China Harbour Engineering Company Limited

Contract No. HY/2010/02

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

Monthly EM&A Report for January 2016

[02/2016]

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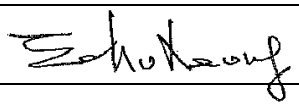
Reviewed, Approved and Certified:	Echo Leong (ETL)	

Version:	Rev. 0	Date:	16 February 2016

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RAMBOLL ENVIRON

Ref.: HYDHZMBEEM00_0_3865L.16

16 February 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 January 2016

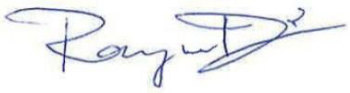
Reference is made to the Environmental Team's submission of Monthly Environmental Monitoring & Audit Report for January 2016 certified by the ET Leader (ET's ref.: "60249820/C/RMKY16021601" dated 16 February 2016) and provided to us via e-mail on 16 February 2016.

We are pleased to inform you that we have no adverse comment on the captioned report. We write to verify the captioned submission in accordance with Condition 5.4 of EP-353/2009/I 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 in the vicinity of Portion B with your on-going surveillance and monitoring.

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

Internal: DY, YH, CL, JLau, ENPO Site

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EXECUTIVE SUMMARY

Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Work (here below, known as "the Project") mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL). It is a designated project and is governed by the current permits for the Project, i.e. the amended Environmental Permits (EPs) issued on 17 July 2015 (EP-353/2009/I) 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 Project).

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

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 Project for carrying out the environmental monitoring and audit (EM&A) works.

The construction phase of the Project under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 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 31 January 2016. As informed by the Contractor, major activities in the reporting period were:-

Marine-base

- Rock fill
- Conforming Sloping Seawalls
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Rubble Mound Seawall

Land-base

- Surcharge removal & laying
- Deep Cement Mixing
- Installations of Precast Culverts except sloping outfalls
- 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	4 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 water quality monitoring, no exceedance was recorded at all monitoring stations in the reporting month.

Impact Dolphin Monitoring

A total of three sightings were made, one “on effort” and two “opportunistic”. One sighting was recorded on the 7 January 2016 and two sightings were recorded on 18 January 2016. All groups contained two individuals.

Behaviour: On the 7 January 2016, the first group was travelling. On the 18 January 2016, the first group was feeding and the second group was travelling. No calves were sighted in January 2016.

Complaint, Notification of Summons and Successful Prosecution

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

Reporting Change

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 for January 2016 was conducted at AMS7 (Hong Kong SkyCity Marriott Hotel), 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.

Future Key Issues

Key issues to be considered in the coming month included:

- Site runoff should be properly collected and treated prior to discharge;
- Minimize loss of sediment from filling works;
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities;
- Exposed surfaces/soil stockpiles should be properly treated to avoid generation of silty surface run-off during rainstorm;
- Regular review and maintenance of wheel washing facilities provided at all site entrances/exits;
- Conduct regular inspection of various working machineries and vessels within works areas to avoid any dark smoke emission;
- Suppress dust generated from work processes with use of bagged cements, earth movements, excavation activities, exposed surfaces/soil stockpiles and haul road traffic;
- Quieter powered mechanical equipment should be used;
- Provision of proper and effective noise control measures for operating equipment and machinery on-site, such as erection of movable noise barriers or enclosure for noisy plants;
- Closely check and replace the sound insulation materials regularly;
- Better scheduling of construction works to minimize noise nuisance;
- Properly store and label oil drums and chemical containers placed on site;
- Proper chemicals, chemical wastes and wastes management;
- Maintenance works should be carried out within roofed, paved and confined areas;
- Collection and segregation of construction waste and general refuse on land and in the sea should be carried out properly and regularly; and
- Proper protection and regular inspection of existing trees, transplanted/retained trees.
- 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 Work (here below, known as "the Project") mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL).

1.1.2 The environmental impact assessment (EIA) reports (Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – EIA Report (Register No. AEIAR-145/2009) (HKBCFEIA) and Tuen Mun – Chek Lap Kok Link – EIA Report (Register No. AEIAR-146/2009) (TMCLKLEIA), and their environmental monitoring and audit (EM&A) Manuals (original EM&A Manuals), for the Project were approved by Environmental Protection Department (EPD) in October 2009.

1.1.3 EPD subsequently issued the Environmental Permit (EP) for HKBCF in November 2009 (EP-353/2009) and the Variation of Environmental Permit (VEP) in June 2010 (EP-353/2009/A), November 2010 (EP-353/2009/B), November 2011 (EP-353/2009/C), March 2012 (EP-353/2009/D), October 2012 (EP-353/2009/E), April 2013 (EP-353/2009/F), August 2013 (EP-353/2009/G), January 2015 (EP-353/2009/H) and July 2015 (EP-353/2009/I). 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 17 July 2015 (EP-353/2009/I) 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 project-relation contents from the original EM&A Manuals for the Project, was issued in May 2012.

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

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

1.1.8 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 Project for carrying out the EM&A works.

1.1.10 The construction phase of the Project under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 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 Project commenced on 12 March 2012.

1.2 Scope of Report

1.2.1 This is the forty-seven monthly EM&A Report under the Contract No.HY/2010/02 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Project in January 2016.

1.3 Project Organization

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

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Engineer's Representative (ER) (Ove Arup & Partners Hong Kong Limited)	Chief Resident Engineer	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	36932254	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
- Rock fill
- Conforming Sloping Seawalls
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Rubble Mound Seawall

Land-base
- Surcharge removal & laying
- Deep Cement Mixing
- Installations of Precast Culverts except sloping outfalls
- 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 Project is shown in Appendix B.

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

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

1.5 Summary of EM&A Programme Requirements

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

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

2 AIR QUALITY MONITORING

2.1 Monitoring Requirements

2.1.1 In accordance with the 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 for January 2016 was conducted at AMS7 (Hong Kong SkyCity Marriott Hotel), 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 project. The omission will be effective on 19 November 2012.

2.4 Monitoring Parameters, Frequency and Duration

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

Table 2.3 Air Quality Monitoring Parameters, Frequency and Duration

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

2.5 Monitoring Methodology

2.5.1 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) No two samplers should be placed less than 2 meters apart.
(iii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iv) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(v) A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
(vi) No furnace or incinerator flues nearby.
(vii) Airflow around the sampler was unrestricted.
(viii) Permission was obtained to set up the samplers and access to the monitoring stations.
(ix) A secured supply of electricity was obtained to operate the samplers.
(x) The sampler was located more than 20 meters from any dripline.
(xi) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
(xii) Flow control accuracy was kept within ±2.5% deviation over 24-hour sampling period.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
(ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.

(iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.
(ii) The filter holder and the area surrounding the filter were cleaned.
(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
(vi) Then the shelter lid was closed and was secured with the aluminum strip.
(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(viii) A new flow rate record sheet was set into the flow recorder.
(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.1 m^3/min, and complied with the range specified in the updated EM&A Manual (i.e. 0.6-1.7 m^3/min).
(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
(xi) The initial elapsed time was recorded.
(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
(xiii) The final elapsed time was recorded.
(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
(xv) It was then placed in a clean plastic envelope and sealed.
(xvi) All monitoring information was recorded on a standard data sheet.
(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
(ii) 5-point calibration of the HVS was conducted using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Bi-monthly 5-point calibration of the HVS will be carried out during impact monitoring.
(iii) Calibration certificate of the HVSs are provided in Appendix E.

2.5.2 1-hour TSP Monitoring

(a) Measuring Procedures

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

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

(b) Maintenance and Calibration

(i) The 1-hour TSP meter was calibrated at 1-year intervals against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in Appendix E.

(ii) 1-hour validation checking of the TSP meter against HVS is carried out on half-year basis at the air quality monitoring locations.

2.6 Monitoring Schedule for the Reporting Month

2.6.1 The schedule for air quality monitoring in January 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	78	72-83	374	500
AMS3B	77	73-81	368	500
AMS7	77	72-82	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	61	38-97	176	260
AMS3B	52	26-83	167	260
AMS7	52	35-72	183	260

2.7.2 Due to electricity failure, the 24-hr TSP monitoring at AMS3B scheduled on 18-19 January 2016 was rescheduled to 19 -20 January 2016.

2.7.3 The event action plan is annexed in Appendix L.

2.7.4 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 Project. The Action and Limit level of the noise monitoring is provided in Appendix D.

3.2 Monitoring Equipment

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

Table 3.1 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31 & B&K2238
Acoustic Calibrator	Rion NC-73 & 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 January 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	68	67-68*	75
NMS3B	66	61-68*	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 Major noise sources during the noise monitoring included construction activities of the Project, construction activities by other contracts and nearby traffic noise.

3.7.4 The event action plan is annexed in Appendix L.

4 WATER QUALITY MONITORING

4.1 Monitoring Requirements

4.1.1 Impact water quality monitoring was carried out to ensure that any deterioration of water quality was detected, and that timely action was taken to rectify the situation. For impact water quality monitoring, measurements were taken in accordance with the 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 January 2016 is provided in Appendix F.

4.6.2 Results and Observations

4.6.3 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.

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

4.6.5 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 Project, some of the transect lines shown in Figure 5 could not be fully surveyed during the regular survey. Transect 10 is reduced from 6.4km to approximately 3.6km in length due to the HKBCF construction site. Therefore the total transect length for both NEL and NWL combined is reduced to approximately 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 January 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 7, 8, 18 and 19 January 2016. A total of 217.6 km of transect line was conducted, all 217.6km 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 January 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	01/07/2016	NWL	1	24	108.6
	01/07/2016	NWL	2	38.1	
	01/08/2016	NWL	1	10	
	01/08/2016	NEL	1	36.5	
2	01/18/2016	NWL	1	13.2	109
	01/18/2016	NWL	2	32.7	
	01/18/2016	NWL	3	11.3	
	01/19/2016	NWL	1	14.9	
	01/19/2016	NEL	1	36.9	
TOTAL in January 2016					**217.6**

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

Table 5.4 Impact Dolphin Monitoring Survey Details January 2016

Date	Location	No. Sightings "on effort"	No. Sightings "opportunistic"
01/07/2016	NW L	**1**	0
	NEL	0	0
01/08/2016	NW L	0	0
	NEL	0	0
01/18/2016	NW L	0	**2**
	NEL	0	0
01/19/2016	NW L	0	0
	NEL	0	0
TOTAL in January 2016		**1**	**2**

*Location indicates which area was being surveyed when the sighting was made. The area noted does not necessarily indicate where the dolphins were when the sighting was made.

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**
7 & 8 Jan 16	36.5	72.1	0	1	0.0	1.4
18 & 19 Jan 16	36.9	72.1	0	0	0.0	0.0
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**
7 & 8 Jan 16	36.5	72.1	0	2	0.0	2.8
18 & 19 Jan 16	36.9	72.1	0	0	0.0	0.0

* 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 three sightings were made, one “on effort” and two “opportunistic”. One sighting was recorded on the 7 January 2016 and two sightings were recorded on 18 January 2016. All groups contained two individuals.

5.7.3 Behaviour: On the 7 January 2016, the first group was travelling. On the 18 January 2016, the first group was feeding and the second group was travelling. No calves were sighted in January 2016.

5.7.4 Two resightings were recorded in December 2015. HZMB 054 [AFCD: CH34] has been resighted twelve times during impact monitoring. On ten occasions in NWL and on two occasiosn in NEL. HZMB 083 [AFCD: NL136] has been resighted eight times (including same day sightings) and always in NWL. Images and re-sightings data are included in Appendix K.

5.7.5 Noteworthy Observation[1]:

5.7.6.1 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. As the working vessels will move during the on-going works, 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 continuously affect survey protocol, survey data collection, dolphin movement, dolphin habitat use and dolphin behaviour.

5.7.6.2 The HKBCF and adjoining “Southern Landfall” Projects effected lines 10, 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.

5.7.6.3 Travel to the northern end of line 10 was slightly impeded by the anchorage located there. After checking with the Contractor, there are no trans-boundary vessels that are required to anchor at northern ends of lines 10 during this reporting period, as such they are unlikely to be related to this

[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.

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.

5.7.6.4 Anchored fishing vessels were noted on lines 1 and 2. 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.

5.7.6.5 Several single anchored vessels were noted on lines 5, 12, 17, 18, 22 and 23 18 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.

5.7.6.6 Projects which involved dredging were noted near the southern end of line 5 and mid-line 9. These were not part of this Contract. Dredging is known to impact dolphins. There was no signage on these projects and they were not part of HKBCF Reclamation Works.

5.7.6.7 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).

5.7.6.8 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 Project. In the reporting month, 4 site inspections were carried out on 7, 14, 21 and 28 January 2016.

6.1.2 Particular observations during the site inspections are described below:

Air Quality

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

Noise

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

Water Quality

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

6.1.6 The Contractor was reminded to continue to carry out maintenance as necessary and ensure integrity of the perimenter silt curtain at all time. (Reminder)

Chemical and Waste Management

6.1.7 Wood materials were observed scattered at Portion C2a. The Contractor was reminded to regualrly clear the materials and keep the site tidy. The Contractor subsequently assigned area for temporary storage of wood materials. (Closed)

6.1.8 Oil drums were observed without drip trays on barge 振明 93. The Contractor was reminded to provide drip tray to oil drum. The Contractor subsequently cleared all oil drum from the area (closed).

6.1.9 General refuses were observed at Portion D, the Contractor was reminded to regularly clear the general refuses and dispose them of properly. The Contractor subsequently cleared the general refuses.

6.1.10 Chemical container were observed without bunding. The Contractor was reminded to store chemical in bunded area. The Contractor subsequently removed the chemical container from the area. (Closed)

Landscape and Visual Impact

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

Others

6.1.12 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, 52,472.9m^3 of fill material were imported for the Project use in the reporting period. 252kg paper/cardboard packing, 800kg chemical, 520m^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 excavated filling material specified by Contract no. HY/2013/01 was received as public fill for Contract no. HY/2010/02's reclamation filling works since January 2015. Such site arrangement was on-going in the reporting month and will be regularly reviewed and reported in the coming monthly EM&A report.

6.3 Environmental Licenses and Permits

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

Table 6.1 Summary of Environmental Licensing and Permit Status

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License/ Permit Holder	Remarks
			From	To		
EIAO	Environmental Permit	EP-353/2009/I	17/07/2015	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-RS1240-15	18/11/2015	28/02/2016	CHEC	Reclamation Works in Contract HY/2010/02
NCO	Construction Noise Permit	GW-RE1214-15	20/12/2015	19/06/2016	CHEC	Section of TKO Fill Bank under Contract HY/2010/02

6.4 Implementation Status of Environmental Mitigation Measures

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

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

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

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

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

6.4.6 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 Project site and associated works areas throughout the construction phase.

6.5 Summary of Exceedances of the Environmental Quality Performance Limit

6.5.1 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.

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

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

6.5.4 A total of three sightings were made, one “on effort” and two “opportunistic”. One sighting was recorded on the 7 January 2016 and two sightings were recorded on 18 January 2016. All groups contained two individuals.

6.5.5 Behaviour: On the 7 January 2016, the first group was travelling. On the 18 January 2016, the first group was feeding and the second group was travelling. No calves were sighted in January 2016.

6.5.6 Environmental site inspection was carried out 4 times in January 2016. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

6.5.7 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 Project in February 2016 and March 2016 will be*:-

Marine-base

- Rock fill
- Conforming Sloping Seawalls
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Rubble Mound Seawall

Land-base

- Deep Cement Mixing
- Installations of Precast Culverts except sloping outfalls
- 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 February 2016 and March 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;
- Minimize loss of sediment from filling works;
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities;
- Exposed surfaces/soil stockpiles should be properly treated to avoid generation of silty surface run-off during rainstorm;
- Regular review and maintenance of wheel washing facilities provided at all site entrances/exits;
- Conduct regular inspection of various working machineries and vessels within works areas to avoid any dark smoke emission;
- Suppress dust generated from work processes with use of bagged cements, earth movements, excavation activities, exposed surfaces/soil stockpiles and haul road traffic;
- Quieter powered mechanical equipment should be used;
- Provision of proper and effective noise control measures for operating equipment and machinery on-site, such as erection of movable noise barriers or enclosure for noisy plants;
- Closely check and replace the sound insulation materials regularly;
- Better scheduling of construction works to minimize noise nuisance;
- Properly store and label oil drums and chemical containers placed on site;
- Proper chemicals, chemical wastes and wastes management;
- Maintenance works should be carried out within roofed, paved and confined areas;
- Collection and segregation of construction waste and general refuse on land and in the sea should be carried out properly and regularly; and
- Proper protection and regular inspection of existing trees, transplanted/retained trees.
- 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 February 2016 is provided in Appendix F.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

8.1.1 The construction phase and EM&A programme of the Project commenced on 12 March 2012.

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

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

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

8.1.5 A total of three sightings were made, one “on effort” and two “opportunistic”. One sighting was recorded on the 7 January 2016 and two sightings were recorded on 18 January 2016. All groups contained two individuals.

8.1.6 Behaviour: On the 7 January 2016, the first group was travelling. On the 18 January 2016, the first group was feeding and the second group was travelling. No calves were sighted in January 2016.

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

8.1.8 Environmental site inspection was carried out 4 times in January 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

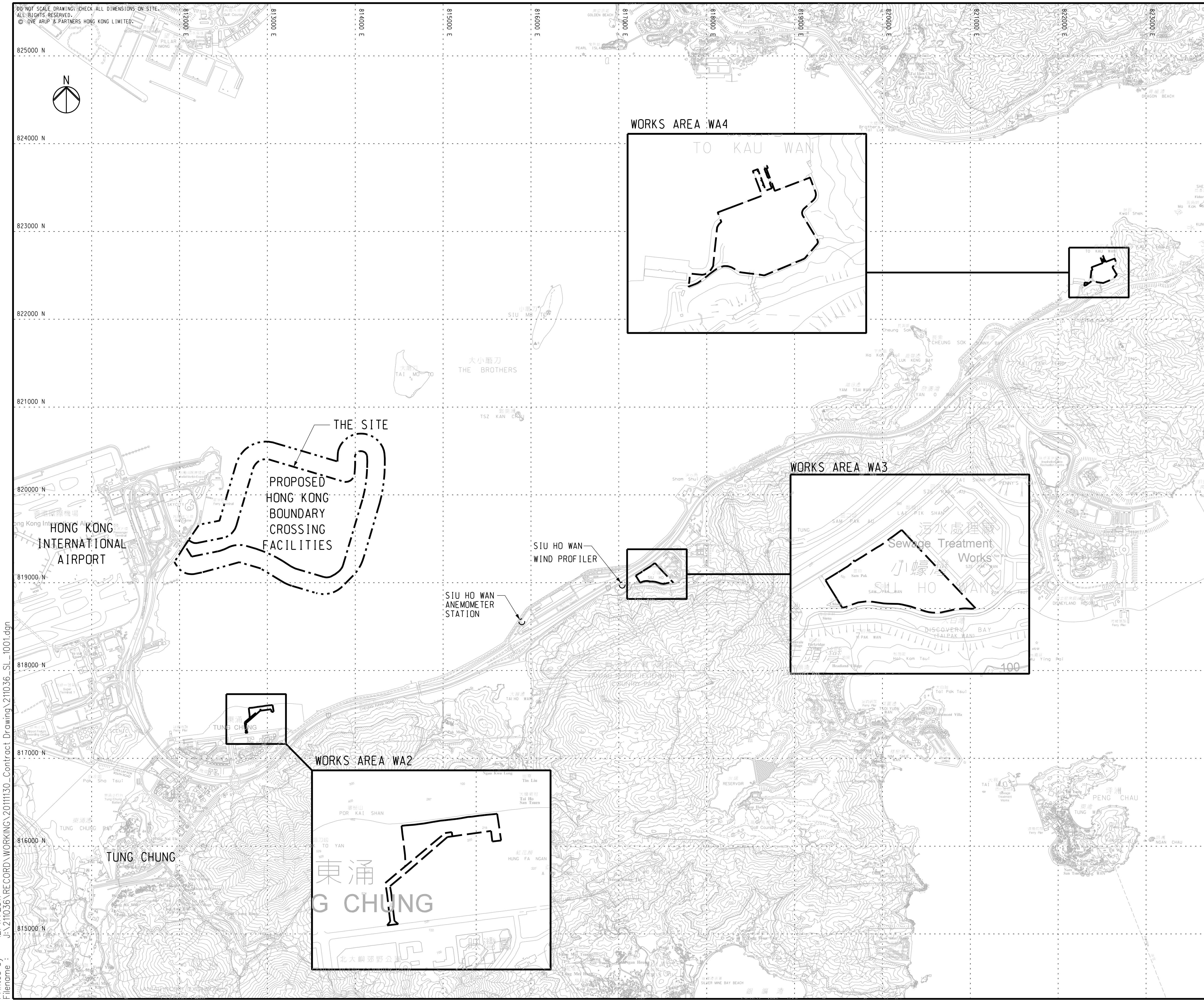
- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities in order to make sure they are functioning effectively.
- Construction of seawall should be completed as early as possible.
- Regular inspect and review the loading process from barges to avoid splashing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

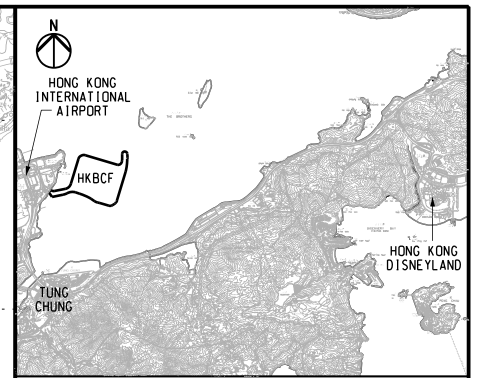
Chemical and Waste Management

- 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:

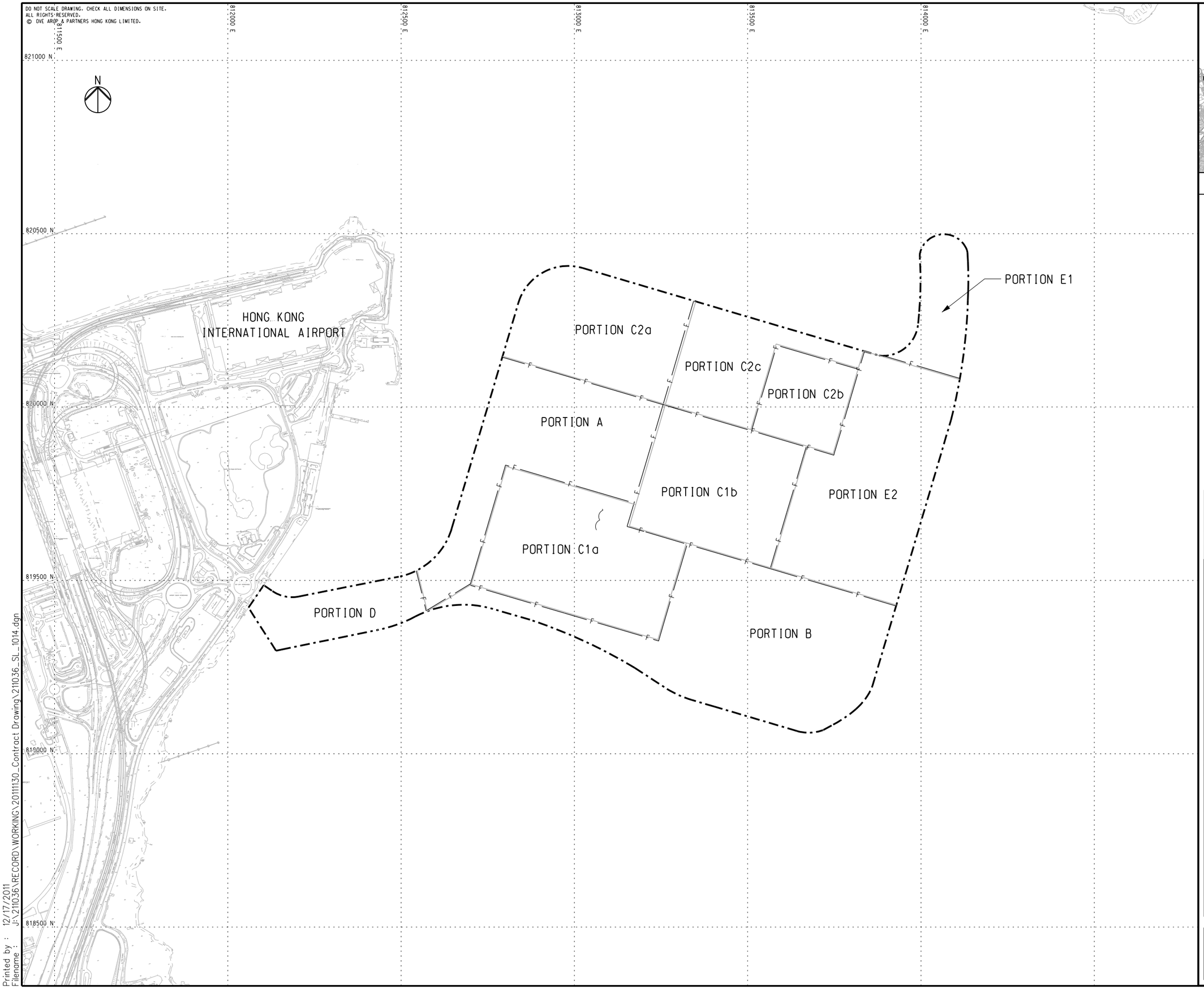
Contract No. HY/2010/02
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities
- Reclamation Works

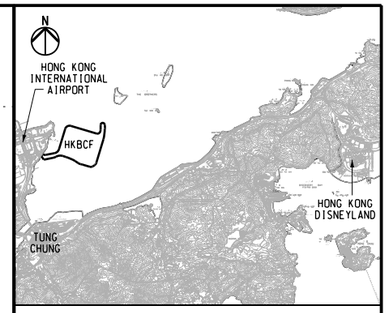
Drawing title

KEY PLAN

Drawing no.		Rev.	
211036/SL/1001		-	
Drawn	Date	Checked	Approved
RL	11/09	KKY	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

Printed by : 12/17/2011
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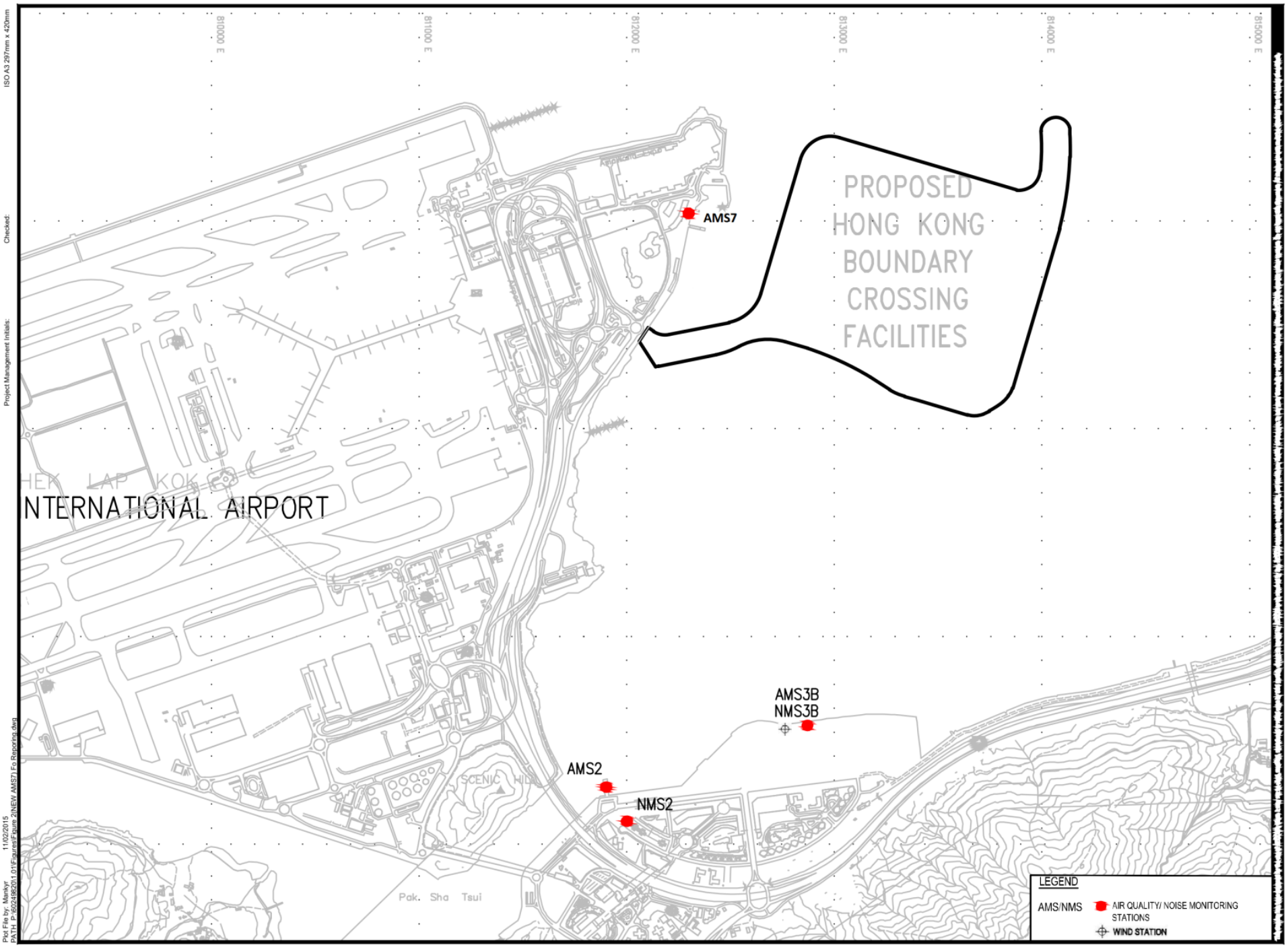

AIR QUALITY AND NOISE MONITORING STATIONS FOR HKBCF

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
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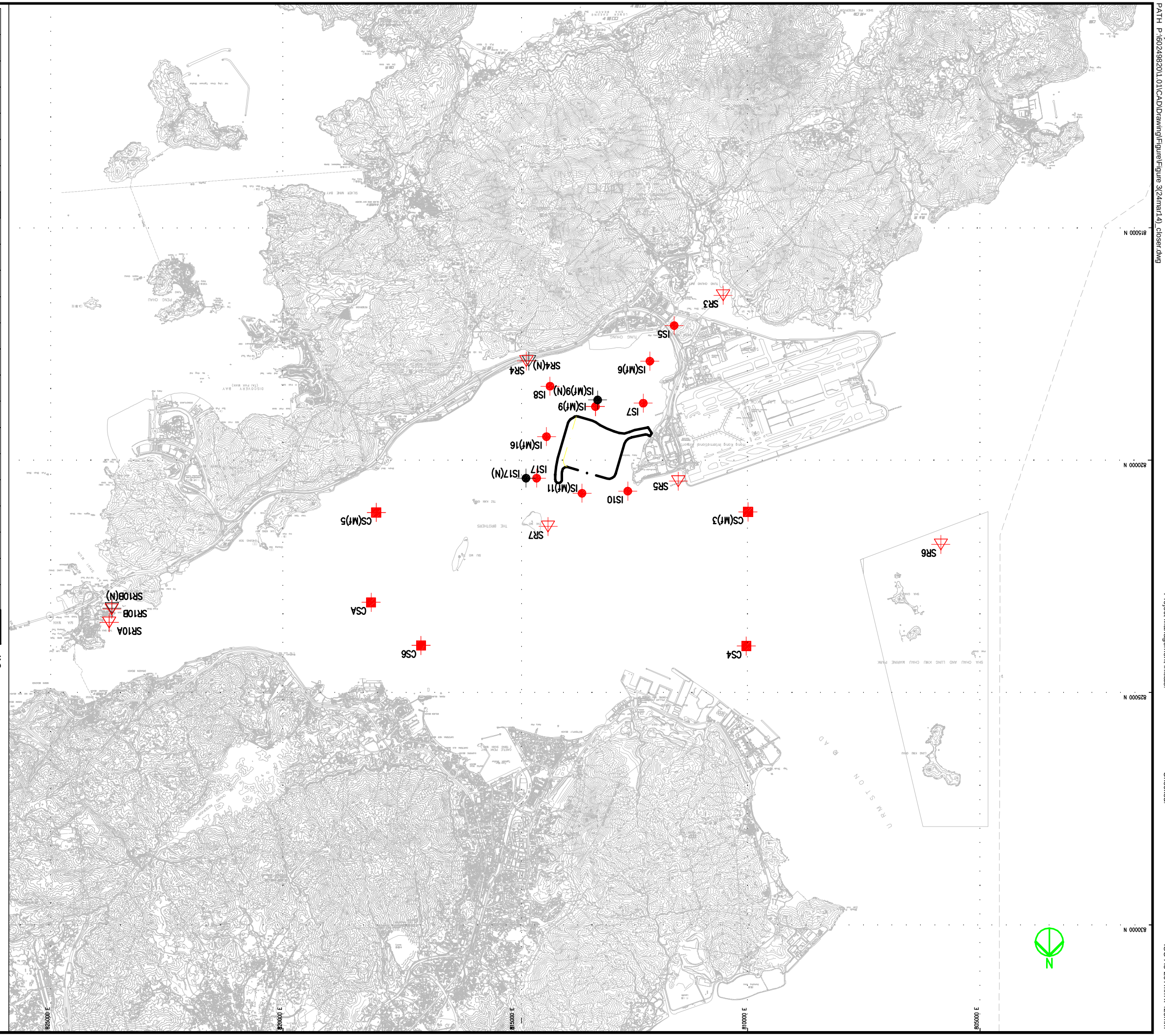
25/03/2014

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

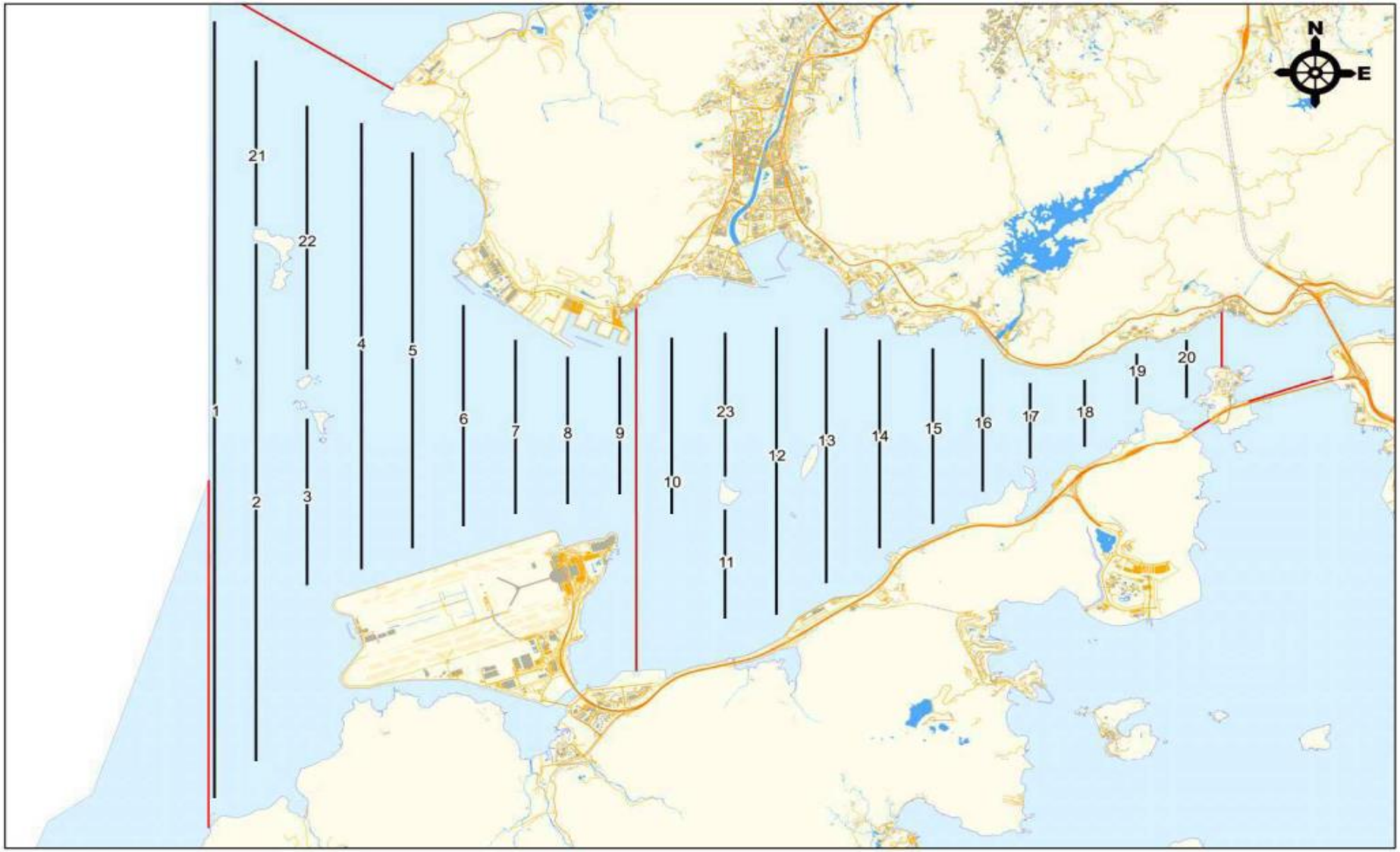
Project No.: -

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.**

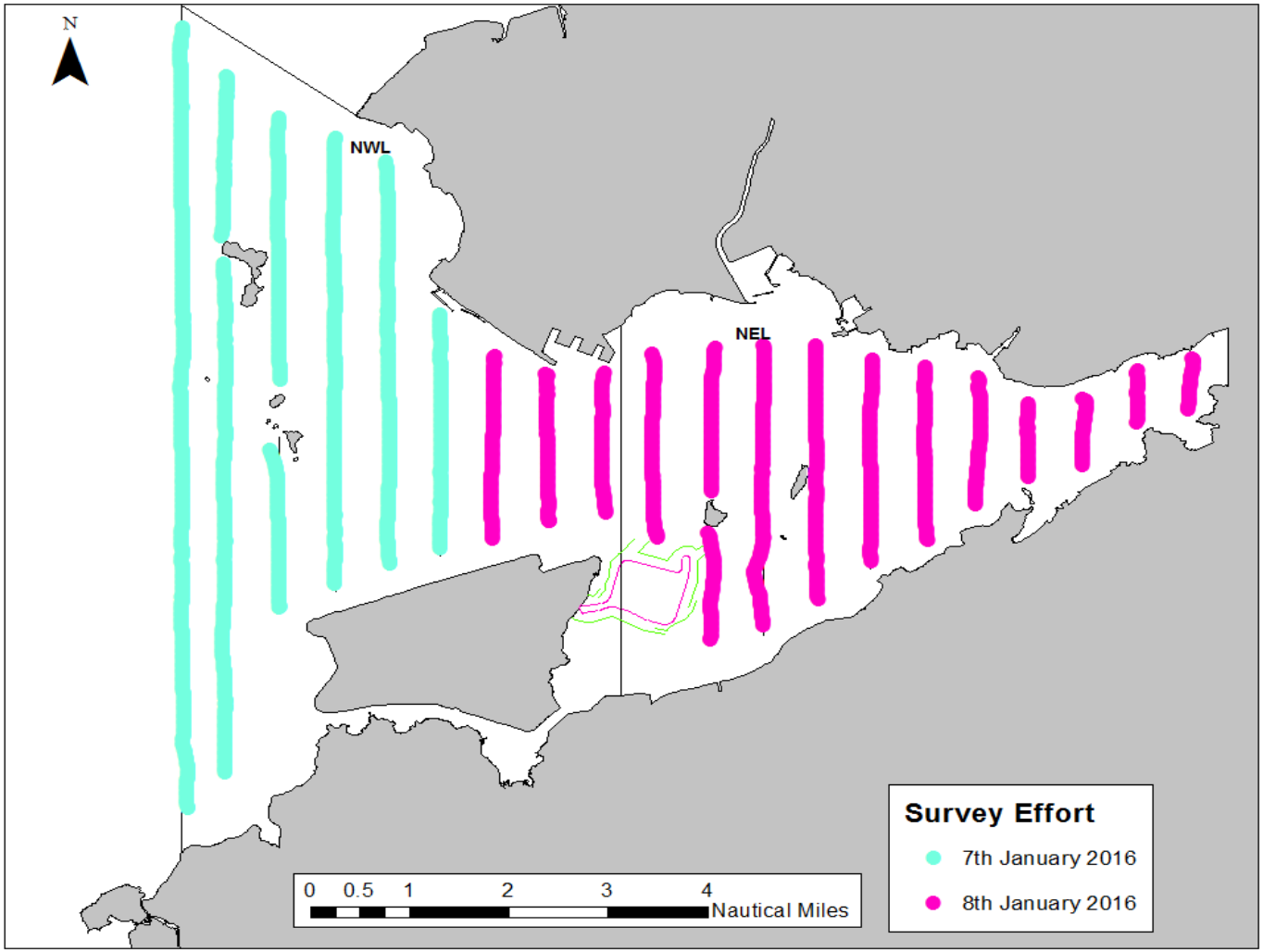
^Coordinates for transect lines 1, 2, 7, 8, 9 and 11 have been updated in respect to the Proposal for Alteration of Transect Line for Dolphin Monitoring approved by EPD on 19 August 2015. The total transect length for both NEL and NWL combined is 108km.

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

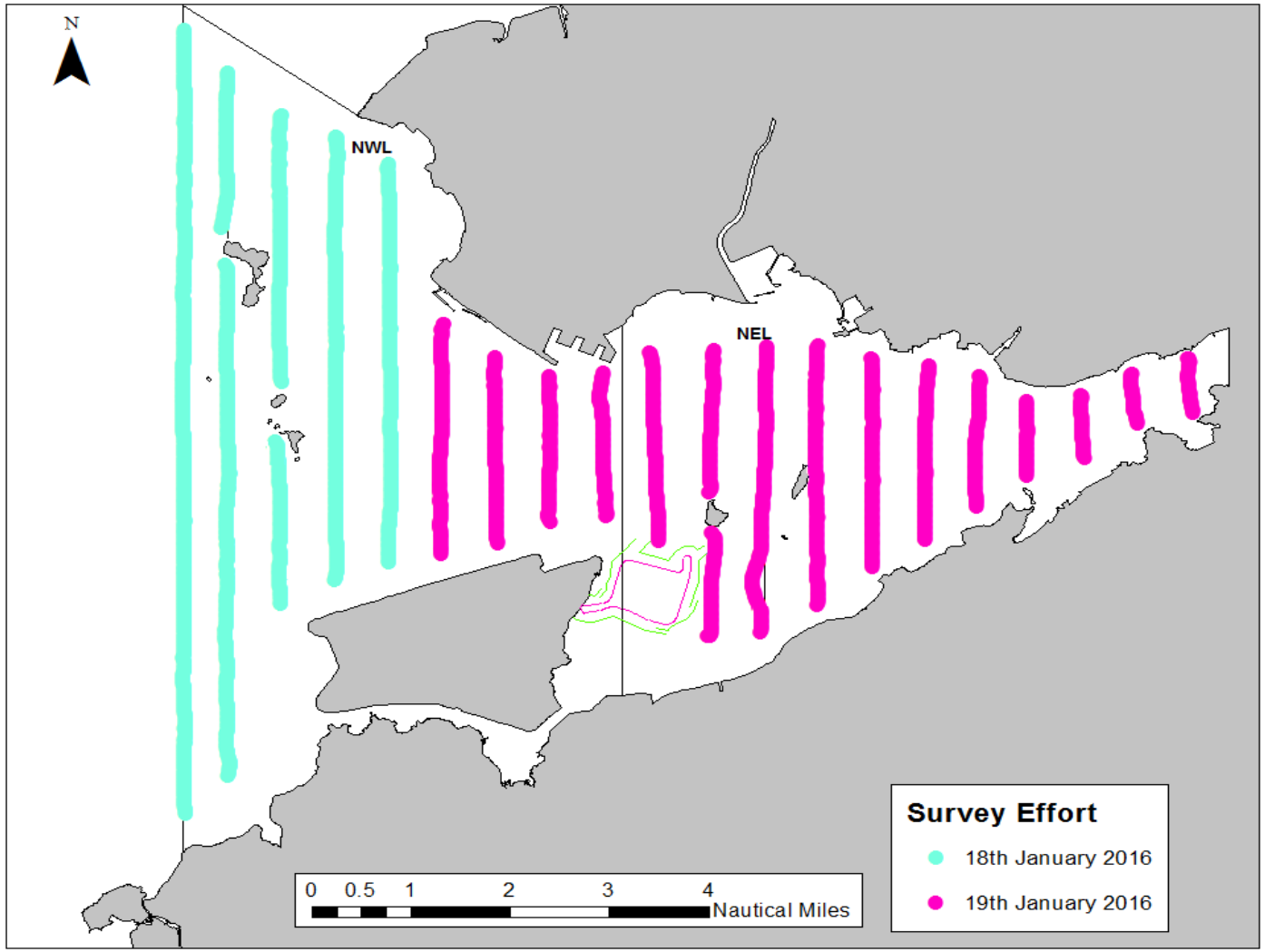
Figure 4



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

Impact Dolphin Monitoring Survey Efforts
on 7 & 8 January 2016

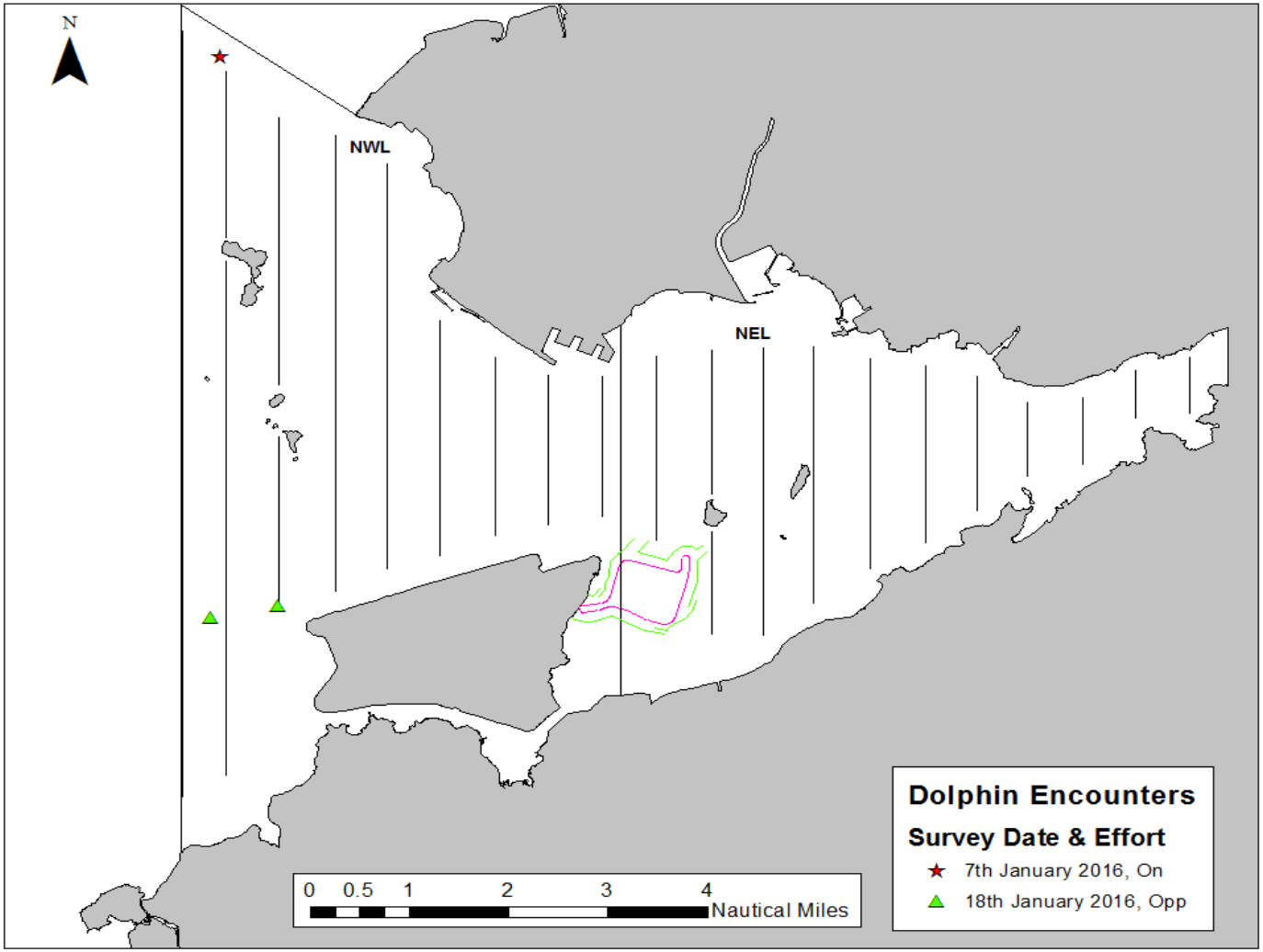
Figure 5a



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

Impact Dolphin Monitoring Survey Efforts
on 18 and 19 January 2016

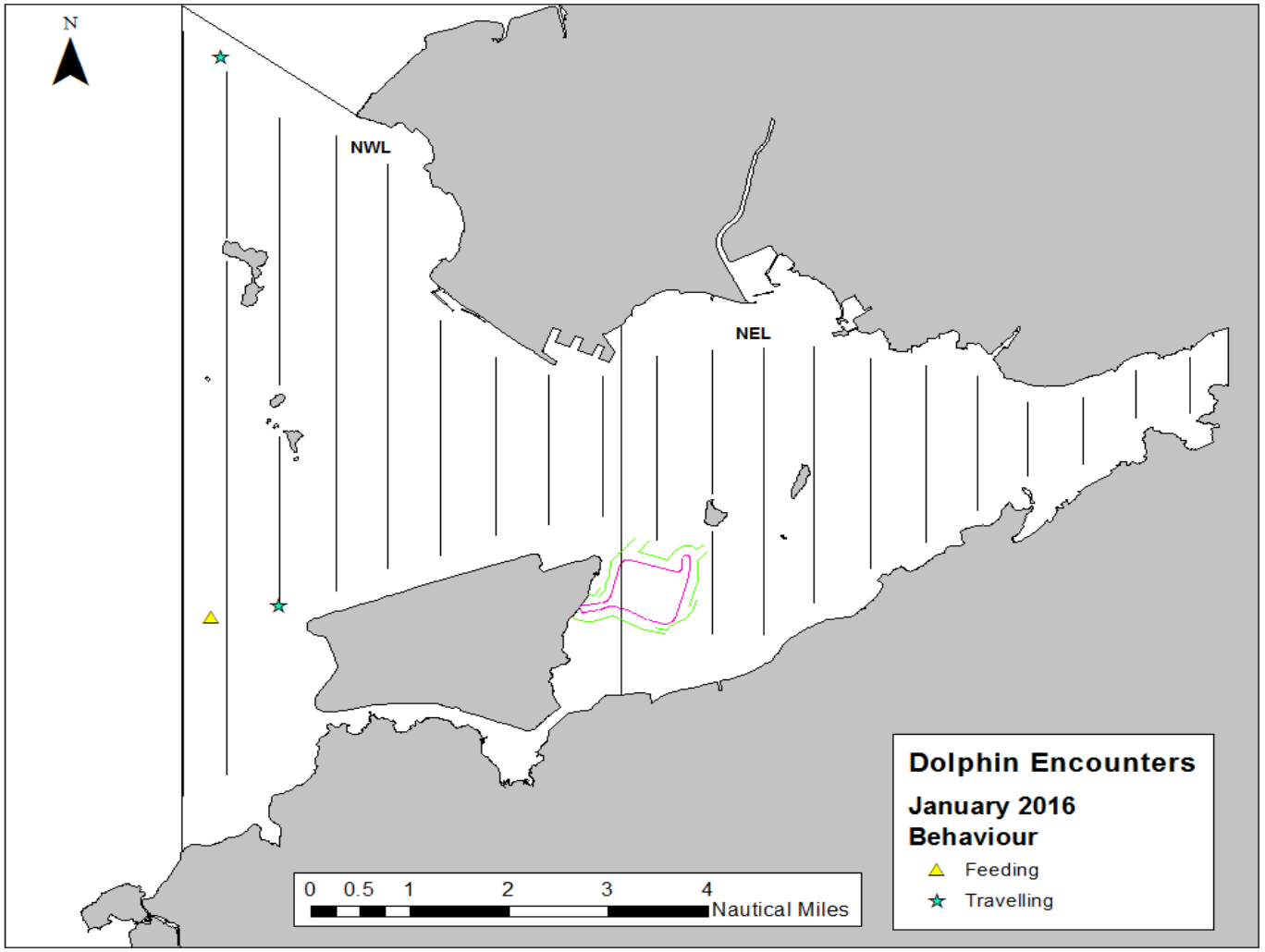
Figure 5b



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

Impact Dolphin Monitoring Survey
Sightings in January 2016

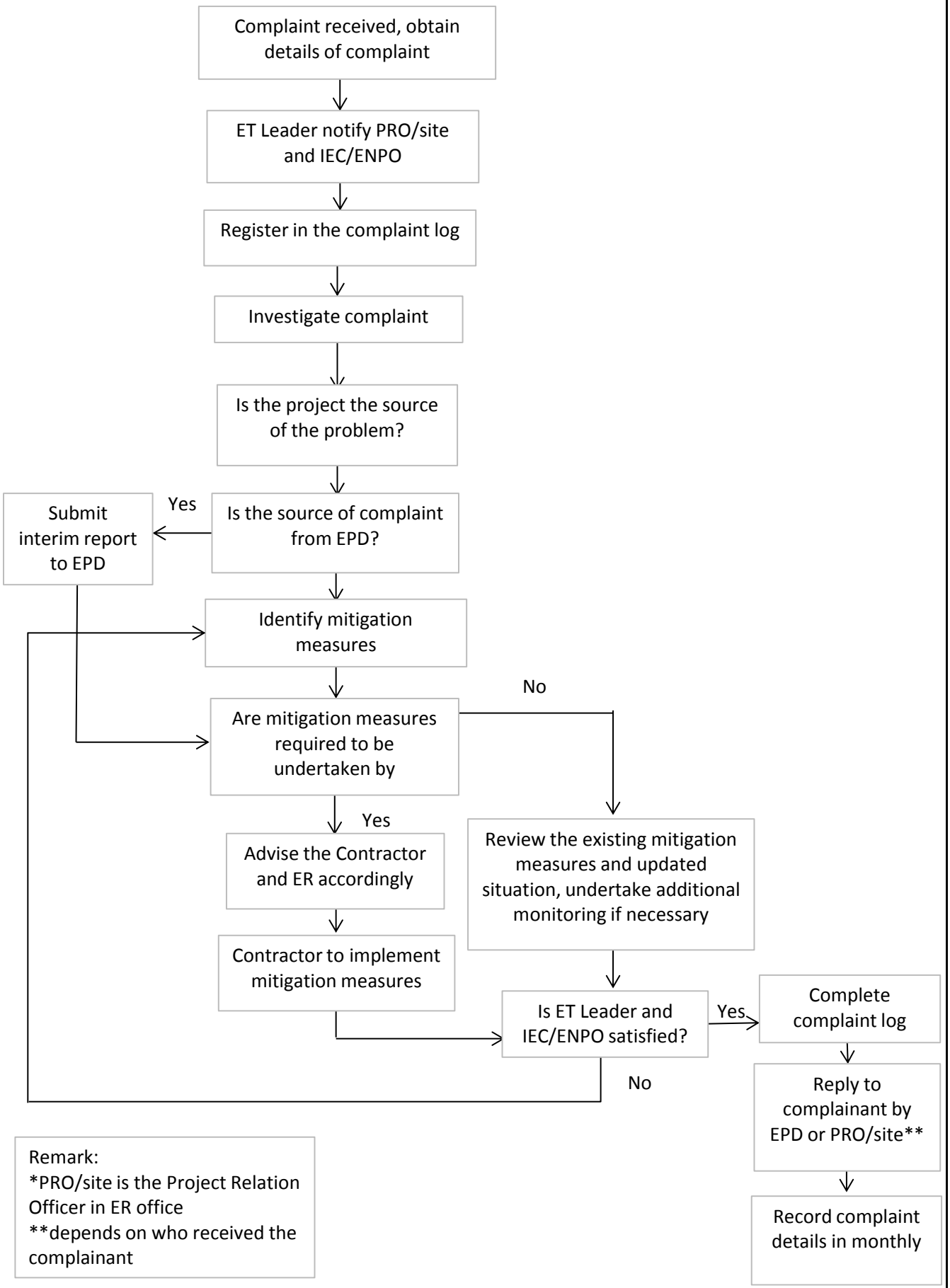
Figure 5c



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

Impact Dolphin Monitoring Survey
Behaviour Map in January 2016

Figure 5d

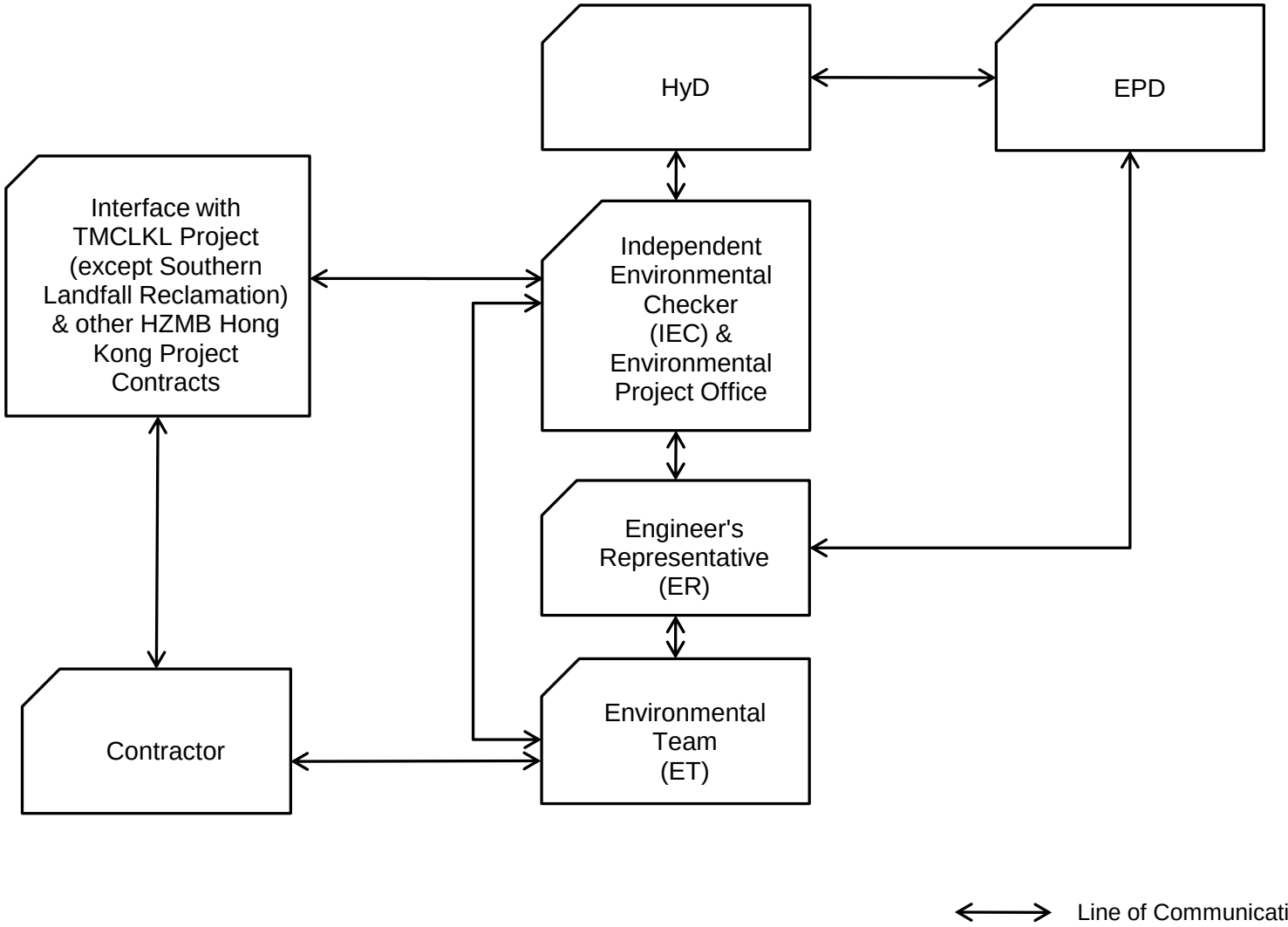


HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

AECOM

Environmental Complaint Handling Procedure

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



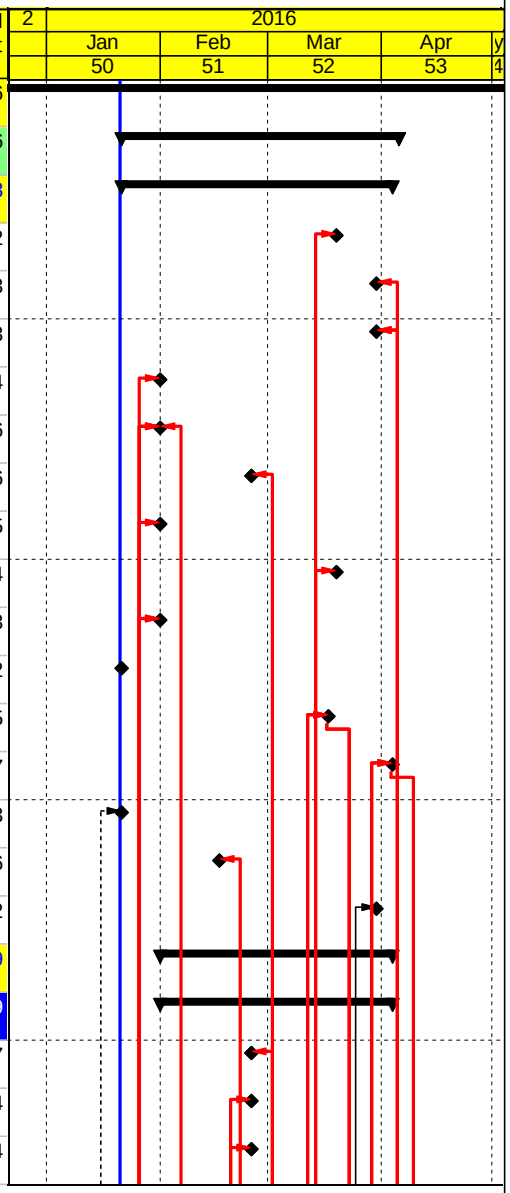
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
--RECLAMATION WORKS
Project No.: 60249820 Date: April 2013

Project Organisation for Environmental Works

AECOM

Appendix A

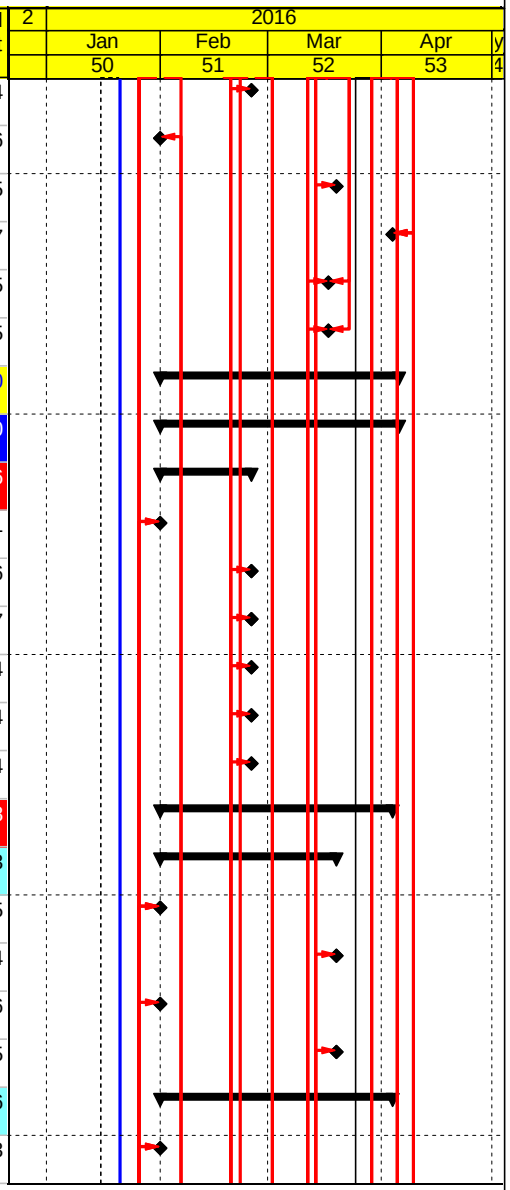
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
50th_7 Monthly Progress Report Status as on 21Jan2016		1774	21-May-12 A	28-Feb-17	316
Contract Key Dates		76	21-Jan-16	05-Apr-16	66
Key Dates for achievement of Stages and completion of Sections		74	21-Jan-16	03-Apr-16	68
G1072	KD-05, Completion of Section D EC1-1 to EC1-6 10Aug2015 SA3	0		19-Mar-16*	-222
G1073	KD-05, Completion of Section D EC1-7 to EC1-8 10Aug2015 SA3	0		30-Mar-16*	-233
G1075	KD-05, Completion of Section D Connection to Existing 10Aug2015 SA3	0		30-Mar-16*	-233
G1077	KD-05, Completion of Section D EC1-1 to EC1-6 West side to Other Contractors	0		31-Jan-16*	-174
G1081	KD-06C4TM, Completion of Section BC4TM Main Area West 12Sep2014 SA4	0		31-Jan-16*	-506
G1086	KD-06C3 Completion of SEction BC3 Main Area East-N 21Nov2015 SA4	0		25-Feb-16*	-96
G1090	KD-07C3, Completion of Section C1aC3 6Jan2016 SA4	0		31-Jan-16*	-25
G1092	KD-07C4, Completion of Section C1aC4 22Sep2014 SA4	0		19-Mar-16*	-544
G1095	KD-08C3, Completion of Section C1bC3 South East 30Sep2015 SA4	0		31-Jan-16*	-123
G1100	KD-08C3, Completion of Section C1bC3 South West 30Sep2015 SA4	0		21-Jan-16*	-112
G1102	KD-08C3, Completion of Section C1bC3 North East 30Sep2015 SA4	0		17-Mar-16*	-245
G1103	KD-08C3, Completion of Section C1bC3 North West 30Sep2015 SA4	0		03-Apr-16*	-187
G1117	KD-09C2, Completion of Section C2aC2 Edge Area C104 - C109 28Nov2015 SA3 0-43M	0		21-Jan-16*	-53
G1130	KD-11TM, Completion of Section E2TM Main Area North 05Feb2015 SA4	0		16-Feb-16*	-376
G1133	KD-11C3, Completion of Section E2C3 Main Area South 10Jun2016 SA4	0		30-Mar-16*	72
Supplementary Agreement		63	31-Jan-16	03-Apr-16	-89
SA4		63	31-Jan-16	03-Apr-16	-89
SA4-KD06-010	KD-06C3 Completion of Section BC3 21Nov2015	0		25-Feb-16*	-97
SA4-KD06-020	KD-06C8E Completion of Section BC8E 17Jun2015	0		25-Feb-16*	-254
SA4-KD06-030	KD-06C8N Completion of Section BC8N 17Jun2015	0		25-Feb-16*	-254



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

TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SA4-KD06-040	KD-06C8NE Completion of Section BC8NE 17Jun2015	0		25-Feb-16*	-254
SA4-KD07-010	KD-07C3 Completion of Section C1aC3 6Jan2016	0		31-Jan-16*	-26
SA4-KD07-020	KD-07C4 Completion of Section C1aC4 22Sep2014	0		19-Mar-16*	-545
SA4-KD08-010	KD-08C3 Completion of Section C1bC3 30Sep2015	0		03-Apr-16*	-187
SA4-KD08-020	KD-08C8NE Completion of Section C1bC8NE 17Jul2015	0		17-Mar-16*	-245
SA4-KD08-040	KD-08C8SE Completion of Section C1bC8SE 17Jul2015	0		17-Mar-16*	-245
Summary Programme		65	31-Jan-16	05-Apr-16	-90
Portion Summary		65	31-Jan-16	05-Apr-16	-90
Portion B		25	31-Jan-16	25-Feb-16	-96
ZG1081	KD-06C4TM, Completion of Section BC3 Main Area West 21Nov2015 SA4	0		31-Jan-16*	-71
ZG1086	KD-06C3 Completion of SEction BC3 Main Area East-N 21Nov2015 SA4	0		25-Feb-16*	-96
ZGA4-KD06-010	KD-06C3 Completion of Section BC3 21Nov2015	0		25-Feb-16*	-97
ZGA4-KD06-020	KD-06C8E Completion of Section BC8E 17Jun2015	0		25-Feb-16*	-254
ZGA4-KD06-030	KD-06C8N Completion of Section BC8N 17Jun2015	0		25-Feb-16*	-254
ZGA4-KD06-040	KD-06C8NE Completion of Section BC8NE 17Jun2015	0		25-Feb-16*	-254
Portion C		63	31-Jan-16	03-Apr-16	-88
Portion C1a		48	31-Jan-16	19-Mar-16	-73
ZG1090	KD-07C3, Completion of Section C1aC3 6Jan2016 SA4	0		31-Jan-16*	-25
ZG1092	KD-07C4, Completion of Section C1aC4 22Sep2014 SA4	0		19-Mar-16*	-544
ZGA4-KD07-010	KD-07C3 Completion of Section C1aC3 6Jan2016	0		31-Jan-16*	-26
ZGA4-KD07-020	KD-07C4 Completion of Section C1aC4 22Sep2014	0		19-Mar-16*	-545
Portion C1b		63	31-Jan-16	03-Apr-16	-186
ZG1095	KD-08C3, Completion of Section C1bC3 South East 30Sep2015 SA4	0		31-Jan-16*	-123

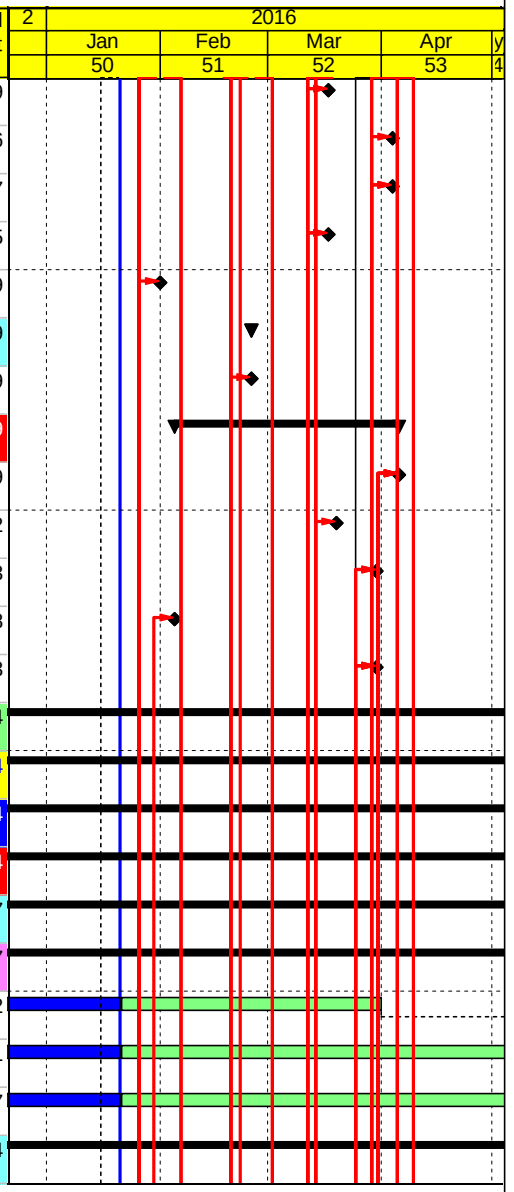


Remaining Level of Effort ◆ Milestone
Actual Level of Effort Summary
Actual Work
Remaining Work
Critical Remaining Work

TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Primavera Systems, Inc.

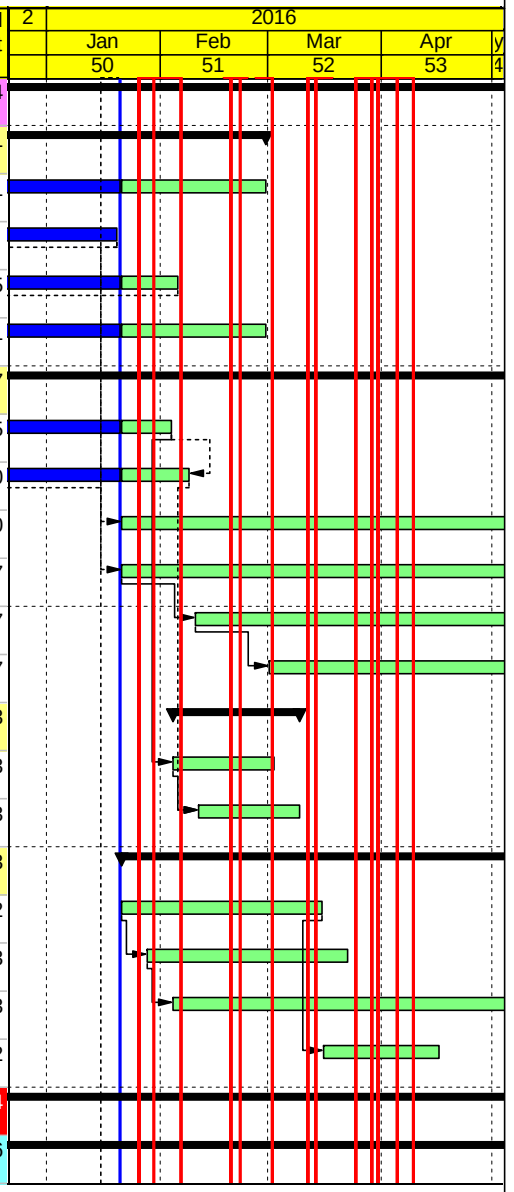
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
ZG1102	KD-08C3, Completion of Section C1bC3 North East 30Sep2015 SA4	0		17-Mar-16*	-169
ZG1103	KD-08C3, Completion of Section C1bC3 North West 30Sep2015 SA4	0		03-Apr-16*	-186
ZGA4-KD08-010	KD-08C3 Completion of Section C1bC3 30Sep2015	0		03-Apr-16*	-187
ZGA4-KD08-020	KD-08C8NE Completion of Section C1bC8NE 17Jul2015	0		17-Mar-16*	-245
ZGA4-KD08-040	KD-08C8SE Completion of Section C1bC8SE 17Jul2015	0		31-Jan-16*	-199
Portion C2a		0	25-Feb-16	25-Feb-16	-69
ZGA4-KD09-020	KD-09C1C3 Completion of Section C2aC1C3 19Dec2015	0		25-Feb-16*	-69
Portion D		61	04-Feb-16	05-Apr-16	-239
ZG1070	KD-05, Completion of Section D C1, C2, C3 & C4 Except Sloping outfall 10Aug2015 SA3	0		05-Apr-16*	-239
ZG1072	KD-05, Completion of Section D EC1-1 to EC1-6 10Aug2015 SA3	0		19-Mar-16*	-222
ZG1073	KD-05, Completion of Section D EC1-7 to EC1-9 10Aug2015 SA3	0		30-Mar-16*	-233
ZG1074	KD-05, Completion of Section D Vertical Seawall 10Aug2015 SA3	0		04-Feb-16*	-178
ZG1075	KD-05, Completion of Section D Connection to Existing 10Aug2015 SA3	0		30-Mar-16*	-233
Work Zone, as defined in PS Clause 1.03(6)		511	21-Jul-15 A	12-Dec-16	394
Portion A, B, C & E		511	21-Jul-15 A	12-Dec-16	394
Portion A, B, C & E		511	21-Jul-15 A	12-Dec-16	394
Seawall		408	02-Sep-15 A	13-Oct-16	454
Optimizing Rubble Mound Seawalls		188	09-Nov-15 A	02-Jun-16	587
Seawall Portion A at C121 - C134		188	09-Nov-15 A	02-Jun-16	587
RFA0-010	PA at C121 - C134 Removal of Temporary Rockfill (170,000m3, 1,500m3/day)	144	09-Nov-15 A	31-Mar-16	622
RFA0-020	PA at C121 - C134 Underlayer (21,600m3 1,000m3/day)	98	15-Nov-15 A	15-May-16	591
RFA0-030	PA at C121 - C134 Rock Armour (1-3ton 30,840m3 & 0.3-1ton 14,466m3 244m3/day)	98	01-Dec-15 A	02-Jun-16	587
Conforming Sloping Seawalls		408	02-Sep-15 A	13-Oct-16	454



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

TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Rock Armour		408	02-Sep-15 A	13-Oct-16	454
Portion B At K028 - K039 (Ch1102 - Ch1600)		228	02-Sep-15 A	29-Feb-16	681
RFB1-030	PB at K028 - K039 on cells Rock Armour 0.3-1ton 13,505m3 237m3/day	119	18-Sep-15 A	29-Feb-16	681
RFB1-040	PB at K028 - K039 in front of cells Removal of temporary rockfill 10205m3 190m3/day	116	02-Sep-15 A	20-Jan-16 A	
RFB1-050	PB at K028 - K039 in front of cells Geotextile & Underlayer 10-60kg 15m/day	33	02-Nov-15 A	05-Feb-16	705
RFB1-060	PB at K028 - K039 in front of cells Rock Armour 0.3-1ton 11,244m3 244m3/day	54	01-Dec-15 A	29-Feb-16	681
Portion E2 At K049 - C067 (Ch1990 - Ch2800)		368	12-Oct-15 A	13-Oct-16	347
RFE2-012	PE2 at K049 - K067 on cells Removal of temporary rockfill	84	12-Oct-15 A	03-Feb-16	415
RFE2-014	PE2 at K049 - K067 on cells Geotextile & Underlayer 10-60kg 11,733m3 200m3/day	84	17-Oct-15 A	08-Feb-16	410
RFE2-030	PE2 at K049 - K067 on cells Rock Armour 1-3ton 31,820m3 237m3/day	134	21-Jan-16*	02-Jun-16	410
RFE2-040	PE2 at K049 - K067 in front of cells Removal of temporary rockfill 25,648m3	227	21-Jan-16	03-Sep-16	347
RFE2-050	PE2 at K049 - K067 in front of cells Geotextile & Underlayer 10-60kg 15m/day	227	10-Feb-16	23-Sep-16	347
RFE2-060	PE2 at K049 - K067 in front of cells Rock Armour 1-3ton 32,060m3 237m3/day	227	01-Mar-16	13-Oct-16	347
Portion E1 At C068 - C076 (Ch2800 - Ch3160)		35	04-Feb-16	09-Mar-16	523
RFE1a-010	PE1 at K068 - K076 on cells Removal of temporary rockfill	28	04-Feb-16	02-Mar-16	523
RFE1a-020	PE1 at K068 - K076 on cells Geotextile & Underlayer 10-60kg 5,557m3 200m3/day	28	11-Feb-16	09-Mar-16	523
Portion C2a At C102 - C112 (Ch4262 - Ch4710)		123	21-Jan-16	22-May-16	203
RFC2a-010	PC2a at C102 - C112 on cells Removal of temporary rockfill	55	21-Jan-16	15-Mar-16	202
RFC2a-020	PC2a at C102 - C112 on cells Geotextile & Underlayer 10-60kg 10907m3 200m3/day	55	28-Jan-16	22-Mar-16	203
RFC2a-030	PC2a at C102 - C112 on cells Rock Armour 2-5ton m3 23,923m3 221m3/day	109	04-Feb-16	22-May-16	203
RFC2a-040	PC2a at C102 - C112 in front of cells Removal of temporary rockfill 31,987m3	32	16-Mar-16	16-Apr-16	202
Surcharge		511	21-Jul-15 A	12-Dec-16	394
Land Portion B		382	22-Jul-15 A	06-Jul-16	-386



Remaining Level of Effort
Actual Level of Effort
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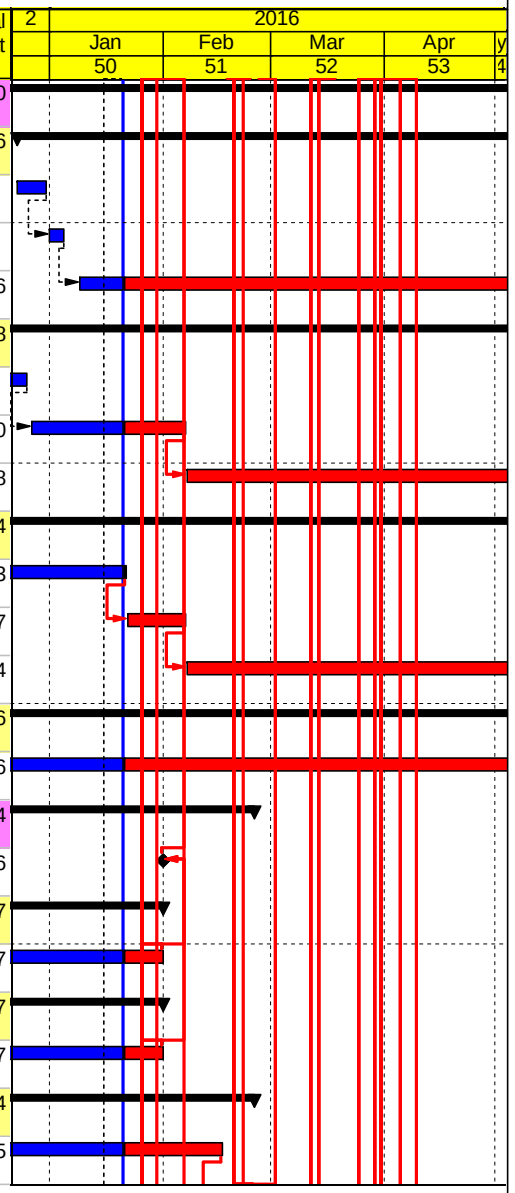
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Edge Areas		315	27-Sep-15 A	06-Jul-16	-670
at K013 - K027		199	23-Dec-15 A	06-Jul-16	-676
SUEB0-036	PB Edge Area K013-K027 Sand Surcharge Checking at +10.5mPD	11	23-Dec-15 A	31-Dec-15 A	
SUEB0-038	PB Edge Area K013-K027 Sand Surcharge up to 11.5mPD 38,103m3 5,000m3/day by Dump Trucks	7	01-Jan-16 A	05-Jan-16 A	
SUEB0-040	PB Edge Area K013-K027 Sand Surcharge Period at +11.5mPD 6mths	180	09-Jan-16 A	06-Jul-16	-676
at K028 - K035		283	27-Sep-15 A	05-Jul-16	-688
SUEB0-072	PB Edge Area K028-K035 Surcharge Strength Test Achievement	96	27-Sep-15 A	26-Dec-15 A	
SUEB0-080	PB Edge Area K028-K035 Sand Surcharge Laying up to 11.5mPD 45,440m3 5,000m3/day	9	27-Dec-15 A	06-Feb-16	-590
SUEB0-090	PB Edge Area K028-K035 Sand Surcharge Period +11.5mPD 5mths	150	07-Feb-16	05-Jul-16	-688
at K036 - K039		242	07-Nov-15 A	05-Jul-16	-674
SUEB0-130	PB Edge Area K036-K039 Surcharge Strength Test Achievement	55	07-Nov-15 A	21-Jan-16	-673
SUEB0-140	PB Edge Area K036-K039 Sand Surcharge Laying up to 11.5mPD 30,293m3 5,000m3/day	14	22-Jan-16	06-Feb-16	-577
SUEB0-150	PB Edge Area K036-K039 Sand Surcharge Period +11.5mPD 5mths	150	07-Feb-16	05-Jul-16	-674
at K047 - K052 (w Deep Cement Mixing)		210	17-Oct-15 A	13-May-16	-616
DCM-2070	PB Edge Area K047-K052 36-73m Surcharge Period 7mths (13May2016)	210	17-Oct-15 A	13-May-16	-616
Reclamation Areas		219	22-Jul-15 A	25-Feb-16	-254
SURB4-099	Completion of Section B in Reclamation Areas	0		31-Jan-16	-506
at West of Main Area stg1		125	19-Aug-15 A	31-Jan-16	-467
SURB1-040	PB Main Area West-S Sand Surcharge Removal 291,223m3 10,000m3/day	125	19-Aug-15 A	31-Jan-16	-467
at West of Main Area stg2		142	01-Aug-15 A	31-Jan-16	-467
SURB2-040	PB Main Area West-N Sand Surcharge Removal 335,714m3 10,000m3/day	142	01-Aug-15 A	31-Jan-16	-467
at North- East of Main Area		219	22-Jul-15 A	25-Feb-16	-254
SURB3-030	PB Main Area East-N Sand Surcharge Period +11.5mPD 7mths (16Feb2016)	210	22-Jul-15 A	16-Feb-16	-255



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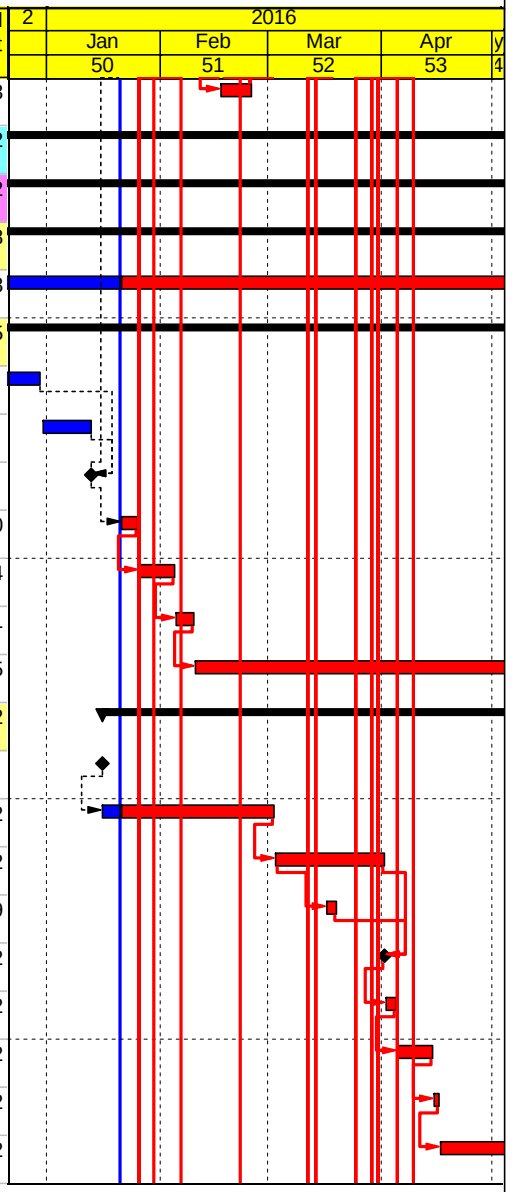
Milestone
Summary

TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
SURB3-040	PB Main Area East-N Sand Surcharge Removal 60,000m3 10,000m3/day	9	17-Feb-16	25-Feb-16	-233
Land Portion C2a		450	20-Sep-15 A	12-Dec-16	-382
Edge Areas		395	14-Nov-15 A	12-Dec-16	-382
Deep Cement Mixing Works at C101 - C103		240	17-Dec-15 A	12-Aug-16	-688
DCM-3070	PC2a Edge Area C101-C103 Surcharge Period 8mths (Land Side)	240	17-Dec-15 A	12-Aug-16	-688
Option - Deep Cement Mixing Works at C104 - C109		311	01-Dec-15 A	06-Oct-16	-565
DCM-4140	PC2a Edge Area C104-C109 Hardening & Pause Period	31	01-Dec-15 A	30-Dec-15 A	
DCM-4150	PC2a Edge Area C104-C109 Filling up to +5.5mPD Type D (73m width, 25,641m3) 5,000m3/day at DCM by Dump Trucks	6	31-Dec-15 A	13-Jan-16 A	
DCM-4155	PC2a Edge Area C104-C109 Completion of 0-43m	0		13-Jan-16 A	
DCM-4160	PC2a Edge Area C104-C109 Filling up to +8.5mPD Surcharge (30m width, 25,334m3 10,000m3/day at DCM by Dump Trucks	4	21-Jan-16	25-Jan-16	-480
DCM-4162	PC2a Edge Area C104-C109 CPT Test	10	26-Jan-16	04-Feb-16	-564
DCM-4170	PC2a Edge Area C104-C109 Filling up to +11.5mPD Surcharge (30m width, 25,334m3 10,000m3/day at DCM by Dump Trucks	4	05-Feb-16	09-Feb-16	-481
DCM-4180	PC2a Edge Area C104-C109 Surcharge Period 8mths (Land Side) (16Sep2016)	240	10-Feb-16	06-Oct-16	-565
at C110 - C112 Cellular Seawall		332	16-Jan-16 A	12-Dec-16	-382
DCM-4202	PC2a Edge Area C110-C112 Variation Order by the Engineer	0	16-Jan-16 A		
DCM-4210	PC2a Edge Area C110-C112 23m width installation 597nrs 15nrs/day	47	16-Jan-16 A	02-Mar-16	-382
DCM-4220	PC2a Edge Area C110-C112 Hardening & Pause Period	30	03-Mar-16	01-Apr-16	-382
DCM-4230	PC2a Edge Area C110-C112 Filling up to +5.5mPD Type D (73m width, 12820m3) 5,000m3/day	3	17-Mar-16	19-Mar-16	-369
DCM-4240	PC2a Edge Area C110-C112 Completion of 0-23m with DCM	0		01-Apr-16	-382
DCM-4250	PC2a Edge Area C110-C112 Filling up to +8.5mPD Surcharge (50m width, 12,667m3)	3	02-Apr-16	04-Apr-16	-382
DCM-4260	PC2a Edge Area C110-C112 CPT Test	10	05-Apr-16	14-Apr-16	-382
DCM-4270	PC2a Edge Area C110-C112 Filling up to +11.5mPD Surcharge (50m width, 12,667m3)	2	15-Apr-16	16-Apr-16	-382
DCM-4280	PC2a Edge Area C110-C112 Surcharge Period Period 8mths	240	17-Apr-16	12-Dec-16	-382



Remaining Level of Effort
Actual Level of Effort
Actual Work
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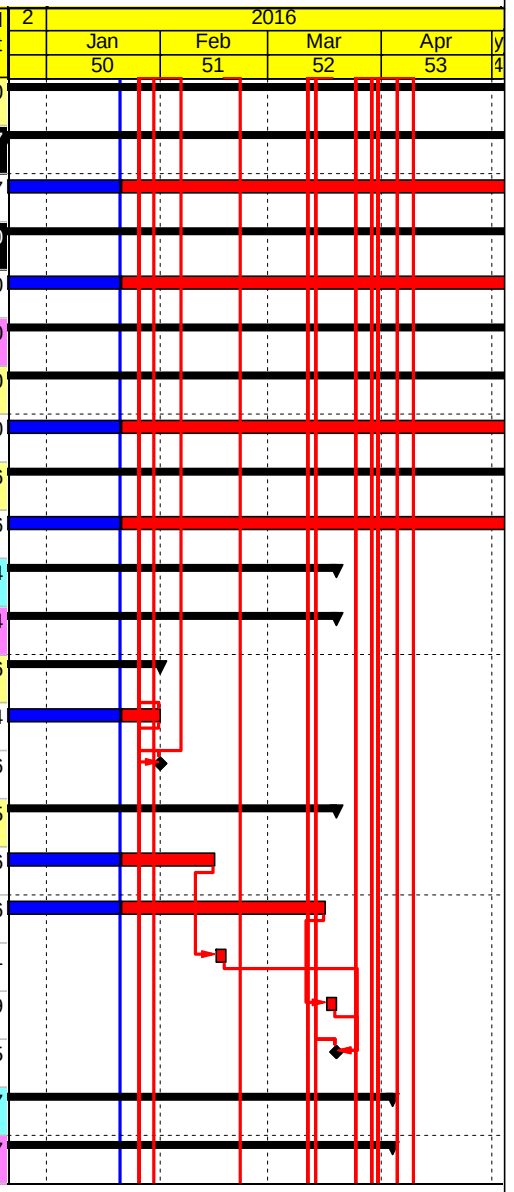
Summary

TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

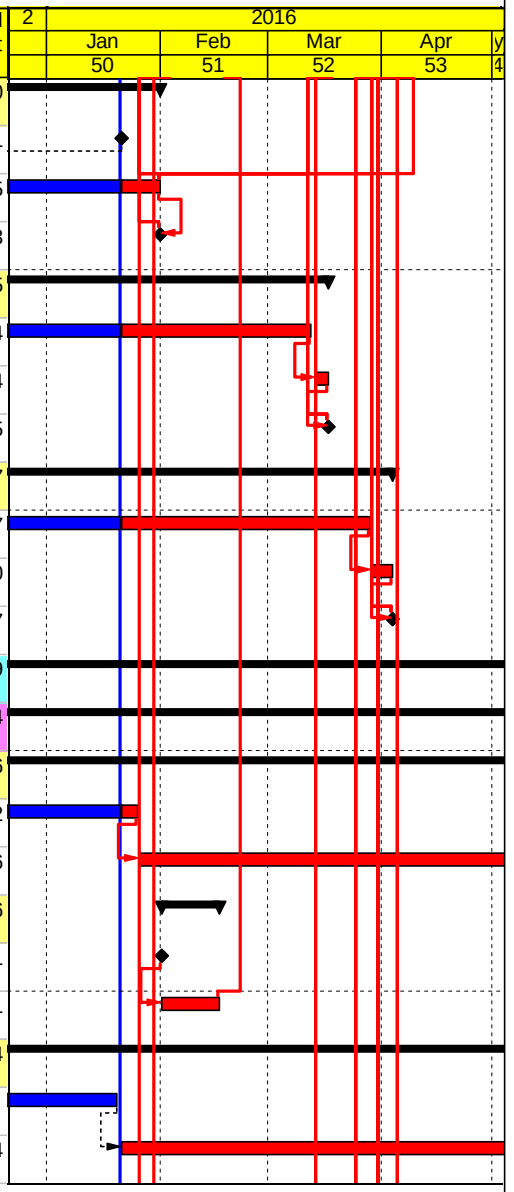
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
CH4+710 - CH5+110 Rubble Mound Seawall		240	14-Nov-15 A	10-Jul-16	-230
10-73m		150	21-Dec-15 A	18-May-16	-177
SUEC2a-1120	PC2a C113-C117 10m-73m Surcharge Sand Period 5mths (18May2016)	150	21-Dec-15 A	18-May-16	-177
73-120m		240	14-Nov-15 A	10-Jul-16	-230
SUEC2a-2090	PC2a C113-C117 73m-120m Surcharge Sand Period 8mths (10Jul2016)	240	14-Nov-15 A	10-Jul-16	-230
Reclamation Areas		275	20-Sep-15 A	20-Jun-16	-630
C2aC1		240	25-Oct-15 A	20-Jun-16	-630
SURC2aC1-070	PC2a C2aC1 Sand Surcharge Period 8mths (20Jun2016)	240	25-Oct-15 A	20-Jun-16	-630
C2aC2		241	20-Sep-15 A	17-May-16	-606
SURC2aC2-070	PC2a C2aC2 Sand Surcharge Period 8mths (17May2016)	241	20-Sep-15 A	17-May-16	-606
Land Portion C1a		243	21-Jul-15 A	19-Mar-16	-74
Reclamation Areas		243	21-Jul-15 A	19-Mar-16	-74
C3		53	10-Dec-15 A	31-Jan-16	-26
SURC1a-040	PC1a Main Area West Sand Surcharge Removal 297,616m3 10,000m3/day	30	10-Dec-15 A	31-Jan-16	-24
SURC1a-050	Completion of Section C1aC3	0		31-Jan-16	-26
C4		243	21-Jul-15 A	19-Mar-16	-545
SURC1a-140	PC1a South East Land Area Sand Surcharge Period at +11.5mPD 7mths (15Feb2016)	210	21-Jul-15 A	15-Feb-16	-516
SURC1a-150	PC1a South West Land Area Sand Surcharge Period at +11.5mPD 8mths (16Mar2016)	240	21-Jul-15 A	16-Mar-16	-546
SURC1a-160	PC1a South East Land Area Sand Surcharge Removal	3	16-Feb-16	18-Feb-16	-471
SURC1a-170	PC1a South West Land Area Sand Surcharge Removal	3	17-Mar-16	19-Mar-16	-499
SURC1a-180	Completion of Section C1aC4	0		19-Mar-16	-545
Land Portion C1b		232	16-Aug-15 A	03-Apr-16	647
Reclamation Areas		232	16-Aug-15 A	03-Apr-16	647



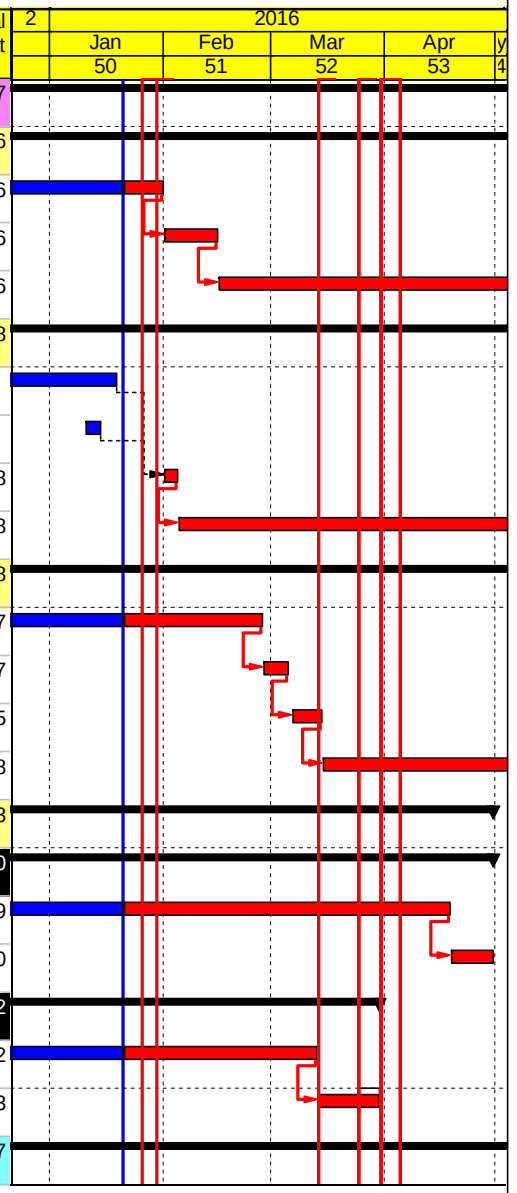
Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
East (3/4 Areas)		56	07-Dec-15 A	31-Jan-16	710
SURC1b-055	PC1b East Instruction of Surcharge Removal by the Engioneer (Assumption)	0	21-Jan-16*		721
SURC1b-060	PC1b East Sand Surcharge Removal 336,435m3 10,000m3/day	23	07-Dec-15 A	31-Jan-16	-185
SURC1b-095	Completion of Section PC1b	0		31-Jan-16	-123
North Side close to Portion C2b		215	16-Aug-15 A	17-Mar-16	-245
SURC1b-1030	PC1b Main Area Sand Surcharge Period as +11.5mPD 7mths (12Mar2016)	210	16-Aug-15 A	12-Mar-16	-244
SURC1b-1040	PC1b Main Area Sand Surcharge Removal 40,000m3 10,000m3/day	4	14-Mar-16	17-Mar-16	-224
SURC1b-1050	Completion of Section PC1b North East at Reclamation Area close to C2b	0		17-Mar-16	-245
North Side close to Portion C2c		216	01-Sep-15 A	03-Apr-16	-187
SURC1b-1080	PC1b Main Area Sand Surcharge Period as +11.5mPD 7mths (28Mar2016)	210	01-Sep-15 A	28-Mar-16	-187
SURC1b-1090	PC1b Main Area Sand Surcharge Removal 56,468m3 10,000m3/day	6	29-Mar-16	03-Apr-16	-170
SURC1b-1100	Completion of Section PC1b North West at Reclamation Area close to C2c	0		03-Apr-16	-187
Land Portion E2		383	16-Aug-15 A	01-Sep-16	-99
North Part		272	13-Nov-15 A	17-Aug-16	-84
Edge Areas - North, Land Area & Edge Area C064-C067		140	13-Nov-15 A	08-Jun-16	-306
SUEE2-120	PE2 North & East Edge C064-C067 Sand Surcharge Laying up to 8.5mPD 54,746m3 5,000m3/day	11	13-Nov-15 A	25-Jan-16	-262
SUEE2-130	PE2 North & East Edge C064-C067 Sand Surcharge Period as +8.5mPD 4.5mths	135	26-Jan-16	08-Jun-16	-306
Land Areas - East (TM) C057 - C063 Ch2+300 to Ch2+600		16	01-Feb-16	16-Feb-16	-376
SURE2-055	PE2 Land C057-C063 Removal of Surcharge instructed by the Engineer	0	01-Feb-16*		-371
SURE2-060	PE2 Land C057-C063 Tunnel Sand Surcharge Removal at tunnel area 107,437m3 10,000m3/day	11	01-Feb-16	16-Feb-16	-341
Land Areas - West (C3)		272	20-Nov-15 A	17-Aug-16	-84
SURE2-170-50	PE2 Land C061-C064 Non-Tunnel Sand Surcharge non tunnel area Laying upto 11.5mPD stg2 60,000m3 5,000m3/day	38	20-Nov-15 A	20-Jan-16 A	
SURE2-180	PE2 Land C061-C064 Non-Tunnel Sand Surcharge Period as +11.5mPD non tunnel area 7mths	210	21-Jan-16	17-Aug-16	-84



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
South Part		383	16-Aug-15 A	01-Sep-16	-227
Edge Areas East C058 to C063		276	13-Oct-15 A	14-Jul-16	-536
SUEE2-025	PE2 Edge C058-C063 Sand Surcharge Strength Test	80	13-Oct-15 A	31-Jan-16	-536
SUEE2-030	PE2 Edge C058-C063 Sand Surcharge Laying up to +11.5mPD 70,806m3 5,000m3/day	13	01-Feb-16	15-Feb-16	-456
SUEE2-040	PE2 Edge C058-C063 Sand Surcharge Period as +11.5mPD 5mths	150	16-Feb-16	14-Jul-16	-536
Edge Areas East C056 to C057		268	09-Dec-15 A	01-Sep-16	-578
SUEE2-640	PE2 Edge C056-C057 DCM Harden	30	09-Dec-15 A	19-Jan-16 A	
SUEE2-650	PE2 Edge C056-C057 DCM Fill upto +5.5mPD	4	11-Jan-16 A	15-Jan-16 A	
SUEE2-660	PE2 Edge C056-C057 Remaining Area Fill upto +11.5mPD	4	01-Feb-16*	04-Feb-16	-578
SUEE2-670	PE2 Edge C056-C057 Remaining Area Surcharge Period 7mths	210	05-Feb-16	01-Sep-16	-578
Edge Areas East C052 to C055		301	16-Oct-15 A	11-Aug-16	-558
SURE2-420	PE2 Edge C052-C055 300m Zone Sand Surcharge Pause Period at 8.5mPD 4.5mths (27Feb2016)	135	16-Oct-15 A	27-Feb-16	-557
SURE2-425	PE2 Edge C052-C055 300m Zone Sand Surcharge CPT Test at 8.5mPD	7	28-Feb-16	05-Mar-16	-557
SURE2-430	PE2 Edge C052-C055 300m Zone Sand Surcharge Laying upto 11.5mPD 58,348m3 5,000m3/day	7	07-Mar-16	14-Mar-16	-475
SURE2-440	PE2 Edge C052-C055 300m Zone Sand Surcharge Period as +11.5mPD 5mths	150	15-Mar-16	11-Aug-16	-558
Land Areas		259	16-Aug-15 A	30-Apr-16	-103
300m to 100m Zone		222	22-Sep-15 A	30-Apr-16	-450
SURE2-530	PE2 Land C052-C056 300m Zone Sand Surcharge Period as +11.5mPD 7mths (18Apr2016)	210	22-Sep-15 A	18-Apr-16	-449
SURE2-540	PE2 Land C052-C056 300m Zone Sand Surcharge Removal 105,782m3 10,000m3/day	11	19-Apr-16	30-Apr-16	-410
Out of K052 300m		228	16-Aug-15 A	30-Mar-16	-72
SURE2-020	PE2 Land C052-C060 Non-Tunnel Sand Surcharge Period as +11.5mPD 7mths (13Mar2016)	211	16-Aug-15 A	13-Mar-16	-72
SURE2-030	PE2 Land C052-C060 Non-Tunnel Sand Surcharge Removal 158,673m3 + 28,116m3(C1b) 10,000m3/day	16	14-Mar-16	30-Mar-16	-63
Land Portion E1		195	08-Dec-15 A	19-Jun-16	-657



Remaining Level of Effort
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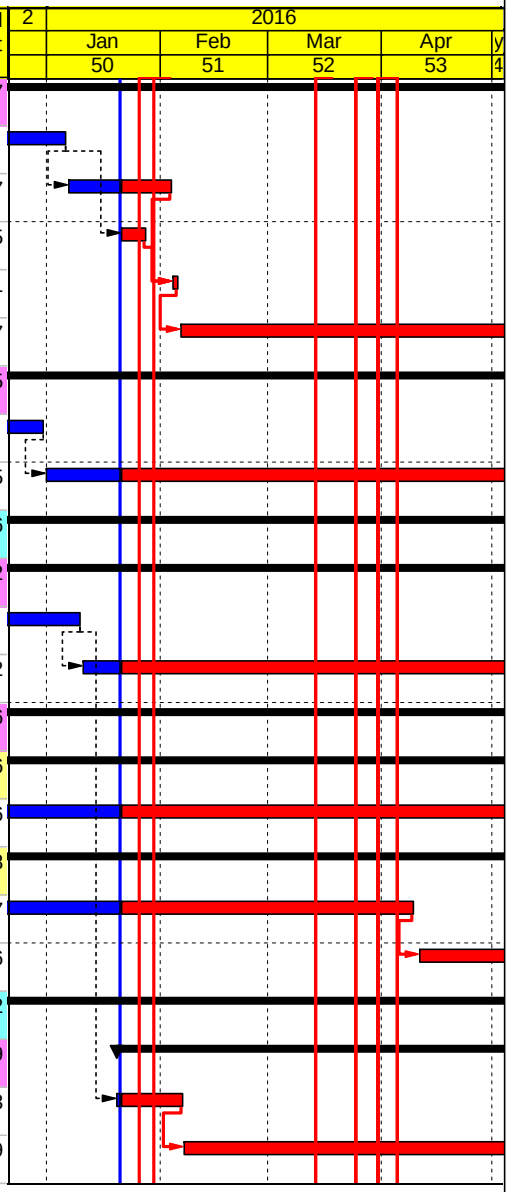
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Deep Cement Mixing C077 - C080 150m (Exclude VB & RS)		195	08-Dec-15 A	19-Jun-16	-657
DCM-4020	PE1 Edge Area Installation 415nrs	33	08-Dec-15 A	06-Jan-16 A	
DCM-4050	PE1 Edge Area Hardening	28	07-Jan-16 A	03-Feb-16	-657
DCM-4060	PE1 Edge Area Flling upto +5.5mPD 25,000m3 5,000m3/day at DCM	6	21-Jan-16	27-Jan-16	-555
DCM-4080	PE1 Edge Area Surcharge Filling up to +8.5mPD (10,000m3) 10,000m3/day at DCM	2	04-Feb-16	05-Feb-16	-561
DCM-4083	PE1 Edge Area Surcharge Pause Period 4.5mths	135	06-Feb-16	19-Jun-16	-657
Edge Areas Excluded 150m of DCM Area		185	14-Dec-15 A	14-May-16	-645
SUEE1-010	PE1 Edge Sand Surcharge Laying up to 8.5mPD 126,529m3 10,000m3/day	16	14-Dec-15 A	31-Dec-15 A	
SUEE1-020	PE1 Edge Sand Surcharge Period +8.5mPD 4.5mths	135	01-Jan-16 A	14-May-16	-645
Land Portion C2b		277	12-Sep-15 A	28-May-16	-136
Edge Areas		212	16-Nov-15 A	24-May-16	-222
SUEC2b-050	PC2b Edge Area PBF Surcharge w compaction upto 8.5mPD 12,054m3 5,000m3/day	43	16-Nov-15 A	10-Jan-16 A	
SUEC2b-060	PC2b Edge Area Surcharge Period as +8.5mPD 4.5mths	135	11-Jan-16 A	24-May-16	-222
Reclamation Areas		260	12-Sep-15 A	28-May-16	-136
North		210	01-Nov-15 A	28-May-16	-146
SURC2b-020	PC2b Main Area North Sand Surcharge Period as +11.5mPD 7mths (28May2016)	210	01-Nov-15 A	28-May-16	-146
South		242	12-Sep-15 A	10-May-16	-118
SURC2b-034	PC2b Main Area South PBF Surcharge Period as +11.5mPD 7mths (9Apr2016)	211	12-Sep-15 A	09-Apr-16	-117
SURC2b-036	PC2b Main Area South PBF Surcharge Removal 137,244m3 5,000m3/day	28	11-Apr-16	10-May-16	-106
Land Portion C2c		296	27-Oct-15 A	17-Aug-16	-142
Edge Areas		152	20-Jan-16 A	20-Jun-16	-229
SUEC2c-010	PC2c Edge Area PBF Surcharge w compaction upto 8.5mPD 43,395m3 5,000m3/day	9	20-Jan-16 A	06-Feb-16	-213
SUEC2c-020	PC2c Edge Area PBF Surcharge Period +8.5mPD 4.5mths	135	07-Feb-16	20-Jun-16	-229



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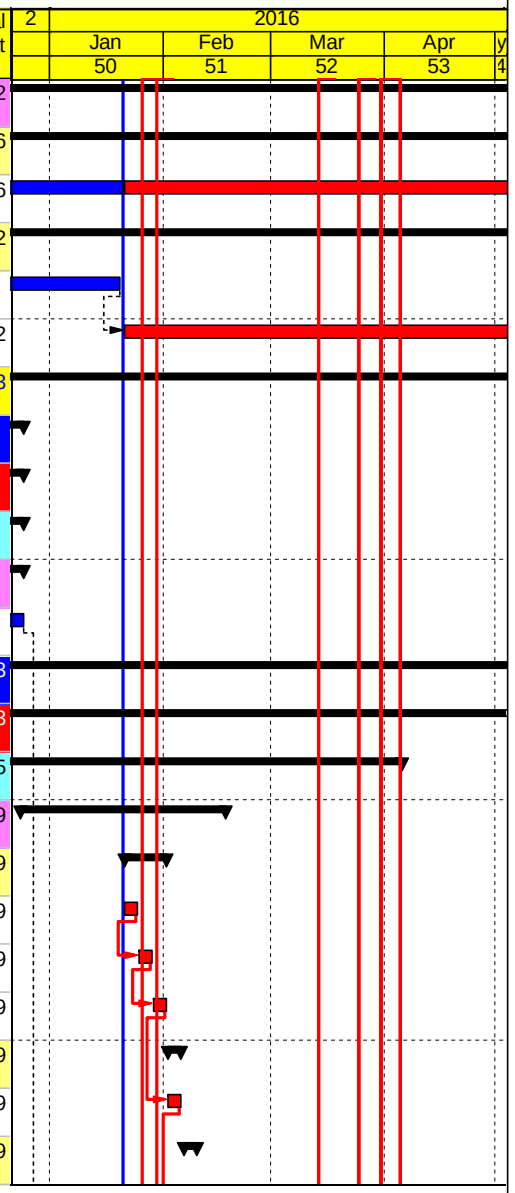
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Reclamation Areas		296	27-Oct-15 A	17-Aug-16	-142
West		201	27-Oct-15 A	23-May-16	-56
SURC2c-W030	PC2c Main Area Sand Surcharge Period 7mths (23May2016)	201	27-Oct-15 A	23-May-16	-56
East		272	20-Nov-15 A	17-Aug-16	-142
SURC2c-E020	PC2c Main Area Sand Surcharge Laying upto 11.5mPD stg2 109,120m3 5,000m3/day	36	20-Nov-15 A	20-Jan-16 A	
SURC2c-E030	PC2c Main Area Sand Surcharge Period 7mths	210	21-Jan-16	17-Aug-16	-142
Portion D		186	14-Nov-15 A	17-May-16	603
Precast Yard for Seawall Blocks & Culverts		15	11-Dec-15 A	25-Dec-15 A	
Culverts		15	11-Dec-15 A	25-Dec-15 A	
Culverts EC1		15	11-Dec-15 A	25-Dec-15 A	
EC1-8		15	11-Dec-15 A	25-Dec-15 A	
PY-EC1-08060	PD EC1-08 Base Curing	15	11-Dec-15 A	25-Dec-15 A	
Site Construction		186	14-Nov-15 A	17-May-16	603
C1 to C4		186	14-Nov-15 A	17-May-16	603
Installations of Precast Culverts except sloping outfalls		127	19-Dec-15 A	05-Apr-16	645
Culvert C1		28	24-Dec-15 A	17-Feb-16	-239
C1-2		12	21-Jan-16	01-Feb-16	-239
PD-C1-2-060	PD C1-2 Removal of South Steel Bulkhead	4	21-Jan-16	24-Jan-16	-239
PD-C1-2-070	PD C1-2 Manhole Insitu concrete	4	25-Jan-16	28-Jan-16	-239
PD-C1-2-120	PD C1-2 Backfill Manhole upto +5.5mPD	4	29-Jan-16*	01-Feb-16	-239
C1-3		4	02-Feb-16	05-Feb-16	-239
PD-C1-3-120	PD C1-3 Backfill Manhole upto +5.5mPD	4	02-Feb-16	05-Feb-16	-239
C1-4		4	06-Feb-16	09-Feb-16	-239



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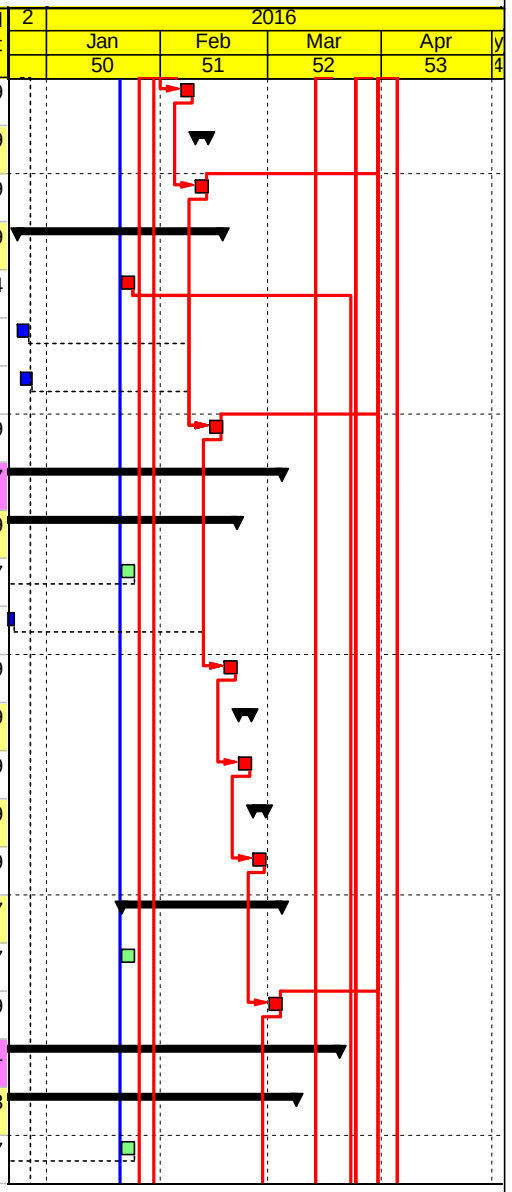
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-C1-4-120	PD C1-4 Backfill Manhole upto +5.5mPD	4	06-Feb-16	09-Feb-16	-239
C1-5		4	10-Feb-16	13-Feb-16	-239
PD-C1-5-120	PD C1-5 Backfill Manhole upto +5.5mPD	4	10-Feb-16	13-Feb-16	-239
C1-6		28	24-Dec-15 A	17-Feb-16	-239
PD-C1-6-050	PD C1-6 Removal of North Steel Bulkhead	4	21-Jan-16	24-Jan-16	-444
PD-C1-6-070	PD C1-6 Manhole Insitu concrete	4	24-Dec-15 A	27-Dec-15 A	
PD-C1-6-090	PD C1-5/6 Movement Joint Insitu	4	25-Dec-15 A	28-Dec-15 A	
PD-C1-6-120	PD C1-6 Backfill Manhole upto +5.5mPD	4	14-Feb-16	17-Feb-16	-239
Culvert C2		77	19-Dec-15 A	04-Mar-16	677
C2-2		65	19-Dec-15 A	21-Feb-16	689
PD-C2-2-060	PD C2-2 Removal of South Steel Bulkhead	4	21-Jan-16	24-Jan-16	717
PD-C2-2-070	PD C2-2 Manhole Insitu concrete	5	19-Dec-15 A	23-Dec-15 A	
PD-C2-2-120	PD C2-2 Backfill Manhole upto +5.5mPD	4	18-Feb-16	21-Feb-16	-239
C2-3		4	22-Feb-16	25-Feb-16	-239
PD-C2-3-120	PD C2-3 Backfill Manhole upto +5.5mPD	4	22-Feb-16	25-Feb-16	-239
C2-4		4	26-Feb-16	29-Feb-16	-239
PD-C2-4-120	PD C2-4 Backfill Manhole upto +5.5mPD	4	26-Feb-16	29-Feb-16	-239
C2-5		44	21-Jan-16	04-Mar-16	677
PD-C2-5-050	PD C2-5 Removal of North Steel Bulkhead	4	21-Jan-16	24-Jan-16	717
PD-C2-5-120	PD C2-5 Backfill Manhole upto +5.5mPD	4	01-Mar-16	04-Mar-16	-239
Culvert C3		111	19-Dec-15 A	20-Mar-16	661
C3-2		81	19-Dec-15 A	08-Mar-16	673
PD-C3-2-060	PD C3-2 Removal of South Steel Bulkhead	4	21-Jan-16	24-Jan-16	717



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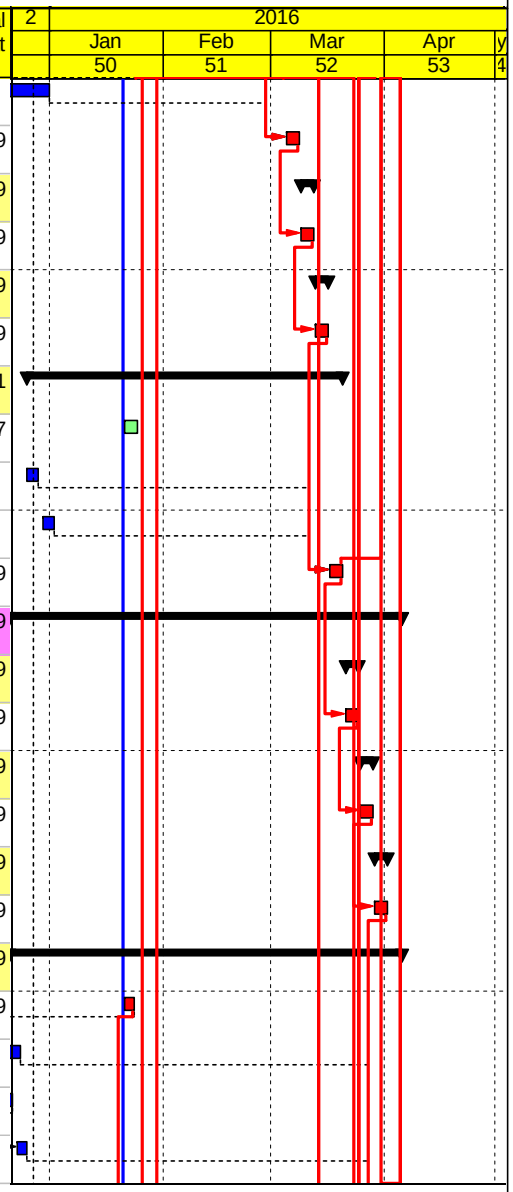
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-C3-2-070	PD C3-2 Manhole Insitu concrete	6	19-Dec-15 A	01-Jan-16 A	
PD-C3-2-120	PD C3-2 Backfill Manhole upto +5.5mPD	4	05-Mar-16	08-Mar-16	-239
C3-3		4	09-Mar-16	12-Mar-16	-239
PD-C3-3-120	PD C3-3 Backfill Manhole upto +5.5mPD	4	09-Mar-16	12-Mar-16	-239
C3-4		4	13-Mar-16	16-Mar-16	-239
PD-C3-4-120	PD C3-4 Backfill Manhole upto +5.5mPD	4	13-Mar-16	16-Mar-16	-239
C3-5		111	26-Dec-15 A	20-Mar-16	661
PD-C3-5-050	PD C3-5 Removal of North Steel Bulkhead	4	21-Jan-16	24-Jan-16	717
PD-C3-5-070	PD C3-5 Manhole Insitu concrete	4	26-Dec-15 A	29-Dec-15 A	
PD-C3-5-090	PD C3-4/5 Movement Joint Insitu	4	30-Dec-15 A	02-Jan-16 A	
PD-C3-5-120	PD C3-5 Backfill Manhole upto +5.5mPD	4	17-Mar-16	20-Mar-16	-239
Culvert C4		76	21-Dec-15 A	05-Apr-16	-239
C4-2		4	21-Mar-16	24-Mar-16	-239
PD-C4-2-120	PD C4-2 Backfill Manhole upto +5.5mPD	4	21-Mar-16	24-Mar-16	-239
C4-3		4	25-Mar-16	28-Mar-16	-239
PD-C4-3-120	PD C4-3 Backfill Manhole upto +5.5mPD	4	25-Mar-16	28-Mar-16	-239
C4-4		4	29-Mar-16	01-Apr-16	-239
PD-C4-4-120	PD C4-4 Backfill Manhole upto +5.5mPD	4	29-Mar-16	01-Apr-16	-239
C4-5		76	21-Dec-15 A	05-Apr-16	-239
PD-C4-5-050	PD C4-5 Removal of North Steel Bulkhead	3	21-Jan-16	23-Jan-16	-469
PD-C4-5-070	PD C4-5 Manhole Insitu concrete	4	21-Dec-15 A	24-Dec-15 A	
PD-C4-5-080	PD C4-4/5 Movement Joint Installation	2	21-Dec-15 A	22-Dec-15 A	
PD-C4-5-090	PD C4-4/5 Movement Joint Insitu	4	23-Dec-15 A	26-Dec-15 A	



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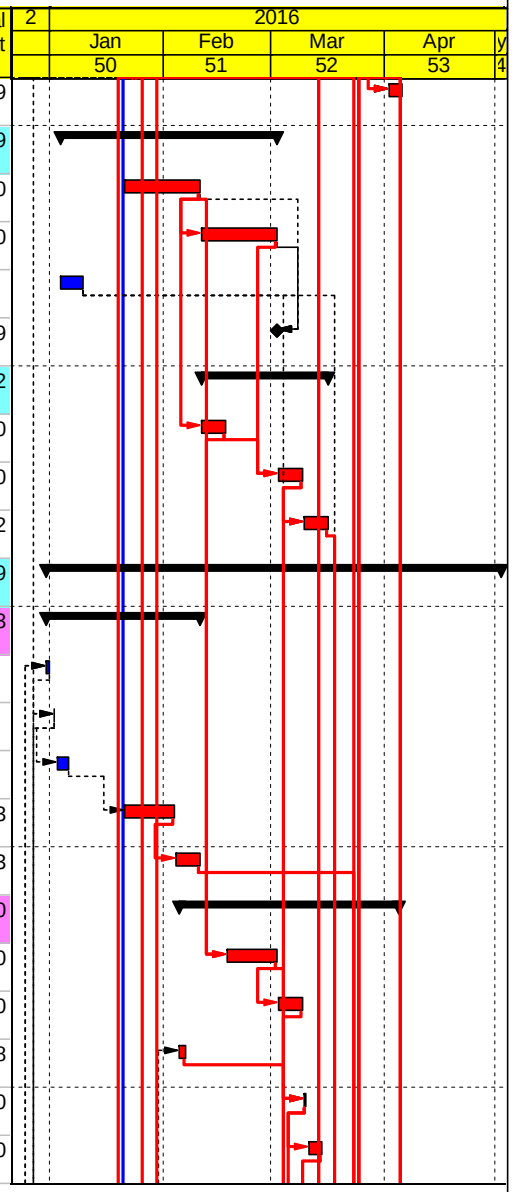
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-C4-5-120	PD C4-5 Backfill Manhole upto +5.5mPD	4	02-Apr-16	05-Apr-16*	-239
Permanent Access to Portion A		42	04-Jan-16 A	02-Mar-16	679
PD-A2090	PD - C2 Divert Access	21	21-Jan-16*	10-Feb-16	-480
PD-A2100	PD - C3 Divert Access	21	11-Feb-16	02-Mar-16	-480
PD-A2110	PD - C4 Divert Access	21	04-Jan-16 A	10-Jan-16 A	
PD-A2140	Completion of Access to PA	0		02-Mar-16	679
Removal of Temporary Access to Portion A		35	11-Feb-16	16-Mar-16	-462
PD-A1110	PD C2 - Removal of Temporary Access	7	11-Feb-16	17-Feb-16	-480
PD-A1120	PD C3 - Removal of Temporary Access	7	03-Mar-16	09-Mar-16	-480
PD-A1130	PD C4 - Removal of Temporary Access	7	10-Mar-16	16-Mar-16	-462
Construction of Sloping Outfalls		103	31-Dec-15 A	02-May-16	-469
Culvert C1 Sloping Outfall		21	31-Dec-15 A	10-Feb-16	-433
PD-C1-0125	PD C1-1 Buoyancy	2	31-Dec-15 A	01-Jan-16 A	
PD-C1-0130	PD C1-1 Outfall Installation	1	02-Jan-16 A	02-Jan-16 A	
PD-C1-0140	PD C1-1 Outfall Removal of Buoyancy & Bulkhead	4	03-Jan-16 A	06-Jan-16 A	
PD-C1-0150	PD C1-1 Outfall Insitu Concrete	14	21-Jan-16	03-Feb-16	-433
PD-C1-0160	PD C1-1 Outfall Backfill	7	04-Feb-16	10-Feb-16	-433
Culvert C2 Sloping Outfall		60	05-Feb-16	04-Apr-16	-480
PD-C2-0110	PD C2-1 Outfall Excavation	14	18-Feb-16	02-Mar-16	-480
PD-C2-0120	PD C2-1 Outfall Formation	7	03-Mar-16	09-Mar-16	-480
PD-C2-0125	PD C2-1 Buoyancy	2	05-Feb-16*	06-Feb-16*	-448
PD-C2-0130	PD C2-1 Outfall Installation	1	10-Mar-16	10-Mar-16	-480
PD-C2-0140	PD C2-1 Outfall Removal of Buoyancy & Bulkhead	4	11-Mar-16	14-Mar-16	-480



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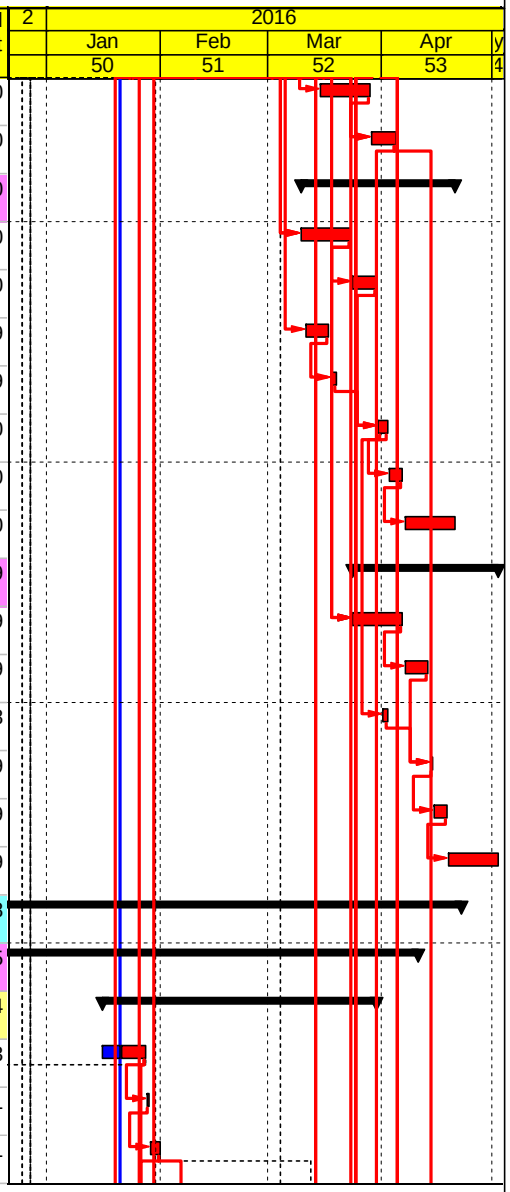
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-C2-0150	PD C2-1 Outfall Insitu Concrete	14	15-Mar-16	28-Mar-16	-480
PD-C2-0160	PD C2-1 Outfall Backfill	7	29-Mar-16	04-Apr-16	-480
Culvert C3 Sloping Outfall		42	10-Mar-16	20-Apr-16	-480
PD-C3-0110	PD C3-1 Outfall Excavation	14	10-Mar-16	23-Mar-16	-480
PD-C3-0120	PD C3-1 Outfall Formation	7	24-Mar-16	30-Mar-16	-480
PD-C3-0122	PD C3-1 & C4-1 Back & Delivery Stg18	7	11-Mar-16	17-Mar-16	-469
PD-C3-0125	PD C3-1 Buoyancy	2	18-Mar-16	19-Mar-16	-469
PD-C3-0130	PD C3-1 Outfall Installation	3	31-Mar-16	02-Apr-16	-480
PD-C3-0140	PD C3-1 Outfall Removal of Buoyancy & Bulkhead	4	03-Apr-16	06-Apr-16	-480
PD-C3-0150	PD C3-1 Outfall Insitu Concrete	14	07-Apr-16	20-Apr-16	-480
Culvert C4 Sloping Outfall		40	24-Mar-16	02-May-16	-469
PD-C4-0110	PD C4-1 Outfall Excavation	14	24-Mar-16	06-Apr-16	-469
PD-C4-0120	PD C4-1 Outfall Formation	7	07-Apr-16	13-Apr-16	-469
PD-C4-0125	PD C4-1 Buoyancy	2	01-Apr-16	02-Apr-16	-458
PD-C4-0130	PD C4-1 Outfall Installation	1	14-Apr-16	14-Apr-16	-469
PD-C4-0140	PD C4-1 Outfall Removal of Buoyancy & Bulkhead	4	15-Apr-16	18-Apr-16	-469
PD-C4-0150	PD C4-1 Outfall Insitu Concrete	14	19-Apr-16	02-May-16	-469
Extension Culvert EC1 by one submerble barge		128	17-Dec-15 A	22-Apr-16	628
Insitu Concrete		116	17-Dec-15 A	10-Apr-16	-265
EC1-1		70	16-Jan-16 A	30-Mar-16	-254
PD-EC1-1-050	PD EC1-1 External Wall Insitu Concrete	12	16-Jan-16 A	27-Jan-16	-233
PD-EC1-1-060	PD EC1-1 External Wall Curing	1	28-Jan-16	28-Jan-16	-251
PD-EC1-1-070	PD EC1-1 Removal of Extenal Wall Formwork	3	29-Jan-16	31-Jan-16	-251

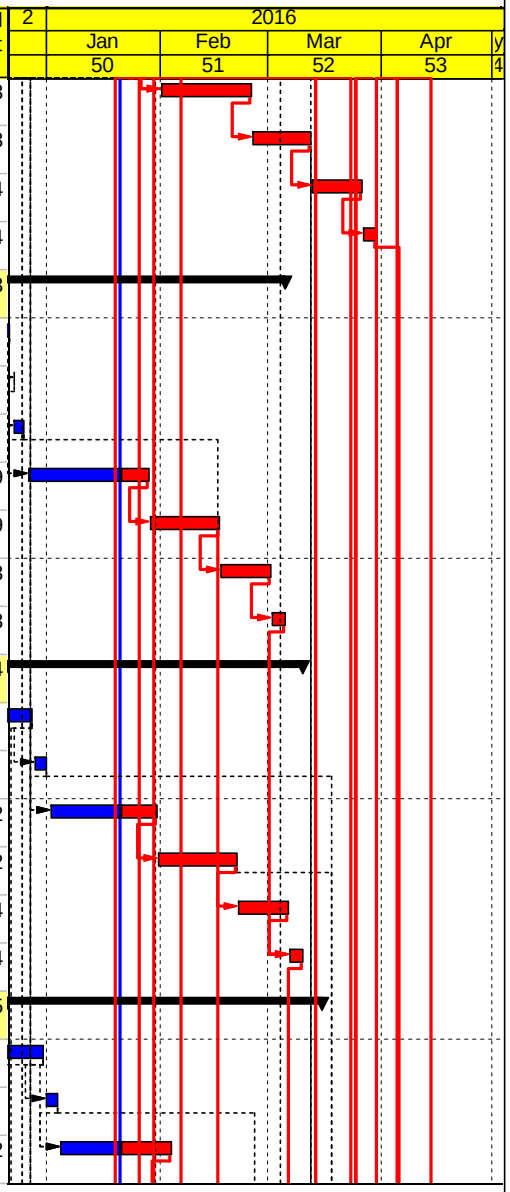


Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-EC1-1-080	PD EC1-1 Base Slab & Internal Wall insitu Concrete	20	01-Feb-16	25-Feb-16	-233
PD-EC1-1-090	PD EC1-1 Top Slab Insitu Concrete	15	26-Feb-16	12-Mar-16	-233
PD-EC1-1-100	PD EC1-1 Top Slab Curing	14	13-Mar-16	26-Mar-16	-254
PD-EC1-1-110	PD EC1-1 Removal of Internal Wall Formwork	4	27-Mar-16	30-Mar-16	-254
EC1-2		80	17-Dec-15 A	05-Mar-16	-253
PD-EC1-2-050	PD EC1-2 External Wall Insitu Concrete	16	17-Dec-15 A	22-Dec-15 A	
PD-EC1-2-060	PD EC1-2 External Wall Curing	7	23-Dec-15 A	23-Dec-15 A	
PD-EC1-2-070	PD EC1-2 Removal of Extenal Wall Formwork	4	23-Dec-15 A	26-Dec-15 A	
PD-EC1-2-080	PD EC1-2 Base Slab & Internal Wall insitu Concrete	7	27-Dec-15 A	28-Jan-16	-359
PD-EC1-2-090	PD EC1-2 Top Slab Insitu Concrete	14	29-Jan-16	16-Feb-16	-359
PD-EC1-2-100	PD EC1-2 Top Slab Curing	14	17-Feb-16	01-Mar-16	-253
PD-EC1-2-110	PD EC1-2 Removal of Internal Wall Formwork	4	02-Mar-16	05-Mar-16	-253
EC1-3		50	21-Dec-15 A	10-Mar-16	-254
PD-EC1-3-050	PD EC1-3 External Wall Insitu Concrete	12	21-Dec-15 A	28-Dec-15 A	
PD-EC1-3-070	PD EC1-3 Removal of Extenal Wall Formwork	4	29-Dec-15 A	01-Jan-16 A	
PD-EC1-3-080	PD EC1-3 Base Slab & Internal Wall insitu Concrete	7	02-Jan-16 A	30-Jan-16	-232
PD-EC1-3-090	PD EC1-3 Top Slab Insitu Concrete	17	31-Jan-16	21-Feb-16	-232
PD-EC1-3-100	PD EC1-3 Top Slab Curing	14	22-Feb-16	06-Mar-16	-254
PD-EC1-3-110	PD EC1-3 Removal of Internal Wall Formwork	4	07-Mar-16	10-Mar-16	-254
EC1-4		49	21-Dec-15 A	15-Mar-16	-255
PD-EC1-4-050	PD EC1-4 External Wall Insitu Concrete	12	21-Dec-15 A	31-Dec-15 A	
PD-EC1-4-070	PD EC1-4 Removal of Extenal Wall Formwork	4	01-Jan-16 A	04-Jan-16 A	
PD-EC1-4-080	PD EC1-4 Base Slab & Internal Wall insitu Concrete	7	05-Jan-16 A	03-Feb-16	-362



Remaining Level of Effort
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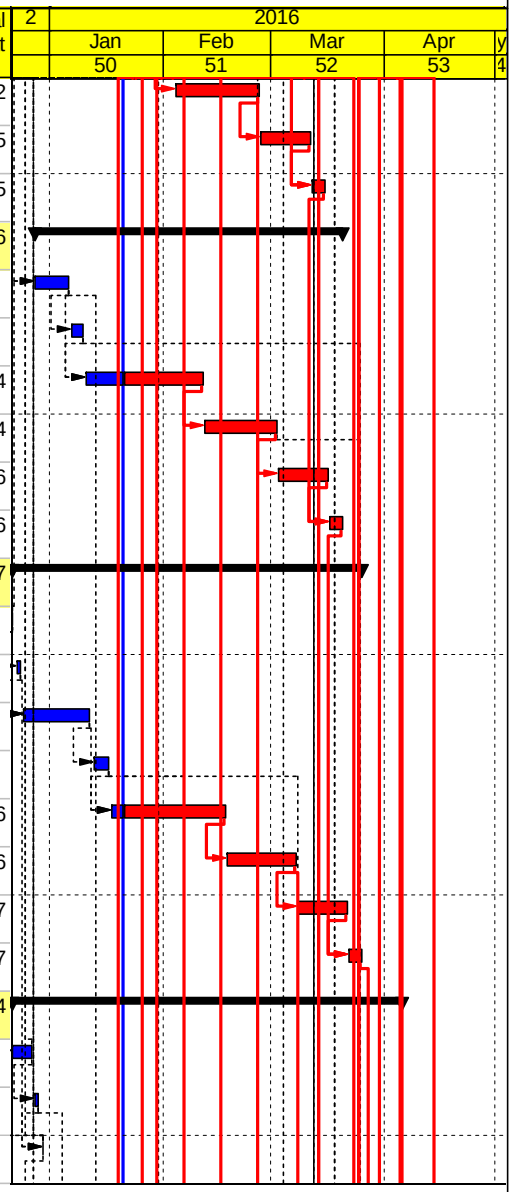
Milestone
Summary

TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-EC1-4-090	PD EC1-4 Top Slab Insitu Concrete	18	04-Feb-16	26-Feb-16	-362
PD-EC1-4-100	PD EC1-4 Top Slab Curing	14	27-Feb-16	11-Mar-16	-255
PD-EC1-4-110	PD EC1-4 Removal of Internal Wall Formwork	4	12-Mar-16	15-Mar-16	-255
EC1-5		50	28-Dec-15 A	20-Mar-16	-256
PD-EC1-5-050	PD EC1-5 External Wall Insitu Concrete	12	28-Dec-15 A	06-Jan-16 A	
PD-EC1-5-070	PD EC1-5 Removal of Extenal Wall Formwork	4	07-Jan-16 A	10-Jan-16 A	
PD-EC1-5-080	PD EC1-5 Base Slab & Internal Wall insitu Concrete	7	11-Jan-16 A	11-Feb-16	-234
PD-EC1-5-090	PD EC1-5 Top Slab Insitu Concrete	18	12-Feb-16	02-Mar-16	-234
PD-EC1-5-100	PD EC1-5 Top Slab Curing	14	03-Mar-16	16-Mar-16	-256
PD-EC1-5-110	PD EC1-5 Removal of Internal Wall Formwork	4	17-Mar-16	20-Mar-16	-256
EC1-6		65	22-Dec-15 A	25-Mar-16	-257
PD-EC1-6-030	PD EC1-6 Installation of Precast Culvert Base	1	22-Dec-15 A	22-Dec-15 A	
PD-EC1-6-040	PD EC1-6 Removal of Buoyancy	2	23-Dec-15 A	24-Dec-15 A	
PD-EC1-6-050	PD EC1-6 External Wall Insitu Concrete	12	25-Dec-15 A	12-Jan-16 A	
PD-EC1-6-070	PD EC1-6 Removal of Extenal Wall Formwork	4	13-Jan-16 A	17-Jan-16 A	
PD-EC1-6-080	PD EC1-6 Base Slab & Internal Wall insitu Concrete	18	18-Jan-16 A	17-Feb-16	-366
PD-EC1-6-090	PD EC1-6 Top Slab Insitu Concrete	18	18-Feb-16	07-Mar-16	-366
PD-EC1-6-100	PD EC1-6 Top Slab Curing	14	08-Mar-16	21-Mar-16	-257
PD-EC1-6-110	PD EC1-6 Removal of Internal Wall Formwork	4	22-Mar-16	25-Mar-16	-257
EC1-7		76	22-Dec-15 A	05-Apr-16	-264
PD-EC1-7-010	PD EC1-7 & C1-1 Back & Delivery stg16	6	22-Dec-15 A	27-Dec-15 A	
PD-EC1-7-020	PD EC1-7 Buoyancy	2	28-Dec-15 A	29-Dec-15 A	
PD-EC1-7-030	PD EC1-7 Installation of Precast Culvert Base	1	30-Dec-15 A	30-Dec-15 A	



Remaining Level of Effort
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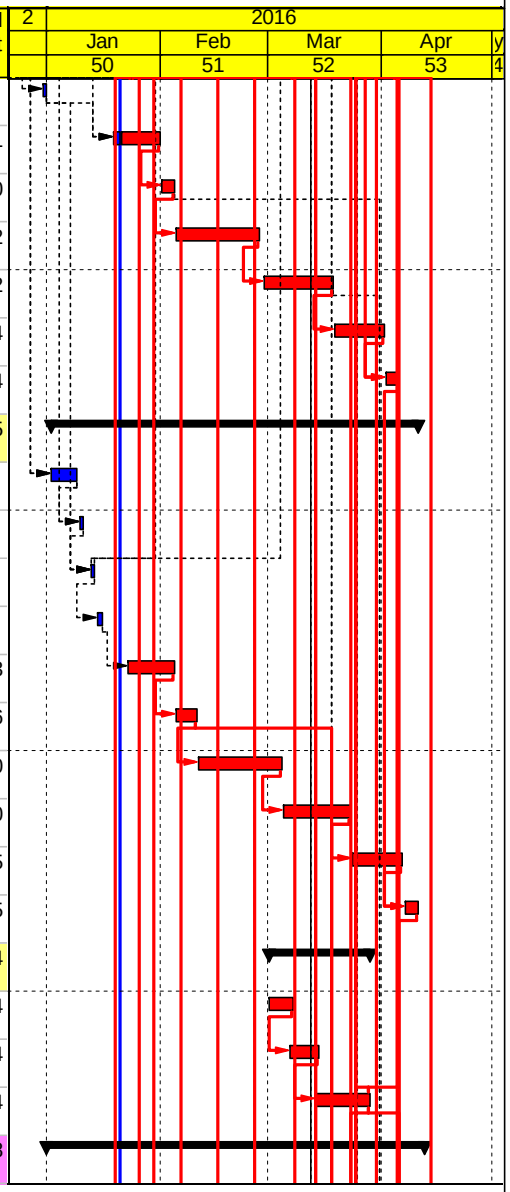
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-EC1-7-040	PD EC1-7 Removal of Buoyancy	2	31-Dec-15 A	01-Jan-16 A	
PD-EC1-7-050	PD EC1-7 External Wall Insitu Concrete	12	19-Jan-16 A	31-Jan-16	-241
PD-EC1-7-070	PD EC1-7 Removal of Extenal Wall Formwork	4	01-Feb-16	04-Feb-16	-260
PD-EC1-7-080	PD EC1-7 Base Slab & Internal Wall insitu Concrete	18	05-Feb-16	27-Feb-16	-242
PD-EC1-7-090	PD EC1-7 Top Slab Insitu Concrete	18	29-Feb-16	18-Mar-16	-242
PD-EC1-7-100	PD EC1-7 Top Slab Curing	14	19-Mar-16	01-Apr-16	-264
PD-EC1-7-110	PD EC1-7 Removal of Internal Wall Formwork	4	02-Apr-16	05-Apr-16	-264
EC1-8		81	02-Jan-16 A	10-Apr-16	-265
PD-EC1-8-010	PD EC1-8 & C2-1 Back & Delivery stg17	8	02-Jan-16 A	09-Jan-16 A	
PD-EC1-8-020	PD EC1-8 Buoyancy	2	10-Jan-16 A	11-Jan-16 A	
PD-EC1-8-030	PD EC1-8 Outfall Installation of Precast Culvert Base	1	13-Jan-16 A	14-Jan-16 A	
PD-EC1-8-040	PD EC1-8 Removal of Buoyancy	2	15-Jan-16 A	16-Jan-16 A	
PD-EC1-8-050	PD EC1-8 External Outfall Wall Insitu Concrete	12	23-Jan-16*	04-Feb-16	-373
PD-EC1-8-070	PD EC1-8 Removal of Extenal Wall Formwork	6	05-Feb-16	10-Feb-16	-406
PD-EC1-8-080	PD EC1-8 Base Slab & Internal Wall insitu Concrete	21	11-Feb-16	04-Mar-16	-370
PD-EC1-8-090	PD EC1-8 Outfall Insitu Concrete	18	05-Mar-16	23-Mar-16	-370
PD-EC1-8-100	PD EC1-8 Outfall Curing	14	24-Mar-16	06-Apr-16	-265
PD-EC1-8-110	PD EC1-8 Removal of Internal Wall Formwork	4	07-Apr-16	10-Apr-16	-265
Connection to the Existing Culvert		26	01-Mar-16	28-Mar-16	-464
PD-EC1-0-10	PD EC1-0 South Wall Insitu Concrete	7	01-Mar-16*	07-Mar-16	-464
PD-EC1-0-20	PD EC1-0 North Wall Insitu Concrete	7	07-Mar-16	14-Mar-16	-464
PD-EC1-0-30	PD EC1-0 Top Slab Insitu Concrete	14	14-Mar-16	28-Mar-16	-464
Backfilling & Reclamation		83	01-Jan-16 A	12-Apr-16	638



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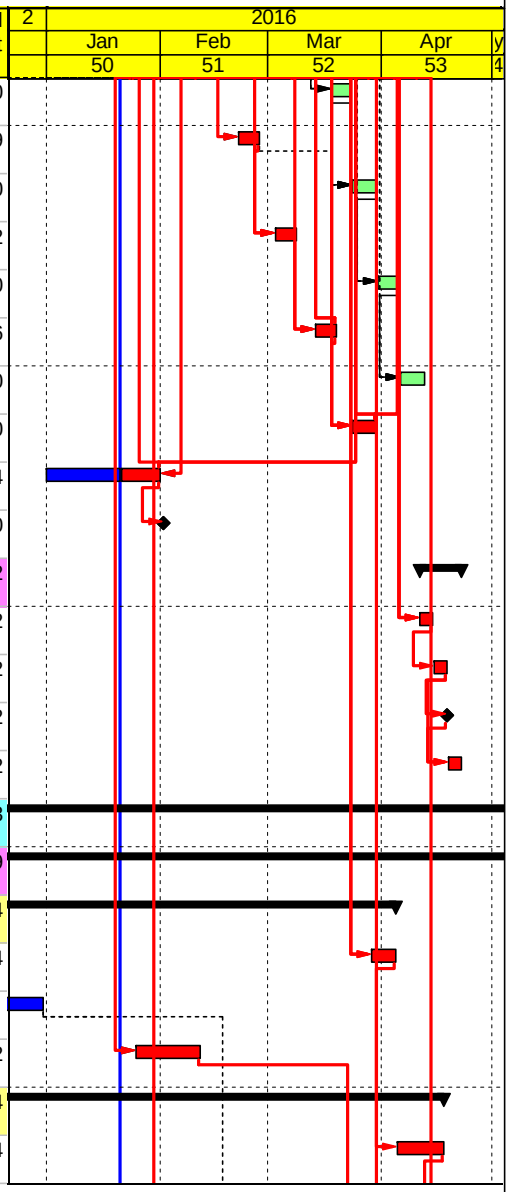
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-EC1-0100-020	PD EC1-1 Backfill and Compaction	6	18-Mar-16	23-Mar-16	620
PD-EC1-0100-030	PD EC1-2 Backfill and Compaction	6	22-Feb-16	27-Feb-16	-359
PD-EC1-0100-040	PD EC1-3 Backfill and Compaction	6	24-Mar-16	30-Mar-16	620
PD-EC1-0100-050	PD EC1-4 Backfill and Compaction	6	03-Mar-16	08-Mar-16	-362
PD-EC1-0100-060	PD EC1-5 Backfill and Compaction	6	31-Mar-16	05-Apr-16	620
PD-EC1-0100-070	PD EC1-6 Backfill and Compaction	6	14-Mar-16	19-Mar-16	-366
PD-EC1-0100-080	PD EC1-7 Backfill and Compaction	6	06-Apr-16	12-Apr-16	620
PD-EC1-0100-090	PD EC1-8 Outfall Backfill and Compaction	6	24-Mar-16	30-Mar-16	-370
PD-EC1-0100-100	Backfill west side of EC1-1 to EC1-6 for Handover to Other Contractors	36	01-Jan-16 A	31-Jan-16	-174
PD-EC1-0100-110	Handover EC1 40m strip to other Contractor	0		01-Feb-16*	0
Removal of Temporary Bridge and Channel Beside Existing Seawall		12	11-Apr-16	22-Apr-16	-242
PD-TD1-0010	PD EC1 Beside Existing Seawall - Removal of Temporary Channel	4	11-Apr-16	14-Apr-16	-242
PD-TD1-0020	PD EC1 Beside Existing Seawall - Backfill & Compaction	4	15-Apr-16	18-Apr-16	-242
PD-TD1-0030	PD EC1 Beside Existing Seawall - Diversion Access from temporary bridge	0		18-Apr-16	-242
PD-TD1-0040	PD EC1 Beside Existing Seawall - Removal of Temporary bridge, concrete blocks & Ramp	4	19-Apr-16	22-Apr-16	-242
Construction of Permanent Seawall		169	14-Nov-15 A	17-May-16	-443
Vertical Seawall Type V2 6+136 to 5+650		169	14-Nov-15 A	17-May-16	-469
Foundation Leveling		124	20-Nov-15 A	04-Apr-16	-464
PD-V2-0050	PD C1 West - Vertical Seawall V2 VSOP22-20 Foundation Leveling 3,000m2 and Geotextile	7	29-Mar-16	04-Apr-16	-464
PD-V2-0065	PD C3/C4 - Vertical Seawall V2 VSOP10-05 Foundation Leveling 3,000m2 and Geotextile	60	20-Nov-15 A	31-Dec-15 A	
PD-V2-920	PD C4 East - Vertical Seawall V2 VSOP04-01 Foundation Leveling 3,000m2 and Geotextile	14	25-Jan-16	11-Feb-16	-432
Seawall Blocks Installation		141	14-Nov-15 A	17-Apr-16	-464
PD-V2-0070	PD C1 West - Vertical Seawall Blocks V2 VSPD22-20 Type 2E & 2A 352nrs (30nrs/day)	12	05-Apr-16	17-Apr-16	-464



Remaining Level of Effort
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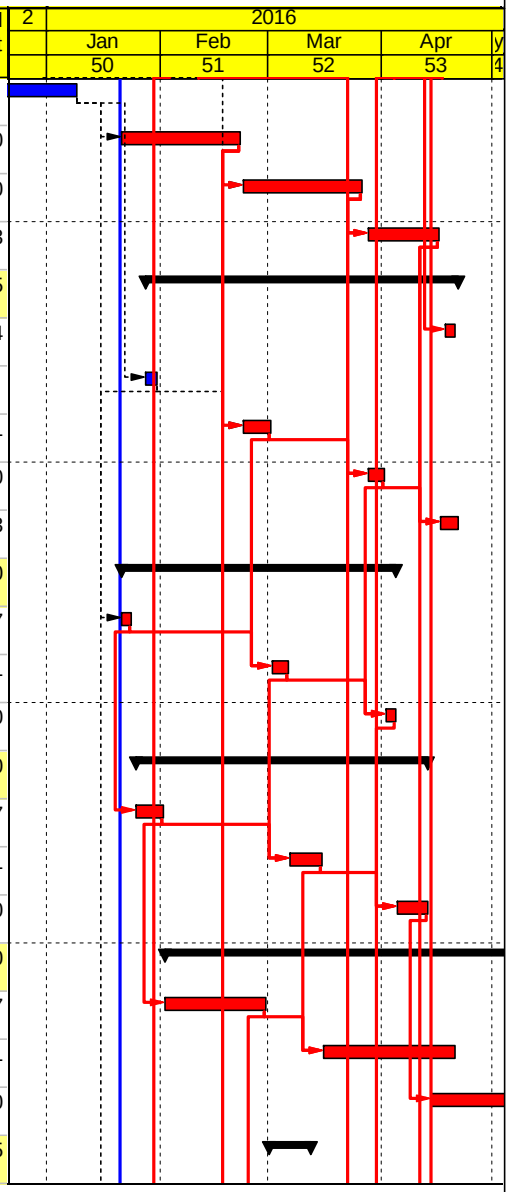
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-V2-0090	PD C1/C2 - Vertical Seawall Blocks V2 VSOP19-16 Type 2A5, 2A4 & 2A3 606nrs (30nrs/day)	57	14-Nov-15 A	09-Jan-16 A	
PD-V2-0110	PD C2/C3 - Vertical Seawall Blocks V2 VSOP15-11 Type 2A x3 & 2D 808nrs (30nrs/day)	27	21-Jan-16	22-Feb-16	-480
PD-V2-0130	PD C3/C4 - Vertical Seawall Blocks V2 VSOP10-05 Type 2A x4, 2AC 905nrs (30nrs/day)	31	23-Feb-16	26-Mar-16	-480
PD-V2-0150	PD C4 East - Vertical Seawall Blocks V2 VSOP04-01 Type 2A2, 2A1 & 2B 548nrs (30nrs/day)	19	28-Mar-16	16-Apr-16	-473
Rockfill Type 2 behind seawall		59	28-Jan-16 A	21-Apr-16	-465
PD-V2-0180	PD C1 West - Vertical Seawall V2 Rockf ill Type 2 VSOP22-20 1,400m3	3	18-Apr-16	20-Apr-16	-464
PD-V2-0190	PD C1/C2 - Vertical Seawall V2 Rockf ill Type 2 VSOP19-16 2,100m3	4	28-Jan-16 A	31-Jan-16 A	
PD-V2-0200	PD C2/C3 - Vertical Seawall V2 Rockf ill Type 2 VSOP15-11 3,400m3	7	23-Feb-16	01-Mar-16	-471
PD-V2-0210	PD C3/C4 - Vertical Seawall V2 Rockf ill Type 2 VSOP10-05 2,500m3	5	28-Mar-16	01-Apr-16	-480
PD-V2-0220	PD C4 East - Vertical Seawall V2 Rockf ill Type 2 VSOP04-01 2,500m3	5	17-Apr-16	21-Apr-16	-473
Geotextile Type 1		66	21-Jan-16	04-Apr-16	-480
PD-V2-0240	PD C1/C2 - Vertical Seawall V2 Geotextile Type 1 VSOP19-16 1,500m2	3	21-Jan-16	23-Jan-16	-457
PD-V2-0250	PD C2/C3 - Vertical Seawall V2 Geotextile Type 1 VSOP15-11 2,400m2	5	02-Mar-16	06-Mar-16	-471
PD-V2-0260	PD C3/C4 - Vertical Seawall V2 Geotextile Type 1 VSOP10-05 1,700m2	3	02-Apr-16	04-Apr-16	-480
Reclamation upto +3.25mPD		71	25-Jan-16	13-Apr-16	-480
PD-V2-0290	PD C1/C2 - Vertical Seawall V2 backfill with compaction upto +3.25mPD VSOP20-16	8	25-Jan-16	01-Feb-16	-457
PD-V2-0300	PD C2/C3 - Vertical Seawall V2 backfill with compaction upto +3.25mPD VSOP16-11	8	07-Mar-16	15-Mar-16	-471
PD-V2-0310	PD C3/C4 - Vertical Seawall V2 backfill with compaction upto +3.25mPD VSOP11-05	8	05-Apr-16	13-Apr-16	-480
Insitu Concrete Coping		95	02-Feb-16	17-May-16	-480
PD-V2-0340	PD C1/C2 - Vertical Seawall V2 Insitu Coping VSOP20-16 11bays	22	02-Feb-16	29-Feb-16	-457
PD-V2-0350	PD C2/C3 - Vertical Seawall V2 Insitu Coping VSOP16-11 17bays	34	16-Mar-16	20-Apr-16	-471
PD-V2-0360	PD C3/C4 - Vertical Seawall V2 Insitu Coping VSOP11-05 16bays	32	14-Apr-16	17-May-16	-480
Reclamation upto +5.5mPD		12	01-Mar-16	12-Mar-16	-435



Remaining Level of Effort ◆ Milestone
Actual Level of Effort Summary
Actual Work
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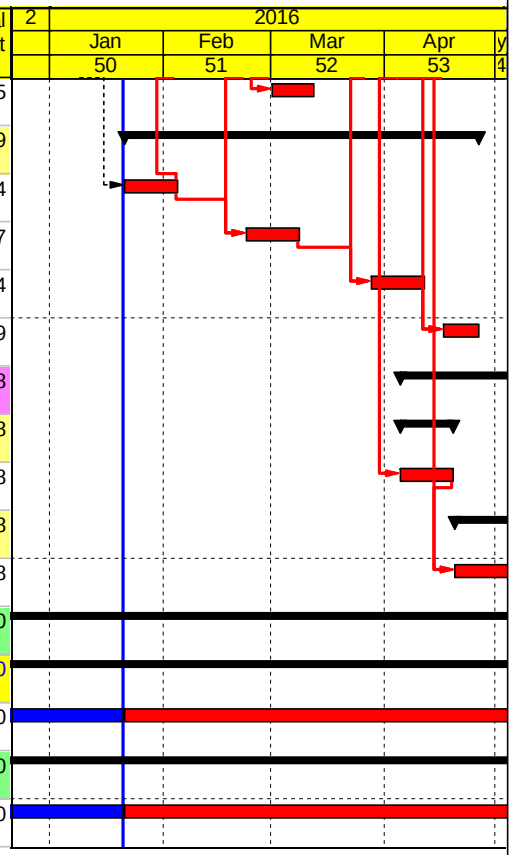
TASK filters: No Option 1 2, Three Month Rolling, Work Programme.

Primavera Systems, Inc.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
PD-V2-0390	PD C1/2 - Vertical Seawall V2 backfill with compaction upto +5.5mPD VSOP20-16	12	01-Mar-16	12-Mar-16	-435
Rock Armour		86	21-Jan-16	26-Apr-16	-449
PD-V2-0920	PD C1/2 - Vertical Seawall V2 Armour VSOP20-16	14	21-Jan-16	04-Feb-16	-414
PD-V2-0930	PD C2/3 - Vertical Seawall V2 Armour VSOP16-11	14	23-Feb-16	08-Mar-16	-427
PD-V2-1000	PD C3/4 - Vertical Seawall V2 Armour VSOP11-05	14	28-Mar-16	11-Apr-16	-444
PD-V2-990	PD C4 East - Vertical Seawall V2 Armour VSOP05-01	9	17-Apr-16	26-Apr-16	-449
Sloping Seawall Type S1 0+000 to 0+420		35	05-Apr-16	12-May-16	-438
Removal of South Temporary Seawall S1		14	05-Apr-16	19-Apr-16	-438
PD-S1-0015	PD C2 - Removal of S1 Temporary seawall West2 0+100 to 0+200	14	05-Apr-16	19-Apr-16	-438
S1 Rockfill Type 1		21	20-Apr-16	12-May-16	-438
PD-S1-1020	PD C2 - Sloping Seawall Type S1 0+100 to 0+200 Reconstruction	21	20-Apr-16	12-May-16	-438
Works Area WA2 (Tung Chung)		1459	21-May-12 A	28-Feb-17	0
Zone A		1459	21-May-12 A	28-Feb-17	0
A1880	Maintenance of Engineer's Accommodation (28Feb2017)	1459	21-May-12 A	28-Feb-17	0
Works Area TKO Fill Bank		1279	25-Sep-12 A	30-Nov-16	0
WA-TKO-1040	Operate and Maintain Public Fill Sorting Facilities in Zone A, B1 & B2 (30Nov2016)	1279	25-Sep-12 A	30-Nov-16	0



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Primavera Systems, Inc.

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:	26-Nov-15	Next Due Date:	26-Jan-16
Equipment No.:	A-001-78T	Serial No.	3383

Ambient Condition			
Temperature, Ta (K)	294	Pressure, Pa (mmHg)	764.2

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	1.99924	Intercept, bc	-0.01238
Last Calibration Date:	9-Dec-14	**mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	9-Dec-15	**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	8.1	2.87	1.44	49.0	49.47
13	6.9	2.65	1.33	44.0	44.42
10	5.0	2.26	1.14	37.0	37.35
7	4.0	2.02	1.02	32.0	32.31
5	2.6	1.63	0.82	24.0	24.23

By Linear Regression of Y on X

Slope , mw = **39.9977** **Intercept, bw =** **-8.4251**

Correlation Coefficient* = **0.9990**

*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)]$^{1/2}$= **43.16**

Remarks:

QC Reviewer: WS CHAN Signature: Date: 26/11/15

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Tung Chung Development Pier (AMS2)	Operator:	Leung Yiu Ting
Cal. Date:	26-Jan-16	Next Due Date:	26-Mar-16
Equipment No.:	A-001-78T	Serial No.	3383

Ambient Condition			
Temperature, Ta (K)	286	Pressure, Pa (mmHg)	769.1

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	8.0	2.90	1.46	48.0	49.29
13	6.9	2.70	1.36	45.0	46.21
10	5.0	2.30	1.15	38.0	39.02
7	4.0	2.05	1.03	33.0	33.89
5	2.5	1.62	0.81	25.0	25.67

By Linear Regression of Y on X

Slope , mw = 36.8413 **Intercept, bw =** -4.0613

Correlation Coefficient* = 0.9980

*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)]$^{1/2}$= **42.69**

Remarks: _____

QC Reviewer: INS CHAN Signature: _____ Date: 26/1/16

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:	30-Dec-15	Next Due Date:	29-Feb-16
Equipment No.:	A-001-79T	Serial No.	3384

Ambient Condition			
Temperature, Ta (K)	291.5	Pressure, Pa (mmHg)	764.4

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	7.1	2.70	1.36	48.0	48.67
13	6.0	2.48	1.25	43.0	43.60
10	4.8	2.22	1.12	37.0	37.52
7	3.2	1.81	0.91	24.0	24.34
5	2.1	1.47	0.74	16.0	16.22

By Linear Regression of Y on X

Slope , mw = 53.4091 **Intercept, bw =** -23.3119

Correlation Coefficient* = 0.9961

*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)]$^{1/2}$= **45.48**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 30/12/15

AECOM Asia Company Limited
TSP High Volume Sampler
Field Calibration Report

Station	Hong Kong SkyCity Marriott Hotel (AMS7)	Operator:	Leung yiu ting
Cal. Date:	30-Dec-15	Next Due Date:	29-Feb-16
Equipment No.:	A-001-80T	Serial No.	3385

Ambient Condition			
Temperature, Ta (K)	291.5	Pressure, Pa (mmHg)	764.4

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	7.9	2.85	1.43	48.0	48.67
13	6.9	2.66	1.34	43.0	43.60
10	5.2	2.31	1.16	37.0	37.52
7	3.2	1.81	0.91	24.0	24.34
5	2.1	1.47	0.74	16.0	16.22

By Linear Regression of Y on X

Slope , mw = 46.2339 **Intercept, bw =** -17.5597

Correlation Coefficient* = 0.9965

*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; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **41.96**

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 30/12/15

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 2015*		

*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	*08-05-15*	*09:15 - 10:15*	*26.9*	*76*	*0.04417*	*1763*	*29.38*
2	*08-05-15*	*10:15 - 11:15*	*26.9*	*76*	*0.04625*	*1851*	*30.85*
3	*08-05-15*	*11:15 - 12:15*	*26.9*	*77*	*0.04513*	*1805*	*30.08*
4	*08-05-15*	*12:15 - 13:15*	*27.1*	*77*	*0.04828*	*1926*	*32.10*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9983*

Validity of Calibration Record: *8 May 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 11 May 2015

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 2015*		

*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	*08-05-15*	*09:30 - 10:30*	*26.9*	*76*	*0.04587*	*1722*	*28.70*
2	*08-05-15*	*10:30 - 11:30*	*26.9*	*76*	*0.04774*	*1795*	*29.92*
3	*08-05-15*	*11:30 - 12:30*	*26.9*	*77*	*0.04976*	*1864*	*31.07*
4	*08-05-15*	*12:30 - 13:30*	*27.1*	*77*	*0.05051*	*1901*	*31.68*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0016*
Correlation coefficient: *0.9978*

Validity of Calibration Record: *8 May 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 11 May 2015

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 2015*		

*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	*08-05-15*	*13:15 - 14:15*	*27.1*	*77*	*0.04986*	*1994*	*33.23*
2	*08-05-15*	*14:15 - 15:15*	*27.1*	*77*	*0.05083*	*2037*	*33.95*
3	*08-05-15*	*15:15 - 16:15*	*27.1*	*77*	*0.05012*	*2003*	*33.38*
4	*08-05-15*	*16:15 - 17:15*	*27.1*	*76*	*0.05241*	*2095*	*34.92*

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: *0.9968*

Validity of Calibration Record: *8 May 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 11 May 2015

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 2015*		

*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	*08-05-15*	*13:45 - 14:45*	*27.1*	*77*	*0.04963*	*1989*	*33.15*
2	*08-05-15*	*14:45 - 15:45*	*27.1*	*77*	*0.05131*	*2054*	*34.23*
3	*08-05-15*	*15:45 - 16:45*	*27.1*	*77*	*0.05170*	*2066*	*34.43*
4	*08-05-15*	*16:45 - 17:45*	*27.1*	*77*	*0.05269*	*2110*	*35.17*

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: *0.9974*

Validity of Calibration Record: *8 May 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: _____ Date: 11 May 2015

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 2015*		

*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	*13-05-15*	*09:15 - 10:15*	*27.3*	*78*	*0.04635*	*1853*	*30.88*
2	*13-05-15*	*10:15 - 11:15*	*27.3*	*78*	*0.04788*	*1916*	*31.93*
3	*13-05-15*	*11:15 - 12:15*	*27.3*	*78*	*0.04943*	*1985*	*33.08*
4	*13-05-15*	*12:15 - 13:15*	*27.4*	*78*	*0.05176*	*2075*	*34.58*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9983*

Validity of Calibration Record: *13 May 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 14 May 2015

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 2015*		

*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	*13-05-15*	*09:45 - 10:45*	*27.3*	*78*	*0.04654*	*1867*	*31.12*
2	*13-05-15*	*10:45 - 11:45*	*27.3*	*78*	*0.04743*	*1901*	*31.68*
3	*13-05-15*	*11:45 - 12:45*	*27.3*	*78*	*0.05036*	*2010*	*33.50*
4	*13-05-15*	*12:45 - 13:45*	*27.4*	*78*	*0.05271*	*2112*	*35.20*

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: *0.9984*

Validity of Calibration Record: *13 May 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 14 May 2015

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 2015*		

*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	*13-05-15*	*13:15 - 14:15*	*27.4*	*78*	*0.05084*	*2178*	*36.30*
2	*13-05-15*	*14:15 - 15:15*	*27.5*	*78*	*0.05236*	*2243*	*37.38*
3	*13-05-15*	*15:15 - 16:15*	*27.5*	*78*	*0.05345*	*2295*	*38.25*
4	*13-05-15*	*16:15 - 17:15*	*27.4*	*77*	*0.05272*	*2261*	*37.68*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0014*
Correlation coefficient: *0.9972*

Validity of Calibration Record: *13 May 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 14 May 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. 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.: 15CA0703 02-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2800930	,	2250455
Adaptors used:	-	,	-

Item submitted by

N-009-07

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 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: HK1541932
Sub-batch: 0
Date of Issue: 05/11/2015
Client: AECOM ASIA COMPANY LIMITED

Description: Multifunctional Meter
Brand Name: YSI
Model No.: Sonde 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 03 November, 2015 Date of next Calibration: 03 February, 2016

Parameters:

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	145.8	-0.7
6667	6710	+0.6
12890	12710	-1.4
58670	58780	+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)
3.50	3.48	-0.02
5.75	5.78	+0.03
7.70	7.66	-0.04
	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)
10.5	10.47	-0.0
22.0	21.95	-0.1
37.0	36.86	-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: HK1541932
Sub-batch: 0
Date of Issue: 05/11/2015
Client: AECOM ASIA COMPANY LIMITED

Description: Multifunctional Meter
Brand Name: YSI
Model No.: Sonde 6820 V2
Serial No.: 12A101545
Equipment No.: W.026.35
Date of Calibration: 03 November, 2015 Date of next Calibration: 03 February, 2016

Parameters:

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

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0	0.0	--
10	9.95	-0.5
20	19.97	-0.2
30	29.92	-0.3
	Tolerance Limit (%)	±10.0

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	4.0	0.0
10	10.3	+3.0
20	20.2	+1.0
50	50.4	+0.8
100	99.6	-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	4.00	0.00
7.0	7.02	+0.02
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

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1541933
Sub-batch: 0
Date of Issue: 05/11/2015
Client: AECOM ASIA COMPANY LIMITED

Description: Multifunctional Meter
Brand Name: YSI
Model No.: Sonde 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 03 November, 2015 Date of next Calibration: 03 February, 2016

Parameters:

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

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	145.2	-1.2
6667	6690	+0.3
12890	12850	-0.3
58670	58700	+0.1
	Tolerance Limit (%)	±10.0

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.50	3.51	+0.01
5.75	5.72	-0.03
7.70	7.67	-0.03
	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)
10.5	10.51	+0.0
22.0	22.05	+0.1
37.0	36.89	-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: HK1541933
Sub-batch: 0
Date of Issue: 05/11/2015
Client: AECOM ASIA COMPANY LIMITED

Description: Multifunctional Meter
Brand Name: YSI
Model No.: Sonde 6820 V2
Serial No.: 12D100972
Equipment No.: W.026.36
Date of Calibration: 03 November, 2015 Date of next Calibration: 03 February, 2016

Parameters:

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

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0	0.0	--
10	10.04	+0.4
20	20.06	+0.3
30	30.04	+0.1
	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	10.2	+2.0
20	20.2	+1.0
50	50.5	+1.0
100	99.3	-0.7
	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	9.98	-0.02
	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
Impact Monitoring Schedule for January 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Jan	02-Jan
					Mid-Flood 12:19 Mid-Ebb 18:06	
03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan
	Mid-Ebb 07:42 Mid-Flood 14:33 24-hour TSP 1-hour TSP Noise		Mid-Ebb 10:29 Mid-Flood 15:53	Dolphin monitoring	Mid-Ebb 12:04 Mid-Flood 17:14 Dolphin monitoring	24-hour TSP 1-hour TSP
10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
	Mid-Flood 08:42 Mid-Ebb 14:07		Mid-Flood 09:57 Mid-Ebb 15:34 24-hour TSP 1-hour TSP Noise		Mid-Flood 11:21 Mid-Ebb 17:18	
17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
	Mid-Ebb 07:12 Mid-Flood 13:55 Dolphin monitoring	24-hour TSP 1-hour TSP Noise Dolphin monitoring	Mid-Ebb 10:13 Mid-Flood 15:45 24-hour TSP*		Mid-Ebb 12:06 Mid-Flood 17:20	
24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan
	Mid-Flood 08:39 Mid-Ebb 14:00 24-hour TSP 1-hour TSP Noise		Mid-Flood 09:35 Mid-Ebb 15:02		Mid-Flood 10:27 Mid-Ebb 16:11	24-hour TSP 1-hour TSP
31-Jan						

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)
*Due to electricity failure, the 24-hr TSP monitoring at AMS3B scheduled on 19 January 2016 was rescheduled 20 January 2016.

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Feb	02-Feb	03-Feb	04-Feb	05-Feb	06-Feb
	Mid-Flood 12:18 Mid-Ebb 19:05		Mid-Ebb 08:51 Mid-Flood 14:04	Dolphin monitoring	Mid-Ebb 11:01 Mid-Flood 16:03 24-hour TSP 1-hour TSP Dolphin monitoring	
07-Feb	08-Feb	09-Feb	10-Feb	11-Feb	12-Feb	13-Feb
	Mid-Flood 07:40* Mid-Ebb 13:08*			Mid-Flood 09:18 Mid-Ebb 15:08 24-hour TSP 1-hour TSP Noise		Mid-Flood 10:28 Mid-Ebb 16:42
14-Feb	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb
	Mid-Flood 12:02 Mid-Ebb 18:56		Mid-Ebb 08:43 Mid-Flood 14:13 24-hour TSP 1-hour TSP Noise	Dolphin monitoring	Mid-Ebb 11:18 Mid-Flood 16:28 Dolphin monitoring	
21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb
	Mid-Flood 07:36 Mid-Ebb 13:08	24-hour TSP 1-hour TSP Noise	Mid-Flood 08:23 Mid-Ebb 14:00		Mid-Flood 09:09 Mid-Ebb 15:01	
28-Feb	29-Feb					
	Mid-Flood 10:32 Mid-Ebb 17:00 24-hour TSP 1-hour TSP Noise					

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)
*As informed by the Contractor on 25 January 2016, no construction work will be undertaken by Contract no. HY/2010/02 during the Chinese New Year Period from 7 - 10 February 2016. As such, the scheduled impact water quality monitoring on 8 and 10 February 2016 will be cancelled.

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-Jan-16	1st Hour	Sunny	0.31	10:05	77	374	500
04-Jan-16	2nd Hour	Sunny	2.56	11:05	74	374	500
04-Jan-16	3rd Hour	Sunny	1.01	12:05	76	374	500
09-Jan-16	1st Hour	Sunny	0.10	10:35	76	374	500
09-Jan-16	2nd Hour	Sunny	1.45	11:35	79	374	500
09-Jan-16	3rd Hour	Sunny	1.92	12:35	77	374	500
13-Jan-16	1st Hour	Fine	0.06	11:50	83	374	500
13-Jan-16	2nd Hour	Fine	0.07	12:50	82	374	500
13-Jan-16	3rd Hour	Fine	0.34	13:50	82	374	500
19-Jan-16	1st Hour	Fine	0.18	10:05	81	374	500
19-Jan-16	2nd Hour	Fine	0.03	11:05	82	374	500
19-Jan-16	3rd Hour	Fine	0.01	12:05	81	374	500
25-Jan-16	1st Hour	Sunny	0.27	10:00	73	374	500
25-Jan-16	2nd Hour	Sunny	0.35	11:00	75	374	500
25-Jan-16	3rd Hour	Sunny	0.48	12:00	72	374	500
29-Jan-16	1st Hour	Cloudy	0.97	10:45	78	374	500
29-Jan-16	2nd Hour	Cloudy	0.41	11:45	79	374	500
29-Jan-16	3rd Hour	Cloudy	0.95	12:45	76	374	500
				Average	78		
				Min	72		
				Max	83		

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-Jan-16	1st Hour	Sunny	0.31	10:15	74	368	500
04-Jan-16	2nd Hour	Sunny	2.56	11:15	76	368	500
04-Jan-16	3rd Hour	Sunny	1.01	12:15	76	368	500
09-Jan-16	1st Hour	Sunny	0.10	10:25	75	368	500
09-Jan-16	2nd Hour	Sunny	1.45	11:25	77	368	500
09-Jan-16	3rd Hour	Sunny	1.92	12:25	75	368	500
13-Jan-16	1st Hour	Fine	0.07	12:02	81	368	500
13-Jan-16	2nd Hour	Fine	0.34	13:02	80	368	500
13-Jan-16	3rd Hour	Fine	0.00	14:02	81	368	500
19-Jan-16	1st Hour	Fine	0.03	11:40	80	368	500
19-Jan-16	2nd Hour	Fine	0.01	12:40	79	368	500
19-Jan-16	3rd Hour	Fine	0.03	13:40	81	368	500
25-Jan-16	1st Hour	Sunny	0.35	10:20	74	368	500
25-Jan-16	2nd Hour	Sunny	0.48	11:20	74	368	500
25-Jan-16	3rd Hour	Sunny	0.15	12:20	73	368	500
29-Jan-16	1st Hour	Cloudy	0.97	10:55	77	368	500
29-Jan-16	2nd Hour	Cloudy	0.41	11:55	78	368	500
29-Jan-16	3rd Hour	Cloudy	0.95	12:55	76	368	500
				Average	77		
				Min	73		
				Max	81		

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-Jan-16	1st Hour	Sunny	0.31	09:50	75	370	500
04-Jan-16	2nd Hour	Sunny	2.56	10:50	77	370	500
04-Jan-16	3rd Hour	Sunny	1.01	11:50	77	370	500
09-Jan-16	1st Hour	Sunny	1.45	11:00	72	370	500
09-Jan-16	2nd Hour	Sunny	1.92	12:00	74	370	500
09-Jan-16	3rd Hour	Sunny	0.56	13:00	74	370	500
13-Jan-16	1st Hour	Fine	0.10	10:49	81	370	500
13-Jan-16	2nd Hour	Fine	0.06	11:49	81	370	500
13-Jan-16	3rd Hour	Fine	0.07	12:49	81	370	500
19-Jan-16	1st Hour	Fine	0.01	12:10	81	370	500
19-Jan-16	2nd Hour	Fine	0.03	13:10	82	370	500
19-Jan-16	3rd Hour	Fine	0.03	14:10	81	370	500
25-Jan-16	1st Hour	Sunny	0.35	10:29	73	370	500
25-Jan-16	2nd Hour	Sunny	0.48	11:29	73	370	500
25-Jan-16	3rd Hour	Sunny	0.15	12:29	75	370	500
29-Jan-16	1st Hour	Cloudy	0.97	10:30	75	370	500
29-Jan-16	2nd Hour	Cloudy	0.41	11:30	77	370	500
29-Jan-16	3rd Hour	Cloudy	0.95	12:30	75	370	500
				Average	77		
				Min	72		
				Max	82		

Appendix G Impact Air Quality Monitoring Results

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

Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
04-Jan-16	09:00	05-Jan-16	09:00	Cloudy	20.6	1018.9	1.33	1.33	1.33	1912.3	2.8827	2.9551	0.0724	5832.04	5856.04	24.00	38	176	260
08-Jan-16	16:00	09-Jan-16	16:00	Sunny	18.1	1020.6	1.33	1.33	1.33	1912.3	2.8804	3.0650	0.1846	5856.04	5880.04	24.00	97	176	260
12-Jan-16	16:00	13-Jan-16	16:00	Fine	16.1	1020.8	1.33	1.33	1.33	1912.3	2.8690	2.9637	0.0947	5880.04	5904.04	24.00	50	176	260
18-Jan-16	16:00	19-Jan-16	16:00	Fine	16.4	1020.1	1.33	1.33	1.33	1912.3	2.8982	3.0223	0.1241	5904.04	5928.04	24.00	65	176	260
25-Jan-16	09:00	26-Jan-16	09:00	Fine	7.4	1032.6	1.33	1.33	1.33	1912.3	2.9032	3.0526	0.1494	5928.04	5952.04	24.00	78	176	260
29-Jan-16	16:00	30-Jan-16	16:00	Cloudy	17.6	1020.0	1.33	1.33	1.33	1912.3	2.8636	2.9387	0.0751	5952.04	5976.04	24.00	39	176	260
																Average	61		
																Min	38		
																Max	97		

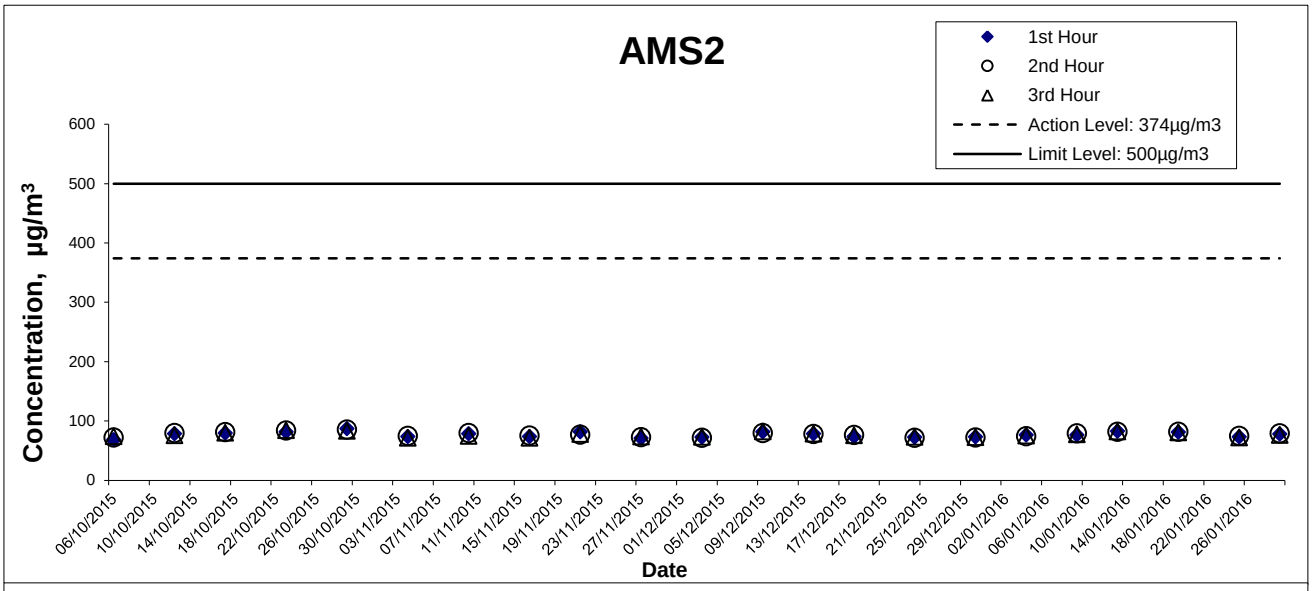
24-hour TSP Monitoring Results at Station AMS3B - Site Boundary of Site Office (WA2)

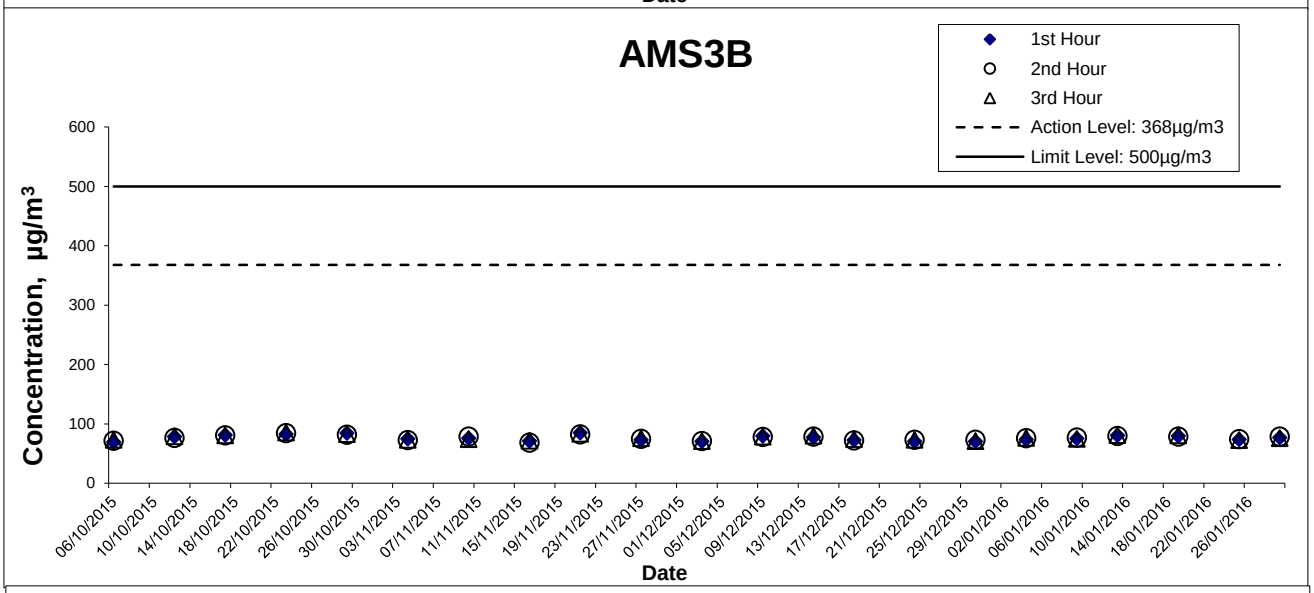
Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
04-Jan-16	09:00	05-Jan-16	09:00	Cloudy	20.6	1018.9	1.34	1.34	1.34	1923.8	2.8974	2.9524	0.0550	6607.38	6631.38	24.00	29	167	260
08-Jan-16	16:00	09-Jan-16	16:00	Sunny	18.1	1020.6	1.34	1.34	1.34	1923.8	2.8700	3.0174	0.1474	6631.38	6655.38	24.00	77	167	260
12-Jan-16	16:00	13-Jan-16	16:00	Fine	16.1	1020.8	1.34	1.34	1.34	1923.8	2.8919	2.9677	0.0758	6655.38	6679.38	24.00	39	167	260
19-Jan-16	12:00	20-Jan-16	12:00	Fine	15.5	1019.6	1.34	1.34	1.34	1923.8	2.9078	3.0681	0.1603	6679.38	6703.38	24.00	83	167	260
25-Jan-16	09:00	26-Jan-16	09:00	Fine	7.4	1032.6	1.34	1.34	1.34	1923.8	2.8842	2.9931	0.1089	6703.38	6727.38	24.00	57	167	260
29-Jan-16	16:00	30-Jan-16	16:00	Cloudy	17.6	1020.0	1.34	1.34	1.34	1923.8	2.91	2.9602	0.0502	6727.38	6751.38	24.00	26	167	260
																Average	52		
																Min	26		
																Max	83		

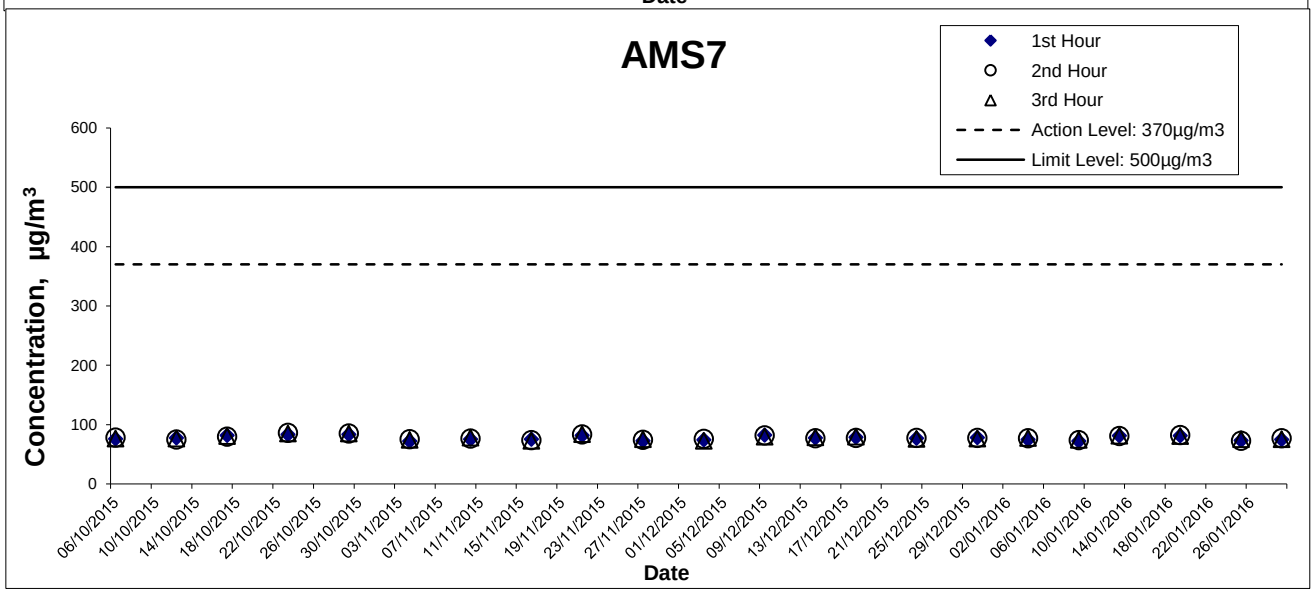
^ Action Level set out at AMS3 Ho Yu College is adopted.

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

Start Date	Start Time	End Date	End Time	Weather Condition	Air Temp. (^oC)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.) Initial	Flow Rate (m^3/min.) Final	Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g) Initial	Filter Weight (g) Final	Particulate weight(g)	Elapse Time Initial	Elapse Time Final	Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
04-Jan-16	09:00	05-Jan-16	09:00	Cloudy	20.6	1018.9	1.30	1.30	1.30	1869.1	2.9034	2.9686	0.0652	5547.91	5571.91	24.00	35	183	260
08-Jan-16	16:00	09-Jan-16	16:00	Sunny	18.1	1020.6	1.30	1.30	1.30	1869.1	2.8798	3.0149	0.1351	5571.91	5595.91	24.00	72	183	260
12-Jan-16	16:00	13-Jan-16	16:00	Fine	16.1	1020.8	1.30	1.30	1.30	1869.1	2.8801	2.9625	0.0824	5595.91	5619.91	24.00	44	183	260
18-Jan-16	16:00	19-Jan-16	16:00	Fine	15.5	1019.6	1.30	1.30	1.30	1869.1	2.8910	3.0004	0.1094	5619.91	5643.91	24.00	59	183	260
25-Jan-16	09:00	26-Jan-16	09:00	Fine	7.4	1032.6	1.30	1.30	1.30	1869.1	2.8884	3.0101	0.1217	5643.91	5667.91	24.00	65	183	260
29-Jan-16	16:00	30-Jan-16	16:00	Cloudy	17.6	1020.0	1.30	1.30	1.30	1869.1	2.9096	2.9761	0.0665	5667.91	5691.91	24.00	36	183	260
																Average	52		
																Min	35		
																Max	72		







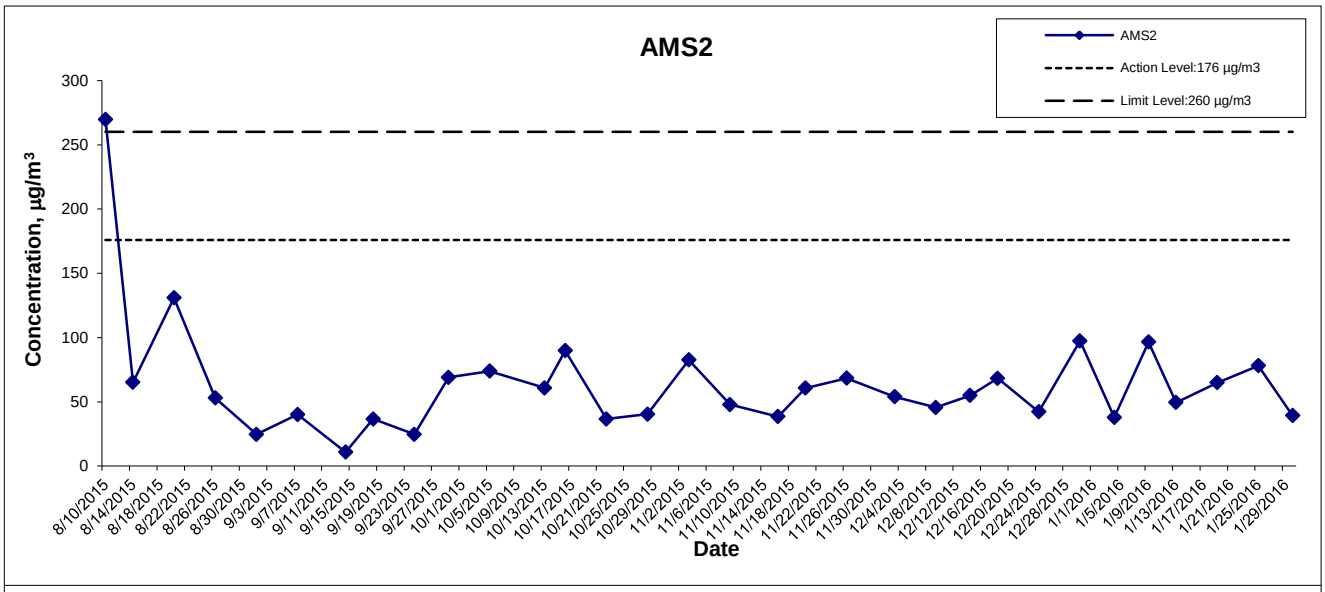
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

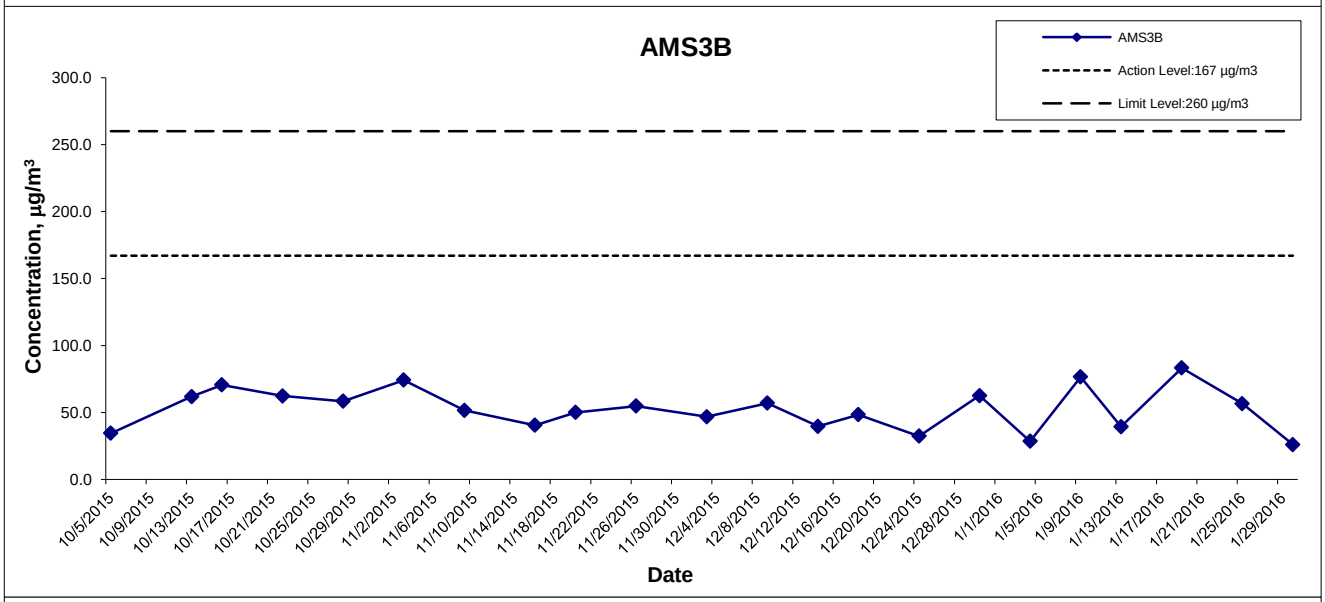
AECOM

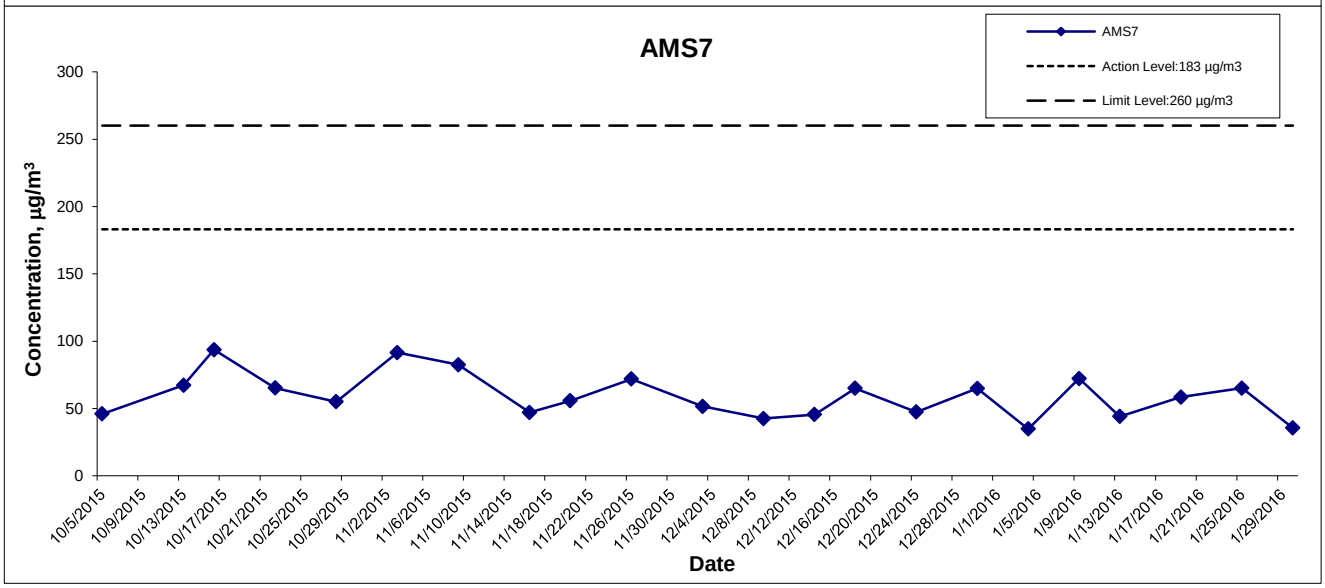
Graphical Presentation of Impact 1-hour TSP Monitoring Results

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

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: February 2016**

Appendix G

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

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
01/04/2016	08:20:16	0.11	10
01/04/2016	09:20:16	0.42	35
01/04/2016	10:20:16	0.31	80
01/04/2016	11:20:16	2.56	115
01/04/2016	12:20:16	1.01	105
01/04/2016	13:20:16	0.10	97
01/04/2016	14:20:16	0.69	96
01/04/2016	15:20:16	0.62	104
01/04/2016	16:20:16	0.17	89
01/04/2016	17:20:16	0.95	96
01/04/2016	18:20:16	0.64	133
01/04/2016	19:20:16	2.22	131
01/04/2016	20:20:16	0.46	63
01/04/2016	21:20:16	0.27	239
01/04/2016	22:20:16	2.35	111
01/04/2016	23:20:16	1.87	107
01/05/2016	00:20:16	1.22	101
01/05/2016	01:20:16	1.44	125
01/05/2016	02:20:16	2.90	130
01/05/2016	03:20:16	0.32	278
01/05/2016	04:20:16	3.01	116
01/05/2016	05:20:16	1.15	300
01/05/2016	06:20:16	0.92	100
01/05/2016	07:20:16	1.37	44
01/05/2016	08:20:16	2.03	103
01/05/2016	09:20:16	0.01	58
01/05/2016	10:20:16	0.83	140
01/08/2016	15:20:16	0.38	293
01/08/2016	16:20:16	1.01	282
01/08/2016	17:20:16	0.11	250
01/08/2016	18:20:16	0.14	246
01/08/2016	19:20:16	0.39	263
01/08/2016	20:20:16	0.15	249
01/08/2016	21:20:16	0.25	249
01/08/2016	22:20:16	0.17	152
01/08/2016	23:20:16	0.03	44
01/09/2016	00:20:16	1.02	103
01/09/2016	01:20:16	2.28	113
01/09/2016	02:20:16	1.44	90
01/09/2016	03:20:16	1.02	74
01/09/2016	04:20:16	0.03	101
01/09/2016	05:20:16	0.03	104
01/09/2016	06:20:16	0.35	102
01/09/2016	07:20:16	0.15	106
01/09/2016	08:20:16	0.15	252
01/09/2016	09:20:16	0.74	284
01/09/2016	10:20:16	0.10	71
01/09/2016	11:20:16	1.45	129
01/09/2016	12:20:16	1.92	104
01/09/2016	13:20:16	0.56	81
01/09/2016	14:20:16	2.42	142
01/09/2016	15:20:16	1.27	304
01/09/2016	16:20:16	0.07	175
01/09/2016	17:20:16	0.11	96
01/12/2016	15:20:16	0.01	77
01/12/2016	16:20:16	0.03	66
01/12/2016	17:20:16	0.60	103
01/12/2016	18:20:16	0.56	121
01/12/2016	19:20:16	0.29	68
01/12/2016	20:20:16	0.83	79
01/12/2016	21:20:16	0.69	79
01/12/2016	22:20:16	0.03	119
01/12/2016	23:20:16	0.67	120
1/13/2016	00:20:16	1.52	101
1/13/2016	01:20:16	0.77	121
1/13/2016	02:20:16	0.04	95
1/13/2016	03:20:16	0.01	82
1/13/2016	04:20:16	0.03	78
1/13/2016	05:20:16	0.01	199
1/13/2016	06:20:16	0.06	66
1/13/2016	07:20:16	1.24	93
1/13/2016	08:20:16	0.83	106
1/13/2016	09:20:16	0.27	96
1/13/2016	10:20:16	0.10	99
1/13/2016	11:20:16	0.06	55
1/13/2016	12:07:29	0.07	72
1/13/2016	13:07:28	0.34	73
1/13/2016	14:07:28	0.00	23
1/13/2016	15:07:28	0.06	127
1/13/2016	16:07:28	0.06	49
1/13/2016	17:07:28	0.14	70
1/18/2016	15:07:28	0.15	282
1/18/2016	16:07:28	0.99	256
1/18/2016	17:07:28	0.10	50
1/18/2016	18:07:28	0.14	274
1/18/2016	19:07:28	0.24	110
1/18/2016	20:07:28	0.74	118

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

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
1/18/2016	21:07:28	0.77	115
1/18/2016	22:07:28	0.91	128
1/18/2016	23:07:28	1.99	87
1/19/2016	00:07:28	1.04	98
1/19/2016	01:07:28	0.10	70
1/19/2016	02:07:28	0.62	144
1/19/2016	03:07:28	1.89	103
1/19/2016	04:07:28	1.13	116
1/19/2016	05:07:28	0.59	103
1/19/2016	06:07:28	1.58	101
1/19/2016	07:07:28	0.15	72
1/19/2016	08:07:28	0.56	65
1/19/2016	09:07:28	0.41	50
1/19/2016	10:07:28	0.18	76
1/19/2016	11:07:28	0.03	63
1/19/2016	12:07:28	0.01	34
1/19/2016	13:07:28	0.03	68
1/19/2016	14:07:28	0.03	71
1/19/2016	15:07:28	0.01	66
1/19/2016	16:07:28	1.61	101
1/19/2016	17:07:28	0.20	131
1/19/2016	18:07:28	2.92	116
1/19/2016	19:07:28	0.20	135
1/19/2016	20:07:28	0.04	147
1/19/2016	21:07:28	1.26	98
1/19/2016	22:07:28	5.66	91
1/19/2016	23:07:28	4.21	101
1/20/2016	00:07:28	2.53	154
1/20/2016	01:07:28	1.16	99
1/20/2016	02:07:28	0.31	336
1/20/2016	03:07:28	0.31	109
1/20/2016	04:07:28	0.17	95
1/20/2016	05:07:28	0.29	84
1/20/2016	06:07:28	1.78	66
1/20/2016	07:07:28	0.24	289
1/20/2016	08:07:28	0.01	34
1/20/2016	09:07:28	0.03	68
1/20/2016	10:07:28	0.03	71
1/20/2016	11:07:28	0.01	66
1/20/2016	12:07:28	1.61	101
1/20/2016	13:07:28	0.07	50
1/25/2016	08:07:28	1.61	49
1/25/2016	09:07:28	1.04	55
1/25/2016	10:07:28	0.27	139
1/25/2016	10:30:13	0.35	132
1/25/2016	11:30:13	0.48	58
1/25/2016	12:30:13	0.15	163
1/25/2016	13:30:13	3.27	76
1/25/2016	14:30:13	0.39	352
1/25/2016	15:30:13	0.91	4
1/25/2016	16:30:13	0.28	348
1/25/2016	17:30:13	0.46	40
1/25/2016	18:30:13	0.42	60
1/25/2016	19:30:13	0.31	51
1/25/2016	20:30:13	0.42	269
1/25/2016	21:30:13	0.42	234
1/25/2016	22:30:13	0.28	230
1/25/2016	23:30:13	0.60	251
1/26/2016	00:30:13	0.17	214
1/26/2016	01:30:13	0.14	251
1/26/2016	02:30:13	0.14	179
1/26/2016	03:30:13	0.15	143
1/26/2016	04:30:13	0.15	107
1/26/2016	05:30:13	0.13	84
1/26/2016	06:30:13	0.17	97
1/26/2016	07:30:13	0.25	294
1/26/2016	08:30:13	0.20	113
1/26/2016	09:30:13	0.48	110
1/26/2016	10:30:13	0.08	111
1/26/2016	11:30:13	0.04	105
1/26/2016	12:30:13	0.01	37
1/26/2016	13:30:13	0.11	33
1/26/2016	14:30:13	0.49	35
1/26/2016	15:30:13	0.62	36
1/26/2016	16:30:13	0.00	62
1/26/2016	17:30:13	0.04	251
1/26/2016	18:30:13	0.04	292
1/26/2016	19:30:13	0.07	342
1/26/2016	20:30:13	0.03	345
1/26/2016	21:30:13	0.22	279
1/26/2016	22:30:13	0.38	39
1/29/2016	15:30:13	0.49	309
1/29/2016	16:30:13	0.57	267
1/29/2016	17:30:13	1.40	333
1/29/2016	18:30:13	0.62	332
1/29/2016	19:30:13	0.71	138
1/29/2016	20:30:13	0.70	328
1/29/2016	21:30:13	0.87	84
1/29/2016	22:30:13	0.71	103
1/29/2016	23:30:13	0.62	112

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

WIND DATA

Date	Time	Averaged Wind Speed (m/s)	Averaged Wind Direction (degrees)
1/30/2016	00:30:13	0.66	17
1/30/2016	01:30:13	0.63	118
1/30/2016	02:30:13	0.84	36
1/30/2016	03:30:13	0.71	264
1/30/2016	04:30:13	0.63	241
1/30/2016	05:30:13	0.62	160
1/30/2016	06:30:13	0.63	227
1/30/2016	07:30:13	0.85	233
1/30/2016	08:30:13	0.63	250
1/30/2016	09:30:13	0.78	331
1/30/2016	10:30:13	1.27	279
1/30/2016	11:30:13	1.58	278
1/30/2016	12:30:13	1.16	267
1/30/2016	13:30:13	1.34	267
1/30/2016	14:30:13	0.91	331
1/30/2016	15:30:13	1.58	277
1/30/2016	16:30:13	0.36	278
1/30/2016	17:30:13	0.35	343

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				
04-Jan-16	Sunny	10:35	63	72	68	<5m/s	62.9	75	N
13-Jan-16	Fine	10:46	63	71	68	<5m/s	62.9	75	N
19-Jan-16	Fine	10:44	66	70	67	<5m/s	62.9	75	N
25-Jan-16	Sunny	10:35	62	71	67	<5m/s	62.9	75	N
		Min	62	70	67				
		Max	66	72	68				
		Average	--	--	68				

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				
04-Jan-16	Sunny	11:30	64	68	67	<5m/s	66.3	70	N
13-Jan-16	Fine	11:58	57	62	61	<5m/s	66.3	70	N
19-Jan-16	Fine	11:39	66	70	67	<5m/s	66.3	70	N
25-Jan-16	Sunny	11:20	63	70	68	<5m/s	66.3	70	N
		Min	57	62	61				
		Max	66	70	68				
		Average	--	--	66				

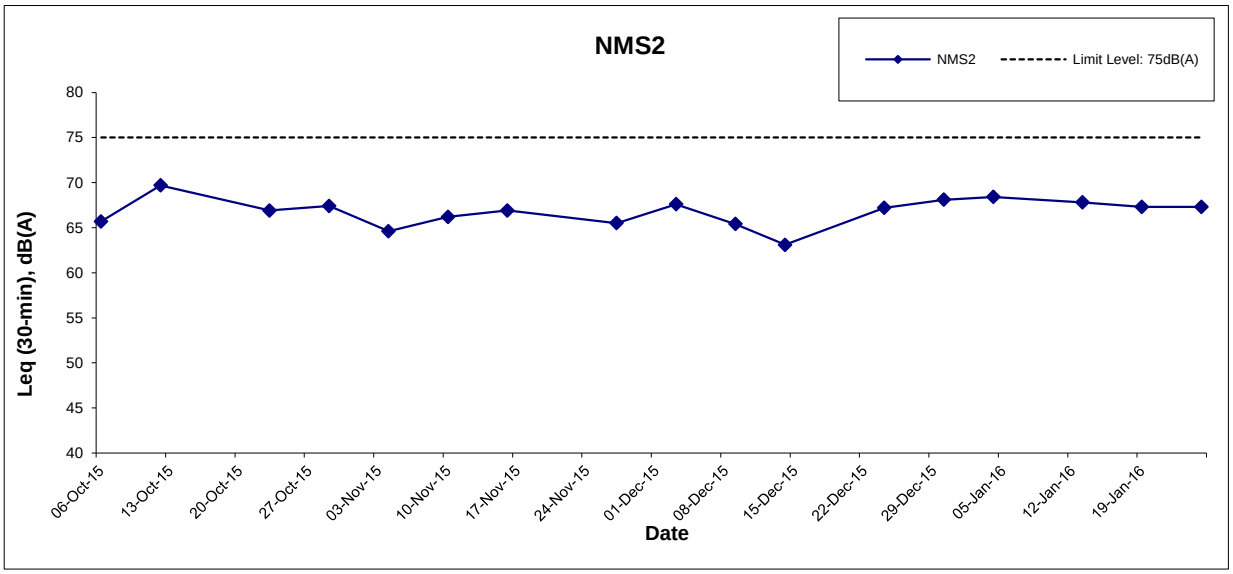
Remark:

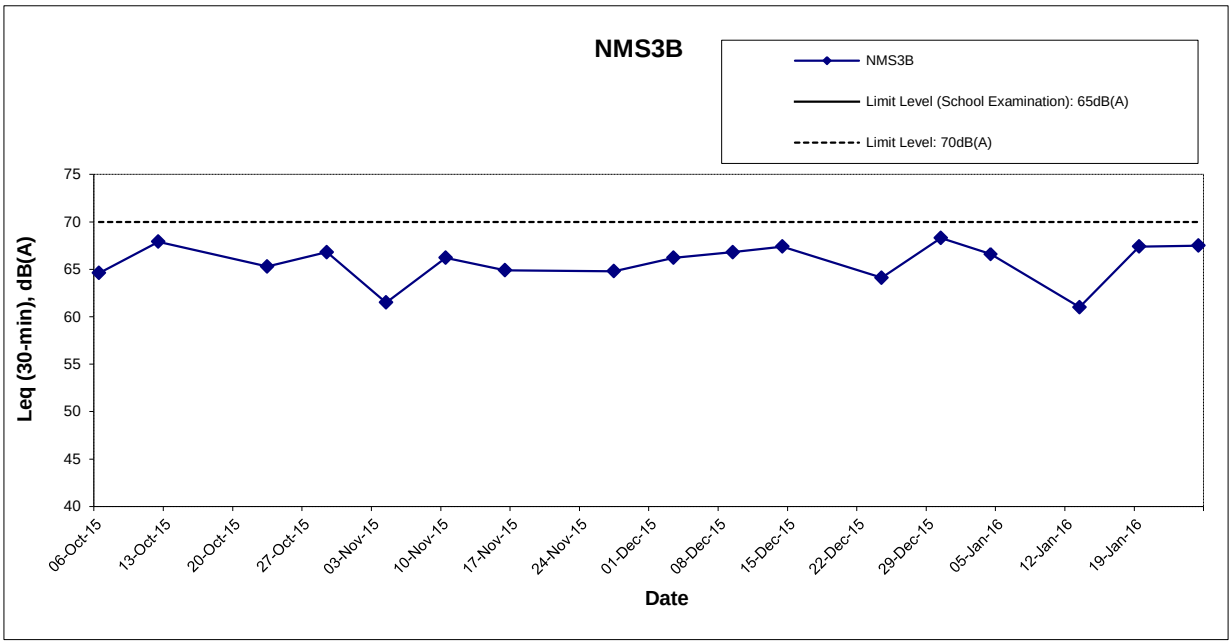
A correction of +3dB(A) was made to the free field measurement.

* Façade measurement.

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

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





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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	17:29	6.6	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	28.5 28.5	28.5	89.6 90.1	89.9	6.9 7.0	7.0	7.0	4.3 4.2	4.3	5.0	4.1 4.6	4.4	3.5
					Middle	3.3	19.5 19.5	19.5	8.2 8.2	8.2	28.7 28.7	28.7	89.2 89.4	89.3	6.9 6.9	6.9		5.1 5.0	5.1		3.9 2.4	3.2	
					Bottom	5.6	19.6 19.5	19.6	8.2 8.2	8.2	28.7 28.7	28.7	89.8 89.1	89.5	7.0 6.9	6.9	6.9	5.5 5.8	5.7		3.8 2.0	2.9	
4-Jan-16	Sunny	Moderate	08:07	6.4	Surface	1.0	16.1 16.1	16.1	8.1 8.1	8.1	28.1 27.4	27.8	98.8 98.2	98.5	8.2 8.2	8.2	8.2	2.1 2.0	2.1	2.2	2.3 2.5	2.4	3.0
					Middle	3.2	16.1 16.1	16.1	8.0 8.0	8.0	28.6 29.5	29.1	98.7 98.2	98.5	8.2 8.1	8.1		2.1 2.2	2.2		2.8 3.0	2.9	
					Bottom	5.4	16.1 16.1	16.1	8.0 8.0	8.0	31.2 31.9	31.5	98.7 98.4	98.6	8.1 8.1	8.1	8.1	2.3 2.2	2.3		3.6 3.5	3.6	
6-Jan-16	Sunny	Moderate	10:16	6.7	Surface	1.0	16.5 16.6	16.5	8.1 8.1	8.1	21.6 21.2	21.4	97.0 95.4	96.2	8.3 8.2	8.3	8.2	1.2 1.3	1.3	1.4	2.6 3.3	3.0	2.5
					Middle	3.4	16.4 16.4	16.4	8.1 8.1	8.1	24.1 23.5	23.8	94.0 95.0	94.5	8.0 8.1	8.0		1.4 1.3	1.4		2.2 2.1	2.2	
					Bottom	5.7	16.4 16.4	16.4	8.0 8.0	8.0	26.8 27.4	27.1	94.3 95.7	95.0	7.9 7.9	7.9	7.9	1.5 1.4	1.5		2.5 2.0	2.3	
8-Jan-16	Sunny	Moderate	12:23	6.3	Surface	1.0	16.6 16.5	16.5	8.1 8.1	8.1	25.9 25.7	25.8	99.4 99.0	99.2	8.3 8.3	8.3	8.3	2.9 2.9	2.9	2.9	3.2 2.6	2.9	3.1
					Middle	3.2	16.4 16.4	16.4	8.1 8.1	8.1	27.7 26.5	27.1	99.7 98.6	99.2	8.3 8.2	8.2		2.6 2.8	2.7		3.4 3.2	3.3	
					Bottom	5.3	16.4 16.4	16.4	8.1 8.1	8.1	28.5 26.8	27.7	100.6 98.8	99.7	8.3 8.2	8.2	8.2	3.0 2.9	3.0		4.1 2.3	3.2	
11-Jan-16	Sunny	Moderate	13:25	6.6	Surface	1.0	16.4 16.4	16.4	8.2 8.2	8.2	29.3 28.5	28.9	101.9 100.2	101.1	8.4 8.3	8.3	8.3	2.1 2.0	2.1	2.2	4.1 4.6	4.4	4.4
					Middle	3.3	16.2 16.2	16.2	8.2 8.2	8.2	30.6 30.4	30.5	99.7 100.7	100.2	8.1 8.2	8.2		2.2 2.2	2.2		3.8 3.5	3.7	
					Bottom	5.6	16.2 16.2	16.2	8.2 8.2	8.2	32.1 31.0	31.5	100.1 99.4	99.8	8.1 8.1	8.1	8.1	2.4 2.4	2.4		5.7 4.6	5.2	
13-Jan-16	Sunny	Moderate	15:00	6.6	Surface	1.0	16.1 16.1	16.1	8.3 8.2	8.3	27.4 27.9	27.6	104.0 106.8	105.4	8.7 8.9	8.8	8.8	2.3 2.4	2.4	2.4	7.0 8.4	7.7	6.3
					Middle	3.3	16.0 16.0	16.0	8.2 8.3	8.3	28.6 27.9	28.3	106.5 103.9	105.2	8.8 8.7	8.7		2.4 2.3	2.4		5.0 3.9	4.5	
					Bottom	5.6	16.0 16.0	16.0	8.2 8.2	8.2	28.3 29.1	28.7	106.8 106.8	106.8	8.9 8.8	8.9	8.9	2.4 2.4	2.4		7.0 6.4	6.7	
15-Jan-16	Rainy	Moderate	16:42	6.5	Surface	1.0	15.3 15.3	15.3	8.1 8.1	8.1	24.0 24.5	24.3	100.6 100.8	100.7	8.7 8.7	8.7	8.7	2.1 1.9	2.0	2.2	1.1 1.1	1.1	1.6
					Middle	3.3	15.5 15.4	15.4	8.1 8.1	8.1	24.4 24.8	24.6	101.1 100.7	100.9	8.7 8.7	8.7		2.3 2.1	2.2		1.5 1.5	1.5	
					Bottom	5.5	15.5 15.5	15.5	8.1 8.0	8.0	25.8 25.9	25.9	101.2 101.2	101.2	8.6 8.6	8.6	8.6	2.4 2.3	2.4		2.4 2.1	2.3	
18-Jan-16	Sunny	Moderate	07:32	6.6	Surface	1.0	14.7 14.7	14.7	8.1 8.1	8.1	24.4 25.4	24.9	97.6 98.5	98.1	8.5 8.6	8.5	8.5	2.1 2.2	2.2	2.2	2.3 2.8	2.6	2.8
					Middle	3.3	14.9 14.9	14.9	8.1 8.1	8.1	25.2 26.1	25.7	98.1 98.8	98.5	8.5 8.5	8.5		2.0 2.2	2.1		3.0 2.6	2.8	
					Bottom	5.6	15.0 15.4	15.2	8.1 8.1	8.1	26.5 28.0	27.3	101.4 101.8	101.6	8.7 8.6	8.6	8.6	2.1 2.2	2.2		3.0 3.0	3.0	
20-Jan-16	Rainy	Moderate	10:03	6.7	Surface	1.0	15.0 15.0	15.0	8.1 8.2	8.2	29.5 28.7	29.1	101.5 100.8	101.2	8.6 8.5	8.5	8.5	1.3 1.3	1.3	1.3	3.7 4.1	3.9	4.1
					Middle	3.4	15.0 15.0	15.0	8.1 8.1	8.1	28.8 30.3	29.5	99.6 101.2	100.4	8.4 8.4	8.4		1.3 1.3	1.3		4.7 4.0	4.4	
					Bottom	5.7	15.0 15.0	15.0	8.1 8.1	8.1	31.4 29.1	30.3	100.0 99.7	99.9	8.4 8.4	8.4	8.4	1.3 1.3	1.3		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 CS(Mf)3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:34	6.6	Surface	1.0	14.7 14.6	14.7	8.0 8.0	8.0	31.4 30.0	30.7	99.0 97.3	98.2	8.3 8.2	8.2	8.2	2.5 2.4	2.5	2.5	2.5 2.7	2.6	3.3
					Middle	3.3	14.6 14.7	14.6	8.0 8.0	8.0	31.1 31.5	31.3	96.9 97.5	97.2	8.2 8.2	8.2		2.5 2.5	2.5		3.6 3.5	3.6	
					Bottom	5.6	14.6 14.6	14.6	8.0 8.0	8.0	31.6 31.9	31.7	95.8 97.4	96.6	8.0 8.2	8.1	8.1	2.6 2.6	2.6		3.6 3.7	3.7	
25-Jan-16	Sunny	Moderate	13:13	6.6	Surface	1.0	12.9 12.9	12.9	8.4 8.4	8.4	31.9 31.5	31.7	97.1 97.1	97.1	8.4 8.4	8.4	8.4	2.7 2.8	2.8	3.2	7.0 7.3	7.2	7.5
					Middle	3.3	12.9 12.8	12.8	8.3 8.4	8.4	31.9 31.4	31.7	97.3 96.8	97.1	8.4 8.4	8.4		3.2 3.1	3.2		8.0 7.4	7.7	
					Bottom	5.6	12.8 12.8	12.8	8.3 8.3	8.3	31.4 32.1	31.8	96.7 97.0	96.9	8.4 8.4	8.4	8.4	3.4 3.5	3.5		7.0 7.9	7.5	
27-Jan-16	Cloudy	Moderate	14:31	6.5	Surface	1.0	11.9 12.0	11.9	8.4 8.3	8.4	31.0 31.2	31.1	98.2 98.4	98.3	8.7 8.7	8.7	8.7	2.7 3.0	2.9	3.3	5.2 4.4	4.8	5.1
					Middle	3.3	11.8 11.8	11.8	8.3 8.4	8.3	31.5 31.0	31.3	97.7 97.9	97.8	8.7 8.7	8.7		4.3 4.0	4.2		5.7 5.8	5.8	
					Bottom	5.5	11.8 11.8	11.8	8.3 8.3	8.3	31.1 31.6	31.4	98.0 97.7	97.9	8.7 8.7	8.7	8.7	3.0 2.6	2.8		4.6 4.8	4.7	
29-Jan-16	Cloudy	Moderate	15:35	6.6	Surface	1.0	11.8 11.8	11.8	8.4 8.4	8.4	25.3 24.8	25.1	95.1 94.2	94.7	8.8 8.7	8.8	8.8	3.2 3.0	3.1	3.5	2.1 3.6	2.9	2.9
					Middle	3.3	11.7 11.7	11.7	8.3 8.4	8.4	25.9 25.6	25.8	94.7 94.1	94.4	8.7 8.7	8.7		3.8 3.8	3.8		3.3 2.9	3.1	
					Bottom	5.6	11.8 11.8	11.8	8.3 8.3	8.3	30.3 29.9	30.1	96.6 96.2	96.4	8.6 8.6	8.6	8.6	3.6 3.7	3.7		3.3 2.3	2.8	

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

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	12:25	6.3	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	28.4 28.4	28.4	91.8 91.6	91.7	7.1 7.1	7.1	7.2	5.3 5.0	5.2	6.1	4.4 4.4	4.4	5.2
					Middle	3.2	19.5 19.5	19.5	8.2 8.2	8.2	28.5 28.5	28.5	93.4 90.9	92.2	7.3 7.1	7.2		6.8 6.3	6.6		5.0 6.5	5.8	
					Bottom	5.3	19.5 19.5	19.5	8.2 8.2	8.2	28.5 28.5	28.5	90.8 90.8	90.8	7.0 7.1	7.0	7.0	6.3 6.5	6.4		5.6 4.9	5.3	
4-Jan-16	Sunny	Moderate	14:05	6.5	Surface	1.0	16.4 16.3	16.4	8.1 8.1	8.1	27.8 27.3	27.6	97.8 98.1	98.0	8.1 8.1	8.1	8.1	2.2 2.4	2.3	2.5	2.6 2.5	2.6	2.9
					Middle	3.3	16.3 16.2	16.3	8.1 8.1	8.1	29.4 29.6	29.5	97.1 98.0	97.6	8.0 8.0	8.0		2.5 2.4	2.5		2.8 4.2	3.5	
					Bottom	5.5	16.2 16.3	16.2	8.1 8.1	8.1	30.4 29.7	30.1	96.5 97.7	97.1	7.9 8.0	8.0	8.0	2.5 2.6	2.6		3.0 2.1	2.6	
6-Jan-16	Sunny	Moderate	15:56	6.8	Surface	1.0	17.0 17.0	17.0	8.1 8.1	8.1	20.5 20.7	20.6	97.1 98.7	97.9	8.3 8.4	8.3	8.2	2.3 2.2	2.3	2.5	3.0 3.2	3.1	3.1
					Middle	3.4	16.4 16.4	16.4	8.1 8.1	8.1	26.6 27.0	26.8	97.2 98.1	97.7	8.0 8.1	8.0		2.4 2.3	2.4		3.3 3.6	3.5	
					Bottom	5.8	16.4 16.4	16.4	8.0 8.0	8.0	28.1 28.7	28.4	94.0 94.4	94.2	7.8 7.8	7.8	7.8	2.7 2.6	2.7		3.0 2.1	2.6	
8-Jan-16	Sunny	Moderate	16:34	6.6	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	26.8 27.2	27.0	98.7 98.4	98.6	8.2 8.1	8.2	8.2	3.5 3.2	3.4	3.5	3.1 2.9	3.0	3.0
					Middle	3.3	16.6 16.6	16.6	8.2 8.2	8.2	27.5 27.3	27.4	98.0 98.0	98.0	8.1 8.1	8.1		3.4 3.3	3.4		2.8 2.9	2.9	
					Bottom	5.6	16.5 16.5	16.5	8.1 8.1	8.1	28.1 28.6	28.4	97.9 97.9	97.9	8.1 8.0	8.0	8.0	3.6 3.9	3.8		3.3 2.8	3.1	
11-Jan-16	Rainy	Moderate	09:07	6.8	Surface	1.0	16.2 16.1	16.1	8.2 8.2	8.2	28.4 28.3	28.4	98.8 98.5	98.7	8.1 8.1	8.1	8.1	2.9 3.0	3.0	3.2	5.1 4.1	4.6	4.9
					Middle	3.4	16.1 16.1	16.1	8.2 8.2	8.2	28.5 28.8	28.6	98.2 98.1	98.2	8.1 8.1	8.1		3.2 3.2	3.2		4.8 6.1	5.5	
					Bottom	5.8	16.1 16.1	16.1	8.1 8.2	8.2	29.1 28.5	28.8	98.0 97.9	98.0	8.1 8.1	8.1	8.1	3.5 3.5	3.5		5.4 4.0	4.7	
13-Jan-16	Sunny	Moderate	10:17	6.6	Surface	1.0	15.8 15.8	15.8	8.2 8.2	8.2	27.2 27.6	27.4	102.9 103.5	103.2	8.6 8.7	8.7	8.7	4.8 4.7	4.8	4.8	5.4 6.2	5.8	5.5
					Middle	3.3	15.8 15.8	15.8	8.2 8.2	8.2	27.6 27.4	27.5	103.4 103.1	103.3	8.7 8.7	8.7		4.8 4.8	4.8		5.9 4.3	5.1	
					Bottom	5.6	15.8 15.8	15.8	8.2 8.2	8.2	27.4 28.5	28.0	103.2 103.9	103.6	8.7 8.7	8.7	8.7	4.9 4.6	4.8		6.0 5.0	5.5	
15-Jan-16	Rainy	Moderate	11:30	6.6	Surface	1.0	15.6 15.5	15.6	8.1 8.1	8.1	27.5 26.4	26.9	102.2 102.1	102.2	8.6 8.7	8.7	8.7	2.5 2.5	2.5	2.6	3.3 3.1	3.2	3.2
					Middle	3.3	15.5 15.6	15.5	8.1 8.1	8.1	26.5 27.4	27.0	102.1 102.4	102.3	8.7 8.6	8.6		2.6 2.5	2.6		3.1 3.3	3.2	
					Bottom	5.6	15.5 15.5	15.5	8.1 8.1	8.1	26.3 27.0	26.7	102.1 102.3	102.2	8.7 8.6	8.6	8.6	2.6 2.6	2.6		3.5 2.9	3.2	
18-Jan-16	Sunny	Moderate	13:27	6.6	Surface	1.0	15.1 15.1	15.1	8.2 8.2	8.2	24.5 24.6	24.6	100.0 99.9	100.0	8.7 8.7	8.7	8.7	3.2 3.5	3.4	3.5	3.0 2.9	3.0	2.9
					Middle	3.3	15.3 15.2	15.3	8.2 8.2	8.2	24.9 24.8	24.9	99.3 99.4	99.4	8.5 8.6	8.6		3.0 2.9	3.0		2.9 2.8	2.9	
					Bottom	5.6	15.4 15.5	15.4	8.2 8.2	8.2	26.9 26.8	26.9	100.6 100.5	100.6	8.5 8.5	8.5	8.5	4.0 4.2	4.1		2.7 3.0	2.9	
20-Jan-16	Rainy	Moderate	15:49	6.7	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	27.3 27.1	27.2	102.0 102.1	102.1	8.7 8.7	8.7	8.7	1.2 1.2	1.2	1.3	3.4 3.5	3.5	3.3
					Middle	3.4	15.0 15.0	15.0	8.2 8.2	8.2	27.4 27.5	27.5	100.8 100.8	100.8	8.6 8.6	8.6		1.3 1.3	1.3		2.7 3.6	3.2	
					Bottom	5.7	15.0 15.0	15.0	8.2 8.2	8.2	28.3 27.5	27.9	99.6 100.2	99.9	8.5 8.6	8.5	8.5	1.5 1.4	1.5		3.3 3.2	3.3	

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:36	6.6	Surface	1.0	14.6 14.6	14.6	8.1 8.1	8.1	24.8 24.9	24.8	95.8 96.9	96.4	8.4 8.5	8.4	8.4	1.3 1.3	1.3	1.4	2.7 2.8	2.8	3.2
					Middle	3.3	14.6 14.6	14.6	8.1 8.1	8.1	25.2 25.2	25.2	94.3 96.6	95.5	8.2 8.4	8.3		1.5 1.4	1.5		2.8 2.1	2.5	
					Bottom	5.6	14.6 14.6	14.6	8.1 8.1	8.1	25.5 25.3	25.4	94.5 96.5	95.5	8.2 8.4	8.3	8.3	1.5 1.5	1.5		3.8 4.8	4.3	
25-Jan-16	Sunny	Moderate	08:52	6.8	Surface	1.0	12.6 12.7	12.6	8.3 8.3	8.3	29.7 29.2	29.5	98.9 98.7	98.8	8.7 8.7	8.7	8.7	8.1 8.2	8.2	8.3	12.3 12.6	12.5	13.7
					Middle	3.4	12.6 12.7	12.6	8.3 8.3	8.3	30.1 29.4	29.7	97.3 98.3	97.8	8.6 8.7	8.6		8.2 8.3	8.3		13.1 12.9	13.0	
					Bottom	5.8	12.6 12.6	12.6	8.3 8.3	8.3	30.6 29.5	30.1	97.1 97.2	97.2	8.6 8.6	8.6	8.6	8.5 8.5	8.5		15.4 15.9	15.7	
27-Jan-16	Cloudy	Moderate	09:47	6.6	Surface	1.0	11.6 11.6	11.6	8.3 8.3	8.3	32.5 34.3	33.4	98.3 98.6	98.5	8.7 8.6	8.7	8.7	12.9 13.4	13.2	13.5	13.0 12.6	12.8	13.9
					Middle	3.3	11.6 11.6	11.6	8.3 8.3	8.3	34.5 33.0	33.8	98.6 98.0	98.3	8.6 8.7	8.6		13.9 13.1	13.5		13.8 12.1	13.0	
					Bottom	5.6	11.6 11.6	11.6	8.3 8.3	8.3	34.8 33.6	34.2	98.8 98.2	98.5	8.6 8.6	8.6	8.6	14.2 13.6	13.9		15.3 16.4	15.9	
29-Jan-16	Rainy	Moderate	10:55	6.8	Surface	1.0	11.8 11.8	11.8	8.3 8.2	8.2	31.7 33.1	32.4	97.8 96.2	97.0	8.7 8.5	8.6	8.6	7.0 7.3	7.2	7.4	7.0 8.3	7.7	8.3
					Middle	3.4	11.8 11.8	11.8	8.2 8.2	8.2	33.5 32.2	32.9	98.2 98.3	98.3	8.6 8.7	8.6		7.7 7.4	7.6		9.0 8.6	8.8	
					Bottom	5.8	11.8 11.8	11.8	8.1 8.2	8.2	33.5 32.7	33.1	98.4 97.0	97.7	8.6 8.6	8.6	8.6	7.5 7.1	7.3		8.9 7.9	8.4	

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 CS4 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	17:09	16.7	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	28.5 28.5	28.5	90.6 92.0	91.3	7.0 7.1	7.1	7.0	4.4 4.8	4.6	5.8	3.9 3.4	3.7	3.8
					Middle	8.4	19.5 19.5	19.5	8.2 8.2	8.2	28.7 28.7	28.7	89.3 89.6	89.5	6.9 6.9	6.9		6.2 6.5	6.4		3.6 3.3	3.5	
					Bottom	15.7	19.5 19.5	19.5	8.2 8.2	8.2	28.7 28.7	28.7	88.8 90.3	89.6	6.9 7.0	6.9	6.9	6.5 6.3	6.4		4.4 4.0	4.2	
4-Jan-16	Sunny	Moderate	08:31	16.8	Surface	1.0	16.1 16.1	16.1	8.1 8.1	8.1	26.6 26.2	26.4	95.3 93.6	94.5	8.0 7.9	7.9	7.9	1.5 1.4	1.5	1.5	2.0 2.1	2.1	3.0
					Middle	8.4	16.1 16.1	16.1	8.1 8.0	8.0	30.4 30.6	30.5	94.8 95.5	95.2	7.8 7.8	7.8		1.5 1.4	1.5		2.2 3.8	3.0	
					Bottom	15.8	16.1 16.1	16.1	8.0 8.0	8.0	30.8 30.7	30.7	95.9 97.7	96.8	7.8 8.0	7.9	7.9	1.5 1.5	1.5		4.2 3.3	3.8	
6-Jan-16	Sunny	Moderate	10:36	15.9	Surface	1.0	16.4 16.5	16.5	8.1 8.1	8.1	21.4 21.3	21.4	95.2 95.2	95.2	8.2 8.2	8.2	8.1	1.2 1.2	1.2	1.4	1.8 1.8	1.8	2.7
					Middle	8.0	16.4 16.4	16.4	8.1 8.1	8.1	22.3 23.2	22.7	93.6 93.3	93.5	8.0 7.9	8.0		1.4 1.3	1.4		3.1 2.8	3.0	
					Bottom	14.9	16.4 16.4	16.4	8.0 8.0	8.0	26.2 26.6	26.4	94.4 93.6	94.0	7.9 7.8	7.8	7.8	1.6 1.5	1.6		3.0 3.6	3.3	
8-Jan-16	Sunny	Moderate	12:45	16.5	Surface	1.0	16.6 16.5	16.5	8.1 8.1	8.1	24.9 25.1	25.0	100.6 98.6	99.6	8.4 8.3	8.4	8.4	3.1 2.9	3.0	2.9	2.1 2.7	2.4	2.4
					Middle	8.3	16.4 16.4	16.4	8.1 8.1	8.1	26.2 26.6	26.4	100.4 97.8	99.1	8.4 8.1	8.3		2.8 2.7	2.8		2.3 2.2	2.3	
					Bottom	15.5	16.4 16.4	16.4	8.1 8.1	8.1	26.8 26.4	26.6	98.1 100.2	99.2	8.2 8.4	8.3	8.3	2.8 2.9	2.9		2.8 2.3	2.6	
11-Jan-16	Sunny	Moderate	13:07	15.6	Surface	1.0	16.2 16.2	16.2	8.3 8.2	8.3	31.1 31.7	31.4	100.9 101.5	101.2	8.1 8.2	8.2	8.2	2.0 2.1	2.1	2.2	3.4 4.2	3.8	4.1
					Middle	7.8	16.2 16.2	16.2	8.3 8.2	8.3	32.4 32.3	32.4	100.0 100.0	100.0	8.1 8.1	8.1		2.1 2.1	2.1		5.2 4.2	4.7	
					Bottom	14.6	16.4 16.3	16.3	8.3 8.2	8.3	30.4 31.0	30.7	99.2 99.7	99.5	8.1 8.1	8.1	8.1	2.4 2.4	2.4		4.3 3.4	3.9	
13-Jan-16	Sunny	Moderate	14:40	17.5	Surface	1.0	16.1 16.1	16.1	8.3 8.3	8.3	29.0 30.1	29.5	106.4 106.5	106.5	8.8 8.7	8.7	8.7	2.2 2.1	2.2	2.2	4.9 6.4	5.7	6.0
					Middle	8.8	15.9 15.9	15.9	8.3 8.3	8.3	30.9 30.1	30.5	105.5 105.7	105.6	8.7 8.7	8.7		2.1 2.2	2.2		6.0 6.0	6.0	
					Bottom	16.5	15.9 16.0	16.0	8.3 8.3	8.3	31.4 30.3	30.9	105.0 105.2	105.1	8.6 8.7	8.6	8.6	2.1 2.2	2.2		6.1 6.5	6.3	
15-Jan-16	Rainy	Moderate	16:22	16.3	Surface	1.0	15.3 15.3	15.3	8.0 8.0	8.0	24.3 25.8	25.0	101.1 101.1	101.1	8.7 8.6	8.6	8.6	2.2 2.2	2.2	2.3	1.4 1.5	1.5	1.6
					Middle	8.2	15.3 15.3	15.3	8.0 8.0	8.0	25.4 26.6	26.0	100.7 100.8	100.8	8.6 8.5	8.5		2.3 2.2	2.3		1.6 1.7	1.7	
					Bottom	15.3	15.3 15.4	15.3	8.0 8.0	8.0	26.0 28.2	27.1	98.8 98.6	98.7	8.5 8.5	8.5	8.5	2.4 2.4	2.4		1.6 1.6	1.6	
18-Jan-16	Sunny	Moderate	07:52	16.5	Surface	1.0	14.7 14.7	14.7	8.1 8.1	8.1	23.5 23.0	23.2	97.7 96.0	96.9	8.6 8.5	8.5	8.4	1.9 2.0	2.0	2.0	2.6 2.6	2.6	2.9
					Middle	8.3	15.3 15.4	15.4	8.1 8.1	8.1	25.0 24.6	24.8	96.8 95.8	96.3	8.3 8.2	8.3		2.0 1.9	2.0		3.2 3.7	3.5	
					Bottom	15.5	15.5 15.5	15.5	8.1 8.1	8.1	25.0 26.2	25.6	96.2 97.9	97.1	8.2 8.3	8.3	8.3	2.0 2.2	2.1		2.7 2.3	2.5	
20-Jan-16	Rainy	Moderate	10:24	16.1	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	27.9 27.8	27.8	100.9 98.6	99.8	8.6 8.4	8.5	8.5	1.1 1.2	1.2	1.3	3.8 4.4	4.1	4.4
					Middle	8.1	15.0 15.0	15.0	8.2 8.2	8.2	27.9 28.0	27.9	100.3 100.0	100.2	8.5 8.5	8.5		1.3 1.2	1.3		4.5 4.5	4.5	
					Bottom	15.1	15.0 15.0	15.0	8.2 8.1	8.2	27.9 29.4	28.7	100.2 100.7	100.5	8.5 8.5	8.5	8.5	1.3 1.3	1.3		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 CS4 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:57	16.5	Surface	1.0	14.6 14.6	14.6	8.1 8.1	8.1	27.3 28.3	27.8	97.3 96.2	96.8	8.4 8.2	8.3	8.3	1.6 1.5	1.6	1.8	3.9 3.5	3.7	3.9
					Middle	8.3	14.6 14.6	14.6	8.1 8.1	8.1	28.6 29.2	28.9	97.1 94.9	96.0	8.3 8.1	8.2		1.8 1.8	1.8		4.2 4.0	4.1	
					Bottom	15.5	14.6 14.6	14.6	8.0 8.1	8.1	29.8 28.5	29.1	94.9 96.9	95.9	8.0 8.3	8.2	8.2	1.9 1.9	1.9		3.0 4.5	3.8	
25-Jan-16	Sunny	Moderate	12:51	16.1	Surface	1.0	12.9 12.9	12.9	8.4 8.3	8.4	32.8 33.3	33.1	97.3 97.6	97.5	8.4 8.4	8.4	8.4	2.8 2.7	2.8	3.1	7.9 7.3	7.6	7.6
					Middle	8.1	12.9 12.8	12.9	8.3 8.4	8.4	33.7 32.9	33.3	97.0 97.2	97.1	8.4 8.4	8.4		2.9 3.0	3.0		7.8 7.8	7.8	
					Bottom	15.1	12.9 12.8	12.8	8.3 8.4	8.3	34.5 33.1	33.8	97.2 97.9	97.6	8.3 8.3	8.3	8.3	3.3 3.4	3.4		7.7 7.0	7.4	
27-Jan-16	Cloudy	Moderate	14:09	16.3	Surface	1.0	11.9 11.9	11.9	8.3 8.4	8.3	33.5 32.3	32.9	98.4 98.4	98.4	8.6 8.7	8.6	8.6	2.8 2.9	2.9	3.2	4.0 4.2	4.1	5.3
					Middle	8.2	11.8 11.7	11.8	8.3 8.3	8.3	33.8 32.6	33.2	98.1 97.4	97.8	8.6 8.6	8.6		3.2 3.3	3.3		5.2 6.2	5.7	
					Bottom	15.3	11.8 11.8	11.8	8.3 8.3	8.3	34.1 33.1	33.6	97.8 97.7	97.8	8.6 8.6	8.6	8.6	3.1 3.4	3.3		5.9 6.2	6.1	
29-Jan-16	Cloudy	Moderate	15:14	16.7	Surface	1.0	11.8 11.8	11.8	8.4 8.4	8.4	25.6 26.2	25.9	96.0 96.9	96.5	8.8 8.9	8.9	8.8	2.7 2.9	2.8	3.3	3.8 5.0	4.4	3.6
					Middle	8.4	11.8 11.8	11.8	8.3 8.4	8.3	32.2 31.5	31.9	96.6 96.7	96.7	8.5 8.6	8.6		3.5 3.4	3.5		3.6 2.9	3.3	
					Bottom	15.7	11.8 11.8	11.8	8.3 8.3	8.3	32.4 31.8	32.1	96.4 96.6	96.5	8.5 8.6	8.5	8.5	3.6 3.3	3.5		3.0 3.3	3.2	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS4 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	12:44	16.6	Surface	1.0	19.5 19.6	19.5	8.2 8.2	8.2	28.5 28.5	28.5	90.4 90.6	90.5	7.0 7.0	7.0	7.0	6.9 6.8	6.9	6.8	3.4 3.1	3.3	3.2
					Middle	8.3	19.5 19.5	19.5	8.2 8.2	8.2	28.6 28.6	28.6	89.2 88.7	89.0	6.9 6.9	6.9		7.0 7.0	7.0		2.8 2.7	2.8	
					Bottom	15.6	19.5 19.5	19.5	8.2 8.2	8.2	28.6 28.6	28.6	89.6 88.3	89.0	7.0 6.9	6.9	6.9	6.5 6.6	6.6		3.4 3.7	3.6	
4-Jan-16	Sunny	Moderate	13:42	17.1	Surface	1.0	16.4 16.3	16.3	8.1 8.1	8.1	29.0 28.9	28.9	95.4 96.4	95.9	7.8 7.9	7.9	7.8	3.3 3.4	3.4	4.9	2.5 2.6	2.6	3.5
					Middle	8.6	16.2 16.2	16.2	8.1 8.1	8.1	31.6 32.3	32.0	96.0 94.8	95.4	7.8 7.7	7.7		5.5 5.5	5.5		4.0 3.5	3.8	
					Bottom	16.1	16.2 16.2	16.2	8.1 8.1	8.1	32.6 32.0	32.3	93.4 95.0	94.2	7.6 7.7	7.6	7.6	5.9 5.6	5.8		3.0 4.9	4.0	
6-Jan-16	Sunny	Moderate	15:36	16.1	Surface	1.0	16.7 16.6	16.6	8.1 8.1	8.1	21.7 23.3	22.5	93.6 94.8	94.2	8.0 8.0	8.0	7.9	2.4 2.3	2.4	2.9	3.1 4.4	3.8	3.9
					Middle	8.1	16.4 16.4	16.4	8.1 8.1	8.1	27.8 29.0	28.4	95.6 94.4	95.0	7.8 7.8	7.8		2.9 3.0	3.0		4.7 3.9	4.3	
					Bottom	15.1	16.4 16.4	16.4	8.1 8.1	8.1	29.3 30.1	29.7	93.2 94.7	94.0	7.7 7.7	7.7	7.7	3.3 3.2	3.3		4.2 3.2	3.7	
8-Jan-16	Sunny	Moderate	16:18	16.5	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	28.7 27.9	28.3	98.3 98.0	98.2	8.0 8.1	8.1	8.0	3.2 3.5	3.4	3.9	2.8 2.7	2.8	3.1
					Middle	8.3	16.5 16.5	16.5	8.1 8.2	8.2	30.5 29.5	30.0	97.4 96.7	97.1	7.9 7.9	7.9		3.9 4.2	4.1		3.0 3.2	3.1	
					Bottom	15.5	16.4 16.4	16.4	8.1 8.1	8.1	31.1 29.6	30.4	98.3 97.0	97.7	8.0 7.9	7.9	7.9	4.2 4.2	4.2		4.1 2.6	3.4	
11-Jan-16	Rainy	Moderate	09:28	15.7	Surface	1.0	16.2 16.2	16.2	8.2 8.2	8.2	27.5 27.6	27.6	100.3 100.1	100.2	8.4 8.3	8.3	8.3	2.9 2.8	2.9	3.2	3.4 4.1	3.8	4.2
					Middle	7.9	16.1 16.2	16.1	8.2 8.2	8.2	27.8 27.5	27.7	99.9 98.3	99.1	8.3 8.2	8.2		3.1 3.0	3.1		3.7 4.6	4.2	
					Bottom	14.7	16.1 16.1	16.1	8.2 8.1	8.2	27.9 27.8	27.9	98.2 97.6	97.9	8.2 8.1	8.1	8.1	3.4 3.5	3.5		4.4 4.9	4.7	
13-Jan-16	Sunny	Moderate	10:39	16.4	Surface	1.0	15.8 15.8	15.8	8.2 8.2	8.2	26.6 26.7	26.7	103.0 102.9	103.0	8.7 8.7	8.7	8.7	6.2 6.5	6.4	6.6	6.7 4.9	5.8	5.7
					Middle	8.2	15.8 15.8	15.8	8.2 8.2	8.2	26.7 26.8	26.7	102.8 102.9	102.9	8.7 8.7	8.7		6.7 6.6	6.7		5.7 5.8	5.8	
					Bottom	15.4	15.8 15.8	15.8	8.2 8.2	8.2	26.6 26.7	26.7	102.8 102.5	102.7	8.7 8.6	8.7	8.7	6.6 6.6	6.6		5.5 5.5	5.5	
15-Jan-16	Rainy	Moderate	11:48	16.3	Surface	1.0	15.5 15.6	15.6	8.1 8.1	8.1	26.1 25.1	25.6	101.9 102.3	102.1	8.7 8.7	8.7	8.7	2.6 2.6	2.6	2.7	2.6 3.2	2.9	3.0
					Middle	8.2	15.6 15.5	15.6	8.1 8.1	8.1	26.1 25.9	26.0	102.1 102.0	102.1	8.7 8.7	8.7		2.7 2.7	2.7		2.5 3.5	3.0	
					Bottom	15.3	15.5 15.5	15.5	8.1 8.1	8.1	26.1 26.1	26.1	101.9 101.9	101.9	8.7 8.7	8.7	8.7	2.7 2.8	2.8		2.8 3.4	3.1	
18-Jan-16	Sunny	Moderate	13:05	16.1	Surface	1.0	15.1 15.1	15.1	8.2 8.2	8.2	25.7 25.1	25.4	98.6 98.9	98.8	8.5 8.5	8.5	8.4	2.8 3.0	2.9	4.1	3.0 2.8	2.9	2.8
					Middle	8.1	15.6 15.6	15.6	8.2 8.2	8.2	27.9 28.4	28.2	99.0 99.9	99.5	8.3 8.4	8.3		4.4 4.4	4.4		2.9 2.0	2.5	
					Bottom	15.1	15.5 15.5	15.5	8.2 8.2	8.2	28.5 28.3	28.4	100.6 100.2	100.4	8.4 8.4	8.4	8.4	4.8 5.0	4.9		3.0 2.9	3.0	
20-Jan-16	Rainy	Moderate	15:27	16.2	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	28.8 28.0	28.4	100.3 100.5	100.4	8.5 8.5	8.5	8.5	1.0 1.0	1.0	1.0	3.7 3.4	3.6	4.1
					Middle	8.1	15.0 15.0	15.0	8.2 8.2	8.2	29.4 28.3	28.9	100.3 100.3	100.3	8.5 8.5	8.5		1.0 1.0	1.0		4.0 4.7	4.4	
					Bottom	15.2	15.0 15.0	15.0	8.2 8.2	8.2	30.2 28.8	29.5	100.4 100.1	100.3	8.4 8.5	8.5	8.5	1.0 1.0	1.0		3.3 5.4	4.4	

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 CS4 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:16	16.5	Surface	1.0	14.6 14.6	14.6	8.1 8.1	8.1	25.7 25.3	25.5	96.6 96.4	96.5	8.4 8.4	8.4	8.4	1.4 1.6	1.5	1.5	2.5 3.8	3.2	4.0
					Middle	8.3	14.6 14.6	14.6	8.1 8.1	8.1	26.1 26.2	26.2	95.0 96.3	95.7	8.2 8.3	8.3		1.5 1.6	1.6		4.0 4.5	4.3	
					Bottom	15.5	14.6 14.6	14.6	8.1 8.1	8.1	25.9 26.1	26.0	94.6 94.3	94.5	8.2 8.2	8.2	8.2	1.5 1.5	1.5		4.6 4.4	4.5	
25-Jan-16	Sunny	Moderate	09:13	16.3	Surface	1.0	12.7 12.7	12.7	8.4 8.4	8.4	28.4 28.4	28.4	97.6 96.2	96.9	8.7 8.6	8.6	8.6	8.4 8.5	8.5	8.7	11.2 11.2	11.2	10.7
					Middle	8.2	12.7 12.7	12.7	8.4 8.3	8.4	28.4 28.5	28.4	96.0 96.5	96.3	8.5 8.6	8.6		8.7 8.5	8.6		10.3 10.9	10.6	
					Bottom	15.3	12.7 12.7	12.7	8.3 8.4	8.4	28.5 28.5	28.5	97.8 97.0	97.4	8.7 8.6	8.7	8.7	8.9 8.9	8.9		10.9 9.5	10.2	
27-Jan-16	Cloudy	Moderate	10:07	16.5	Surface	1.0	11.6 11.6	11.6	8.4 8.3	8.4	31.2 31.4	31.3	98.2 97.8	98.0	8.8 8.7	8.7	8.7	12.8 12.1	12.5	13.4	12.3 12.6	12.5	13.5
					Middle	8.3	11.6 11.6	11.6	8.4 8.3	8.3	31.2 31.7	31.4	97.9 95.6	96.8	8.7 8.5	8.6		13.0 12.6	12.8		14.2 14.0	14.1	
					Bottom	15.5	11.6 11.6	11.6	8.3 8.4	8.3	31.8 31.3	31.6	97.9 97.7	97.8	8.7 8.7	8.7	8.7	15.2 14.5	14.9		13.5 14.3	13.9	
29-Jan-16	Rainy	Moderate	11:13	16.2	Surface	1.0	11.8 11.8	11.8	8.3 8.3	8.3	30.3 29.8	30.0	95.5 97.8	96.7	8.6 8.8	8.7	8.7	7.3 7.2	7.3	9.0	6.6 6.1	6.4	7.2
					Middle	8.1	11.8 11.8	11.8	8.2 8.3	8.3	30.7 30.3	30.5	97.7 97.5	97.6	8.7 8.7	8.7		10.1 9.4	9.8		7.2 6.3	6.8	
					Bottom	15.2	11.8 11.8	11.8	8.2 8.3	8.3	30.8 30.4	30.6	97.8 97.5	97.7	8.7 8.7	8.7	8.7	10.2 9.6	9.9		9.1 7.6	8.4	

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 CS(Mf)5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	18:40	13.4	Surface	1.0	16.2 16.2	16.2	8.2 8.2	8.2	27.8 27.8	27.8	92.6 92.4	92.5	7.7 7.7	7.7	7.7	2.7 2.8	2.8	3.7	3.0 2.2	2.6	3.2
					Middle	6.7	16.1 16.1	16.1	8.2 8.2	8.2	28.5 28.5	28.5	91.3 91.5	91.4	7.6 7.6	7.6		4.0 4.1	4.1		3.4 2.6	3.0	
					Bottom	12.4	16.1 16.1	16.1	8.2 8.2	8.2	28.5 28.5	28.5	94.3 94.7	94.5	7.8 7.9	7.8	7.8	4.0 4.2	4.1		3.8 4.2	4.0	
4-Jan-16	Sunny	Moderate	06:32	13.3	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	27.1 27.1	27.1	91.0 94.0	92.5	7.1 7.3	7.2	7.1	1.8 1.9	1.9	1.8	2.3 2.3	2.3	2.8
					Middle	6.7	19.7 19.7	19.7	8.1 8.1	8.1	27.8 27.9	27.9	90.7 89.6	90.2	7.0 7.0	7.0		1.7 1.7	1.7		3.4 2.1	2.8	
					Bottom	12.3	19.7 19.7	19.7	8.1 8.1	8.1	27.9 28.0	27.9	90.6 90.8	90.7	7.0 7.0	7.0	7.0	1.8 1.7	1.8		3.0 3.7	3.4	
6-Jan-16	Sunny	Moderate	09:56	12.3	Surface	1.0	19.9 20.0	20.0	8.1 8.1	8.1	25.7 25.7	25.7	88.0 89.4	88.7	6.9 7.0	6.9	6.9	1.7 1.7	1.7	1.8	2.2 2.2	2.2	2.4
					Middle	6.2	19.9 19.9	19.9	8.1 8.1	8.1	28.3 28.3	28.3	87.6 88.3	88.0	6.8 6.8	6.8		1.8 1.7	1.8		2.4 2.9	2.7	
					Bottom	11.3	19.9 19.9	19.9	8.1 8.1	8.1	28.3 28.3	28.3	87.8 87.6	87.7	6.8 6.8	6.8	6.8	1.7 1.8	1.8		2.7 2.1	2.4	
8-Jan-16	Sunny	Moderate	11:50	12.6	Surface	1.0	20.1 20.1	20.1	8.2 8.2	8.2	28.1 27.9	28.0	92.8 95.6	94.2	7.1 7.4	7.3	7.2	1.4 1.4	1.4	1.3	2.5 3.4	3.0	2.9
					Middle	6.3	20.0 20.0	20.0	8.2 8.2	8.2	28.7 28.7	28.7	91.6 91.1	91.4	7.0 7.0	7.0		1.2 1.2	1.2		3.3 2.6	3.0	
					Bottom	11.6	20.0 20.0	20.0	8.2 8.2	8.2	28.8 28.8	28.8	89.8 90.9	90.4	6.9 7.0	6.9	6.9	1.3 1.3	1.3		2.6 2.8	2.7	
11-Jan-16	Sunny	Moderate	14:06	12.5	Surface	1.0	20.2 20.0	20.1	8.2 8.2	8.2	28.2 28.3	28.3	96.9 92.7	94.8	7.4 7.1	7.3	7.3	1.5 1.4	1.5	1.6	2.7 3.7	3.2	3.4
					Middle	6.3	19.8 19.8	19.8	8.2 8.2	8.2	29.0 29.0	29.0	92.7 93.6	93.2	7.1 7.2	7.2		1.4 1.5	1.5		3.2 2.8	3.0	
					Bottom	11.5	19.8 19.8	19.8	8.2 8.2	8.2	29.1 29.1	29.1	92.8 90.9	91.9	7.1 7.0	7.1	7.1	1.7 1.8	1.8		4.8 3.2	4.0	
13-Jan-16	Sunny	Moderate	15:38	12.7	Surface	1.0	19.9 19.9	19.9	8.2 8.2	8.2	27.6 27.6	27.6	97.3 100.0	98.7	7.5 7.8	7.6	7.6	1.7 1.7	1.7	1.9	6.7 6.0	6.4	5.9
					Middle	6.4	19.7 19.7	19.7	8.2 8.2	8.2	28.3 28.3	28.3	97.5 96.2	96.9	7.6 7.5	7.5		2.0 1.8	1.9		5.8 4.0	4.9	
					Bottom	11.7	19.7 19.7	19.7	8.2 8.2	8.2	28.2 28.3	28.3	98.2 98.2	98.2	7.6 7.6	7.6	7.6	2.0 2.2	2.1		6.3 6.3	6.3	
15-Jan-16	Rainy	Moderate	17:20	12.0	Surface	1.0	19.1 19.1	19.1	8.3 8.3	8.3	27.8 27.9	27.8	98.4 96.5	97.5	7.7 7.5	7.6	7.6	1.8 1.6	1.7	1.8	1.7 1.8	1.8	2.2
					Middle	6.0	19.2 19.2	19.2	8.3 8.2	8.3	28.1 28.1	28.1	96.1 97.1	96.6	7.5 7.6	7.6		1.7 1.8	1.8		2.4 2.2	2.3	
					Bottom	11.0	19.3 19.3	19.3	8.2 8.2	8.2	28.3 28.3	28.3	96.2 95.7	96.0	7.6 7.5	7.5	7.5	1.8 1.8	1.8		2.4 2.4	2.4	
18-Jan-16	Sunny	Moderate	07:06	12.2	Surface	1.0	18.1 18.4	18.3	8.2 8.2	8.2	25.3 25.2	25.3	91.1 91.2	91.2	7.4 7.4	7.4	7.3	1.5 1.4	1.5	1.6	2.5 2.7	2.6	2.6
					Middle	6.1	19.2 19.2	19.2	8.2 8.2	8.2	28.1 28.0	28.0	92.2 91.5	91.9	7.2 7.2	7.2		1.6 1.6	1.6		2.7 2.9	2.8	
					Bottom	11.2	19.2 19.2	19.2	8.1 8.2	8.2	28.1 28.2	28.1	91.0 91.6	91.3	7.1 7.2	7.1	7.1	1.6 1.6	1.6		2.3 2.7	2.5	
20-Jan-16	Rainy	Moderate	09:53	13.6	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	28.8 28.8	28.8	91.8 93.4	92.6	7.2 7.3	7.3	7.3	1.8 1.7	1.8	1.8	3.9 3.4	3.7	3.7
					Middle	6.8	18.8 18.8	18.8	8.2 8.2	8.2	28.8 28.8	28.8	93.6 92.2	92.9	7.3 7.2	7.3		1.8 1.8	1.8		3.5 3.1	3.3	
					Bottom	12.6	18.8 18.8	18.8	8.2 8.2	8.2	28.9 28.9	28.9	93.5 91.0	92.3	7.3 7.1	7.2	7.2	1.6 1.8	1.7		4.5 3.5	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 CS(Mf)5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	11:49	13.4	Surface	1.0	18.3 18.3	18.3	8.3 8.3	8.3	28.3 28.4	28.4	92.6 93.2	92.9	7.3 7.4	7.4	7.3	1.2 1.2	1.2	1.4	4.7 4.1	4.4	4.4
					Middle	6.7	18.3 18.5	18.4	8.2 8.2	8.2	28.4 28.9	28.6	90.0 91.7	90.9	7.2 7.3	7.2		1.3 1.4	1.4		4.7 3.7	4.2	
					Bottom	12.4	18.5 18.4	18.4	8.2 8.2	8.2	29.2 28.7	28.9	88.9 88.4	88.7	7.0 7.0	7.0	7.0	1.5 1.4	1.5		4.6 4.5	4.6	
25-Jan-16	Sunny	Moderate	14:15	12.8	Surface	1.0	16.9 16.9	16.9	8.4 8.4	8.4	29.4 29.4	29.4	92.9 91.8	92.4	7.5 7.5	7.5	7.5	2.3 2.4	2.4	2.5	4.7 4.5	4.6	4.6
					Middle	6.4	16.8 16.8	16.8	8.3 8.4	8.4	29.6 29.6	29.6	92.7 91.2	92.0	7.5 7.4	7.5		2.5 2.5	2.5		4.2 4.1	4.2	
					Bottom	11.8	16.8 16.8	16.8	8.4 8.3	8.3	29.6 29.8	29.7	90.4 91.9	91.2	7.3 7.5	7.4	7.4	2.5 2.5	2.5		4.9 5.1	5.0	
27-Jan-16	Cloudy	Moderate	14:55	12.3	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	29.9 29.9	29.9	90.3 91.3	90.8	7.4 7.5	7.4	7.4	2.5 2.4	2.5	2.6	3.7 4.0	3.9	4.8
					Middle	6.2	16.3 16.3	16.3	8.3 8.3	8.3	30.0 30.0	30.0	91.3 90.0	90.7	7.5 7.4	7.4		2.6 2.7	2.7		4.6 4.0	4.3	
					Bottom	11.3	16.3 16.3	16.3	8.3 8.3	8.3	30.0 30.0	30.0	89.8 91.2	90.5	7.3 7.5	7.4	7.4	2.6 2.5	2.6		5.9 6.3	6.1	
29-Jan-16	Cloudy	Moderate	16:29	12.4	Surface	1.0	15.8 15.8	15.8	8.2 8.2	8.2	29.1 29.1	29.1	92.9 91.5	92.2	7.7 7.6	7.6	7.6	2.9 2.9	2.9	2.8	3.9 4.0	4.0	3.8
					Middle	6.2	16.0 16.0	16.0	8.2 8.2	8.2	29.5 29.5	29.5	92.0 90.7	91.4	7.6 7.5	7.6		2.7 2.9	2.8		4.0 3.7	3.9	
					Bottom	11.4	16.1 15.9	16.0	8.2 8.2	8.2	29.6 29.5	29.6	91.4 90.2	90.8	7.5 7.4	7.5	7.5	2.7 2.9	2.8		3.7 3.0	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 CS(Mf)5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	11:48	13.6	Surface	1.0	16.0 16.0	16.0	8.1 8.1	8.1	31.2 31.2	31.2	92.7 92.4	92.6	7.5 7.5	7.5	7.5	3.1 3.3	3.2	4.1	2.5 2.3	2.4	3.0
					Middle	6.8	16.1 16.1	16.1	8.1 8.1	8.1	32.5 32.6	32.6	92.6 92.7	92.7	7.5 7.4	7.4		4.2 4.2	4.2		2.8 3.3	3.1	
					Bottom	12.6	16.2 16.2	16.2	8.0 8.1	8.1	33.1 33.1	33.1	95.1 95.4	95.3	7.7 7.6	7.6	7.6	4.7 4.8	4.8		3.3 3.5	3.4	
4-Jan-16	Sunny	Moderate	14:32	13.6	Surface	1.0	19.9 19.8	19.8	8.2 8.2	8.2	27.5 27.6	27.6	91.8 91.0	91.4	7.1 7.1	7.1	7.0	1.6 1.7	1.7	1.8	1.3 1.4	1.4	2.1
					Middle	6.8	19.7 19.7	19.7	8.2 8.2	8.2	28.9 29.0	29.0	89.6 87.5	88.6	6.9 6.8	6.8		1.7 1.8	1.8		2.2 2.4	2.3	
					Bottom	12.6	19.7 19.7	19.7	8.2 8.2	8.2	28.9 29.0	29.0	90.3 89.2	89.8	7.0 6.9	6.9	6.9	1.7 1.8	1.8		2.6 2.3	2.5	
6-Jan-16	Sunny	Moderate	15:58	12.8	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	26.1 26.3	26.2	89.7 89.3	89.5	7.0 6.9	6.9	6.8	2.3 2.3	2.3	2.5	3.7 3.6	3.7	3.4
					Middle	6.4	19.9 19.9	19.9	8.1 8.1	8.1	29.3 29.3	29.3	88.4 85.4	86.9	6.8 6.6	6.7		2.5 2.5	2.5		3.8 2.7	3.3	
					Bottom	11.8	19.9 20.0	19.9	8.1 8.1	8.1	29.4 29.2	29.3	86.2 89.6	87.9	6.6 6.9	6.7	6.7	2.5 2.6	2.6		3.5 3.1	3.3	
8-Jan-16	Sunny	Moderate	17:16	12.5	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	28.6 28.6	28.6	95.1 96.4	95.8	7.3 7.4	7.3	7.3	1.8 1.6	1.7	1.8	2.7 2.2	2.5	2.5
					Middle	6.3	20.1 20.1	20.1	8.2 8.2	8.2	29.0 28.8	28.9	94.1 94.3	94.2	7.2 7.2	7.2		1.9 1.8	1.9		3.1 2.5	2.8	
					Bottom	11.5	20.1 20.1	20.1	8.2 8.2	8.2	29.2 29.2	29.2	93.6 94.7	94.2	7.2 7.2	7.2	7.2	1.7 1.7	1.7		2.1 2.2	2.2	
11-Jan-16	Rainy	Moderate	08:16	12.7	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	26.9 26.9	26.9	94.1 93.5	93.8	7.3 7.3	7.3	7.3	4.1 4.1	4.1	4.2	5.3 3.4	4.4	5.8
					Middle	6.4	19.8 19.8	19.8	8.2 8.2	8.2	27.3 27.2	27.2	92.5 92.9	92.7	7.2 7.2	7.2		4.2 4.1	4.2		4.5 5.9	5.2	
					Bottom	11.7	19.8 19.8	19.8	8.2 8.2	8.2	27.2 27.2	27.2	91.6 92.3	92.0	7.1 7.2	7.2	7.2	4.2 4.3	4.3		7.9 7.5	7.7	
13-Jan-16	Sunny	Moderate	09:20	12.9	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	27.9 27.8	27.8	92.2 94.7	93.5	7.2 7.4	7.3	7.3	3.0 2.8	2.9	4.5	5.9 7.4	6.7	6.7
					Middle	6.5	19.6 19.6	19.6	8.2 8.2	8.2	28.3 28.2	28.3	92.3 94.4	93.4	7.2 7.3	7.2		4.8 5.3	5.1		5.6 6.8	6.2	
					Bottom	11.9	19.6 19.6	19.6	8.2 8.2	8.2	28.3 28.2	28.2	92.1 95.7	93.9	7.1 7.4	7.3	7.3	5.3 5.5	5.4		6.9 7.7	7.3	
15-Jan-16	Rainy	Moderate	10:51	12.7	Surface	1.0	19.3 19.3	19.3	8.2 8.2	8.2	27.7 27.4	27.6	96.2 96.7	96.5	7.5 7.6	7.5	7.5	8.2 8.4	8.3	8.4	3.4 2.6	3.0	3.1
					Middle	6.4	19.4 19.4	19.4	8.2 8.2	8.2	27.8 27.9	27.8	96.4 95.9	96.2	7.5 7.5	7.5		8.5 8.2	8.4		3.6 3.0	3.3	
					Bottom	11.7	19.3 19.3	19.3	8.2 8.2	8.2	27.8 27.8	27.8	95.7 95.3	95.5	7.5 7.5	7.5	7.5	8.3 8.5	8.4		2.8 3.0	2.9	
18-Jan-16	Sunny	Moderate	13:57	12.6	Surface	1.0	18.6 18.7	18.6	8.3 8.3	8.3	26.6 26.5	26.5	94.3 93.4	93.9	7.5 7.5	7.5	7.4	1.3 1.3	1.3	1.4	2.7 3.6	3.2	2.9
					Middle	6.3	18.9 19.0	19.0	8.2 8.2	8.2	28.9 28.8	28.9	93.4 93.1	93.3	7.3 7.2	7.3		1.4 1.3	1.4		3.0 2.2	2.6	
					Bottom	11.6	19.0 19.1	19.1	8.2 8.2	8.2	29.5 29.3	29.4	92.6 92.0	92.3	7.2 7.2	7.2	7.2	1.6 1.6	1.6		3.3 2.2	2.8	
20-Jan-16	Rainy	Moderate	15:52	13.8	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	29.4 29.5	29.5	95.2 93.1	94.2	7.4 7.3	7.4	7.4	1.7 1.7	1.7	1.9	2.3 3.3	2.8	3.3
					Middle	6.9	18.8 18.8	18.8	8.2 8.2	8.2	29.6 29.5	29.6	92.0 94.9	93.5	7.2 7.4	7.3		1.9 2.0	2.0		3.1 2.4	2.8	
					Bottom	12.8	18.8 18.8	18.8	8.2 8.2	8.2	29.5 29.6	29.5	96.9 92.5	94.7	7.6 7.2	7.4	7.4	2.1 1.9	2.0		5.1 3.4	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)5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	17:30	13.4	Surface	1.0	18.3 18.3	18.3	8.3 8.3	8.3	28.4 28.4	28.4	91.5 91.8	91.7	7.3 7.3	7.3	7.3	1.1 1.2	1.2	1.3	4.8 4.0	4.4	4.5
					Middle	6.7	18.3 18.3	18.3	8.3 8.2	8.3	28.4 28.4	28.4	91.1 91.3	91.2	7.2 7.2	7.2		1.2 1.2	1.2		4.5 4.6	4.6	
					Bottom	12.4	18.3 18.3	18.3	8.3 8.2	8.3	28.5 28.5	28.5	90.6 90.4	90.5	7.2 7.2	7.2	7.2	1.4 1.3	1.4		4.8 4.1	4.5	
25-Jan-16	Sunny	Moderate	08:18	12.4	Surface	1.0	16.6 16.6	16.6	8.3 8.3	8.3	29.4 29.3	29.4	90.3 90.7	90.5	7.4 7.4	7.4	7.4	6.4 6.5	6.5	6.5	12.2 12.5	12.4	12.5
					Middle	6.2	16.6 16.6	16.6	8.3 8.3	8.3	29.4 29.3	29.4	89.2 89.4	89.3	7.3 7.3	7.3		6.6 6.6	6.6		11.5 13.2	12.4	
					Bottom	11.4	16.6 16.6	16.6	8.3 8.3	8.3	29.3 29.4	29.3	89.1 88.8	89.0	7.3 7.2	7.3	7.3	6.5 6.4	6.5		11.7 13.4	12.6	
27-Jan-16	Cloudy	Moderate	08:59	12.8	Surface	1.0	16.0 16.0	16.0	8.3 8.2	8.3	28.9 28.8	28.8	90.1 89.3	89.7	7.5 7.4	7.4	7.4	4.5 4.4	4.5	4.5	4.3 4.7	4.5	5.2
					Middle	6.4	15.8 15.8	15.8	8.2 8.3	8.3	29.0 29.0	29.0	89.1 89.0	89.1	7.4 7.4	7.4		4.5 4.4	4.5		4.4 5.9	5.2	
					Bottom	11.8	15.8 15.9	15.9	8.2 8.3	8.3	29.0 29.0	29.0	88.9 88.7	88.8	7.4 7.4	7.4	7.4	4.6 4.6	4.6		6.3 5.4	5.9	
29-Jan-16	Rainy	Moderate	10:15	12.5	Surface	1.0	15.5 15.5	15.5	8.2 8.2	8.2	27.6 27.6	27.6	90.2 91.1	90.7	7.6 7.7	7.6	7.6	6.6 6.7	6.7	8.1	3.4 2.1	2.8	3.1
					Middle	6.3	15.6 15.6	15.6	8.2 8.2	8.2	27.8 27.9	27.8	89.6 90.5	90.1	7.5 7.6	7.6		8.8 8.5	8.7		2.9 2.8	2.9	
					Bottom	11.5	15.6 15.6	15.6	8.2 8.2	8.2	27.8 27.8	27.8	90.1 89.1	89.6	7.6 7.5	7.5	7.5	8.8 8.9	8.9		3.3 3.9	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 CS6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	18:45	10.1	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	30.0 30.0	30.0	87.9 89.6	88.8	6.7 6.9	6.8	6.9	2.1 2.0	2.1	2.2	2.7 3.7	3.2	3.0
					Middle	5.1	19.7 19.7	19.7	8.2 8.2	8.2	30.0 30.0	30.0	90.7 89.6	90.2	7.0 6.9	6.9		2.1 2.0	2.1		2.2 3.1	2.7	
					Bottom	9.1	19.7 19.7	19.7	8.2 8.2	8.2	30.0 30.0	30.0	93.0 92.2	92.6	7.1 7.1	7.1	7.1	2.4 2.6	2.5		2.8 3.2	3.0	
4-Jan-16	Sunny	Moderate	06:50	10.2	Surface	1.0	16.1 16.1	16.1	8.0 8.0	8.0	30.9 30.9	30.9	95.8 95.9	95.9	7.8 7.8	7.8	7.8	1.4 1.5	1.5	1.5	2.5 2.1	2.3	3.0
					Middle	5.1	16.2 16.2	16.2	8.0 8.0	8.0	32.5 32.3	32.4	95.7 95.7	95.7	7.7 7.7	7.7		1.5 1.5	1.5		2.3 2.4	2.4	
					Bottom	9.2	16.2 16.2	16.2	8.0 8.0	8.0	33.2 33.2	33.2	95.4 93.9	94.7	7.7 7.6	7.6	7.6	1.5 1.5	1.5		4.1 4.7	4.4	
6-Jan-16	Sunny	Moderate	08:57	10.2	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	31.4 31.4	31.4	95.1 96.8	96.0	7.7 7.7	7.7	7.7	1.6 1.5	1.6	1.8	2.2 2.2	2.2	2.5
					Middle	5.1	16.4 16.4	16.4	8.0 8.0	8.0	32.9 31.7	32.3	94.3 93.8	94.1	7.6 7.6	7.6		1.7 1.7	1.7		2.8 2.2	2.5	
					Bottom	9.2	16.4 16.4	16.4	8.0 8.0	8.0	33.3 33.0	33.2	94.2 93.7	94.0	7.6 7.5	7.5	7.5	1.9 2.1	2.0		2.8 2.6	2.7	
8-Jan-16	Sunny	Moderate	11:02	10.3	Surface	1.0	16.5 16.5	16.5	8.1 8.1	8.1	33.1 33.1	33.1	98.9 99.1	99.0	7.9 7.9	7.9	7.9	1.9 1.8	1.9	1.9	1.8 1.6	1.7	2.1
					Middle	5.2	16.5 16.5	16.5	8.1 8.1	8.1	33.3 33.3	33.3	98.6 98.8	98.7	7.9 7.9	7.9		2.0 2.1	2.1		2.2 2.6	2.4	
					Bottom	9.3	16.5 16.5	16.5	8.1 8.1	8.1	33.3 33.3	33.3	98.7 98.9	98.8	7.9 7.9	7.9	7.9	1.8 1.7	1.8		2.5 2.1	2.3	
11-Jan-16	Sunny	Moderate	14:29	10.4	Surface	1.0	16.4 16.4	16.4	8.2 8.2	8.2	26.7 28.0	27.3	99.8 99.4	99.6	8.3 8.2	8.3	8.3	1.2 1.1	1.2	1.4	2.6 4.1	3.4	3.8
					Middle	5.2	16.3 16.3	16.3	8.2 8.2	8.2	28.9 27.0	27.9	99.2 99.5	99.4	8.2 8.3	8.2		1.3 1.4	1.4		4.6 4.8	4.7	
					Bottom	9.4	16.3 16.3	16.3	8.2 8.2	8.2	27.4 31.3	29.3	99.6 99.4	99.5	8.3 8.1	8.2	8.2	1.5 1.5	1.5		3.8 3.0	3.4	
13-Jan-16	Sunny	Moderate	16:22	10.5	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	25.5 26.9	26.2	103.3 105.0	104.2	8.7 8.8	8.7	8.6	1.4 1.6	1.5	1.5	7.7 6.3	7.0	6.1
					Middle	5.3	16.2 16.2	16.2	8.2 8.2	8.2	26.1 29.4	27.8	101.4 103.4	102.4	8.5 8.5	8.5		1.5 1.6	1.6		5.1 5.0	5.1	
					Bottom	9.5	16.2 16.1	16.2	8.2 8.2	8.2	31.5 26.3	28.9	104.0 100.5	102.3	8.5 8.4	8.4	8.4	1.5 1.5	1.5		6.0 6.6	6.3	
15-Jan-16	Rainy	Moderate	17:51	10.2	Surface	1.0	15.6 15.7	15.7	8.1 8.1	8.1	25.8 25.4	25.6	100.1 103.2	101.7	8.5 8.6	8.6	8.6	1.1 1.1	1.1	1.2	1.2 1.3	1.3	2.1
					Middle	5.1	15.8 15.8	15.8	8.1 8.1	8.1	27.2 25.9	26.5	100.5 99.8	100.2	8.5 8.5	8.5		1.2 1.2	1.2		2.3 2.2	2.3	
					Bottom	9.2	15.8 15.8	15.8	8.1 8.1	8.1	28.7 26.1	27.4	100.2 99.2	99.7	8.4 8.4	8.4	8.4	1.3 1.2	1.3		2.8 2.4	2.6	
18-Jan-16	Sunny	Moderate	06:13	10.2	Surface	1.0	15.1 15.1	15.1	8.0 7.9	8.0	32.4 32.4	32.4	96.7 98.7	97.7	8.0 8.2	8.1	8.1	1.7 1.8	1.8	1.8	3.9 4.4	4.2	3.9
					Middle	5.1	15.3 15.3	15.3	7.9 7.9	7.9	33.0 33.1	33.1	99.0 98.5	98.8	8.1 8.1	8.1		1.8 1.8	1.8		3.9 4.1	4.0	
					Bottom	9.2	15.2 15.3	15.3	7.9 7.9	7.9	33.1 33.2	33.1	99.0 98.6	98.8	8.1 8.1	8.1	8.1	1.7 1.6	1.7		3.1 4.1	3.6	
20-Jan-16	Rainy	Moderate	08:45	10.3	Surface	1.0	15.2 15.1	15.2	8.1 8.1	8.1	34.1 34.0	34.1	98.5 98.5	98.5	8.0 8.0	8.0	8.0	1.5 1.6	1.6	1.6	2.8 3.1	3.0	3.9
					Middle	5.2	15.2 15.2	15.2	8.1 8.1	8.1	34.1 34.2	34.2	96.4 96.9	96.7	7.9 7.9	7.9		1.6 1.6	1.6		4.9 4.9	4.9	
					Bottom	9.3	15.2 15.2	15.2	8.1 8.1	8.1	34.2 34.2	34.2	96.5 96.3	96.4	7.9 7.9	7.9	7.9	1.7 1.6	1.7		4.1 3.6	3.9	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	11:11	10.3	Surface	1.0	14.9 14.9	14.9	8.1 8.1	8.1	34.2 34.2	34.2	95.3 95.1	95.2	7.8 7.8	7.8	7.8	1.3 1.4	1.4	1.5	2.8 3.2	3.0	3.6
					Middle	5.2	14.9 14.9	14.9	8.1 8.1	8.1	34.2 34.2	34.2	94.9 95.0	95.0	7.8 7.8	7.8		1.4 1.5	1.5		4.0 3.7	3.9	
					Bottom	9.3	14.9 14.9	14.9	8.1 8.1	8.1	34.2 34.2	34.2	95.0 94.7	94.9	7.8 7.8	7.8	7.8	1.5 1.4	1.5		3.8 4.2	4.0	
25-Jan-16	Sunny	Moderate	14:39	10.1	Surface	1.0	12.5 12.5	12.5	8.4 8.4	8.4	27.6 27.6	27.6	97.8 97.5	97.7	8.8 8.8	8.8	8.8	2.6 2.6	2.6	2.8	5.9 6.1	6.0	6.5
					Middle	5.1	12.5 12.4	12.4	8.3 8.4	8.4	27.6 27.6	27.6	97.3 97.3	97.3	8.7 8.7	8.7		2.8 2.7	2.8		6.9 6.8	6.9	
					Bottom	9.1	12.4 12.4	12.4	8.3 8.4	8.3	27.6 27.6	27.6	97.3 97.4	97.4	8.7 8.7	8.7	8.7	2.9 2.9	2.9		6.5 6.5	6.5	
27-Jan-16	Cloudy	Moderate	15:49	10.2	Surface	1.0	12.8 12.8	12.8	8.4 8.3	8.3	28.6 29.9	29.3	94.6 95.8	95.2	8.4 8.4	8.4	8.4	1.3 1.3	1.3	1.5	4.8 5.2	5.0	4.9
					Middle	5.1	12.8 12.8	12.8	8.3 8.3	8.3	31.5 29.0	30.3	97.1 94.3	95.7	8.5 8.3	8.4		1.6 1.5	1.6		4.7 4.7	4.7	
					Bottom	9.2	12.8 12.8	12.8	8.3 8.3	8.3	32.5 29.2	30.9	98.7 94.9	96.8	8.5 8.4	8.5	8.5	1.5 1.6	1.6		4.3 5.8	5.1	
29-Jan-16	Cloudy	Moderate	16:59	10.1	Surface	1.0	12.6 12.6	12.6	8.3 8.3	8.3	30.5 29.0	29.7	97.1 93.7	95.4	8.5 8.3	8.4	8.4	1.9 2.1	2.0	2.1	4.0 3.1	3.6	3.5
					Middle	5.1	12.5 12.5	12.5	8.3 8.3	8.3	32.4 29.2	30.8	97.7 94.2	96.0	8.5 8.4	8.4		2.1 2.3	2.2		3.7 2.9	3.3	
					Bottom	9.1	12.5 12.5	12.5	8.3 8.3	8.3	34.3 29.5	31.9	98.6 95.9	97.3	8.5 8.5	8.5	8.5	2.0 2.2	2.1		4.2 3.0	3.6	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	11:11	10.2	Surface	1.0	19.6 19.6	19.6	8.1 8.1	8.1	27.8 27.6	27.7	90.3 93.0	91.7	7.0 7.2	7.1	7.1	1.5 1.7	1.6	1.6	2.6 3.9	3.3	3.1
					Middle	5.1	19.5 19.5	19.5	8.1 8.1	8.1	28.2 28.3	28.3	91.0 88.7	89.9	7.1 6.9	7.0		1.5 1.5	1.5		3.5 2.6	3.1	
					Bottom	9.2	19.5 19.5	19.5	8.1 8.1	8.1	28.3 28.3	28.3	89.5 88.0	88.8	7.0 6.8	6.9	6.9	1.6 1.5	1.6		2.6 3.1	2.9	
4-Jan-16	Sunny	Moderate	15:21	10.6	Surface	1.0	16.3 16.3	16.3	8.1 8.1	8.1	27.4 29.0	28.2	96.6 97.8	97.2	8.0 7.9	7.9	7.9	1.5 1.5	1.5	1.5	2.6 2.0	2.3	2.5
					Middle	5.3	16.2 16.2	16.2	8.1 8.1	8.1	31.5 29.3	30.4	97.5 96.3	96.9	7.8 7.9	7.8		1.5 1.5	1.5		2.8 2.9	2.9	
					Bottom	9.6	16.2 16.2	16.2	8.1 8.1	8.1	30.1 34.1	32.1	95.3 95.2	95.3	7.8 7.7	7.8	7.8	1.5 1.6	1.6		2.7 2.0	2.4	
6-Jan-16	Sunny	Moderate	17:17	10.2	Surface	1.0	16.9 16.9	16.9	8.1 8.1	8.1	23.7 23.2	23.5	100.4 99.0	99.7	8.4 8.3	8.4	8.3	1.5 1.5	1.5	1.7	3.6 4.9	4.3	3.6
					Middle	5.1	16.8 16.6	16.7	8.1 8.1	8.1	25.4 25.4	25.4	98.0 95.8	96.9	8.2 8.0	8.1		1.6 1.7	1.7		2.3 3.9	3.1	
					Bottom	9.2	16.6 16.4	16.5	8.1 8.1	8.1	28.6 27.2	27.9	97.2 95.8	96.5	8.0 8.0	8.0	8.0	1.8 1.9	1.9		3.8 3.1	3.5	
8-Jan-16	Sunny	Moderate	17:53	10.3	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	26.7 27.6	27.2	101.0 101.8	101.4	8.4 8.4	8.4	8.4	2.6 2.7	2.7	2.1	2.6 2.4	2.5	2.7
					Middle	5.2	16.5 16.5	16.5	8.1 8.1	8.1	27.2 29.9	28.5	100.9 101.9	101.4	8.4 8.3	8.3		1.8 1.8	1.8		2.5 2.8	2.7	
					Bottom	9.3	16.5 16.5	16.5	8.1 8.2	8.2	31.0 27.6	29.3	103.3 102.0	102.7	8.4 8.4	8.4	8.4	1.6 1.7	1.7		2.9 2.6	2.8	
11-Jan-16	Rainy	Moderate	07:55	10.5	Surface	1.0	16.2 16.2	16.2	8.1 8.1	8.1	32.5 32.5	32.5	100.0 99.8	99.9	8.1 8.0	8.1	8.0	1.6 1.5	1.6	1.7	4.2 3.7	4.0	4.2
					Middle	5.3	16.2 16.2	16.2	8.1 8.1	8.1	32.6 32.6	32.6	97.8 97.5	97.7	7.9 7.9	7.9		1.7 1.7	1.7		4.4 4.6	4.5	
					Bottom	9.5	16.2 16.2	16.2	8.1 8.1	8.1	32.6 32.7	32.6	97.3 97.4	97.4	7.9 7.9	7.9	7.9	1.9 1.8	1.9		4.1 3.8	4.0	
13-Jan-16	Sunny	Moderate	09:01	10.6	Surface	1.0	15.9 15.9	15.9	8.1 8.1	8.1	32.2 32.2	32.2	100.6 101.8	101.2	8.2 8.2	8.2	8.2	1.6 1.6	1.6	1.6	4.9 3.8	4.4	4.8
					Middle	5.3	16.0 16.0	16.0	8.1 8.1	8.1	32.5 32.5	32.5	100.4 101.1	100.8	8.1 8.2	8.1		1.7 1.7	1.7		2.3 4.0	3.2	
					Bottom	9.6	16.1 16.0	16.1	8.1 8.1	8.1	32.8 32.7	32.7	98.2 99.8	99.0	8.0 8.1	8.0	8.0	1.6 1.6	1.6		7.3 6.3	6.8	
15-Jan-16	Rainy	Moderate	10:34	10.3	Surface	1.0	15.7 15.7	15.7	8.1 8.1	8.1	32.4 32.4	32.4	102.4 102.6	102.5	8.4 8.4	8.4	8.4	1.1 1.2	1.2	1.3	2.1 2.1	2.1	2.5
					Middle	5.2	15.7 15.8	15.8	8.1 8.1	8.1	32.4 32.5	32.5	102.2 102.3	102.3	8.3 8.3	8.3		1.3 1.3	1.3		2.7 2.7	2.7	
					Bottom	9.3	15.8 15.8	15.8	8.1 8.1	8.1	32.5 32.5	32.5	101.9 102.2	102.1	8.3 8.3	8.3	8.3	1.4 1.5	1.5		2.8 2.3	2.6	
18-Jan-16	Sunny	Moderate	14:46	10.3	Surface	1.0	15.5 15.5	15.5	8.2 8.2	8.2	28.5 26.7	27.6	100.5 100.1	100.3	8.4 8.5	8.5	8.6	2.2 2.0	2.1	2.3	4.0 2.7	3.4	3.2
					Middle	5.2	15.5 15.5	15.5	8.2 8.2	8.2	27.1 29.7	28.4	100.5 103.6	102.1	8.5 8.6	8.6		2.2 2.3	2.3		2.5 3.2	2.9	
					Bottom	9.3	15.5 15.5	15.5	8.2 8.2	8.2	27.5 30.7	29.1	100.7 105.6	103.2	8.5 8.7	8.6	8.6	2.4 2.4	2.4		2.8 3.5	3.2	
20-Jan-16	Rainy	Moderate	17:05	10.4	Surface	1.0	15.1 15.1	15.1	8.2 8.2	8.2	28.1 29.8	29.0	105.0 103.4	104.2	8.6 8.6	8.6	8.6	1.1 1.2	1.2	1.2	3.6 3.1	3.4	4.1
					Middle	5.2	15.2 15.1	15.2	8.2 8.2	8.2	28.6 31.1	29.8	102.7 101.5	102.1	8.6 8.6	8.6		1.2 1.2	1.2		3.3 4.3	3.8	
					Bottom	9.4	15.1 15.2	15.2	8.2 8.2	8.2	33.0 29.0	31.0	100.3 101.3	100.8	8.5 8.6	8.5	8.5	1.3 1.3	1.3		4.0 6.0	5.0	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CS6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	18:06	10.4	Surface	1.0	14.8 14.8	14.8	8.1 8.1	8.1	28.2 27.1	27.7	102.5 96.6	99.6	8.6 8.3	8.4	8.4	1.4 1.3	1.4	1.4	4.8 4.3	4.6	4.2
					Middle	5.2	14.9 14.9	14.9	8.1 8.1	8.1	29.6 27.5	28.6	97.5 96.7	97.1	8.3 8.3	8.3		1.4 1.4	1.4		3.7 4.0	3.9	
					Bottom	9.4	14.9 14.9	14.9	8.1 8.1	8.1	31.2 27.8	29.5	97.0 94.9	96.0	8.2 8.1	8.2	8.2	1.5 1.4	1.5		4.3 4.0	4.2	
25-Jan-16	Sunny	Moderate	07:49	10.3	Surface	1.0	13.3 13.3	13.3	8.3 8.3	8.3	34.8 34.8	34.8	96.9 97.1	97.0	8.2 8.2	8.2	8.2	6.4 6.3	6.4	6.5	9.3 9.7	9.5	9.6
					Middle	5.2	13.3 13.3	13.3	8.2 8.3	8.3	34.8 34.8	34.8	95.8 97.0	96.4	8.1 8.2	8.1		6.5 6.6	6.6		9.3 9.5	9.4	
					Bottom	9.3	13.3 13.3	13.3	8.2 8.3	8.2	34.8 34.8	34.8	94.8 95.3	95.1	8.0 8.1	8.0	8.0	6.6 6.6	6.6		9.8 9.7	9.8	
27-Jan-16	Cloudy	Moderate	08:28	10.3	Surface	1.0	11.5 11.5	11.5	8.3 8.3	8.3	34.7 34.6	34.6	98.0 98.1	98.1	8.6 8.6	8.6	8.6	2.0 2.3	2.2	2.1	3.1 3.1	3.1	3.9
					Middle	5.2	11.5 11.5	11.5	8.3 8.3	8.3	34.7 34.7	34.7	97.8 97.8	97.8	8.6 8.6	8.6		2.1 2.3	2.2		5.0 2.8	3.9	
					Bottom	9.3	11.5 11.5	11.5	8.3 8.3	8.3	34.7 34.7	34.7	98.0 97.6	97.8	8.6 8.6	8.6	8.6	1.9 2.0	2.0		5.4 4.0	4.7	
29-Jan-16	Rainy	Moderate	09:35	10.3	Surface	1.0	11.9 11.9	11.9	8.2 8.2	8.2	33.3 33.4	33.4	95.6 96.8	96.2	8.4 8.5	8.4	8.5	2.1 2.0	2.1	2.2	2.9 2.3	2.6	3.0
					Middle	5.2	12.0 12.0	12.0	8.1 8.2	8.2	33.7 33.7	33.7	97.3 97.5	97.4	8.5 8.5	8.5		2.2 2.3	2.3		3.5 3.0	3.3	
					Bottom	9.3	12.0 12.0	12.0	8.1 8.2	8.1	33.8 33.7	33.7	97.2 96.9	97.1	8.5 8.5	8.5	8.5	2.2 2.2	2.2		3.6 2.6	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 CSA - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	18:58	33.9	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	30.0 30.0	30.0	87.7 87.1	87.4	6.7 6.7	6.7	6.7	2.0 1.9	2.0	1.8	2.8 2.3	2.6	3.0
					Middle	17.0	19.7 19.7	19.7	8.2 8.2	8.2	30.0 30.0	30.0	87.1 86.4	86.8	6.7 6.6	6.6		1.8 1.8	1.8		2.1 3.1	2.6	
					Bottom	32.9	19.7 19.7	19.7	8.2 8.2	8.2	30.0 30.0	30.0	87.6 87.4	87.5	6.7 6.7	6.7	6.7	1.6 1.8	1.7		3.0 4.3	3.7	
4-Jan-16	Sunny	Moderate	06:42	33.7	Surface	1.0	16.1 16.1	16.1	8.0 7.9	8.0	30.8 30.7	30.7	95.3 95.4	95.4	7.7 7.8	7.7	7.7	1.1 1.2	1.2	1.2	2.7 2.5	2.6	2.7
					Middle	16.9	16.2 16.2	16.2	7.9 7.9	7.9	33.2 32.8	33.0	94.4 94.6	94.5	7.6 7.6	7.6		1.1 1.1	1.1		2.9 2.8	2.9	
					Bottom	32.7	16.2 16.2	16.2	7.8 7.9	7.9	33.1 33.1	33.1	93.3 93.3	93.3	7.5 7.6	7.6	7.6	1.1 1.2	1.2		2.6 2.8	2.7	
6-Jan-16	Sunny	Moderate	08:45	34.3	Surface	1.0	16.5 16.5	16.5	8.0 8.0	8.0	31.2 31.4	31.3	93.6 93.6	93.6	7.6 7.6	7.6	7.6	1.2 1.3	1.3	1.4	2.6 2.9	2.8	3.0
					Middle	17.2	16.4 16.4	16.4	8.0 8.0	8.0	32.8 32.9	32.9	92.5 94.1	93.3	7.4 7.5	7.5		1.4 1.4	1.4		3.4 3.4	3.4	
					Bottom	33.3	16.3 16.3	16.3	8.0 8.0	8.0	33.5 33.6	33.6	92.4 92.4	92.4	7.4 7.4	7.4	7.4	1.5 1.6	1.6		2.8 2.7	2.8	
8-Jan-16	Sunny	Moderate	10:51	35.0	Surface	1.0	16.5 16.5	16.5	8.1 8.1	8.1	33.0 33.0	33.0	99.3 99.1	99.2	7.9 7.9	7.9	7.9	1.9 1.8	1.9	1.9	1.5 1.4	1.5	2.0
					Middle	17.5	16.4 16.4	16.4	8.1 8.1	8.1	33.4 33.4	33.4	97.5 98.3	97.9	7.8 7.9	7.8		2.0 2.0	2.0		1.9 1.3	1.6	
					Bottom	34.0	16.4 16.4	16.4	8.1 8.1	8.1	33.4 33.4	33.4	97.4 98.6	98.0	7.8 7.9	7.8	7.8	1.8 1.7	1.8		3.3 2.4	2.9	
11-Jan-16	Sunny	Moderate	14:40	34.6	Surface	1.0	16.4 16.4	16.4	8.2 8.2	8.2	26.0 25.9	26.0	97.9 97.9	97.9	8.2 8.2	8.2	8.2	1.1 1.2	1.2	1.4	3.5 3.9	3.7	3.4
					Middle	17.3	16.3 16.3	16.3	8.2 8.2	8.2	26.0 26.0	26.0	97.0 97.1	97.1	8.1 8.1	8.1		1.4 1.3	1.4		3.7 2.5	3.1	
					Bottom	33.6	16.3 16.3	16.3	8.2 8.2	8.2	26.1 26.1	26.1	96.7 96.8	96.8	8.1 8.1	8.1	8.1	1.4 1.5	1.5		3.4 3.4	3.4	
13-Jan-16	Sunny	Moderate	16:32	34.4	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	24.7 24.8	24.7	102.5 103.1	102.8	8.7 8.7	8.7	8.6	1.3 1.2	1.3	1.4	5.9 5.8	5.9	5.0
					Middle	17.2	16.1 16.1	16.1	8.2 8.2	8.2	25.4 25.6	25.5	100.0 100.4	100.2	8.4 8.5	8.5		1.5 1.5	1.5		5.2 4.4	4.8	
					Bottom	33.4	16.1 16.1	16.1	8.2 8.2	8.2	25.4 25.7	25.6	99.7 99.3	99.5	8.4 8.4	8.4	8.4	1.4 1.5	1.5		4.3 4.1	4.2	
15-Jan-16	Rainy	Moderate	18:06	34.6	Surface	1.0	15.6 15.7	15.6	8.2 8.1	8.2	24.4 24.6	24.5	101.4 101.8	101.6	8.7 8.7	8.7	8.7	1.2 1.2	1.2	1.3	1.8 1.7	1.8	1.8
					Middle	17.3	15.8 15.8	15.8	8.1 8.1	8.1	25.0 24.9	24.9	102.0 102.2	102.1	8.7 8.7	8.7		1.3 1.2	1.3		1.6 1.6	1.6	
					Bottom	33.6	15.8 15.8	15.8	8.1 8.1	8.1	25.3 25.2	25.2	99.3 102.2	100.8	8.5 8.7	8.6	8.6	1.2 1.3	1.3		1.8 2.0	1.9	
18-Jan-16	Sunny	Moderate	06:00	35.2	Surface	1.0	15.1 15.1	15.1	8.0 8.0	8.0	32.3 32.1	32.2	98.9 99.1	99.0	8.2 8.2	8.2	8.2	2.0 1.9	2.0	1.8	3.2 2.3	2.8	3.2
					Middle	17.6	15.3 15.3	15.3	8.0 8.0	8.0	32.6 33.2	32.9	98.1 99.0	98.6	8.1 8.1	8.1		1.8 1.6	1.7		2.5 3.1	2.8	
					Bottom	34.2	15.3 15.4	15.3	7.9 7.9	7.9	32.3 33.2	32.8	103.2 99.3	101.3	8.5 8.1	8.3	8.3	1.8 1.6	1.7		3.5 4.4	4.0	
20-Jan-16	Rainy	Moderate	08:31	34.6	Surface	1.0	15.1 15.1	15.1	8.1 8.1	8.1	34.0 34.0	34.0	102.1 100.6	101.4	8.3 8.2	8.3	8.3	1.2 1.1	1.2	1.4	3.6 3.7	3.7	4.0
					Middle	17.3	15.2 15.2	15.2	8.1 8.1	8.1	34.1 34.1	34.1	100.2 99.6	99.9	8.2 8.1	8.2		1.3 1.3	1.3		3.4 4.6	4.0	
					Bottom	33.6	15.2 15.2	15.2	8.1 8.1	8.1	34.2 34.2	34.2	97.7 98.0	97.9	8.0 8.0	8.0	8.0	1.5 1.6	1.6		5.2 3.6	4.4	

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-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	11:02	33.8	Surface	1.0	14.9 14.9	14.9	8.1 8.1	8.1	34.1 34.1	34.1	95.5 94.7	95.1	7.8 7.8	7.8	7.8	1.9 1.8	1.9	1.9	4.5 3.1	3.8	3.8
					Middle	16.9	14.9 14.9	14.9	8.1 8.1	8.1	34.2 34.2	34.2	95.0 94.6	94.8	7.8 7.8	7.8		1.8 1.9	1.9		3.5 3.8	3.7	
					Bottom	32.8	14.9 14.9	14.9	8.1 8.1	8.1	34.2 34.2	34.2	94.6 93.1	93.9	7.8 7.6	7.7	7.7	1.9 1.9	1.9		4.0 3.6	3.8	
25-Jan-16	Sunny	Moderate	14:54	34.7	Surface	1.0	12.4 12.5	12.5	8.4 8.4	8.4	27.3 27.3	27.3	97.7 97.5	97.6	8.8 8.8	8.8	8.8	2.8 2.8	2.8	2.9	8.6 8.5	8.6	8.7
					Middle	17.4	12.3 12.4	12.4	8.4 8.4	8.4	27.3 27.2	27.3	97.6 97.2	97.4	8.8 8.8	8.8		2.8 2.9	2.9		8.9 9.2	9.1	
					Bottom	33.7	12.4 12.4	12.4	8.3 8.4	8.3	27.2 27.3	27.2	97.4 97.2	97.3	8.8 8.8	8.8	8.8	3.0 2.9	3.0		9.1 7.8	8.5	
27-Jan-16	Cloudy	Moderate	16:03	35.1	Surface	1.0	12.8 12.8	12.8	8.4 8.4	8.4	27.9 28.0	27.9	96.6 94.3	95.5	8.6 8.4	8.5	8.5	1.5 1.5	1.5	1.8	4.0 5.5	4.8	5.2
					Middle	17.6	12.8 12.8	12.8	8.3 8.4	8.4	28.0 28.0	28.0	95.7 96.2	96.0	8.5 8.6	8.5		1.8 1.8	1.8		5.2 5.2	5.2	
					Bottom	34.1	12.8 12.8	12.8	8.3 8.4	8.4	28.0 28.0	28.0	95.7 96.1	95.9	8.5 8.5	8.5	8.5	2.0 2.0	2.0		5.5 5.4	5.5	
29-Jan-16	Cloudy	Moderate	17:13	35.1	Surface	1.0	12.7 12.6	12.6	8.4 8.4	8.4	28.1 28.0	28.0	93.5 93.2	93.4	8.3 8.3	8.3	8.4	1.9 2.0	2.0	2.4	3.6 3.4	3.5	4.0
					Middle	17.6	12.5 12.5	12.5	8.4 8.3	8.4	28.0 28.1	28.1	95.0 94.8	94.9	8.5 8.5	8.5		2.8 2.8	2.8		3.5 5.4	4.5	
					Bottom	34.1	12.5 12.5	12.5	8.3 8.4	8.3	28.1 28.0	28.1	94.9 94.8	94.9	8.5 8.5	8.5	8.5	2.5 2.5	2.5		4.0 4.0	4.0	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at CSA - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	10:59	34.1	Surface	1.0	19.6 19.6	19.6	8.1 8.1	8.1	27.6 27.7	27.6	90.0 89.0	89.5	7.0 6.9	7.0	6.9	1.5 1.6	1.6	1.9	2.8 3.2	3.0	3.0
					Middle	17.1	19.5 19.5	19.5	8.1 8.1	8.1	28.1 28.4	28.2	88.4 87.5	88.0	6.9 6.8	6.8		2.1 1.8	2.0		2.1 4.1	3.1	
					Bottom	33.1	19.5 19.5	19.5	8.1 8.1	8.1	27.9 28.3	28.1	88.7 88.3	88.5	6.9 6.9	6.9	6.9	2.0 1.9	2.0		3.0 3.0	3.0	
4-Jan-16	Sunny	Moderate	15:37	34.7	Surface	1.0	16.3 16.3	16.3	8.1 8.1	8.1	26.0 26.6	26.3	95.1 94.0	94.6	8.0 7.9	7.9	7.9	1.5 1.6	1.6	1.6	1.4 1.3	1.4	2.4
					Middle	17.4	16.2 16.2	16.2	8.1 8.1	8.1	28.9 28.6	28.8	93.8 94.6	94.2	7.7 7.8	7.8		1.6 1.6	1.6		2.4 3.0	2.7	
					Bottom	33.7	16.2 16.2	16.2	8.1 8.1	8.1	29.1 28.7	28.9	92.6 92.8	92.7	7.6 7.7	7.7	7.7	1.5 1.6	1.6		3.9 2.2	3.1	
6-Jan-16	Sunny	Moderate	17:30	34.4	Surface	1.0	16.9 16.9	16.9	8.1 8.1	8.1	23.1 23.2	23.1	97.8 98.0	97.9	8.2 8.3	8.2	8.1	1.6 1.6	1.6	1.7	2.6 3.2	2.9	3.5
					Middle	17.2	16.6 16.6	16.6	8.1 8.1	8.1	25.8 25.7	25.8	95.0 95.3	95.2	7.9 8.0	7.9		1.6 1.7	1.7		2.1 2.4	2.3	
					Bottom	33.4	16.4 16.4	16.4	8.1 8.1	8.1	26.8 26.9	26.9	94.6 95.2	94.9	7.9 7.9	7.9	7.9	1.7 1.8	1.8		4.3 6.1	5.2	
8-Jan-16	Sunny	Moderate	18:06	35.3	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	25.9 25.4	25.7	101.2 98.9	100.1	8.4 8.3	8.3	8.3	1.7 1.7	1.7	1.7	1.2 1.3	1.3	1.7
					Middle	17.7	16.5 16.5	16.5	8.1 8.2	8.2	26.5 25.9	26.2	99.8 98.5	99.2	8.3 8.2	8.3		1.6 1.7	1.7		1.2 1.5	1.4	
					Bottom	34.3	16.5 16.5	16.5	8.1 8.2	8.1	26.8 26.0	26.4	100.6 100.5	100.6	8.4 8.4	8.4	8.4	1.5 1.6	1.6		2.1 2.8	2.5	
11-Jan-16	Rainy	Moderate	07:43	34.8	Surface	1.0	16.2 16.2	16.2	8.1 8.1	8.1	32.1 32.4	32.3	100.1 100.3	100.2	8.1 8.1	8.1	8.0	1.3 1.4	1.4	1.6	4.6 4.5	4.6	4.5
					Middle	17.4	16.2 16.2	16.2	8.1 8.1	8.1	32.1 32.4	32.2	98.1 97.3	97.7	7.9 7.9	7.9		1.4 1.5	1.5		5.0 4.0	4.5	
					Bottom	33.8	16.2 16.2	16.2	8.1 8.1	8.1	31.9 32.4	32.1	98.2 98.8	98.5	8.0 8.0	8.0	8.0	1.7 1.8	1.8		4.2 4.7	4.5	
13-Jan-16	Sunny	Moderate	08:53	34.0	Surface	1.0	16.0 16.0	16.0	8.1 8.1	8.1	32.3 32.3	32.3	102.5 100.3	101.4	8.3 8.1	8.2	8.1	1.5 1.5	1.5	1.5	5.5 3.7	4.6	5.7
					Middle	17.0	16.1 16.1	16.1	8.1 8.1	8.1	32.9 32.9	32.9	99.8 98.6	99.2	8.1 8.0	8.0		1.5 1.5	1.5		3.0 4.1	3.6	
					Bottom	33.0	16.1 16.1	16.1	8.1 8.1	8.1	32.9 33.0	32.9	97.4 98.2	97.8	7.9 8.0	7.9	7.9	1.5 1.5	1.5		8.3 9.5	8.9	
15-Jan-16	Rainy	Moderate	10:22	34.7	Surface	1.0	15.7 15.7	15.7	8.1 8.0	8.0	32.3 32.1	32.2	102.2 102.6	102.4	8.4 8.4	8.4	8.4	1.1 1.1	1.1	1.2	1.8 2.0	1.9	2.1
					Middle	17.4	15.8 15.7	15.8	8.0 8.0	8.0	32.4 32.2	32.3	102.2 102.5	102.4	8.3 8.3	8.3		1.2 1.3	1.3		2.1 2.0	2.1	
					Bottom	33.7	15.8 15.8	15.8	8.0 8.0	8.0	32.2 32.4	32.3	100.9 102.1	101.5	8.2 8.3	8.3	8.3	1.3 1.3	1.3		2.1 2.6	2.4	
18-Jan-16	Sunny	Moderate	14:59	35.4	Surface	1.0	15.5 15.5	15.5	8.2 8.2	8.2	25.9 25.9	25.9	99.4 99.2	99.3	8.5 8.5	8.5	8.5	1.9 1.8	1.9	2.0	2.8 3.1	3.0	2.9
					Middle	17.7	15.5 15.5	15.5	8.2 8.2	8.2	26.0 26.0	26.0	98.7 98.9	98.8	8.4 8.4	8.4		1.8 2.0	1.9		2.8 3.9	3.4	
					Bottom	34.4	15.5 15.5	15.5	8.2 8.2	8.2	25.9 26.1	26.0	98.9 98.8	98.9	8.4 8.4	8.4	8.4	2.2 2.3	2.3		2.5 2.3	2.4	
20-Jan-16	Rainy	Moderate	17:19	34.8	Surface	1.0	15.1 15.2	15.2	8.2 8.2	8.2	26.8 27.0	26.9	100.0 98.4	99.2	8.5 8.4	8.5	8.5	1.1 1.1	1.1	1.2	2.8 3.9	3.4	3.4
					Middle	17.4	15.2 15.1	15.2	8.2 8.2	8.2	27.1 26.9	27.0	98.3 99.0	98.7	8.4 8.5	8.4		1.1 1.2	1.2		3.3 3.3	3.3	
					Bottom	33.8	15.1 15.2	15.2	8.2 8.2	8.2	26.9 27.5	27.2	99.4 98.5	99.0	8.5 8.4	8.4	8.4	1.3 1.2	1.3		3.1 3.9	3.5	

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 CSA - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	18:17	34.4	Surface	1.0	14.9 14.9	14.9	8.1 8.2	8.2	26.4 26.3	26.4	94.6 94.9	94.8	8.1 8.2	8.1	8.1	1.4 1.4	1.4	1.5	5.0 5.0	5.0	4.2
					Middle	17.2	14.9 14.9	14.9	8.2 8.1	8.2	26.4 26.6	26.5	94.8 94.1	94.5	8.2 8.1	8.1		1.5 1.5	1.5		3.9 4.7	4.3	
					Bottom	33.4	14.9 14.9	14.9	8.1 8.2	8.1	26.7 26.4	26.6	93.3 93.5	93.4	8.0 8.0	8.0	8.0	1.5 1.5	1.5		3.6 3.1	3.4	
25-Jan-16	Sunny	Moderate	07:39	34.8	Surface	1.0	13.3 13.3	13.3	8.2 8.2	8.2	34.8 34.8	34.8	98.8 97.4	98.1	8.3 8.2	8.3	8.2	5.1 5.1	5.1	5.3	10.3 10.3	10.3	11.3
					Middle	17.4	13.3 13.3	13.3	8.2 8.2	8.2	34.8 34.8	34.8	95.8 96.5	96.2	8.1 8.1	8.1		5.2 5.3	5.3		11.3 11.8	11.6	
					Bottom	33.8	13.3 13.3	13.3	8.2 8.2	8.2	34.8 34.8	34.8	95.1 95.9	95.5	8.0 8.1	8.1	8.1	5.5 5.4	5.5		12.4 11.6	12.0	
27-Jan-16	Cloudy	Moderate	08:14	35.3	Surface	1.0	11.5 11.5	11.5	8.3 8.3	8.3	34.6 34.5	34.6	98.4 98.7	98.6	8.6 8.7	8.6	8.6	2.5 2.4	2.5	2.3	4.2 4.4	4.3	4.3
					Middle	17.7	11.5 11.5	11.5	8.3 8.2	8.3	34.7 34.6	34.6	98.0 98.9	98.5	8.6 8.7	8.6		2.1 2.3	2.2		4.9 3.7	4.3	
					Bottom	34.3	11.5 11.5	11.5	8.3 8.2	8.3	34.6 34.6	34.6	98.3 99.3	98.8	8.6 8.7	8.7	8.7	2.0 2.1	2.1		3.8 5.0	4.4	
29-Jan-16	Rainy	Moderate	09:22	35.2	Surface	1.0	11.9 11.9	11.9	8.2 8.1	8.2	33.2 32.9	33.1	95.2 95.6	95.4	8.4 8.4	8.4	8.5	1.9 1.8	1.9	1.8	4.1 4.4	4.3	3.8
					Middle	17.6	12.1 12.1	12.1	8.1 8.2	8.1	33.3 33.7	33.5	97.1 97.1	97.1	8.5 8.5	8.5		1.8 2.0	1.9		3.9 3.7	3.8	
					Bottom	34.2	12.0 12.1	12.1	8.2 8.1	8.1	33.6 33.1	33.4	97.0 97.4	97.2	8.5 8.5	8.5	8.5	1.8 1.6	1.7		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 IS(Mf)6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	17:26	3.2	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	26.0 26.0	26.0	99.0 99.2	99.1	8.3 8.3	8.3	8.3	3.9 3.7	3.8	4.0	2.4 3.7	3.1	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	16.2 16.2	16.2	8.2 8.2	8.2	25.9 25.9	25.9	99.1 99.0	99.1	8.3 8.3	8.3	8.3	4.1 4.3	4.2		2.9 4.0	3.5	
4-Jan-16	Sunny	Moderate	07:57	3.1	Surface	1.0	19.6 19.6	19.6	8.1 8.2	8.2	26.3 26.3	26.3	93.9 92.9	93.4	7.4 7.3	7.3	7.3	4.1 3.8	4.0	4.2	3.1 3.4	3.3	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	19.6 19.6	19.6	8.1 8.1	8.1	26.4 26.5	26.4	92.8 93.5	93.2	7.3 7.3	7.3	7.3	4.1 4.4	4.3		2.4 2.3	2.4	
6-Jan-16	Sunny	Moderate	11:31	3.3	Surface	1.0	20.3 20.1	20.2	8.2 8.2	8.2	25.9 26.2	26.0	94.3 94.8	94.6	7.3 7.4	7.3	7.3	7.4 7.5	7.5	7.5	4.2 3.4	3.8	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	20.3 20.2	20.3	8.1 8.1	8.1	26.9 27.0	26.9	94.2 94.0	94.1	7.3 7.3	7.3	7.3	7.3 7.5	7.4		6.4 5.1	5.8	
8-Jan-16	Sunny	Moderate	12:52	3.2	Surface	1.0	20.1 20.2	20.2	8.2 8.2	8.2	26.8 26.8	26.8	94.3 93.1	93.7	7.3 7.2	7.3	7.3	7.1 6.9	7.0	7.1	5.4 5.9	5.7	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.1 20.1	20.1	8.2 8.2	8.2	26.9 26.9	26.9	95.7 93.2	94.5	7.4 7.2	7.3	7.3	7.0 7.2	7.1		6.7 7.1	6.9	
11-Jan-16	Sunny	Moderate	13:05	3.1	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	27.9 27.9	27.9	94.3 94.9	94.6	7.3 7.4	7.4	7.4	2.2 2.2	2.2	2.3	3.4 3.8	3.6	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	19.5 19.6	19.5	8.2 8.2	8.2	28.0 28.0	28.0	96.1 94.6	95.4	7.5 7.4	7.4	7.4	2.3 2.3	2.3		3.3 3.6	3.5	
13-Jan-16	Sunny	Moderate	14:17	3.3	Surface	1.0	19.3 19.3	19.3	8.3 8.3	8.3	27.0 27.1	27.1	94.9 95.5	95.2	7.5 7.5	7.5	7.5	5.5 5.1	5.3	5.3	5.8 5.4	5.6	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	19.3 19.3	19.3	8.3 8.3	8.3	27.1 27.1	27.1	95.0 95.5	95.3	7.5 7.5	7.5	7.5	5.4 5.1	5.3		6.8 5.4	6.1	
15-Jan-16	Rainy	Moderate	16:21	3.3	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	27.1 27.0	27.1	97.0 98.9	98.0	7.7 7.8	7.8	7.8	2.8 2.8	2.8	2.9	3.7 2.9	3.3	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	18.8 18.8	18.8	8.2 8.2	8.2	27.1 27.0	27.1	95.8 96.8	96.3	7.6 7.7	7.6	7.6	2.9 2.8	2.9		3.0 3.2	3.1	
18-Jan-16	Sunny	Moderate	08:13	3.2	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	26.3 26.2	26.3	94.6 96.1	95.4	7.7 7.8	7.7	7.7	2.5 2.5	2.5	2.5	2.4 3.9	3.2	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	18.1 18.2	18.1	8.2 8.2	8.2	26.5 26.7	26.6	95.4 99.3	97.4	7.7 8.0	7.8	7.8	2.5 2.5	2.5		2.9 2.7	2.8	
20-Jan-16	Rainy	Moderate	11:30	3.2	Surface	1.0	18.3 18.2	18.2	8.2 8.2	8.2	27.5 27.4	27.4	94.0 96.7	95.4	7.5 7.7	7.6	7.6	3.2 3.1	3.2	3.2	3.4 3.5	3.5	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	18.1 18.2	18.2	8.2 8.2	8.2	27.5 27.4	27.4	99.3 95.2	97.3	8.0 7.6	7.8	7.8	3.0 3.3	3.2		3.6 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 IS(Mf)6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:53	3.5	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	27.9 27.9	27.9	91.3 91.8	91.6	7.3 7.4	7.3	7.3	9.6 9.5	9.6	9.7	9.6 9.6	9.6	9.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	17.9 18.0	18.0	8.2 8.2	8.2	27.8 27.9	27.9	89.2 90.6	89.9	7.2 7.3	7.2	7.2	9.7 9.7	9.7		9.6 8.8	9.2	
25-Jan-16	Sunny	Moderate	13:15	3.2	Surface	1.0	14.7 14.6	14.7	8.3 8.3	8.3	27.8 27.8	27.8	91.7 92.6	92.2	7.9 7.9	7.9	7.9	10.8 10.8	10.8	10.8	10.4 10.0	10.2	12.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	14.5 14.4	14.4	8.3 8.4	8.4	27.9 27.8	27.9	91.6 94.3	93.0	7.9 8.1	8.0	8.0	10.7 10.7	10.7		13.5 14.2	13.9	
27-Jan-16	Cloudy	Moderate	13:51	3.2	Surface	1.0	14.5 14.5	14.5	8.3 8.3	8.3	29.3 29.3	29.3	93.0 92.1	92.6	7.9 7.8	7.9	7.9	6.9 6.9	6.9	6.9	8.9 8.3	8.6	8.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	14.5 14.5	14.5	8.3 8.3	8.3	29.3 29.3	29.3	91.9 91.7	91.8	7.8 7.8	7.8	7.8	6.9 6.9	6.9		8.5 8.6	8.6	
29-Jan-16	Cloudy	Moderate	15:26	3.3	Surface	1.0	15.6 15.5	15.6	8.3 8.2	8.3	27.0 27.2	27.1	93.6 91.0	92.3	7.9 7.7	7.8	7.8	12.2 12.2	12.2	12.3	5.6 6.8	6.2	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	15.4 15.4	15.4	8.2 8.2	8.2	28.1 27.6	27.9	91.5 91.7	91.6	7.7 7.7	7.7	7.7	12.2 12.5	12.4		7.6 7.6	7.6	

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)6 - 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-Jan-16	Sunny	Moderate	12:59	3.4	Surface	1.0	16.2 16.2	16.2	8.1 8.1	8.1	26.1 26.2	26.2	98.7 98.9	98.8	8.3 8.3	8.3	8.3	4.9 4.9	4.9	5.1	5.2 4.9	5.1	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	16.0 16.0	16.0	8.1 8.1	8.1	26.2 26.2	26.2	98.4 98.6	98.5	8.3 8.3	8.3	8.3	5.1 5.3	5.2		4.6 4.1	4.4	
4-Jan-16	Sunny	Moderate	13:11	3.2	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	26.7 26.7	26.7	94.1 94.0	94.1	7.3 7.3	7.3	7.3	2.9 2.9	2.9	3.0	3.9 3.2	3.6	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	19.8 19.8	19.8	8.2 8.2	8.2	26.7 26.8	26.7	93.2 93.2	93.2	7.3 7.3	7.3	7.3	3.0 2.9	3.0		3.0 2.4	2.7	
6-Jan-16	Sunny	Moderate	14:48	3.1	Surface	1.0	20.8 20.7	20.8	8.2 8.2	8.2	26.8 26.8	26.8	95.6 94.8	95.2	7.3 7.3	7.3	7.3	3.4 3.3	3.4	3.4	4.6 4.3	4.5	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	20.5 20.6	20.5	8.2 8.2	8.2	27.3 27.2	27.3	96.3 93.7	95.0	7.4 7.2	7.3	7.3	3.5 3.3	3.4		3.9 4.4	4.2	
8-Jan-16	Sunny	Moderate	16:09	3.4	Surface	1.0	20.4 20.5	20.5	8.2 8.2	8.2	27.9 27.9	27.9	95.9 96.3	96.1	7.3 7.4	7.4	7.4	5.2 5.1	5.2	5.2	5.8 5.9	5.9	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	20.3 20.2	20.2	8.2 8.2	8.2	28.1 28.3	28.2	95.3 94.7	95.0	7.3 7.3	7.3	7.3	5.1 5.1	5.1		5.5 6.8	6.2	
11-Jan-16	Rainy	Moderate	09:14	3.4	Surface	1.0	19.4 19.4	19.4	8.2 8.2	8.2	27.6 27.6	27.6	95.5 96.0	95.8	7.5 7.5	7.5	7.5	2.7 2.6	2.7	2.8	2.7 3.4	3.1	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	19.4 19.5	19.4	8.2 8.2	8.2	27.6 27.6	27.6	95.6 95.7	95.7	7.5 7.5	7.5	7.5	2.9 2.8	2.9		2.6 3.8	3.2	
13-Jan-16	Sunny	Moderate	10:49	3.4	Surface	1.0	19.4 19.3	19.4	8.2 8.2	8.2	27.8 27.7	27.7	96.9 97.8	97.4	7.6 7.6	7.6	7.6	4.6 5.0	4.8	4.9	4.1 4.5	4.3	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	19.3 19.3	19.3	8.2 8.2	8.2	27.8 27.8	27.8	98.4 97.1	97.8	7.7 7.6	7.6	7.6	4.7 5.0	4.9		5.6 6.6	6.1	
15-Jan-16	Rainy	Moderate	11:49	3.2	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	27.7 27.7	27.7	96.2 98.9	97.6	7.6 7.8	7.7	7.7	3.4 3.3	3.4	3.4	4.9 4.0	4.5	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	18.8 18.8	18.8	8.2 8.2	8.2	27.7 27.8	27.8	95.5 96.6	96.1	7.5 7.6	7.6	7.6	3.2 3.3	3.3		4.8 4.9	4.9	
18-Jan-16	Sunny	Moderate	12:49	3.2	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	25.9 25.9	25.9	94.7 93.9	94.3	7.6 7.6	7.6	7.6	1.8 1.8	1.8	1.8	2.8 3.1	3.0	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	18.3 18.3	18.3	8.2 8.2	8.2	26.0 26.2	26.1	95.0 97.5	96.3	7.7 7.9	7.8	7.8	1.7 1.8	1.8		2.4 2.6	2.5	
20-Jan-16	Rainy	Moderate	14:32	3.1	Surface	1.0	18.2 18.2	18.2	8.2 8.2	8.2	28.1 28.1	28.1	95.2 94.3	94.8	7.6 7.5	7.6	7.6	5.1 5.3	5.2	5.2	4.9 5.3	5.1	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	18.2 18.2	18.2	8.2 8.2	8.2	28.1 28.1	28.1	98.7 95.1	96.9	7.9 7.6	7.7	7.7	5.1 5.2	5.2		6.2 6.3	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-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:30	3.6	Surface	1.0	17.9 17.8	17.8	8.2 8.2	8.2	27.0 26.8	26.9	90.1 90.1	90.1	7.3 7.3	7.3	7.3	6.1 6.2	6.2	6.4	10.2 10.6	10.4	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	17.9 17.8	17.8	8.2 8.2	8.2	27.1 27.0	27.1	89.3 89.5	89.4	7.2 7.2	7.2	7.2	6.5 6.5	6.5		12.0 13.1	12.6	
25-Jan-16	Sunny	Moderate	09:21	3.2	Surface	1.0	14.5 14.5	14.5	8.2 8.2	8.2	28.7 28.7	28.7	98.1 95.1	96.6	8.4 8.1	8.3	8.3	7.8 7.9	7.9	7.8	9.6 9.4	9.5	10.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	14.5 14.5	14.5	8.2 8.2	8.2	28.7 28.7	28.7	102.1 96.7	99.4	8.7 8.3	8.5	8.5	7.5 7.6	7.6		11.9 11.6	11.8	
27-Jan-16	Cloudy	Moderate	10:00	3.3	Surface	1.0	14.5 14.5	14.5	8.3 8.2	8.3	28.9 28.9	28.9	90.3 92.7	91.5	7.7 7.9	7.8	7.8	6.5 6.7	6.6	6.6	6.2 5.8	6.0	6.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	14.5 14.5	14.5	8.3 8.2	8.3	29.0 29.0	29.0	91.7 96.2	94.0	7.8 8.2	8.0	8.0	6.4 6.6	6.5		5.7 6.8	6.3	
29-Jan-16	Rainy	Moderate	11:17	3.2	Surface	1.0	15.3 15.3	15.3	8.2 8.2	8.2	28.1 28.1	28.1	91.7 93.4	92.6	7.7 7.9	7.8	7.8	5.7 5.7	5.7	5.8	7.4 7.2	7.3	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	15.3 15.3	15.3	8.2 8.2	8.2	28.4 28.1	28.2	91.4 91.9	91.7	7.7 7.8	7.7	7.7	5.8 5.8	5.8		5.2 5.6	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)9 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	17:42	3.3	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	26.5 26.5	26.5	98.8 98.5	98.7	8.3 8.2	8.2	8.2	3.0 3.0	3.0	3.1	3.1 3.2	3.2	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	16.2 16.2	16.2	8.2 8.2	8.2	26.6 26.6	26.6	98.0 98.1	98.1	8.2 8.2	8.2	8.2	3.0 3.3	3.2		4.4 4.8	4.6	
4-Jan-16	Sunny	Moderate	07:39	3.5	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	26.2 26.0	26.1	91.9 90.8	91.4	7.2 7.1	7.2	7.2	4.9 5.2	5.1	6.1	2.1 2.1	2.1	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	19.6 19.6	19.6	8.1 8.1	8.1	26.5 26.9	26.7	92.1 92.5	92.3	7.2 7.2	7.2	7.2	7.0 7.2	7.1		3.6 3.8	3.7	
6-Jan-16	Sunny	Moderate	11:18	3.6	Surface	1.0	20.2 20.1	20.1	8.2 8.2	8.2	25.9 26.3	26.1	91.9 92.8	92.4	7.1 7.2	7.2	7.2	3.6 3.6	3.6	3.7	2.6 2.8	2.7	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	20.1 20.1	20.1	8.2 8.2	8.2	26.3 26.4	26.3	91.5 93.1	92.3	7.1 7.2	7.2	7.2	3.7 3.6	3.7		3.8 3.8	3.8	
8-Jan-16	Sunny	Moderate	12:37	3.7	Surface	1.0	20.0 20.2	20.1	8.2 8.2	8.2	26.8 26.4	26.6	96.2 96.3	96.3	7.5 7.5	7.5	7.5	2.8 2.7	2.8	2.9	3.1 2.7	2.9	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	19.9 19.9	19.9	8.2 8.2	8.2	27.2 27.2	27.2	95.5 97.6	96.6	7.4 7.6	7.5	7.5	2.7 3.0	2.9		4.7 4.0	4.4	
11-Jan-16	Sunny	Moderate	13:18	3.8	Surface	1.0	20.1 20.2	20.2	8.2 8.2	8.2	28.1 28.2	28.2	95.6 97.3	96.5	7.3 7.5	7.4	7.4	2.6 2.6	2.6	2.6	4.2 3.9	4.1	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	20.2 20.1	20.2	8.2 8.2	8.2	28.2 28.3	28.3	96.6 95.3	96.0	7.4 7.3	7.4	7.4	2.5 2.6	2.6		4.4 3.0	3.7	
13-Jan-16	Sunny	Moderate	14:34	3.7	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	26.9 26.9	26.9	98.2 97.6	97.9	7.7 7.6	7.7	7.7	3.6 3.6	3.6	3.8	5.4 5.8	5.6	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	19.4 19.4	19.4	8.2 8.2	8.2	27.0 27.0	27.0	97.5 97.1	97.3	7.6 7.6	7.6	7.6	3.8 4.0	3.9		8.5 7.0	7.8	
15-Jan-16	Rainy	Moderate	16:33	3.7	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	27.3 27.3	27.3	96.0 95.7	95.9	7.6 7.6	7.6	7.6	2.8 2.8	2.8	2.8	3.3 2.5	2.9	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.8 18.8	18.8	8.2 8.2	8.2	27.3 27.3	27.3	95.7 95.9	95.8	7.6 7.6	7.6	7.6	2.7 2.8	2.8		3.0 3.6	3.3	
18-Jan-16	Sunny	Moderate	07:57	3.7	Surface	1.0	18.2 18.3	18.3	8.2 8.2	8.2	25.6 25.7	25.7	93.2 93.9	93.6	7.5 7.6	7.6	7.6	2.1 2.1	2.1	2.1	2.1 2.9	2.5	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.3 18.3	18.3	8.2 8.2	8.2	26.4 26.1	26.3	96.3 94.0	95.2	7.7 7.6	7.6	7.6	2.0 2.2	2.1		2.2 2.5	2.4	
20-Jan-16	Rainy	Moderate	11:16	3.4	Surface	1.0	18.2 18.2	18.2	8.2 8.2	8.2	27.6 27.5	27.5	94.9 94.8	94.9	7.6 7.6	7.6	7.6	4.2 4.3	4.3	4.4	4.2 4.3	4.3	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	18.2 18.2	18.2	8.2 8.2	8.2	27.6 27.5	27.5	94.4 96.4	95.4	7.6 7.7	7.6	7.6	4.3 4.4	4.4		3.9 3.7	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 IS(Mf)9 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:41	3.5	Surface	1.0	18.0 18.0	18.0	8.2 8.2	8.2	28.0 27.9	28.0	93.4 92.5	93.0	7.3 7.4	7.4	7.4	3.1 3.0	3.1	3.1	4.5 4.5	4.5	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	18.0 18.0	18.0	8.2 8.2	8.2	27.9 28.0	27.9	89.7 90.3	90.0	7.2 7.2	7.2	7.2	3.1 3.1	3.1		5.3 4.3	4.8	
25-Jan-16	Sunny	Moderate	13:28	3.7	Surface	1.0	15.5 15.6	15.5	8.3 8.3	8.3	28.3 28.3	28.3	94.0 95.9	95.0	7.9 8.0	8.0	8.0	4.8 4.7	4.8	4.8	6.0 6.1	6.1	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	15.5 15.6	15.6	8.3 8.3	8.3	28.4 28.4	28.4	94.5 99.0	96.8	7.9 8.3	8.1	8.1	4.7 4.8	4.8		8.7 8.1	8.4	
27-Jan-16	Cloudy	Moderate	14:09	3.8	Surface	1.0	14.8 14.8	14.8	8.3 8.3	8.3	29.2 29.2	29.2	93.2 93.1	93.2	7.9 7.9	7.9	7.9	4.5 4.6	4.6	4.6	6.6 6.6	6.6	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	14.8 14.8	14.8	8.3 8.2	8.3	29.2 29.2	29.2	92.8 92.8	92.8	7.9 7.9	7.9	7.9	4.6 4.6	4.6		7.1 6.0	6.6	
29-Jan-16	Cloudy	Moderate	15:40	3.7	Surface	1.0	15.8 15.8	15.8	8.2 8.2	8.2	28.2 28.1	28.1	94.2 93.0	93.6	7.9 7.8	7.8	7.8	10.7 10.5	10.6	10.6	6.0 5.5	5.8	8.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	15.7 15.7	15.7	8.2 8.2	8.2	28.3 28.2	28.3	92.9 92.8	92.9	7.8 7.8	7.8	7.8	10.4 10.8	10.6		9.6 10.9	10.3	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS(Mf)9 - 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-Jan-16	Sunny	Moderate	12:43	3.5	Surface	1.0	16.2 16.2	16.2	8.1 8.1	8.1	26.5 26.6	26.5	99.1 98.5	98.8	8.3 8.2	8.2	8.2	3.1 3.1	3.1	3.3	3.1 2.8	3.0	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	16.1 16.1	16.1	8.1 8.1	8.1	26.7 26.7	26.7	98.5 98.7	98.6	8.2 8.3	8.2	8.2	3.3 3.4	3.4		3.4 4.0	3.7	
4-Jan-16	Sunny	Moderate	13:26	3.3	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	26.7 26.7	26.7	93.6 94.3	94.0	7.3 7.4	7.3	7.3	3.2 3.1	3.2	3.2	3.3 2.1	2.7	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	19.8 19.8	19.8	8.2 8.2	8.2	26.7 26.7	26.7	92.6 93.5	93.1	7.2 7.3	7.3	7.3	3.1 3.1	3.1		3.8 3.0	3.4	
6-Jan-16	Sunny	Moderate	15:03	3.6	Surface	1.0	20.8 20.5	20.7	8.2 8.2	8.2	26.4 26.6	26.5	96.5 94.4	95.5	7.4 7.3	7.3	7.3	3.7 3.9	3.8	3.8	2.7 3.5	3.1	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	20.5 20.2	20.3	8.2 8.2	8.2	26.8 27.2	27.0	95.4 93.4	94.4	7.3 7.2	7.3	7.3	3.8 3.7	3.8		3.1 3.5	3.3	
8-Jan-16	Sunny	Moderate	16:23	3.7	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	28.0 28.0	28.0	98.9 98.4	98.7	7.6 7.5	7.6	7.6	3.2 3.2	3.2	3.2	4.4 4.4	4.4	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.2 20.0	20.1	8.2 8.2	8.2	28.2 28.5	28.4	97.9 98.7	98.3	7.5 7.6	7.5	7.5	3.1 3.2	3.2		4.7 4.1	4.4	
11-Jan-16	Rainy	Moderate	09:02	3.7	Surface	1.0	19.5 19.6	19.6	8.2 8.2	8.2	27.7 27.7	27.7	94.2 94.5	94.4	7.3 7.4	7.4	7.4	2.5 2.5	2.5	2.5	4.3 4.1	4.2	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	19.5 19.6	19.6	8.2 8.2	8.2	27.8 27.8	27.8	95.6 94.8	95.2	7.4 7.4	7.4	7.4	2.5 2.5	2.5		5.9 4.1	5.0	
13-Jan-16	Sunny	Moderate	10:36	3.5	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	27.8 27.9	27.9	98.6 97.3	98.0	7.7 7.6	7.6	7.6	3.4 3.5	3.5	3.5	3.9 4.6	4.3	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	19.5 19.4	19.5	8.2 8.2	8.2	27.9 27.9	27.9	98.6 101.2	99.9	7.7 7.9	7.8	7.8	3.6 3.4	3.5		3.8 4.6	4.2	
15-Jan-16	Rainy	Moderate	11:37	3.7	Surface	1.0	18.9 18.9	18.9	8.2 8.2	8.2	27.7 27.7	27.7	95.5 97.5	96.5	7.5 7.7	7.6	7.6	3.6 3.7	3.7	3.7	3.7 3.1	3.4	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.9 18.9	18.9	8.2 8.2	8.2	27.7 27.7	27.7	95.9 100.0	98.0	7.6 7.9	7.7	7.7	3.7 3.6	3.7		4.5 4.0	4.3	
18-Jan-16	Sunny	Moderate	13:02	3.7	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	26.2 26.3	26.3	94.4 94.1	94.3	7.6 7.5	7.6	7.6	4.6 4.6	4.6	4.7	3.9 4.3	4.1	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.5 18.5	18.5	8.2 8.2	8.2	26.4 26.7	26.6	93.8 95.0	94.4	7.5 7.6	7.6	7.6	4.7 4.6	4.7		6.0 5.9	6.0	
20-Jan-16	Rainy	Moderate	14:49	3.4	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	28.2 28.2	28.2	94.6 96.4	95.5	7.5 7.7	7.6	7.6	3.4 3.2	3.3	3.4	4.5 4.6	4.6	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	18.3 18.3	18.3	8.2 8.2	8.2	28.2 28.2	28.2	98.5 95.8	97.2	7.8 7.6	7.7	7.7	3.4 3.4	3.4		4.8 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 IS(Mf)9 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:44	3.7	Surface	1.0	17.9 17.9	17.9	8.2 8.2	8.2	27.4 27.4	27.4	95.1 95.5	95.3	7.7 7.7	7.7	7.7	2.8 2.8	2.8	2.9	5.3 5.8	5.6	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	17.9 17.9	17.9	8.2 8.2	8.2	27.4 27.4	27.4	91.9 92.5	92.2	7.4 7.4	7.4	7.4	2.9 2.9	2.9		5.7 5.1	5.4	
25-Jan-16	Sunny	Moderate	09:07	3.7	Surface	1.0	15.1 15.1	15.1	8.3 8.3	8.3	29.2 29.2	29.2	92.3 91.1	91.7	7.8 7.7	7.7	7.7	6.0 5.9	6.0	6.1	7.9 8.4	8.2	9.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	15.1 15.1	15.1	8.3 8.3	8.3	29.2 29.2	29.2	90.5 91.4	91.0	7.6 7.7	7.7	7.7	6.0 6.2	6.1		10.2 10.4	10.3	
27-Jan-16	Cloudy	Moderate	09:46	3.8	Surface	1.0	14.9 14.9	14.9	8.3 8.3	8.3	29.1 29.1	29.1	94.7 90.6	92.7	8.0 7.7	7.8	7.8	6.4 6.4	6.4	6.4	9.1 9.7	9.4	9.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	15.0 15.0	15.0	8.3 8.3	8.3	29.2 29.3	29.2	95.8 90.7	93.3	8.1 7.7	7.9	7.9	6.4 6.4	6.4		8.9 10.1	9.5	
29-Jan-16	Rainy	Moderate	11:05	3.8	Surface	1.0	15.3 15.3	15.3	8.2 8.2	8.2	28.1 28.1	28.1	92.1 91.8	92.0	7.8 7.7	7.8	7.8	5.7 5.9	5.8	5.9	5.4 6.1	5.8	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	15.3 15.3	15.3	8.2 8.2	8.2	28.2 28.2	28.2	92.2 91.3	91.8	7.8 7.7	7.7	7.7	5.8 5.9	5.9		7.2 5.1	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 IS10 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	17:52	10.7	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	28.7 28.7	28.7	91.9 91.1	91.5	7.1 7.1	7.1	7.0	2.8 3.0	2.9	3.3	3.4 2.5	3.0	3.1
					Middle	5.4	19.5 19.5	19.5	8.2 8.2	8.2	28.8 28.8	28.8	89.2 89.6	89.4	6.9 7.0	6.9		3.7 3.5	3.6		3.4 2.4	2.9	
					Bottom	9.7	19.5 19.5	19.5	8.2 8.2	8.2	28.7 28.8	28.7	89.9 89.1	89.5	7.0 6.9	6.9	6.9	3.3 3.6	3.5		3.9 2.7	3.3	
4-Jan-16	Sunny	Moderate	07:45	10.6	Surface	1.0	16.1 16.1	16.1	8.0 8.1	8.0	28.8 28.8	28.8	98.9 96.4	97.7	8.0 7.8	7.9	7.9	1.4 1.4	1.4	1.5	2.0 2.1	2.1	2.4
					Middle	5.3	16.1 16.1	16.1	8.0 8.0	8.0	32.6 32.6	32.6	95.5 97.1	96.3	7.8 8.0	7.9		1.6 1.6	1.6		2.6 2.9	2.8	
					Bottom	9.6	16.1 16.1	16.1	8.0 8.0	8.0	32.7 32.9	32.8	94.5 96.7	95.6	7.7 7.8	7.8	7.8	1.5 1.5	1.5		2.4 2.3	2.4	
6-Jan-16	Sunny	Moderate	09:55	11.1	Surface	1.0	16.3 16.2	16.3	8.1 8.1	8.1	20.7 19.5	20.1	94.3 95.1	94.7	8.2 7.9	8.0	8.0	1.8 1.7	1.8	1.9	2.6 2.6	2.6	2.8
					Middle	5.6	16.4 16.4	16.4	8.1 8.1	8.1	27.4 26.1	26.8	94.5 94.9	94.7	7.9 7.9	7.9		1.8 1.8	1.8		3.5 2.1	2.8	
					Bottom	10.1	16.4 16.4	16.4	8.0 8.0	8.0	29.9 31.6	30.8	93.6 92.8	93.2	7.7 7.6	7.6	7.6	2.0 2.1	2.1		3.7 2.3	3.0	
8-Jan-16	Sunny	Moderate	12:01	10.6	Surface	1.0	16.5 16.5	16.5	8.1 8.1	8.1	25.7 25.5	25.6	99.4 99.3	99.4	8.3 8.3	8.3	8.3	2.8 2.8	2.8	2.8	2.2 2.8	2.5	2.8
					Middle	5.3	16.5 16.5	16.5	8.1 8.1	8.1	27.0 26.8	26.9	99.3 101.4	100.4	8.2 8.4	8.3		2.8 2.8	2.8		3.5 2.3	2.9	
					Bottom	9.6	16.5 16.5	16.5	8.1 8.1	8.1	26.9 27.2	27.0	101.3 100.2	100.8	8.4 8.3	8.4	8.4	2.9 2.8	2.9		3.1 2.7	2.9	
11-Jan-16	Sunny	Moderate	13:41	10.6	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	26.1 26.4	26.3	101.4 101.6	101.5	8.5 8.5	8.5	8.5	2.1 1.9	2.0	2.1	2.3 3.9	3.1	3.6
					Middle	5.3	16.3 16.2	16.2	8.2 8.2	8.2	26.8 27.0	26.9	100.0 99.9	100.0	8.4 8.4	8.4		2.1 2.1	2.1		4.5 3.1	3.8	
					Bottom	9.6	16.2 16.2	16.2	8.2 8.2	8.2	27.3 26.9	27.1	99.5 100.0	99.8	8.3 8.3	8.3	8.3	2.2 2.4	2.3		4.6 3.4	4.0	
13-Jan-16	Sunny	Moderate	15:21	10.7	Surface	1.0	16.1 16.1	16.1	8.2 8.2	8.2	25.2 25.5	25.3	105.7 105.9	105.8	8.9 8.9	8.9	8.9	2.1 2.1	2.1	2.1	2.6 2.3	2.5	3.7
					Middle	5.4	16.0 16.0	16.0	8.2 8.2	8.2	25.9 25.9	25.9	105.3 105.0	105.2	8.9 8.9	8.9		2.1 2.1	2.1		2.5 3.8	3.2	
					Bottom	9.7	16.0 16.0	16.0	8.2 8.2	8.2	26.1 26.1	26.1	104.7 105.1	104.9	8.8 8.9	8.8	8.8	2.2 2.2	2.2		5.1 5.4	5.3	
15-Jan-16	Rainy	Moderate	17:02	10.7	Surface	1.0	15.4 15.3	15.4	8.1 8.1	8.1	23.1 22.9	23.0	101.6 101.7	101.7	8.8 8.8	8.8	8.8	1.6 1.7	1.7	1.9	1.7 1.6	1.7	1.7
					Middle	5.4	15.5 15.5	15.5	8.1 8.1	8.1	23.2 23.4	23.3	101.0 101.8	101.4	8.8 8.8	8.8		1.8 1.9	1.9		1.4 1.5	1.5	
					Bottom	9.7	15.5 15.6	15.5	8.1 8.1	8.1	24.5 24.7	24.6	101.3 101.7	101.5	8.7 8.7	8.7	8.7	2.0 2.1	2.1		1.6 1.9	1.8	
18-Jan-16	Sunny	Moderate	07:05	10.3	Surface	1.0	14.7 14.7	14.7	8.1 8.1	8.1	24.3 23.9	24.1	99.4 97.4	98.4	8.7 8.5	8.6	8.7	2.9 3.0	3.0	2.9	2.2 2.3	2.3	2.7
					Middle	5.2	15.1 15.0	15.1	8.1 8.1	8.1	24.7 24.3	24.5	103.9 99.7	101.8	9.0 8.7	8.8		2.8 2.7	2.8		2.7 2.7	2.7	
					Bottom	9.3	14.9 15.3	15.1	8.1 8.1	8.1	25.8 26.8	26.3	101.1 105.8	103.5	8.7 9.0	8.9	8.9	2.9 3.1	3.0		4.0 2.3	3.2	
20-Jan-16	Rainy	Moderate	09:41	10.5	Surface	1.0	14.9 15.0	15.0	8.2 8.1	8.2	31.9 32.6	32.3	101.6 101.1	101.4	8.4 8.4	8.4	8.4	1.1 1.3	1.2	1.3	4.3 3.1	3.7	3.5
					Middle	5.3	15.0 15.0	15.0	8.1 8.2	8.2	32.7 31.9	32.3	99.3 101.0	100.2	8.2 8.4	8.3		1.3 1.2	1.3		3.8 2.8	3.3	
					Bottom	9.5	15.0 14.9	15.0	8.1 8.1	8.1	32.3 32.8	32.6	98.9 98.7	98.8	8.3 8.3	8.3	8.3	1.4 1.4	1.4		4.0 2.8	3.4	

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 IS10 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:13	10.6	Surface	1.0	14.6 14.6	14.6	8.1 8.1	8.1	31.0 30.1	30.5	97.3 97.7	97.5	8.1 8.2	8.1	8.1	1.4 1.3	1.4	1.5	5.2 5.3	5.3	5.3
					Middle	5.3	14.6 14.7	14.7	8.1 8.1	8.1	31.0 31.9	31.5	95.7 96.4	96.1	8.1 8.0	8.1		1.5 1.4	1.5		5.8 4.7	5.3	
					Bottom	9.6	14.7 14.7	14.7	8.1 8.1	8.1	32.5 31.7	32.1	95.7 95.3	95.5	8.0 8.0	8.0	8.0	1.4 1.5	1.5		5.6 4.8	5.2	
25-Jan-16	Sunny	Moderate	13:34	10.5	Surface	1.0	13.0 13.0	13.0	8.4 8.4	8.4	29.5 29.4	29.4	97.4 97.8	97.6	8.6 8.6	8.6	8.6	2.2 2.1	2.2	2.3	7.8 7.9	7.9	7.9
					Middle	5.3	12.9 12.9	12.9	8.4 8.4	8.4	29.4 29.6	29.5	97.5 97.0	97.3	8.6 8.6	8.6		2.3 2.3	2.3		8.3 8.1	8.2	
					Bottom	9.5	12.7 12.9	12.8	8.3 8.4	8.4	29.5 29.3	29.4	97.5 97.6	97.6	8.6 8.6	8.6	8.6	2.5 2.5	2.5		7.2 7.7	7.5	
27-Jan-16	Cloudy	Moderate	14:54	10.6	Surface	1.0	11.7 11.7	11.7	8.4 8.4	8.4	28.9 29.0	28.9	98.5 98.5	98.5	8.9 8.9	8.9	8.9	2.7 2.9	2.8	2.9	4.6 6.1	5.4	5.7
					Middle	5.3	11.7 11.7	11.7	8.4 8.4	8.4	28.9 29.1	29.0	98.2 98.1	98.2	8.9 8.9	8.9		3.0 3.2	3.1		6.5 5.8	6.2	
					Bottom	9.6	11.7 11.7	11.7	8.4 8.4	8.4	29.0 29.2	29.1	98.2 98.5	98.4	8.9 8.9	8.9	8.9	2.8 2.6	2.7		5.4 5.3	5.4	
29-Jan-16	Cloudy	Moderate	16:01	10.5	Surface	1.0	11.8 11.8	11.8	8.4 8.4	8.4	22.9 23.2	23.0	95.5 95.5	95.5	9.0 8.9	8.9	8.9	2.6 2.9	2.8	3.0	4.4 5.0	4.7	4.5
					Middle	5.3	11.8 11.8	11.8	8.4 8.4	8.4	28.2 28.3	28.3	96.8 97.7	97.3	8.8 8.9	8.8		3.1 3.2	3.2		3.9 4.9	4.4	
					Bottom	9.5	11.8 11.8	11.8	8.4 8.4	8.4	28.3 28.5	28.4	97.1 97.1	97.1	8.8 8.8	8.8	8.8	2.8 3.0	2.9		4.7 4.0	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 IS10 - 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-Jan-16	Sunny	Moderate	12:02	10.5	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	28.2 28.1	28.1	90.6 91.0	90.8	7.0 7.1	7.1	7.0	3.7 3.4	3.6	4.3	4.0 2.0	3.0	3.2
					Middle	5.3	19.5 19.5	19.5	8.2 8.2	8.2	28.4 28.4	28.4	89.5 88.9	89.2	7.0 6.9	6.9		4.6 4.4	4.5		2.2 2.1	2.2	
					Bottom	9.5	19.5 19.5	19.5	8.2 8.2	8.2	28.5 28.4	28.4	89.3 89.8	89.6	6.9 7.0	7.0	7.0	4.6 4.9	4.8		3.5 5.0	4.3	
4-Jan-16	Sunny	Moderate	14:27	10.7	Surface	1.0	16.1 16.1	16.1	8.1 8.1	8.1	26.4 26.5	26.5	92.8 95.5	94.2	7.8 7.9	7.8	7.8	3.2 3.2	3.2	3.4	3.7 2.5	3.1	3.1
					Middle	5.4	16.1 16.1	16.1	8.1 8.1	8.1	29.1 28.6	28.8	92.6 94.5	93.6	7.6 7.8	7.7		3.5 3.4	3.5		3.2 2.6	2.9	
					Bottom	9.7	16.1 16.2	16.2	8.1 8.1	8.1	29.2 29.8	29.5	93.4 91.8	92.6	7.8 7.6	7.7	7.7	3.5 3.5	3.5		2.8 3.7	3.3	
6-Jan-16	Sunny	Moderate	16:20	11.2	Surface	1.0	16.4 16.4	16.4	8.1 8.1	8.1	23.8 24.3	24.0	96.3 94.3	95.3	8.1 8.0	8.1	8.1	1.5 1.4	1.5	1.7	3.1 2.8	3.0	3.1
					Middle	5.6	16.4 16.4	16.4	8.1 8.1	8.1	24.3 25.2	24.7	95.2 94.1	94.7	8.0 8.0	8.0		1.7 1.6	1.7		2.5 3.1	2.8	
					Bottom	10.2	16.4 16.6	16.5	8.1 8.1	8.1	26.0 25.0	25.5	93.3 92.9	93.1	7.8 7.9	7.8	7.8	2.0 1.9	2.0		3.8 3.0	3.4	
8-Jan-16	Sunny	Moderate	17:00	10.6	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	25.5 25.8	25.6	103.0 102.2	102.6	8.6 8.5	8.5	8.5	2.6 2.8	2.7	2.9	2.7 3.2	3.0	2.9
					Middle	5.3	16.7 16.7	16.7	8.2 8.2	8.2	25.7 26.1	25.9	101.7 101.5	101.6	8.5 8.4	8.5		2.8 3.1	3.0		2.8 2.3	2.6	
					Bottom	9.6	16.6 16.6	16.6	8.2 8.2	8.2	26.5 26.1	26.3	101.5 101.9	101.7	8.4 8.5	8.5	8.5	2.8 2.9	2.9		3.6 2.8	3.2	
11-Jan-16	Rainy	Moderate	08:49	10.8	Surface	1.0	16.0 16.0	16.0	8.2 8.1	8.2	31.1 31.8	31.5	99.3 99.6	99.5	8.1 8.1	8.1	8.1	3.3 3.4	3.4	3.7	4.1 3.0	3.6	3.9
					Middle	5.4	16.1 16.1	16.1	8.2 8.1	8.2	31.5 32.0	31.7	97.7 98.4	98.1	8.0 8.0	8.0		3.6 3.7	3.7		3.3 3.9	3.6	
					Bottom	9.8	16.0 16.1	16.1	8.1 8.1	8.1	32.1 31.6	31.9	97.1 97.0	97.1	8.0 7.9	8.0	8.0	3.9 3.8	3.9		4.1 5.0	4.6	
13-Jan-16	Sunny	Moderate	09:56	10.7	Surface	1.0	15.8 15.8	15.8	8.2 8.2	8.2	31.4 30.4	30.9	106.2 103.4	104.8	8.7 8.5	8.6	8.6	4.0 3.9	4.0	4.7	7.0 5.7	6.4	6.1
					Middle	5.4	15.8 15.8	15.8	8.2 8.2	8.2	30.3 31.9	31.1	102.7 104.5	103.6	8.5 8.5	8.5		4.9 4.9	4.9		6.0 6.2	6.1	
					Bottom	9.7	15.8 15.8	15.8	8.2 8.1	8.2	31.0 32.1	31.6	102.0 104.2	103.1	8.4 8.5	8.5	8.5	5.1 5.1	5.1		6.6 5.0	5.8	
15-Jan-16	Rainy	Moderate	11:20	10.8	Surface	1.0	15.5 15.5	15.5	8.1 8.1	8.1	29.5 28.8	29.2	103.2 102.9	103.1	8.6 8.6	8.6	8.6	2.3 2.3	2.3	2.5	2.9 2.7	2.8	2.7
					Middle	5.4	15.5 15.5	15.5	8.1 8.1	8.1	29.9 29.1	29.5	103.3 102.6	103.0	8.6 8.6	8.6		2.5 2.6	2.6		3.2 2.4	2.8	
					Bottom	9.8	15.5 15.5	15.5	8.1 8.1	8.1	29.1 30.6	29.9	102.6 103.6	103.1	8.6 8.6	8.6	8.6	2.7 2.7	2.7		2.6 2.1	2.4	
18-Jan-16	Sunny	Moderate	13:50	10.3	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	22.1 22.4	22.3	98.8 99.3	99.1	8.7 8.7	8.7	8.7	2.4 2.4	2.4	2.6	2.5 2.9	2.7	2.9
					Middle	5.2	15.3 15.4	15.4	8.2 8.2	8.2	24.4 24.2	24.3	99.7 98.7	99.2	8.6 8.5	8.6		2.8 2.6	2.7		2.7 3.7	3.2	
					Bottom	9.3	15.4 15.3	15.4	8.2 8.2	8.2	24.2 24.5	24.4	98.6 99.8	99.2	8.5 8.6	8.6	8.6	2.7 2.9	2.8		2.9 2.7	2.8	
20-Jan-16	Rainy	Moderate	16:07	10.6	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	25.9 25.8	25.9	99.6 101.6	100.6	8.6 8.8	8.7	8.7	1.3 1.2	1.3	1.4	3.8 4.1	4.0	3.4
					Middle	5.3	15.0 15.0	15.0	8.2 8.2	8.2	26.0 26.0	26.0	99.5 100.2	99.9	8.6 8.6	8.6		1.4 1.4	1.4		3.3 2.3	2.8	
					Bottom	9.6	15.0 15.0	15.0	8.2 8.2	8.2	26.2 26.0	26.1	99.6 99.0	99.3	8.6 8.5	8.5	8.5	1.5 1.6	1.6		2.9 3.7	3.3	

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 IS10 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:59	10.7	Surface	1.0	14.5 14.5	14.5	8.1 8.1	8.1	24.3 24.7	24.5	98.4 97.2	97.8	8.6 8.5	8.6	8.5	2.3 2.4	2.4	2.4	5.7 5.5	5.6	5.8
					Middle	5.4	14.6 14.6	14.6	8.1 8.1	8.1	24.8 25.0	24.9	94.7 97.4	96.1	8.3 8.5	8.4		2.3 2.3	2.3		5.0 6.1	5.6	
					Bottom	9.7	14.6 14.6	14.6	8.1 8.1	8.1	25.0 24.8	24.9	95.5 94.6	95.1	8.4 8.3	8.3	8.3	2.4 2.4	2.4		6.0 6.1	6.1	
25-Jan-16	Sunny	Moderate	08:30	10.6	Surface	1.0	12.1 12.1	12.1	8.3 8.3	8.3	32.0 31.3	31.7	97.5 98.2	97.9	8.6 8.6	8.6	8.6	6.3 6.2	6.3	6.6	9.2 9.3	9.3	8.9
					Middle	5.3	12.1 12.1	12.1	8.3 8.3	8.3	32.3 31.4	31.8	96.4 97.0	96.7	8.5 8.5	8.5		6.5 6.6	6.6		8.5 8.7	8.6	
					Bottom	9.6	12.1 12.1	12.1	8.3 8.3	8.3	31.7 32.6	32.1	95.5 95.4	95.5	8.5 8.5	8.5	8.5	6.9 6.8	6.9		8.9 8.6	8.8	
27-Jan-16	Cloudy	Moderate	09:23	10.5	Surface	1.0	11.6 11.6	11.6	8.4 8.3	8.3	34.7 34.7	34.7	98.3 99.4	98.9	8.6 8.7	8.6	8.7	6.2 5.7	6.0	6.1	9.5 9.6	9.6	9.9
					Middle	5.3	11.6 11.6	11.6	8.3 8.3	8.3	34.7 34.7	34.7	98.4 100.0	99.2	8.6 8.7	8.7		6.3 5.9	6.1		10.1 10.3	10.2	
					Bottom	9.5	11.6 11.6	11.6	8.3 8.3	8.3	34.7 34.7	34.7	98.8 100.8	99.8	8.6 8.8	8.7	8.7	6.0 6.1	6.1		9.6 10.1	9.9	
29-Jan-16	Rainy	Moderate	10:29	10.7	Surface	1.0	11.8 11.8	11.8	8.2 8.3	8.2	33.2 33.2	33.2	97.2 98.0	97.6	8.5 8.6	8.6	8.6	4.5 4.5	4.5	4.9	5.2 6.9	6.1	6.8
					Middle	5.4	11.8 11.8	11.8	8.2 8.3	8.2	33.4 33.3	33.4	98.5 97.7	98.1	8.6 8.6	8.6		4.9 4.6	4.8		6.5 6.0	6.3	
					Bottom	9.7	11.8 11.8	11.8	8.2 8.2	8.2	33.3 33.4	33.4	97.7 98.8	98.3	8.6 8.7	8.6	8.6	5.2 5.4	5.3		7.9 8.2	8.1	

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 IS(Mf)11 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	18:02	10.7	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	28.8 28.7	28.7	90.6 89.0	89.8	7.0 6.9	6.9	6.9	3.0 3.0	3.0	3.2	3.6 4.3	4.0	4.0
					Middle	5.4	19.5 19.5	19.5	8.2 8.2	8.2	28.9 28.9	28.9	92.1 87.3	89.7	7.1 6.8	6.9		3.4 3.3	3.4		4.8 3.7	4.3	
					Bottom	9.7	19.6 19.5	19.6	8.2 8.2	8.2	28.8 28.9	28.9	88.2 91.1	89.7	6.8 7.1	6.9	6.9	3.1 3.5	3.3		3.7 3.6	3.7	
4-Jan-16	Sunny	Moderate	07:35	10.4	Surface	1.0	16.0 16.1	16.1	8.0 8.0	8.0	28.7 28.6	28.7	95.7 97.6	96.7	7.7 7.9	7.8	7.8	1.4 1.3	1.4	1.4	1.3 1.5	1.4	1.7
					Middle	5.2	16.1 16.1	16.1	8.0 7.9	8.0	32.6 32.4	32.5	94.9 94.1	94.5	7.7 7.8	7.7		1.4 1.4	1.4		1.7 1.7	1.7	
					Bottom	9.4	16.1 16.1	16.1	7.9 8.0	7.9	33.0 33.0	33.0	93.5 93.5	93.5	7.6 7.7	7.6	7.6	1.5 1.5	1.5		1.8 1.9	1.9	
6-Jan-16	Sunny	Moderate	09:41	10.9	Surface	1.0	16.3 16.3	16.3	8.0 8.0	8.0	23.9 29.3	26.6	94.0 93.9	94.0	8.0 8.0	8.0	8.0	1.5 1.6	1.6	1.6	3.0 2.2	2.6	2.7
					Middle	5.5	16.3 16.3	16.3	8.1 8.1	8.1	22.4 23.1	22.8	93.5 93.5	93.5	7.9 8.0	8.0		1.6 1.6	1.6		2.6 2.3	2.5	
					Bottom	9.9	16.3 16.4	16.4	8.1 8.1	8.1	24.4 24.2	24.3	93.9 93.5	93.7	7.7 7.9	7.8	7.8	1.7 1.6	1.7		3.3 2.4	2.9	
8-Jan-16	Sunny	Moderate	11:49	10.4	Surface	1.0	16.5 16.6	16.6	8.1 8.1	8.1	32.1 32.2	32.2	99.2 98.8	99.0	8.0 7.9	8.0	7.9	3.2 3.1	3.2	3.3	3.1 3.5	3.3	3.0
					Middle	5.2	16.4 16.4	16.4	8.1 8.1	8.1	32.3 32.4	32.4	98.5 95.5	97.0	7.9 7.7	7.8		3.3 3.2	3.3		3.0 3.3	3.2	
					Bottom	9.4	16.4 16.4	16.4	8.1 8.1	8.1	32.4 32.4	32.4	98.9 96.2	97.6	8.0 7.7	7.8	7.8	3.3 3.2	3.3		2.5 2.5	2.5	
11-Jan-16	Sunny	Moderate	13:48	10.5	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	25.8 25.6	25.7	100.8 100.5	100.7	8.5 8.4	8.4	8.4	2.2 2.2	2.2	2.3	4.5 3.4	4.0	4.0
					Middle	5.3	16.1 16.2	16.2	8.2 8.2	8.2	25.7 26.0	25.8	99.2 98.6	98.9	8.3 8.3	8.3		2.3 2.3	2.3		3.8 4.3	4.1	
					Bottom	9.5	16.1 16.2	16.2	8.2 8.2	8.2	26.6 25.8	26.2	98.7 98.5	98.6	8.3 8.3	8.3	8.3	2.4 2.5	2.5		4.1 3.9	4.0	
13-Jan-16	Sunny	Moderate	15:31	10.5	Surface	1.0	16.1 16.1	16.1	8.2 8.2	8.2	24.6 25.3	25.0	103.9 104.7	104.3	8.8 8.7	8.7	8.7	2.3 2.3	2.3	2.3	5.1 3.6	4.4	5.1
					Middle	5.3	16.0 16.1	16.1	8.2 8.2	8.2	25.1 25.8	25.4	103.6 102.3	103.0	8.7 8.6	8.7		2.3 2.3	2.3		5.2 5.9	5.6	
					Bottom	9.5	16.0 16.1	16.0	8.2 8.2	8.2	28.0 25.8	26.9	101.6 103.0	102.3	8.6 8.7	8.6	8.6	2.3 2.3	2.3		5.1 5.5	5.3	
15-Jan-16	Rainy	Moderate	17:11	10.7	Surface	1.0	15.3 15.3	15.3	8.1 8.1	8.1	22.9 23.3	23.1	104.3 103.8	104.1	8.9 8.9	8.9	8.9	1.5 1.6	1.6	1.7	1.3 1.3	1.3	1.7
					Middle	5.4	15.5 15.4	15.4	8.1 8.1	8.1	25.0 23.2	24.1	102.2 102.0	102.1	8.9 8.9	8.9		1.7 1.6	1.7		1.5 1.8	1.7	
					Bottom	9.7	15.5 15.5	15.5	8.1 8.1	8.1	25.5 24.8	25.2	102.0 101.0	101.5	8.8 8.8	8.8	8.8	1.8 1.7	1.8		2.0 2.1	2.1	
18-Jan-16	Sunny	Moderate	06:54	10.6	Surface	1.0	14.7 14.8	14.8	8.1 8.1	8.1	29.6 29.6	29.6	97.3 97.3	97.3	8.2 8.2	8.2	8.2	2.1 2.2	2.2	2.1	3.3 2.9	3.1	2.8
					Middle	5.3	15.5 15.5	15.5	8.1 8.1	8.1	32.0 32.2	32.1	98.4 98.3	98.4	8.1 8.1	8.1		2.0 2.3	2.2		2.6 2.5	2.6	
					Bottom	9.6	15.5 15.5	15.5	8.1 8.1	8.1	32.7 32.8	32.7	98.7 98.6	98.7	8.1 8.1	8.1	8.1	2.0 2.0	2.0		2.7 2.8	2.8	
20-Jan-16	Rainy	Moderate	09:31	10.7	Surface	1.0	15.1 15.2	15.2	8.1 8.1	8.1	33.1 33.3	33.2	99.7 100.3	100.0	8.2 8.2	8.2	8.2	1.1 1.0	1.1	1.2	1.2 1.2	1.2	3.6
					Middle	5.4	15.2 15.2	15.2	8.1 8.1	8.1	33.2 33.3	33.3	98.9 98.3	98.6	8.1 8.1	8.1		1.1 1.2	1.2		3.6 5.1	4.4	
					Bottom	9.7	15.2 15.2	15.2	8.1 8.1	8.1	33.4 33.5	33.5	98.5 98.3	98.4	8.1 8.1	8.1	8.1	1.3 1.3	1.3		5.1 5.2	5.2	

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:03	10.4	Surface	1.0	14.7 14.7	14.7	8.1 8.1	8.1	32.1 31.8	31.9	97.0 95.6	96.3	8.0 7.9	8.0	8.0	1.8 1.7	1.8	1.8	2.9 3.7	3.3	4.5
					Middle	5.2	14.8 14.8	14.8	8.1 8.1	8.1	33.1 33.0	33.0	95.0 95.0	95.0	7.9 7.9	7.9		1.8 1.7	1.8		4.9 4.8	4.9	
					Bottom	9.4	14.8 14.8	14.8	8.1 8.1	8.1	33.1 33.2	33.2	94.9 94.6	94.8	7.9 7.8	7.8	7.8	1.7 1.7	1.7		4.9 5.5	5.2	
25-Jan-16	Sunny	Moderate	13:49	10.3	Surface	1.0	12.5 12.5	12.5	8.3 8.4	8.4	30.0 29.8	29.9	99.1 101.0	100.1	8.7 8.7	8.7	8.7	2.3 2.3	2.3	2.6	6.5 6.5	6.5	6.8
					Middle	5.2	12.4 12.4	12.4	8.4 8.3	8.3	29.1 30.7	29.9	98.8 98.1	98.5	8.7 8.7	8.7		2.5 2.6	2.6		6.6 5.4	6.0	
					Bottom	9.3	12.6 12.4	12.5	8.3 8.3	8.3	33.3 29.5	31.4	98.1 97.6	97.9	8.7 8.7	8.7	8.7	2.8 2.7	2.8		8.6 7.1	7.9	
27-Jan-16	Cloudy	Moderate	15:03	10.6	Surface	1.0	12.2 12.2	12.2	8.3 8.3	8.3	29.7 28.9	29.3	98.9 98.2	98.6	8.8 8.8	8.8	8.8	2.7 2.9	2.8	2.6	4.6 4.9	4.8	5.0
					Middle	5.3	12.0 12.0	12.0	8.3 8.3	8.3	30.5 29.2	29.9	99.1 97.9	98.5	8.8 8.8	8.8		2.4 2.6	2.5		5.0 4.2	4.6	
					Bottom	9.6	12.1 12.0	12.0	8.3 8.3	8.3	29.3 31.5	30.4	98.0 99.6	98.8	8.8 8.8	8.8	8.8	2.4 2.3	2.4		5.5 5.6	5.6	
29-Jan-16	Cloudy	Moderate	16:09	10.6	Surface	1.0	11.9 12.0	11.9	8.3 8.3	8.3	27.1 24.4	25.8	96.5 96.8	96.7	8.8 9.0	8.9	8.9	2.5 2.6	2.6	2.4	5.3 4.4	4.9	4.4
					Middle	5.3	11.9 11.9	11.9	8.3 8.3	8.3	27.9 29.4	28.6	98.1 95.9	97.0	8.9 8.6	8.8		2.5 2.4	2.5		4.5 3.0	3.8	
					Bottom	9.6	11.9 11.9	11.9	8.2 8.3	8.3	30.7 28.2	29.5	97.9 98.1	98.0	8.7 8.9	8.8	8.8	2.1 2.2	2.2		5.0 3.9	4.5	

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

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	11:52	10.6	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	28.3 28.3	28.3	91.4 89.0	90.2	7.1 6.9	7.0	7.0	4.2 4.1	4.2	4.7	3.1 4.1	3.6	3.8
					Middle	5.3	19.5 19.5	19.5	8.2 8.2	8.2	28.5 28.5	28.5	89.5 90.5	90.0	6.9 7.0	7.0		3.5 3.4	3.5		3.8 3.3	3.6	
					Bottom	9.6	19.5 19.5	19.5	8.2 8.2	8.2	28.4 28.4	28.4	89.9 89.1	89.5	7.0 6.9	6.9	6.9	6.1 6.6	6.4		4.3 3.8	4.1	
4-Jan-16	Sunny	Moderate	14:39	10.6	Surface	1.0	16.2 16.3	16.3	8.1 8.1	8.1	25.7 25.9	25.8	97.3 98.4	97.9	8.2 8.3	8.2	8.2	1.5 1.5	1.5	1.6	3.1 2.6	2.9	3.0
					Middle	5.3	16.2 16.2	16.2	8.1 8.1	8.1	27.8 27.3	27.5	97.5 96.8	97.2	8.1 8.1	8.1		1.5 1.6	1.6		2.6 4.2	3.4	
					Bottom	9.6	16.2 16.2	16.2	8.1 8.1	8.1	27.4 29.1	28.3	98.3 98.9	98.6	8.2 8.2	8.2	8.2	1.6 1.5	1.6		2.9 2.5	2.7	
6-Jan-16	Sunny	Moderate	16:33	11.1	Surface	1.0	16.9 16.9	16.9	8.1 8.1	8.1	20.7 21.0	20.9	98.6 99.3	99.0	8.4 8.5	8.4	8.4	1.6 1.6	1.6	1.8	2.9 3.3	3.1	3.4
					Middle	5.6	16.8 16.8	16.8	8.1 8.1	8.1	21.7 21.7	21.7	96.9 98.8	97.9	8.3 8.4	8.3		1.9 1.8	1.9		3.8 3.7	3.8	
					Bottom	10.1	16.5 16.8	16.6	8.1 8.1	8.1	25.3 24.2	24.7	96.3 98.5	97.4	8.1 8.3	8.2	8.2	1.9 1.9	1.9		3.4 3.1	3.3	
8-Jan-16	Sunny	Moderate	17:09	10.5	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	25.4 26.3	25.9	101.8 102.5	102.2	8.5 8.5	8.5	8.4	2.8 3.0	2.9	3.1	2.9 3.4	3.2	2.8
					Middle	5.3	16.5 16.5	16.5	8.2 8.1	8.1	26.7 28.8	27.8	100.9 101.0	101.0	8.4 8.3	8.3		3.0 3.3	3.2		2.9 2.6	2.8	
					Bottom	9.5	16.5 16.5	16.5	8.1 8.1	8.1	27.0 29.8	28.4	101.9 101.9	101.9	8.4 8.3	8.4	8.4	3.0 3.4	3.2		2.3 2.4	2.4	
11-Jan-16	Rainy	Moderate	08:39	10.6	Surface	1.0	16.1 16.1	16.1	8.2 8.2	8.2	32.3 32.2	32.3	100.5 100.2	100.4	8.1 8.1	8.1	8.1	2.8 2.8	2.8	2.9	4.3 4.6	4.5	4.8
					Middle	5.3	16.1 16.1	16.1	8.2 8.2	8.2	32.4 32.4	32.4	100.2 100.1	100.2	8.1 8.1	8.1		2.9 2.8	2.9		4.9 4.6	4.8	
					Bottom	9.6	16.1 16.1	16.1	8.2 8.1	8.2	32.4 32.4	32.4	99.7 99.0	99.4	8.1 8.0	8.0	8.0	2.9 2.9	2.9		5.8 4.5	5.2	
13-Jan-16	Sunny	Moderate	09:43	10.3	Surface	1.0	15.8 15.8	15.8	8.2 8.2	8.2	32.0 31.6	31.8	102.6 102.8	102.7	8.4 8.4	8.4	8.4	6.3 6.2	6.3	6.5	5.2 6.0	5.6	5.6
					Middle	5.2	15.7 15.7	15.7	8.2 8.2	8.2	31.8 32.0	31.9	102.8 101.4	102.1	8.4 8.3	8.3		6.6 6.5	6.6		6.2 6.0	6.1	
					Bottom	9.3	15.7 15.7	15.7	8.2 8.2	8.2	32.0 32.1	32.0	102.4 101.2	101.8	8.4 8.3	8.3	8.3	6.6 6.5	6.6		5.2 4.8	5.0	
15-Jan-16	Rainy	Moderate	11:13	10.8	Surface	1.0	15.6 15.6	15.6	8.1 8.1	8.1	31.6 29.7	30.7	102.4 102.4	102.4	8.5 8.5	8.5	8.5	2.8 2.8	2.8	2.9	2.5 2.3	2.4	2.8
					Middle	5.4	15.6 15.6	15.6	8.1 8.1	8.1	30.9 31.8	31.3	102.1 102.1	102.1	8.4 8.4	8.4		2.8 2.9	2.9		3.0 2.8	2.9	
					Bottom	9.8	15.6 15.6	15.6	8.1 8.1	8.1	31.7 31.6	31.6	102.0 101.9	102.0	8.4 8.4	8.4	8.4	3.0 3.0	3.0		2.7 3.4	3.1	
18-Jan-16	Sunny	Moderate	14:01	10.5	Surface	1.0	15.2 15.2	15.2	8.2 8.2	8.2	23.9 23.5	23.7	102.1 98.9	100.5	8.9 8.6	8.7	8.8	2.9 3.0	3.0	3.4	2.9 2.8	2.9	2.6
					Middle	5.3	15.5 15.5	15.5	8.1 8.2	8.2	26.6 25.2	25.9	104.1 101.7	102.9	8.8 8.7	8.8		3.7 3.5	3.6		2.4 2.2	2.3	
					Bottom	9.5	15.5 15.3	15.4	8.1 8.2	8.2	27.5 25.4	26.4	105.5 102.4	104.0	8.9 8.8	8.8	8.8	3.6 3.3	3.5		2.7 2.6	2.7	
20-Jan-16	Rainy	Moderate	16:21	10.8	Surface	1.0	15.1 15.1	15.1	8.2 8.2	8.2	26.8 27.1	27.0	100.0 100.4	100.2	8.5 8.6	8.5	8.5	1.2 1.1	1.2	1.3	4.2 4.1	4.2	4.5
					Middle	5.4	15.1 15.1	15.1	8.2 8.2	8.2	27.6 26.9	27.2	100.3 100.0	100.2	8.5 8.5	8.5		1.3 1.3	1.3		4.1 5.1	4.6	
					Bottom	9.8	15.1 15.1	15.1	8.2 8.2	8.2	27.0 28.5	27.8	99.5 99.4	99.5	8.5 8.4	8.5	8.5	1.5 1.4	1.5		5.1 4.3	4.7	

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	17:07	10.8	Surface	1.0	14.5 14.5	14.5	8.1 8.1	8.1	24.0 23.9	23.9	96.9 97.4	97.2	8.5 8.5	8.5	8.5	1.5 1.6	1.6	1.6	5.0 5.4	5.2	4.7
					Middle	5.4	14.6 14.6	14.6	8.1 8.1	8.1	24.3 24.4	24.3	95.8 95.9	95.9	8.4 8.4	8.4		1.6 1.5	1.6		4.4 4.0	4.2	
					Bottom	9.8	14.6 14.6	14.6	8.1 8.1	8.1	24.3 24.2	24.2	94.9 94.9	94.9	8.4 8.4	8.4	8.4	1.5 1.6	1.6		4.8 4.7	4.8	
25-Jan-16	Sunny	Moderate	08:21	10.5	Surface	1.0	12.1 12.1	12.1	8.3 8.3	8.3	33.7 33.2	33.4	96.2 97.0	96.6	8.4 8.5	8.4	8.4	3.9 3.8	3.9	4.0	8.5 8.8	8.7	9.0
					Middle	5.3	12.1 12.1	12.1	8.3 8.2	8.3	33.4 33.9	33.6	96.1 95.5	95.8	8.3 8.3	8.3		4.0 4.0	4.0		9.3 8.4	8.9	
					Bottom	9.5	12.1 12.1	12.1	8.2 8.3	8.2	34.3 33.7	34.0	95.3 95.5	95.4	8.3 8.3	8.3	8.3	4.1 4.1	4.1		9.4 9.2	9.3	
27-Jan-16	Cloudy	Moderate	09:12	10.3	Surface	1.0	11.5 11.5	11.5	8.3 8.3	8.3	34.7 34.7	34.7	98.1 97.9	98.0	8.6 8.6	8.6	8.6	5.8 5.5	5.7	6.1	8.0 8.5	8.3	8.3
					Middle	5.2	11.5 11.5	11.5	8.3 8.3	8.3	34.8 34.8	34.8	97.8 97.5	97.7	8.6 8.5	8.6		6.3 6.8	6.6		8.3 8.6	8.5	
					Bottom	9.3	11.5 11.5	11.5	8.3 8.3	8.3	34.8 34.8	34.8	97.6 97.7	97.7	8.6 8.6	8.6	8.6	6.0 5.8	5.9		7.7 8.7	8.2	
29-Jan-16	Rainy	Moderate	10:21	10.5	Surface	1.0	11.8 11.8	11.8	8.3 8.3	8.3	32.7 32.8	32.8	97.9 95.4	96.7	8.6 8.4	8.5	8.6	9.4 10.4	9.9	10.1	12.2 12.0	12.1	12.8
					Middle	5.3	11.8 11.8	11.8	8.3 8.3	8.3	32.9 32.9	32.9	97.7 96.9	97.3	8.6 8.5	8.6		10.2 10.7	10.5		14.1 13.7	13.9	
					Bottom	9.5	11.8 11.8	11.8	8.3 8.2	8.3	32.9 32.9	32.9	97.7 97.5	97.6	8.6 8.6	8.6	8.6	10.1 9.8	10.0		12.5 12.3	12.4	

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

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	18:13	6.4	Surface	1.0	16.0 16.1	16.1	8.1 8.1	8.1	26.5 26.5	26.5	97.2 97.0	97.1	8.2 8.2	8.2	8.2	3.4 3.3	3.4	3.5	5.0 4.6	4.8	3.9
					Middle	3.2	16.0 16.0	16.0	8.1 8.1	8.1	26.5 26.5	26.5	96.9 97.0	97.0	8.1 8.2	8.1		3.4 3.3	3.4		3.8 3.2	3.5	
					Bottom	5.4	16.0 16.0	16.0	8.1 8.1	8.1	26.6 26.5	26.5	96.9 96.7	96.8	8.1 8.1	8.1	8.1	3.5 3.6	3.6		3.3 3.4	3.4	
4-Jan-16	Sunny	Moderate	07:01	6.4	Surface	1.0	19.7 19.6	19.7	8.1 8.1	8.1	27.3 27.3	27.3	90.2 89.7	90.0	7.0 7.0	7.0	7.0	1.8 1.9	1.9	1.8	4.0 3.5	3.8	3.1
					Middle	3.2	19.7 19.7	19.7	8.1 8.1	8.1	27.8 27.5	27.7	90.4 88.8	89.6	7.0 6.9	7.0		1.8 1.7	1.8		2.1 3.4	2.8	
					Bottom	5.4	19.7 19.7	19.7	8.1 8.1	8.1	27.8 27.9	27.9	89.1 89.3	89.2	6.9 6.9	6.9	6.9	1.6 1.8	1.7		2.6 2.7	2.7	
6-Jan-16	Sunny	Moderate	10:50	6.2	Surface	1.0	20.1 20.0	20.0	8.1 8.1	8.1	26.4 26.5	26.4	89.3 88.3	88.8	7.0 6.9	6.9	6.9	1.8 1.8	1.8	2.5	3.1 3.8	3.5	3.2
					Middle	3.1	19.9 19.9	19.9	8.1 8.1	8.1	27.7 27.6	27.6	87.2 88.3	87.8	6.8 6.8	6.8		2.3 2.4	2.4		2.5 2.7	2.6	
					Bottom	5.2	19.9 19.9	19.9	8.1 8.1	8.1	27.8 27.8	27.8	91.7 88.8	90.3	7.1 6.9	7.0	7.0	3.2 3.1	3.2		2.9 4.3	3.6	
8-Jan-16	Sunny	Moderate	12:16	6.3	Surface	1.0	20.0 20.1	20.1	8.2 8.2	8.2	27.8 27.8	27.8	95.4 95.5	95.5	7.4 7.4	7.4	7.4	2.2 2.2	2.2	2.2	4.3 4.0	4.2	3.8
					Middle	3.2	20.0 20.1	20.1	8.2 8.2	8.2	28.0 28.0	28.0	95.2 95.0	95.1	7.3 7.3	7.3		2.3 2.0	2.2		3.5 3.5	3.5	
					Bottom	5.3	20.0 20.0	20.0	8.2 8.2	8.2	28.1 28.0	28.1	94.8 94.6	94.7	7.3 7.3	7.3	7.3	2.2 2.1	2.2		3.3 3.8	3.6	
11-Jan-16	Sunny	Moderate	13:41	6.3	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	28.2 28.2	28.2	94.9 95.6	95.3	7.3 7.4	7.4	7.4	1.6 1.5	1.6	1.6	3.7 2.4	3.1	3.4
					Middle	3.2	19.8 19.8	19.8	8.2 8.2	8.2	28.2 28.2	28.2	94.8 94.8	94.8	7.3 7.3	7.3		1.6 1.6	1.6		2.6 3.5	3.1	
					Bottom	5.3	19.8 19.8	19.8	8.2 8.2	8.2	28.2 28.2	28.2	94.3 95.4	94.9	7.3 7.4	7.3	7.3	1.6 1.6	1.6		4.1 4.0	4.1	
13-Jan-16	Sunny	Moderate	15:08	6.3	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	27.4 27.3	27.4	96.3 96.8	96.6	7.5 7.6	7.5	7.5	2.7 2.6	2.7	2.7	6.1 5.4	5.8	5.5
					Middle	3.2	19.6 19.6	19.6	8.2 8.2	8.2	27.5 27.5	27.5	96.3 96.9	96.6	7.5 7.6	7.5		2.9 2.7	2.8		4.5 5.7	5.1	
					Bottom	5.3	19.6 19.5	19.6	8.2 8.2	8.2	27.6 27.5	27.6	96.3 97.2	96.8	7.5 7.6	7.5	7.5	2.8 2.6	2.7		6.2 4.7	5.5	
15-Jan-16	Rainy	Moderate	16:57	6.0	Surface	1.0	19.1 19.1	19.1	8.2 8.2	8.2	27.5 27.5	27.5	97.8 97.5	97.7	7.7 7.7	7.7	7.7	2.0 2.0	2.0	2.1	2.7 2.0	2.4	2.5
					Middle	3.0	19.1 19.1	19.1	8.2 8.2	8.2	27.5 27.6	27.6	96.7 97.2	97.0	7.6 7.6	7.6		2.2 2.1	2.2		2.4 2.1	2.3	
					Bottom	5.0	19.1 19.1	19.1	8.2 8.2	8.2	27.6 27.6	27.6	95.4 95.5	95.5	7.5 7.5	7.5	7.5	2.2 2.1	2.2		2.1 3.3	2.7	
18-Jan-16	Sunny	Moderate	07:36	6.2	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	25.5 25.5	25.5	94.9 101.4	98.2	7.5 8.0	7.8	7.7	1.9 1.8	1.9	1.9	3.2 2.9	3.1	2.7
					Middle	3.1	18.4 18.6	18.5	8.2 8.2	8.2	26.7 26.8	26.8	95.2 92.7	94.0	7.7 7.5	7.6		1.9 1.9	1.9		2.8 2.2	2.5	
					Bottom	5.2	18.7 18.8	18.8	8.2 8.2	8.2	27.8 27.8	27.8	94.6 91.9	93.3	7.6 7.4	7.5	7.5	1.9 1.9	1.9		2.3 2.5	2.4	
20-Jan-16	Rainy	Moderate	10:41	6.2	Surface	1.0	18.6 18.6	18.6	8.2 8.2	8.2	28.6 28.6	28.6	93.9 92.5	93.2	7.4 7.3	7.3	7.4	3.3 3.3	3.3	3.2	4.0 4.2	4.1	4.9
					Middle	3.1	18.6 18.6	18.6	8.2 8.2	8.2	28.7 28.6	28.6	93.0 94.3	93.7	7.3 7.4	7.4		3.2 3.0	3.1		5.0 5.2	5.1	
					Bottom	5.2	18.7 18.6	18.6	8.2 8.2	8.2	28.7 28.6	28.6	92.1 98.4	95.3	7.3 7.8	7.5	7.5	3.1 3.3	3.2		5.8 5.0	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 IS(Mf)16 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:19	6.7	Surface	1.0	18.2 18.2	18.2	8.3 8.3	8.3	28.3 28.3	28.3	92.6 92.5	92.6	7.4 7.4	7.4	7.4	2.8 2.8	2.8	3.0	6.1 6.3	6.2	6.5
					Middle	3.4	18.3 18.3	18.3	8.3 8.3	8.3	28.4 28.3	28.3	92.3 91.0	91.7	7.4 7.2	7.3		2.9 2.9	2.9		6.2 6.3	6.3	
					Bottom	5.7	18.4 18.4	18.4	8.2 8.2	8.2	28.6 28.5	28.5	90.9 90.5	90.7	7.2 7.2	7.2	7.2	3.1 3.2	3.2		6.4 7.4	6.9	
25-Jan-16	Sunny	Moderate	13:52	6.2	Surface	1.0	16.1 16.1	16.1	8.3 8.3	8.3	28.8 28.8	28.8	96.0 92.5	94.3	7.9 7.6	7.8	7.8	3.2 3.2	3.2	3.1	6.2 5.9	6.1	6.4
					Middle	3.1	16.1 16.1	16.1	8.3 8.3	8.3	29.0 29.0	29.0	91.8 94.2	93.0	7.6 7.8	7.7		3.1 3.1	3.1		6.3 6.6	6.5	
					Bottom	5.2	16.1 16.1	16.1	8.3 8.3	8.3	29.0 29.0	29.0	91.8 93.1	92.5	7.6 7.7	7.6	7.6	3.1 3.1	3.1		6.9 6.5	6.7	
27-Jan-16	Cloudy	Moderate	14:30	6.1	Surface	1.0	15.4 15.4	15.4	8.3 8.3	8.3	29.7 29.7	29.7	93.8 91.9	92.9	7.8 7.7	7.8	7.8	3.3 3.5	3.4	3.4	3.8 4.6	4.2	4.5
					Middle	3.1	15.4 15.4	15.4	8.3 8.3	8.3	29.8 29.7	29.7	91.6 93.4	92.5	7.6 7.8	7.7		3.4 3.4	3.4		3.9 4.3	4.1	
					Bottom	5.1	15.4 15.4	15.4	8.3 8.3	8.3	29.9 29.8	29.8	92.1 90.9	91.5	7.7 7.6	7.6	7.6	3.5 3.5	3.5		4.1 6.3	5.2	
29-Jan-16	Cloudy	Moderate	16:06	6.3	Surface	1.0	15.7 15.6	15.6	8.3 8.3	8.3	27.8 28.1	28.0	92.9 92.9	92.9	7.8 7.8	7.8	7.8	4.2 4.0	4.1	4.1	4.2 5.1	4.7	3.9
					Middle	3.2	15.5 15.5	15.5	8.3 8.3	8.3	28.5 28.5	28.5	92.0 90.5	91.3	7.7 7.6	7.7		4.1 4.1	4.1		3.5 3.7	3.6	
					Bottom	5.3	15.5 15.4	15.5	8.3 8.2	8.3	28.5 28.7	28.6	91.2 90.6	90.9	7.7 7.6	7.6	7.6	4.0 4.2	4.1		3.8 3.2	3.5	

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

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	12:16	6.6	Surface	1.0	16.0 16.0	16.0	8.1 8.1	8.1	26.7 26.7	26.7	94.1 94.5	94.3	7.9 7.9	7.9	7.9	5.3 5.4	5.4	6.2	4.6 4.2	4.4	4.3
					Middle	3.3	15.9 15.9	15.9	8.1 8.1	8.1	26.8 26.8	26.8	94.4 94.3	94.4	7.9 7.9	7.9		6.2 6.1	6.2		4.9 4.4	4.7	
					Bottom	5.6	16.0 15.9	16.0	8.1 8.0	8.1	27.1 27.1	27.1	95.2 95.3	95.3	8.0 8.0	8.0	8.0	7.1 6.8	7.0		3.3 4.3	3.8	
4-Jan-16	Sunny	Moderate	13:59	6.3	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	25.9 26.0	26.0	91.6 92.3	92.0	7.2 7.2	7.2	7.1	5.1 5.7	5.4	6.9	1.3 1.5	1.4	1.6
					Middle	3.2	19.7 19.7	19.7	8.2 8.2	8.2	27.1 27.1	27.1	89.9 90.1	90.0	7.0 7.0	7.0		8.2 7.5	7.9		1.7 1.2	1.5	
					Bottom	5.3	19.7 19.7	19.7	8.1 8.1	8.1	28.3 28.2	28.3	90.2 90.4	90.3	7.0 7.0	7.0	7.0	7.8 7.1	7.5		1.7 1.8	1.8	
6-Jan-16	Sunny	Moderate	15:33	6.4	Surface	1.0	20.6 20.5	20.6	8.2 8.2	8.2	25.5 25.5	25.5	94.6 94.9	94.8	7.3 7.4	7.3	7.3	4.1 4.2	4.2	4.3	2.9 2.9	2.9	3.7
					Middle	3.2	20.3 20.3	20.3	8.2 8.2	8.2	26.4 26.5	26.4	92.7 92.2	92.5	7.2 7.1	7.2		4.5 4.1	4.3		3.9 3.2	3.6	
					Bottom	5.4	20.2 20.3	20.2	8.1 8.1	8.1	27.1 27.0	27.1	94.0 92.9	93.5	7.3 7.2	7.2	7.2	4.4 4.2	4.3		5.3 3.7	4.5	
8-Jan-16	Sunny	Moderate	16:46	6.1	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	28.2 28.2	28.2	97.6 98.9	98.3	7.5 7.6	7.5	7.5	6.6 6.5	6.6	6.5	5.2 5.0	5.1	4.9
					Middle	3.1	20.2 20.2	20.2	8.2 8.2	8.2	28.6 28.5	28.6	95.9 98.6	97.3	7.3 7.6	7.4		6.5 6.5	6.5		4.7 4.2	4.5	
					Bottom	5.1	20.2 20.2	20.2	8.2 8.2	8.2	28.8 28.9	28.8	96.4 98.7	97.6	7.4 7.6	7.5	7.5	6.4 6.5	6.5		4.3 5.8	5.1	
11-Jan-16	Rainy	Moderate	08:40	6.3	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	27.5 27.4	27.5	93.7 93.4	93.6	7.3 7.3	7.3	7.3	2.6 2.7	2.7	3.0	3.1 3.4	3.3	3.9
					Middle	3.2	19.7 19.7	19.7	8.2 8.2	8.2	27.6 27.6	27.6	94.8 93.2	94.0	7.4 7.2	7.3		3.2 3.1	3.2		3.6 4.3	4.0	
					Bottom	5.3	19.7 19.7	19.7	8.2 8.2	8.2	27.6 27.6	27.6	95.5 92.6	94.1	7.4 7.2	7.3	7.3	3.1 3.2	3.2		3.8 5.2	4.5	
13-Jan-16	Sunny	Moderate	09:47	6.2	Surface	1.0	19.3 19.3	19.3	8.2 8.2	8.2	27.8 27.9	27.8	97.9 96.2	97.1	7.7 7.5	7.6	7.7	2.9 2.8	2.9	3.3	4.9 3.7	4.3	6.8
					Middle	3.1	19.3 19.3	19.3	8.2 8.2	8.2	27.9 27.8	27.8	99.4 98.7	99.1	7.8 7.7	7.7		3.1 3.3	3.2		8.1 7.3	7.7	
					Bottom	5.2	19.3 19.3	19.3	8.2 8.2	8.2	27.8 27.9	27.8	101.0 96.3	98.7	7.9 7.5	7.7	7.7	3.8 4.0	3.9		9.1 7.5	8.3	
15-Jan-16	Rainy	Moderate	11:14	6.4	Surface	1.0	19.0 19.0	19.0	8.2 8.2	8.2	27.5 27.6	27.5	96.1 97.6	96.9	7.6 7.7	7.6	7.6	1.8 1.7	1.8	1.8	2.8 2.9	2.9	2.6
					Middle	3.2	19.1 19.2	19.2	8.2 8.2	8.2	27.8 27.8	27.8	96.4 96.6	96.5	7.6 7.6	7.6		1.8 1.8	1.8		3.1 2.2	2.7	
					Bottom	5.4	19.1 19.2	19.1	8.2 8.2	8.2	27.8 27.9	27.8	96.3 96.3	96.3	7.6 7.6	7.6	7.6	1.9 1.8	1.9		2.1 2.5	2.3	
18-Jan-16	Sunny	Moderate	13:24	6.3	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	26.7 26.7	26.7	94.1 94.2	94.2	7.4 7.5	7.5	7.5	1.9 1.8	1.9	1.9	2.8 2.4	2.6	2.6
					Middle	3.2	18.9 18.9	18.9	8.2 8.2	8.2	26.8 27.2	27.0	94.5 93.9	94.2	7.5 7.5	7.5		1.9 1.9	1.9		2.6 2.4	2.5	
					Bottom	5.3	18.9 19.0	18.9	8.2 8.2	8.2	27.8 27.7	27.7	92.7 95.1	93.9	7.3 7.5	7.4	7.4	1.9 1.9	1.9		2.7 2.8	2.8	
20-Jan-16	Rainy	Moderate	15:21	6.1	Surface	1.0	18.7 18.7	18.7	8.2 8.2	8.2	29.0 29.1	29.1	94.1 92.6	93.4	7.4 7.3	7.3	7.4	3.0 3.1	3.1	2.9	3.5 3.9	3.7	4.2
					Middle	3.1	18.7 18.7	18.7	8.2 8.2	8.2	29.0 29.1	29.1	95.7 92.3	94.0	7.5 7.3	7.4		2.3 2.2	2.3		4.2 3.9	4.1	
					Bottom	5.1	18.7 18.7	18.7	8.2 8.2	8.2	29.1 29.0	29.0	93.3 97.3	95.3	7.3 7.6	7.5	7.5	3.0 3.3	3.2		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 IS(Mf)16 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	17:05	6.8	Surface	1.0	18.0 18.1	18.1	8.2 8.2	8.2	27.8 27.9	27.8	95.4 95.7	95.6	7.6 7.6	7.6	7.6	2.6 2.6	2.6	2.8	4.1 3.9	4.0	4.1
					Middle	3.4	18.1 18.1	18.1	8.2 8.2	8.2	27.8 27.8	27.8	93.6 94.2	93.9	7.5 7.5	7.5		2.7 2.8	2.8		3.1 5.1	4.1	
					Bottom	5.8	18.1 18.1	18.1	8.2 8.2	8.2	27.8 27.8	27.8	92.7 92.3	92.5	7.4 7.4	7.4	7.4	3.1 3.0	3.1		3.5 4.6	4.1	
25-Jan-16	Sunny	Moderate	08:43	6.4	Surface	1.0	16.3 16.3	16.3	8.3 8.3	8.3	29.6 29.7	29.6	104.6 99.2	101.9	8.6 8.1	8.4	8.1	4.7 4.7	4.7	4.8	8.8 8.8	8.8	8.5
					Middle	3.2	16.3 16.3	16.3	8.3 8.3	8.3	29.7 29.6	29.6	94.2 96.5	95.4	7.7 7.9	7.8		4.8 4.9	4.9		7.1 7.4	7.3	
					Bottom	5.4	16.2 16.3	16.3	8.3 8.3	8.3	29.5 29.6	29.6	92.5 94.0	93.3	7.6 7.7	7.6	7.6	4.8 4.8	4.8		9.3 9.7	9.5	
27-Jan-16	Cloudy	Moderate	09:24	6.3	Surface	1.0	15.4 15.5	15.4	8.3 8.3	8.3	29.3 29.4	29.3	95.5 91.4	93.5	8.0 7.6	7.8	7.8	4.0 4.0	4.0	4.3	4.0 4.6	4.3	5.3
					Middle	3.2	15.5 15.5	15.5	8.3 8.3	8.3	29.4 29.5	29.4	93.5 90.4	92.0	7.8 7.5	7.7		4.5 4.3	4.4		6.1 5.5	5.8	
					Bottom	5.3	15.5 15.4	15.5	8.3 8.2	8.3	29.5 29.5	29.5	90.5 92.2	91.4	7.6 7.7	7.6	7.6	4.3 4.5	4.4		5.1 6.2	5.7	
29-Jan-16	Rainy	Moderate	10:44	6.3	Surface	1.0	15.4 15.4	15.4	8.2 8.2	8.2	27.8 28.0	27.9	92.0 92.7	92.4	7.8 7.8	7.8	7.8	3.1 3.1	3.1	3.1	4.2 3.5	3.9	3.3
					Middle	3.2	15.4 15.4	15.4	8.2 8.2	8.2	28.1 28.0	28.1	91.7 92.5	92.1	7.7 7.8	7.8		3.2 3.1	3.2		3.8 2.1	3.0	
					Bottom	5.3	15.4 15.4	15.4	8.2 8.2	8.2	28.0 28.1	28.1	91.6 91.5	91.6	7.7 7.7	7.7	7.7	3.1 3.1	3.1		3.3 2.7	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 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-Jan-16	Sunny	Moderate	17:17	8.2	Surface	1.0	16.2 16.2	16.2	8.2 8.2	8.2	25.6 25.6	25.6	99.6 100.1	99.9	8.4 8.4	8.4	8.4	4.8 4.9	4.9	5.1	5.0 4.5	4.8	4.6
					Middle	4.1	16.1 16.2	16.1	8.2 8.2	8.2	25.7 25.7	25.7	99.9 99.9	99.9	8.4 8.4	8.4		4.9 5.1	5.0		5.4 3.9	4.7	
					Bottom	7.2	16.0 16.1	16.1	8.2 8.2	8.2	25.7 25.7	25.7	99.6 99.8	99.7	8.4 8.4	8.4	8.4	5.4 5.3	5.4		5.0 3.8	4.4	
4-Jan-16	Sunny	Moderate	08:07	8.5	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	25.8 25.8	25.8	89.9 89.8	89.9	7.1 7.1	7.1	7.1	3.7 3.6	3.7	3.8	3.1 2.2	2.7	3.0
					Middle	4.3	19.6 19.6	19.6	8.1 8.1	8.1	27.6 27.6	27.6	89.7 89.3	89.5	7.0 6.9	7.0		3.7 3.7	3.7		2.8 3.6	3.2	
					Bottom	7.5	19.6 19.6	19.6	8.1 8.1	8.1	28.0 27.6	27.8	91.1 89.3	90.2	7.1 7.0	7.0	7.0	4.1 3.8	4.0		2.7 3.3	3.0	
6-Jan-16	Sunny	Moderate	11:39	8.5	Surface	1.0	20.2 20.1	20.2	8.1 8.1	8.1	27.0 27.0	27.0	90.0 89.5	89.8	7.0 6.9	6.9	6.9	4.5 4.5	4.5	4.6	5.5 6.4	6.0	6.4
					Middle	4.3	20.1 20.1	20.1	8.1 8.1	8.1	27.1 27.1	27.1	88.7 88.8	88.8	6.9 6.9	6.9		4.5 4.6	4.6		6.2 6.9	6.6	
					Bottom	7.5	20.1 20.0	20.1	8.1 8.1	8.1	27.2 27.4	27.3	89.9 91.2	90.6	7.0 7.1	7.0	7.0	4.6 4.5	4.6		6.0 7.0	6.5	
8-Jan-16	Sunny	Moderate	13:01	8.3	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	26.7 26.7	26.7	94.1 97.0	95.6	7.3 7.5	7.4	7.4	5.3 5.4	5.4	5.4	5.4 5.8	5.6	6.1
					Middle	4.2	20.1 20.1	20.1	8.2 8.2	8.2	26.7 26.7	26.7	94.0 96.9	95.5	7.3 7.5	7.4		5.3 5.5	5.4		6.2 6.6	6.4	
					Bottom	7.3	20.1 20.1	20.1	8.2 8.2	8.2	26.8 26.7	26.8	92.9 94.7	93.8	7.2 7.4	7.3	7.3	5.3 5.3	5.3		6.2 6.1	6.2	
11-Jan-16	Sunny	Moderate	12:55	8.8	Surface	1.0	19.6 19.6	19.6	8.3 8.3	8.3	27.5 27.6	27.5	93.6 94.3	94.0	7.3 7.4	7.3	7.3	3.5 3.2	3.4	3.4	4.6 5.1	4.9	4.8
					Middle	4.4	19.5 19.5	19.5	8.3 8.3	8.3	27.6 27.5	27.6	94.0 92.7	93.4	7.3 7.2	7.3		3.2 3.5	3.4		5.0 4.2	4.6	
					Bottom	7.8	19.5 19.5	19.5	8.3 8.3	8.3	27.6 27.5	27.5	93.9 93.8	93.9	7.3 7.3	7.3	7.3	3.4 3.3	3.4		4.7 5.2	5.0	
13-Jan-16	Sunny	Moderate	14:07	8.6	Surface	1.0	19.6 19.5	19.6	8.3 8.3	8.3	27.0 27.1	27.0	96.8 97.4	97.1	7.6 7.6	7.6	7.6	3.3 3.4	3.4	3.5	6.0 5.0	5.5	5.7
					Middle	4.3	19.5 19.5	19.5	8.3 8.3	8.3	27.2 27.1	27.1	96.9 96.6	96.8	7.6 7.6	7.6		3.6 3.4	3.5		5.1 6.6	5.9	
					Bottom	7.6	19.5 19.5	19.5	8.3 8.3	8.3	27.1 27.2	27.1	95.3 96.4	95.9	7.5 7.5	7.5	7.5	3.5 3.6	3.6		5.3 6.1	5.7	
15-Jan-16	Rainy	Moderate	16:10	8.5	Surface	1.0	18.8 18.8	18.8	8.0 8.1	8.0	26.9 26.9	26.9	94.7 94.3	94.5	7.5 7.5	7.5	7.5	3.9 3.9	3.9	4.3	3.2 3.7	3.5	3.9
					Middle	4.3	18.8 18.8	18.8	8.0 8.0	8.0	26.9 26.9	26.9	94.1 94.2	94.2	7.5 7.5	7.5		4.4 4.5	4.5		3.5 3.9	3.7	
					Bottom	7.5	18.8 18.8	18.8	8.0 8.0	8.0	26.9 26.9	26.9	93.6 94.2	93.9	7.4 7.5	7.5	7.5	4.6 4.6	4.6		4.3 4.6	4.5	
18-Jan-16	Sunny	Moderate	08:24	8.6	Surface	1.0	18.2 18.2	18.2	8.2 8.2	8.2	26.3 26.6	26.5	92.3 94.5	93.4	7.4 7.6	7.5	7.5	2.9 2.8	2.9	3.0	3.2 2.6	2.9	3.3
					Middle	4.3	18.4 18.4	18.4	8.2 8.2	8.2	27.1 27.1	27.1	92.4 91.7	92.1	7.4 7.4	7.4		3.0 3.0	3.0		2.8 4.3	3.6	
					Bottom	7.6	18.4 18.3	18.3	8.2 8.2	8.2	27.1 27.1	27.1	91.5 91.4	91.5	7.4 7.3	7.3	7.3	3.0 3.1	3.1		2.9 3.6	3.3	
20-Jan-16	Rainy	Moderate	11:41	8.3	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	27.5 27.5	27.5	92.6 93.5	93.1	7.4 7.5	7.4	7.4	3.2 3.2	3.2	3.2	2.9 2.8	2.9	3.5
					Middle	4.2	18.3 18.3	18.3	8.2 8.2	8.2	27.5 27.5	27.5	94.3 92.1	93.2	7.5 7.4	7.4		3.1 3.1	3.1		4.3 3.4	3.9	
					Bottom	7.3	18.3 18.3	18.3	8.2 8.2	8.2	27.6 27.6	27.6	92.6 92.5	92.6	7.4 7.4	7.4	7.4	3.3 3.2	3.3		4.0 3.6	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 IS5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	13:01	8.4	Surface	1.0	18.0 17.9	18.0	8.2 8.2	8.2	27.9 28.0	28.0	91.0 91.3	91.2	7.3 7.3	7.3	7.3	4.8 4.7	4.8	4.9	5.6 5.8	5.7	5.6
					Middle	4.2	18.0 18.0	18.0	8.2 8.2	8.2	28.1 28.0	28.0	90.9 90.9	90.9	7.3 7.3	7.3		4.9 4.8	4.9		5.4 5.7	5.6	
					Bottom	7.4	17.9 18.0	18.0	8.2 8.2	8.2	28.0 28.0	28.0	90.6 90.5	90.6	7.3 7.3	7.3	7.3	5.1 5.0	5.1		5.7 5.3	5.5	
25-Jan-16	Sunny	Moderate	13:07	8.2	Surface	1.0	14.6 14.6	14.6	8.5 8.5	8.5	27.8 27.7	27.8	90.4 90.6	90.5	7.7 7.8	7.8	7.8	5.8 6.1	6.0	5.9	8.1 9.0	8.6	10.6
					Middle	4.1	14.6 14.6	14.6	8.5 8.5	8.5	27.9 28.0	27.9	89.8 90.1	90.0	7.7 7.7	7.7		5.9 5.7	5.8		11.3 11.1	11.2	
					Bottom	7.2	14.6 14.6	14.6	8.5 8.5	8.5	28.0 28.0	28.0	89.5 90.2	89.9	7.7 7.7	7.7	7.7	5.9 6.0	6.0		11.7 12.3	12.0	
27-Jan-16	Cloudy	Moderate	13:41	8.4	Surface	1.0	14.5 14.5	14.5	8.3 8.3	8.3	29.3 29.4	29.3	89.8 89.5	89.7	7.6 7.6	7.6	7.6	6.6 6.5	6.6	6.7	7.6 7.9	7.8	8.3
					Middle	4.2	14.5 14.5	14.5	8.3 8.3	8.3	29.4 29.4	29.4	89.7 89.5	89.6	7.6 7.6	7.6		6.7 6.7	6.7		7.8 8.3	8.1	
					Bottom	7.4	14.5 14.5	14.5	8.3 8.3	8.3	29.4 29.4	29.4	89.2 89.3	89.3	7.6 7.6	7.6	7.6	6.6 6.8	6.7		8.9 8.9	8.9	
29-Jan-16	Cloudy	Moderate	15:14	8.1	Surface	1.0	15.6 15.5	15.6	8.2 8.2	8.2	26.4 27.1	26.8	92.3 91.9	92.1	7.8 7.8	7.8	7.8	8.3 8.5	8.4	8.7	4.4 4.9	4.7	5.7
					Middle	4.1	15.3 15.4	15.4	8.2 8.2	8.2	27.8 27.6	27.7	91.2 91.8	91.5	7.7 7.8	7.7		9.0 8.9	9.0		6.3 7.2	6.8	
					Bottom	7.1	15.3 15.4	15.4	8.2 8.2	8.2	28.1 28.0	28.1	91.0 90.8	90.9	7.7 7.7	7.7	7.7	8.8 8.7	8.8		5.3 6.0	5.7	

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 IS5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	13:07	8.4	Surface	1.0	16.0 16.0	16.0	8.2 8.2	8.2	25.8 25.8	25.8	99.7 100.1	99.9	8.4 8.4	8.4	8.4	4.9 4.9	4.9		4.2 4.5	4.4	
					Middle	4.2	16.0 16.0	16.0	8.2 8.2	8.2	26.0 26.0	26.0	99.3 99.5	99.4	8.4 8.4	8.4		4.9 5.1	5.0	5.0	3.9 4.1	4.0	4.6
					Bottom	7.4	15.9 15.9	15.9	8.2 8.2	8.2	26.1 26.1	26.1	98.7 98.8	98.8	8.3 8.3	8.3	8.3	5.3 5.1	5.2		6.0 4.5	5.3	
4-Jan-16	Sunny	Moderate	12:59	8.2	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	26.4 26.4	26.4	93.5 93.2	93.4	7.3 7.3	7.3	7.3	2.8 3.0	2.9		2.0 2.1	2.1	
					Middle	4.1	19.7 19.7	19.7	8.2 8.2	8.2	26.7 26.8	26.7	92.0 92.8	92.4	7.2 7.3	7.2		3.1 2.9	3.0	3.2	2.9 2.5	2.7	2.5
					Bottom	7.2	19.7 19.7	19.7	8.2 8.2	8.2	27.0 27.2	27.1	91.5 92.4	92.0	7.1 7.2	7.2	7.2	3.4 3.7	3.6		3.0 2.1	2.6	
6-Jan-16	Sunny	Moderate	14:42	8.4	Surface	1.0	20.7 20.6	20.6	8.2 8.2	8.2	27.3 27.4	27.3	90.3 89.6	90.0	6.9 6.9	6.9	6.9	16.2 15.1	15.7		16.4 15.0	15.7	
					Middle	4.2	20.5 20.4	20.4	8.2 8.2	8.2	27.5 27.6	27.5	89.5 88.7	89.1	6.9 6.8	6.8		16.1 15.9	16.0	16.1	18.0 17.8	17.9	17.1
					Bottom	7.4	20.4 20.3	20.3	8.2 8.2	8.2	27.6 27.7	27.6	88.0 88.8	88.4	6.8 6.8	6.8	6.8	16.6 16.3	16.5		17.6 17.6	17.6	
8-Jan-16	Sunny	Moderate	16:00	8.6	Surface	1.0	20.2 20.2	20.2	8.3 8.2	8.3	28.1 28.1	28.1	92.5 94.1	93.3	7.1 7.2	7.2	7.1	5.8 5.8	5.8		15.4 15.0	15.2	
					Middle	4.3	20.1 20.1	20.1	8.3 8.2	8.3	28.4 28.4	28.4	90.6 92.7	91.7	7.0 7.1	7.0		5.7 5.8	5.8	5.8	17.6 18.0	17.8	17.3
					Bottom	7.6	20.1 20.1	20.1	8.3 8.2	8.3	28.6 28.7	28.6	90.8 93.1	92.0	7.0 7.1	7.0	7.0	5.8 5.8	5.8		19.1 18.7	18.9	
11-Jan-16	Rainy	Moderate	09:22	8.8	Surface	1.0	19.4 19.4	19.4	8.2 8.2	8.2	27.4 27.2	27.3	93.2 94.1	93.7	7.3 7.4	7.3	7.3	2.6 2.7	2.7		4.0 4.5	4.3	
					Middle	4.4	19.5 19.5	19.5	8.2 8.2	8.2	27.7 27.7	27.7	92.1 95.6	93.9	7.2 7.5	7.3		2.6 2.8	2.7	2.7	3.9 4.1	4.0	4.5
					Bottom	7.8	19.5 19.5	19.5	8.2 8.2	8.2	27.7 27.7	27.7	94.0 92.5	93.3	7.3 7.2	7.3	7.3	2.8 2.6	2.7		4.4 5.8	5.1	
13-Jan-16	Sunny	Moderate	10:59	8.6	Surface	1.0	19.2 19.2	19.2	8.2 8.2	8.2	27.9 27.9	27.9	96.5 96.0	96.3	7.6 7.5	7.5	7.6	2.9 3.2	3.1		5.6 5.9	5.8	
					Middle	4.3	19.2 19.2	19.2	8.2 8.2	8.2	27.9 27.9	27.9	99.0 95.1	97.1	7.8 7.5	7.6		2.8 3.0	2.9	3.1	5.1 6.4	5.8	6.1
					Bottom	7.6	19.2 19.2	19.2	8.2 8.2	8.2	27.8 27.9	27.9	96.7 95.6	96.2	7.6 7.5	7.5	7.5	3.4 3.2	3.3		5.8 7.8	6.8	
15-Jan-16	Rainy	Moderate	11:58	8.6	Surface	1.0	18.8 18.8	18.8	8.2 8.3	8.3	27.8 27.9	27.8	95.1 95.4	95.3	7.5 7.5	7.5	7.5	2.8 3.0	2.9		4.0 4.0	4.0	
					Middle	4.3	18.9 18.9	18.9	8.2 8.2	8.2	28.0 28.0	28.0	94.7 94.1	94.4	7.5 7.4	7.4		2.9 2.8	2.9	2.9	2.6 3.5	3.1	3.4
					Bottom	7.6	18.9 18.9	18.9	8.2 8.2	8.2	28.0 28.1	28.0	94.2 93.2	93.7	7.4 7.3	7.4	7.4	2.9 2.9	2.9		3.3 2.8	3.1	
18-Jan-16	Sunny	Moderate	12:39	8.5	Surface	1.0	18.3 18.3	18.3	8.3 8.3	8.3	26.6 26.5	26.6	93.1 92.6	92.9	7.5 7.4	7.4	7.4	3.3 3.2	3.3		5.6 5.9	5.8	
					Middle	4.3	18.3 18.4	18.4	8.3 8.3	8.3	26.9 26.9	26.9	93.5 92.5	93.0	7.5 7.4	7.4		3.3 3.3	3.3	3.3	5.9 5.7	5.8	5.9
					Bottom	7.5	18.4 18.4	18.4	8.3 8.3	8.3	27.1 27.1	27.1	92.3 92.9	92.6	7.4 7.4	7.4	7.4	3.1 3.3	3.2		6.1 6.2	6.2	
20-Jan-16	Rainy	Moderate	14:24	8.5	Surface	1.0	18.1 18.0	18.1	8.3 8.3	8.3	28.3 28.4	28.4	94.3 93.7	94.0	7.5 7.5	7.5	7.5	5.5 5.0	5.3		7.5 8.3	7.9	
					Middle	4.3	18.1 18.1	18.1	8.3 8.3	8.3	28.5 28.5	28.5	94.5 94.9	94.7	7.5 7.6	7.5		5.2 5.0	5.1	5.2	8.2 8.1	8.2	8.7
					Bottom	7.5	18.1 18.1	18.1	8.3 8.3	8.3	28.5 28.5	28.5	93.2 92.9	93.1	7.4 7.4	7.4	7.4	5.3 5.1	5.2		10.3 9.7	10.0	

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-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:25	8.5	Surface	1.0	17.9 17.9	17.9	8.2 8.2	8.2	27.0 27.0	27.0	90.6 90.4	90.5	7.4 7.3	7.3	7.3	5.2 5.1	5.2	5.4	10.4 10.2	10.3	11.1
					Middle	4.3	17.9 17.9	17.9	8.2 8.2	8.2	27.0 27.0	27.0	90.1 89.7	89.9	7.3 7.2	7.3		5.4 5.3	5.4		11.6 11.4	11.5	
					Bottom	7.5	17.9 18.0	17.9	8.2 8.2	8.2	27.0 27.0	27.0	89.5 89.1	89.3	7.2 7.2	7.2	7.2	5.5 5.5	5.5		11.7 11.4	11.6	
25-Jan-16	Sunny	Moderate	09:30	8.4	Surface	1.0	14.5 14.5	14.5	8.3 8.3	8.3	28.9 28.8	28.8	91.5 91.0	91.3	7.8 7.8	7.8	7.8	7.3 7.5	7.4	7.3	11.4 11.5	11.5	11.7
					Middle	4.2	14.5 14.6	14.6	8.3 8.3	8.3	28.8 28.9	28.8	90.8 90.8	90.8	7.7 7.7	7.7		7.1 7.2	7.2		11.7 11.1	11.4	
					Bottom	7.4	14.5 14.6	14.5	8.3 8.3	8.3	28.8 28.8	28.8	89.7 90.4	90.1	7.7 7.7	7.7	7.7	7.3 7.2	7.3		12.8 11.3	12.1	
27-Jan-16	Cloudy	Moderate	10:12	8.8	Surface	1.0	14.5 14.5	14.5	8.3 8.3	8.3	29.0 29.0	29.0	90.3 93.5	91.9	7.7 8.0	7.8	7.8	5.5 5.5	5.5	5.7	6.9 7.8	7.4	7.2
					Middle	4.4	14.5 14.5	14.5	8.3 8.3	8.3	29.1 29.2	29.2	91.8 90.0	90.9	7.8 7.7	7.8		5.9 5.7	5.8		6.4 6.8	6.6	
					Bottom	7.8	14.5 14.5	14.5	8.3 8.3	8.3	29.2 29.3	29.2	90.3 89.2	89.8	7.7 7.6	7.7	7.7	5.8 5.8	5.8		7.4 7.9	7.7	
29-Jan-16	Rainy	Moderate	11:26	8.9	Surface	1.0	15.3 15.3	15.3	8.3 8.3	8.3	27.2 27.3	27.3	90.9 91.0	91.0	7.7 7.7	7.7	7.7	6.0 5.8	5.9	6.2	5.3 6.7	6.0	6.1
					Middle	4.5	15.2 15.2	15.2	8.2 8.2	8.2	28.4 28.4	28.4	90.8 91.0	90.9	7.7 7.7	7.7		6.5 6.3	6.4		6.1 5.9	6.0	
					Bottom	7.9	15.3 15.3	15.3	8.2 8.2	8.2	28.5 28.4	28.5	90.2 90.3	90.3	7.6 7.6	7.6	7.6	6.5 6.1	6.3		5.0 7.3	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 IS7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	17:34	3.3	Surface	1.0	16.4 16.5	16.5	8.2 8.2	8.2	26.5 26.6	26.5	99.1 99.5	99.3	8.3 8.3	8.3	8.3	4.6 4.7	4.7	4.9	4.2 3.4	3.8	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	16.2 16.2	16.2	8.2 8.2	8.2	26.5 26.5	26.5	98.9 99.2	99.1	8.3 8.3	8.3	8.3	4.9 5.0	5.0		2.3 4.0	3.2	
4-Jan-16	Sunny	Moderate	07:47	3.4	Surface	1.0	19.5 19.5	19.5	8.1 8.1	8.1	26.1 26.1	26.1	91.9 91.5	91.7	7.2 7.2	7.2	7.2	3.3 3.2	3.3	3.7	2.8 2.1	2.5	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	19.6 19.5	19.6	8.1 8.1	8.1	26.2 26.2	26.2	91.1 91.9	91.5	7.2 7.2	7.2	7.2	3.9 4.0	4.0		2.7 3.3	3.0	
6-Jan-16	Sunny	Moderate	11:24	3.1	Surface	1.0	20.2 20.2	20.2	8.1 8.1	8.1	25.9 25.9	25.9	95.5 94.1	94.8	7.4 7.3	7.4	7.4	2.4 2.4	2.4	2.4	2.9 3.2	3.1	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	20.0 20.1	20.1	8.1 8.1	8.1	26.5 26.3	26.4	94.6 94.1	94.4	7.4 7.3	7.3	7.3	2.4 2.3	2.4		3.5 3.5	3.5	
8-Jan-16	Sunny	Moderate	12:44	3.1	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	26.5 26.5	26.5	95.7 96.2	96.0	7.4 7.5	7.4	7.4	3.3 3.4	3.4	3.4	3.4 3.7	3.6	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.1	20.2 19.8	20.0	8.2 8.2	8.2	26.7 27.4	27.0	96.4 96.3	96.4	7.5 7.5	7.5	7.5	3.3 3.3	3.3		4.0 4.8	4.4	
11-Jan-16	Sunny	Moderate	13:10	3.2	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	27.8 27.8	27.8	93.5 94.0	93.8	7.3 7.3	7.3	7.3	2.5 2.5	2.5	2.5	3.2 3.9	3.6	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	19.5 19.6	19.6	8.2 8.2	8.2	28.1 28.0	28.1	94.8 92.8	93.8	7.4 7.2	7.3	7.3	2.5 2.5	2.5		5.4 3.1	4.3	
13-Jan-16	Sunny	Moderate	14:24	3.5	Surface	1.0	19.3 19.4	19.4	8.2 8.2	8.2	27.1 27.1	27.1	95.2 94.2	94.7	7.5 7.4	7.4	7.4	4.5 4.8	4.7	4.7	8.2 7.7	8.0	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	19.3 19.3	19.3	8.2 8.2	8.2	27.1 27.1	27.1	94.5 94.2	94.4	7.4 7.4	7.4	7.4	4.4 4.7	4.6		6.0 6.0	6.0	
15-Jan-16	Rainy	Moderate	16:27	3.2	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	27.2 27.2	27.2	96.7 96.3	96.5	7.7 7.6	7.7	7.7	3.2 3.0	3.1	3.1	3.8 3.0	3.4	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	18.8 18.8	18.8	8.2 8.2	8.2	27.2 27.2	27.2	96.5 96.3	96.4	7.7 7.6	7.6	7.6	3.1 3.1	3.1		3.2 2.9	3.1	
18-Jan-16	Sunny	Moderate	08:06	3.3	Surface	1.0	18.2 18.2	18.2	8.2 8.2	8.2	25.6 25.8	25.7	91.0 91.5	91.3	7.4 7.4	7.4	7.4	2.1 2.2	2.2	2.2	3.4 2.8	3.1	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	18.3 18.3	18.3	8.2 8.2	8.2	26.4 26.1	26.3	91.5 91.4	91.5	7.4 7.4	7.4	7.4	2.1 2.1	2.1		2.3 2.1	2.2	
20-Jan-16	Rainy	Moderate	11:22	3.4	Surface	1.0	18.2 18.2	18.2	8.2 8.2	8.2	27.6 27.6	27.6	93.9 94.7	94.3	7.5 7.6	7.5	7.5	4.4 4.6	4.5	4.6	3.4 2.7	3.1	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	18.2 18.2	18.2	8.2 8.2	8.2	27.6 27.6	27.6	94.9 94.5	94.7	7.6 7.6	7.6	7.6	4.5 4.7	4.6		4.4 3.3	3.9	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:46	3.3	Surface	1.0	18.1 18.1	18.1	8.2 8.2	8.2	28.0 28.0	28.0	90.4 89.2	89.8	7.2 7.1	7.2	7.2	3.1 2.9	3.0	3.2	5.0 4.9	5.0	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	18.2 18.1	18.1	8.2 8.2	8.2	28.2 28.1	28.2	89.0 89.7	89.4	7.1 7.2	7.1	7.1	3.2 3.3	3.3		4.5 4.2	4.4	
25-Jan-16	Sunny	Moderate	13:21	3.2	Surface	1.0	14.7 14.7	14.7	8.3 8.3	8.3	27.8 27.8	27.8	91.1 91.0	91.1	7.8 7.8	7.8	7.8	10.4 10.7	10.6	10.6	13.7 13.5	13.6	13.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	14.6 14.6	14.6	8.3 8.3	8.3	27.9 27.9	27.9	90.5 89.7	90.1	7.8 7.7	7.7	7.7	10.5 10.5	10.5		13.5 13.7	13.6	
27-Jan-16	Cloudy	Moderate	13:59	3.3	Surface	1.0	14.5 14.5	14.5	8.3 8.3	8.3	29.3 29.2	29.3	89.5 89.6	89.6	7.6 7.6	7.6	7.6	6.9 7.0	7.0	7.0	6.8 7.0	6.9	7.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	14.5 14.5	14.5	8.3 8.3	8.3	29.3 29.3	29.3	89.3 89.5	89.4	7.6 7.6	7.6	7.6	7.0 6.9	7.0		7.6 6.8	7.2	
29-Jan-16	Cloudy	Moderate	15:34	3.2	Surface	1.0	15.6 15.6	15.6	8.3 8.3	8.3	26.9 26.9	26.9	92.1 92.4	92.3	7.8 7.8	7.8	7.8	6.3 6.5	6.4	6.6	4.8 5.7	5.3	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	15.5 15.4	15.4	8.2 8.2	8.2	27.5 27.9	27.7	91.2 90.9	91.1	7.7 7.7	7.7	7.7	6.8 6.8	6.8		6.3 5.2	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-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-Jan-16	Sunny	Moderate	12:50	3.5	Surface	1.0	16.3 16.3	16.3	8.1 8.1	8.1	26.9 26.9	26.9	99.8 99.5	99.7	8.3 8.3	8.3	8.3	4.9 4.6	4.8	5.2	2.5 3.0	2.8	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.5	15.9 16.0	16.0	8.1 8.1	8.1	26.8 26.8	26.8	97.9 98.1	98.0	8.2 8.2	8.2	8.2	5.7 5.5	5.6		3.0 2.6	2.8	
4-Jan-16	Sunny	Moderate	13:17	3.2	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	26.7 26.7	26.7	94.7 93.3	94.0	7.4 7.3	7.3	7.3	3.4 3.1	3.3	3.2	2.7 2.5	2.6	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	19.8 19.8	19.8	8.2 8.2	8.2	26.7 26.7	26.7	93.1 93.8	93.5	7.3 7.3	7.3	7.3	3.1 3.1	3.1		2.2 2.9	2.6	
6-Jan-16	Sunny	Moderate	14:55	3.2	Surface	1.0	20.4 20.4	20.4	8.2 8.2	8.2	27.0 27.0	27.0	93.6 93.8	93.7	7.2 7.2	7.2	7.2	3.5 3.5	3.5	3.6	3.0 3.2	3.1	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	20.3 20.4	20.4	8.2 8.2	8.2	27.1 27.1	27.1	93.8 93.8	93.8	7.2 7.2	7.2	7.2	3.6 3.5	3.6		5.1 4.6	4.9	
8-Jan-16	Sunny	Moderate	16:17	3.4	Surface	1.0	20.5 20.4	20.5	8.2 8.2	8.2	27.9 27.9	27.9	95.4 96.0	95.7	7.3 7.4	7.3	7.3	4.9 4.8	4.9	4.9	5.8 5.8	5.8	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	20.3 20.2	20.2	8.2 8.2	8.2	28.1 28.3	28.2	95.0 93.8	94.4	7.3 7.2	7.2	7.2	4.9 4.9	4.9		5.5 5.3	5.4	
11-Jan-16	Rainy	Moderate	09:07	3.2	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	27.6 27.6	27.6	95.2 95.7	95.5	7.4 7.5	7.5	7.5	2.5 2.6	2.6	2.6	4.8 5.3	5.1	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	19.5 19.5	19.5	8.2 8.2	8.2	27.7 27.7	27.7	96.7 95.5	96.1	7.5 7.5	7.5	7.5	2.5 2.6	2.6		5.4 6.4	5.9	
13-Jan-16	Sunny	Moderate	10:41	3.6	Surface	1.0	19.4 19.4	19.4	8.2 8.2	8.2	27.8 27.8	27.8	96.1 96.0	96.1	7.5 7.5	7.5	7.5	4.3 4.3	4.3	4.4	5.7 4.9	5.3	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	19.4 19.3	19.4	8.2 8.2	8.2	27.8 27.8	27.8	95.3 96.6	96.0	7.4 7.5	7.5	7.5	4.3 4.7	4.5		6.5 6.3	6.4	
15-Jan-16	Rainy	Moderate	11:43	3.2	Surface	1.0	18.9 18.9	18.9	8.2 8.2	8.2	27.7 27.7	27.7	95.3 96.0	95.7	7.5 7.6	7.5	7.5	3.3 3.4	3.4	3.4	3.4 3.7	3.6	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	18.9 18.9	18.9	8.2 8.2	8.2	27.8 27.7	27.7	94.2 95.2	94.7	7.4 7.5	7.5	7.5	3.3 3.2	3.3		4.5 3.6	4.1	
18-Jan-16	Sunny	Moderate	12:57	3.2	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	25.9 25.9	25.9	92.4 91.6	92.0	7.5 7.4	7.4	7.4	1.8 1.7	1.8	1.8	2.8 2.5	2.7	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	18.2 18.3	18.3	8.2 8.2	8.2	26.0 26.1	26.0	92.8 92.5	92.7	7.5 7.5	7.5	7.5	1.8 1.8	1.8		2.7 2.6	2.7	
20-Jan-16	Rainy	Moderate	14:39	3.3	Surface	1.0	18.1 18.1	18.1	8.2 8.2	8.2	27.9 28.0	27.9	96.6 96.2	96.4	7.7 7.7	7.7	7.7	3.7 4.0	3.9	3.9	3.2 3.4	3.3	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	18.1 18.1	18.1	8.2 8.2	8.2	27.9 28.0	27.9	100.8 96.3	98.6	8.1 7.7	7.9	7.9	3.7 3.8	3.8		4.5 4.3	4.4	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:37	3.4	Surface	1.0	17.7 17.8	17.8	8.2 8.2	8.2	27.1 27.1	27.1	92.8 93.8	93.3	7.5 7.6	7.5	7.5	4.3 4.2	4.3	4.4	4.6 5.9	5.3	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.4	17.8 17.8	17.8	8.2 8.2	8.2	27.2 27.2	27.2	91.8 91.4	91.6	7.4 7.4	7.4	7.4	4.5 4.4	4.5		6.2 4.6	5.4	
25-Jan-16	Sunny	Moderate	09:15	3.2	Surface	1.0	15.0 15.0	15.0	8.3 8.3	8.3	29.3 29.3	29.3	91.4 90.6	91.0	7.7 7.6	7.7	7.7	5.9 5.9	5.9	5.9	9.2 9.7	9.5	10.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.2	15.0 15.1	15.1	8.3 8.3	8.3	29.3 29.3	29.3	90.8 89.8	90.3	7.6 7.6	7.6	7.6	5.8 5.8	5.8		11.2 11.1	11.2	
27-Jan-16	Cloudy	Moderate	09:55	3.3	Surface	1.0	14.9 14.9	14.9	8.3 8.3	8.3	29.2 29.2	29.2	89.3 88.4	88.9	7.5 7.5	7.5	7.5	6.7 6.7	6.7	6.7	10.2 10.8	10.5	11.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	14.9 15.0	15.0	8.3 8.3	8.3	29.2 29.3	29.3	88.9 89.8	89.4	7.5 7.6	7.5	7.5	6.8 6.5	6.7		12.8 11.9	12.4	
29-Jan-16	Rainy	Moderate	11:14	3.3	Surface	1.0	15.3 15.3	15.3	8.2 8.2	8.2	28.1 28.1	28.1	91.8 92.1	92.0	7.7 7.8	7.8	7.8	5.6 5.7	5.7	5.8	6.2 5.8	6.0	6.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.3	15.3 15.3	15.3	8.2 8.2	8.2	28.1 28.1	28.1	91.1 91.3	91.2	7.7 7.7	7.7	7.7	5.9 5.8	5.9		7.5 7.2	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 IS8 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	18:03	3.7	Surface	1.0	16.2 16.2	16.2	8.2 8.2	8.2	26.2 26.3	26.3	97.1 97.1	97.1	8.1 8.1	8.1	8.1	2.8 2.7	2.8	2.8	3.5 2.6	3.1	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	16.1 16.1	16.1	8.2 8.2	8.2	26.3 26.4	26.4	97.5 97.5	97.5	8.2 8.2	8.2	8.2	2.7 2.7	2.7		2.8 4.3	3.6	
4-Jan-16	Sunny	Moderate	07:16	3.8	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	26.1 26.3	26.2	90.5 91.9	91.2	7.1 7.2	7.2	7.2	5.5 5.7	5.6	6.1	2.8 2.8	2.8	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.6 19.6	19.6	8.2 8.2	8.2	27.3 27.1	27.2	90.6 93.4	92.0	7.1 7.3	7.2	7.2	6.6 6.3	6.5		2.8 2.7	2.8	
6-Jan-16	Sunny	Moderate	11:01	3.9	Surface	1.0	20.1 20.1	20.1	8.2 8.2	8.2	26.3 26.2	26.2	90.8 91.9	91.4	7.1 7.1	7.1	7.1	7.8 8.0	7.9	7.9	8.9 8.8	8.9	8.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	20.1 20.0	20.1	8.1 8.1	8.1	26.5 26.6	26.6	91.2 91.5	91.4	7.1 7.1	7.1	7.1	7.9 7.8	7.9		9.2 8.1	8.7	
8-Jan-16	Sunny	Moderate	12:23	3.9	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	26.9 26.9	26.9	95.8 96.2	96.0	7.4 7.4	7.4	7.4	2.2 2.2	2.2	2.2	2.8 2.7	2.8	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	19.9 19.9	19.9	8.2 8.2	8.2	27.5 27.4	27.4	96.3 95.3	95.8	7.5 7.4	7.4	7.4	2.2 2.0	2.1		3.1 3.3	3.2	
11-Jan-16	Sunny	Moderate	13:34	4.0	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	28.2 28.2	28.2	95.1 95.4	95.3	7.3 7.3	7.3	7.3	2.2 2.2	2.2	2.2	3.8 3.9	3.9	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	20.2 19.8	20.0	8.2 8.2	8.2	28.1 28.2	28.2	95.4 94.9	95.2	7.3 7.3	7.3	7.3	2.2 2.2	2.2		4.9 5.0	5.0	
13-Jan-16	Sunny	Moderate	14:55	4.1	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	27.1 27.0	27.1	100.1 100.4	100.3	7.8 7.8	7.8	7.8	3.7 3.4	3.6	3.5	4.3 3.6	4.0	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	19.6 19.6	19.6	8.2 8.2	8.2	27.2 27.1	27.2	99.6 100.4	100.0	7.8 7.8	7.8	7.8	3.1 3.4	3.3		5.7 7.1	6.4	
15-Jan-16	Rainy	Moderate	16:49	4.1	Surface	1.0	18.8 18.8	18.8	8.2 8.2	8.2	27.3 27.3	27.3	95.3 95.5	95.4	7.5 7.6	7.6	7.6	3.2 3.1	3.2	3.2	2.9 3.6	3.3	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	18.9 18.9	18.9	8.2 8.2	8.2	27.4 27.4	27.4	95.0 95.2	95.1	7.5 7.5	7.5	7.5	3.1 3.1	3.1		3.1 3.5	3.3	
18-Jan-16	Sunny	Moderate	07:45	4.0	Surface	1.0	18.2 18.3	18.3	8.2 8.2	8.2	25.5 25.1	25.3	96.4 96.0	96.2	7.8 7.8	7.8	7.8	5.7 5.8	5.8	5.8	3.7 3.8	3.8	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	18.2 18.4	18.3	8.2 8.2	8.2	26.1 26.5	26.3	95.0 98.6	96.8	7.7 7.9	7.8	7.8	5.6 5.7	5.7		3.4 3.5	3.5	
20-Jan-16	Rainy	Moderate	10:55	3.9	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	27.8 27.8	27.8	97.3 95.0	96.2	7.8 7.6	7.7	7.7	3.0 2.9	3.0	3.1	4.0 3.0	3.5	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	18.4 18.3	18.3	8.2 8.2	8.2	27.9 27.8	27.8	95.7 98.1	96.9	7.6 7.8	7.7	7.7	3.0 3.2	3.1		3.5 4.3	3.9	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS8 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:26	3.7	Surface	1.0	18.0 18.1	18.0	8.3 8.2	8.3	27.9 27.9	27.9	91.5 92.8	92.2	7.3 7.4	7.4	7.4	2.9 3.0	3.0	3.2	3.8 5.1	4.5	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.0 18.1	18.0	8.2 8.3	8.3	28.1 28.0	28.1	90.8 89.8	90.3	7.2 7.2	7.2	7.2	3.3 3.3	3.3		3.4 3.8	3.6	
25-Jan-16	Sunny	Moderate	13:44	3.9	Surface	1.0	15.3 15.5	15.4	8.3 8.3	8.3	27.9 28.0	28.0	91.0 90.4	90.7	7.7 7.6	7.6	7.6	5.9 5.8	5.9	5.9	5.4 5.3	5.4	7.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	16.0 15.8	15.9	8.3 8.3	8.3	28.9 29.1	29.0	92.5 92.4	92.5	7.7 7.7	7.7	7.7	5.8 5.8	5.8		9.5 8.6	9.1	
27-Jan-16	Cloudy	Moderate	14:22	3.8	Surface	1.0	15.0 15.0	15.0	8.3 8.3	8.3	29.3 29.3	29.3	90.9 91.1	91.0	7.7 7.7	7.7	7.7	5.2 5.3	5.3	5.3	6.2 6.7	6.5	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	15.1 15.0	15.0	8.3 8.3	8.3	29.5 29.4	29.4	91.0 89.6	90.3	7.7 7.6	7.6	7.6	5.2 5.3	5.3		6.7 8.0	7.4	
29-Jan-16	Cloudy	Moderate	15:57	3.9	Surface	1.0	15.6 15.6	15.6	8.2 8.2	8.2	28.2 28.1	28.2	93.7 93.9	93.8	7.9 7.9	7.9	7.9	8.1 8.1	8.1	8.2	8.1 8.6	8.4	8.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	15.5 15.4	15.5	8.2 8.2	8.2	28.3 28.4	28.3	92.2 93.5	92.9	7.7 7.9	7.8	7.8	8.4 8.2	8.3		7.1 8.8	8.0	

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 IS8 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	12:23	3.9	Surface	1.0	16.1 16.1	16.1	8.1 8.1	8.1	25.6 25.6	25.6	96.1 95.8	96.0	8.1 8.1	8.1	8.1	3.2 3.1	3.2	3.3	3.7 3.8	3.8	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	16.1 16.1	16.1	8.1 8.1	8.1	25.9 25.9	25.9	96.2 96.2	96.2	8.1 8.1	8.1	8.1	3.5 3.2	3.4		4.1 4.2	4.2	
4-Jan-16	Sunny	Moderate	13:50	3.8	Surface	1.0	19.8 19.8	19.8	8.1 8.1	8.1	26.6 26.7	26.6	91.7 92.0	91.9	7.2 7.2	7.2	7.2	15.8 16.1	16.0	15.6	6.4 6.6	6.5	7.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.8 19.8	19.8	8.1 8.1	8.1	26.9 27.0	27.0	91.5 91.6	91.6	7.1 7.1	7.1	7.1	15.2 15.0	15.1		8.6 7.0	7.8	
6-Jan-16	Sunny	Moderate	15:25	4.0	Surface	1.0	20.6 20.6	20.6	8.2 8.2	8.2	25.2 25.6	25.4	92.8 93.1	93.0	7.2 7.2	7.2	7.2	8.9 9.4	9.2	9.0	5.2 6.4	5.8	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	20.6 20.6	20.6	8.1 8.2	8.2	26.1 25.8	26.0	92.8 92.8	92.8	7.2 7.2	7.2	7.2	8.8 8.6	8.7		5.8 6.4	6.1	
8-Jan-16	Sunny	Moderate	16:36	4.0	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	28.1 28.0	28.1	96.8 96.5	96.7	7.4 7.4	7.4	7.4	7.5 7.2	7.4	7.5	4.5 5.9	5.2	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	20.1 20.3	20.2	8.2 8.2	8.2	28.6 28.3	28.5	96.3 95.8	96.1	7.4 7.3	7.4	7.4	7.5 7.5	7.5		5.3 6.0	5.7	
11-Jan-16	Rainy	Moderate	08:47	4.2	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	27.6 27.6	27.6	94.5 94.9	94.7	7.4 7.4	7.4	7.4	2.8 2.8	2.8	2.8	4.2 4.9	4.6	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	19.6 19.6	19.6	8.2 8.2	8.2	27.6 27.6	27.6	95.2 94.6	94.9	7.4 7.4	7.4	7.4	2.8 2.8	2.8		3.1 2.7	2.9	
13-Jan-16	Sunny	Moderate	10:06	4.1	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	27.9 27.9	27.9	94.9 95.4	95.2	7.4 7.4	7.4	7.4	5.4 5.0	5.2	4.9	5.9 6.1	6.0	10.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	19.4 19.4	19.4	8.2 8.2	8.2	27.9 27.9	27.9	93.7 96.2	95.0	7.3 7.5	7.4	7.4	4.5 4.5	4.5		14.3 14.0	14.2	
15-Jan-16	Rainy	Moderate	11:21	3.9	Surface	1.0	19.1 19.1	19.1	8.2 8.2	8.2	27.8 27.7	27.8	96.5 98.1	97.3	7.6 7.7	7.6	7.6	5.3 5.4	5.4	5.5	6.7 6.8	6.8	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	19.1 19.1	19.1	8.2 8.2	8.2	27.8 27.8	27.8	98.1 97.6	97.9	7.7 7.7	7.7	7.7	5.4 5.5	5.5		5.7 5.7	5.7	
18-Jan-16	Sunny	Moderate	13:16	3.9	Surface	1.0	18.6 18.6	18.6	8.2 8.2	8.2	26.0 26.3	26.1	90.9 91.7	91.3	7.3 7.3	7.3	7.3	2.6 2.8	2.7	2.7	3.2 2.4	2.8	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	18.6 18.6	18.6	8.2 8.2	8.2	26.7 26.5	26.6	92.4 92.2	92.3	7.4 7.4	7.4	7.4	2.7 2.7	2.7		4.3 2.7	3.5	
20-Jan-16	Rainy	Moderate	15:08	3.7	Surface	1.0	18.4 18.4	18.4	8.2 8.2	8.2	28.4 28.4	28.4	92.9 93.4	93.2	7.4 7.4	7.4	7.4	5.8 6.1	6.0	6.0	5.5 5.5	5.5	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.4 18.4	18.4	8.2 8.2	8.2	28.4 28.6	28.5	93.8 93.0	93.4	7.4 7.4	7.4	7.4	6.0 5.8	5.9		5.7 5.7	5.7	

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-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:57	3.9	Surface	1.0	18.0 17.9	18.0	8.2 8.2	8.2	27.6 27.6	27.6	90.4 90.4	90.4	7.3 7.3	7.3	7.3	5.6 5.5	5.6	5.8	8.2 8.2	8.2	8.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	17.9 18.0	18.0	8.2 8.2	8.2	27.6 27.7	27.7	89.8 89.6	89.7	7.2 7.2	7.2	7.2	5.9 5.8	5.9		8.0 9.2	8.6	
25-Jan-16	Sunny	Moderate	08:50	3.9	Surface	1.0	16.0 16.0	16.0	8.3 8.3	8.3	29.6 29.7	29.7	98.5 94.1	96.3	8.1 7.8	7.9	7.9	5.3 5.1	5.2	5.3	6.6 7.3	7.0	8.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	15.9 16.0	16.0	8.3 8.3	8.3	29.5 29.7	29.6	102.8 96.3	99.6	8.5 7.9	8.2	8.2	5.3 5.2	5.3		9.1 9.6	9.4	
27-Jan-16	Cloudy	Moderate	09:32	4.0	Surface	1.0	14.8 14.8	14.8	8.3 8.3	8.3	29.0 29.0	29.0	91.1 93.0	92.1	7.7 7.9	7.8	7.8	5.4 5.4	5.4	5.4	7.0 7.4	7.2	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	14.8 14.8	14.8	8.3 8.3	8.3	29.1 29.1	29.1	92.4 95.6	94.0	7.8 8.1	8.0	8.0	5.3 5.3	5.3		6.6 6.5	6.6	
29-Jan-16	Rainy	Moderate	10:51	3.8	Surface	1.0	15.4 15.4	15.4	8.2 8.2	8.2	27.6 27.5	27.6	93.3 92.8	93.1	7.9 7.8	7.9	7.9	3.3 3.3	3.3	3.3	3.4 4.5	4.0	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	15.4 15.4	15.4	8.2 8.2	8.2	27.8 28.0	27.9	92.3 92.5	92.4	7.8 7.8	7.8	7.8	3.3 3.2	3.3		3.8 4.3	4.1	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS17 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	18:23	10.6	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	26.9 27.0	26.9	94.2 94.6	94.4	7.9 7.9	7.9	7.9	3.3 3.3	3.3	4.6	3.1 3.3	3.2	3.3
					Middle	5.3	16.0 16.0	16.0	8.2 8.2	8.2	27.2 27.2	27.2	92.9 92.6	92.8	7.8 7.8	7.8		4.8 5.0	4.9		2.8 2.6	2.7	
					Bottom	9.6	16.0 16.1	16.0	8.2 8.2	8.2	27.7 27.6	27.7	95.0 94.7	94.9	7.9 7.9	7.9		5.5 5.6	5.6		3.8 3.9	3.9	
4-Jan-16	Sunny	Moderate	06:49	10.8	Surface	1.0	19.7 19.6	19.7	8.1 8.1	8.1	27.4 27.3	27.3	90.6 90.9	90.8	7.1 7.1	7.1	7.0	1.8 1.8	1.8	1.8	3.5 3.6	3.6	3.6
					Middle	5.4	19.7 19.7	19.7	8.1 8.1	8.1	27.9 27.9	27.9	88.8 88.8	88.8	6.9 6.9	6.9		1.7 1.8	1.8		3.4 3.7	3.6	
					Bottom	9.8	19.7 19.7	19.7	8.1 8.1	8.1	28.0 27.9	28.0	88.3 88.9	88.6	6.9 6.9	6.9	6.9	1.7 1.8	1.8		3.0 4.3	3.7	
6-Jan-16	Sunny	Moderate	10:40	10.9	Surface	1.0	19.9 19.9	19.9	8.2 8.2	8.2	24.5 23.3	23.9	88.5 90.1	89.3	7.0 7.2	7.1	7.0	1.2 1.2	1.2	1.4	3.4 2.9	3.2	3.0
					Middle	5.5	19.9 19.9	19.9	8.1 8.1	8.1	27.9 27.8	27.9	88.0 88.3	88.2	6.8 6.8	6.8		1.4 1.5	1.5		2.6 3.0	2.8	
					Bottom	9.9	19.9 19.9	19.9	8.1 8.1	8.1	28.1 28.2	28.2	90.2 89.3	89.8	7.0 6.9	6.9	6.9	1.5 1.4	1.5		2.3 3.9	3.1	
8-Jan-16	Sunny	Moderate	12:10	10.6	Surface	1.0	20.0 20.0	20.0	8.2 8.2	8.2	27.9 27.9	27.9	93.6 93.8	93.7	7.2 7.2	7.2	7.2	6.5 6.1	6.3	6.0	6.3 6.2	6.3	5.9
					Middle	5.3	20.0 20.0	20.0	8.2 8.2	8.2	28.0 28.1	28.0	91.3 92.2	91.8	7.0 7.1	7.1		5.8 5.9	5.9		6.4 5.7	6.1	
					Bottom	9.6	20.0 20.0	20.0	8.2 8.2	8.2	28.2 28.2	28.2	91.5 91.1	91.3	7.1 7.0	7.0	7.0	5.8 5.6	5.7		4.6 5.8	5.2	
11-Jan-16	Sunny	Moderate	13:46	10.5	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	28.1 28.1	28.1	94.2 96.3	95.3	7.3 7.5	7.4	7.4	2.2 2.1	2.2	2.2	4.2 4.4	4.3	4.3
					Middle	5.3	19.8 19.8	19.8	8.2 8.2	8.2	28.3 28.3	28.3	95.1 93.6	94.4	7.3 7.2	7.3		2.2 2.1	2.2		5.4 3.8	4.6	
					Bottom	9.5	19.8 19.8	19.8	8.2 8.2	8.2	28.6 28.3	28.5	92.9 92.6	92.8	7.2 7.2	7.2	7.2	2.2 2.2	2.2		3.4 4.7	4.1	
13-Jan-16	Sunny	Moderate	15:15	10.6	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	27.4 27.4	27.4	96.0 96.8	96.4	7.5 7.6	7.5	7.5	2.4 2.3	2.4	2.3	6.9 5.4	6.2	5.3
					Middle	5.3	19.6 19.6	19.6	8.2 8.2	8.2	27.6 27.6	27.6	96.1 96.0	96.1	7.5 7.5	7.5		2.2 2.4	2.3		3.3 4.1	3.7	
					Bottom	9.6	19.6 19.6	19.6	8.2 8.2	8.2	27.7 27.6	27.6	96.0 96.5	96.3	7.5 7.5	7.5	7.5	2.3 2.3	2.3		5.6 6.4	6.0	
15-Jan-16	Rainy	Moderate	17:03	10.2	Surface	1.0	19.1 19.1	19.1	8.3 8.2	8.3	27.6 27.6	27.6	94.9 96.0	95.5	7.5 7.6	7.5	7.5	1.8 1.9	1.9	2.0	2.3 2.6	2.5	2.4
					Middle	5.1	19.1 19.2	19.2	8.2 8.2	8.2	27.7 27.7	27.7	94.9 95.0	95.0	7.5 7.5	7.5		1.9 1.9	1.9		2.2 2.6	2.4	
					Bottom	9.2	19.1 19.2	19.1	8.2 8.2	8.2	27.8 27.9	27.8	93.7 95.1	94.4	7.4 7.5	7.4	7.4	2.1 2.1	2.1		2.3 2.0	2.2	
18-Jan-16	Sunny	Moderate	07:30	10.3	Surface	1.0	18.5 18.4	18.4	8.2 8.2	8.2	25.5 25.7	25.6	91.7 99.1	95.4	7.4 7.7	7.6	7.5	1.2 1.2	1.2	1.4	2.1 2.3	2.2	2.6
					Middle	5.2	19.2 19.2	19.2	8.2 8.1	8.2	28.4 28.3	28.4	93.1 97.0	95.1	7.3 7.6	7.4		1.4 1.5	1.5		2.5 2.5	2.5	
					Bottom	9.3	19.2 19.1	19.1	8.1 8.2	8.1	28.3 28.5	28.4	93.6 92.9	93.3	7.6 7.3	7.4	7.4	1.5 1.5	1.5		3.6 2.8	3.2	
20-Jan-16	Rainy	Moderate	10:31	10.6	Surface	1.0	18.7 18.7	18.7	8.2 8.2	8.2	28.9 28.9	28.9	93.2 92.7	93.0	7.3 7.3	7.3	7.3	2.6 2.7	2.7	2.7	4.1 3.6	3.9	4.0
					Middle	5.3	18.8 18.8	18.8	8.2 8.2	8.2	29.0 28.9	28.9	92.9 92.8	92.9	7.3 7.3	7.3		2.9 2.6	2.8		3.7 3.7	3.7	
					Bottom	9.6	18.8 18.8	18.8	8.2 8.2	8.2	29.0 29.0	29.0	92.8 92.7	92.8	7.3 7.3	7.3	7.3	2.5 2.4	2.5		4.5 4.3	4.4	

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 IS17 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:11	11.2	Surface	1.0	18.4 18.4	18.4	8.3 8.2	8.3	28.5 28.4	28.5	92.9 92.3	92.6	7.3 7.3	7.3	7.3	2.8 2.8	2.8	2.9	3.7 5.3	4.5	4.9
					Middle	5.6	18.4 18.4	18.4	8.2 8.2	8.2	28.5 28.6	28.5	91.0 91.8	91.4	7.2 7.3	7.2		2.9 2.9	2.9		5.0 4.5	4.8	
					Bottom	10.2	18.4 18.4	18.4	8.2 8.2	8.2	28.5 28.6	28.6	90.4 90.2	90.3	7.2 7.1	7.1	7.1	3.0 3.1	3.1		5.3 5.5	5.4	
25-Jan-16	Sunny	Moderate	14:00	10.5	Surface	1.0	15.9 15.9	15.9	8.3 8.3	8.3	29.0 28.9	28.9	90.9 93.6	92.3	7.5 7.8	7.7	7.7	4.2 4.2	4.2	4.2	7.7 7.8	7.8	8.5
					Middle	5.3	15.9 15.9	15.9	8.3 8.3	8.3	29.0 29.1	29.1	92.4 90.6	91.5	7.7 7.5	7.6		4.4 4.1	4.3		9.2 9.3	9.3	
					Bottom	9.5	15.9 15.9	15.9	8.3 8.3	8.3	29.2 29.1	29.2	90.2 92.3	91.3	7.5 7.7	7.6	7.6	4.3 4.1	4.2		8.9 8.0	8.5	
27-Jan-16	Cloudy	Moderate	14:36	10.2	Surface	1.0	15.3 15.3	15.3	8.3 8.3	8.3	29.8 29.8	29.8	91.4 92.6	92.0	7.6 7.7	7.7	7.7	9.5 9.5	9.5	9.5	12.5 13.3	12.9	12.6
					Middle	5.1	15.3 15.3	15.3	8.3 8.3	8.3	29.9 29.9	29.9	91.4 92.4	91.9	7.6 7.7	7.7		9.4 9.5	9.5		12.2 11.9	12.1	
					Bottom	9.2	15.3 15.3	15.3	8.3 8.3	8.3	29.9 29.9	29.9	91.0 91.8	91.4	7.6 7.7	7.6	7.6	9.2 9.6	9.4		12.9 12.6	12.8	
29-Jan-16	Cloudy	Moderate	16:12	10.2	Surface	1.0	15.6 15.5	15.6	8.3 8.3	8.3	28.2 28.2	28.2	92.3 91.9	92.1	7.8 7.7	7.7	7.7	5.4 5.4	5.4	5.5	4.3 5.3	4.8	5.5
					Middle	5.1	15.5 15.5	15.5	8.3 8.3	8.3	28.7 28.7	28.7	91.6 91.8	91.7	7.7 7.7	7.7		5.3 5.5	5.4		5.1 5.3	5.2	
					Bottom	9.2	15.5 15.5	15.5	8.2 8.3	8.3	28.8 28.8	28.8	90.3 91.4	90.9	7.6 7.7	7.6	7.6	5.5 5.6	5.6		7.1 5.6	6.4	

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 IS17 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	12:06	11.0	Surface	1.0	16.0 16.0	16.0	8.0 7.9	8.0	28.6 28.7	28.7	92.8 94.0	93.4	7.7 7.8	7.7	7.7	4.1 4.2	4.2	4.7	2.8 3.7	3.3	3.4
					Middle	5.5	16.0 16.0	16.0	8.0 7.9	8.0	29.4 29.3	29.4	93.2 92.9	93.1	7.6 7.7	7.7		4.9 4.7	4.8		3.3 3.2	3.3	
					Bottom	10.0	16.0 16.0	16.0	7.9 7.9	7.9	29.5 29.5	29.5	96.5 94.9	95.7	7.9 7.8	7.8	7.8	5.3 5.1	5.2		4.0 3.3	3.7	
4-Jan-16	Sunny	Moderate	14:10	10.9	Surface	1.0	19.9 19.9	19.9	8.2 8.2	8.2	25.8 25.6	25.7	91.8 92.9	92.4	7.2 7.3	7.2	7.1	6.2 6.3	6.3	6.2	3.3 2.3	2.8	3.0
					Middle	5.5	19.7 19.7	19.7	8.1 8.1	8.1	28.1 28.5	28.3	89.4 88.6	89.0	6.9 6.9	6.9		5.8 5.7	5.8		3.0 2.8	2.9	
					Bottom	9.9	19.7 19.7	19.7	8.1 8.1	8.1	28.6 28.7	28.6	90.9 91.2	91.1	7.0 7.0	7.0	7.0	6.3 6.6	6.5		3.5 2.9	3.2	
6-Jan-16	Sunny	Moderate	15:39	11.1	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	25.3 26.0	25.7	91.4 91.4	91.4	7.1 7.1	7.1	7.0	2.3 2.3	2.3	2.4	3.1 3.2	3.2	3.5
					Middle	5.6	20.0 20.0	20.0	8.2 8.1	8.2	26.9 27.0	27.0	89.7 89.4	89.6	7.0 6.9	6.9		2.4 2.5	2.5		3.0 2.6	2.8	
					Bottom	10.1	19.9 20.0	19.9	8.1 8.1	8.1	28.6 28.6	28.6	90.1 90.4	90.3	6.9 7.0	6.9	6.9	2.5 2.4	2.5		4.6 4.2	4.4	
8-Jan-16	Sunny	Moderate	16:52	10.3	Surface	1.0	20.3 20.3	20.3	8.2 8.2	8.2	28.1 28.0	28.1	95.0 96.8	95.9	7.3 7.4	7.3	7.3	3.4 3.6	3.5	3.6	3.4 2.5	3.0	2.7
					Middle	5.2	20.1 20.1	20.1	8.2 8.2	8.2	28.7 28.7	28.7	93.5 94.4	94.0	7.2 7.2	7.2		3.6 3.8	3.7		2.6 2.6	2.6	
					Bottom	9.3	20.0 20.0	20.0	8.2 8.2	8.2	28.9 28.9	28.9	93.3 93.0	93.2	7.2 7.1	7.1	7.1	3.6 3.6	3.6		2.1 2.6	2.4	
11-Jan-16	Rainy	Moderate	08:34	10.7	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	27.4 27.3	27.3	94.1 94.8	94.5	7.3 7.4	7.4	7.4	2.4 2.2	2.3	2.4	4.0 3.8	3.9	4.3
					Middle	5.4	19.7 19.7	19.7	8.2 8.2	8.2	27.4 27.4	27.4	94.3 95.2	94.8	7.3 7.4	7.4		2.5 2.5	2.5		5.0 4.5	4.8	
					Bottom	9.7	19.7 19.7	19.7	8.2 8.2	8.2	27.5 27.5	27.5	92.9 97.6	95.3	7.2 7.6	7.4	7.4	2.5 2.5	2.5		4.5 3.6	4.1	
13-Jan-16	Sunny	Moderate	09:40	10.6	Surface	1.0	19.4 19.4	19.4	8.2 8.2	8.2	27.9 28.0	28.0	97.1 95.2	96.2	7.6 7.4	7.5	7.5	3.2 3.0	3.1	3.2	7.5 6.3	6.9	6.4
					Middle	5.3	19.4 19.4	19.4	8.2 8.2	8.2	27.9 28.0	27.9	97.0 95.7	96.4	7.6 7.5	7.5		3.4 3.2	3.3		5.1 6.6	5.9	
					Bottom	9.6	19.4 19.4	19.4	8.2 8.2	8.2	27.9 28.0	27.9	99.2 95.1	97.2	7.8 7.4	7.6	7.6	3.4 3.1	3.3		6.8 5.7	6.3	
15-Jan-16	Rainy	Moderate	11:07	10.0	Surface	1.0	19.1 19.1	19.1	8.2 8.2	8.2	27.7 27.7	27.7	96.1 98.5	97.3	7.5 7.7	7.6	7.6	2.1 2.2	2.2	2.2	2.6 3.0	2.8	2.8
					Middle	5.0	19.1 19.1	19.1	8.2 8.2	8.2	27.9 27.9	27.9	98.0 95.7	96.9	7.7 7.5	7.6		2.1 2.2	2.2		3.1 2.4	2.8	
					Bottom	9.0	19.1 19.1	19.1	8.2 8.2	8.2	27.9 28.0	27.9	94.9 97.1	96.0	7.4 7.6	7.5	7.5	2.2 2.2	2.2		2.8 2.7	2.8	
18-Jan-16	Sunny	Moderate	13:30	10.6	Surface	1.0	18.9 18.9	18.9	8.2 8.2	8.2	26.6 26.8	26.7	91.7 92.6	92.2	7.3 7.3	7.3	7.3	3.0 3.0	3.0	4.6	3.2 2.8	3.0	2.7
					Middle	5.3	19.2 19.2	19.2	8.2 8.2	8.2	28.7 28.7	28.7	92.3 91.2	91.8	7.2 7.1	7.2		5.1 5.5	5.3		2.7 2.3	2.5	
					Bottom	9.6	19.2 19.0	19.1	8.2 8.2	8.2	28.7 28.8	28.7	88.9 91.3	90.1	6.9 7.1	7.0	7.0	5.5 5.2	5.4		2.4 2.7	2.6	
20-Jan-16	Rainy	Moderate	15:34	10.3	Surface	1.0	18.7 18.7	18.7	8.3 8.3	8.3	29.1 29.1	29.1	94.3 92.2	93.3	7.4 7.2	7.3	7.3	1.9 2.0	2.0	2.0	3.2 2.4	2.8	3.1
					Middle	5.2	18.7 18.7	18.7	8.3 8.2	8.3	29.1 29.1	29.1	93.6 92.4	93.0	7.4 7.3	7.3		1.9 2.0	2.0		4.0 3.1	3.6	
					Bottom	9.3	18.7 18.7	18.7	8.3 8.2	8.3	29.1 29.1	29.1	92.2 91.6	91.9	7.2 7.2	7.2	7.2	2.0 1.8	1.9		2.9 2.8	2.9	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at IS17 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	17:11	11.3	Surface	1.0	18.1 18.1	18.1	8.2 8.3	8.3	27.9 27.9	27.9	93.9 94.1	94.0	7.5 7.6	7.5	7.5	2.2 2.3	2.3	2.4	4.1 4.0	4.1	4.4
					Middle	5.7	18.1 18.1	18.1	8.2 8.2	8.2	27.9 27.9	27.9	93.9 93.4	93.7	7.5 7.5	7.5		2.4 2.3	2.4		4.4 4.0	4.2	
					Bottom	10.3	18.1 18.1	18.1	8.2 8.2	8.2	27.9 27.9	27.9	91.7 92.3	92.0	7.3 7.4	7.4	7.4	2.5 2.5	2.5		4.7 5.2	5.0	
25-Jan-16	Sunny	Moderate	08:37	10.3	Surface	1.0	16.2 16.2	16.2	8.3 8.2	8.3	29.7 29.7	29.7	103.8 100.7	102.3	8.6 8.3	8.4	8.1	8.3 8.6	8.5	9.7	12.1 14.3	13.2	13.7
					Middle	5.2	16.1 16.1	16.1	8.3 8.2	8.2	29.7 29.6	29.7	93.7 96.4	95.1	7.7 7.9	7.8		10.4 10.1	10.3		13.5 13.1	13.3	
					Bottom	9.3	16.1 16.1	16.1	8.3 8.2	8.2	29.7 29.5	29.6	92.7 93.4	93.1	7.6 7.7	7.6	7.6	10.4 10.3	10.4		14.6 14.3	14.5	
27-Jan-16	Cloudy	Moderate	09:16	10.2	Surface	1.0	15.0 15.0	15.0	8.3 8.3	8.3	29.3 29.3	29.3	90.4 94.2	92.3	7.6 7.9	7.8	7.8	12.3 12.6	12.5	12.4	5.2 4.3	4.8	7.0
					Middle	5.1	15.0 15.1	15.1	8.2 8.3	8.3	29.5 29.5	29.5	92.8 90.3	91.6	7.8 7.6	7.7		12.2 12.2	12.2		8.3 7.9	8.1	
					Bottom	9.2	15.1 15.0	15.0	8.3 8.2	8.3	29.5 29.5	29.5	90.3 92.2	91.3	7.6 7.8	7.7	7.7	12.5 12.5	12.5		8.7 7.7	8.2	
29-Jan-16	Rainy	Moderate	10:32	10.7	Surface	1.0	15.4 15.4	15.4	8.2 8.2	8.2	27.7 27.8	27.7	92.9 92.8	92.9	7.9 7.8	7.8	7.8	5.2 5.1	5.2	5.2	3.2 2.1	2.7	3.0
					Middle	5.4	15.3 15.3	15.3	8.2 8.2	8.2	28.2 28.2	28.2	92.0 92.4	92.2	7.8 7.8	7.8		5.4 5.1	5.3		3.2 2.4	2.8	
					Bottom	9.7	15.3 15.3	15.3	8.2 8.2	8.2	28.1 28.2	28.2	91.7 92.5	92.1	7.7 7.8	7.8	7.8	5.1 5.2	5.2		3.7 3.2	3.5	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	-	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	8.5	-	-		-	-	
					Middle	0.6	16.2 16.2	16.2	8.1 8.1	8.1	25.4 25.4	25.4	100.9 101.1	101.0	8.5 8.5	8.5		6.6 6.5	6.6	6.6	4.4 5.2	4.8	4.8
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
4-Jan-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
					Middle	0.8	19.5 19.6	19.6	8.2 8.1	8.2	25.6 25.7	25.7	91.0 90.8	90.9	7.2 7.2	7.2		3.8 3.6	3.7	3.7	2.3 2.5	2.4	2.4
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
6-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-		-	-	
					Middle	0.7	20.1 20.1	20.1	8.1 8.1	8.1	27.0 27.0	27.0	88.8 88.4	88.6	6.9 6.8	6.9		4.3 4.3	4.3	4.3	5.5 6.8	6.2	6.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
8-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-		-	-	
					Middle	0.7	20.1 20.1	20.1	8.2 8.2	8.2	26.7 26.7	26.7	93.8 93.9	93.9	7.3 7.3	7.3		4.5 4.6	4.6	4.6	7.2 7.1	7.2	7.2
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
11-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
					Middle	0.7	19.7 19.7	19.7	8.4 8.4	8.4	26.8 26.9	26.9	94.4 96.0	95.2	7.4 7.5	7.4		2.6 2.6	2.6	2.6	3.8 3.8	3.8	3.8
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
13-Jan-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-		-	-	
					Middle	0.8	19.5 19.5	19.5	8.5 8.5	8.5	26.2 26.2	26.2	96.8 97.3	97.1	7.6 7.7	7.6		3.0 3.0	3.0	3.0	3.6 4.4	4.0	4.0
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
15-Jan-16	Rainy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-		-	-	
					Middle	0.8	18.8 18.8	18.8	8.0 8.0	8.0	26.8 26.7	26.7	95.3 96.4	95.9	7.6 7.7	7.6		3.6 3.6	3.6	3.6	3.7 4.2	4.0	4.0
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
18-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
					Middle	0.7	18.1 18.1	18.1	8.2 8.2	8.2	26.5 26.5	26.5	91.1 91.4	91.3	7.3 7.4	7.4		2.8 2.8	2.8	2.8	3.3 3.3	3.3	3.3
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
20-Jan-16	Rainy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
					Middle	0.8	18.3 18.3	18.3	8.2 8.2	8.2	27.5 27.5	27.5	92.2 92.3	92.3	7.4 7.4	7.4		3.1 3.1	3.1	3.1	4.9 4.5	4.7	4.7
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-	5.0	-	-	4.7
					Middle	0.8	18.0 18.0	18.0	8.2 8.2	8.2	28.1 28.1	28.1	88.7 89.9	89.3	7.1 7.2	7.2		5.0 4.9	5.0		4.4 4.9	4.7	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
25-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	8.2	-	-	6.6	-	-	11.8
					Middle	0.7	14.5 14.5	14.5	8.6 8.6	8.6	27.5 27.4	27.4	94.0 96.1	95.1	8.1 8.3	8.2		6.6 6.5	6.6		11.6 11.9	11.8	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
27-Jan-16	Cloudy	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	8.0	-	-	6.6	-	-	9.1
					Middle	0.7	14.5 14.5	14.5	8.3 8.3	8.3	29.3 29.3	29.3	93.2 94.4	93.8	7.9 8.0	8.0		6.6 6.6	6.6		9.3 8.9	9.1	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
29-Jan-16	Cloudy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.9	-	-	6.2	-	-	6.8
					Middle	0.8	15.7 15.7	15.7	8.2 8.2	8.2	26.4 26.6	26.5	93.7 92.5	93.1	7.9 7.8	7.9		6.1 6.3	6.2		7.3 6.2	6.8	
					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 (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	8.5	-	-		-	-	
					Middle	0.7	16.0 16.0	16.0	8.2 8.2	8.2	25.5 25.5	25.5	100.7 100.9	100.8	8.5 8.5	8.5		4.7 4.6	4.7	4.7	3.7 5.9	4.8	4.8
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
4-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
					Middle	0.7	19.8 19.8	19.8	8.2 8.2	8.2	26.4 26.4	26.4	92.1 92.4	92.3	7.2 7.2	7.2		2.9 2.8	2.9	2.9	5.3 3.9	4.6	4.6
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
6-Jan-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
					Middle	0.8	20.8 20.7	20.8	8.3 8.3	8.3	27.2 27.3	27.2	94.7 92.9	93.8	7.2 7.1	7.2		18.4 18.8	18.6	18.6	17.9 17.4	17.7	17.7
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
8-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-		-	-	
					Middle	0.7	20.3 20.3	20.3	8.3 8.3	8.3	27.3 27.5	27.4	98.0 96.3	97.2	7.6 7.4	7.5		10.3 10.9	10.6	10.6	16.3 15.4	15.9	15.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
11-Jan-16	Rainy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
					Middle	0.8	19.4 19.4	19.4	8.2 8.2	8.2	27.4 27.3	27.3	92.1 92.9	92.5	7.2 7.3	7.2		2.4 2.4	2.4	2.4	4.5 4.1	4.3	4.3
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
13-Jan-16	Sunny	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-		-	-	
					Middle	0.8	19.2 19.2	19.2	8.2 8.2	8.2	27.9 27.9	27.9	95.2 95.8	95.5	7.5 7.5	7.5		3.3 2.9	3.1	3.1	4.3 5.9	5.1	5.1
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
15-Jan-16	Rainy	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-		-	-	
					Middle	0.7	18.8 18.8	18.8	8.3 8.3	8.3	27.8 27.8	27.8	95.3 94.9	95.1	7.5 7.5	7.5		2.7 2.7	2.7	2.7	2.9 2.9	2.9	2.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
18-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-		-	-	
					Middle	0.7	18.3 18.3	18.3	8.4 8.4	8.4	26.6 26.5	26.5	95.7 94.8	95.3	7.7 7.6	7.7		4.4 4.4	4.4	4.4	5.2 4.7	5.0	5.0
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
20-Jan-16	Rainy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-		-	-	
					Middle	0.8	18.0 18.0	18.0	8.3 8.3	8.3	28.4 28.4	28.4	94.8 97.0	95.9	7.6 7.8	7.7		5.3 5.1	5.2	5.2	5.8 6.0	5.9	5.9
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR3 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	-	1.6	Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	6.9	-	-	11.4
					Middle	0.8	17.9 17.9	17.9	8.1 8.2	8.1	26.8 26.8	26.8	92.2 92.3	92.3	7.4 7.5	7.4		6.8 6.9	6.9		11.3 11.4	11.4	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
25-Jan-16	Sunny	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.7	-	-	6.9	-	-	8.8
					Middle	0.7	14.6 14.6	14.6	8.3 8.3	8.3	28.9 28.9	28.9	90.0 90.1	90.1	7.7 7.7	7.7		6.8 7.0	6.9		9.4 8.2	8.8	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
27-Jan-16	Cloudy	Moderate	-	1.4	Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-	5.5	-	-	8.2
					Middle	0.7	14.4 14.4	14.4	8.3 8.3	8.3	29.0 29.0	29.0	89.8 89.1	89.5	7.7 7.6	7.6		5.5 5.5	5.5		8.7 7.6	8.2	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
29-Jan-16	Rainy	Moderate	-	1.2	Surface	-	-	-	-	-	-	-	-	-	-	-	7.8	-	-	5.1	-	-	6.0
					Middle	0.6	15.4 15.4	15.4	8.3 8.3	8.3	26.7 27.1	26.9	91.5 92.0	91.8	7.8 7.8	7.8		5.1 5.1	5.1		6.0 6.0	6.0	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.
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 (^{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-Jan-16	Sunny	Moderate	17:49	3.6	Surface	1.0	16.2 16.2	16.2	8.2 8.2	8.2	26.2 26.3	26.3	97.7 97.1	97.4	8.2 8.1	8.2	8.2	2.8 2.9	2.9	2.9	2.4 2.8	2.6	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	16.1 16.1	16.1	8.2 8.2	8.2	26.3 26.3	26.3	98.0 97.3	97.7	8.2 8.2	8.2	8.2	2.7 2.8	2.8		3.6 2.3	3.0	
4-Jan-16	Sunny	Moderate	07:28	3.8	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	26.2 26.3	26.3	89.9 90.3	90.1	7.1 7.1	7.1	7.1	3.5 3.7	3.6	3.7	2.8 2.4	2.6	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.7 19.6	19.6	8.1 8.1	8.1	26.9 26.6	26.8	89.3 91.5	90.4	7.0 7.2	7.1	7.1	3.8 3.5	3.7		2.2 2.5	2.4	
6-Jan-16	Sunny	Moderate	11:08	3.8	Surface	1.0	20.1 20.1	20.1	8.1 8.1	8.1	26.3 26.3	26.3	89.6 90.5	90.1	7.0 7.0	7.0	7.0	10.6 10.9	10.8	10.6	7.1 6.8	7.0	6.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	20.1 20.1	20.1	8.1 8.1	8.1	26.5 26.6	26.5	89.4 90.4	89.9	6.9 7.0	7.0	7.0	10.3 10.5	10.4		6.9 6.6	6.8	
8-Jan-16	Sunny	Moderate	12:29	3.8	Surface	1.0	19.9 19.9	19.9	8.2 8.2	8.2	27.4 27.4	27.4	95.8 95.5	95.7	7.4 7.4	7.4	7.4	1.9 1.8	1.9	1.9	2.5 2.2	2.4	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.9 19.9	19.9	8.2 8.2	8.2	27.6 27.6	27.6	94.9 95.5	95.2	7.4 7.4	7.4	7.4	1.8 1.8	1.8		2.5 3.3	2.9	
11-Jan-16	Sunny	Moderate	13:28	3.6	Surface	1.0	20.1 20.2	20.1	8.2 8.2	8.2	28.2 28.2	28.2	96.0 97.4	96.7	7.4 7.5	7.4	7.4	2.4 2.3	2.4	2.4	4.6 4.4	4.5	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	20.1 19.9	20.0	8.2 8.2	8.2	28.1 28.2	28.2	95.5 95.9	95.7	7.4 7.4	7.4	7.4	2.4 2.4	2.4		3.2 3.5	3.4	
13-Jan-16	Sunny	Moderate	14:44	3.9	Surface	1.0	19.8 19.8	19.8	8.2 8.2	8.2	26.9 26.9	26.9	99.2 99.3	99.3	7.7 7.7	7.7	7.7	3.0 3.1	3.1	3.1	4.9 6.0	5.5	6.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	19.7 19.6	19.6	8.2 8.2	8.2	27.0 27.1	27.1	99.6 98.1	98.9	7.8 7.7	7.7	7.7	3.1 2.9	3.0		7.3 6.8	7.1	
15-Jan-16	Rainy	Moderate	16:43	3.6	Surface	1.0	18.8 18.9	18.8	8.2 8.2	8.2	27.3 27.3	27.3	96.8 96.8	96.8	7.7 7.7	7.7	7.7	3.1 3.2	3.2	3.2	3.1 2.8	3.0	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.6	18.9 18.9	18.9	8.2 8.2	8.2	27.3 27.4	27.4	96.1 97.1	96.6	7.6 7.7	7.6	7.6	3.1 3.1	3.1		2.5 3.8	3.2	
18-Jan-16	Sunny	Moderate	07:49	3.7	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	25.7 25.5	25.6	90.7 91.5	91.1	7.3 7.4	7.4	7.4	5.3 5.6	5.5	5.5	4.1 3.7	3.9	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.5 18.3	18.4	8.2 8.2	8.2	26.6 26.0	26.3	91.7 91.0	91.4	7.3 7.3	7.3	7.3	5.5 5.5	5.5		3.1 3.4	3.3	
20-Jan-16	Rainy	Moderate	11:07	3.7	Surface	1.0	18.3 18.3	18.3	8.2 8.2	8.2	27.9 27.9	27.9	93.5 94.8	94.2	7.4 7.6	7.5	7.5	2.6 2.5	2.6	2.6	3.0 3.6	3.3	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.3 18.3	18.3	8.2 8.2	8.2	27.9 27.9	27.9	93.6 93.6	93.6	7.5 7.5	7.5	7.5	2.4 2.5	2.5		3.9 4.6	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 SR4(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:32	3.8	Surface	1.0	18.0 18.1	18.0	8.2 8.2	8.2	27.9 28.0	28.0	90.4 90.1	90.3	7.3 7.2	7.2	7.2	3.8 3.9	3.9	4.1	3.5 3.8	3.7	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	18.2 18.0	18.1	8.2 8.2	8.2	28.2 28.1	28.2	89.9 89.7	89.8	7.2 7.2	7.2	7.2	4.2 4.1	4.2		4.2 2.8	3.5	
25-Jan-16	Sunny	Moderate	13:38	3.8	Surface	1.0	15.1 15.2	15.1	8.3 8.3	8.3	27.8 27.8	27.8	91.1 92.9	92.0	7.7 7.9	7.8	7.8	6.4 6.3	6.4	6.5	8.5 8.3	8.4	8.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	15.7 15.3	15.5	8.3 8.3	8.3	28.9 29.3	29.1	92.8 93.6	93.2	7.7 7.9	7.8	7.8	6.5 6.5	6.5		9.0 8.6	8.8	
27-Jan-16	Cloudy	Moderate	14:15	3.8	Surface	1.0	14.9 15.0	15.0	8.3 8.3	8.3	29.3 29.3	29.3	91.6 92.5	92.1	7.7 7.8	7.8	7.8	4.9 5.1	5.0	5.0	5.5 6.1	5.8	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	15.0 15.0	15.0	8.3 8.3	8.3	29.4 29.4	29.4	92.4 92.6	92.5	7.8 7.8	7.8	7.8	4.9 5.1	5.0		4.9 6.0	5.5	
29-Jan-16	Cloudy	Moderate	15:50	3.7	Surface	1.0	15.6 15.6	15.6	8.2 8.2	8.2	28.2 28.1	28.1	92.1 92.8	92.5	7.7 7.8	7.8	7.8	7.3 7.5	7.4	7.4	5.6 6.5	6.1	7.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	15.5 15.6	15.6	8.2 8.2	8.2	28.4 28.2	28.3	91.2 92.1	91.7	7.7 7.7	7.7	7.7	7.4 7.3	7.4		8.6 10.0	9.3	

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 SR4(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	12:37	3.8	Surface	1.0	16.1 16.1	16.1	8.1 8.2	8.2	25.3 25.2	25.3	98.9 98.6	98.8	8.4 8.3	8.3	8.3	3.4 3.0	3.2	3.4	2.6 3.2	2.9	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	16.1 16.1	16.1	8.1 8.2	8.1	25.6 25.5	25.6	98.7 98.5	98.6	8.3 8.3	8.3	8.3	3.6 3.3	3.5		2.5 3.3	2.9	
4-Jan-16	Sunny	Moderate	13:40	3.7	Surface	1.0	19.8 19.9	19.9	8.1 8.1	8.1	26.6 26.5	26.6	93.2 95.7	94.5	7.3 7.5	7.4	7.4	16.8 17.1	17.0	17.8	5.7 6.2	6.0	5.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	19.8 19.8	19.8	8.2 8.1	8.2	26.9 26.9	26.9	91.6 95.8	93.7	7.1 7.5	7.3	7.3	18.6 18.3	18.5		5.9 5.1	5.5	
6-Jan-16	Sunny	Moderate	15:15	3.7	Surface	1.0	20.6 20.6	20.6	8.2 8.2	8.2	24.7 24.7	24.7	94.1 95.2	94.7	7.3 7.4	7.4	7.4	7.9 7.7	7.8	7.8	5.5 6.0	5.8	5.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	20.6 20.6	20.6	8.2 8.2	8.2	25.5 26.1	25.8	95.3 95.2	95.3	7.4 7.3	7.4	7.4	7.8 7.7	7.8		5.8 4.1	5.0	
8-Jan-16	Sunny	Moderate	16:29	3.9	Surface	1.0	20.4 20.3	20.3	8.2 8.2	8.2	27.8 27.9	27.9	98.4 97.0	97.7	7.6 7.4	7.5	7.5	6.6 6.7	6.7	6.7	6.5 6.8	6.7	6.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	20.3 20.2	20.3	8.2 8.2	8.2	28.0 28.4	28.2	96.9 95.0	96.0	7.4 7.3	7.4	7.4	6.7 6.7	6.7		5.5 5.6	5.6	
11-Jan-16	Rainy	Moderate	08:53	3.9	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	27.7 27.7	27.7	92.6 92.5	92.6	7.2 7.2	7.2	7.2	2.8 2.8	2.8	2.9	4.2 4.9	4.6	5.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	19.6 19.6	19.6	8.2 8.2	8.2	27.7 27.7	27.7	91.5 92.4	92.0	7.1 7.2	7.2	7.2	2.8 2.9	2.9		6.3 4.2	5.3	
13-Jan-16	Sunny	Moderate	10:21	4.0	Surface	1.0	19.5 19.5	19.5	8.2 8.1	8.2	27.9 27.9	27.9	95.2 94.1	94.7	7.4 7.3	7.4	7.4	10.6 11.0	10.8	11.3	12.8 11.8	12.3	14.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	19.5 19.5	19.5	8.1 8.2	8.1	27.9 27.9	27.9	95.5 94.9	95.2	7.4 7.4	7.4	7.4	11.7 11.6	11.7		17.8 15.9	16.9	
15-Jan-16	Rainy	Moderate	11:25	3.8	Surface	1.0	19.1 19.1	19.1	8.2 8.2	8.2	27.8 27.8	27.8	94.2 94.8	94.5	7.4 7.4	7.4	7.4	7.2 7.1	7.2	7.2	4.9 5.7	5.3	6.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.1 19.1	19.1	8.2 8.2	8.2	27.8 27.8	27.8	94.0 94.6	94.3	7.4 7.4	7.4	7.4	7.1 7.2	7.2		7.0 6.5	6.8	
18-Jan-16	Sunny	Moderate	13:10	3.7	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	26.2 26.1	26.1	93.5 95.6	94.6	7.5 7.7	7.6	7.6	2.7 2.6	2.7	2.8	2.8 2.7	2.8	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	18.6 18.5	18.6	8.2 8.2	8.2	26.6 26.6	26.6	94.8 95.9	95.4	7.6 7.7	7.6	7.6	2.7 2.8	2.8		2.8 2.8	2.8	
20-Jan-16	Rainy	Moderate	15:01	3.8	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	28.5 28.5	28.5	92.6 93.9	93.3	7.3 7.4	7.4	7.4	5.5 5.1	5.3	5.2	2.4 3.1	2.8	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	18.5 18.5	18.5	8.2 8.2	8.2	28.7 28.7	28.7	94.2 94.2	94.2	7.4 7.4	7.4	7.4	5.0 5.0	5.0		5.3 4.0	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 SR4(N) - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:49	3.9	Surface	1.0	17.9 17.9	17.9	8.2 8.2	8.2	27.4 27.5	27.5	93.3 93.5	93.4	7.5 7.6	7.5	7.5	3.6 3.6	3.6	3.7	7.1 6.5	6.8	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	17.9 17.8	17.9	8.2 8.2	8.2	27.5 27.5	27.5	91.9 91.9	91.9	7.4 7.4	7.4	7.4	3.8 3.7	3.8		6.6 6.0	6.3	
25-Jan-16	Sunny	Moderate	08:57	3.8	Surface	1.0	16.0 16.0	16.0	8.3 8.3	8.3	29.8 29.8	29.8	91.1 92.5	91.8	7.5 7.6	7.6	7.6	5.0 4.8	4.9	4.9	9.2 9.2	9.2	9.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	16.0 16.0	16.0	8.3 8.3	8.3	29.8 29.8	29.8	91.7 91.9	91.8	7.6 7.6	7.6	7.6	5.0 4.8	4.9		8.8 9.5	9.2	
27-Jan-16	Cloudy	Moderate	09:39	3.8	Surface	1.0	14.8 14.8	14.8	8.3 8.3	8.3	29.1 29.0	29.1	89.0 88.9	89.0	7.5 7.5	7.5	7.5	6.5 6.5	6.5	6.6	8.0 9.2	8.6	10.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	14.8 14.8	14.8	8.3 8.3	8.3	29.1 29.1	29.1	90.8 89.3	90.1	7.7 7.6	7.6	7.6	6.6 6.6	6.6		12.3 12.0	12.2	
29-Jan-16	Rainy	Moderate	10:55	3.8	Surface	1.0	15.4 15.4	15.4	8.2 8.2	8.2	27.8 27.7	27.7	92.0 92.4	92.2	7.8 7.8	7.8	7.8	4.4 4.3	4.4	4.5	4.9 4.6	4.8	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	15.4 15.4	15.4	8.2 8.2	8.2	28.3 28.0	28.1	91.2 91.4	91.3	7.7 7.7	7.7	7.7	4.4 4.5	4.5		5.2 3.5	4.4	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - Mid-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-Jan-16	Sunny	Moderate	17:44	4.9	Surface	1.0	19.5 19.6	19.6	8.2 8.2	8.2	28.6 28.6	28.6	94.2 92.4	93.3	7.3 7.2	7.2	7.2	2.8 2.9	2.9	3.3	2.1 2.1	2.1	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	19.5 19.5	19.5	8.2 8.2	8.2	28.7 28.7	28.7	92.8 89.9	91.4	7.2 7.0	7.1	7.1	3.7 3.5	3.6		2.7 2.7	2.7	
4-Jan-16	Sunny	Moderate	07:56	5.3	Surface	1.0	16.0 16.1	16.1	8.1 8.0	8.1	28.1 28.7	28.4	94.5 95.7	95.1	7.9 7.9	7.9	7.9	1.5 1.4	1.5	1.5	2.5 3.8	3.2	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	16.1 16.1	16.1	8.0 8.0	8.0	32.0 31.6	31.8	96.1 95.8	96.0	7.8 7.8	7.8	7.8	1.4 1.4	1.4		2.6 2.9	2.8	
6-Jan-16	Sunny	Moderate	10:05	4.9	Surface	1.0	16.3 16.4	16.4	8.0 8.1	8.1	21.8 23.0	22.4	95.4 94.1	94.8	8.0 8.3	8.1	8.1	2.1 2.0	2.1	2.2	3.1 2.7	2.9	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	16.4 16.4	16.4	8.0 8.0	8.0	24.9 27.4	26.1	93.3 93.1	93.2	7.7 7.7	7.7	7.7	2.3 2.3	2.3		2.8 2.2	2.5	
8-Jan-16	Sunny	Moderate	12:10	5.1	Surface	1.0	16.6 16.5	16.5	8.1 8.1	8.1	25.1 25.2	25.2	98.8 99.0	98.9	8.3 8.3	8.3	8.3	2.8 2.9	2.9	2.9	2.3 2.2	2.3	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	16.5 16.5	16.5	8.1 8.1	8.1	26.2 26.2	26.2	98.6 98.5	98.6	8.2 8.2	8.2	8.2	2.9 2.8	2.9		2.6 2.5	2.6	
11-Jan-16	Sunny	Moderate	13:31	5.0	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	28.2 29.0	28.6	100.5 101.9	101.2	8.3 8.3	8.3	8.3	2.1 2.1	2.1	2.2	4.7 5.0	4.9	5.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	16.2 16.3	16.3	8.2 8.2	8.2	28.6 30.2	29.4	100.0 99.7	99.9	8.3 8.2	8.2	8.2	2.2 2.3	2.3		5.4 6.5	6.0	
13-Jan-16	Sunny	Moderate	15:10	5.1	Surface	1.0	16.1 16.1	16.1	8.2 8.2	8.2	26.7 28.2	27.4	103.4 102.8	103.1	8.7 8.5	8.6	8.6	2.2 2.1	2.2	2.2	2.8 4.5	3.7	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	16.1 16.1	16.1	8.2 8.2	8.2	27.8 30.8	29.3	104.4 104.1	104.3	8.7 8.5	8.6	8.6	2.2 2.2	2.2		4.1 3.7	3.9	
15-Jan-16	Rainy	Moderate	16:50	4.8	Surface	1.0	15.5 15.5	15.5	8.1 8.1	8.1	26.2 24.9	25.5	103.3 102.6	103.0	8.8 8.8	8.8	8.8	1.5 1.6	1.6	1.7	2.0 2.0	2.0	2.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	15.5 15.5	15.5	8.0 8.1	8.1	28.7 26.0	27.3	104.3 102.3	103.3	8.7 8.7	8.7	8.7	1.9 1.7	1.8		2.1 2.3	2.2	
18-Jan-16	Sunny	Moderate	07:15	4.7	Surface	1.0	14.7 14.7	14.7	8.1 8.1	8.1	23.1 23.1	23.1	98.7 97.1	97.9	8.7 8.6	8.6	8.6	2.1 2.0	2.1	2.1	3.0 2.2	2.6	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	14.7 14.7	14.7	8.1 8.1	8.1	23.1 23.1	23.1	98.8 98.7	98.8	8.7 8.7	8.7	8.7	2.1 2.1	2.1		3.4 3.7	3.6	
20-Jan-16	Rainy	Moderate	09:51	5.3	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	29.8 29.4	29.6	98.7 98.5	98.6	8.3 8.3	8.3	8.3	1.3 1.2	1.3	1.4	1.3 1.5	1.4	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	15.0 15.0	15.0	8.2 8.1	8.2	29.5 30.7	30.1	98.5 98.5	98.5	8.3 8.3	8.3	8.3	1.4 1.5	1.5		4.4 4.2	4.3	

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	12:23	5.2	Surface	1.0	14.6 14.6	14.6	8.2 8.2	8.2	27.4 27.7	27.6	94.8 94.6	94.7	8.2 8.1	8.1	8.1	1.4 1.4	1.4	1.5	2.9 2.2	2.6	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	14.6 14.7	14.6	8.2 8.2	8.2	28.0 28.5	28.3	94.9 94.3	94.6	8.1 8.0	8.1	8.1	1.4 1.5	1.5		2.6 3.0	2.8	
25-Jan-16	Sunny	Moderate	13:21	5.0	Surface	1.0	13.1 13.1	13.1	8.4 8.4	8.4	31.7 31.2	31.5	99.4 99.6	99.5	8.6 8.6	8.6	8.6	2.1 2.2	2.2	2.3	6.7 6.2	6.5	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	13.0 13.0	13.0	8.4 8.4	8.4	32.0 31.5	31.8	98.4 98.3	98.4	8.6 8.6	8.6	8.6	2.3 2.3	2.3		7.0 6.1	6.6	
27-Jan-16	Cloudy	Moderate	14:44	4.7	Surface	1.0	11.7 11.7	11.7	8.3 8.3	8.3	31.3 32.7	32.0	98.0 100.2	99.1	8.7 8.9	8.8	8.8	2.6 2.7	2.7	2.8	4.7 4.3	4.5	4.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	11.7 11.7	11.7	8.3 8.3	8.3	34.0 31.9	32.9	100.1 99.5	99.8	8.8 8.8	8.8	8.8	3.0 2.7	2.9		5.2 5.2	5.2	
29-Jan-16	Cloudy	Moderate	15:51	4.9	Surface	1.0	11.8 11.8	11.8	8.3 8.3	8.3	24.2 26.9	25.5	95.8 97.4	96.6	8.9 8.9	8.9	8.9	2.6 2.8	2.7	2.9	4.5 4.8	4.7	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	11.8 11.8	11.8	8.3 8.3	8.3	29.6 31.9	30.7	97.5 98.7	98.1	8.8 8.7	8.8	8.8	2.9 3.0	3.0		4.2 3.7	4.0	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR5 - 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-Jan-16	Sunny	Moderate	12:11	5.2	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	28.2 28.3	28.3	90.1 90.5	90.3	7.0 7.0	7.0	7.0	3.3 3.4	3.4	3.6	2.3 2.4	2.4	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	19.5 19.5	19.5	8.2 8.2	8.2	28.3 28.4	28.4	90.4 90.5	90.5	7.0 7.0	7.0	7.0	3.6 3.7	3.7		3.4 3.5	3.5	
4-Jan-16	Sunny	Moderate	14:16	5.3	Surface	1.0	16.2 16.1	16.2	8.1 8.1	8.1	26.7 28.3	27.5	98.3 98.0	98.2	8.2 8.1	8.2	8.2	1.7 1.8	1.8	1.8	2.2 2.2	2.2	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	16.1 16.1	16.1	8.1 8.1	8.1	30.1 29.4	29.8	98.1 98.0	98.1	8.0 8.1	8.1	8.1	1.8 1.6	1.7		4.2 2.2	3.2	
6-Jan-16	Sunny	Moderate	16:06	5.1	Surface	1.0	16.6 16.4	16.5	8.1 8.1	8.1	23.6 24.2	23.9	96.5 95.6	96.1	8.2 8.2	8.2	8.2	1.7 1.9	1.8	2.0	3.1 2.9	3.0	3.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	16.5 16.5	16.5	8.0 8.1	8.1	29.7 25.8	27.7	96.1 96.6	96.4	8.1 8.1	8.1	8.1	2.3 2.1	2.2		2.8 3.7	3.3	
8-Jan-16	Sunny	Moderate	16:48	4.8	Surface	1.0	16.7 16.7	16.7	8.1 8.1	8.1	27.8 29.3	28.6	103.4 102.1	102.8	8.5 8.3	8.4	8.4	2.9 2.8	2.9	2.9	2.7 2.6	2.7	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	16.7 16.7	16.7	8.1 8.1	8.1	30.2 28.7	29.5	101.4 103.4	102.4	8.2 8.5	8.3	8.3	2.6 2.9	2.8		2.1 2.5	2.3	
11-Jan-16	Rainy	Moderate	08:57	5.1	Surface	1.0	16.1 16.1	16.1	8.1 8.2	8.2	29.5 29.4	29.4	97.2 97.1	97.2	8.0 8.0	8.0	8.0	3.3 3.4	3.4	3.6	4.5 4.2	4.4	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	16.1 16.1	16.1	8.2 8.1	8.1	29.6 29.6	29.6	97.0 96.5	96.8	8.0 8.0	8.0	8.0	3.8 3.6	3.7		4.9 5.0	5.0	
13-Jan-16	Sunny	Moderate	10:07	5.2	Surface	1.0	15.8 15.9	15.8	8.1 8.1	8.1	28.4 29.2	28.8	103.3 106.3	104.8	8.6 8.8	8.7	8.7	4.0 3.9	4.0	4.0	8.0 9.4	8.7	7.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	15.8 15.8	15.8	8.1 8.1	8.1	30.3 28.9	29.6	104.9 103.7	104.3	8.7 8.6	8.7	8.7	3.9 4.1	4.0		5.4 6.9	6.2	
15-Jan-16	Rainy	Moderate	11:25	4.9	Surface	1.0	15.5 15.5	15.5	8.1 8.1	8.1	27.2 27.1	27.1	102.6 102.5	102.6	8.7 8.7	8.7	8.7	2.3 2.4	2.4	2.5	3.1 2.5	2.8	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	15.5 15.5	15.5	8.1 8.1	8.1	27.2 27.3	27.2	102.2 102.4	102.3	8.6 8.7	8.6	8.6	2.5 2.5	2.5		2.8 2.5	2.7	
18-Jan-16	Sunny	Moderate	13:41	5.1	Surface	1.0	14.9 14.9	14.9	8.2 8.2	8.2	24.4 25.8	25.1	99.4 100.2	99.8	8.7 8.6	8.6	8.6	2.1 2.3	2.2	2.3	2.8 2.2	2.5	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	14.9 14.9	14.9	8.1 8.2	8.2	28.1 25.4	26.7	103.2 100.0	101.6	8.8 8.6	8.7	8.7	2.2 2.3	2.3		2.5 2.7	2.6	
20-Jan-16	Rainy	Moderate	16:00	5.5	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	26.6 27.0	26.8	101.1 102.6	101.9	8.7 8.8	8.7	8.7	1.1 1.2	1.2	1.3	4.8 5.4	5.1	4.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	15.0 15.0	15.0	8.2 8.2	8.2	27.0 27.5	27.3	100.6 101.1	100.9	8.6 8.6	8.6	8.6	1.3 1.3	1.3		5.2 3.8	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 SR5 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	16:45	5.4	Surface	1.0	14.5 14.5	14.5	8.1 8.1	8.1	25.0 25.1	25.1	96.3 95.7	96.0	8.4 8.4	8.4	8.4	1.4 1.4	1.4	1.5	3.6 4.6	4.1	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	14.6 14.6	14.6	8.1 8.1	8.1	25.6 25.3	25.5	97.2 97.0	97.1	8.5 8.5	8.5	8.5	1.5 1.5	1.5		4.4 3.5	4.0	
25-Jan-16	Sunny	Moderate	08:39	5.1	Surface	1.0	12.1 12.1	12.1	8.3 8.3	8.3	29.8 29.9	29.9	97.2 95.2	96.2	8.7 8.5	8.6	8.6	5.8 5.7	5.8	5.9	7.7 8.2	8.0	9.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	12.2 12.1	12.2	8.2 8.3	8.3	30.3 29.9	30.1	95.5 95.5	95.5	8.5 8.5	8.5	8.5	5.9 5.9	5.9		11.1 11.7	11.4	
27-Jan-16	Cloudy	Moderate	09:33	4.9	Surface	1.0	11.6 11.6	11.6	8.4 8.4	8.4	34.1 33.9	34.0	96.6 98.0	97.3	8.5 8.6	8.5	8.5	5.9 6.0	6.0	6.1	6.2 5.8	6.0	6.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	11.6 11.6	11.6	8.4 8.4	8.4	34.3 34.0	34.2	97.8 97.8	97.8	8.6 8.6	8.6	8.6	6.1 6.3	6.2		7.2 7.8	7.5	
29-Jan-16	Rainy	Moderate	10:39	4.7	Surface	1.0	11.8 11.8	11.8	8.3 8.4	8.4	30.4 30.0	30.2	98.2 98.3	98.3	8.8 8.8	8.8	8.8	3.1 3.0	3.1	3.1	4.6 5.5	5.1	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	11.8 11.8	11.8	8.3 8.3	8.3	30.8 30.7	30.7	96.1 98.2	97.2	8.6 8.8	8.7	8.7	3.1 3.0	3.1		7.4 6.3	6.9	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	16:47	4.2	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	28.5 28.5	28.5	93.3 91.3	92.3	7.2 7.1	7.2	7.2	4.0 4.3	4.2	4.2	3.8 3.8	3.8	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	19.6 19.6	19.6	8.2 8.2	8.2	28.6 28.6	28.6	91.5 91.1	91.3	7.1 7.1	7.1	7.1	4.3 3.9	4.1		3.5 4.8	4.2	
4-Jan-16	Sunny	Moderate	08:49	4.2	Surface	1.0	16.1 16.1	16.1	8.1 8.1	8.1	25.9 26.1	26.0	96.8 97.4	97.1	8.2 8.2	8.2	8.2	1.2 1.1	1.2	1.2	1.6 1.5	1.6	1.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	16.1 16.1	16.1	8.1 8.1	8.1	28.0 28.1	28.1	96.7 97.4	97.1	8.0 8.1	8.1	8.1	1.2 1.2	1.2		1.5 1.4	1.5	
6-Jan-16	Sunny	Moderate	10:59	4.2	Surface	1.0	16.5 16.6	16.5	8.1 8.1	8.1	20.1 20.1	20.1	95.4 94.9	95.2	8.3 8.2	8.2	8.2	1.8 1.7	1.8	1.9	2.1 2.2	2.2	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	16.4 16.4	16.4	8.0 8.1	8.1	26.9 26.0	26.4	95.3 94.6	95.0	7.9 7.9	7.9	7.9	1.9 1.9	1.9		3.1 3.6	3.4	
8-Jan-16	Sunny	Moderate	13:05	4.1	Surface	1.0	16.6 16.6	16.6	8.1 8.1	8.1	24.8 24.7	24.8	99.2 99.0	99.1	8.3 8.3	8.3	8.3	2.8 3.0	2.9	2.9	2.6 2.8	2.7	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	16.4 16.4	16.4	8.1 8.1	8.1	25.8 25.5	25.7	98.6 100.8	99.7	8.3 8.5	8.4	8.4	2.7 3.0	2.9		2.7 2.0	2.4	
11-Jan-16	Sunny	Moderate	12:44	4.1	Surface	1.0	16.2 16.2	16.2	8.3 8.3	8.3	25.7 25.9	25.8	98.0 98.0	98.0	8.3 8.2	8.2	8.2	2.5 2.6	2.6	2.9	4.5 5.1	4.8	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	16.2 16.2	16.2	8.3 8.2	8.3	25.9 25.8	25.8	98.0 98.9	98.5	8.2 8.3	8.2	8.2	3.2 3.0	3.1		4.2 4.2	4.2	
13-Jan-16	Sunny	Moderate	14:19	4.5	Surface	1.0	16.1 16.1	16.1	8.3 8.3	8.3	31.5 31.8	31.7	107.7 106.4	107.1	8.8 8.6	8.7	8.7	2.1 2.1	2.1	2.1	7.3 7.2	7.3	7.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.5	16.0 16.1	16.0	8.3 8.3	8.3	32.3 32.1	32.2	107.5 107.1	107.3	8.7 8.7	8.7	8.7	2.1 2.1	2.1		6.9 6.7	6.8	
15-Jan-16	Rainy	Moderate	16:01	4.1	Surface	1.0	15.3 15.3	15.3	8.0 7.9	8.0	28.1 29.1	28.6	101.1 101.1	101.1	8.5 8.5	8.5	8.5	1.8 1.9	1.9	2.0	1.4 1.3	1.4	1.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	15.3 15.3	15.3	7.9 8.0	7.9	30.8 29.4	30.1	100.7 100.8	100.8	8.4 8.4	8.4	8.4	2.0 2.0	2.0		1.4 1.4	1.4	
18-Jan-16	Sunny	Moderate	08:14	4.0	Surface	1.0	14.7 14.7	14.7	8.1 8.1	8.1	22.6 22.9	22.8	98.9 99.5	99.2	8.7 8.8	8.8	8.8	1.9 2.0	2.0	2.0	2.3 2.4	2.4	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	14.7 14.7	14.7	8.1 8.1	8.1	23.2 22.7	22.9	99.3 98.4	98.9	8.7 8.7	8.7	8.7	2.0 1.9	2.0		4.0 3.4	3.7	
20-Jan-16	Rainy	Moderate	10:51	4.3	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	27.4 27.9	27.6	100.1 99.9	100.0	8.5 8.5	8.5	8.5	1.5 1.6	1.6	1.7	5.5 4.5	5.0	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	15.0 15.0	15.0	8.1 8.2	8.2	28.3 27.5	27.9	100.0 98.9	99.5	8.5 8.4	8.5	8.5	1.7 1.7	1.7		4.3 4.2	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 SR6 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	13:16	4.2	Surface	1.0	14.6 14.7	14.7	8.1 8.1	8.1	26.9 26.9	26.9	97.2 97.2	97.2	8.4 8.4	8.4	8.4	1.6 1.6	1.6	1.6	3.7 2.4	3.1	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	14.6 14.6	14.6	8.1 8.1	8.1	27.2 27.1	27.1	96.8 97.0	96.9	8.3 8.4	8.3	8.3	1.6 1.5	1.6		4.8 4.8	4.8	
25-Jan-16	Sunny	Moderate	12:27	3.7	Surface	1.0	12.9 12.9	12.9	8.3 8.4	8.4	34.7 34.4	34.5	98.1 98.1	98.1	8.4 8.4	8.4	8.4	2.7 2.7	2.7	2.9	7.5 7.3	7.4	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.7	12.9 12.9	12.9	8.3 8.4	8.3	34.8 34.6	34.7	97.9 97.8	97.9	8.3 8.3	8.3	8.3	3.0 3.0	3.0		6.7 6.2	6.5	
27-Jan-16	Cloudy	Moderate	13:47	4.0	Surface	1.0	11.9 11.9	11.9	8.3 8.3	8.3	34.8 34.8	34.8	98.9 99.1	99.0	8.6 8.6	8.6	8.6	2.6 2.5	2.6	2.6	5.7 5.6	5.7	5.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	11.8 11.9	11.9	8.3 8.3	8.3	34.8 34.8	34.8	98.8 98.5	98.7	8.6 8.6	8.6	8.6	2.6 2.4	2.5		5.6 5.8	5.7	
29-Jan-16	Cloudy	Moderate	14:54	3.8	Surface	1.0	11.8 11.8	11.8	8.3 8.3	8.3	27.0 27.3	27.1	96.2 94.2	95.2	8.8 8.6	8.7	8.7	2.3 2.5	2.4	2.7	2.2 3.2	2.7	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	11.7 11.7	11.7	8.3 8.3	8.3	27.7 28.1	27.9	95.5 94.0	94.8	8.7 8.6	8.6	8.6	2.7 3.0	2.9		4.7 4.7	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 SR6 - 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-Jan-16	Sunny	Moderate	13:03	4.3	Surface	1.0	19.5 19.6	19.6	8.2 8.2	8.2	28.5 28.5	28.5	90.4 90.9	90.7	7.0 7.0	7.0	7.0	5.6 5.5	5.6	5.5	3.6 4.8	4.2	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	19.5 19.5	19.5	8.2 8.2	8.2	28.6 28.5	28.6	89.2 89.7	89.5	6.9 7.0	6.9	6.9	5.2 5.4	5.3		4.4 4.4	4.4	
4-Jan-16	Sunny	Moderate	13:22	4.2	Surface	1.0	16.4 16.3	16.4	8.1 8.2	8.2	29.6 29.2	29.4	98.4 97.4	97.9	8.1 8.0	8.0	8.0	1.8 1.8	1.8	1.9	1.6 1.8	1.7	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	16.3 16.2	16.3	8.1 8.1	8.1	31.1 31.5	31.3	97.7 96.6	97.2	7.9 7.9	7.9	7.9	1.9 1.8	1.9		3.8 2.3	3.1	
6-Jan-16	Sunny	Moderate	15:16	4.2	Surface	1.0	16.6 16.5	16.5	8.1 8.1	8.1	28.9 28.7	28.8	98.1 95.5	96.8	8.0 8.0	8.0	8.0	1.9 2.0	2.0	2.2	3.2 2.9	3.1	2.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	16.8 16.4	16.6	8.1 8.0	8.1	23.3 21.2	22.2	97.4 94.3	95.9	8.0 7.9	7.9	7.9	2.3 2.4	2.4		2.8 2.1	2.5	
8-Jan-16	Sunny	Moderate	15:57	3.9	Surface	1.0	16.6 16.6	16.6	8.2 8.2	8.2	29.9 30.4	30.1	99.7 99.5	99.6	8.1 8.1	8.1	8.1	3.1 2.9	3.0	3.2	3.3 2.5	2.9	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	16.6 16.6	16.6	8.2 8.2	8.2	30.7 30.2	30.5	99.3 99.4	99.4	8.0 8.1	8.1	8.1	3.5 3.3	3.4		3.4 3.2	3.3	
11-Jan-16	Rainy	Moderate	09:54	4.3	Surface	1.0	16.1 16.1	16.1	8.2 8.2	8.2	27.0 27.5	27.3	101.6 100.5	101.1	8.4 8.4	8.4	8.4	4.4 4.3	4.4	4.7	3.9 4.2	4.1	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	16.1 16.1	16.1	8.2 8.2	8.2	28.1 27.4	27.8	98.8 100.6	99.7	8.2 8.4	8.3	8.3	4.9 4.8	4.9		4.4 4.9	4.7	
13-Jan-16	Sunny	Moderate	11:00	4.3	Surface	1.0	15.8 15.8	15.8	8.2 8.2	8.2	26.2 26.1	26.2	103.1 103.0	103.1	8.7 8.7	8.7	8.7	3.7 3.6	3.7	3.8	6.9 6.2	6.6	5.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	15.8 15.8	15.8	8.2 8.2	8.2	26.1 26.3	26.2	102.9 103.1	103.0	8.7 8.7	8.7	8.7	3.8 3.8	3.8		3.8 3.7	3.8	
15-Jan-16	Rainy	Moderate	12:06	4.2	Surface	1.0	15.5 15.5	15.5	8.1 8.1	8.1	25.3 26.2	25.8	105.0 104.1	104.6	8.8 8.8	8.8	8.8	3.1 3.2	3.2	3.3	2.3 2.2	2.3	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	15.5 15.6	15.5	8.1 8.1	8.1	28.8 26.2	27.5	103.1 102.5	102.8	8.8 8.8	8.8	8.8	3.4 3.4	3.4		4.3 2.7	3.5	
18-Jan-16	Sunny	Moderate	12:44	3.8	Surface	1.0	15.1 15.1	15.1	8.2 8.2	8.2	27.8 27.2	27.5	101.3 101.2	101.3	8.6 8.6	8.6	8.6	1.9 2.0	2.0	2.2	2.7 2.6	2.7	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	15.1 15.2	15.2	8.2 8.2	8.2	27.8 28.4	28.1	101.3 101.3	101.3	8.6 8.6	8.6	8.6	2.2 2.5	2.4		3.2 3.4	3.3	
20-Jan-16	Rainy	Moderate	15:05	4.3	Surface	1.0	15.0 15.0	15.0	8.2 8.2	8.2	32.3 31.0	31.7	98.8 98.6	98.7	8.2 8.2	8.2	8.2	1.0 1.0	1.0	1.1	3.3 3.4	3.4	4.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	15.0 15.0	15.0	8.2 8.2	8.2	31.6 32.9	32.3	98.5 98.5	98.5	8.2 8.1	8.2	8.2	1.1 1.1	1.1		5.1 3.9	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 SR6 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	15:55	4.0	Surface	1.0	14.6 14.6	14.6	8.1 8.1	8.1	25.4 25.4	25.4	97.3 97.1	97.2	8.5 8.4	8.5	8.5	1.6 1.5	1.6	1.6	3.3 4.0	3.7	4.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	14.6 14.6	14.6	8.1 8.1	8.1	25.3 25.6	25.5	96.9 97.1	97.0	8.4 8.4	8.4	8.4	1.6 1.6	1.6		4.7 6.2	5.5	
25-Jan-16	Sunny	Moderate	09:33	3.8	Surface	1.0	12.7 12.6	12.7	8.3 8.4	8.3	27.9 28.0	28.0	95.8 96.1	96.0	8.6 8.6	8.6	8.6	9.1 9.2	9.2	9.3	15.8 15.6	15.7	15.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	12.7 12.7	12.7	8.4 8.3	8.3	28.1 28.0	28.0	95.7 95.7	95.7	8.5 8.5	8.5	8.5	9.3 9.3	9.3		15.4 16.3	15.9	
27-Jan-16	Cloudy	Moderate	10:28	3.9	Surface	1.0	11.6 11.6	11.6	8.4 8.3	8.4	30.4 30.7	30.6	98.0 98.0	98.0	8.8 8.8	8.8	8.8	10.9 10.4	10.7	10.4	15.1 13.9	14.5	16.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	11.6 11.6	11.6	8.4 8.3	8.3	30.5 30.9	30.7	97.7 98.2	98.0	8.8 8.8	8.8	8.8	10.0 9.9	10.0		17.8 16.9	17.4	
29-Jan-16	Rainy	Moderate	11:34	4.0	Surface	1.0	11.8 11.8	11.8	8.3 8.3	8.3	29.2 29.3	29.2	98.2 97.8	98.0	8.8 8.8	8.8	8.8	4.9 4.5	4.7	4.8	6.7 6.4	6.6	7.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	11.8 11.8	11.8	8.3 8.2	8.3	29.3 29.6	29.4	97.9 97.8	97.9	8.8 8.8	8.8	8.8	4.7 5.0	4.9		7.9 7.4	7.7	

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 SR7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	18:11	3.8	Surface	1.0	19.6 19.6	19.6	8.2 8.2	8.2	28.7 28.8	28.8	88.5 88.5	88.5	6.8 6.8	6.8	6.8	2.6 2.5	2.6	2.8	2.8 3.5	3.2	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.8	19.5 19.6	19.5	8.2 8.2	8.2	28.9 28.8	28.9	89.0 88.4	88.7	6.9 6.8	6.9	6.9	2.7 3.0	2.9		3.5 3.1	3.3	
4-Jan-16	Sunny	Moderate	07:25	4.2	Surface	1.0	16.0 16.0	16.0	7.9 7.9	7.9	28.6 28.5	28.6	96.1 95.5	95.8	8.0 7.9	7.9	7.9	1.2 1.2	1.2	1.2	3.2 3.1	3.2	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	16.1 16.0	16.1	7.8 7.9	7.8	30.6 29.0	29.8	94.8 96.3	95.6	7.8 8.0	7.9	7.9	1.2 1.2	1.2		3.8 4.5	4.2	
6-Jan-16	Sunny	Moderate	09:31	4.0	Surface	1.0	16.3 16.3	16.3	8.1 8.1	8.1	24.3 26.6	25.5	94.3 95.1	94.7	8.0 7.9	8.0	8.0	1.5 1.5	1.5	1.5	3.1 2.3	2.7	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	16.4 16.4	16.4	8.1 8.1	8.1	29.4 28.8	29.1	95.7 95.0	95.4	7.8 7.8	7.8	7.8	1.5 1.5	1.5		3.8 3.2	3.5	
8-Jan-16	Sunny	Moderate	11:40	4.1	Surface	1.0	16.5 16.5	16.5	8.1 8.1	8.1	32.3 32.3	32.3	102.9 101.3	102.1	8.3 8.1	8.2	8.2	3.2 3.3	3.3	3.3	3.4 2.7	3.1	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	16.4 16.4	16.4	8.1 8.2	8.2	32.3 32.4	32.4	101.8 103.9	102.9	8.2 8.4	8.3	8.3	3.3 3.3	3.3		2.6 3.0	2.8	
11-Jan-16	Sunny	Moderate	13:59	4.1	Surface	1.0	16.2 16.4	16.3	8.2 8.2	8.2	25.3 25.3	25.3	102.0 102.0	102.0	8.6 8.6	8.6	8.6	2.1 2.0	2.1	2.2	3.0 2.8	2.9	3.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	16.2 16.1	16.2	8.2 8.2	8.2	25.3 25.3	25.3	101.5 100.9	101.2	8.5 8.5	8.5	8.5	2.2 2.3	2.3		4.9 4.9	4.9	
13-Jan-16	Sunny	Moderate	15:38	4.3	Surface	1.0	16.2 16.2	16.2	8.2 8.2	8.2	24.1 24.2	24.1	105.1 104.8	105.0	8.9 8.9	8.9	8.9	2.1 2.1	2.1	2.2	8.2 8.1	8.2	7.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	16.1 16.2	16.1	8.2 8.2	8.2	24.3 24.4	24.3	104.5 104.7	104.6	8.9 8.9	8.9	8.9	2.2 2.1	2.2		6.4 4.9	5.7	
15-Jan-16	Rainy	Moderate	17:21	4.2	Surface	1.0	15.4 15.4	15.4	8.1 8.1	8.1	22.6 22.9	22.8	101.7 101.7	101.7	8.9 8.8	8.8	8.8	1.4 1.4	1.4	1.5	2.3 2.6	2.5	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	15.5 15.5	15.5	8.1 8.1	8.1	24.1 23.8	24.0	101.2 101.4	101.3	8.7 8.8	8.7	8.7	1.5 1.6	1.6		2.8 2.1	2.5	
18-Jan-16	Sunny	Moderate	06:48	4.1	Surface	1.0	14.7 14.7	14.7	8.1 8.1	8.1	29.8 29.8	29.8	97.6 99.0	98.3	8.3 8.4	8.3	8.3	2.0 1.8	1.9	2.0	2.5 2.2	2.4	2.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	15.1 14.9	15.0	8.0 8.1	8.1	29.8 30.2	30.0	98.4 95.6	97.0	8.3 8.0	8.1	8.1	2.2 2.0	2.1		2.5 2.6	2.6	
20-Jan-16	Rainy	Moderate	09:18	4.1	Surface	1.0	15.2 15.2	15.2	8.1 8.1	8.1	33.3 33.3	33.3	100.4 101.0	100.7	8.2 8.3	8.2	8.2	1.2 1.3	1.3	1.4	4.2 3.4	3.8	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	15.2 15.2	15.2	8.1 8.1	8.1	33.3 33.4	33.3	99.2 99.4	99.3	8.1 8.2	8.1	8.1	1.4 1.4	1.4		3.9 3.3	3.6	

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 SR7 - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	11:53	4.1	Surface	1.0	14.6 14.7	14.7	8.1 8.1	8.1	32.2 32.3	32.2	96.4 98.7	97.6	8.0 8.2	8.1	8.1	1.9 1.9	1.9	1.9	3.4 2.8	3.1	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	14.7 14.7	14.7	8.1 8.1	8.1	32.7 32.8	32.8	99.9 96.7	98.3	8.3 8.0	8.2	8.2	1.9 1.9	1.9		4.9 5.1	5.0	
25-Jan-16	Sunny	Moderate	14:04	4.1	Surface	1.0	12.5 12.5	12.5	8.4 8.4	8.4	28.1 28.3	28.2	97.7 97.6	97.7	8.7 8.7	8.7	8.7	2.8 2.7	2.8	2.8	4.7 5.2	5.0	5.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	12.5 12.4	12.4	8.4 8.3	8.3	28.2 28.3	28.3	97.6 97.7	97.7	8.7 8.7	8.7	8.7	2.8 2.8	2.8		7.2 6.1	6.7	
27-Jan-16	Cloudy	Moderate	15:10	4.3	Surface	1.0	12.1 12.2	12.1	8.3 8.3	8.3	28.2 28.3	28.3	97.6 97.6	97.6	8.8 8.8	8.8	8.8	2.3 2.4	2.4	2.4	6.4 6.7	6.6	6.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	12.1 12.1	12.1	8.3 8.3	8.3	28.1 28.3	28.2	97.2 97.4	97.3	8.8 8.8	8.8	8.8	2.3 2.3	2.3		5.6 6.5	6.1	
29-Jan-16	Cloudy	Moderate	16:17	3.9	Surface	1.0	11.9 12.0	12.0	8.3 8.3	8.3	24.4 23.3	23.8	96.1 96.1	96.1	8.9 9.0	8.9	8.9	2.5 2.3	2.4	2.8	3.4 3.1	3.3	4.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	12.0 12.0	12.0	8.3 8.3	8.3	26.2 26.3	26.3	96.1 97.2	96.7	8.8 8.9	8.8	8.8	3.0 3.1	3.1		5.3 4.4	4.9	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (^{o}C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	11:44	4.2	Surface	1.0	19.5 19.5	19.5	8.2 8.2	8.2	28.2 28.2	28.2	94.2 92.0	93.1	7.3 7.1	7.2	7.2	3.8 3.5	3.7	3.7	5.0 3.7	4.4	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	19.5 19.5	19.5	8.2 8.2	8.2	28.3 28.4	28.3	94.3 91.5	92.9	7.3 7.1	7.2	7.2	3.7 3.4	3.6		5.3 3.5	4.4	
4-Jan-16	Sunny	Moderate	14:47	4.3	Surface	1.0	16.2 16.3	16.2	8.1 8.1	8.1	25.3 25.3	25.3	98.0 99.0	98.5	8.3 8.3	8.3	8.3	1.5 1.5	1.5	1.5	1.2 1.3	1.3	1.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	16.2 16.2	16.2	8.1 8.1	8.1	26.7 25.8	26.3	98.1 98.5	98.3	8.2 8.3	8.2	8.2	1.5 1.5	1.5		2.5 2.1	2.3	
6-Jan-16	Sunny	Moderate	16:48	4.1	Surface	1.0	16.9 16.9	16.9	8.1 8.1	8.1	20.3 20.2	20.3	99.2 99.5	99.4	8.5 8.5	8.5	8.5	1.7 1.6	1.7	1.8	3.3 3.4	3.4	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	16.8 16.8	16.8	8.1 8.1	8.1	23.1 22.9	23.0	98.7 99.0	98.9	8.3 8.4	8.4	8.4	1.9 1.9	1.9		2.7 3.4	3.1	
8-Jan-16	Sunny	Moderate	17:17	4.1	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	25.0 25.1	25.1	103.1 103.3	103.2	8.6 8.6	8.6	8.6	2.7 2.7	2.7	2.7	2.3 2.4	2.4	2.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	16.7 16.6	16.6	8.1 8.2	8.1	26.1 25.8	25.9	103.1 103.2	103.2	8.6 8.6	8.6	8.6	2.6 2.7	2.7		2.5 2.1	2.3	
11-Jan-16	Rainy	Moderate	08:27	4.1	Surface	1.0	16.1 16.1	16.1	8.2 8.2	8.2	32.3 32.3	32.3	100.6 100.8	100.7	8.1 8.2	8.1	8.1	2.7 2.7	2.7	2.9	5.0 3.9	4.5	5.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.1	16.1 16.1	16.1	8.2 8.2	8.2	32.4 32.4	32.4	99.7 100.1	99.9	8.1 8.1	8.1	8.1	3.0 3.0	3.0		5.5 5.7	5.6	
13-Jan-16	Sunny	Moderate	09:27	4.3	Surface	1.0	15.7 15.7	15.7	8.1 8.1	8.1	32.1 32.1	32.1	105.1 104.9	105.0	8.6 8.6	8.6	8.6	3.9 4.1	4.0	4.0	6.5 5.9	6.2	7.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	15.7 15.7	15.7	8.1 8.1	8.1	32.2 32.1	32.1	109.8 105.8	107.8	9.0 8.6	8.8	8.8	3.9 3.9	3.9		8.0 9.4	8.7	
15-Jan-16	Rainy	Moderate	11:01	4.3	Surface	1.0	15.6 15.6	15.6	8.0 8.0	8.0	32.1 32.2	32.1	104.2 103.3	103.8	8.5 8.5	8.5	8.5	3.1 3.1	3.1	3.3	3.7 2.9	3.3	3.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	15.6 15.6	15.6	7.9 8.0	8.0	32.2 32.2	32.2	102.9 102.9	102.9	8.4 8.4	8.4	8.4	3.4 3.5	3.5		3.6 4.2	3.9	
18-Jan-16	Sunny	Moderate	14:08	4.0	Surface	1.0	15.2 15.2	15.2	8.2 8.2	8.2	22.9 23.1	23.0	101.2 100.9	101.1	8.8 8.8	8.8	8.8	2.4 2.7	2.6	2.8	2.7 2.0	2.4	2.9
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.0	15.3 15.4	15.3	8.1 8.2	8.2	23.0 23.9	23.4	101.3 101.0	101.2	8.8 8.7	8.8	8.8	3.0 2.8	2.9		3.1 3.5	3.3	
20-Jan-16	Rainy	Moderate	16:30	4.3	Surface	1.0	15.1 15.1	15.1	8.2 8.2	8.2	26.2 26.2	26.2	99.3 99.0	99.2	8.5 8.5	8.5	8.5	1.0 1.0	1.0	1.1	2.9 3.1	3.0	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	15.1 15.1	15.1	8.2 8.2	8.2	26.6 26.3	26.5	98.6 98.7	98.7	8.5 8.5	8.5	8.5	1.1 1.0	1.1		2.3 4.1	3.2	

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 SR7 - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	17:15	4.4	Surface	1.0	14.4 14.5	14.5	8.1 8.1	8.1	23.8 23.7	23.8	97.7 97.4	97.6	8.6 8.6	8.6	8.6	1.6 1.6	1.6	1.6	5.3 4.3	4.8	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.4	14.6 14.5	14.5	8.1 8.1	8.1	23.8 23.8	23.8	95.3 97.2	96.3	8.4 8.6	8.5	8.5	1.6 1.6	1.6		3.8 3.7	3.8	
25-Jan-16	Sunny	Moderate	08:14	4.2	Surface	1.0	12.1 12.3	12.2	8.2 8.2	8.2	34.3 34.7	34.5	97.7 97.2	97.5	8.4 8.4	8.4	8.4	4.8 4.9	4.9	5.2	9.0 8.8	8.9	9.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.2	12.2 12.2	12.2	8.2 8.2	8.2	34.7 34.5	34.6	96.1 96.3	96.2	8.3 8.3	8.3	8.3	5.4 5.3	5.4		10.5 10.6	10.6	
27-Jan-16	Cloudy	Moderate	09:04	4.3	Surface	1.0	11.6 11.6	11.6	8.3 8.3	8.3	34.6 34.7	34.6	98.0 97.9	98.0	8.6 8.6	8.6	8.6	3.5 3.3	3.4	3.8	6.7 6.3	6.5	6.2
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.3	11.6 11.5	11.5	8.3 8.2	8.3	34.7 34.7	34.7	97.7 97.8	97.8	8.5 8.6	8.6	8.6	4.0 4.1	4.1		5.8 5.9	5.9	
29-Jan-16	Rainy	Moderate	10:12	3.9	Surface	1.0	11.8 11.8	11.8	8.2 8.2	8.2	32.7 32.7	32.7	98.5 99.3	98.9	8.7 8.8	8.7	8.7	8.0 7.9	8.0	8.3	6.6 6.5	6.6	7.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	2.9	11.8 11.8	11.8	8.2 8.2	8.2	32.8 32.7	32.8	98.6 99.9	99.3	8.7 8.8	8.7	8.7	8.6 8.6	8.6		8.1 9.6	8.9	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10A - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	19:13	6.4	Surface	1.0	16.2 16.2	16.2	8.1 8.1	8.1	28.8 28.8	28.8	92.3 91.6	92.0	7.6 7.6	7.6	7.6	2.7 2.8	2.8	2.8	2.8 3.9	3.4	3.5
					Middle	3.2	16.2 16.2	16.2	7.1 8.1	7.6	28.8 28.7	28.7	91.1 91.2	91.2	7.5 7.5	7.5		2.7 2.6	2.7		2.3 2.2	2.3	
					Bottom	5.4	16.2 16.2	16.2	8.1 7.1	7.6	28.5 28.6	28.6	91.3 91.4	91.4	7.5 7.5	7.5	7.5	2.9 3.0	3.0		4.9 4.7	4.8	
4-Jan-16	Sunny	Moderate	05:58	6.8	Surface	1.0	19.7 19.7	19.7	8.1 8.1	8.1	26.2 26.2	26.2	89.8 88.9	89.4	7.0 7.0	7.0	7.0	1.7 1.7	1.7	1.7	2.8 2.0	2.4	2.6
					Middle	3.4	19.7 19.7	19.7	8.1 8.1	8.1	26.4 26.5	26.5	89.0 88.1	88.6	7.0 6.9	6.9		1.7 1.7	1.7		2.5 3.0	2.8	
					Bottom	5.8	19.7 19.7	19.7	8.1 8.1	8.1	27.6 27.5	27.5	87.7 89.6	88.7	6.8 7.0	6.9	6.9	1.7 1.7	1.7		2.5 2.4	2.5	
6-Jan-16	Sunny	Moderate	09:11	6.4	Surface	1.0	20.0 20.0	20.0	8.1 8.1	8.1	25.7 25.7	25.7	88.8 90.2	89.5	6.9 7.1	7.0	7.0	1.7 1.6	1.7	1.7	3.8 2.3	3.1	2.7
					Middle	3.2	19.9 19.9	19.9	8.1 8.1	8.1	26.8 26.9	26.9	88.1 89.6	88.9	6.9 7.0	6.9		1.7 1.6	1.7		2.2 2.6	2.4	
					Bottom	5.4	19.9 19.9	19.9	8.1 8.1	8.1	28.0 28.0	28.0	88.7 89.2	89.0	6.9 6.9	6.9	6.9	1.8 1.8	1.8		2.4 2.8	2.6	
8-Jan-16	Sunny	Moderate	11:11	6.7	Surface	1.0	20.0 20.0	20.0	8.1 8.1	8.1	28.1 28.0	28.0	90.3 89.9	90.1	7.0 6.9	6.9	7.0	1.8 1.9	1.9	1.9	2.7 2.7	2.7	2.5
					Middle	3.4	20.0 20.0	20.0	8.1 8.1	8.1	28.0 28.1	28.0	89.7 90.7	90.2	6.9 7.0	7.0		1.8 1.9	1.9		2.5 2.7	2.6	
					Bottom	5.7	20.0 20.0	20.0	8.1 8.1	8.1	28.0 28.0	28.0	89.8 89.0	89.4	6.9 6.9	6.9	6.9	1.9 1.8	1.9		2.3 2.2	2.3	
11-Jan-16	Sunny	Moderate	14:50	6.5	Surface	1.0	20.0 20.0	20.0	8.2 8.2	8.2	28.5 28.4	28.4	93.7 95.3	94.5	7.2 7.3	7.3	7.3	1.8 1.8	1.8	1.8	2.6 3.0	2.8	3.1
					Middle	3.3	19.9 19.9	19.9	8.2 8.2	8.2	28.7 28.8	28.8	93.9 94.7	94.3	7.2 7.3	7.3		1.8 1.8	1.8		2.7 3.9	3.3	
					Bottom	5.5	20.0 19.9	19.9	8.2 8.2	8.2	28.6 29.0	28.8	94.6 94.1	94.4	7.3 7.2	7.3	7.3	1.9 1.8	1.9		2.5 3.9	3.2	
13-Jan-16	Sunny	Moderate	16:13	6.5	Surface	1.0	19.9 19.9	19.9	8.3 8.2	8.3	27.5 27.6	27.5	99.8 98.0	98.9	7.7 7.6	7.7	7.7	1.8 1.9	1.9	2.0	2.4 3.5	3.0	4.6
					Middle	3.3	19.7 19.8	19.7	8.2 8.2	8.2	27.9 27.8	27.9	96.3 98.6	97.5	7.5 7.6	7.6		1.9 1.8	1.9		4.7 5.7	5.2	
					Bottom	5.5	19.7 19.8	19.7	8.2 8.2	8.2	28.2 28.0	28.1	96.9 97.8	97.4	7.5 7.6	7.5	7.5	2.2 2.0	2.1		5.8 5.6	5.7	
15-Jan-16	Rainy	Moderate	17:56	6.3	Surface	1.0	19.1 19.1	19.1	8.3 8.3	8.3	27.9 27.9	27.9	97.1 96.6	96.9	7.6 7.6	7.6	7.6	1.7 1.7	1.7	1.7	2.6 2.1	2.4	2.4
					Middle	3.2	19.1 19.1	19.1	8.3 8.3	8.3	27.9 27.9	27.9	95.8 96.4	96.1	7.5 7.6	7.5		1.8 1.7	1.8		2.2 2.3	2.3	
					Bottom	5.3	19.1 19.2	19.1	8.3 8.3	8.3	28.0 28.0	28.0	95.7 95.2	95.5	7.5 7.5	7.5	7.5	1.7 1.7	1.7		2.1 2.6	2.4	
18-Jan-16	Sunny	Moderate	06:22	6.3	Surface	1.0	18.2 18.2	18.2	8.1 8.2	8.1	24.7 24.9	24.8	91.2 91.5	91.4	7.4 7.4	7.4	7.4	1.6 1.7	1.7	1.8	2.8 2.4	2.6	2.4
					Middle	3.2	18.5 18.6	18.6	8.1 8.1	8.1	26.0 25.4	25.7	90.1 91.2	90.7	7.2 7.3	7.3		1.8 1.8	1.8		2.4 2.3	2.4	
					Bottom	5.3	19.1 19.2	19.2	8.1 8.1	8.1	27.7 27.5	27.6	91.8 91.0	91.4	7.2 7.2	7.2	7.2	1.8 1.9	1.9		2.3 2.3	2.3	
20-Jan-16	Rainy	Moderate	09:10	6.7	Surface	1.0	18.8 18.8	18.8	8.1 8.1	8.1	28.8 28.8	28.8	91.3 93.3	92.3	7.2 7.3	7.2	7.3	1.9 1.9	1.9	1.9	3.8 4.0	3.9	5.3
					Middle	3.4	18.8 18.8	18.8	8.1 8.1	8.1	28.8 28.8	28.8	92.6 93.8	93.2	7.3 7.4	7.3		1.9 1.8	1.9		4.4 4.5	4.5	
					Bottom	5.7	18.8 18.8	18.8	8.1 8.1	8.1	28.9 28.8	28.9	92.8 90.5	91.7	7.3 7.1	7.2	7.2	1.8 1.8	1.8		7.1 7.6	7.4	

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 SR10A - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	11:15	6.5	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	28.4 28.4	28.4	89.6 89.5	89.6	7.1 7.1	7.1	7.1	1.0 0.9	1.0	1.0	3.2 3.9	3.6	4.0
					Middle	3.3	18.5 18.5	18.5	8.2 8.2	8.2	28.4 28.4	28.4	89.0 89.0	89.0	7.1 7.0	7.0		1.0 1.0	1.0		4.5 4.7	4.6	
					Bottom	5.5	18.5 18.5	18.5	8.2 8.2	8.2	28.4 28.4	28.4	88.7 88.9	88.8	7.0 7.0	7.0	7.0	1.1 1.1	1.1		4.3 3.2	3.8	
25-Jan-16	Sunny	Moderate	14:51	6.4	Surface	1.0	16.9 16.9	16.9	8.4 8.4	8.4	29.2 29.2	29.2	91.8 91.1	91.5	7.5 7.4	7.4	7.4	2.1 2.0	2.1	2.2	6.6 7.2	6.9	8.0
					Middle	3.2	16.9 16.9	16.9	8.4 8.4	8.4	29.3 29.3	29.3	91.0 91.0	91.0	7.4 7.4	7.4		2.2 2.1	2.2		7.2 8.9	8.1	
					Bottom	5.4	16.8 16.9	16.9	8.4 8.4	8.4	29.4 29.3	29.4	90.5 91.0	90.8	7.4 7.4	7.4	7.4	2.1 2.2	2.2		8.9 9.2	9.1	
27-Jan-16	Cloudy	Moderate	15:30	6.5	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	29.9 29.9	29.9	89.2 89.7	89.5	7.3 7.3	7.3	7.3	2.4 2.3	2.4	2.5	4.6 3.9	4.3	4.7
					Middle	3.3	16.4 16.4	16.4	8.3 8.3	8.3	29.9 29.9	29.9	89.1 89.4	89.3	7.3 7.3	7.3		2.5 2.4	2.5		4.3 4.2	4.3	
					Bottom	5.5	16.4 16.3	16.4	8.3 8.3	8.3	29.9 30.0	30.0	89.1 88.4	88.8	7.3 7.2	7.3	7.3	2.4 2.5	2.5		6.2 4.8	5.5	
29-Jan-16	Cloudy	Moderate	17:00	6.3	Surface	1.0	15.8 15.8	15.8	8.3 8.3	8.3	29.1 29.1	29.1	91.8 91.1	91.5	7.6 7.6	7.6	7.6	3.0 3.0	3.0	3.0	3.7 3.4	3.6	4.0
					Middle	3.2	15.9 15.9	15.9	8.3 8.3	8.3	29.3 29.2	29.3	89.9 91.4	90.7	7.4 7.6	7.5		3.0 2.9	3.0		4.2 3.8	4.0	
					Bottom	5.3	15.9 15.9	15.9	8.3 8.3	8.3	29.3 29.4	29.4	90.8 89.5	90.2	7.5 7.4	7.5	7.5	3.0 3.1	3.1		4.1 4.4	4.3	

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 SR10A - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	11:17	6.6	Surface	1.0	16.1 16.0	16.1	8.1 8.1	8.1	33.7 33.7	33.7	95.1 95.5	95.3	7.6 7.7	7.7	7.7	2.1 2.1	2.1		3.9 3.8	3.9	
					Middle	3.3	16.0 16.0	16.0	8.1 8.1	8.1	33.7 33.7	33.7	95.2 94.9	95.1	7.6 7.6	7.6		2.1 2.1	2.1	2.1	3.6 3.9	3.8	3.5
					Bottom	5.6	16.1 16.1	16.1	8.0 8.1	8.1	33.9 33.8	33.9	95.0 94.8	94.9	7.6 7.6	7.6	7.6	2.2 2.1	2.2		2.9 2.4	2.7	
4-Jan-16	Sunny	Moderate	15:06	6.7	Surface	1.0	20.0 20.0	20.0	8.2 8.2	8.2	27.4 27.5	27.5	92.7 92.4	92.6	7.2 7.2	7.2	7.2	1.6 1.6	1.6		2.1 2.0	2.1	
					Middle	3.4	19.7 19.7	19.7	8.2 8.2	8.2	28.0 27.9	28.0	91.4 91.1	91.3	7.1 7.1	7.1		1.7 1.6	1.7	1.6	2.0 2.1	2.1	2.2
					Bottom	5.7	19.8 19.7	19.7	8.2 8.2	8.2	28.2 28.4	28.3	92.2 90.8	91.5	7.1 7.0	7.1	7.1	1.6 1.6	1.6		2.7 2.1	2.4	
6-Jan-16	Sunny	Moderate	16:41	6.6	Surface	1.0	20.0 20.0	20.0	8.2 8.2	8.2	28.3 27.8	28.0	87.3 87.8	87.6	6.7 6.8	6.8	6.8	2.3 2.2	2.3		3.0 2.8	2.9	
					Middle	3.3	19.9 19.9	19.9	8.1 8.1	8.1	29.3 29.3	29.3	86.8 87.0	86.9	6.7 6.7	6.7		2.6 2.6	2.6	2.6	3.6 2.8	3.2	3.2
					Bottom	5.6	19.9 19.9	19.9	8.1 8.1	8.1	29.3 29.3	29.3	87.5 87.3	87.4	6.7 6.7	6.7	6.7	2.8 3.1	3.0		3.7 3.5	3.6	
8-Jan-16	Sunny	Moderate	18:01	6.5	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	28.5 28.4	28.5	96.1 96.5	96.3	7.4 7.4	7.4	7.4	1.5 1.4	1.5		2.3 2.1	2.2	
					Middle	3.3	20.2 20.2	20.2	8.2 8.2	8.2	28.5 28.5	28.5	96.5 94.9	95.7	7.4 7.3	7.3		1.5 1.6	1.6	1.6	2.4 2.7	2.6	2.5
					Bottom	5.5	20.2 20.2	20.2	8.2 8.2	8.2	28.6 28.5	28.6	94.9 96.5	95.7	7.3 7.4	7.3	7.3	1.6 1.6	1.6		2.5 3.0	2.8	
11-Jan-16	Rainy	Moderate	07:41	6.4	Surface	1.0	19.7 19.7	19.7	8.1 8.1	8.1	26.6 26.6	26.6	92.2 92.1	92.2	7.2 7.2	7.2	7.2	1.8 1.7	1.8		3.4 3.7	3.6	
					Middle	3.2	19.7 19.8	19.8	8.1 8.1	8.1	26.7 26.6	26.7	92.0 92.9	92.5	7.2 7.3	7.2		1.8 1.8	1.8	1.8	4.5 3.5	4.0	3.7
					Bottom	5.4	19.7 19.8	19.8	8.1 8.1	8.1	26.7 26.7	26.7	92.7 93.6	93.6	7.2 7.4	7.3	7.3	1.8 1.8	1.8		3.9 3.3	3.6	
13-Jan-16	Sunny	Moderate	08:47	6.6	Surface	1.0	19.6 19.6	19.6	8.1 8.1	8.1	27.3 27.3	27.3	93.1 92.8	93.0	7.3 7.3	7.3	7.2	1.9 1.9	1.9		5.3 5.7	5.5	
					Middle	3.3	19.6 19.6	19.6	8.1 8.1	8.1	27.4 27.5	27.4	90.5 92.5	91.5	7.1 7.2	7.1		2.0 2.0	2.0	2.1	5.7 4.1	4.9	4.9
					Bottom	5.6	19.6 19.6	19.6	8.1 8.1	8.1	27.5 27.4	27.4	92.1 90.0	91.1	7.2 7.0	7.1	7.1	2.3 2.2	2.3		4.4 4.4	4.4	
15-Jan-16	Rainy	Moderate	10:12	6.4	Surface	1.0	19.3 19.3	19.3	8.2 8.2	8.2	27.2 27.1	27.1	95.5 95.6	95.6	7.5 7.5	7.5	7.5	4.2 4.3	4.3		1.8 1.9	1.9	
					Middle	3.2	19.3 19.3	19.3	8.2 8.2	8.2	27.2 27.3	27.2	95.8 95.4	95.6	7.5 7.5	7.5		4.5 4.4	4.5	4.4	1.9 2.0	2.0	2.2
					Bottom	5.4	19.3 19.3	19.3	8.2 8.2	8.2	27.2 27.3	27.3	95.0 93.2	94.1	7.5 7.3	7.4	7.4	4.4 4.5	4.5		2.8 2.6	2.7	
18-Jan-16	Sunny	Moderate	14:45	6.4	Surface	1.0	18.7 18.6	18.6	8.3 8.3	8.3	27.4 27.2	27.3	96.0 95.5	95.8	7.6 7.6	7.6	7.6	1.2 1.2	1.2		2.4 2.9	2.7	
					Middle	3.2	18.7 18.7	18.7	8.2 8.2	8.2	27.8 27.7	27.7	93.9 97.1	95.5	7.4 7.7	7.6		1.3 1.3	1.3	1.3	2.4 2.8	2.6	2.6
					Bottom	5.4	18.9 18.7	18.8	8.2 8.2	8.2	28.8 28.7	28.7	94.1 95.0	94.6	7.4 7.5	7.4	7.4	1.3 1.3	1.3		2.5 2.7	2.6	
20-Jan-16	Rainy	Moderate	16:34	6.6	Surface	1.0	18.8 18.8	18.8	8.3 8.3	8.3	29.6 29.5	29.6	94.1 92.2	93.2	7.4 7.2	7.3	7.3	1.5 1.6	1.6		2.7 3.9	3.3	
					Middle	3.3	18.8 18.8	18.8	8.3 8.3	8.3	29.6 29.6	29.6	93.3 94.0	93.7	7.3 7.3	7.3		1.5 1.6	1.6	1.6	3.4 3.8	3.6	3.5
					Bottom	5.6	18.8 18.8	18.8	8.3 8.3	8.3	29.6 29.6	29.6	91.1 92.0	91.6	7.1 7.2	7.2	7.2	1.7 1.7	1.7		3.2 3.7	3.5	

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 SR10A - Mid-FloodTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	18:12	6.7	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	29.3 29.2	29.3	92.8 92.6	92.7	7.3 7.3	7.3	7.2	1.2 1.2	1.2	1.4	2.4 3.1	2.8	4.0
					Middle	3.4	18.4 18.5	18.5	8.2 8.2	8.2	29.2 29.3	29.2	90.2 90.3	90.3	7.1 7.1	7.1		1.4 1.3	1.4		3.9 3.4	3.7	
					Bottom	5.7	18.3 18.5	18.4	8.2 8.2	8.2	29.2 29.2	29.2	88.9 89.0	89.0	7.0 7.0	7.0	7.0	1.6 1.5	1.6		5.9 4.9	5.4	
25-Jan-16	Sunny	Moderate	07:41	6.7	Surface	1.0	16.7 16.7	16.7	8.2 8.2	8.2	28.9 29.0	29.0	90.6 90.2	90.4	7.4 7.4	7.4	7.4	6.1 6.4	6.3	6.3	9.0 9.0	9.0	10.7
					Middle	3.4	16.7 16.7	16.7	8.2 8.2	8.2	29.0 28.9	29.0	90.0 90.4	90.2	7.4 7.4	7.4		6.3 6.3	6.3		10.0 9.8	9.9	
					Bottom	5.7	16.7 16.7	16.7	8.2 8.1	8.2	29.0 28.9	28.9	89.2 90.0	89.6	7.3 7.4	7.3	7.3	6.3 6.2	6.3		12.2 14.0	13.1	
27-Jan-16	Cloudy	Moderate	08:21	6.6	Surface	1.0	16.0 16.0	16.0	8.2 8.2	8.2	28.4 28.4	28.4	89.9 89.1	89.5	7.5 7.4	7.4	7.4	3.8 3.7	3.8	4.3	3.1 3.7	3.4	3.8
					Middle	3.3	16.0 16.0	16.0	8.2 8.2	8.2	28.5 28.6	28.6	89.7 89.2	89.5	7.5 7.4	7.4		4.4 4.5	4.5		2.7 2.6	2.7	
					Bottom	5.6	15.9 15.9	15.9	8.2 8.2	8.2	28.5 28.6	28.6	89.0 87.7	88.4	7.4 7.3	7.3	7.3	4.4 4.6	4.5		5.1 5.4	5.3	
29-Jan-16	Rainy	Moderate	09:42	6.6	Surface	1.0	15.5 15.5	15.5	8.2 8.2	8.2	27.3 27.2	27.2	91.5 90.2	90.9	7.7 7.6	7.7	7.7	2.6 2.4	2.5	3.1	3.2 2.8	3.0	3.1
					Middle	3.3	15.5 15.5	15.5	8.1 8.2	8.2	27.3 27.3	27.3	91.4 90.9	91.2	7.7 7.7	7.7		3.5 3.4	3.5		2.5 2.3	2.4	
					Bottom	5.6	15.6 15.6	15.6	8.1 8.2	8.1	27.4 27.4	27.4	90.1 89.9	90.0	7.6 7.6	7.6	7.6	3.5 3.3	3.4		2.9 4.6	3.8	

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

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

Appendix J - Marine Water Quality Monitoring Results

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

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Jan-16	Sunny	Moderate	19:27	4.7	Surface	1.0	16.3 16.3	16.3	8.2 8.2	8.2	29.0 29.0	29.0	94.3 94.0	94.2	7.8 7.8	7.8	7.8	3.0 3.1	3.1	3.3	2.9 2.2	2.6	3.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.7	16.3 16.3	16.3	8.1 8.2	8.2	28.9 29.0	28.9	94.1 94.6	94.4	7.8 7.8	7.8	7.8	3.3 3.4	3.4		3.5 3.2	3.4	
4-Jan-16	Sunny	Moderate	05:36	5.2	Surface	1.0	19.7 19.7	19.7	8.2 8.2	8.2	25.4 24.7	25.0	90.7 92.2	91.5	7.2 7.3	7.2	7.2	1.8 1.8	1.8	1.8	3.8 3.6	3.7	3.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	19.7 19.7	19.7	8.2 8.2	8.2	23.9 25.2	24.6	92.3 90.8	91.6	7.3 7.2	7.3	7.3	1.8 1.8	1.8		2.3 4.2	3.3	
6-Jan-16	Sunny	Moderate	09:01	5.3	Surface	1.0	20.0 19.9	20.0	8.2 8.2	8.2	25.2 25.4	25.3	88.5 89.3	88.9	7.0 7.0	7.0	7.0	1.6 1.6	1.6	1.6	2.6 3.6	3.1	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	19.9 19.9	19.9	8.1 8.1	8.1	27.5 27.1	27.3	89.2 89.2	89.2	6.9 6.9	6.9	6.9	1.6 1.5	1.6		2.4 3.6	3.0	
8-Jan-16	Sunny	Moderate	11:02	5.1	Surface	1.0	20.0 20.0	20.0	8.1 8.1	8.1	26.8 27.2	27.0	92.3 92.2	92.3	7.2 7.1	7.2	7.2	1.1 1.1	1.1	1.1	1.1 1.0	1.1	1.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	20.0 20.0	20.0	8.0 8.1	8.1	26.3 27.1	26.7	91.4 91.8	91.6	7.1 7.1	7.1	7.1	1.1 1.1	1.1		0.8 1.0	0.9	
11-Jan-16	Sunny	Moderate	15:00	5.0	Surface	1.0	20.1 20.1	20.1	8.2 8.2	8.2	28.3 28.3	28.3	96.6 95.0	95.8	7.4 7.3	7.4	7.4	1.9 1.8	1.9	1.9	3.4 3.7	3.6	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	19.9 20.1	20.0	8.2 8.2	8.2	28.7 28.2	28.5	94.7 96.3	95.5	7.3 7.4	7.3	7.3	1.8 1.9	1.9		3.4 4.3	3.9	
13-Jan-16	Sunny	Moderate	16:24	4.8	Surface	1.0	19.9 19.9	19.9	8.3 8.3	8.3	27.5 27.6	27.6	101.8 101.7	101.8	7.9 7.9	7.9	7.9	1.8 1.9	1.9	1.9	4.0 5.3	4.7	5.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	19.9 19.8	19.8	8.3 8.3	8.3	27.6 27.8	27.7	102.3 101.2	101.8	7.9 7.8	7.9	7.9	1.8 2.0	1.9		5.1 6.4	5.8	
15-Jan-16	Rainy	Moderate	18:06	5.2	Surface	1.0	19.1 19.1	19.1	8.3 8.3	8.3	27.9 27.9	27.9	96.5 96.3	96.4	7.6 7.6	7.6	7.6	1.8 1.7	1.8	1.8	1.8 1.8	1.8	1.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	19.1 19.1	19.1	8.3 8.3	8.3	28.1 28.0	28.0	96.6 96.0	96.3	7.6 7.5	7.5	7.5	1.8 1.8	1.8		1.6 1.9	1.8	
18-Jan-16	Sunny	Moderate	06:12	5.1	Surface	1.0	18.3 18.1	18.2	8.0 8.0	8.0	23.8 23.5	23.7	92.5 94.7	93.6	7.6 7.6	7.6	7.6	1.8 1.8	1.8	1.8	2.2 2.5	2.4	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	18.3 18.8	18.6	8.0 7.9	8.0	26.4 25.1	25.8	93.9 92.4	93.2	7.6 7.6	7.6	7.6	1.8 1.8	1.8		3.2 2.4	2.8	
20-Jan-16	Rainy	Moderate	08:56	5.2	Surface	1.0	18.8 18.8	18.8	8.0 8.0	8.0	28.3 27.8	28.1	93.3 94.6	94.0	7.3 7.5	7.4	7.4	2.0 2.2	2.1	2.1	4.4 4.8	4.6	4.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	18.8 18.8	18.8	8.0 8.0	8.0	27.1 28.2	27.7	97.9 93.4	95.7	7.8 7.4	7.6	7.6	2.1 2.0	2.1		5.2 3.6	4.4	

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 SR10B(N) - Mid-EbbTide

Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (°C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	11:06	5.2	Surface	1.0	18.5 18.5	18.5	8.2 8.2	8.2	28.2 27.9	28.0	89.9 89.8	89.9	7.1 7.1	7.1	7.1	1.3 1.3	1.3	1.4	4.7 4.7	4.7	4.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	18.5 18.5	18.5	8.2 8.2	8.2	28.1 27.7	27.9	87.6 88.2	87.9	6.9 7.0	7.0	7.0	1.5 1.5	1.5		4.5 4.9	4.7	
25-Jan-16	Sunny	Moderate	15:01	5.0	Surface	1.0	16.9 16.9	16.9	8.4 8.4	8.4	29.2 29.2	29.2	91.3 92.5	91.9	7.4 7.5	7.5	7.5	1.9 1.9	1.9	2.0	8.5 8.7	8.6	8.5
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	16.9 16.8	16.9	8.4 8.4	8.4	29.2 29.4	29.3	90.9 89.6	90.3	7.4 7.3	7.3	7.3	2.0 1.9	2.0		8.6 8.2	8.4	
27-Jan-16	Cloudy	Moderate	15:40	5.0	Surface	1.0	16.4 16.4	16.4	8.3 8.3	8.3	29.9 29.9	29.9	89.8 90.4	90.1	7.3 7.4	7.4	7.4	2.3 2.2	2.3	2.3	5.8 5.9	5.9	6.0
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	16.4 16.4	16.4	8.3 8.3	8.3	29.9 30.0	29.9	89.9 88.5	89.2	7.3 7.2	7.3	7.3	2.3 2.3	2.3		6.7 5.3	6.0	
29-Jan-16	Cloudy	Moderate	17:12	4.9	Surface	1.0	15.8 15.8	15.8	8.3 8.3	8.3	29.1 29.0	29.1	92.9 90.2	91.6	7.7 7.5	7.6	7.6	3.1 3.1	3.1	3.1	3.9 4.6	4.3	4.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.9	15.9 15.8	15.9	8.3 8.3	8.3	29.4 29.2	29.3	90.7 91.5	91.1	7.5 7.6	7.5	7.5	3.1 3.1	3.1		5.1 3.9	4.5	

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

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

Appendix J - Marine Water Quality Monitoring Results

Water Quality Monitoring Results at SR10B(N) - 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-Jan-16	Sunny	Moderate	11:02	5.0	Surface	1.0	16.0 16.0	16.0	8.0 8.0	8.0	33.3 33.3	33.3	96.1 95.4	95.8	7.7 7.7	7.7	7.7	1.6 1.6	1.6	1.6	3.4 3.2	3.3	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	16.0 16.0	16.0	7.9 7.9	7.9	33.3 33.3	33.3	96.4 96.4	96.4	7.8 7.8	7.8	7.8	1.7 1.5	1.6		2.6 3.7	3.2	
4-Jan-16	Sunny	Moderate	15:21	5.4	Surface	1.0	20.0 19.9	19.9	8.2 8.2	8.2	27.4 27.4	27.4	93.4 93.0	93.2	7.2 7.2	7.2	7.2	1.6 1.6	1.6	1.7	2.3 2.1	2.2	2.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.4	19.8 19.8	19.8	8.2 8.2	8.2	27.9 27.8	27.8	91.8 93.0	92.4	7.1 7.2	7.2	7.2	1.7 1.6	1.7		2.4 2.1	2.3	
6-Jan-16	Sunny	Moderate	16:51	5.1	Surface	1.0	20.0 20.1	20.1	8.2 8.2	8.2	26.7 27.4	27.1	89.1 89.2	89.2	6.9 6.9	6.9	6.9	1.6 1.6	1.6	1.6	3.2 4.2	3.7	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.1	20.0 19.9	19.9	8.1 8.1	8.1	29.0 29.3	29.2	89.1 87.2	88.2	6.8 6.7	6.8	6.8	1.6 1.6	1.6		3.1 2.9	3.0	
8-Jan-16	Sunny	Moderate	18:11	5.3	Surface	1.0	20.2 20.2	20.2	8.2 8.2	8.2	28.5 28.5	28.5	96.8 95.9	96.4	7.4 7.4	7.4	7.4	1.5 1.5	1.5	1.6	2.8 3.2	3.0	3.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	20.2 20.2	20.2	8.2 8.2	8.2	28.5 28.6	28.6	96.2 95.6	95.9	7.4 7.3	7.3	7.3	1.6 1.6	1.6		3.6 3.6	3.6	
11-Jan-16	Rainy	Moderate	07:31	5.0	Surface	1.0	19.7 19.7	19.7	8.1 8.1	8.1	25.0 26.1	25.5	94.4 93.0	93.7	7.5 7.3	7.4	7.4	3.2 3.2	3.2	3.3	2.8 3.9	3.4	3.4
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.0	19.8 19.7	19.8	8.1 8.2	8.2	26.1 23.8	24.9	92.8 96.8	94.8	7.3 7.7	7.5	7.5	3.3 3.2	3.3		2.5 4.2	3.4	
13-Jan-16	Sunny	Moderate	08:34	4.8	Surface	1.0	19.6 19.6	19.6	8.0 8.0	8.0	26.4 26.9	26.7	95.2 92.5	93.9	7.5 7.2	7.4	7.4	2.0 2.0	2.0	2.2	3.4 2.3	2.9	2.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	3.8	19.6 19.6	19.6	7.9 8.0	8.0	25.8 26.9	26.3	97.6 93.0	95.3	7.7 7.3	7.5	7.5	2.3 2.4	2.4		2.1 2.2	2.2	
15-Jan-16	Rainy	Moderate	10:01	5.2	Surface	1.0	19.3 19.3	19.3	8.2 8.2	8.2	26.7 26.5	26.6	94.8 96.1	95.5	7.5 7.6	7.5	7.5	2.6 2.4	2.5	2.6	2.9 2.6	2.8	2.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	19.3 19.3	19.3	8.2 8.2	8.2	26.7 26.1	26.4	95.5 95.8	95.7	7.5 7.6	7.5	7.5	2.7 2.6	2.7		2.7 2.4	2.6	
18-Jan-16	Sunny	Moderate	14:53	5.2	Surface	1.0	18.7 18.7	18.7	8.3 8.2	8.3	26.9 27.7	27.3	97.2 96.5	96.9	7.7 7.6	7.7	7.7	1.5 1.6	1.6	1.6	2.8 2.8	2.8	3.1
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	18.7 18.7	18.7	8.2 8.2	8.2	28.0 28.1	28.0	95.4 98.2	96.8	7.5 7.8	7.6	7.6	1.6 1.5	1.6		2.8 3.8	3.3	
20-Jan-16	Rainy	Moderate	16:46	5.5	Surface	1.0	18.8 18.8	18.8	8.3 8.3	8.3	29.6 29.6	29.6	93.9 93.9	93.9	7.3 7.3	7.3	7.3	1.5 1.4	1.5	1.5	3.6 3.4	3.5	3.8
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.5	18.8 18.8	18.8	8.3 8.3	8.3	29.6 29.6	29.6	91.7 93.2	92.5	7.2 7.3	7.2	7.2	1.4 1.5	1.5		3.6 4.3	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

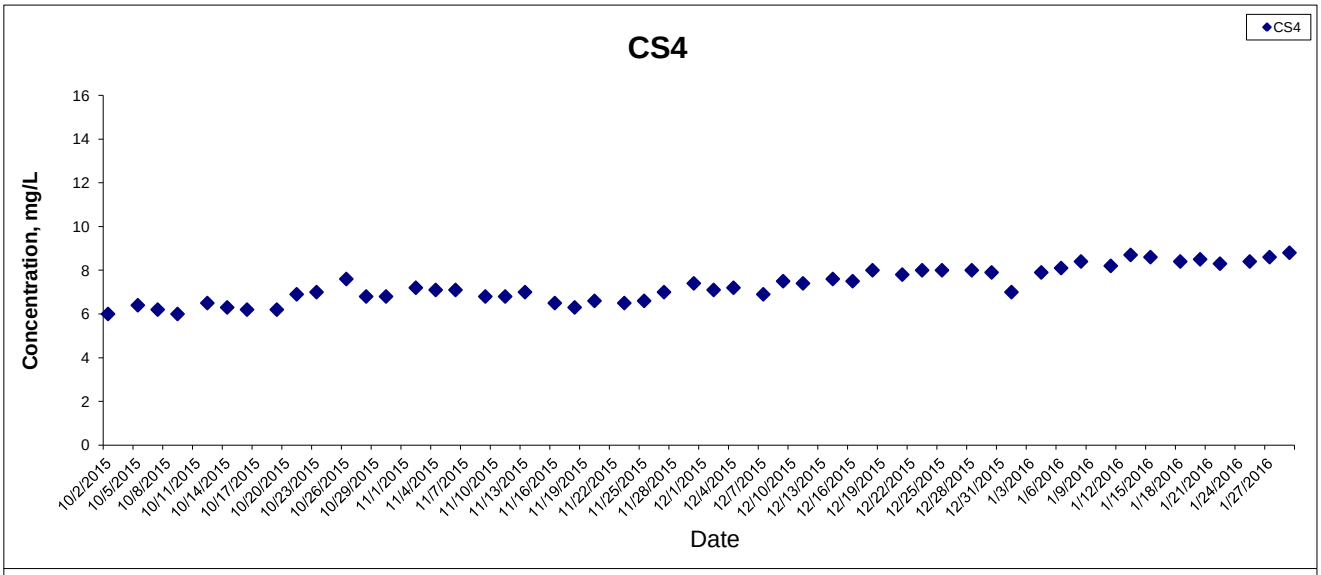
Water Quality Monitoring Results at SR10B(N) - Mid-FloodTide

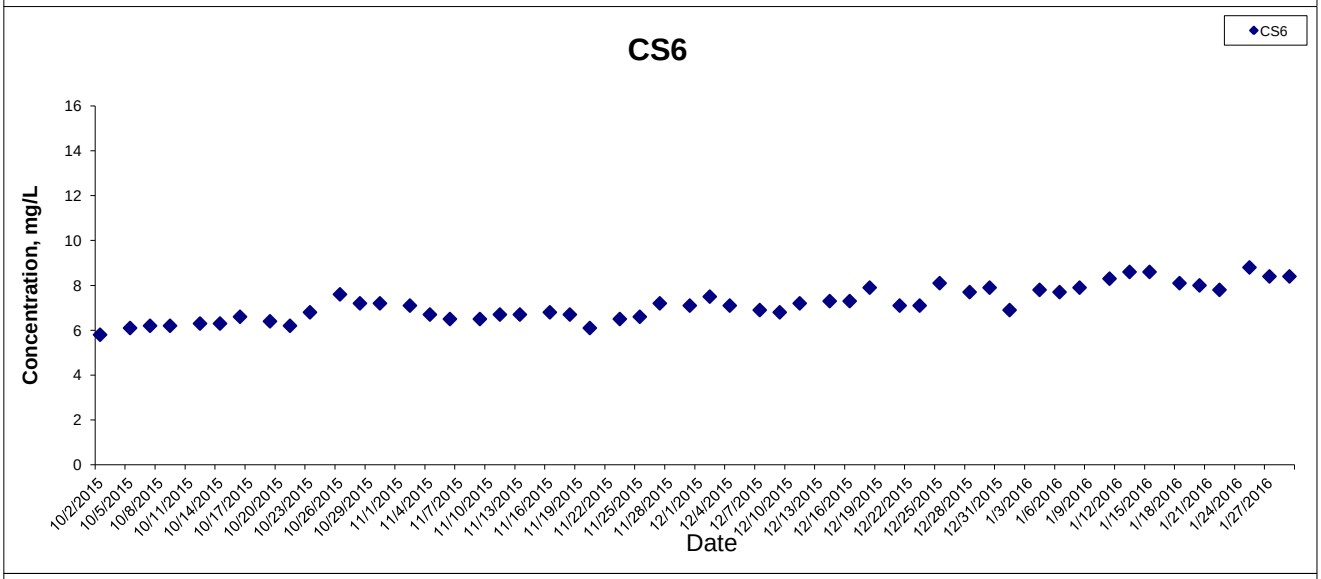
Date	Weather Condition	Sea Condition**	Sampling Time	Water Depth (m)	Sampling Depth (m)		Temperature (^{o}C)		pH		Salinity (ppt)		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
							Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
22-Jan-16	Cloudy	Moderate	18:17	5.3	Surface	1.0	18.5 18.5	18.5	8.3 8.3	8.3	29.4 29.4	29.4	88.6 89.4	89.0	7.0 7.0	7.0	7.0	1.1 1.0	1.1	1.1	5.4 4.4	4.9	5.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.3	18.5 18.5	18.5	8.3 8.3	8.3	29.4 29.4	29.4	88.2 88.6	88.4	6.9 7.0	7.0	7.0	1.1 1.1	1.1		5.8 6.8	6.3	
25-Jan-16	Sunny	Moderate	07:32	5.2	Surface	1.0	16.7 16.7	16.7	7.9 8.0	7.9	28.2 28.4	28.3	92.9 90.5	91.7	7.6 7.4	7.5	7.5	6.1 6.2	6.2	6.4	6.1 6.8	6.5	6.6
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	16.7 16.7	16.7	7.9 7.9	7.9	28.3 27.8	28.1	90.3 91.1	90.7	7.4 7.5	7.4	7.4	6.5 6.4	6.5		7.3 5.8	6.6	
27-Jan-16	Cloudy	Moderate	08:11	5.2	Surface	1.0	16.1 16.1	16.1	8.2 8.1	8.1	28.0 27.8	27.9	91.2 91.3	91.3	7.6 7.6	7.6	7.6	3.7 3.7	3.7	3.7	4.4 4.5	4.5	4.3
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	16.0 16.1	16.0	8.1 8.1	8.1	27.6 27.9	27.8	91.4 90.9	91.2	7.6 7.6	7.6	7.6	3.6 3.7	3.7		4.3 3.9	4.1	
29-Jan-16	Rainy	Moderate	09:31	5.2	Surface	1.0	15.6 15.5	15.6	8.1 8.1	8.1	26.2 26.6	26.4	91.4 90.8	91.1	7.8 7.7	7.7	7.7	5.6 5.5	5.6	5.7	3.6 3.6	3.6	3.7
					Middle	-	- -	-	- -	-	- -	-	- -	-	- -	-		- -	-		- -	-	
					Bottom	4.2	15.6 15.6	15.6	8.0 8.1	8.1	25.6 26.6	26.1	92.4 91.7	92.1	7.9 7.8	7.8	7.8	5.5 6.0	5.8		3.6 3.9	3.8	

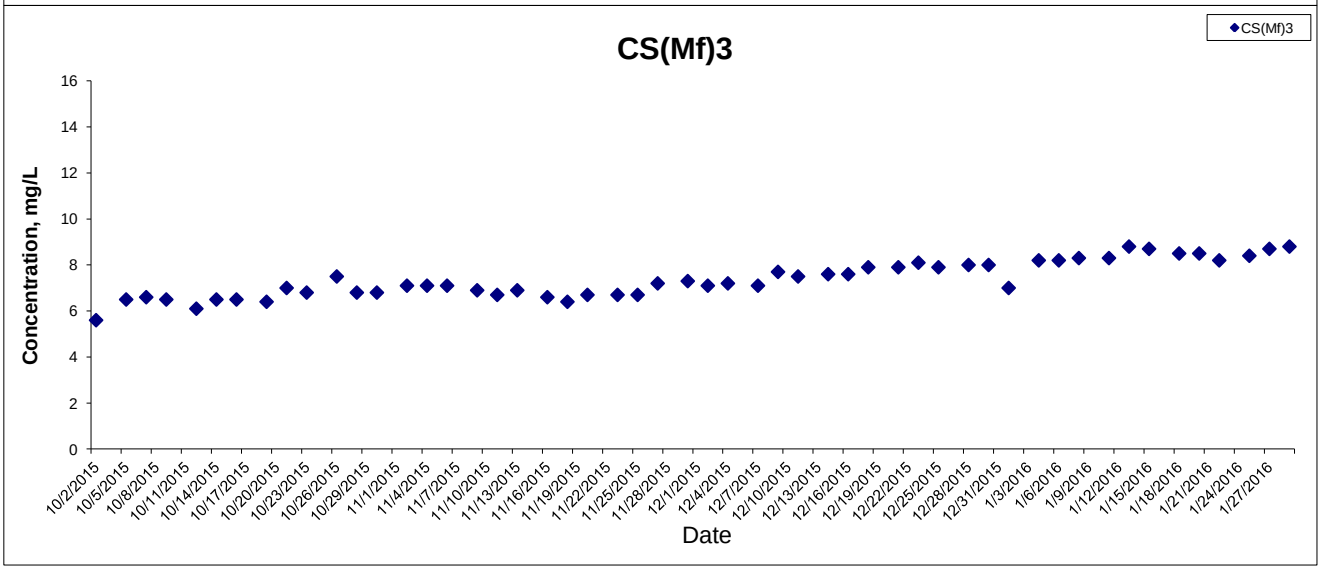
Remarks:
Bolded values means the measured values exceed the Action Level; Underlined bolded values means the measured values exceed the Limit Level.

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

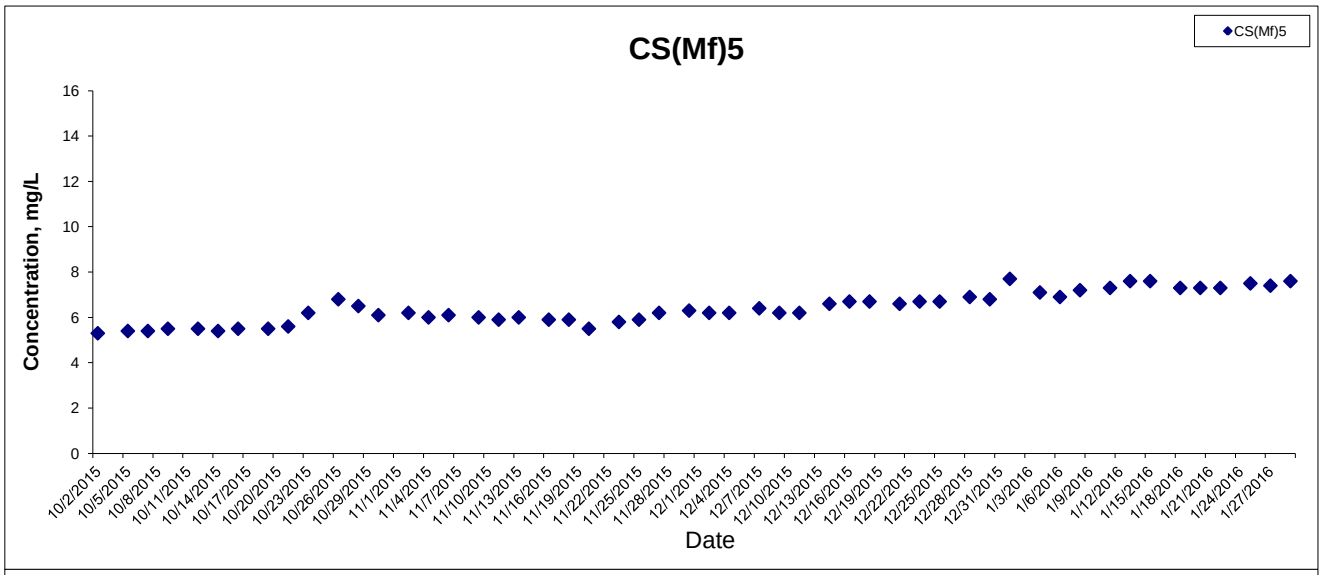
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide

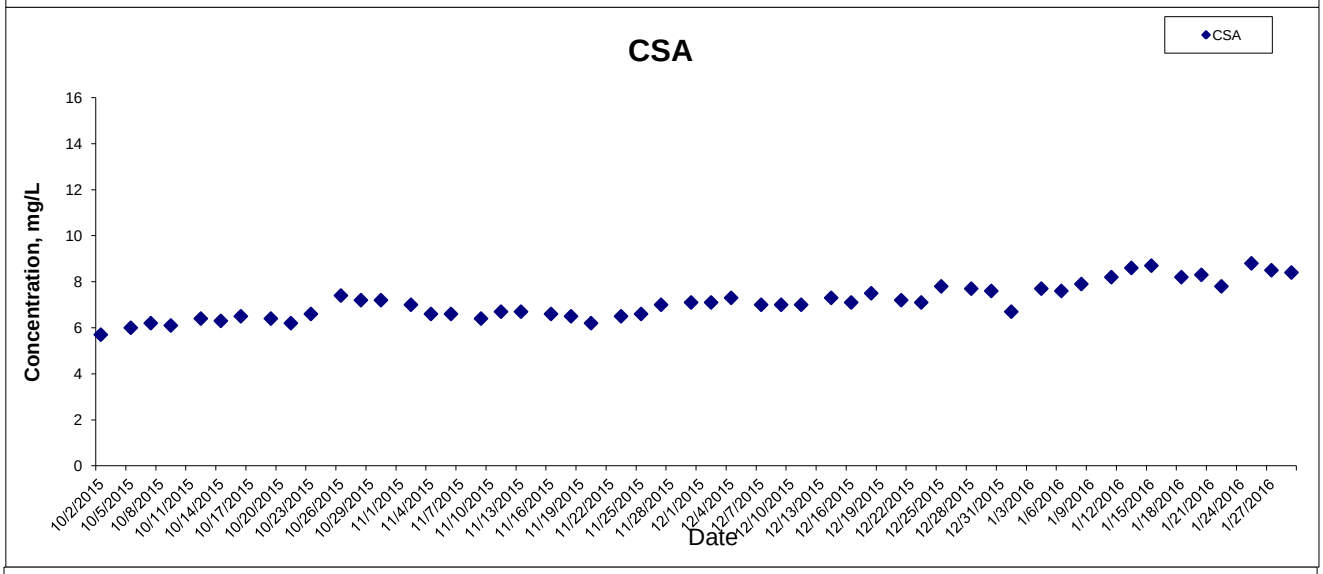


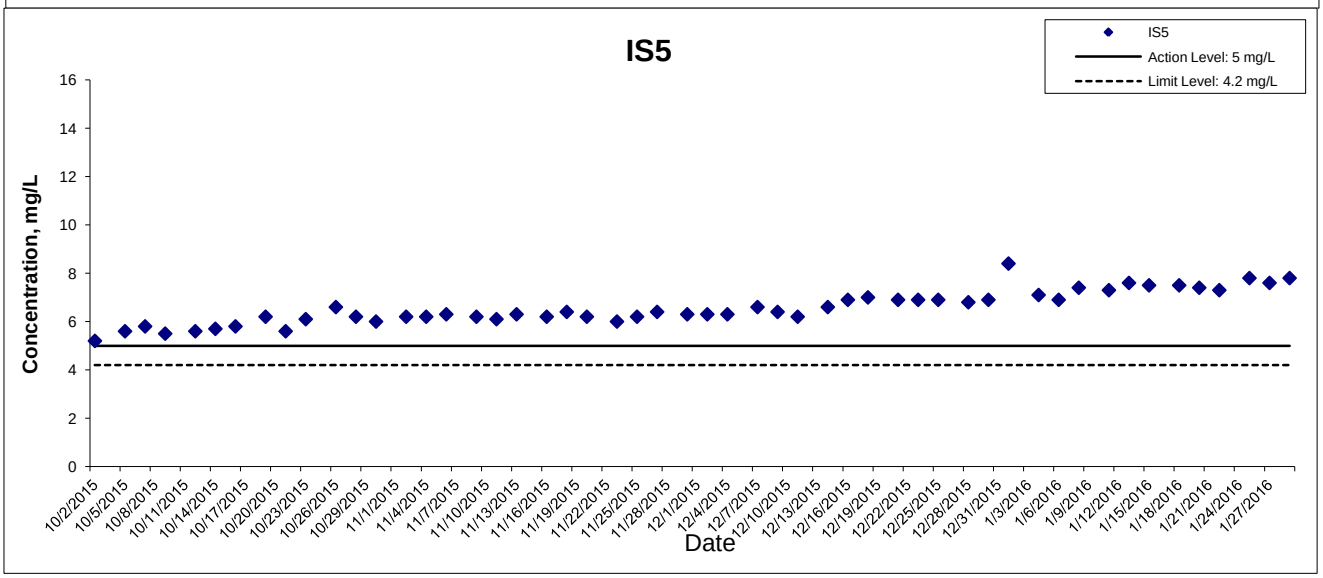




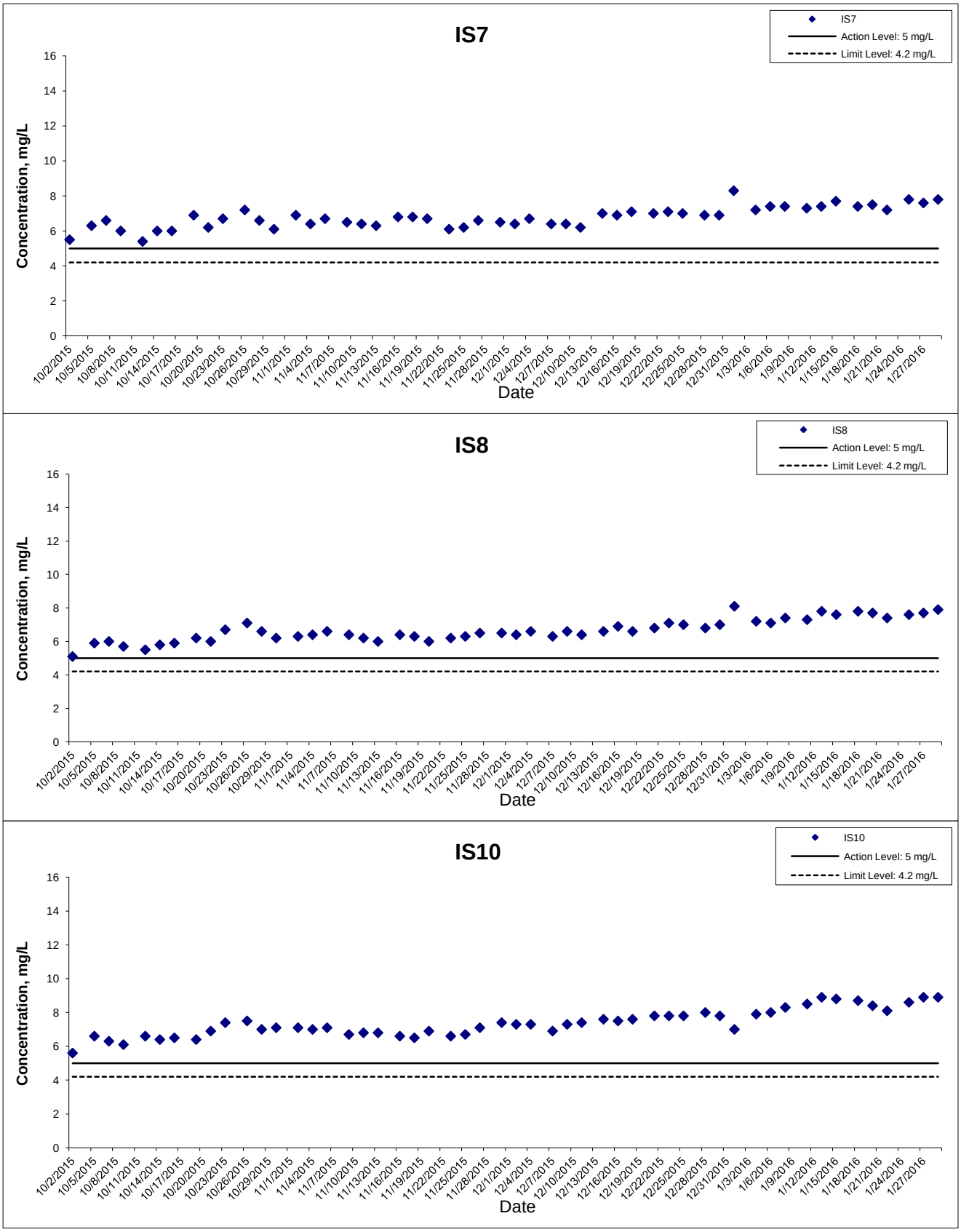
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide







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



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

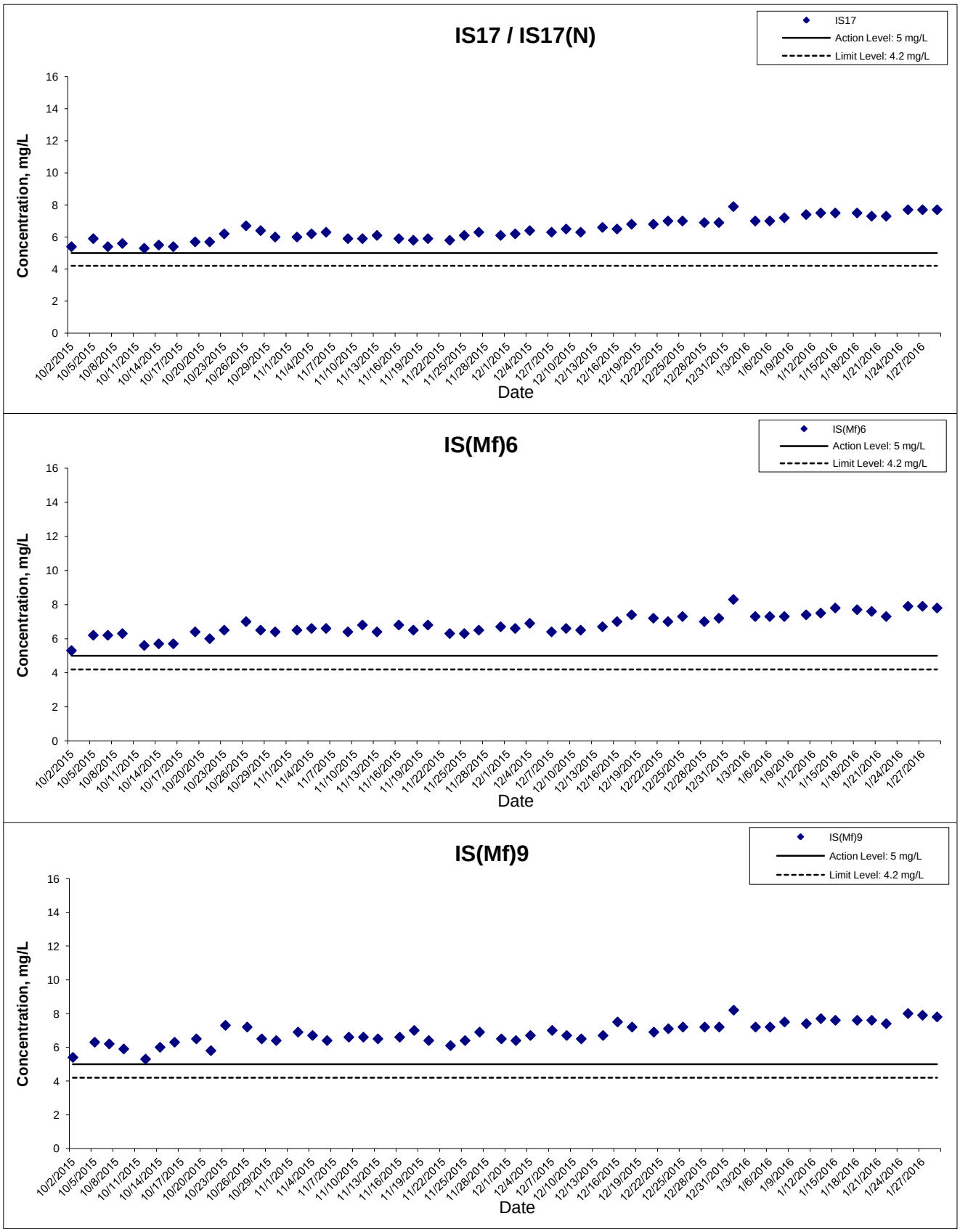
AECOM

Graphical Presentation of Impact Water Quality Monitoring Results

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

Appendix J

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

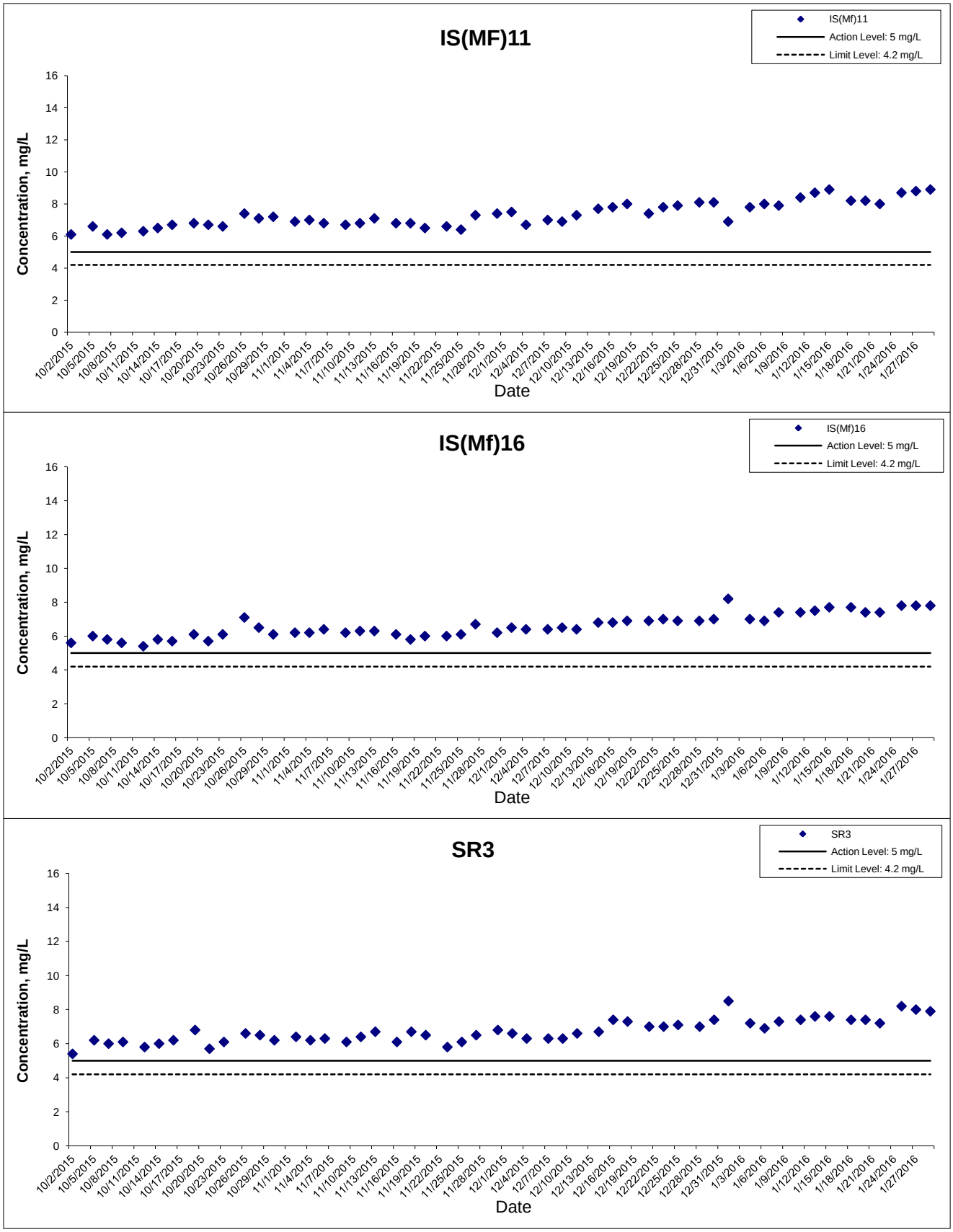


HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

Graphical Presentation of Impact Water Quality Monitoring Results

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

Appendix J



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HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

Graphical Presentation of Impact Water Quality Monitoring Results

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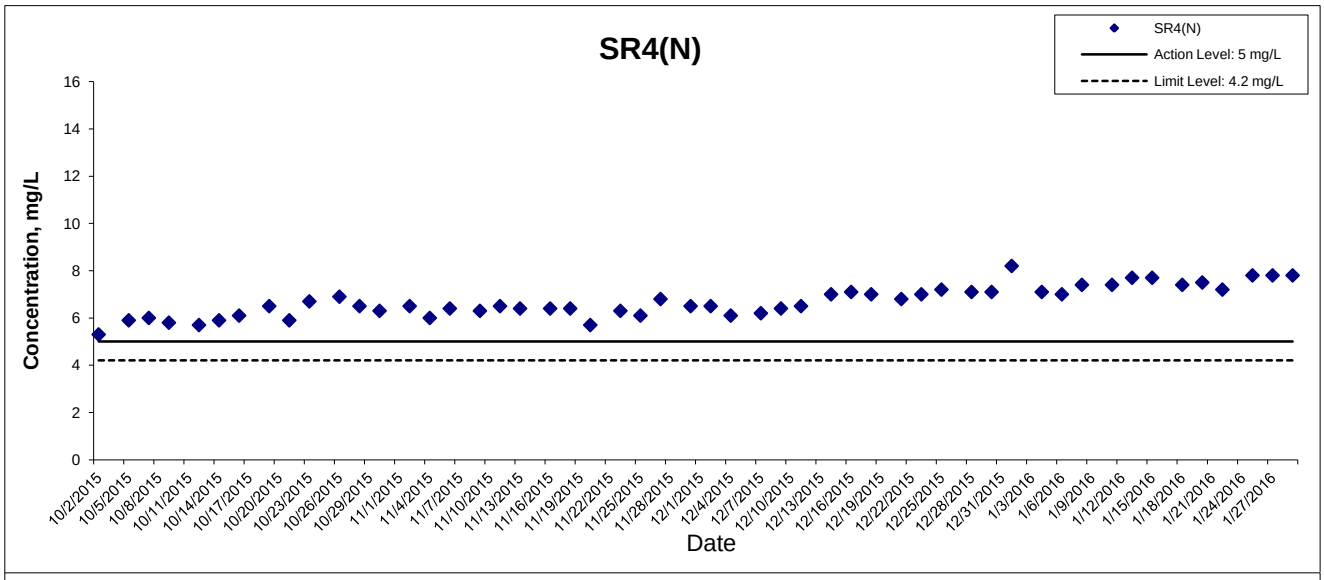
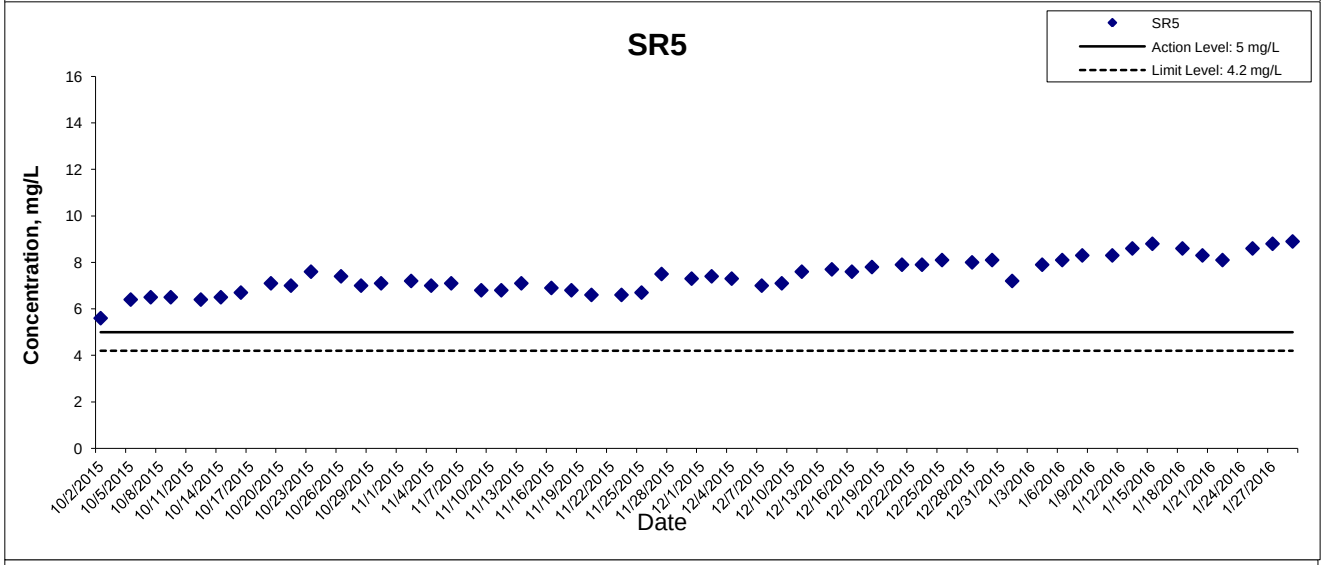
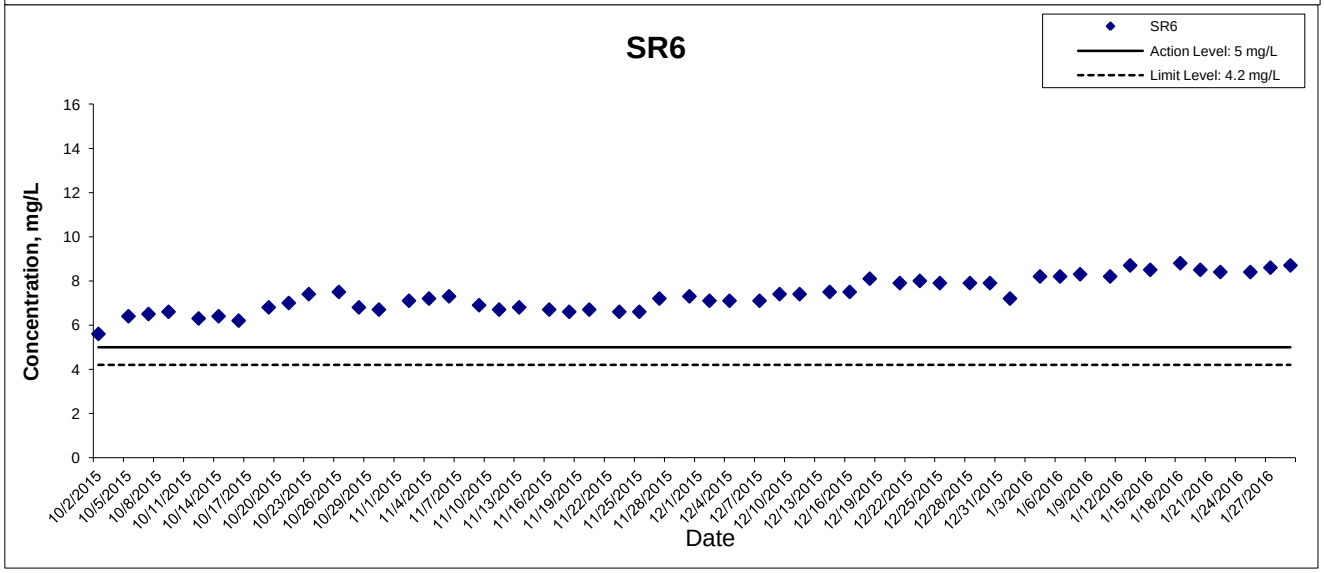
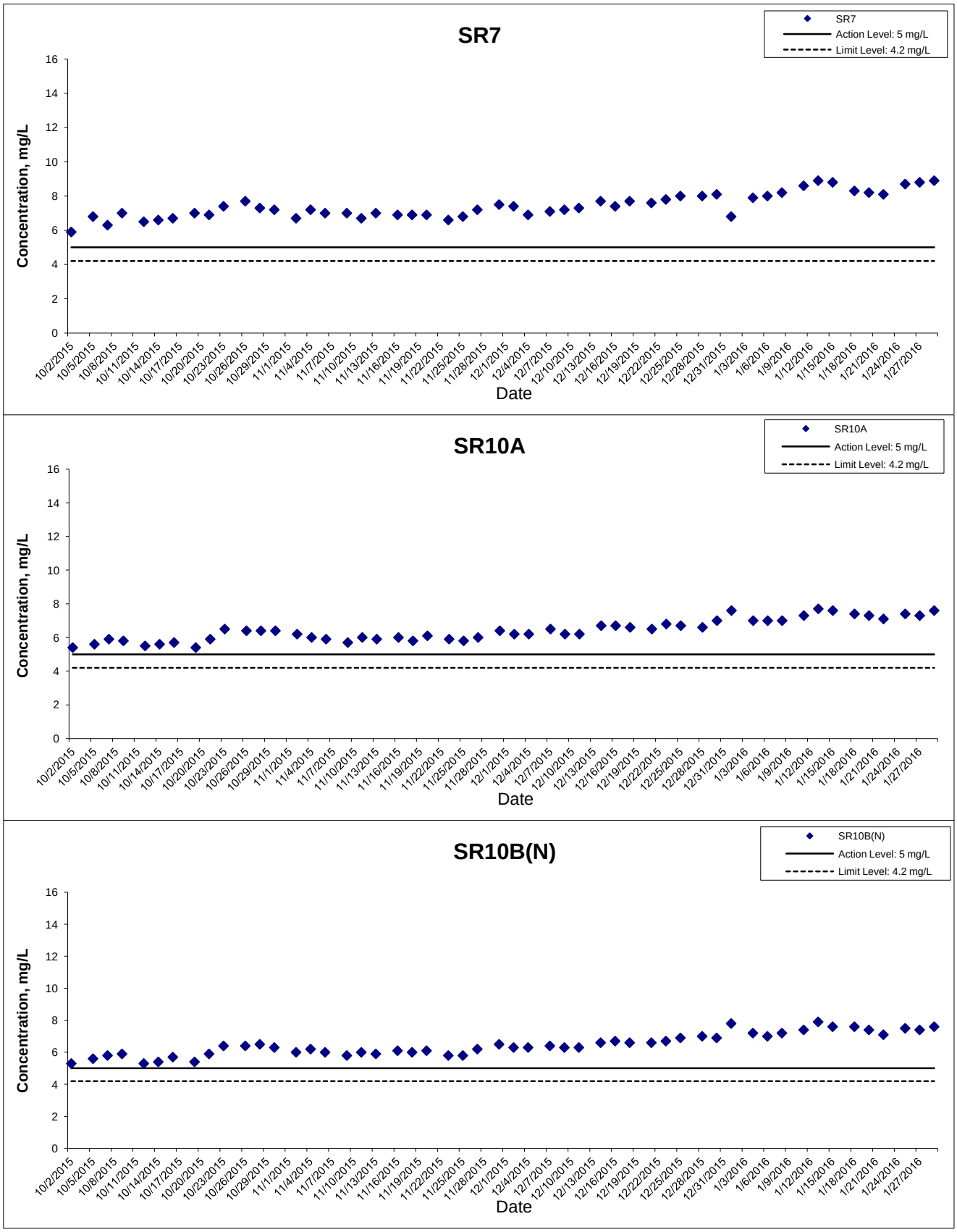
Appendix J









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

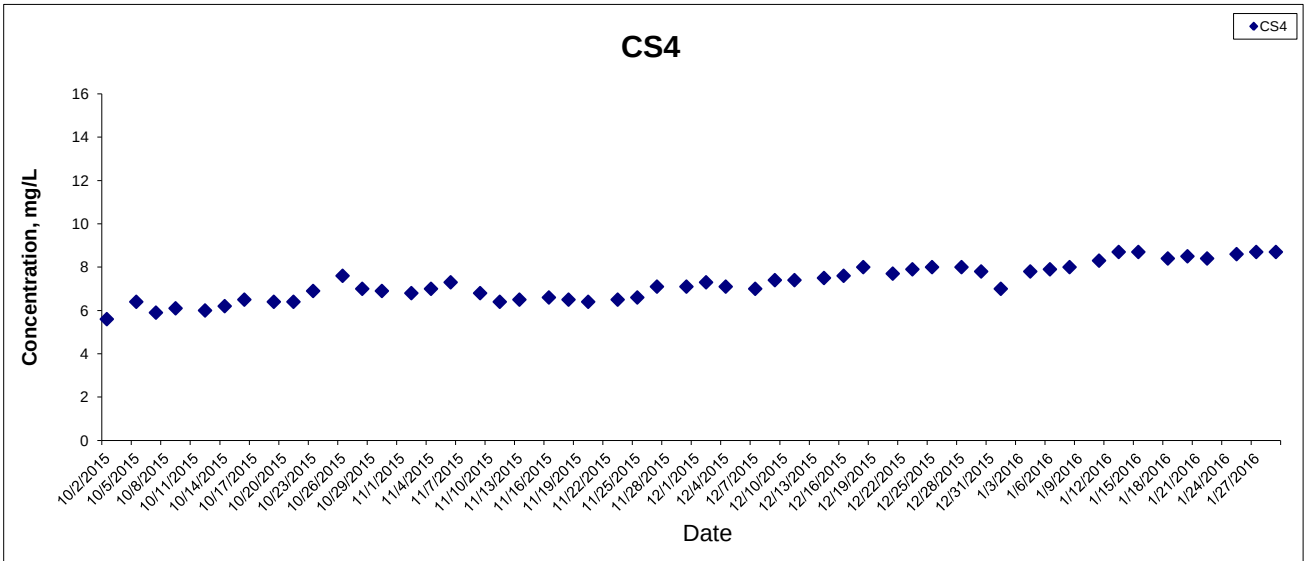
AECOM

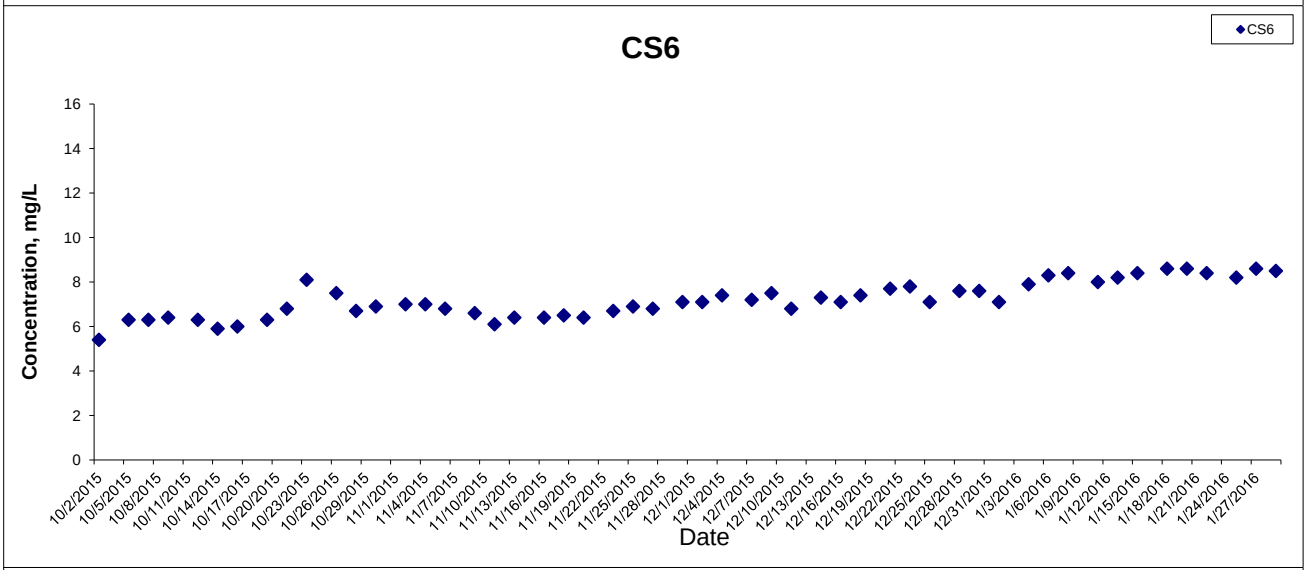
Graphical Presentation of Impact Water Quality Monitoring Results

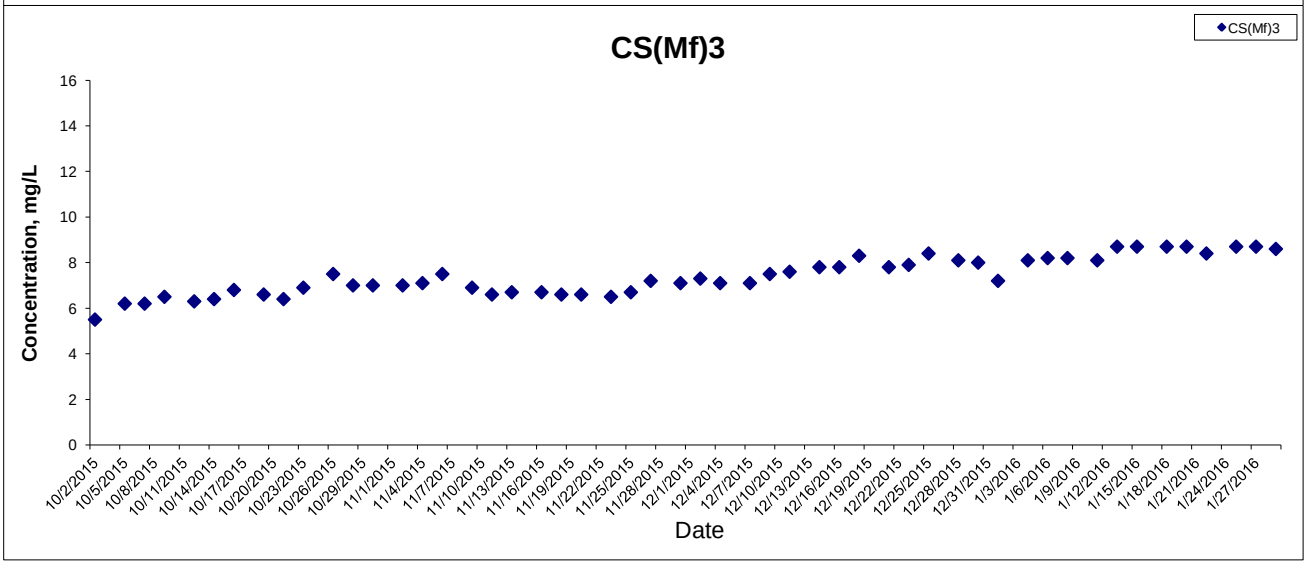
Project No.: 60249820 **Date: February 2016**

Appendix J

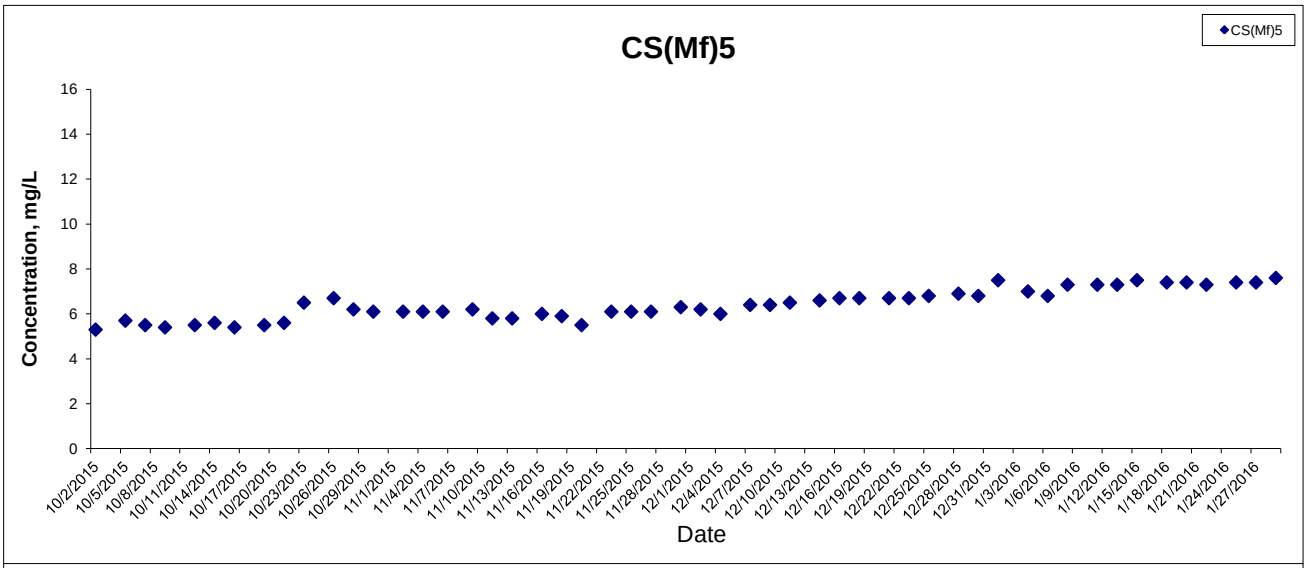
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

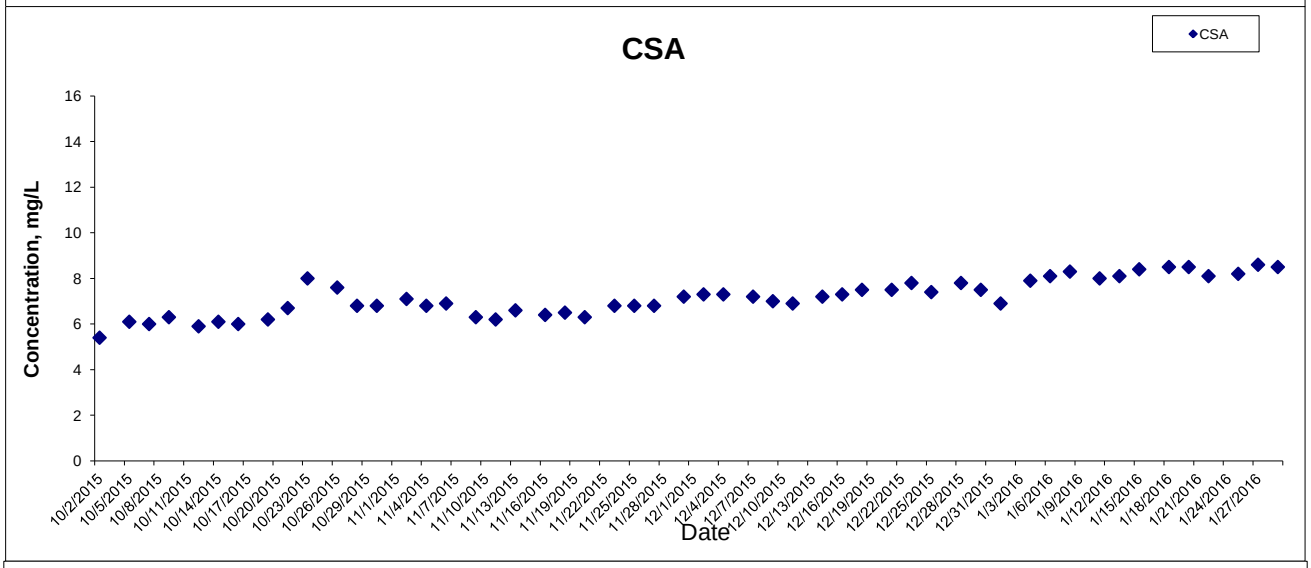


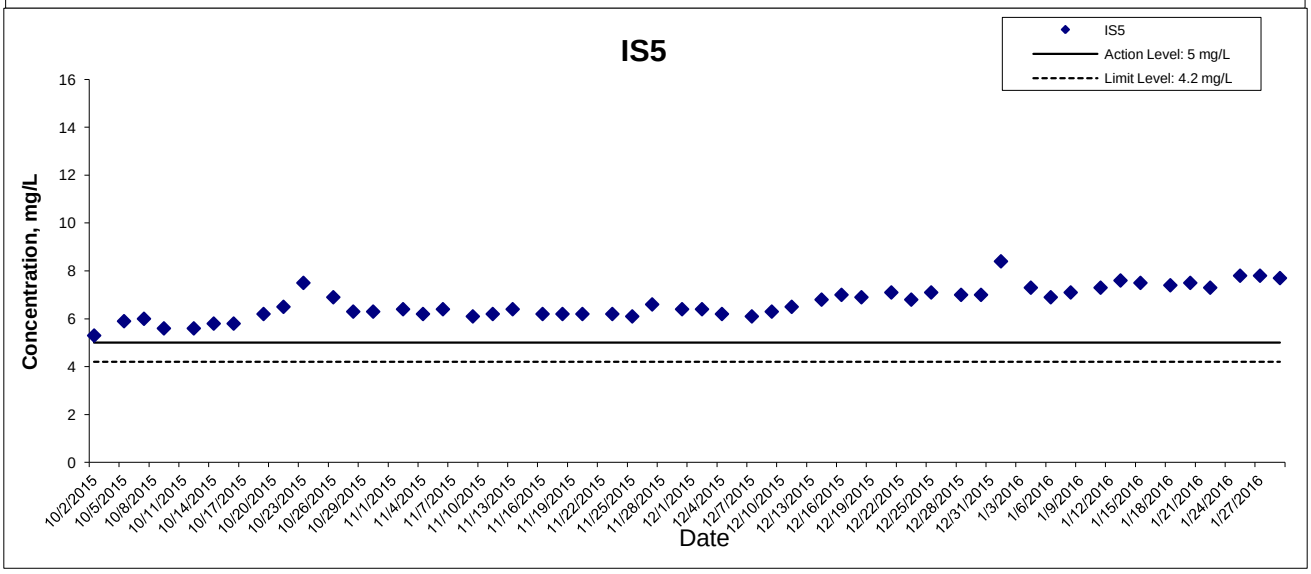




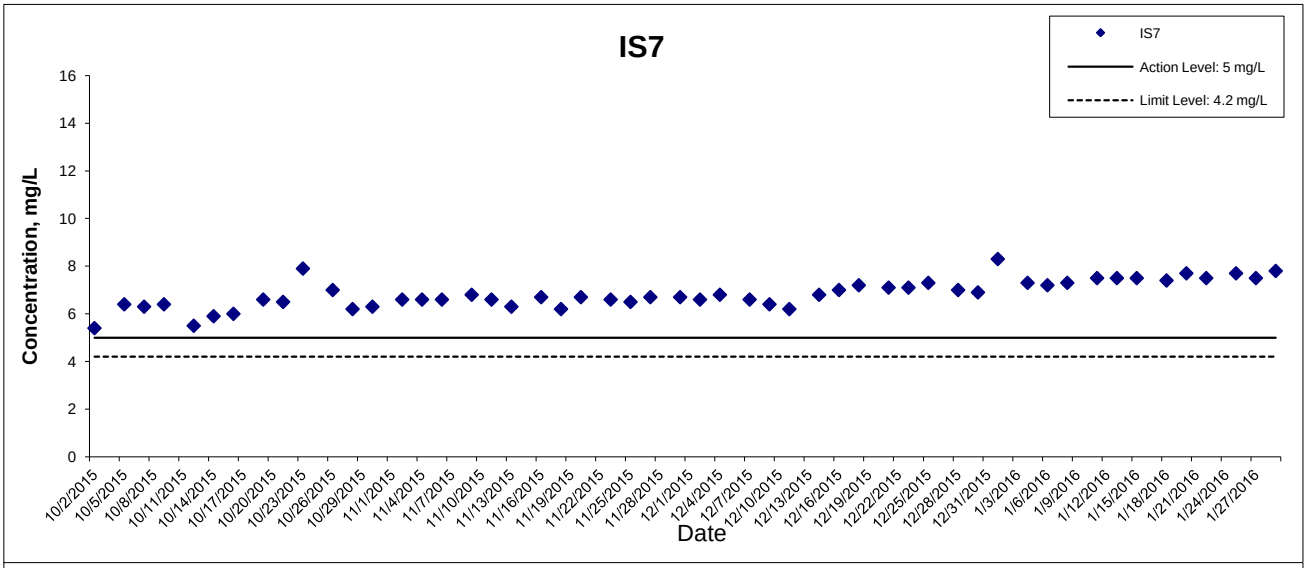
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

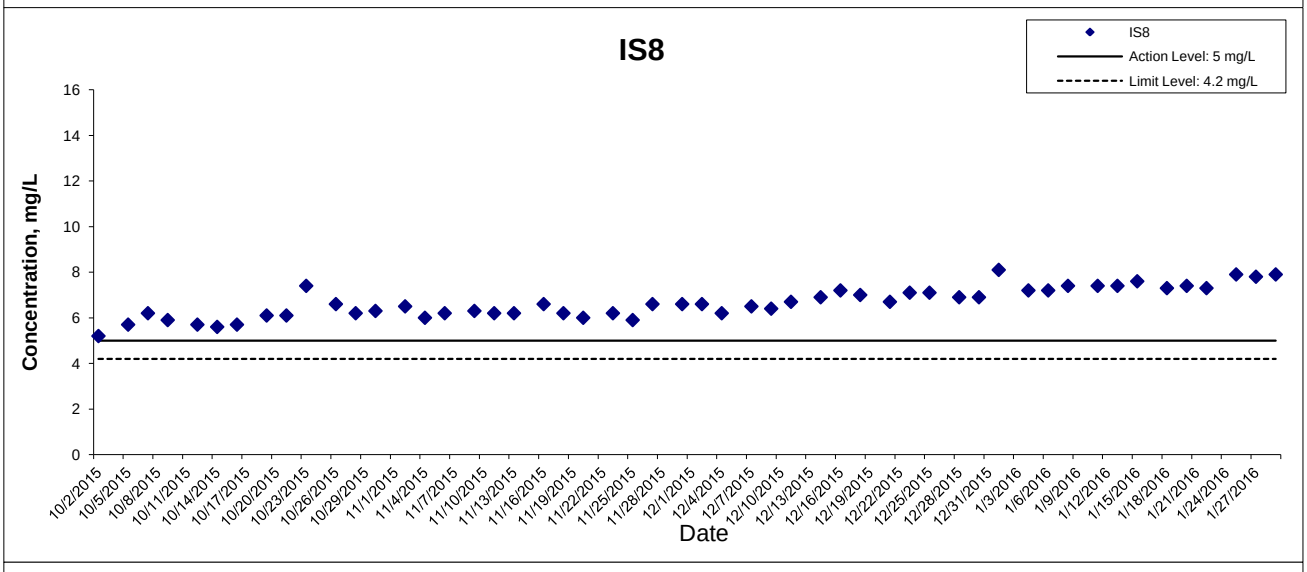


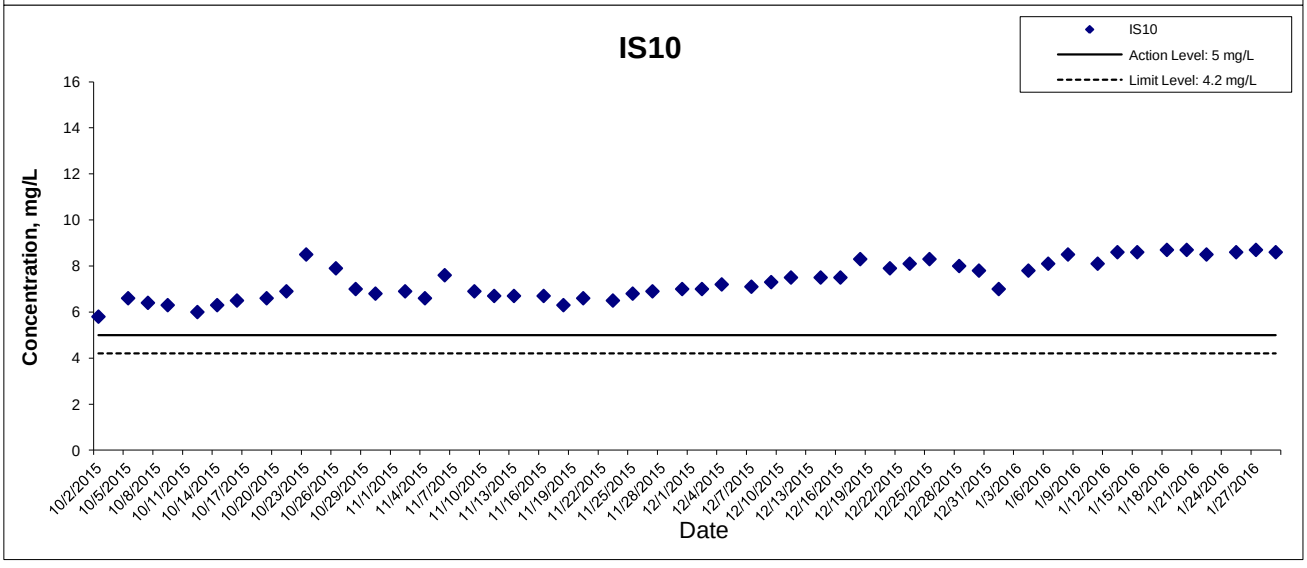




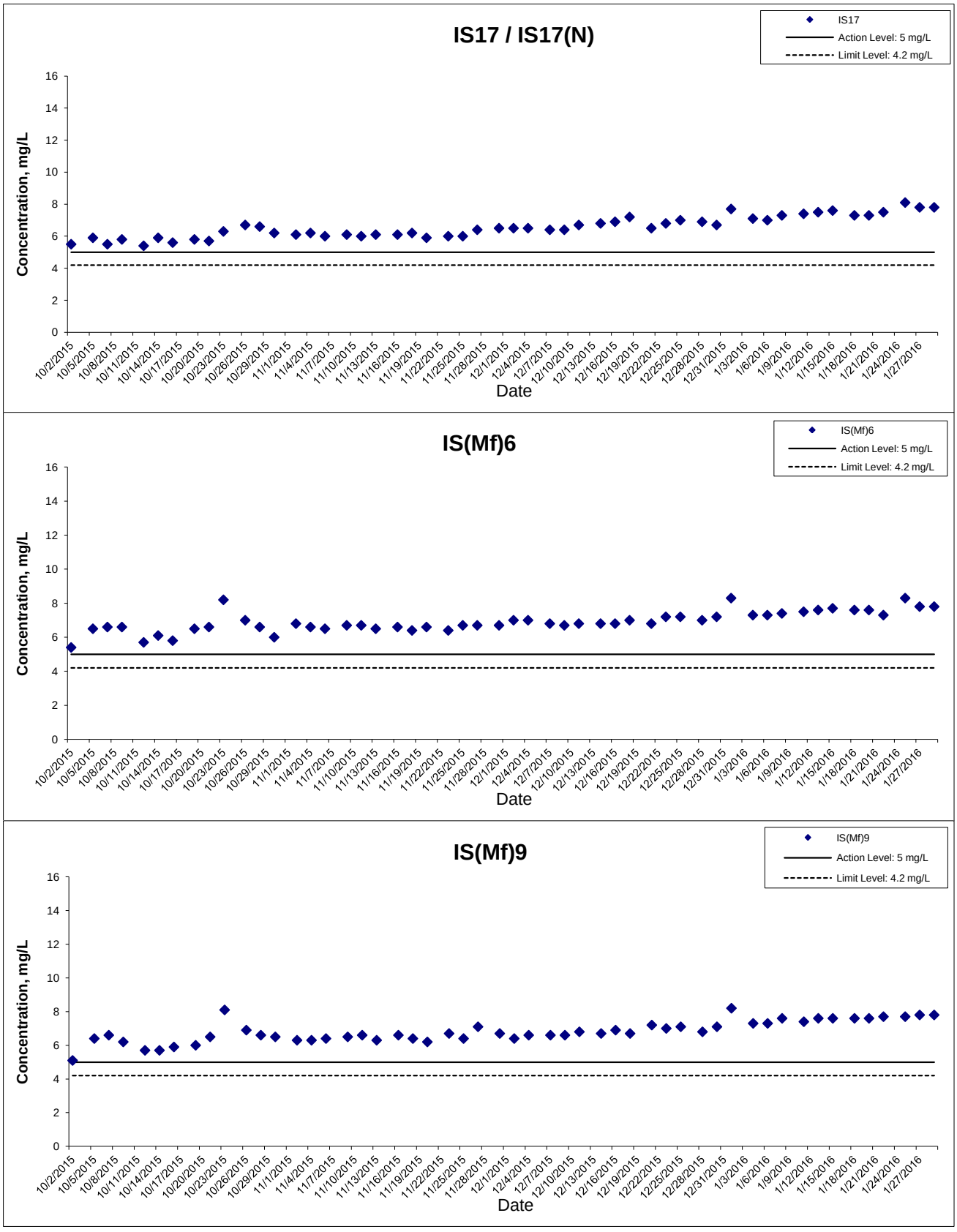
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide







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

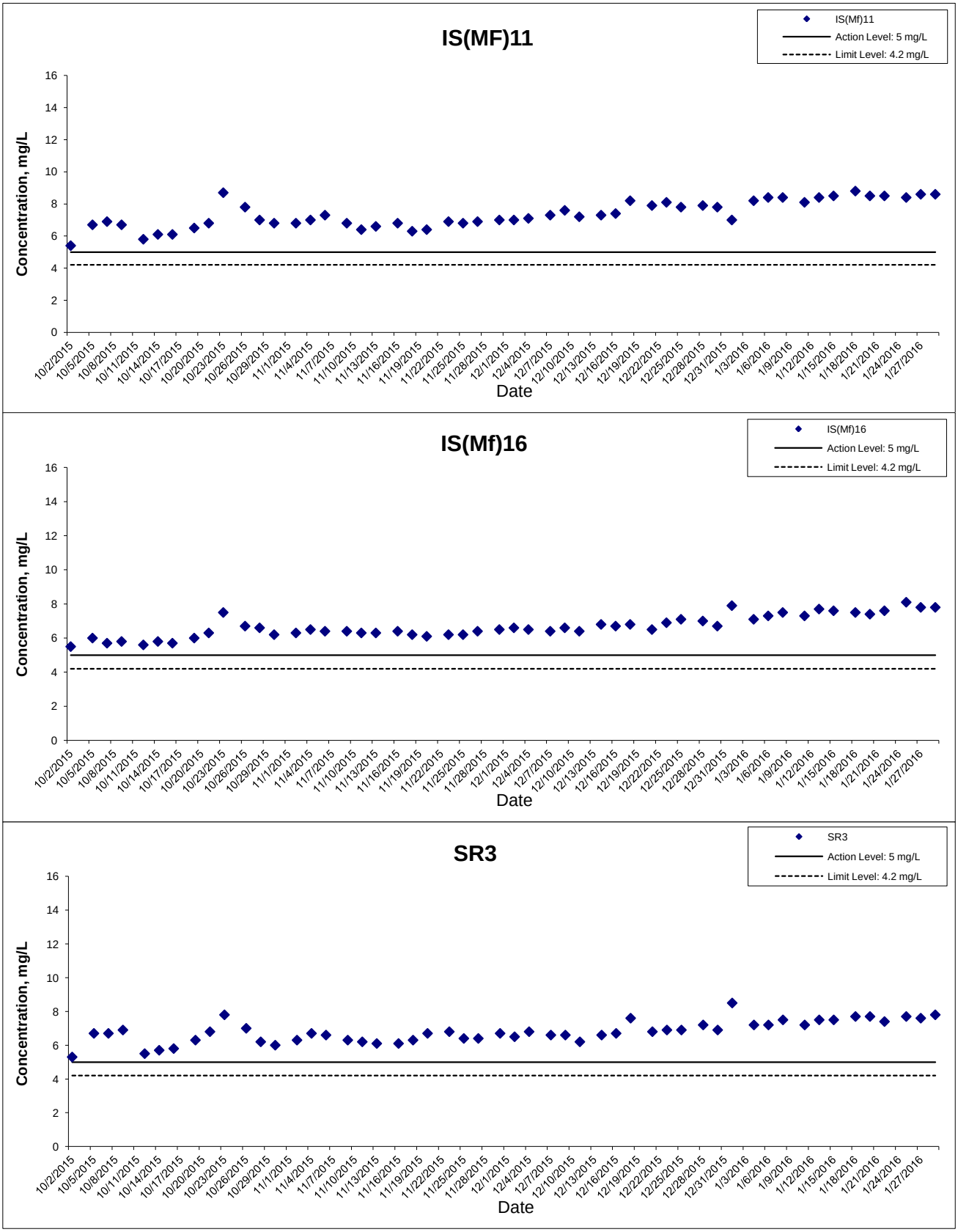


HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: February 2016** **Appendix J**

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



HONG KONG - ZHUHAI - MACAO BRIDGE
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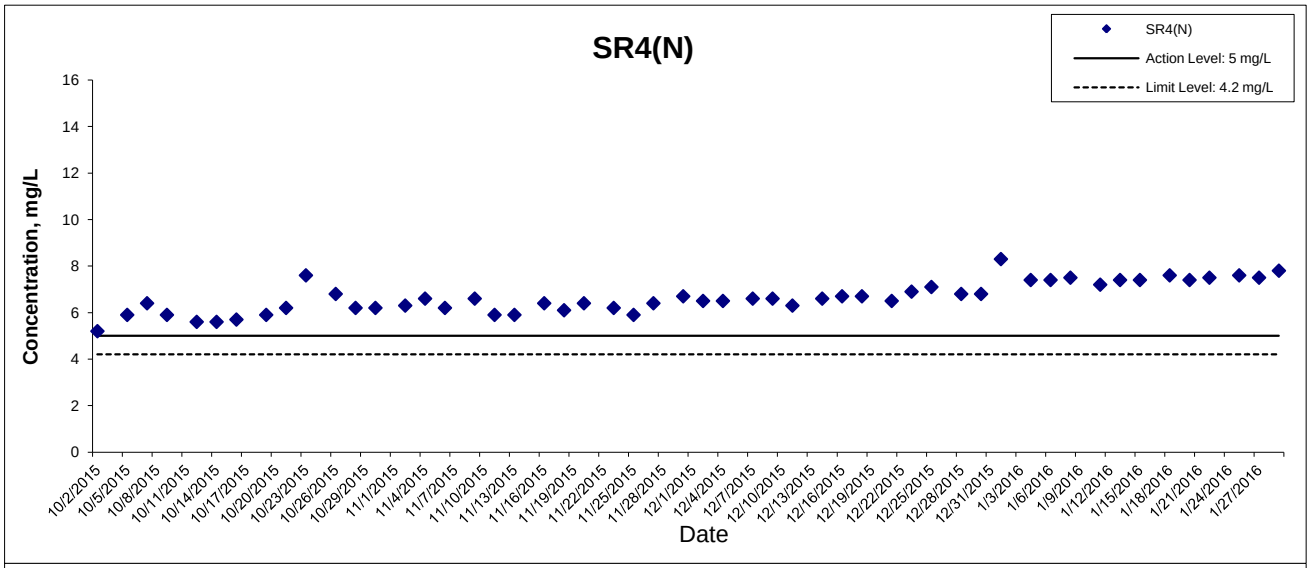
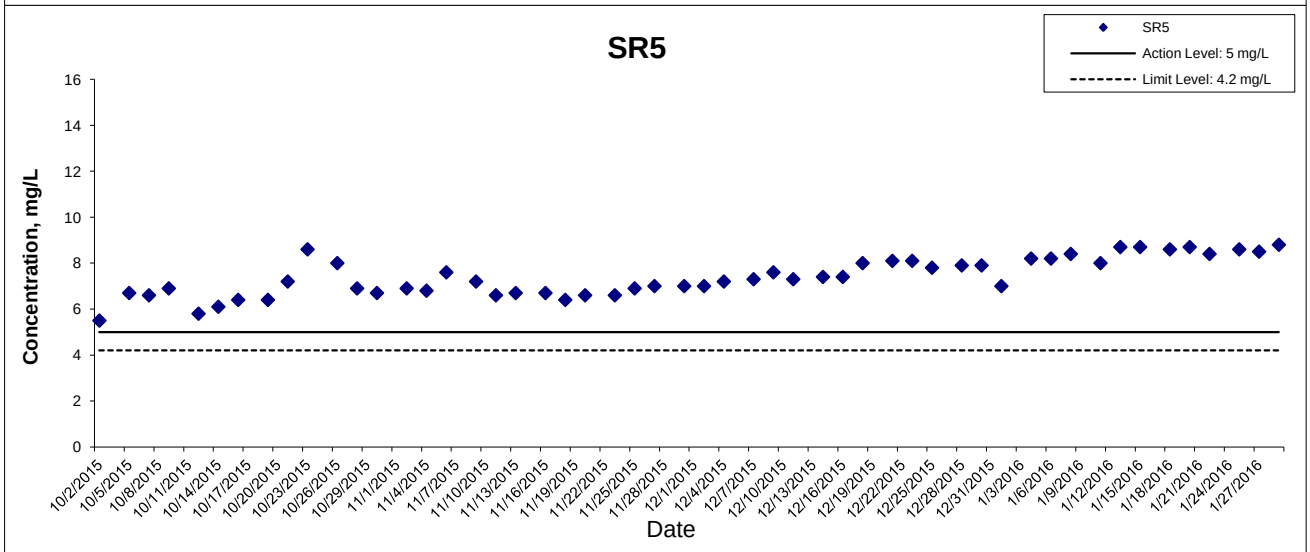
- RECLAMATION WORKS

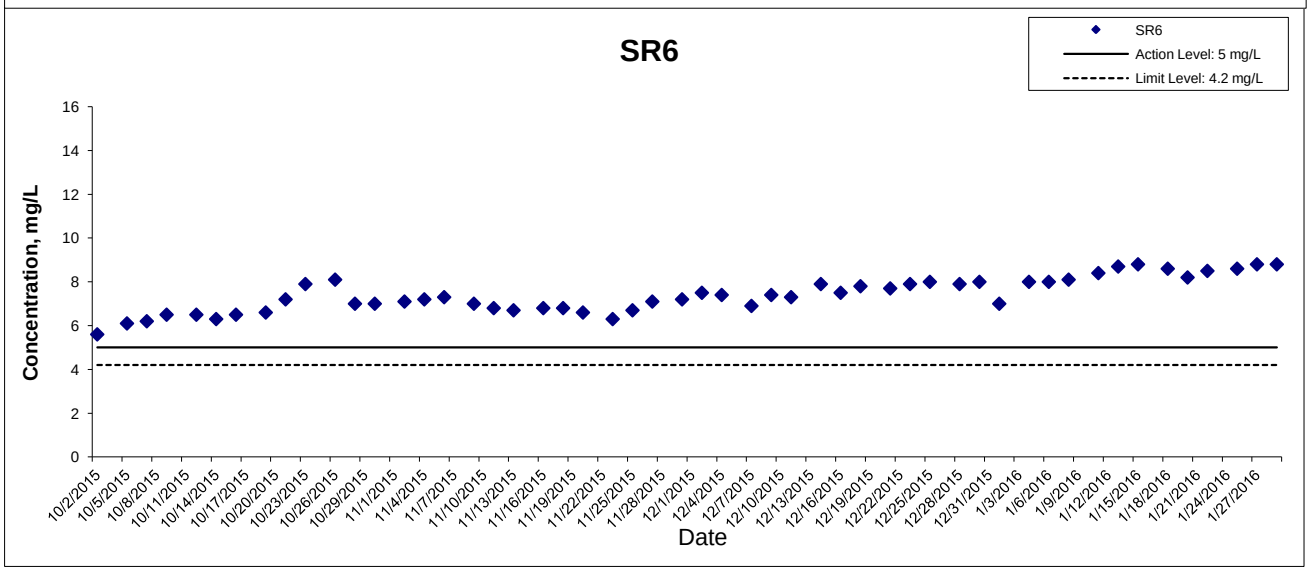
Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: February 2016** **Appendix J**

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







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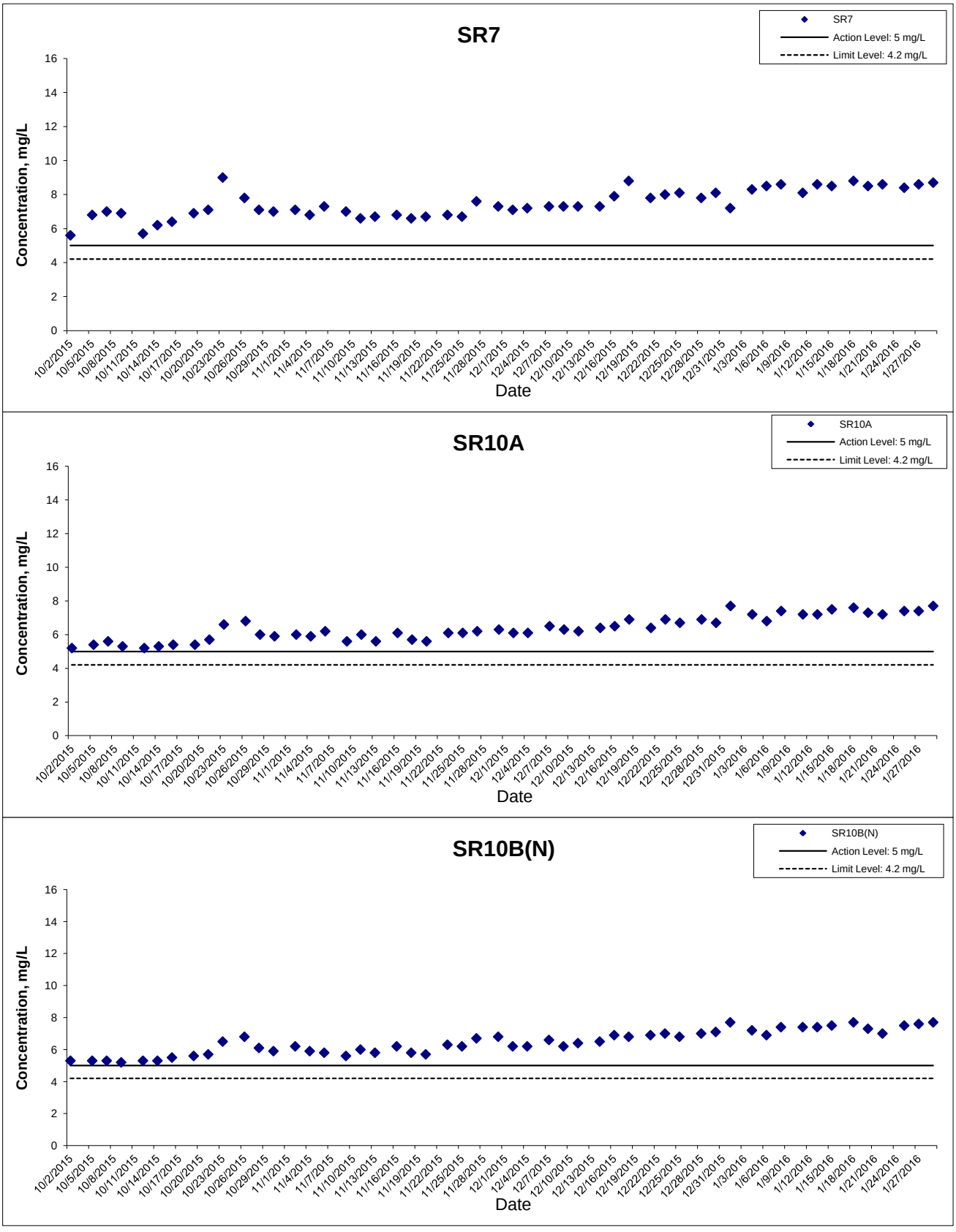

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HONG KONG BOUNDARY CROSSING FACILITIES
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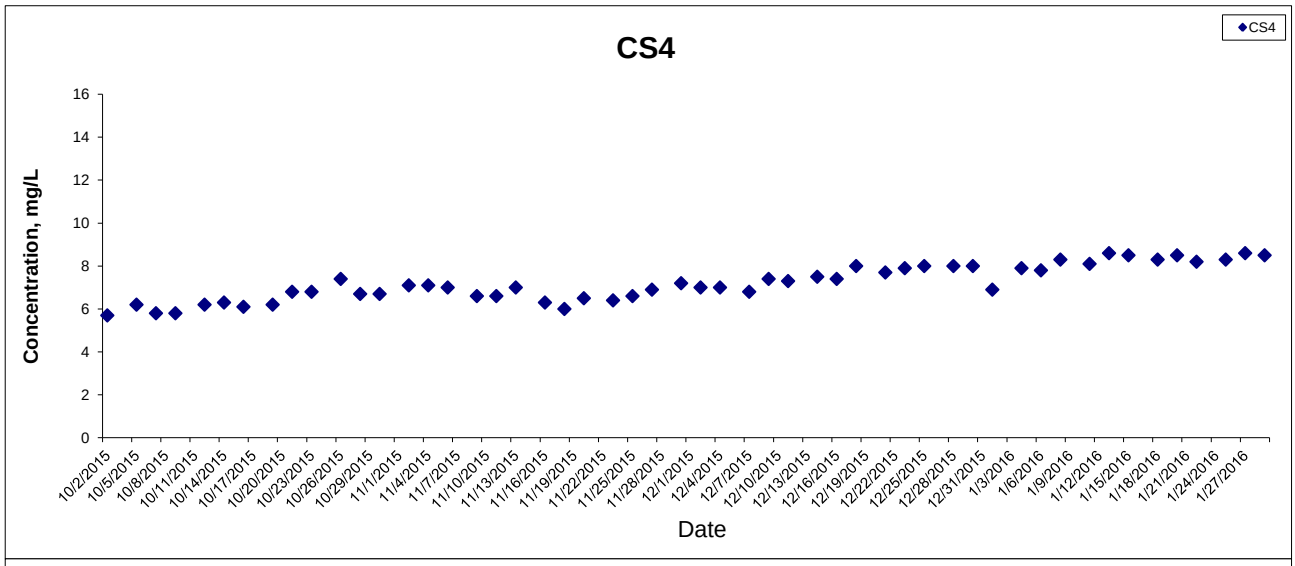
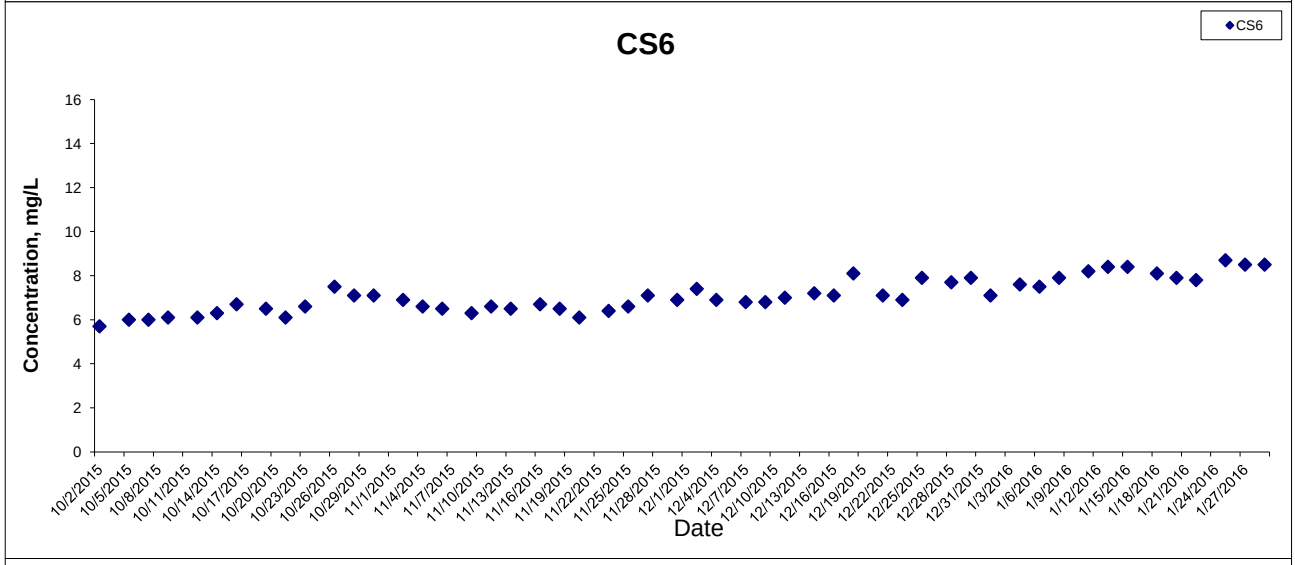
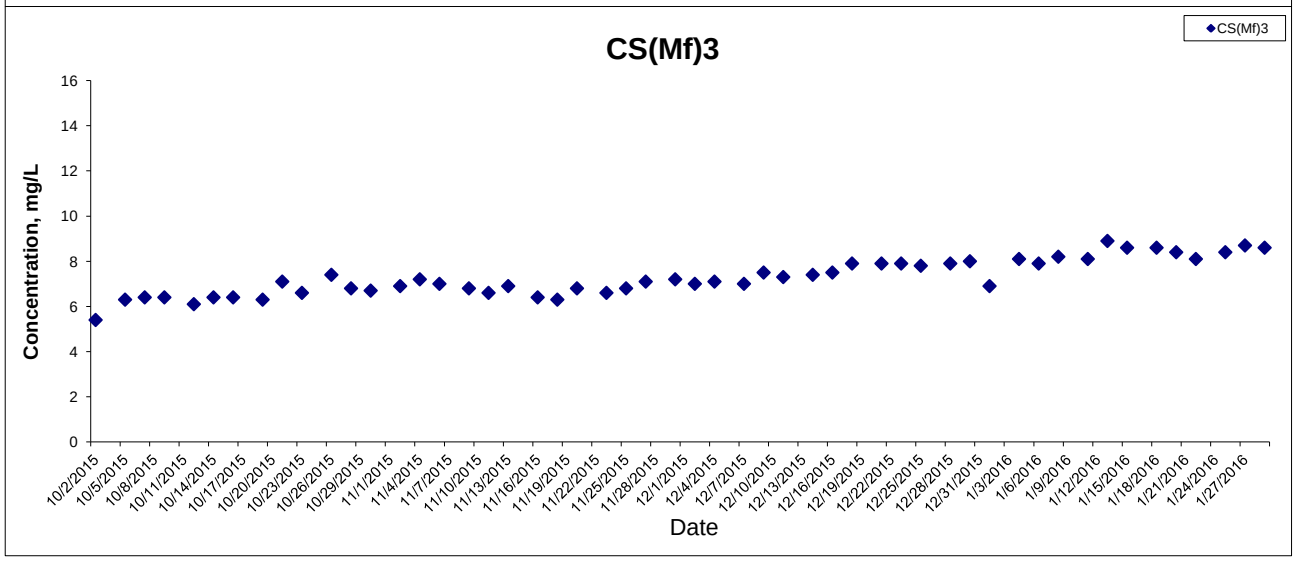
Project No.: 60249820 **Date: February 2016** **Appendix J**

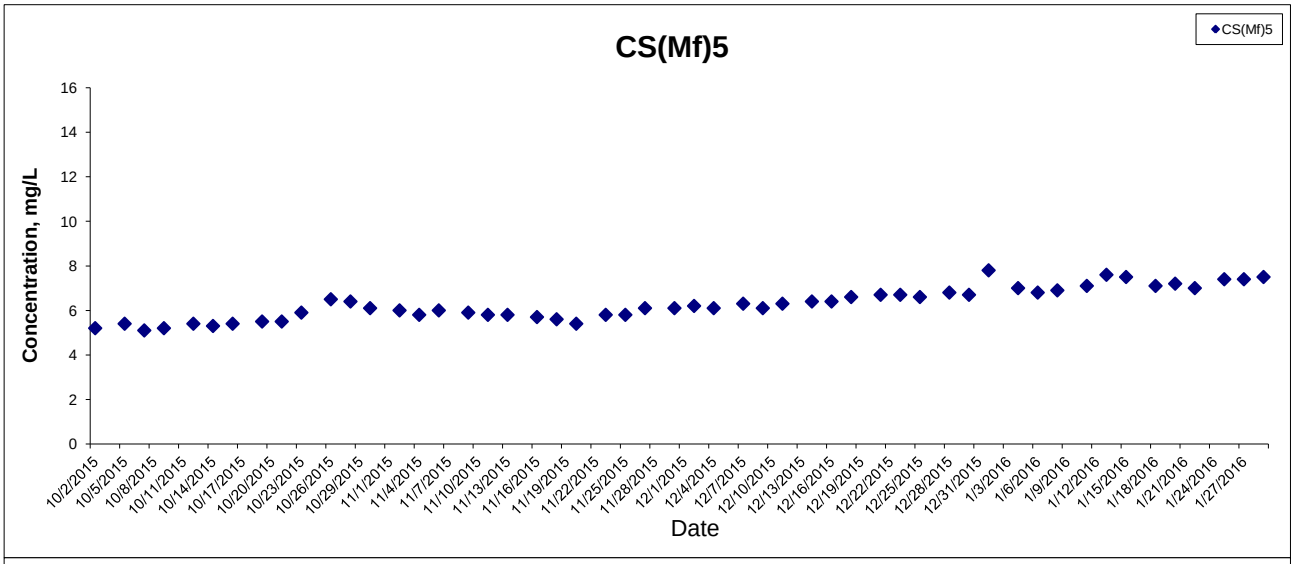
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

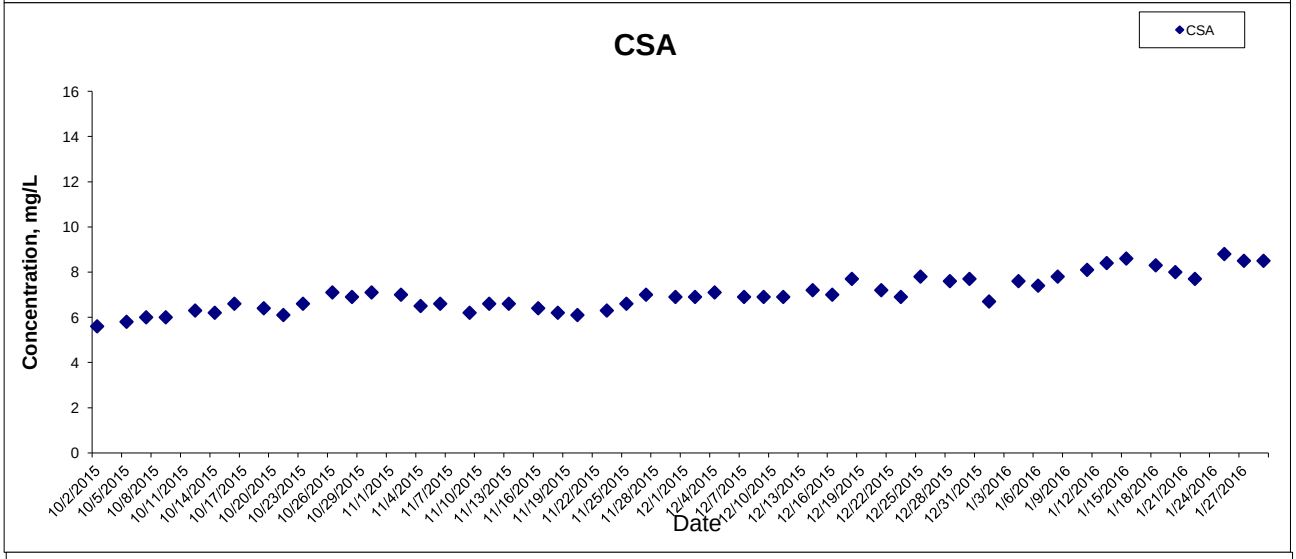


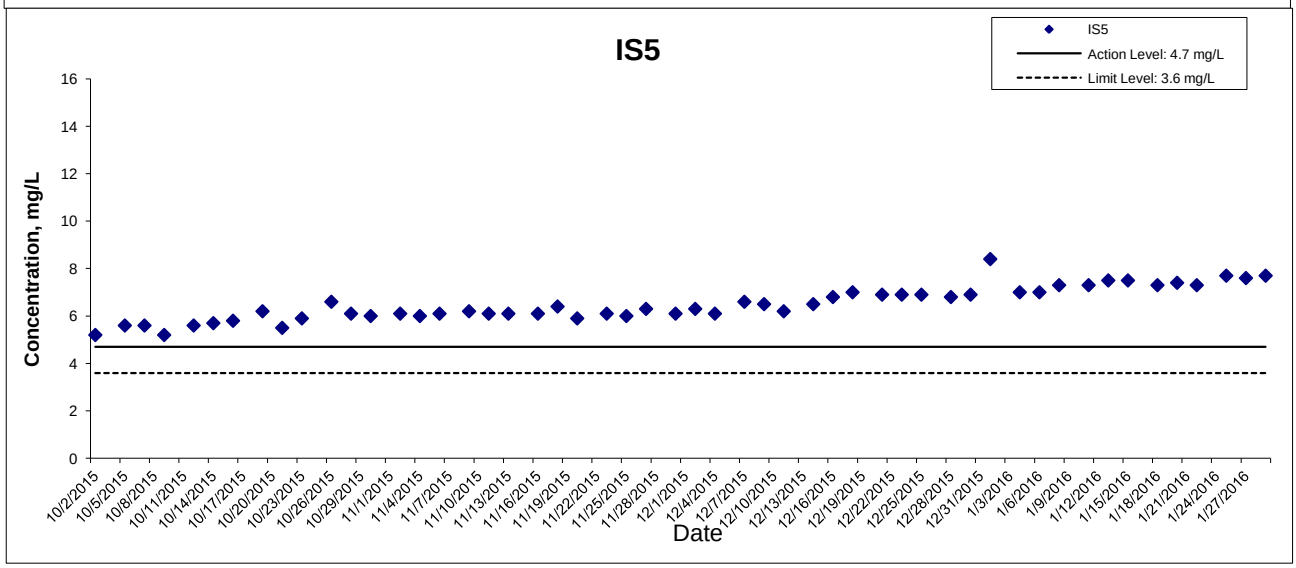




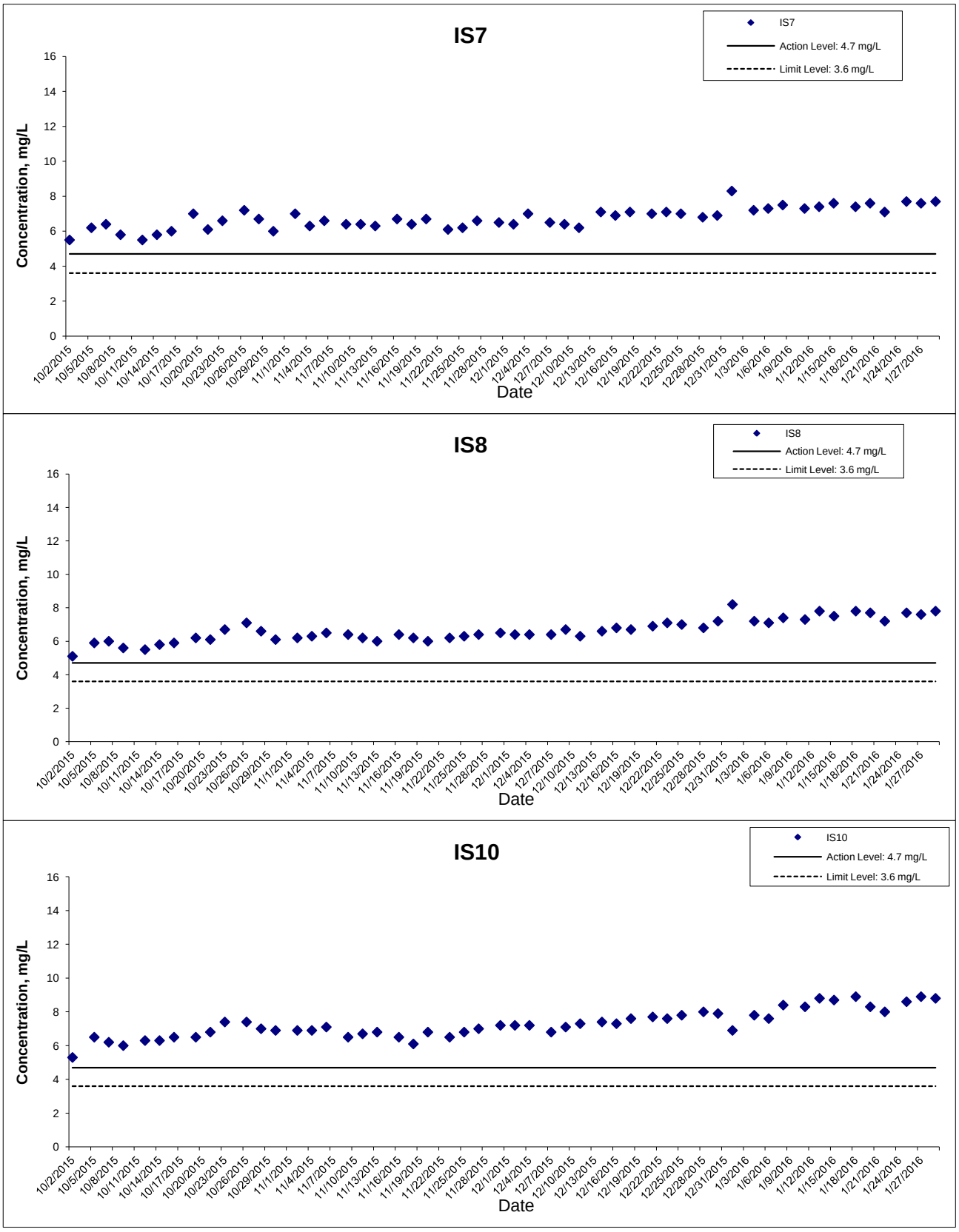
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



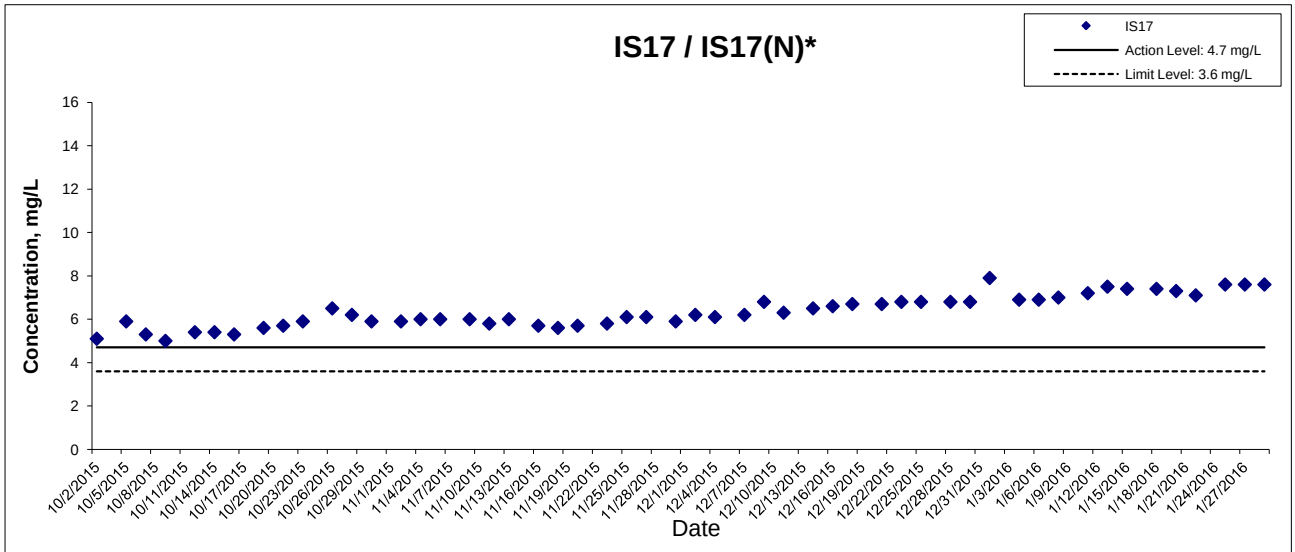


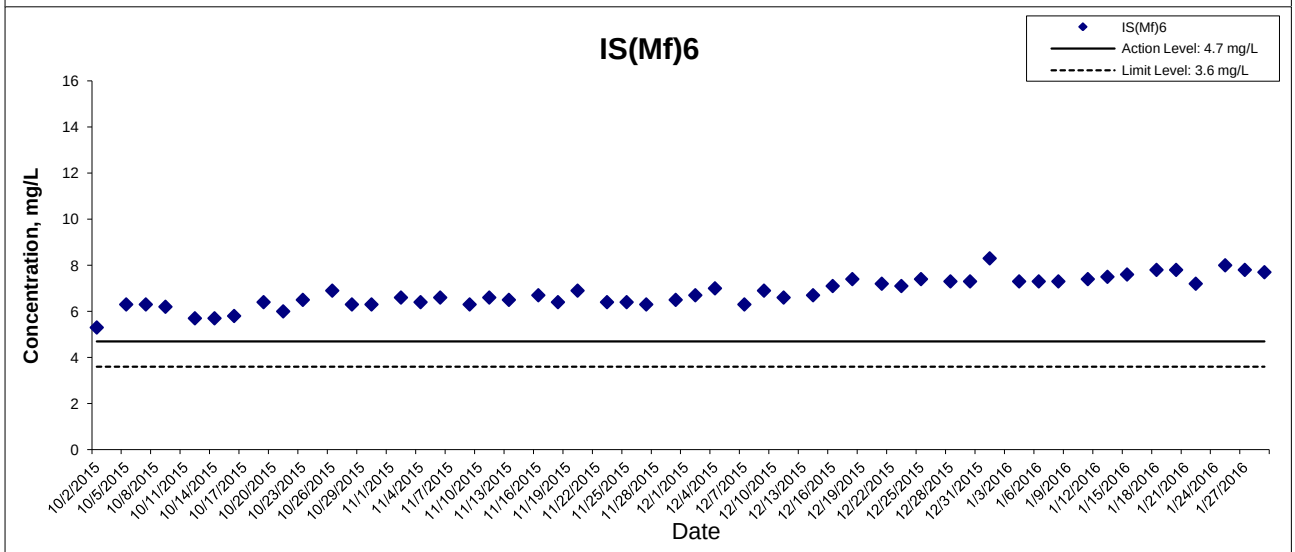


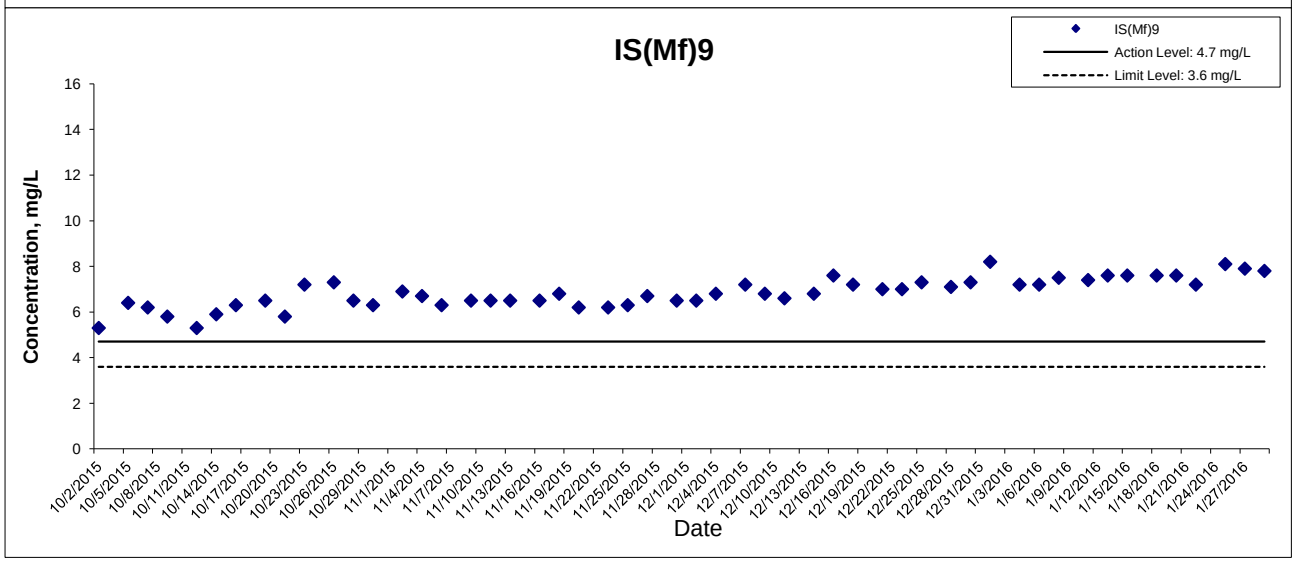
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



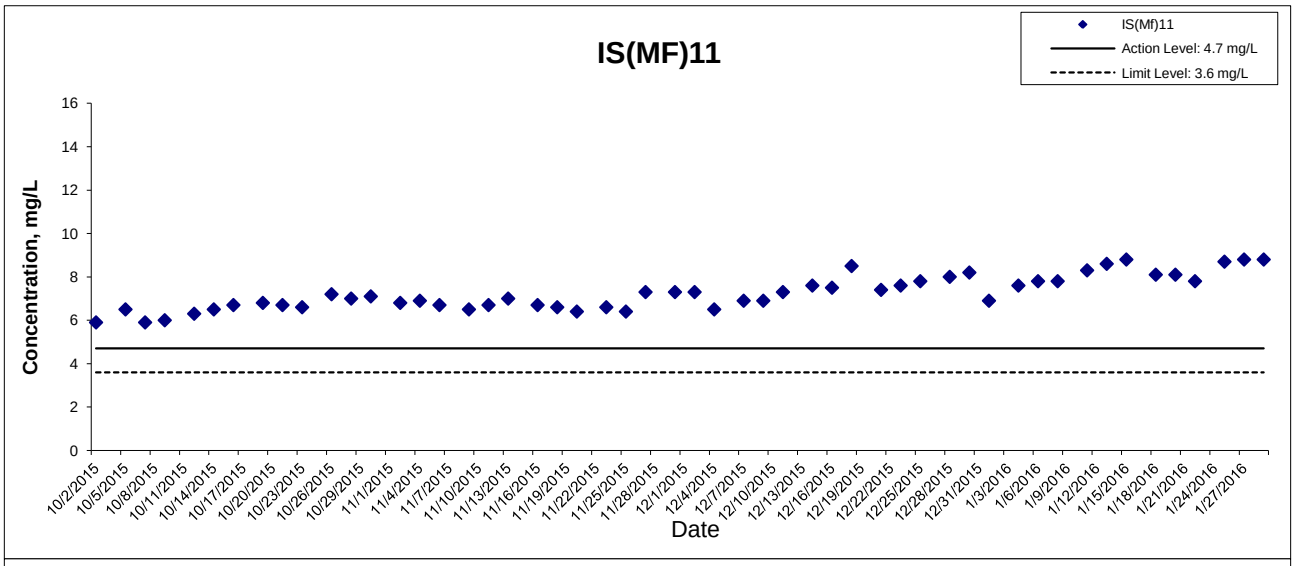
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

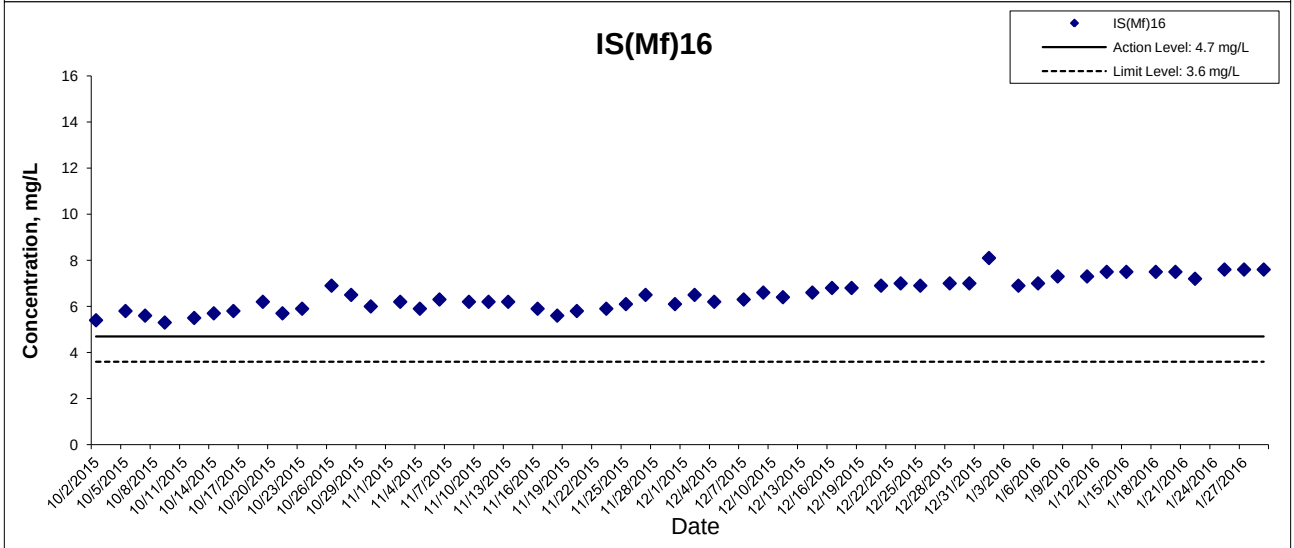


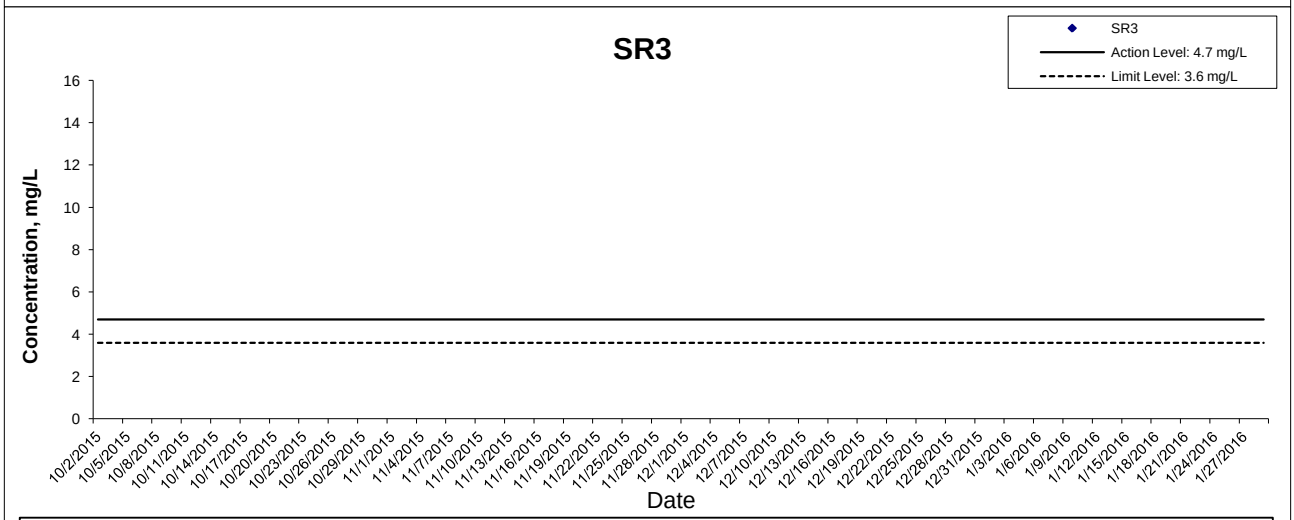




Dissolved Oxygen (Bottom) at Mid-Ebb Tide







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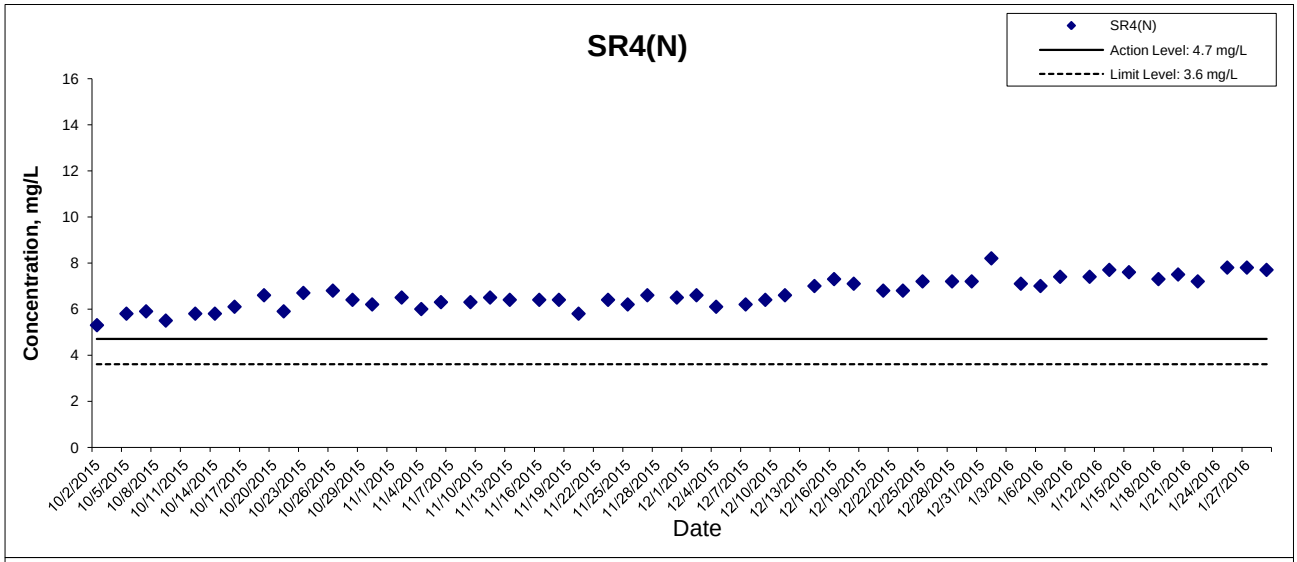
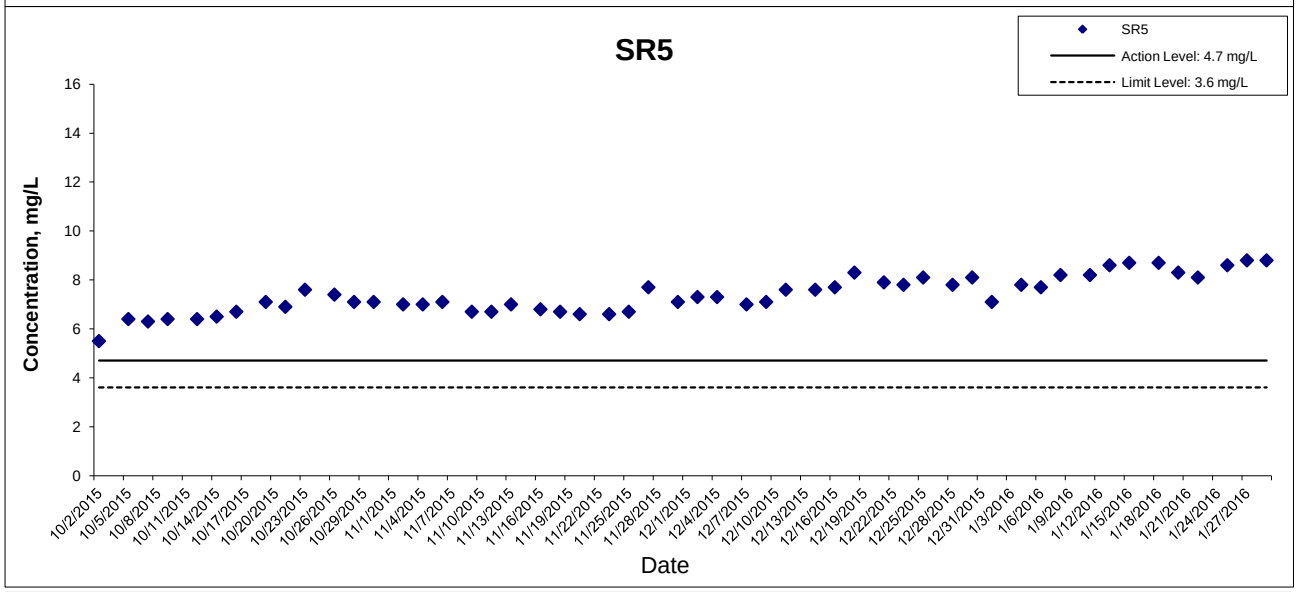
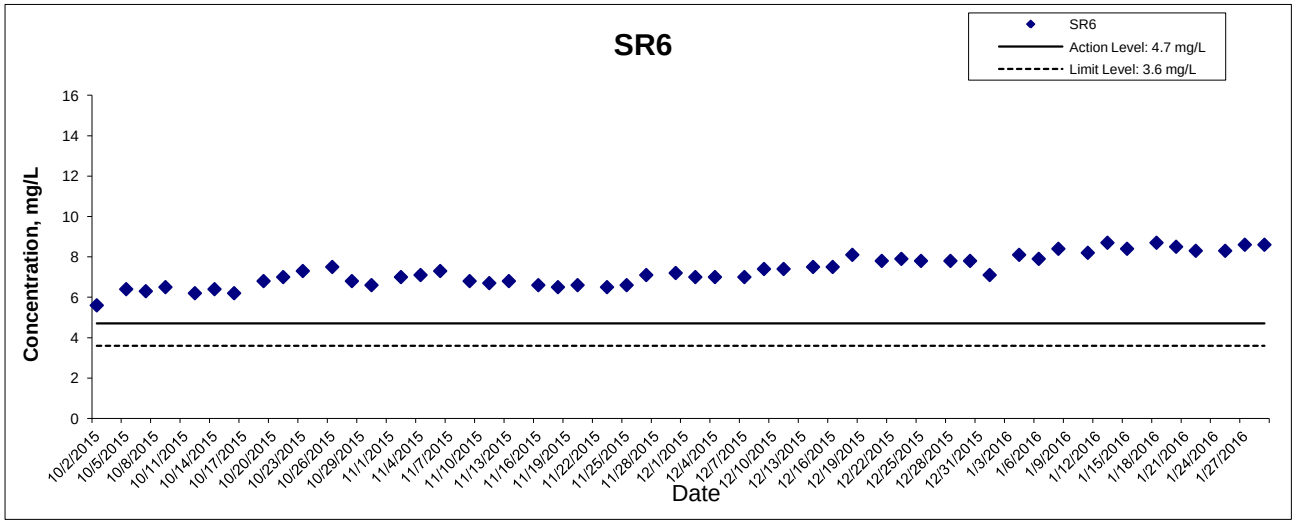
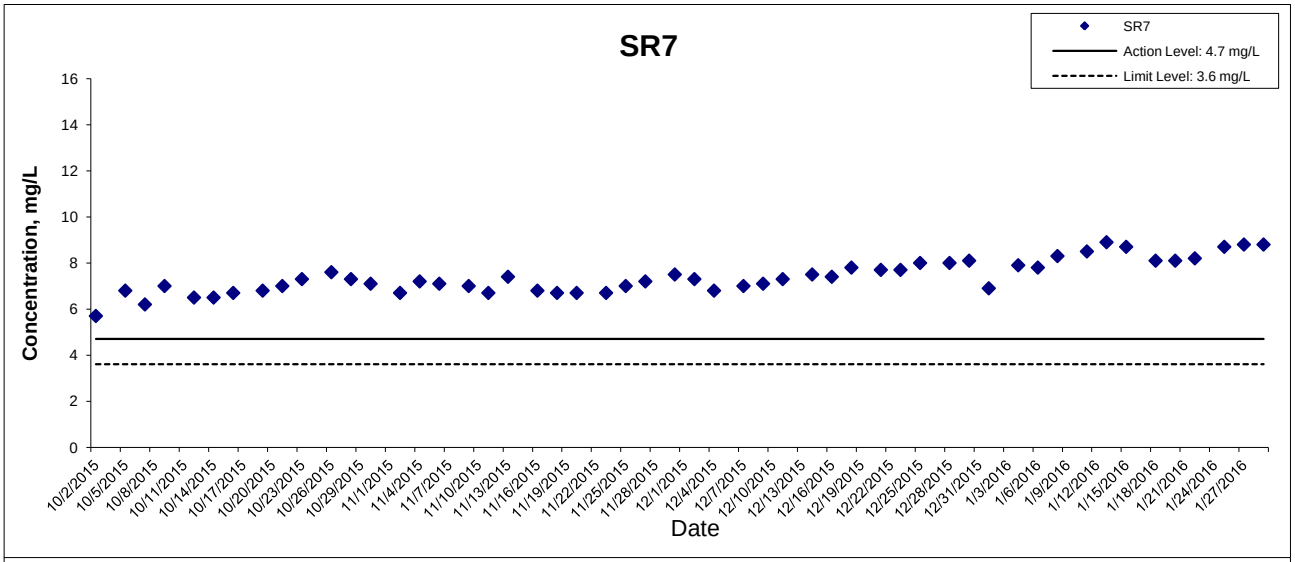
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

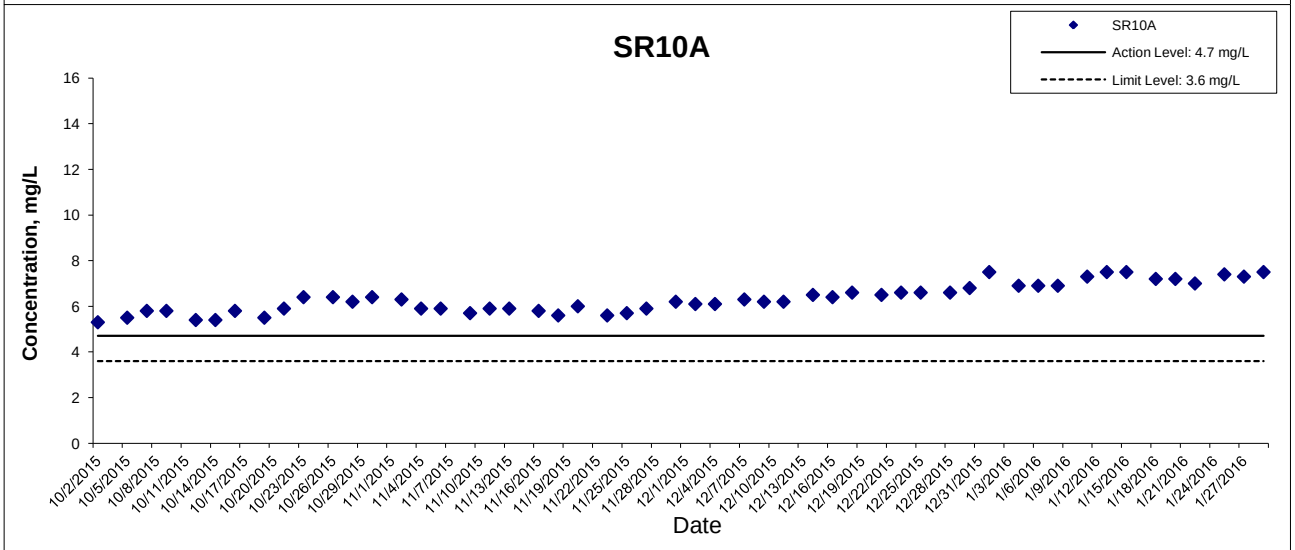


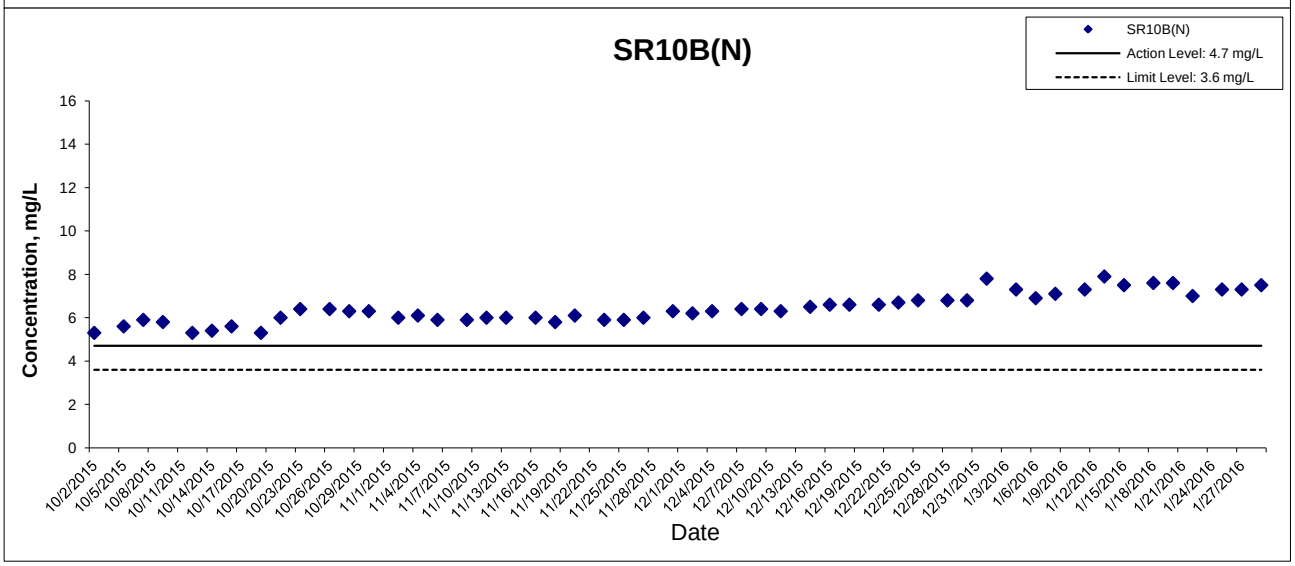




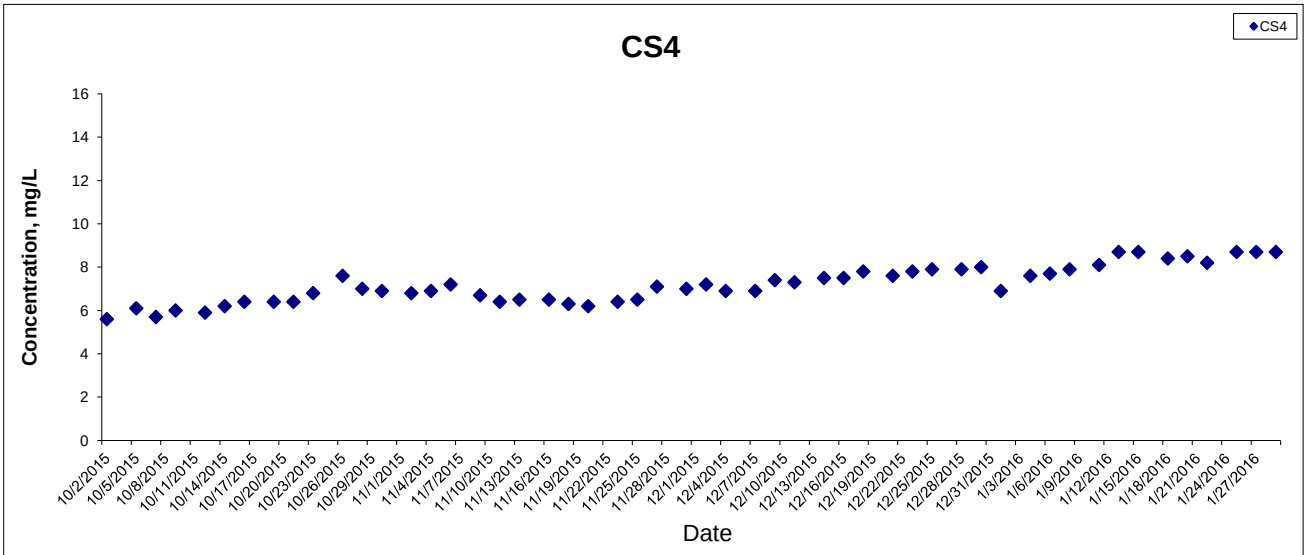
Dissolved Oxygen (Bottom) at Mid-Ebb Tide

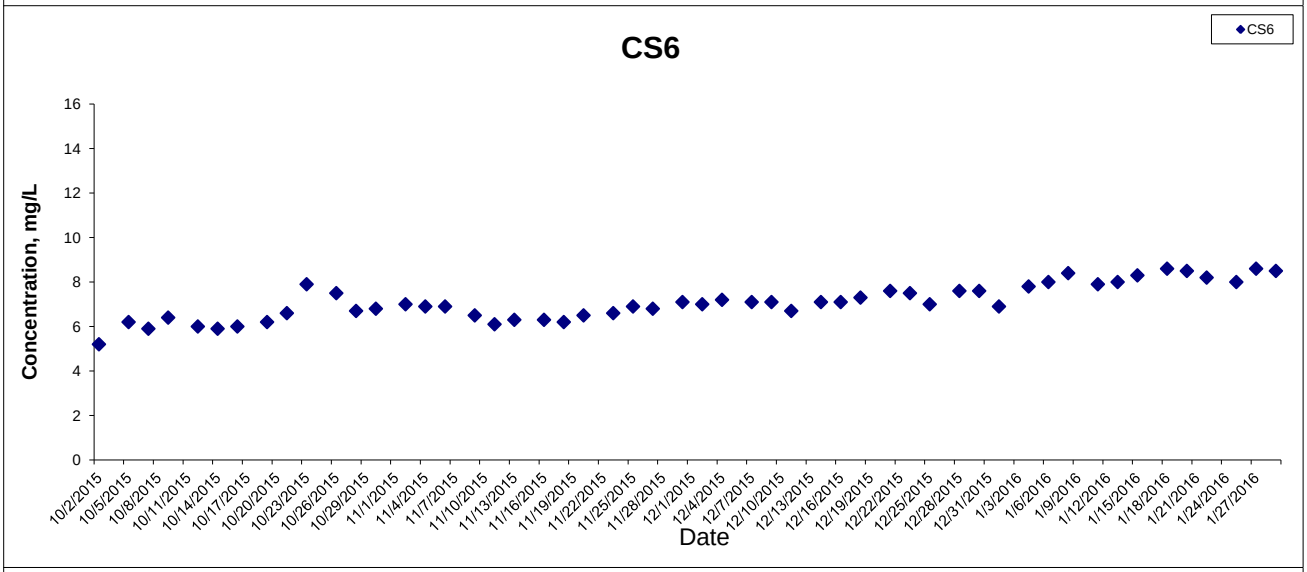


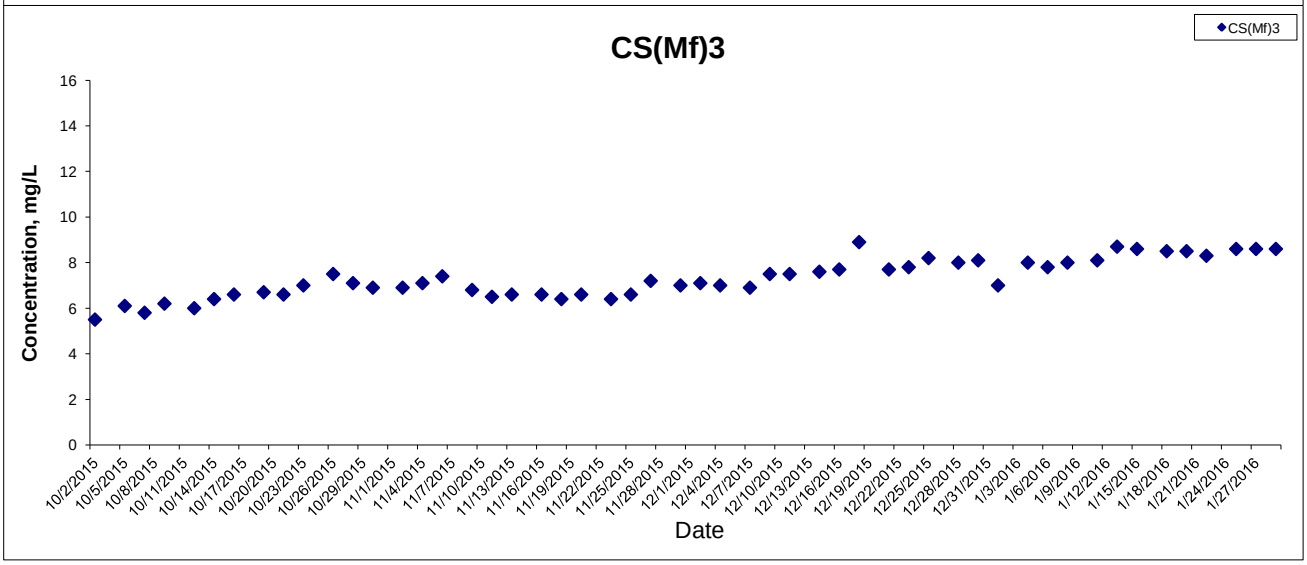




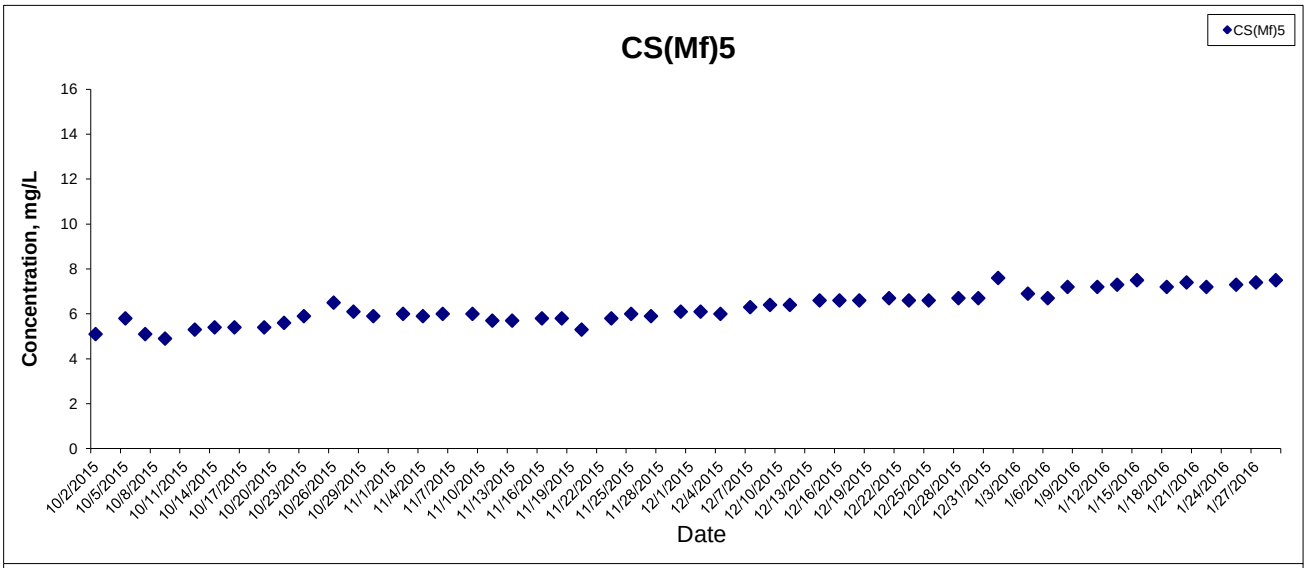
Dissolved Oxygen (Bottom) at Mid-Flood Tide

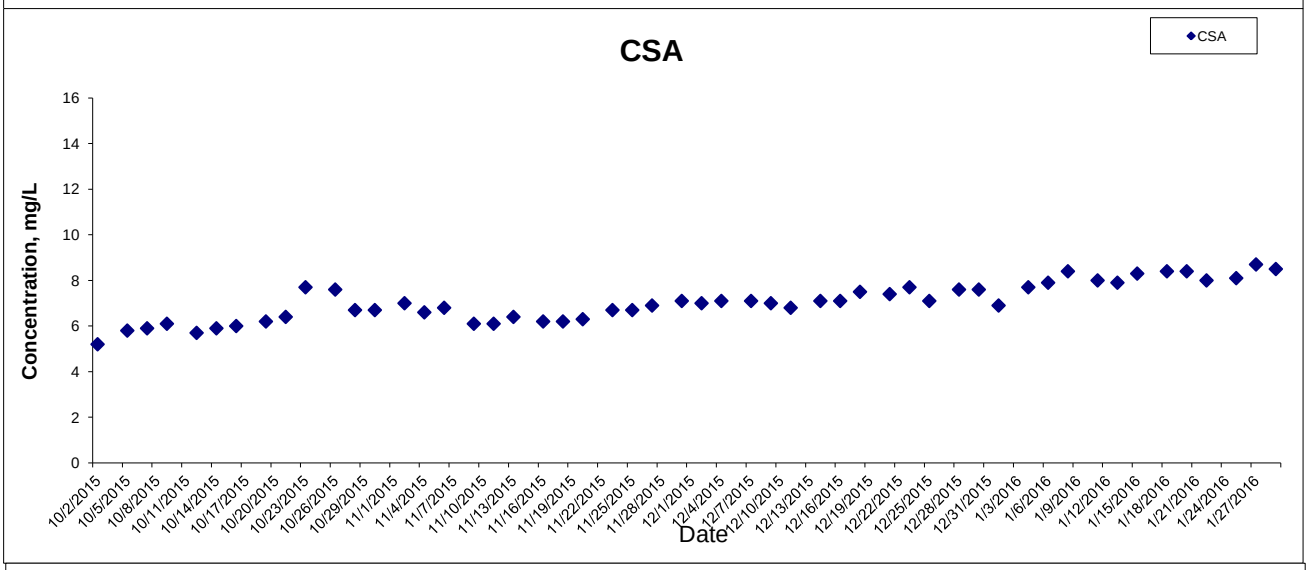


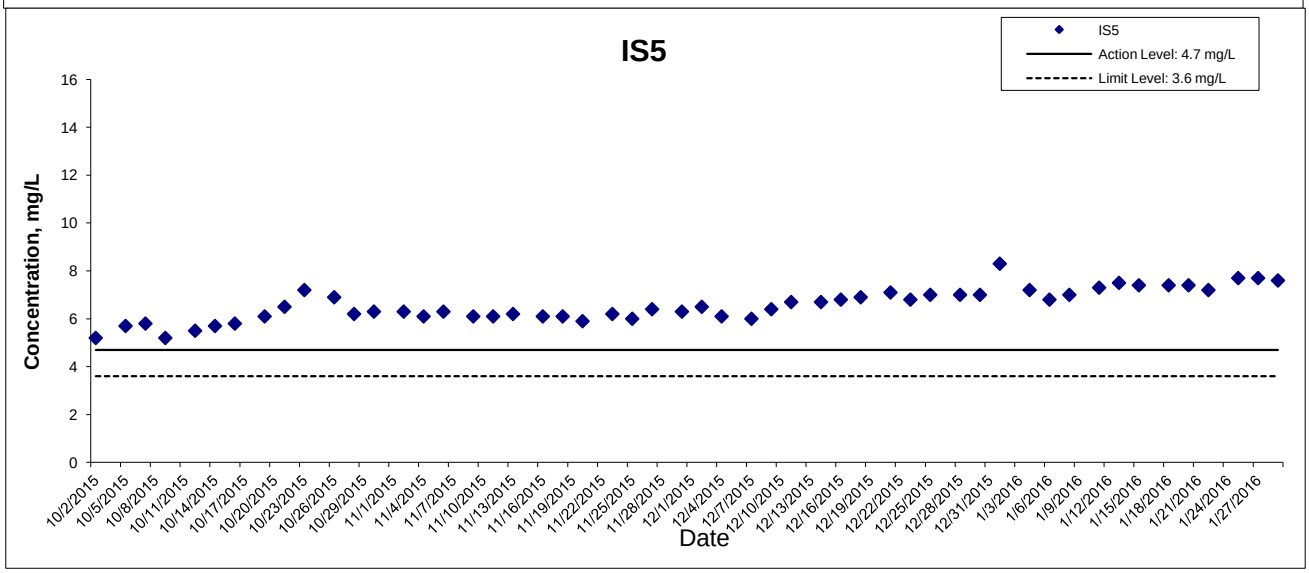




Dissolved Oxygen (Bottom) at Mid-Flood Tide







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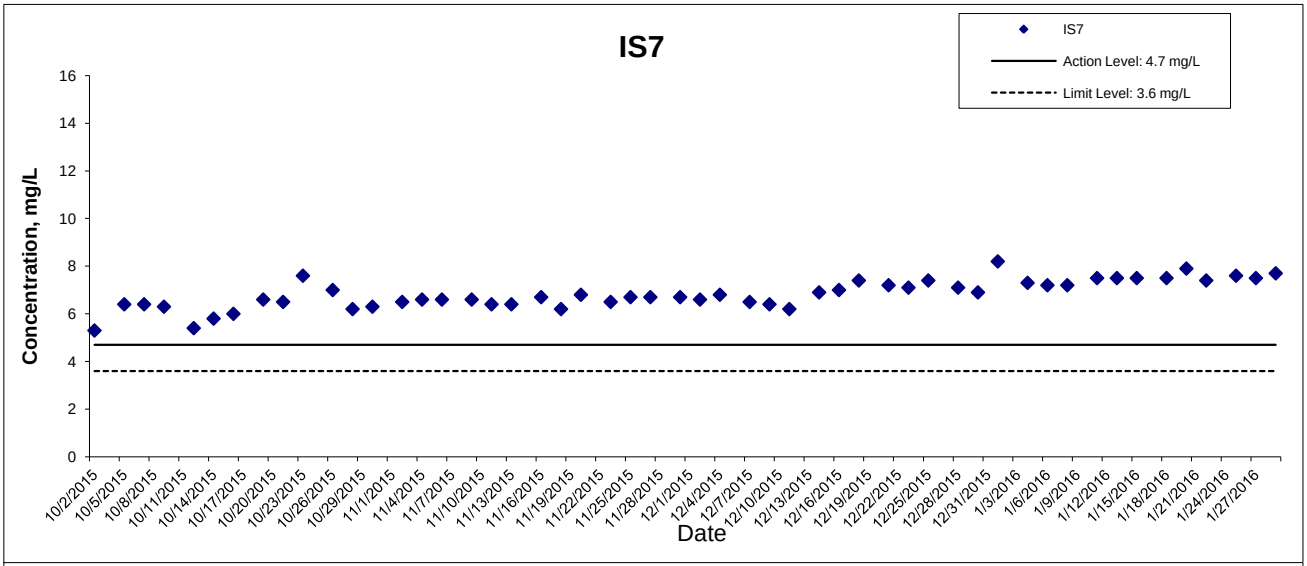

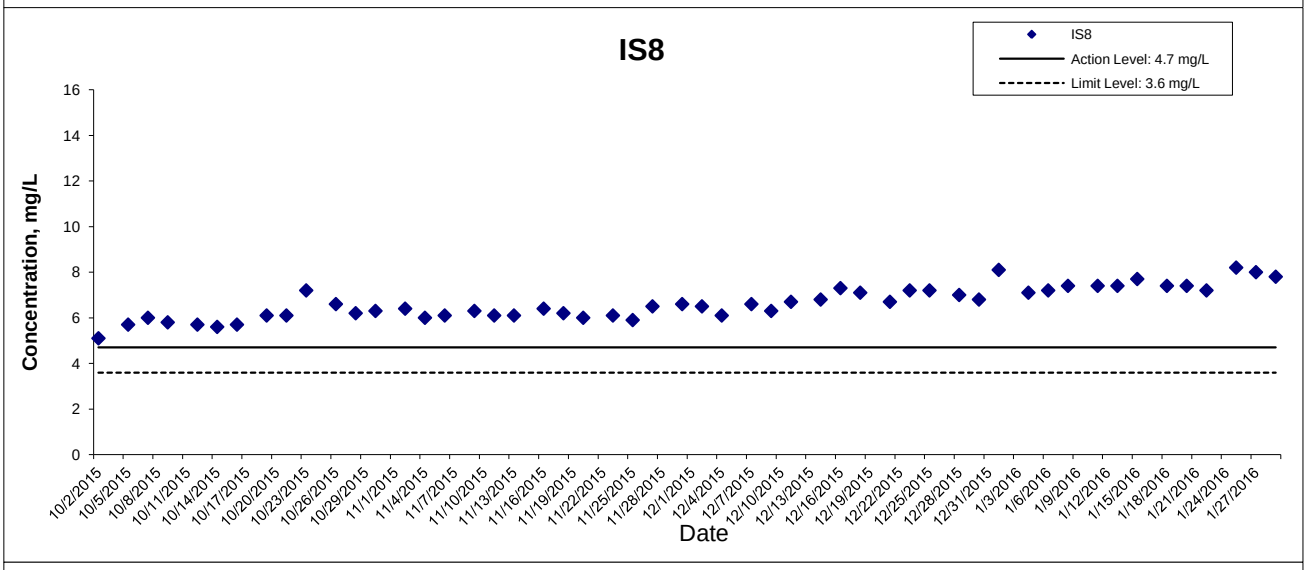

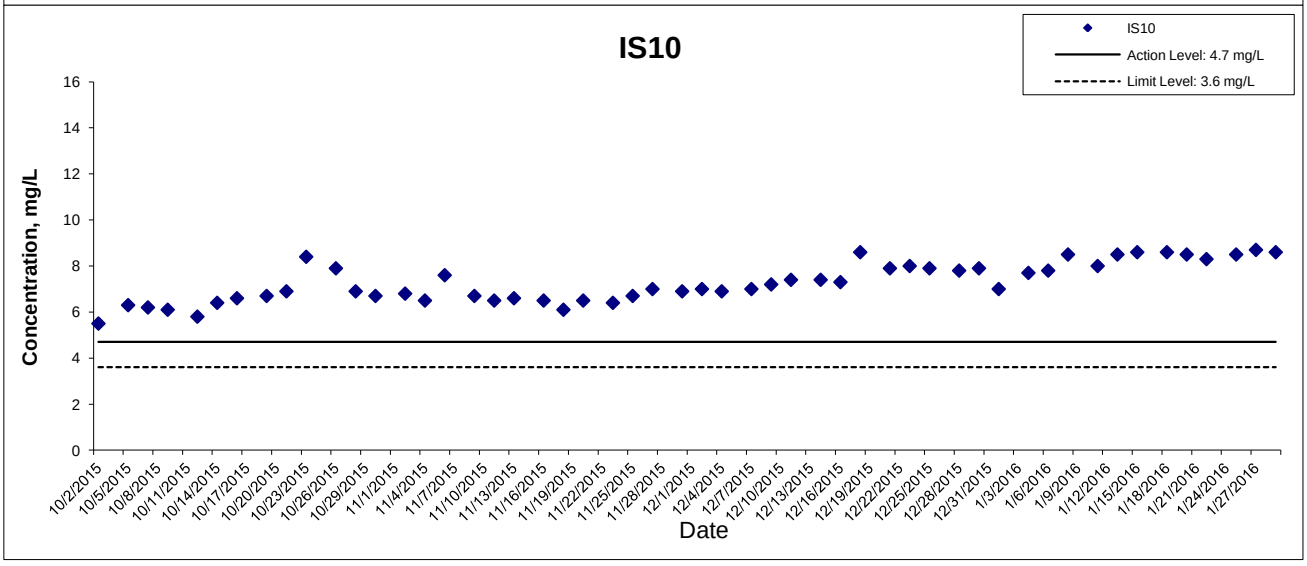

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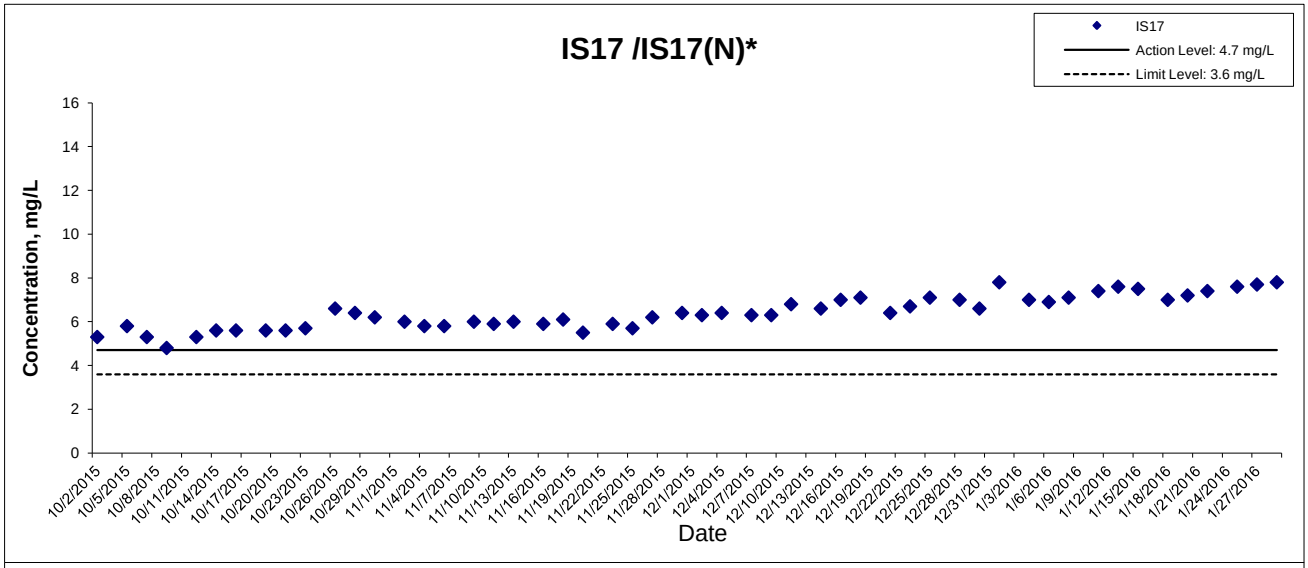
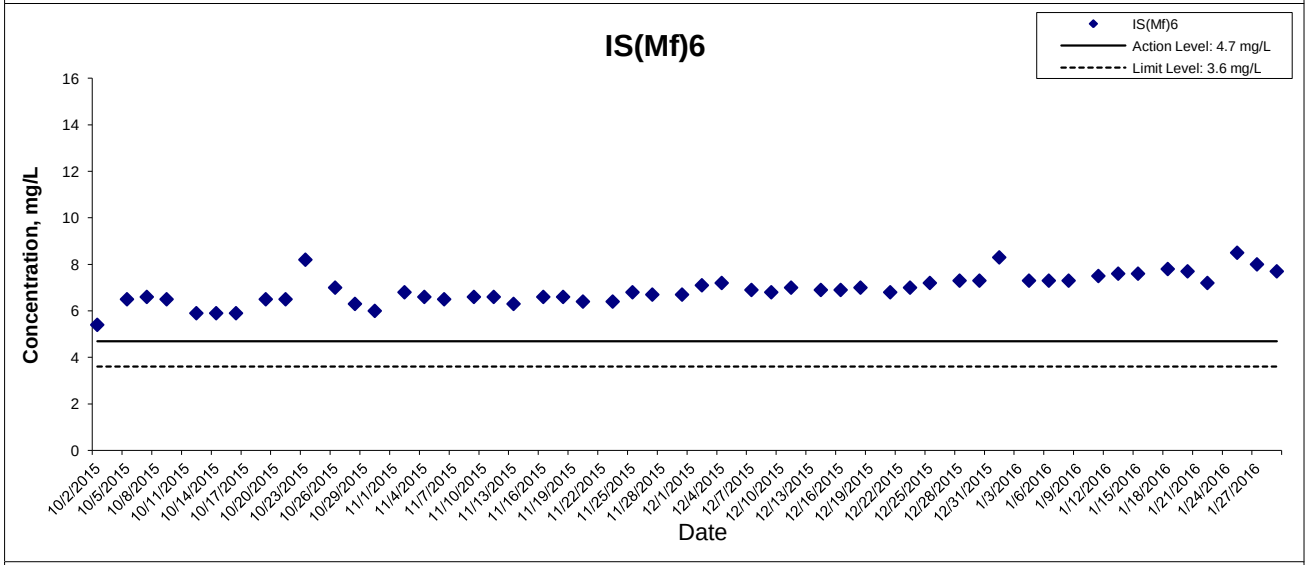
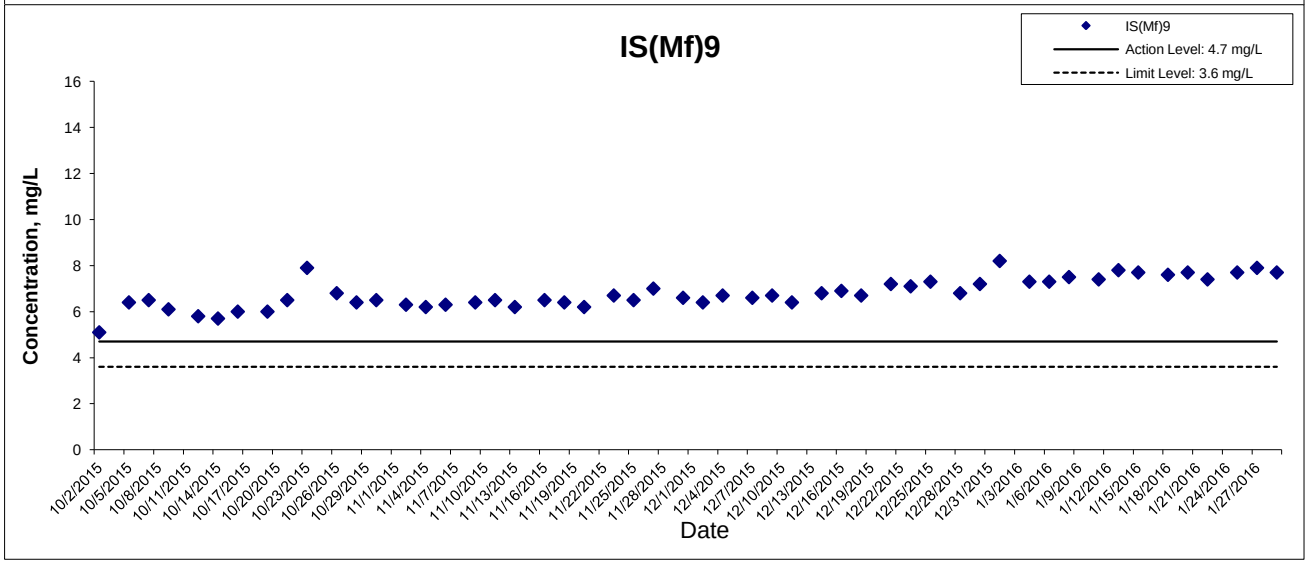
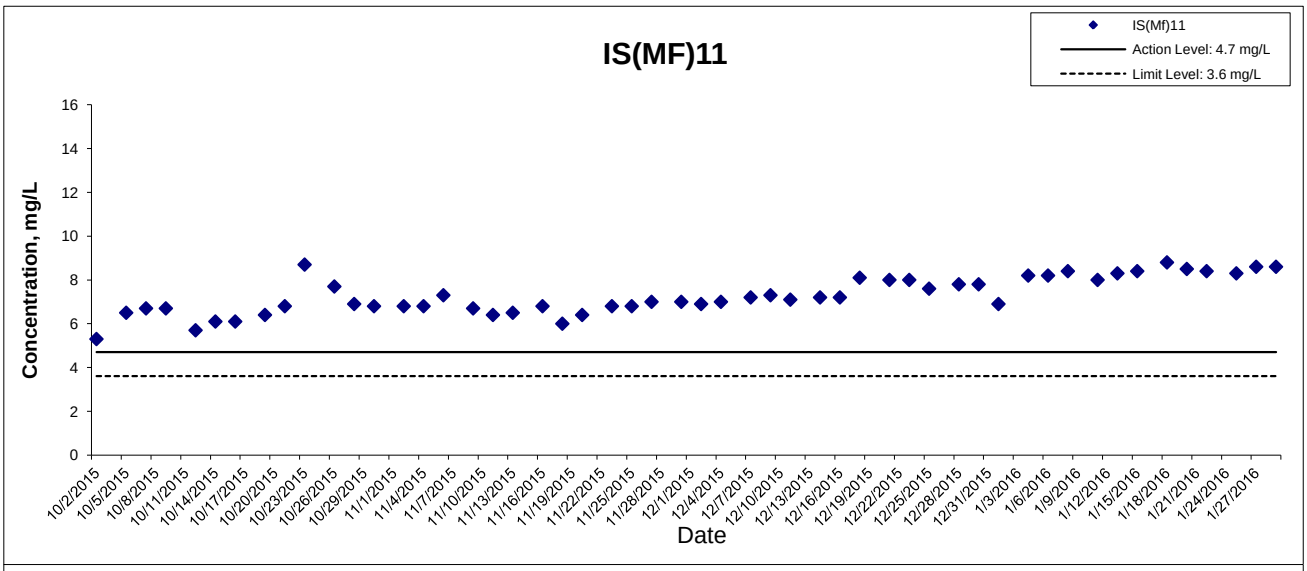
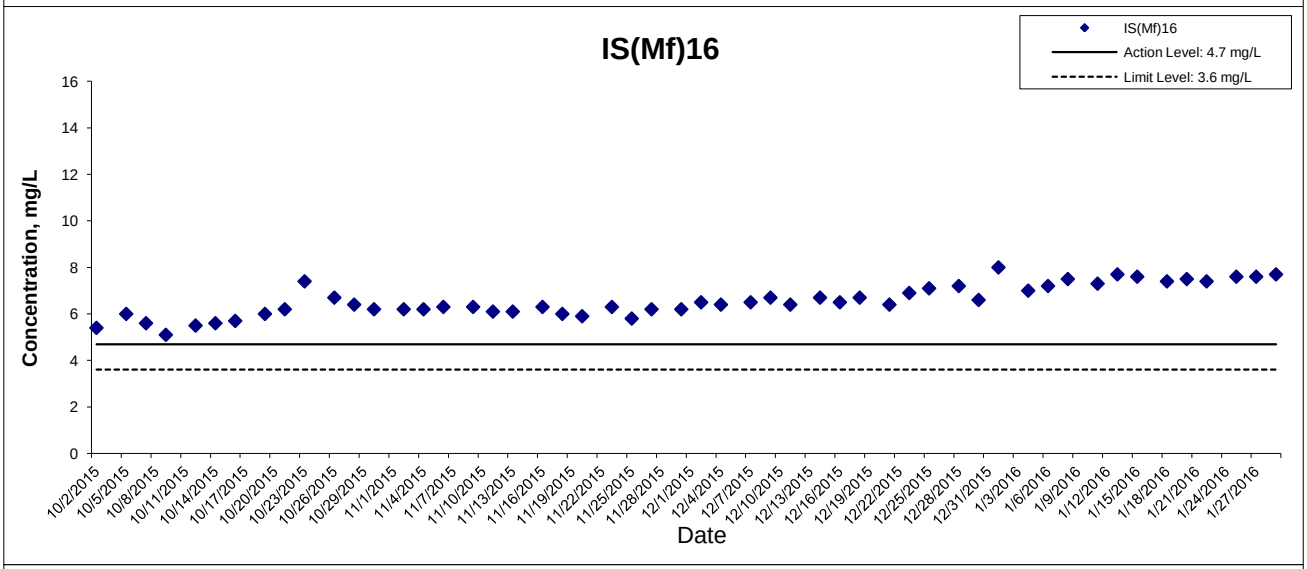


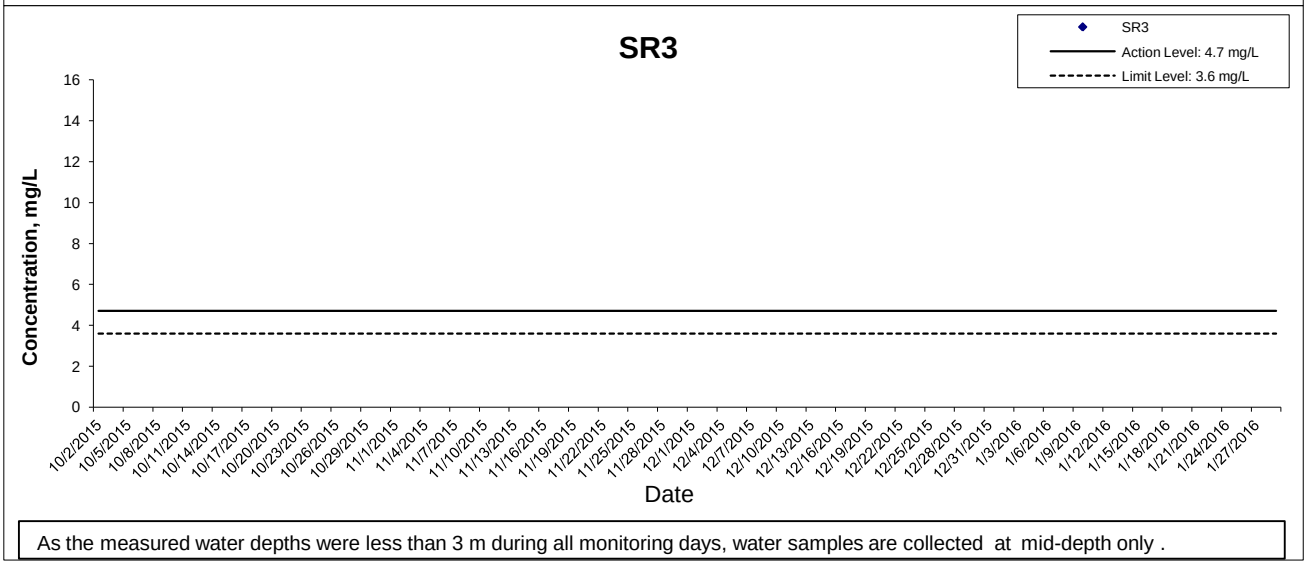




Dissolved Oxygen (Bottom) at Mid-Flood Tide







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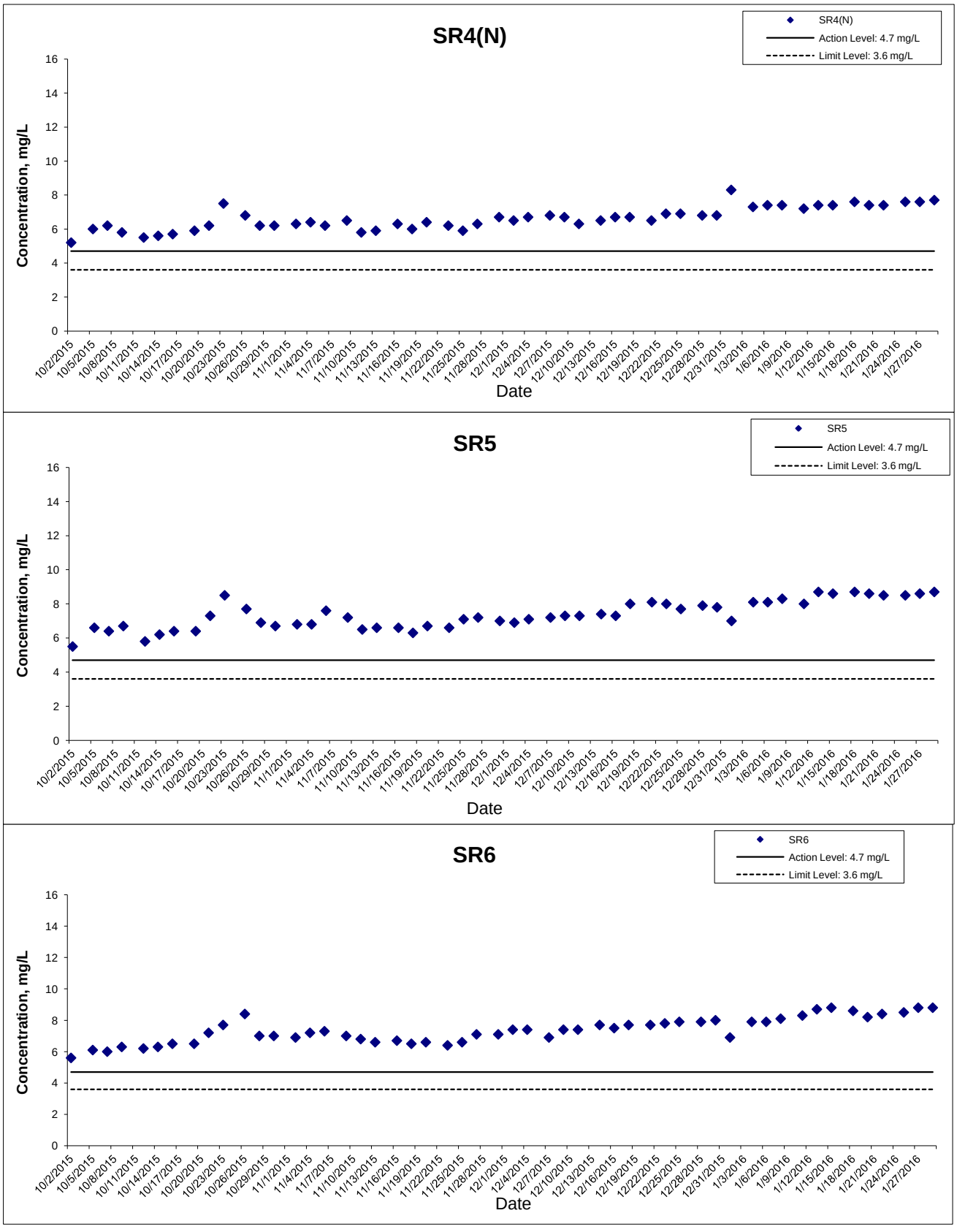
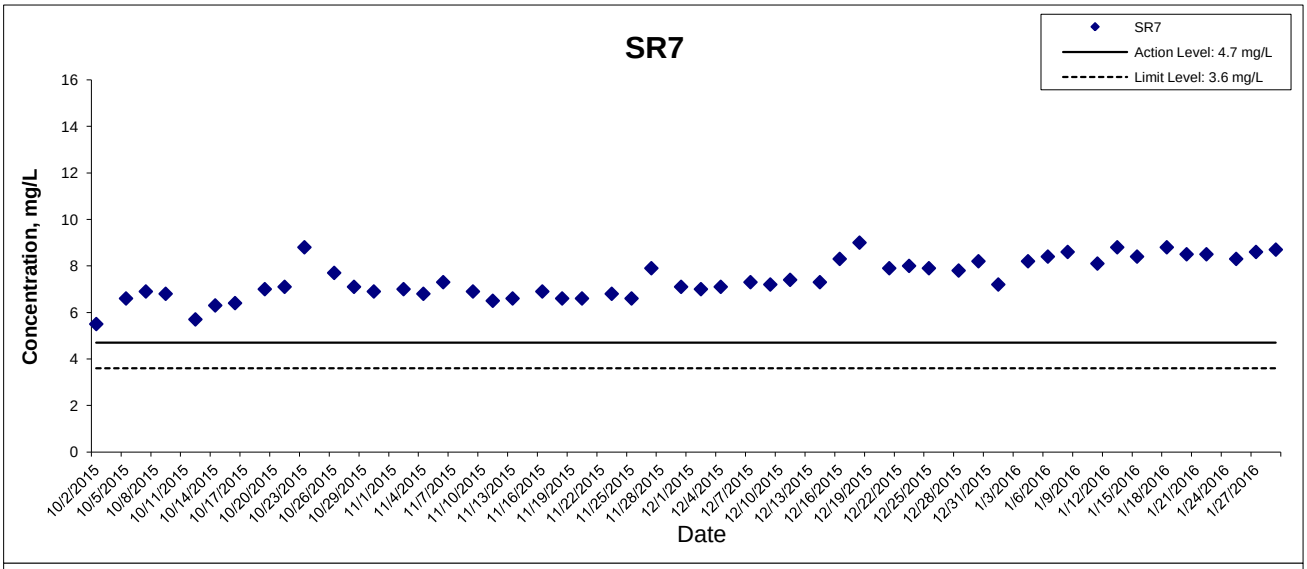
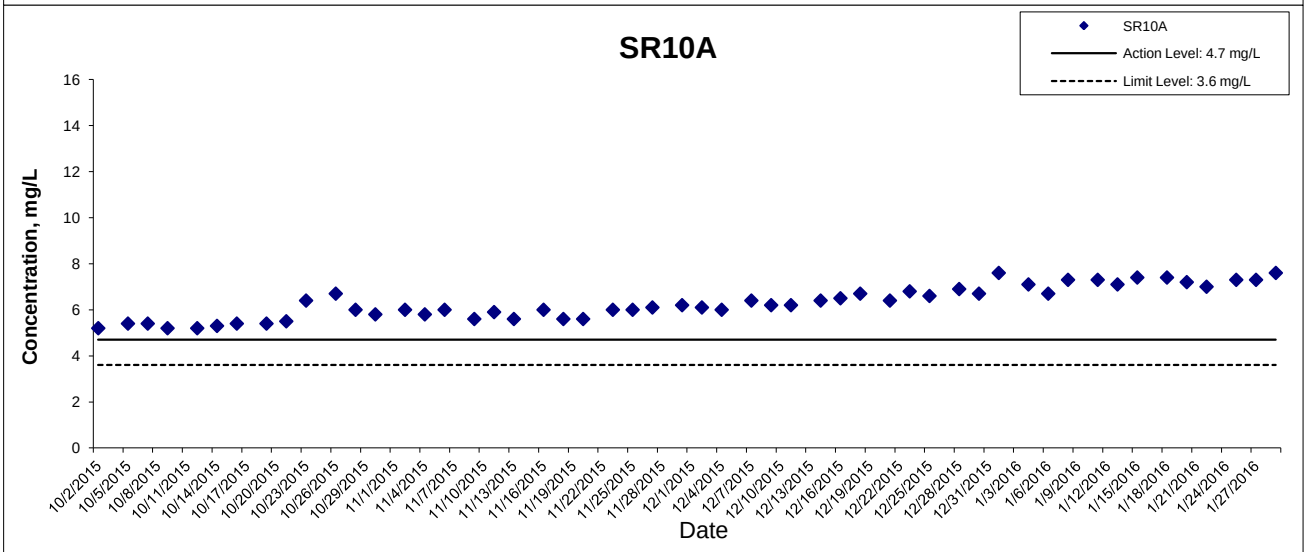
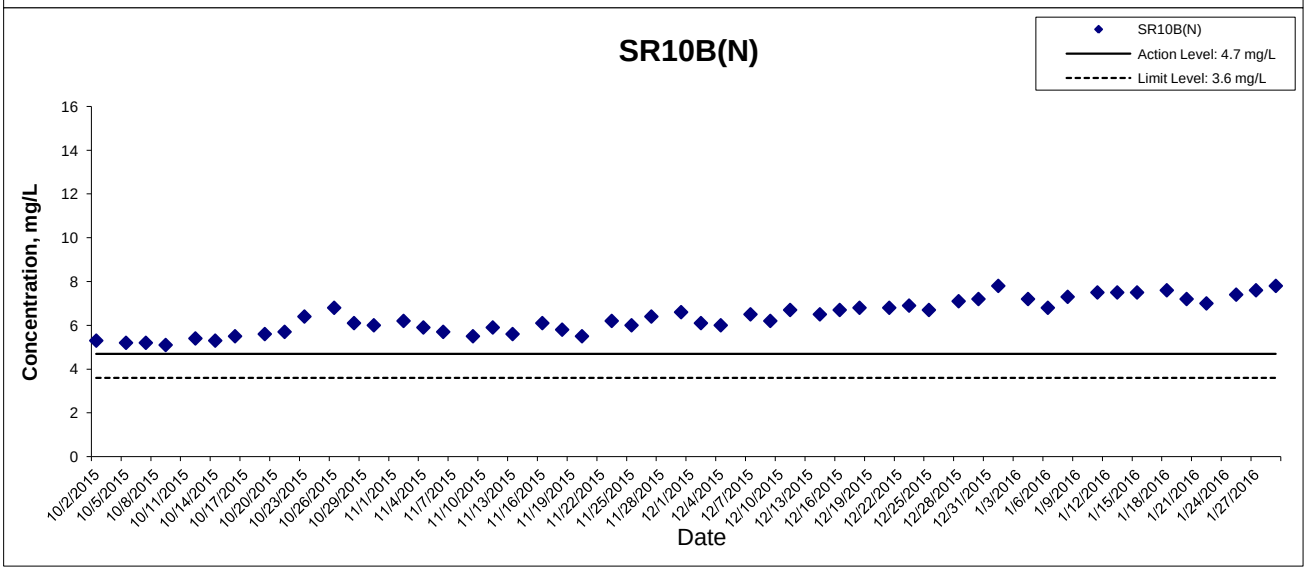


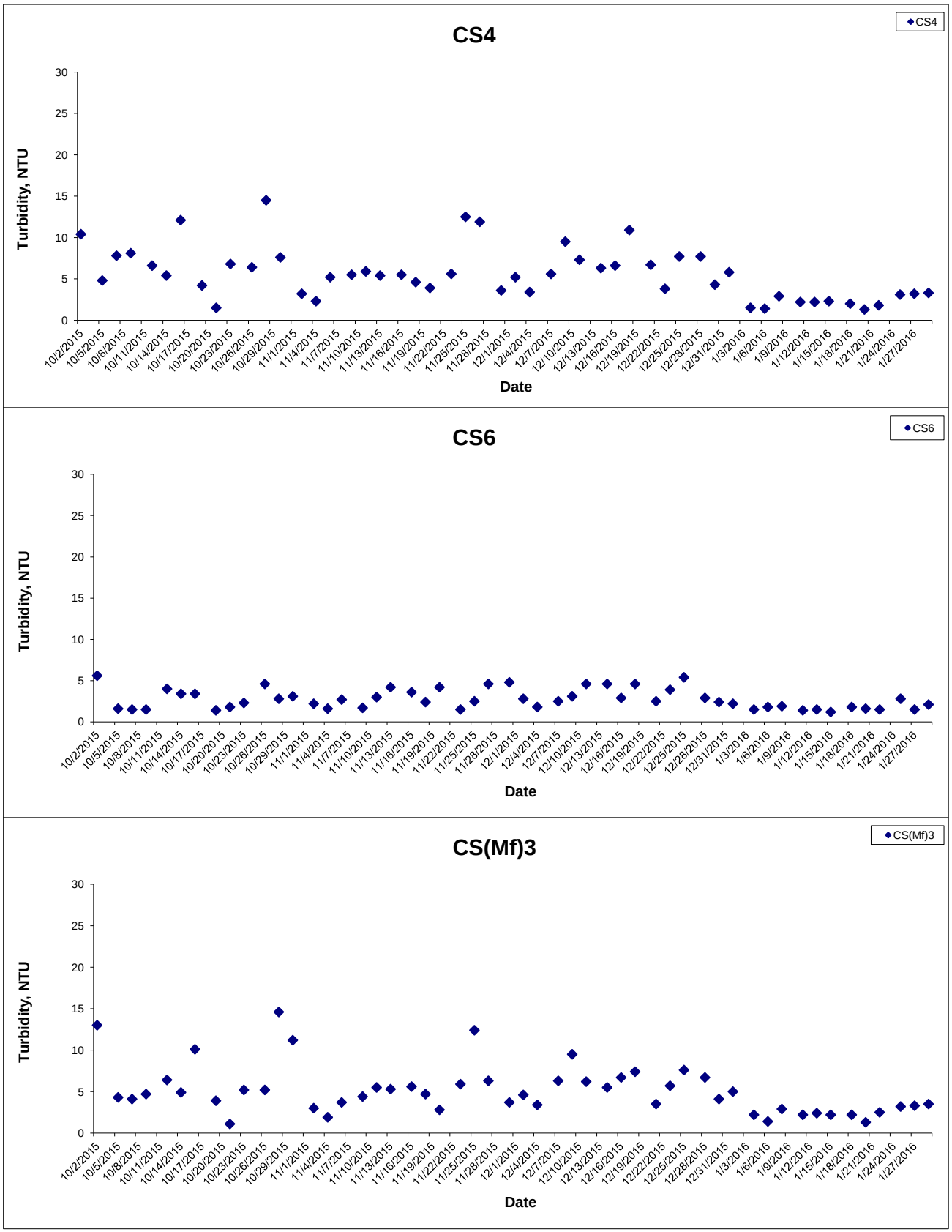
Dissolved Oxygen (Bottom) at Mid-Flood Tide



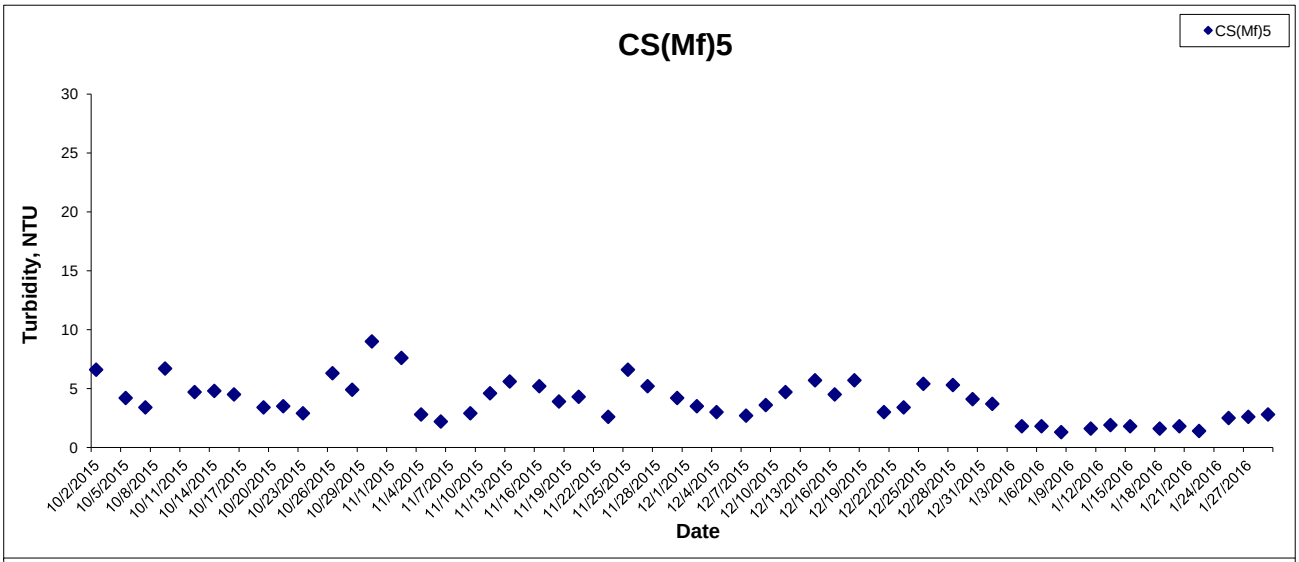


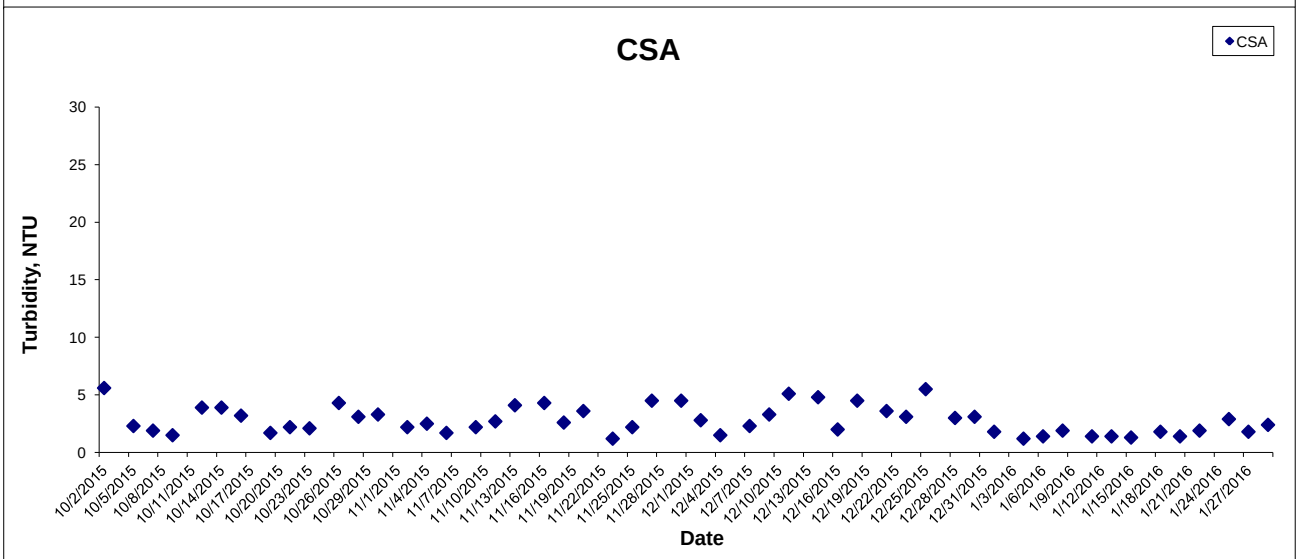


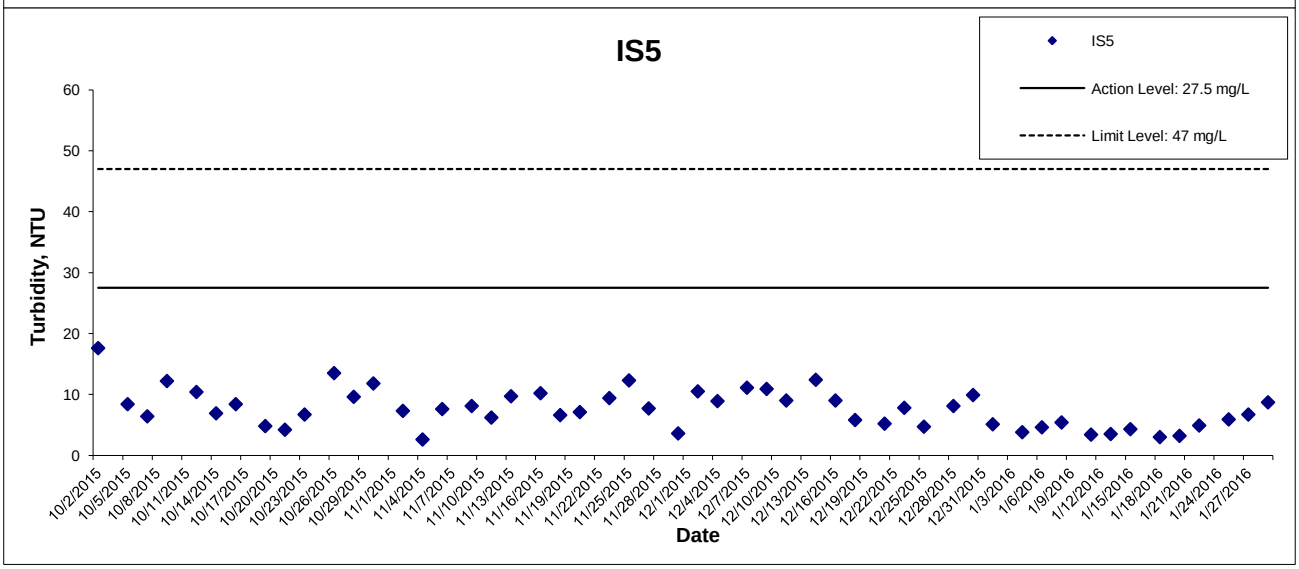
Turbidity at Mid-Ebb Tide



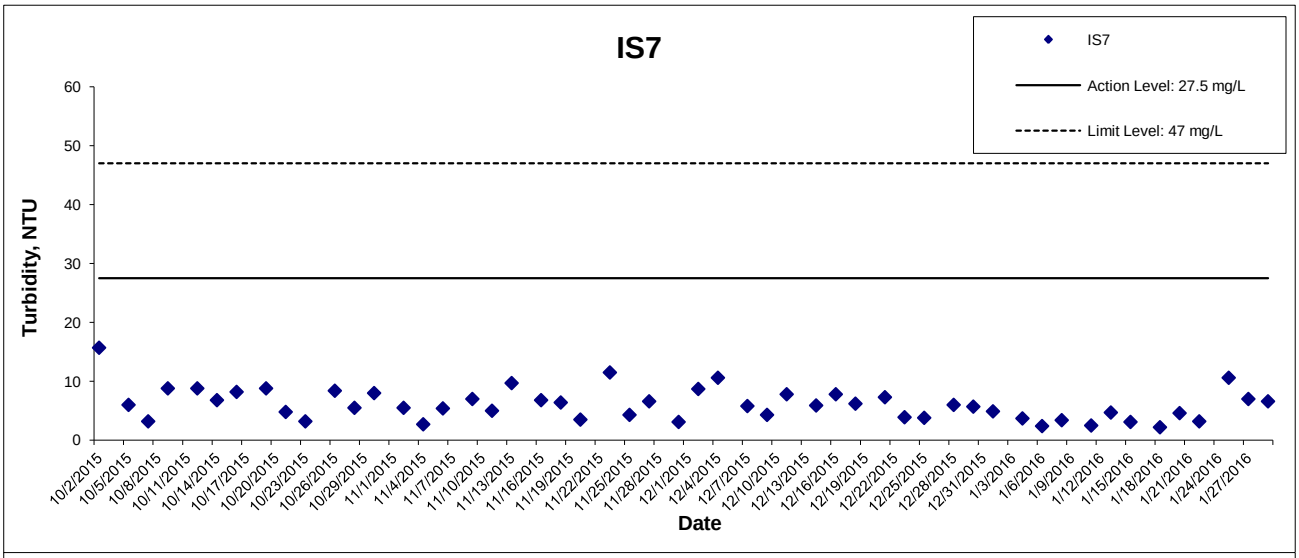
Turbidity at Mid-Ebb Tide

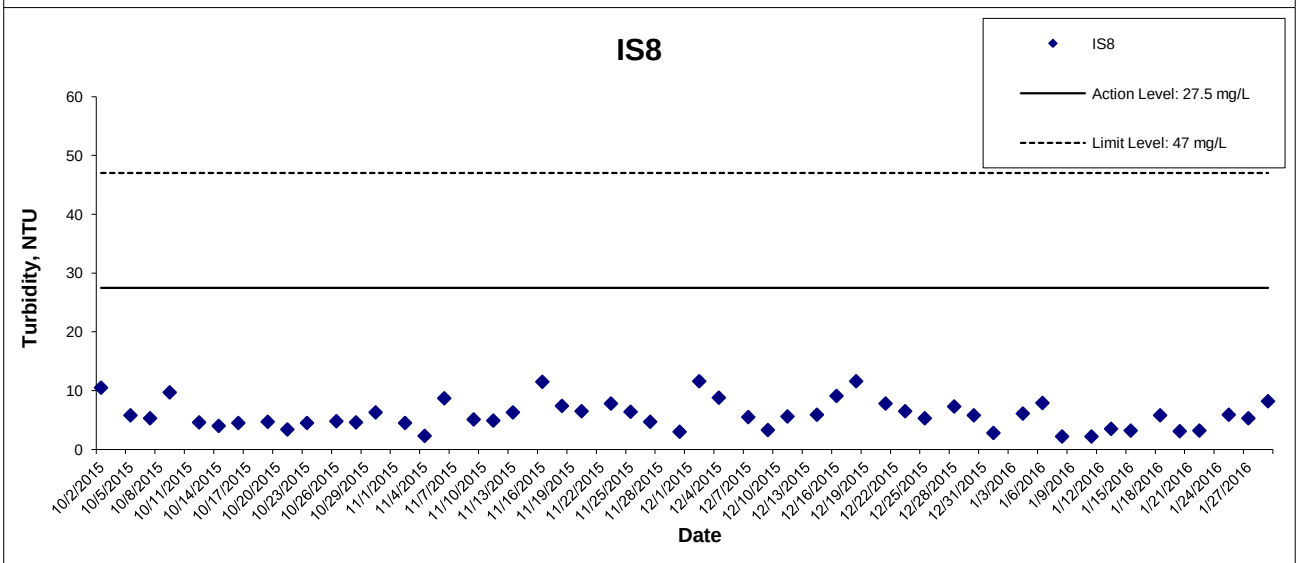


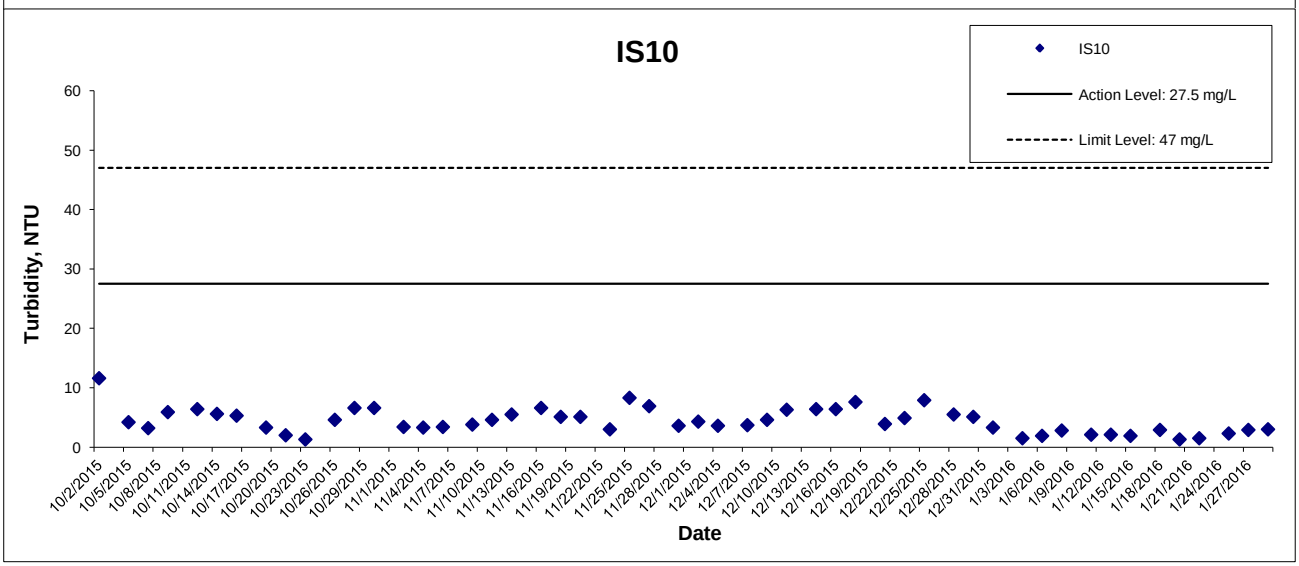




Turbidity at Mid-Ebb Tide







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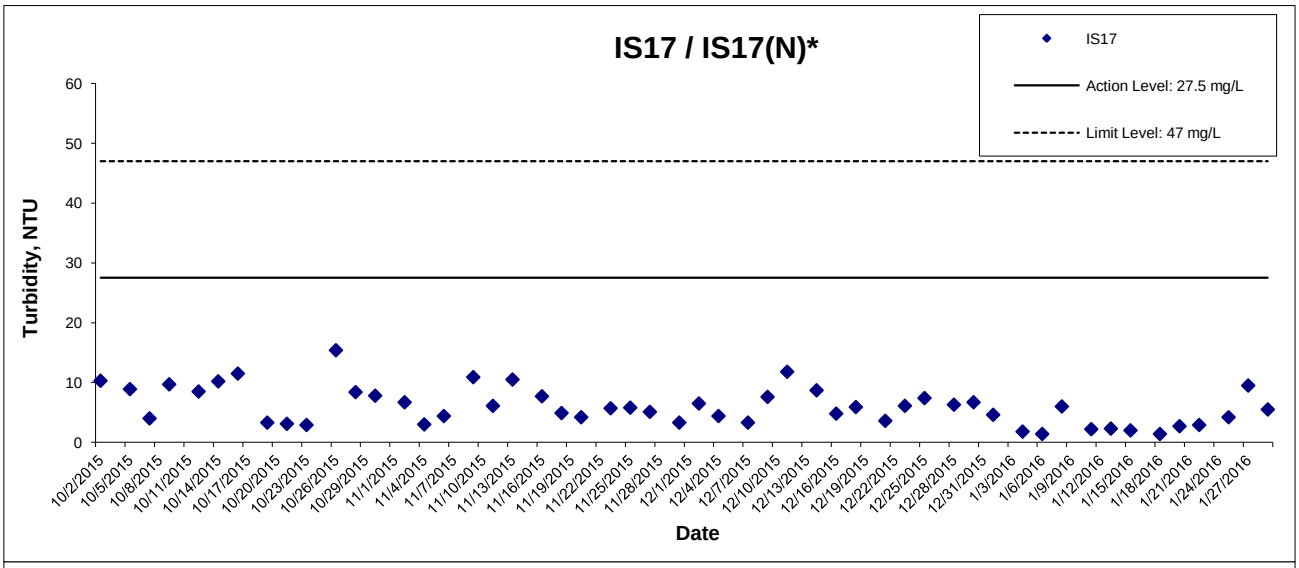

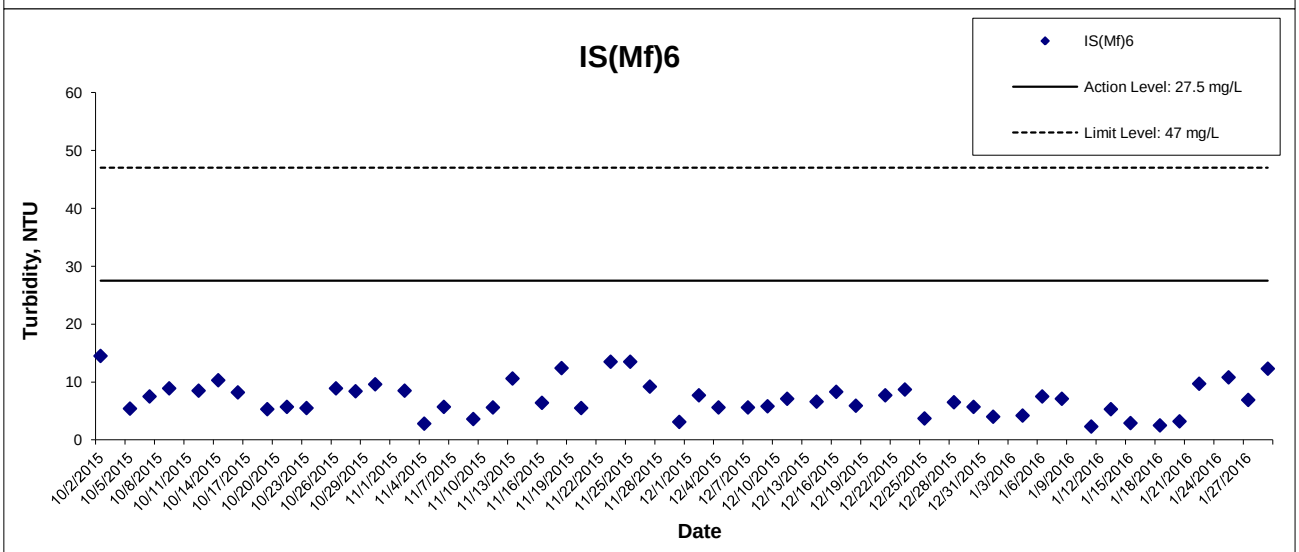

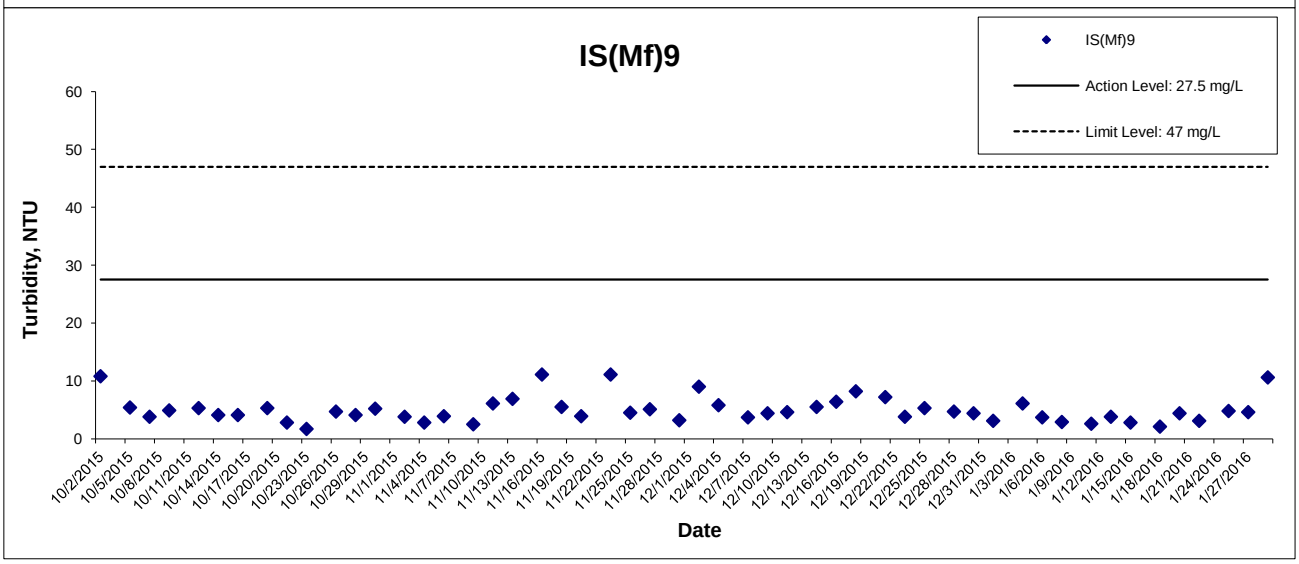

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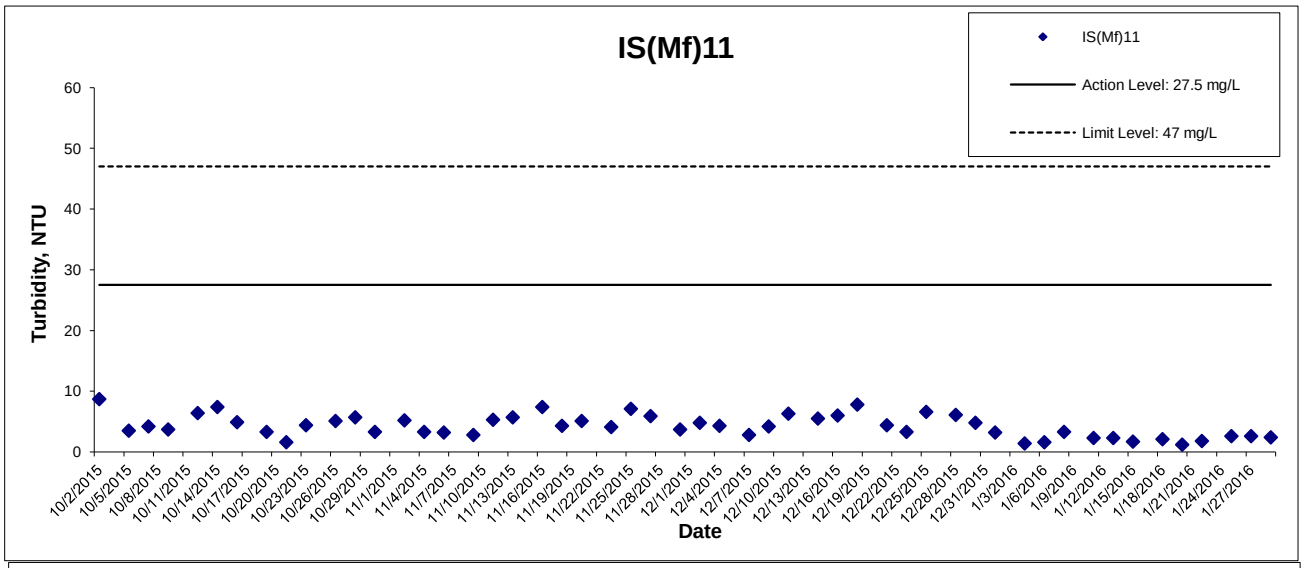

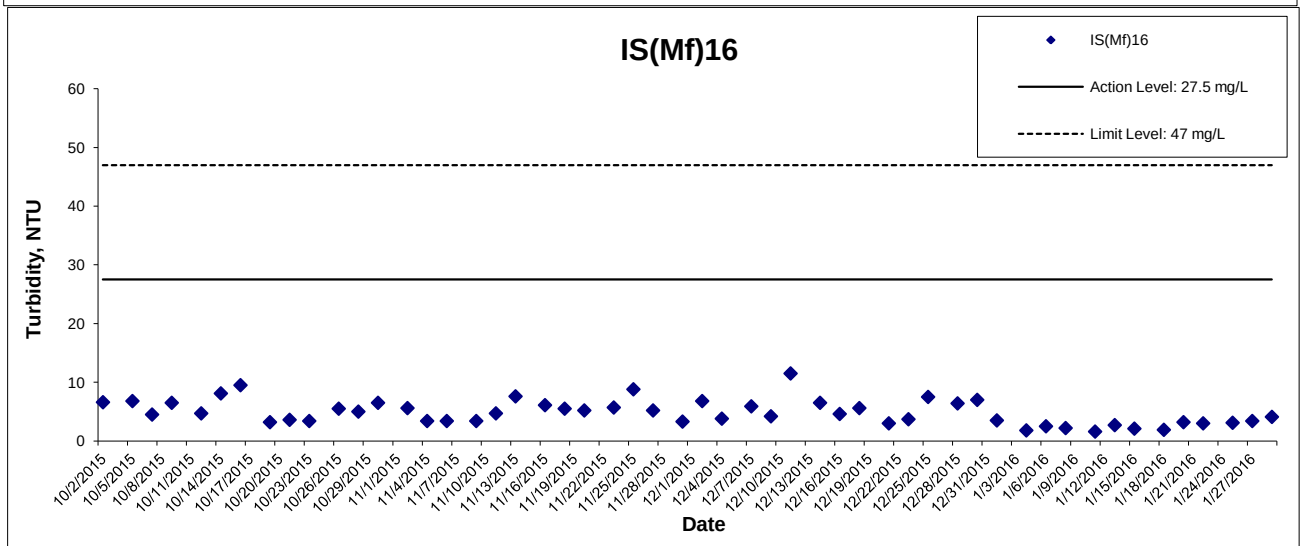

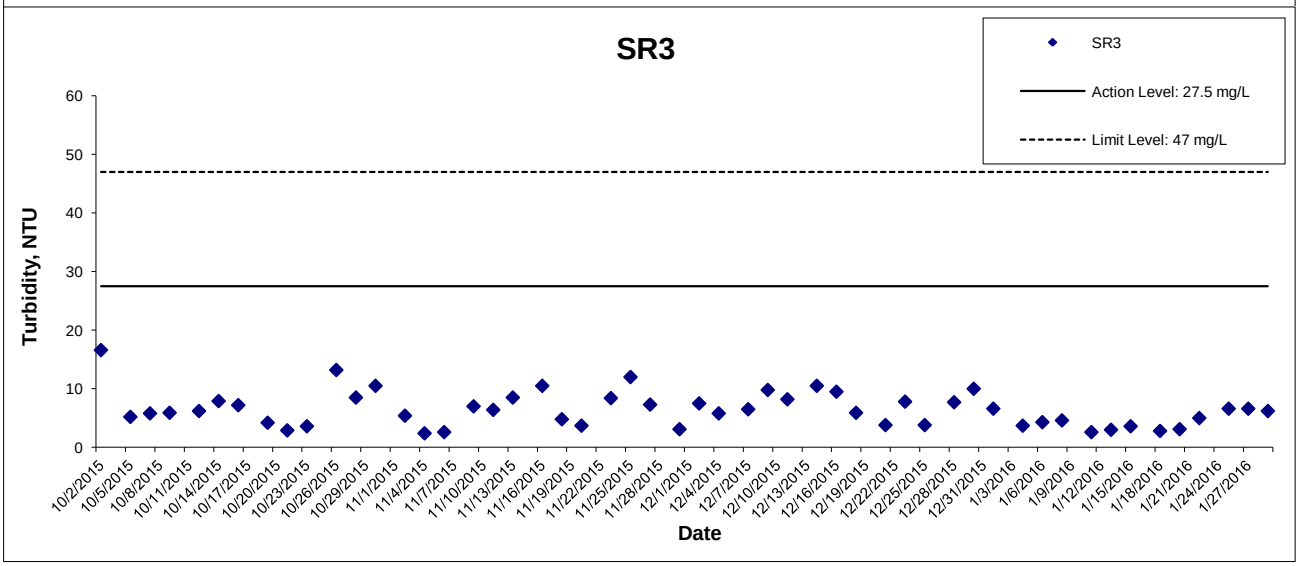

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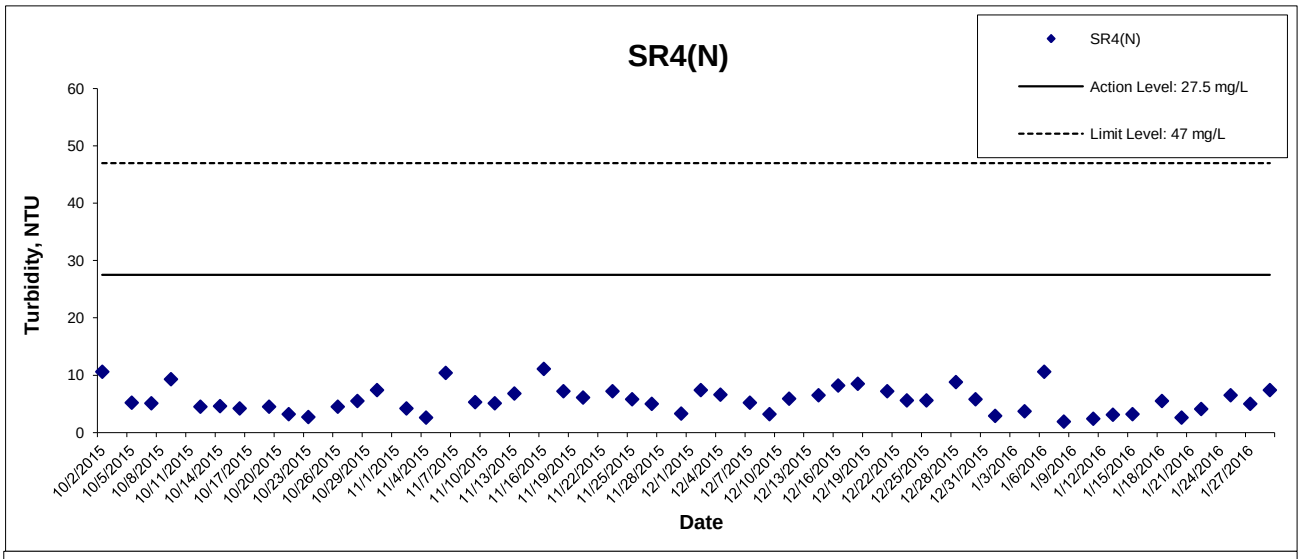
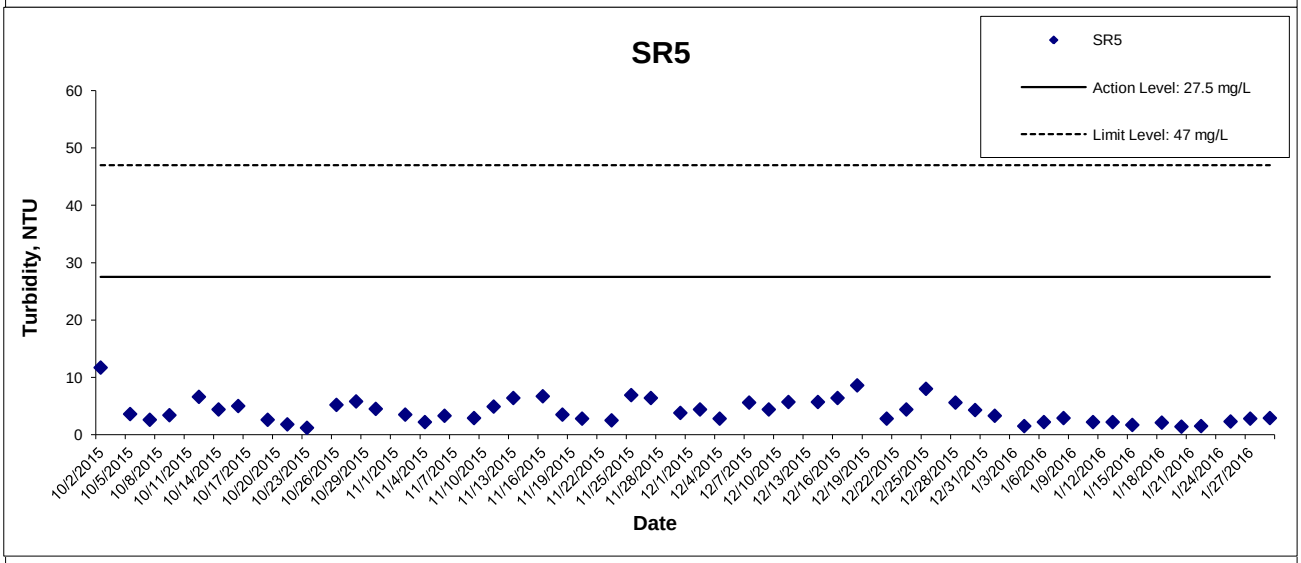
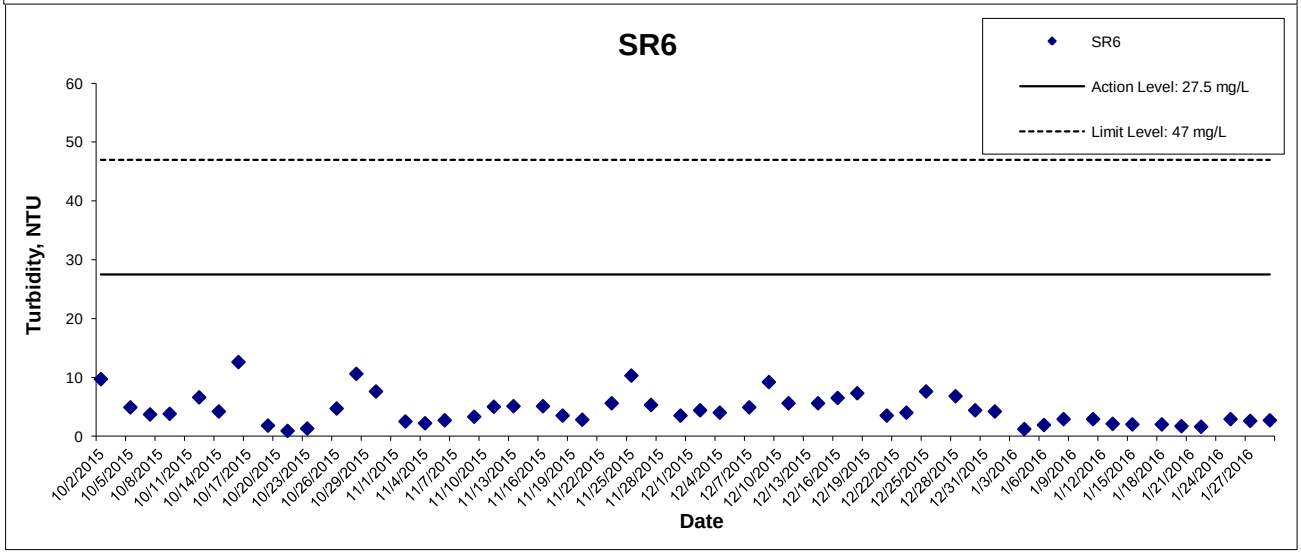
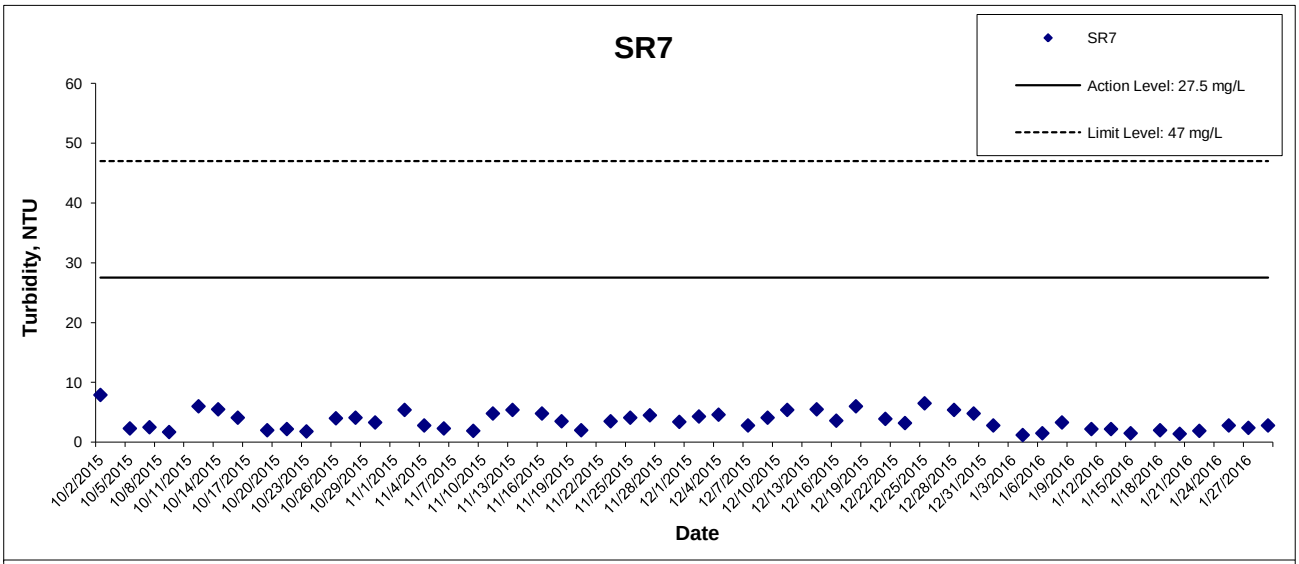
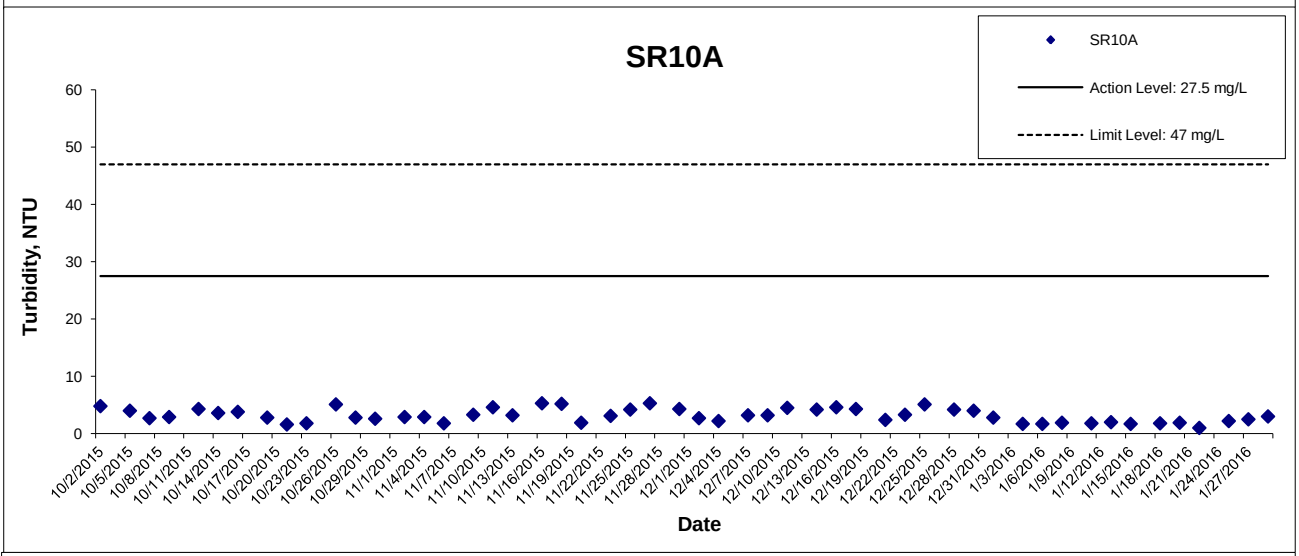


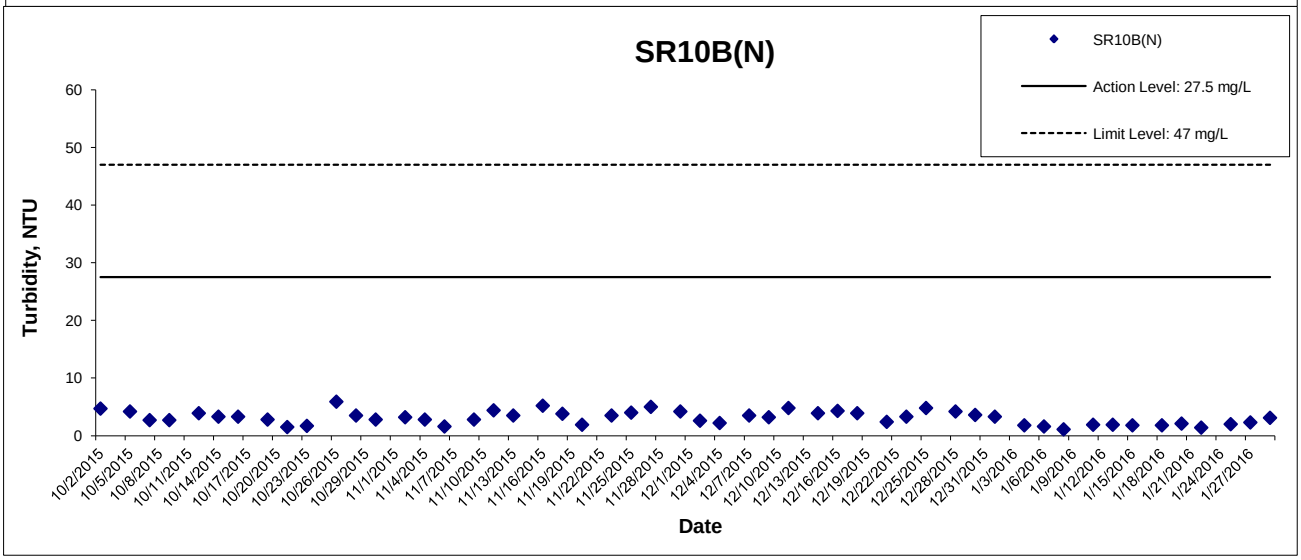




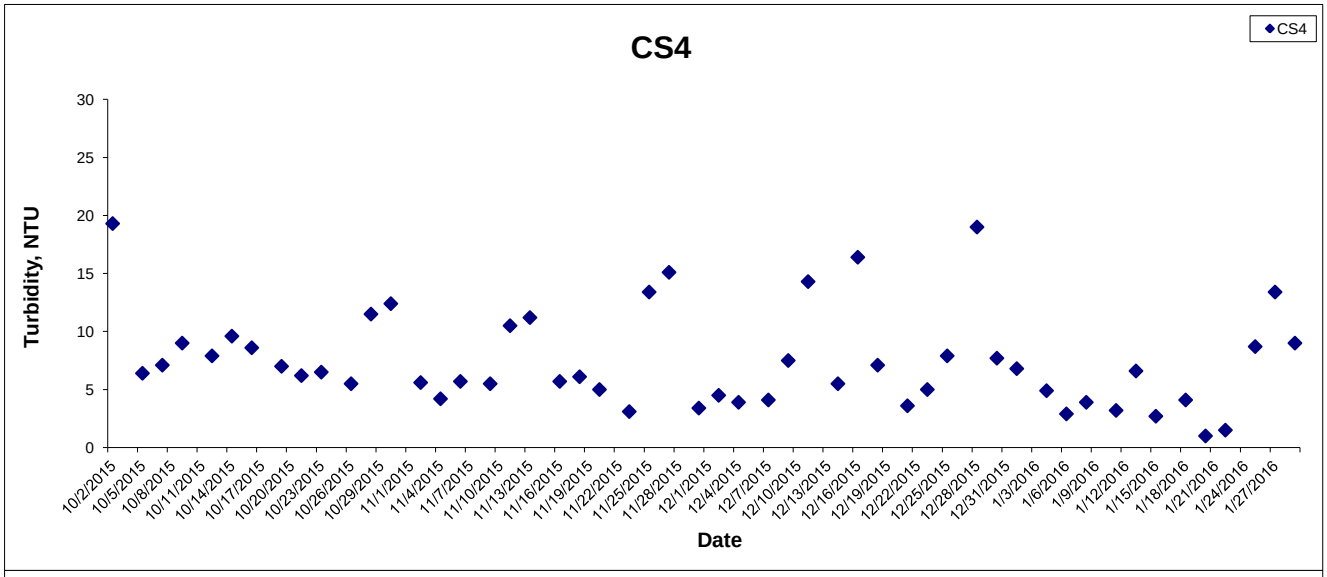
Turbidity at Mid-Ebb Tide

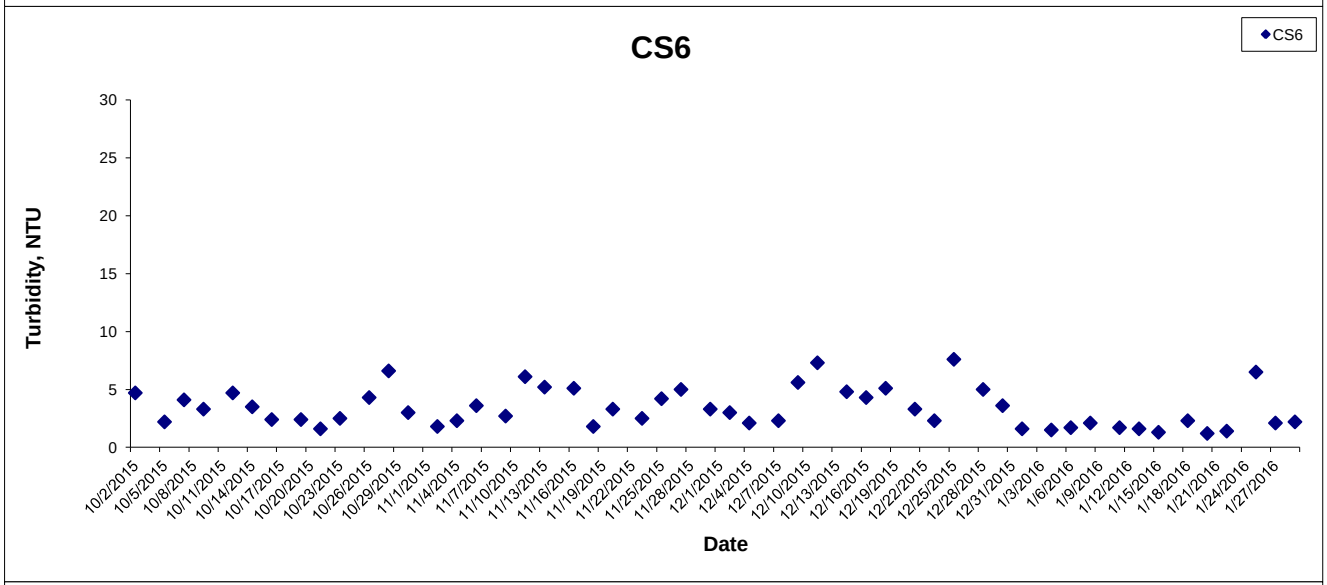


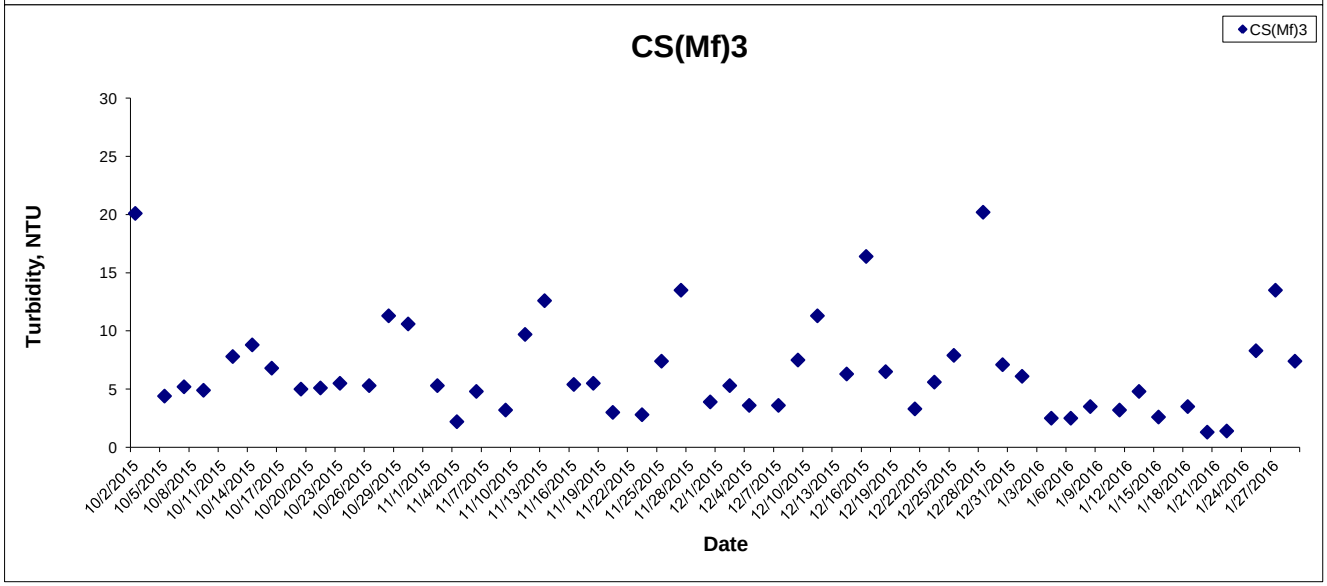




Turbidity at Mid-Flood Tide







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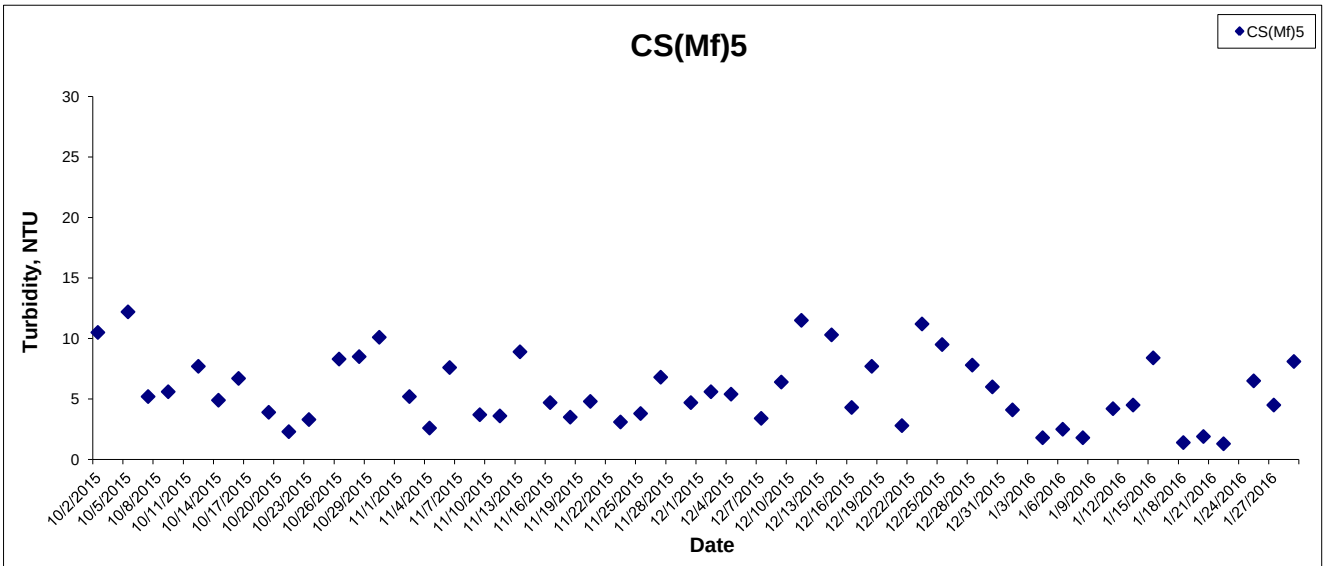

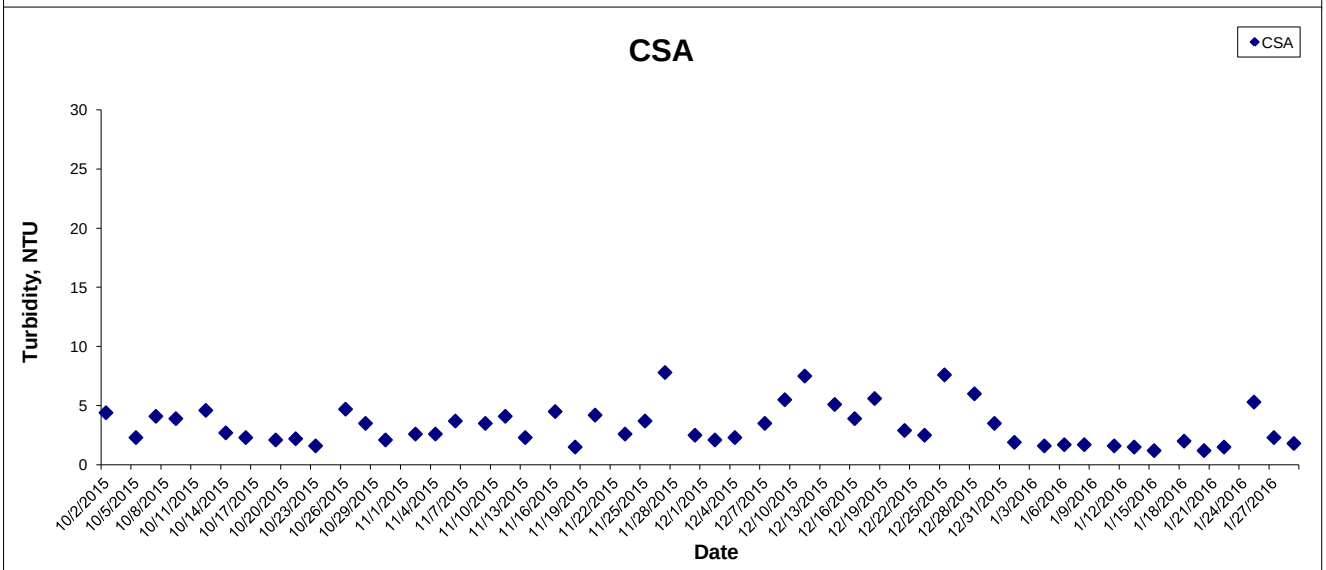

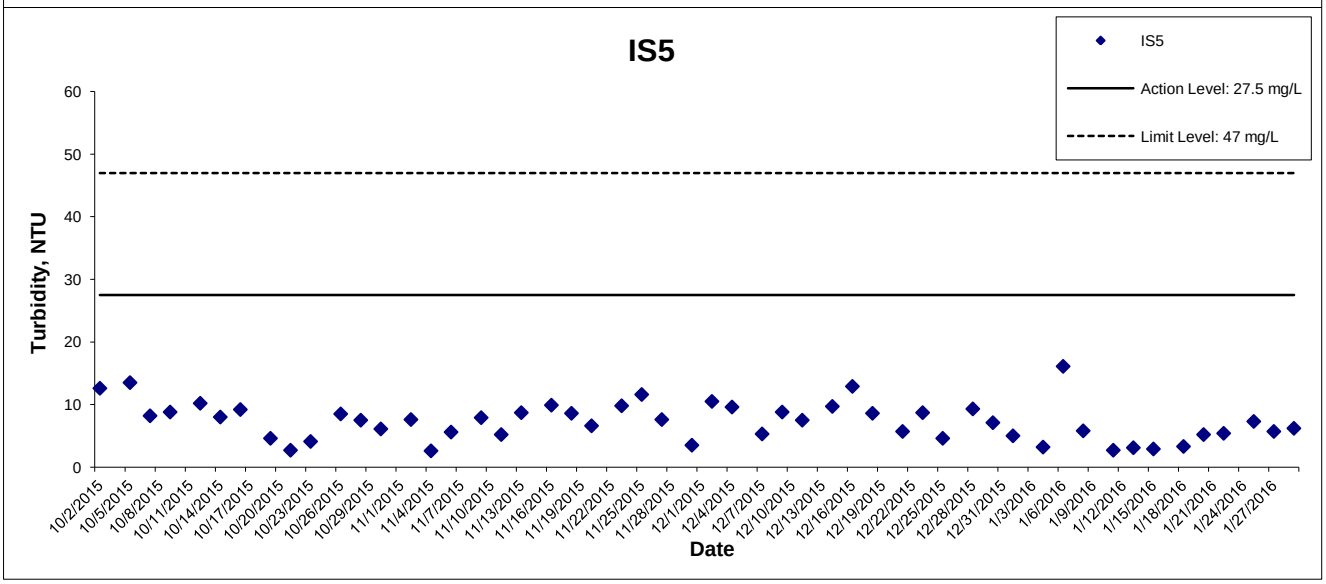

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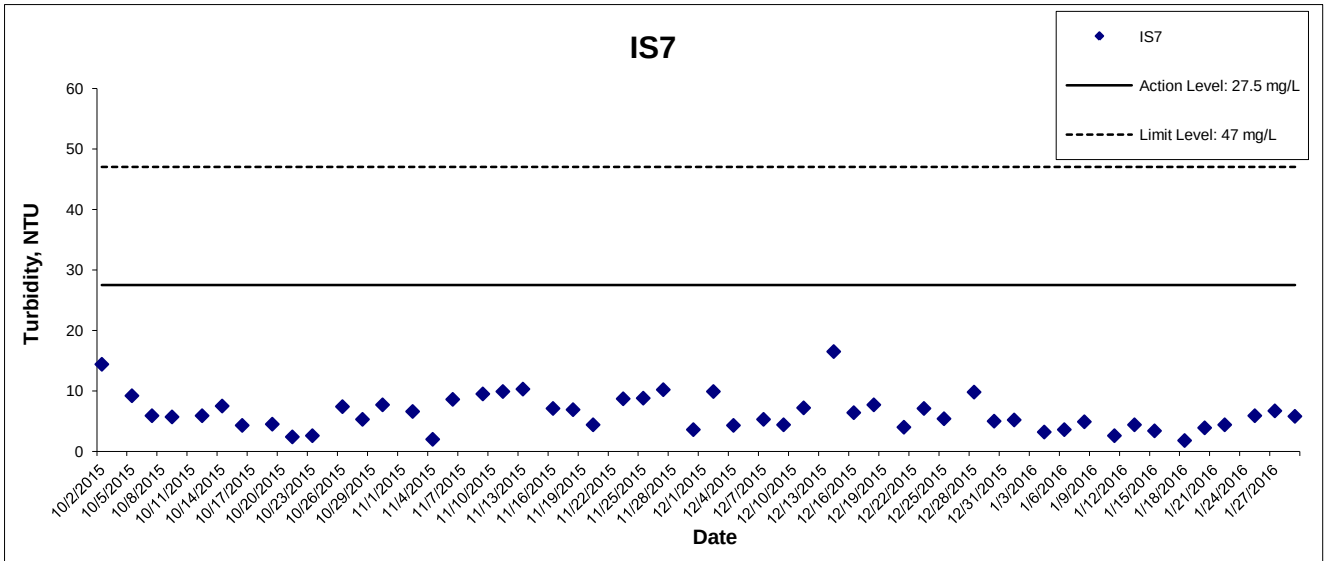
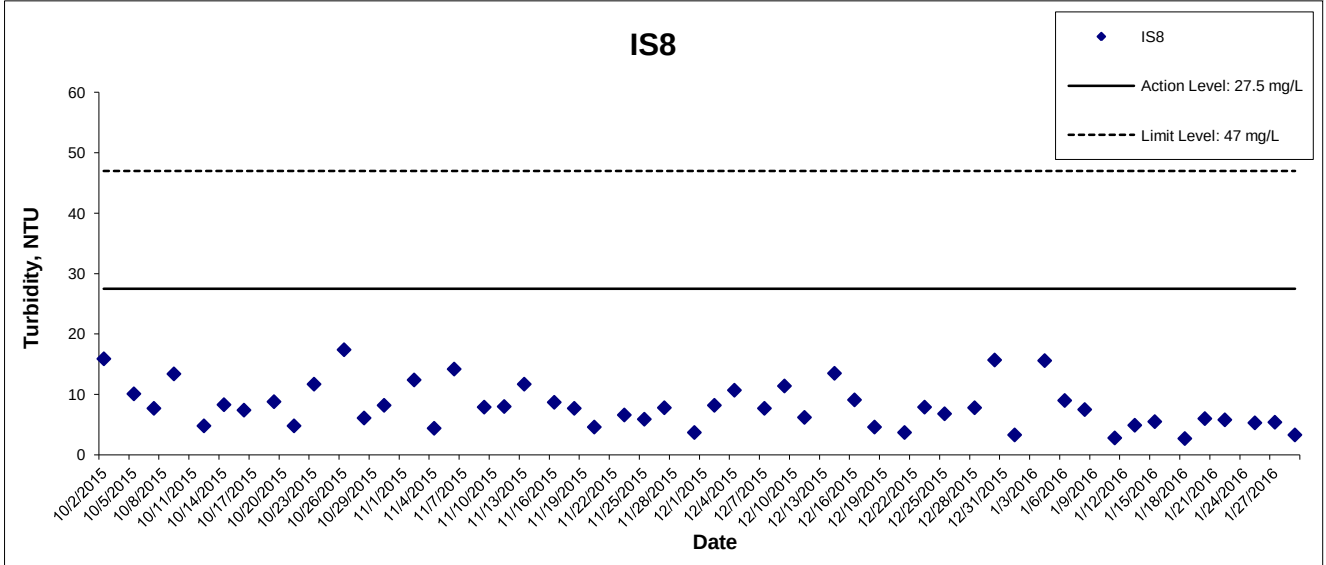
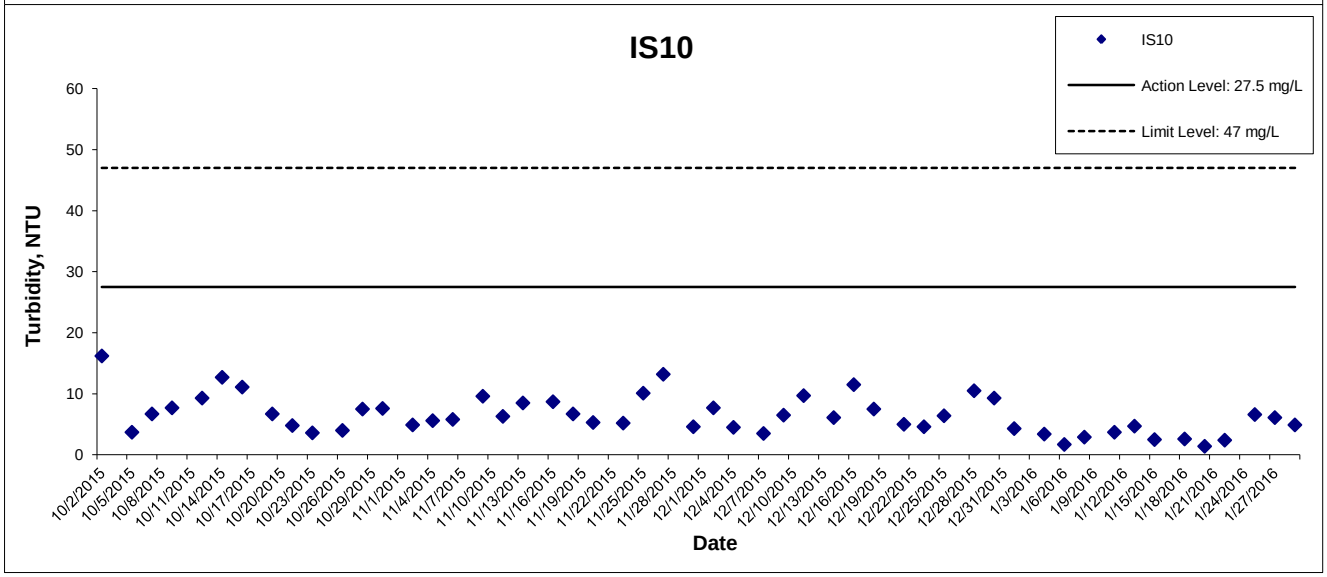
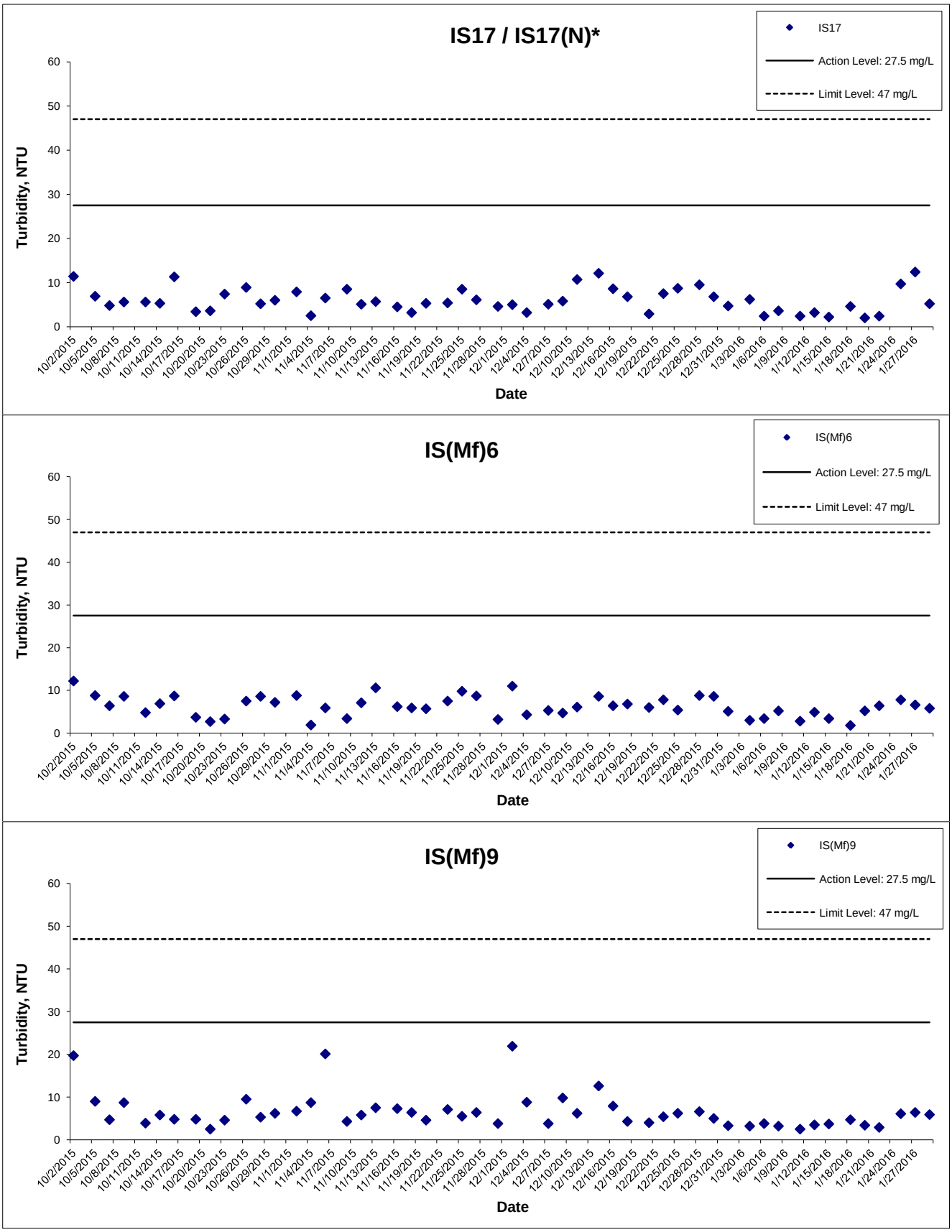


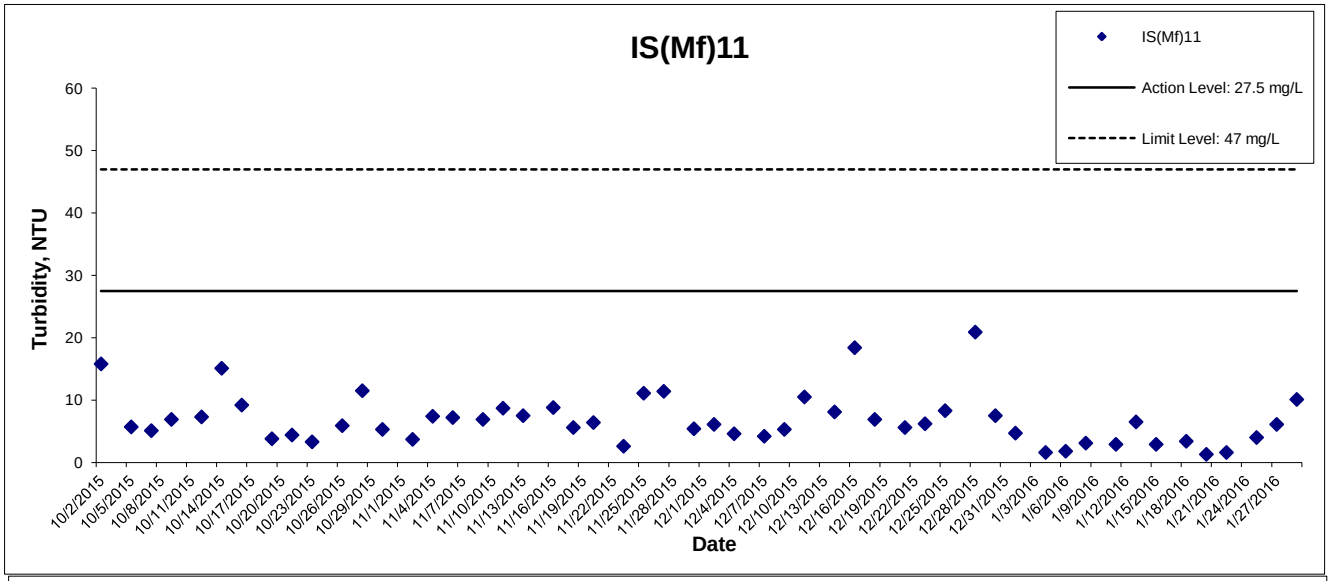


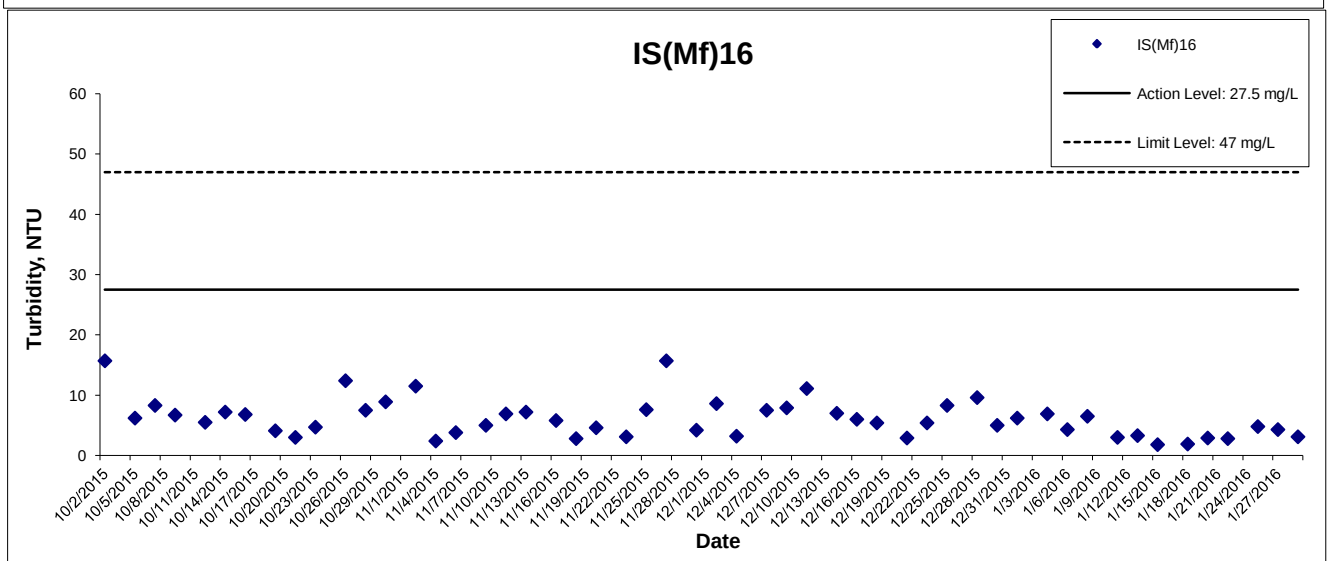


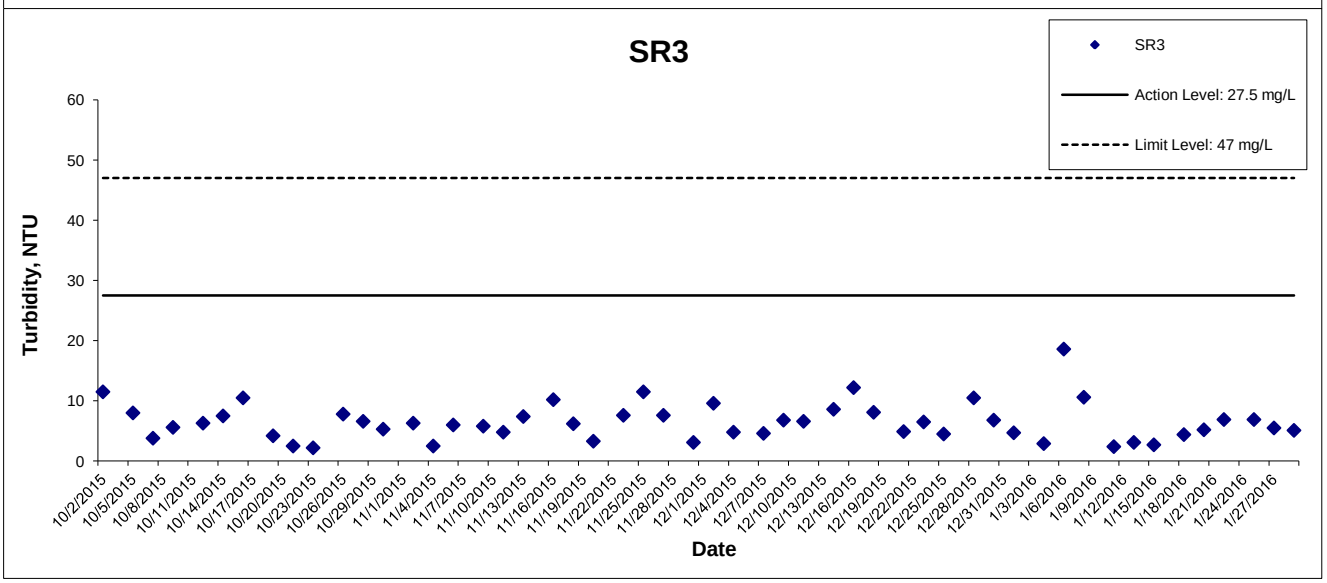
Turbidity at Mid-Flood Tide



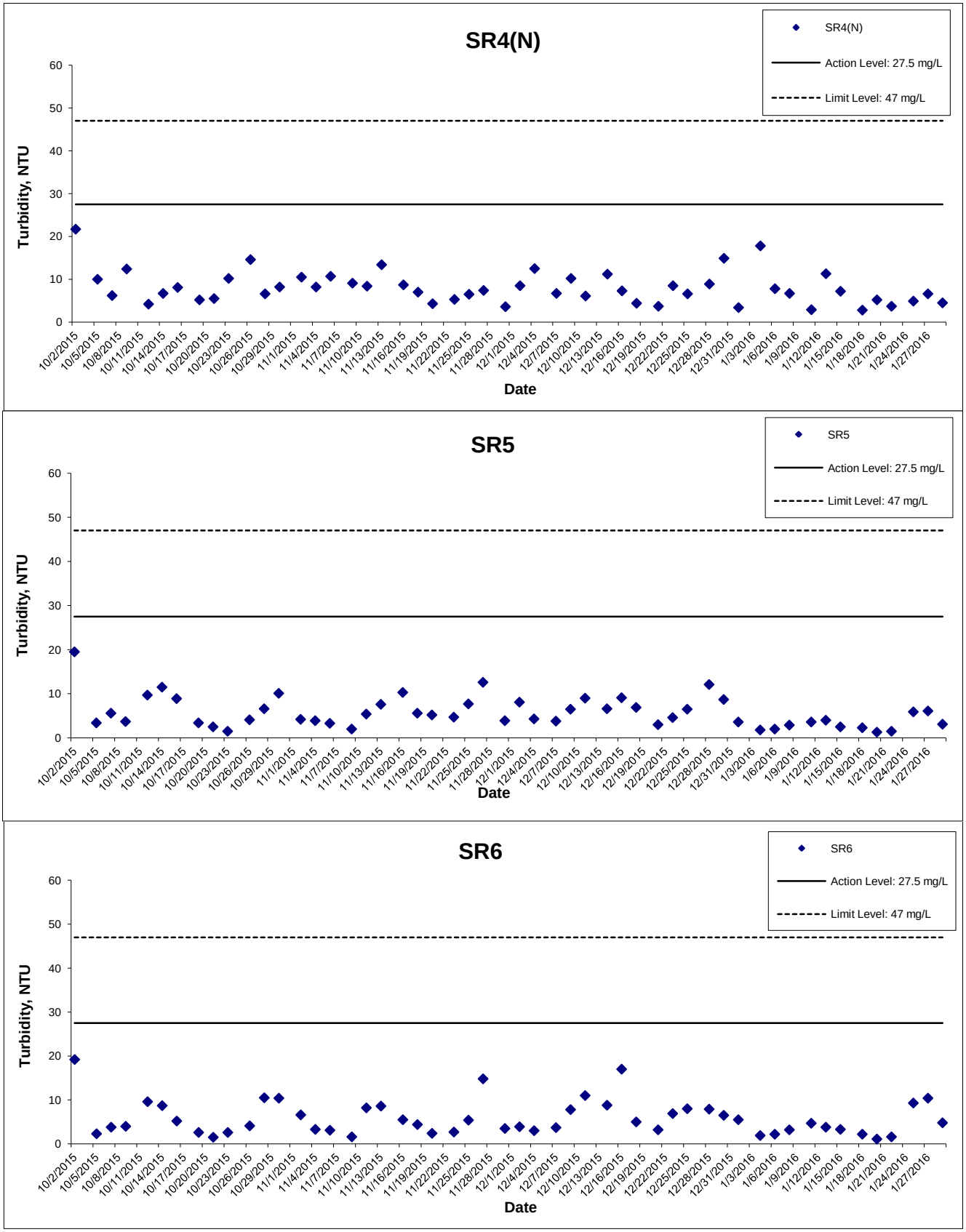
Turbidity at Mid-Flood Tide



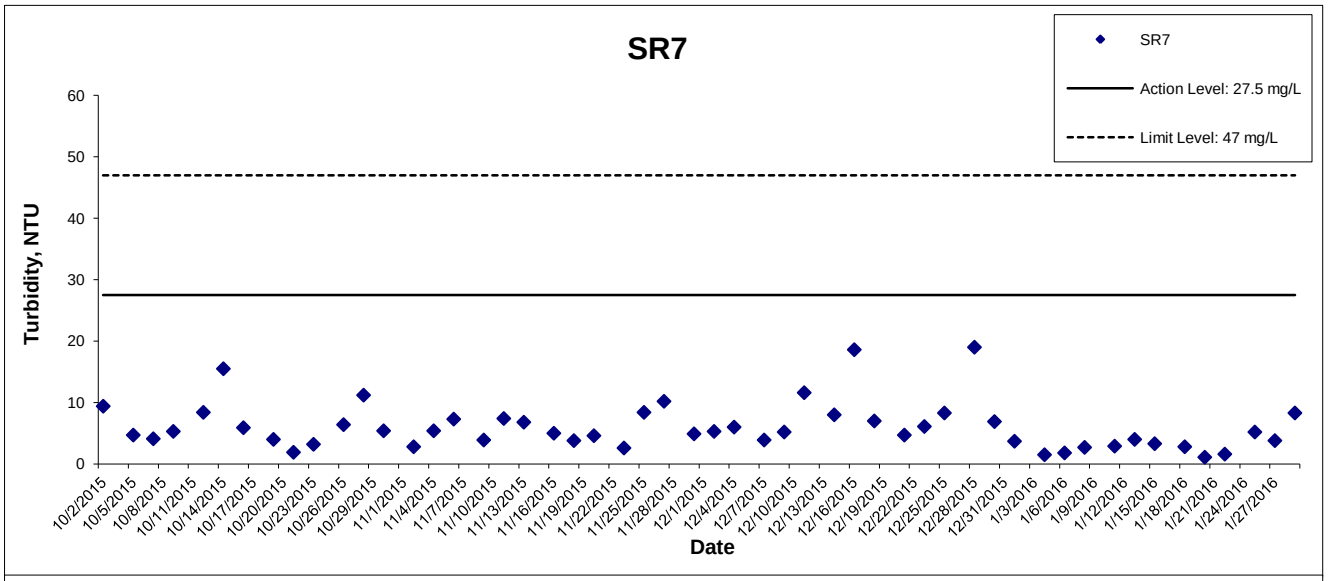


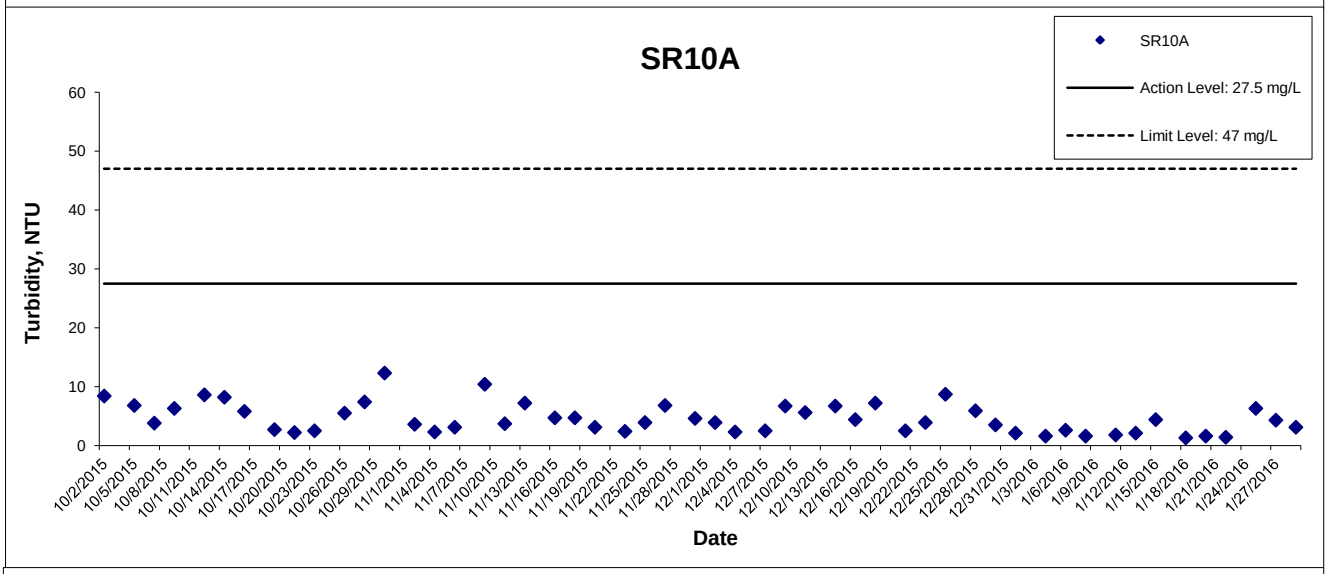


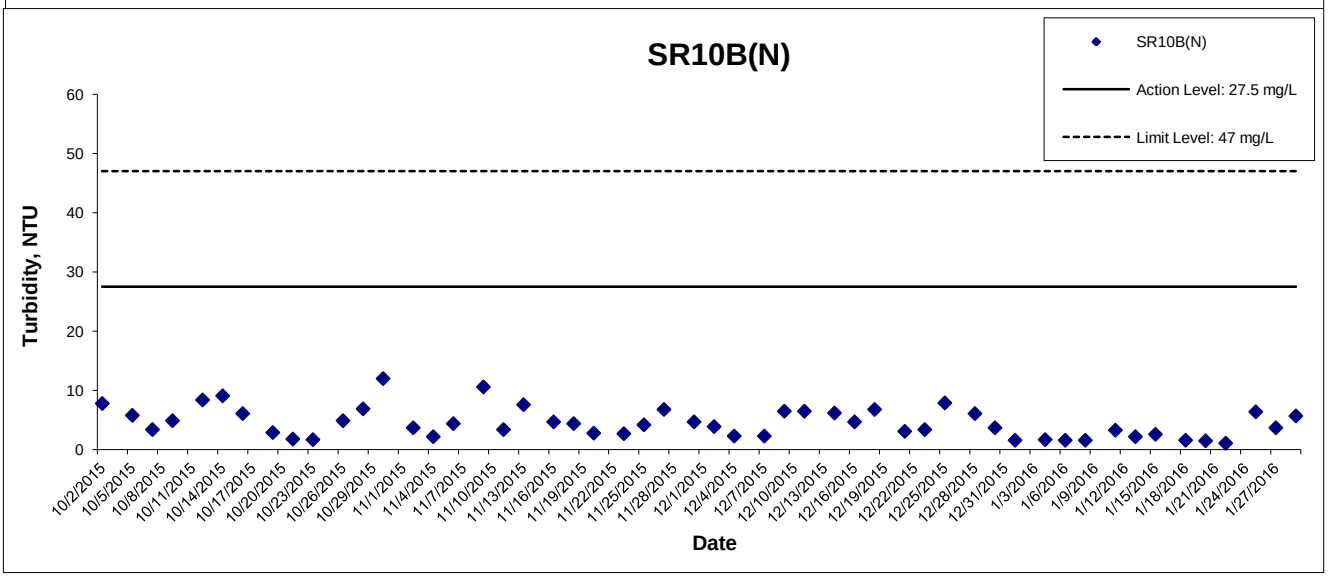
Turbidity at Mid-Flood Tide



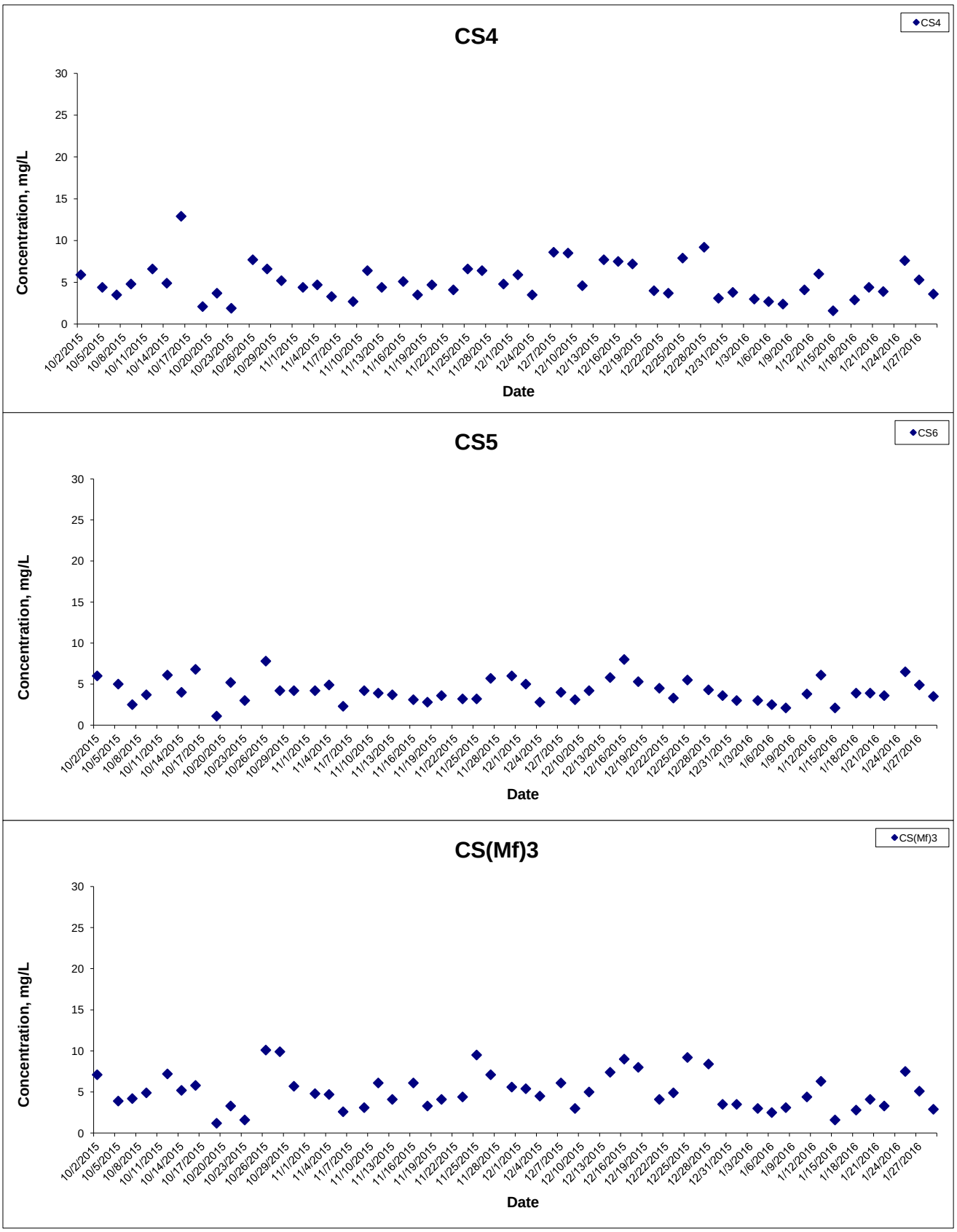
Turbidity at Mid-Flood Tide



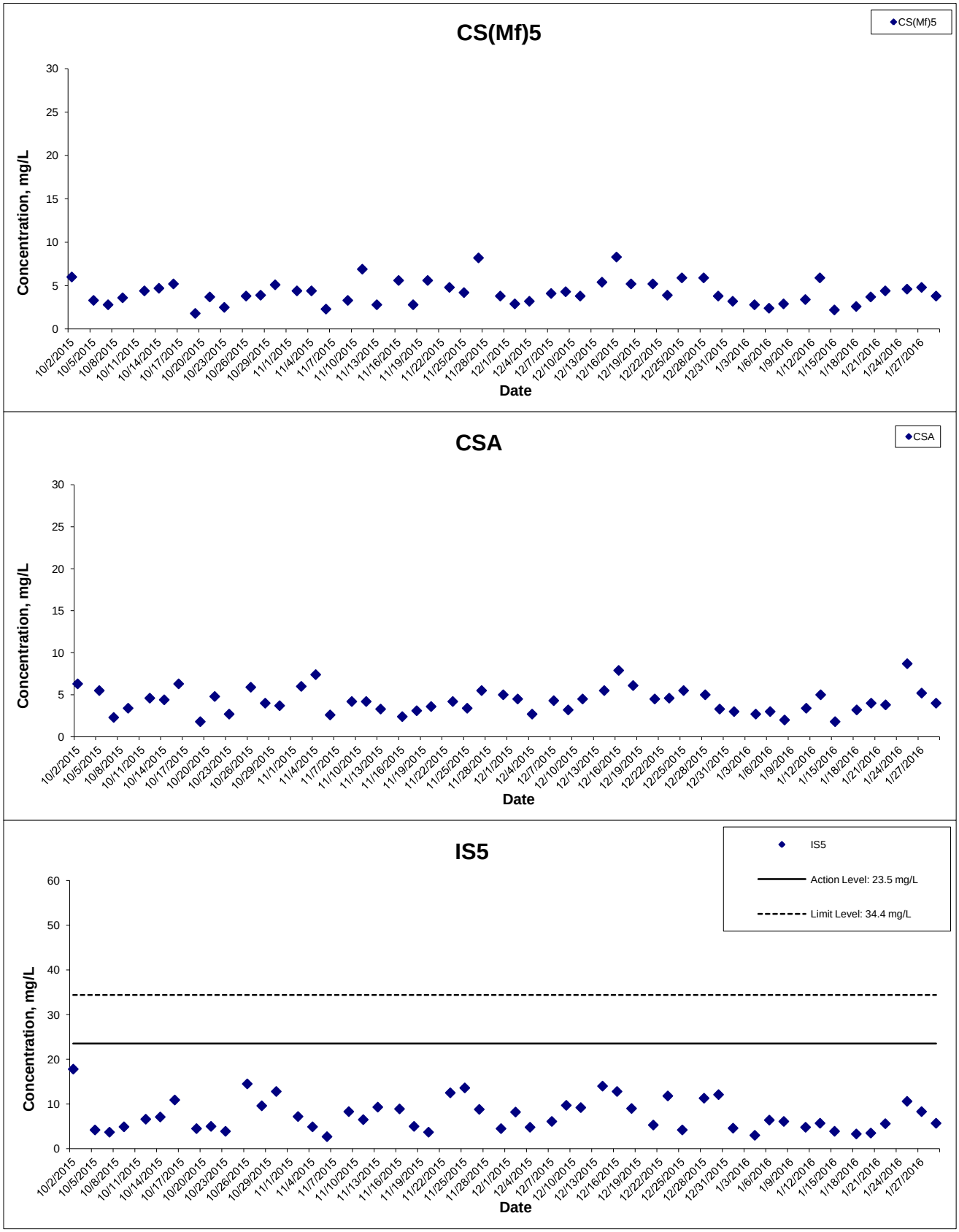




Suspended Solids at Mid-Ebb Tide



Suspended Solids at Mid-Ebb Tide

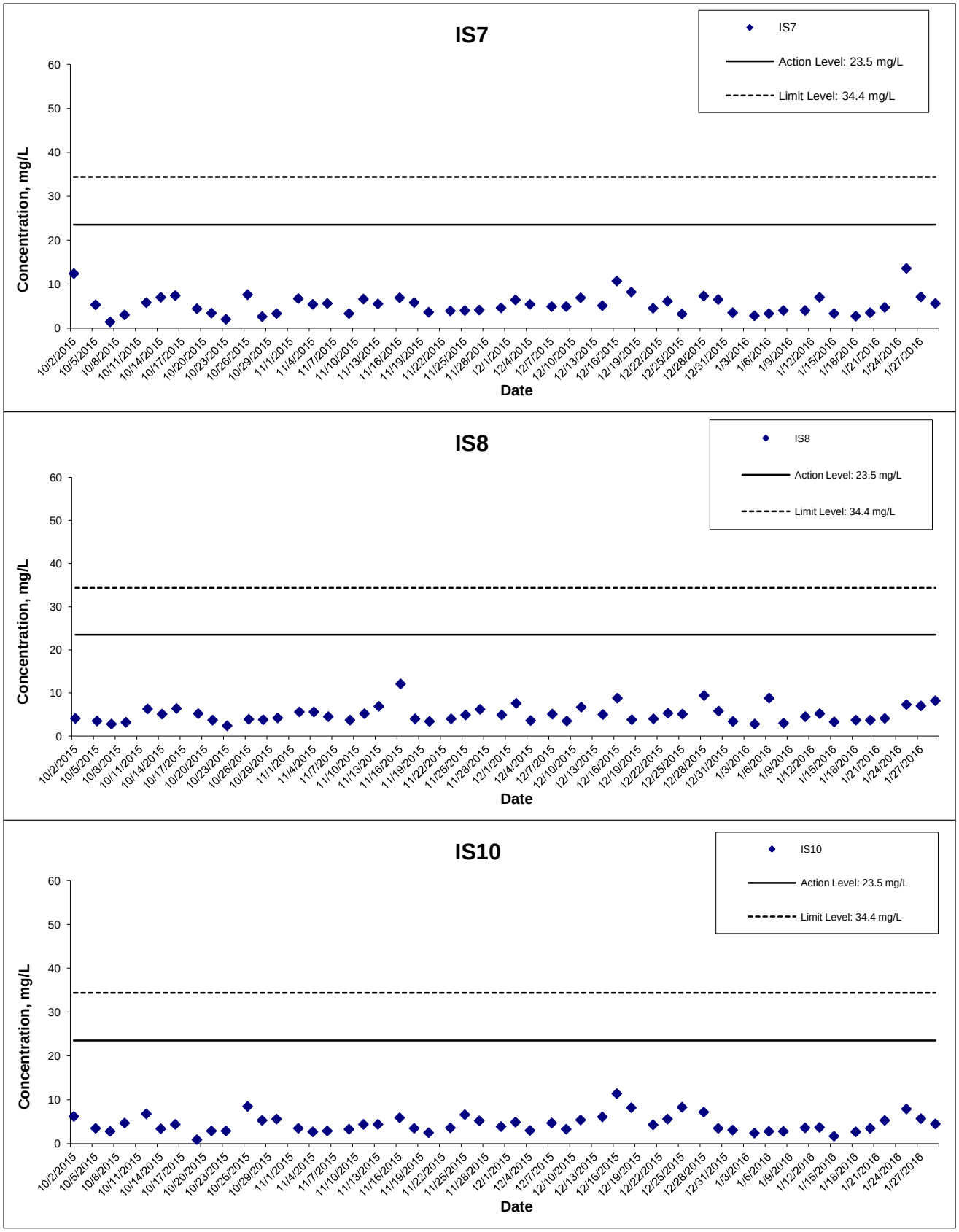


HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

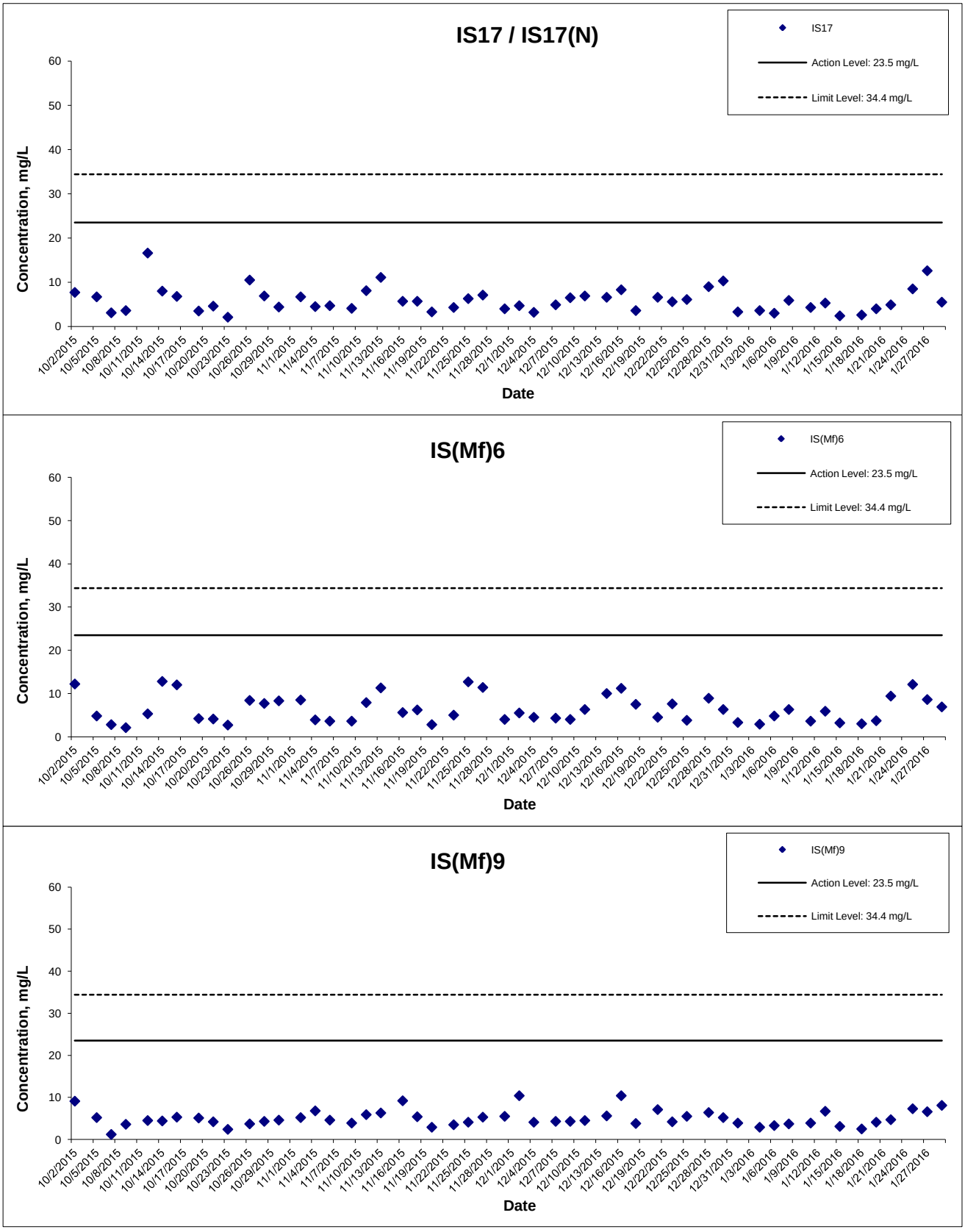
Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: February 2016** **Appendix J**

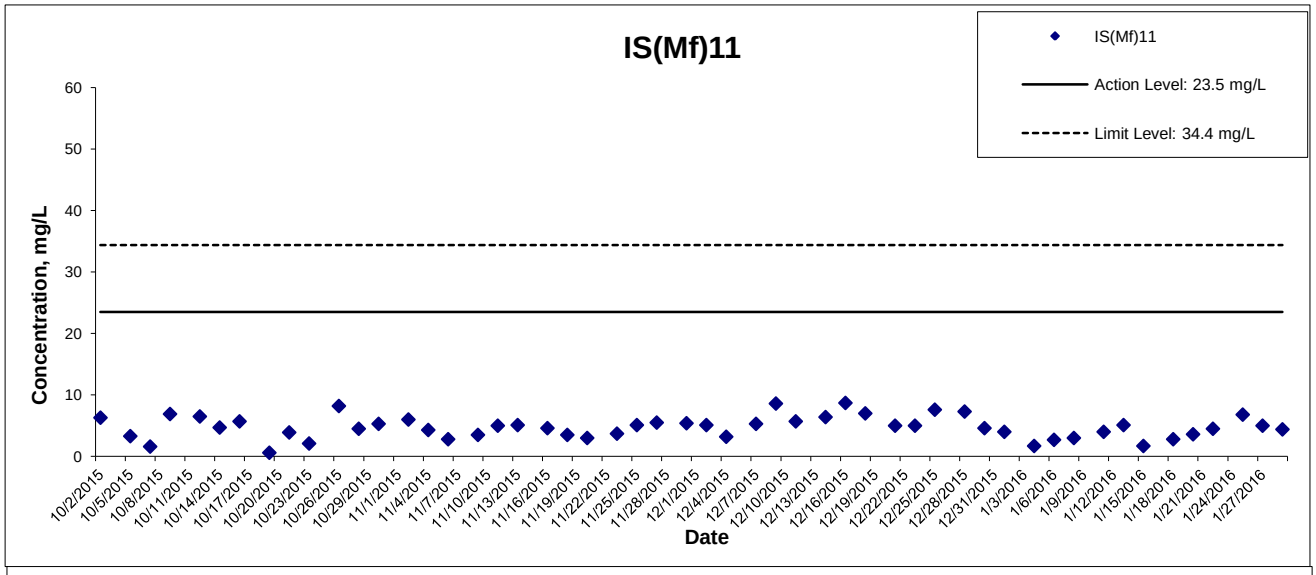
Suspended Solids at Mid-Ebb Tide

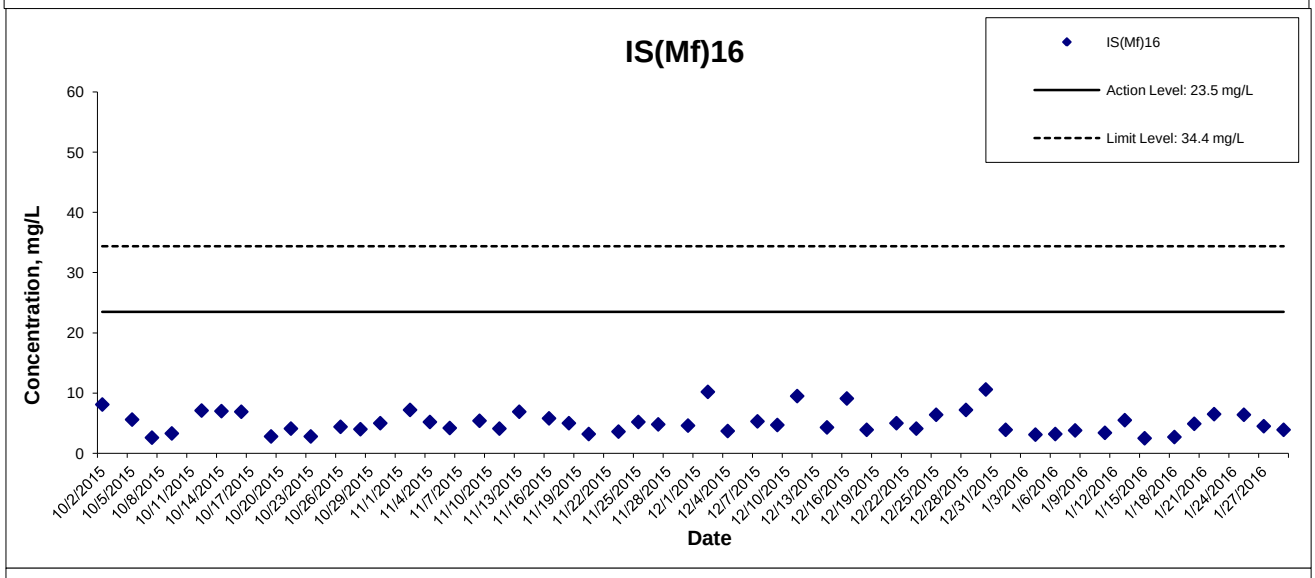


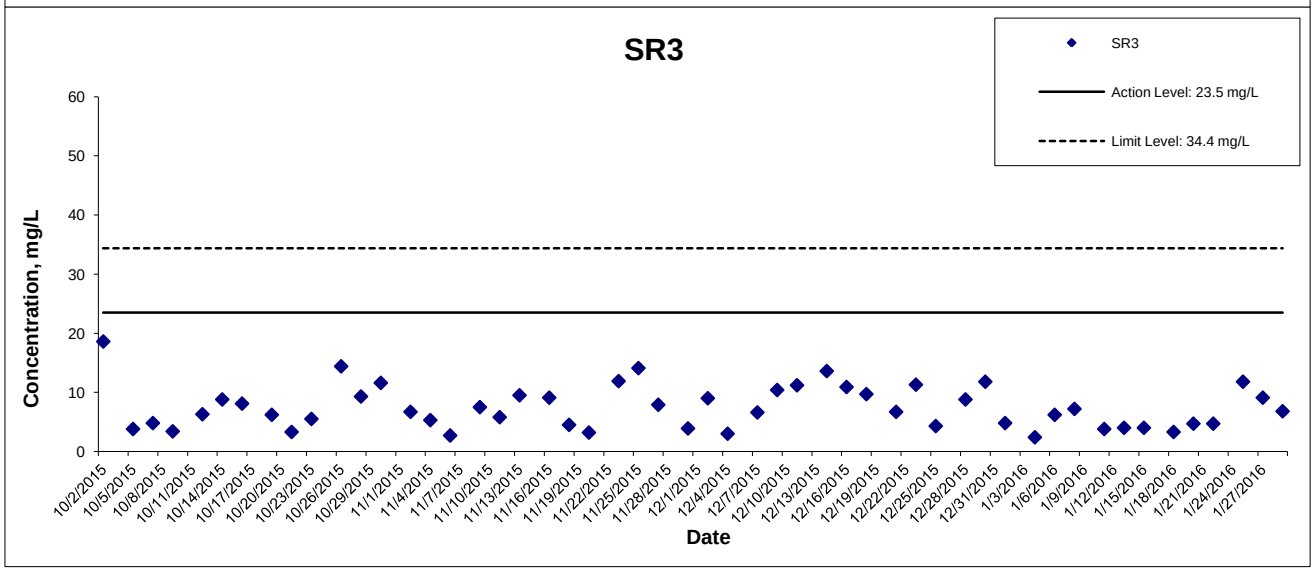
Suspended Solids at Mid-Ebb Tide



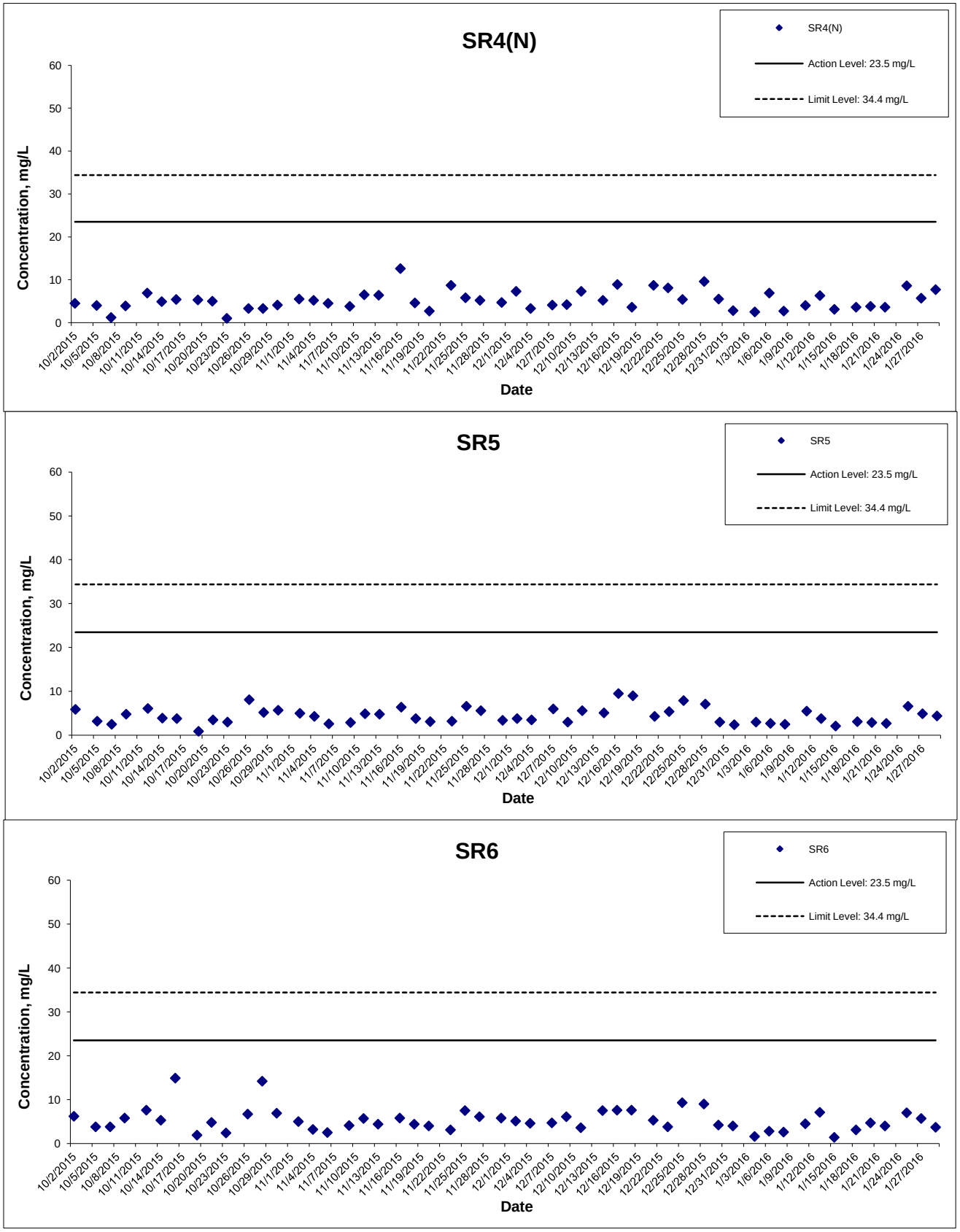
Suspended Solids at Mid-Ebb Tide







Suspended Solids at Mid-Ebb Tide



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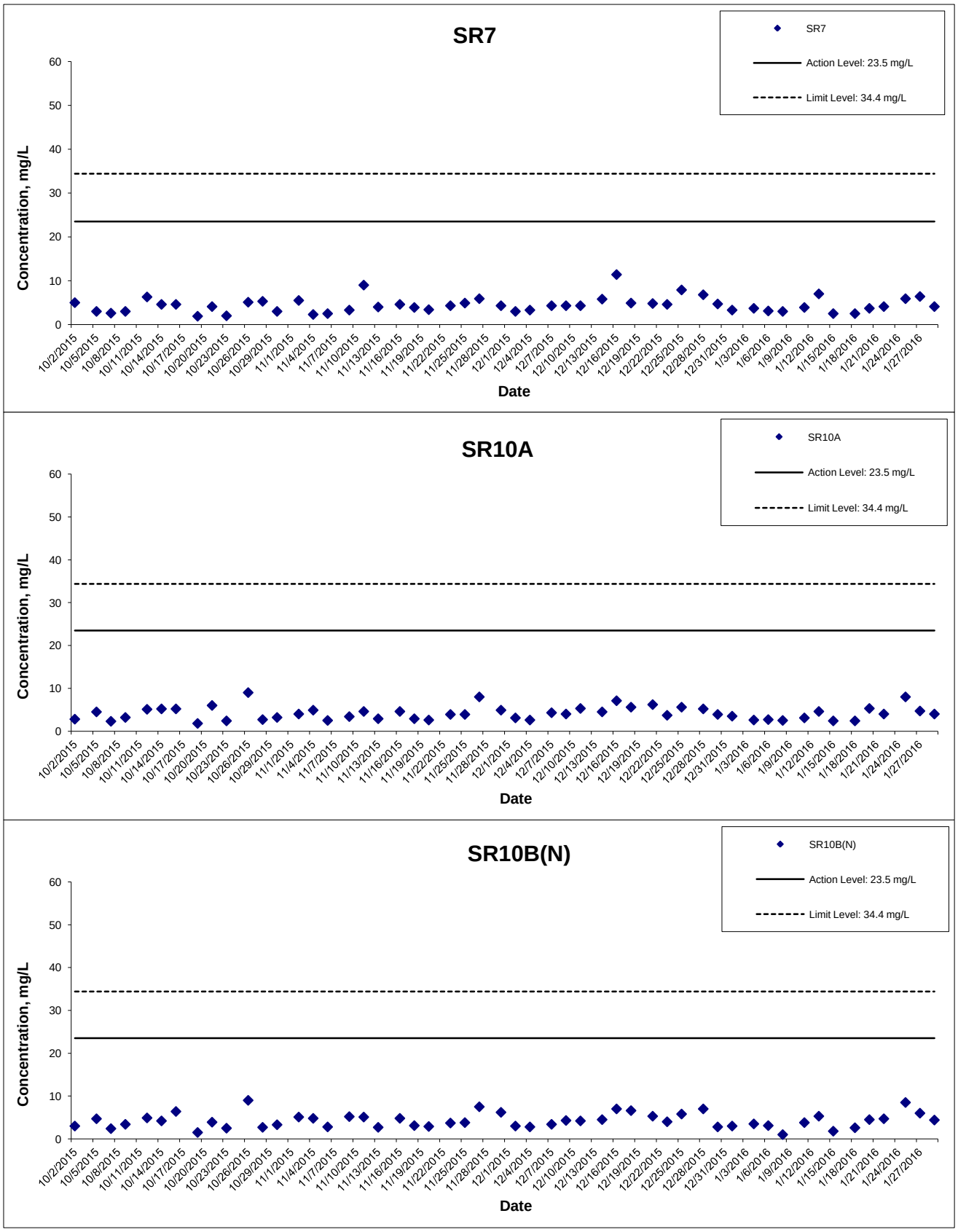
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

Graphical Presentation of Impact Water Quality Monitoring Results

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

Appendix J

Suspended Solids at Mid-Ebb Tide



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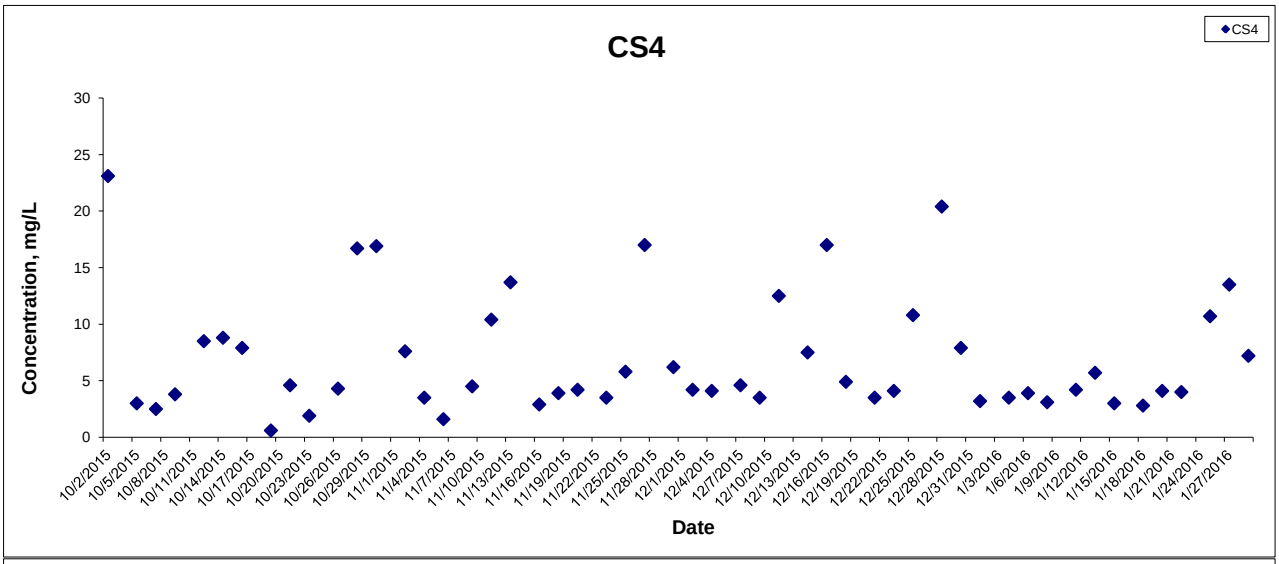
HONG KONG BOUNDARY CROSSING FACILITIES
- RECLAMATION WORKS

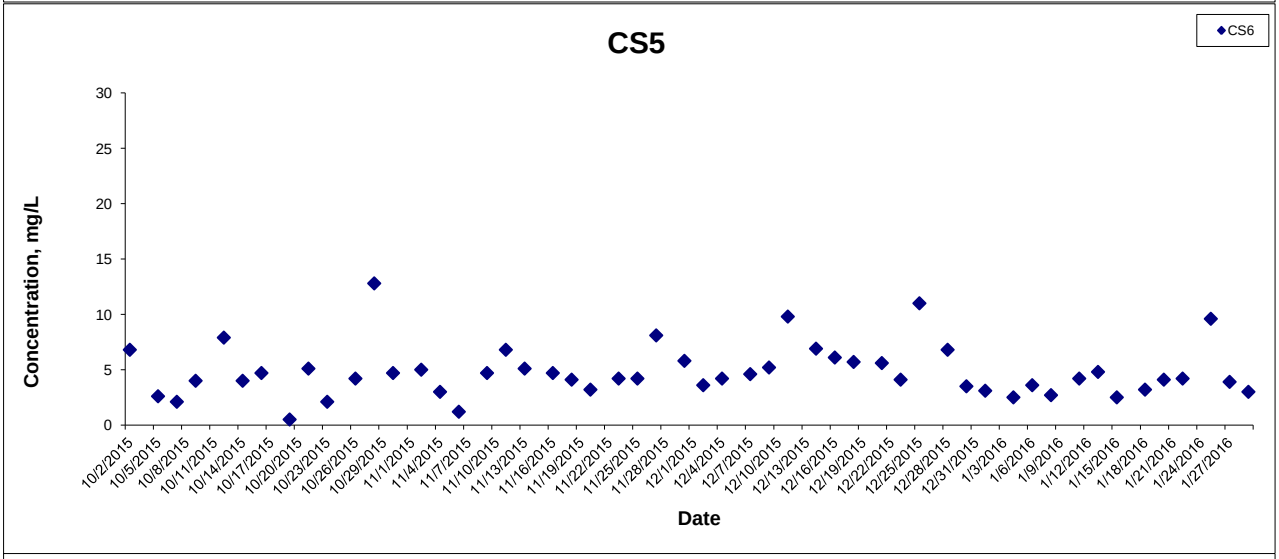
Graphical Presentation of Impact Water Quality Monitoring Results

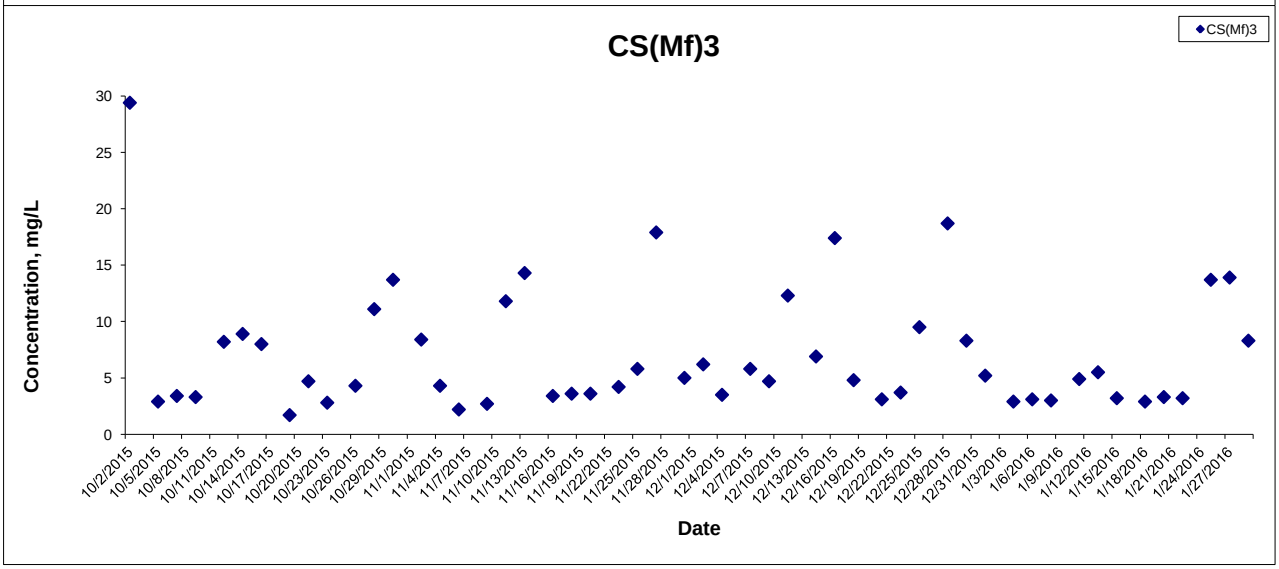
Project No.: 60249820 **Date: February 2016**

Appendix J

Suspended Solids at Mid-Flood Tide







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

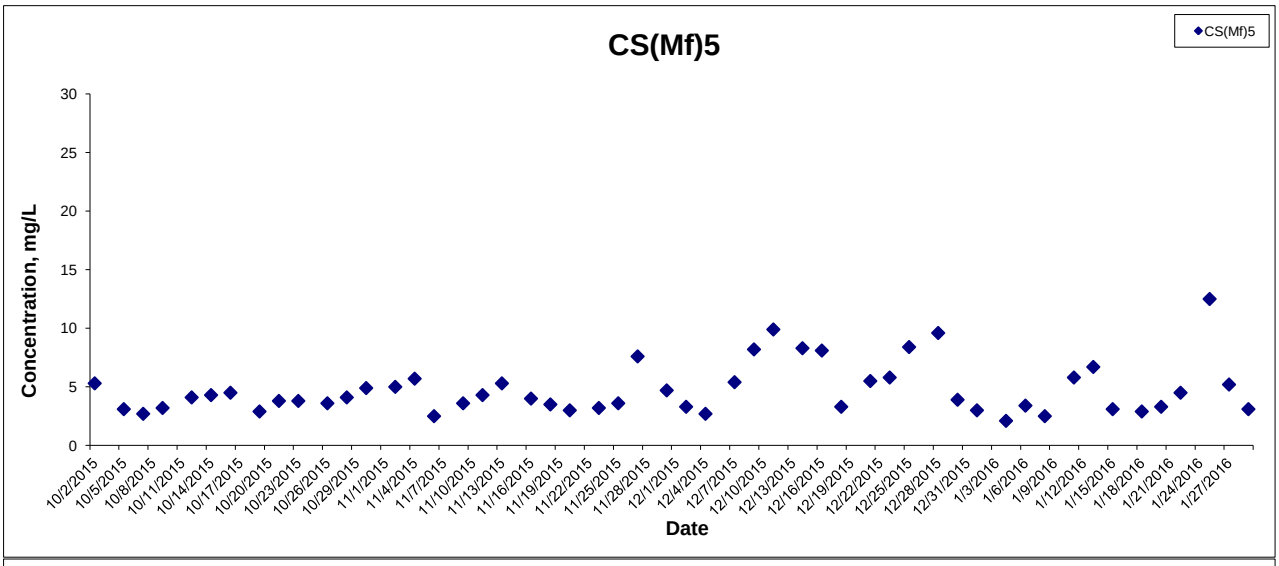
AECOM

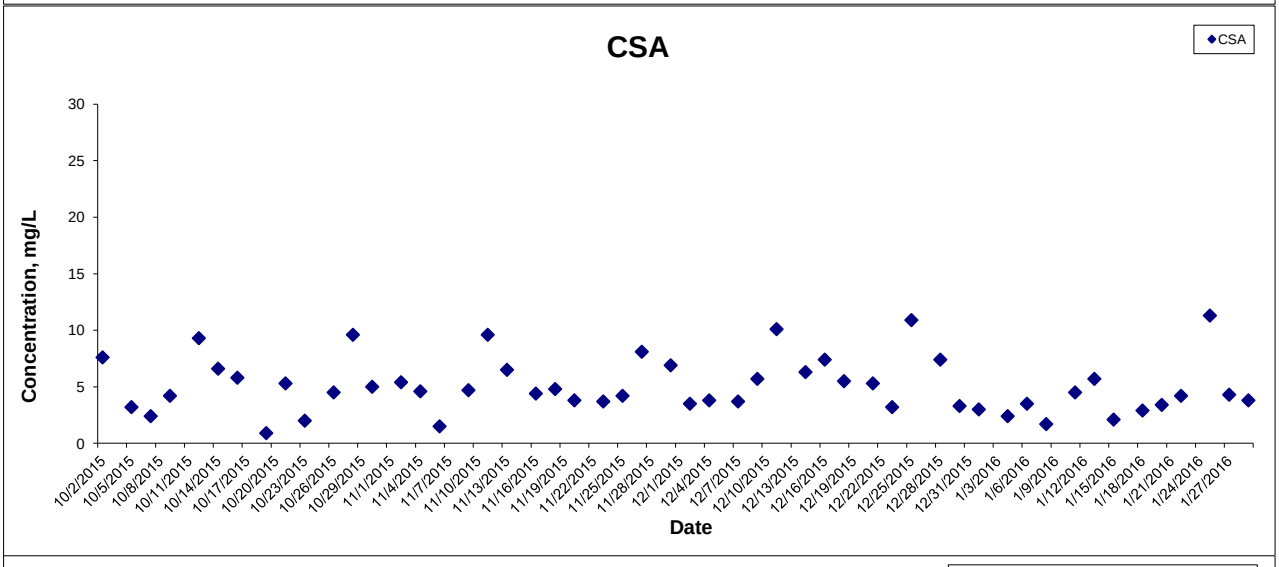
Graphical Presentation of Impact Water Quality Monitoring Results

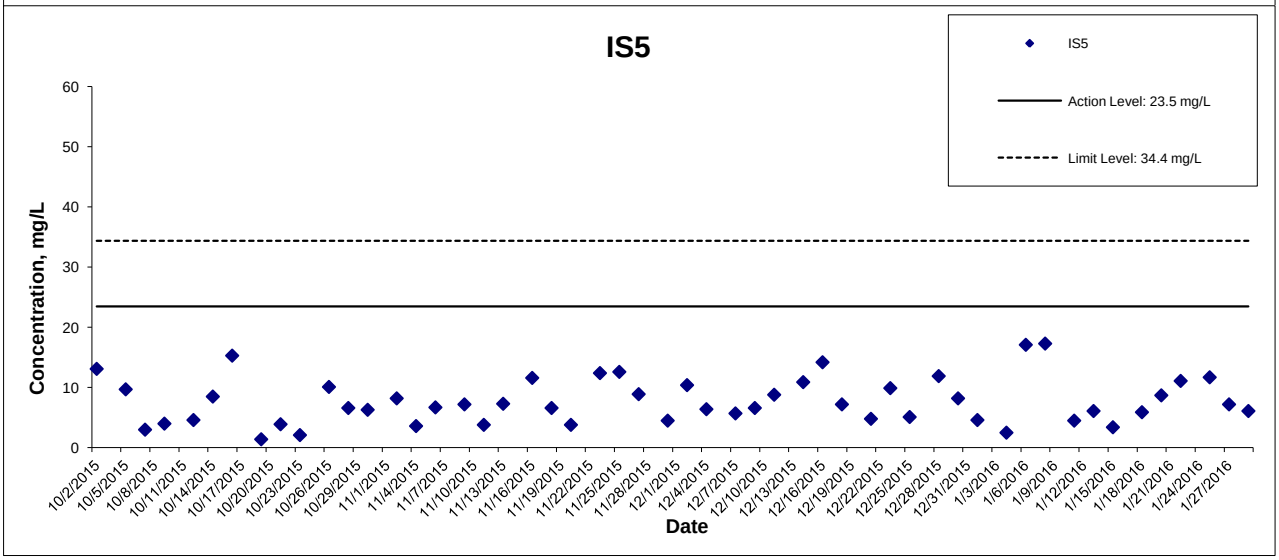
Project No.: 60249820 Date: February 2016

Appendix J

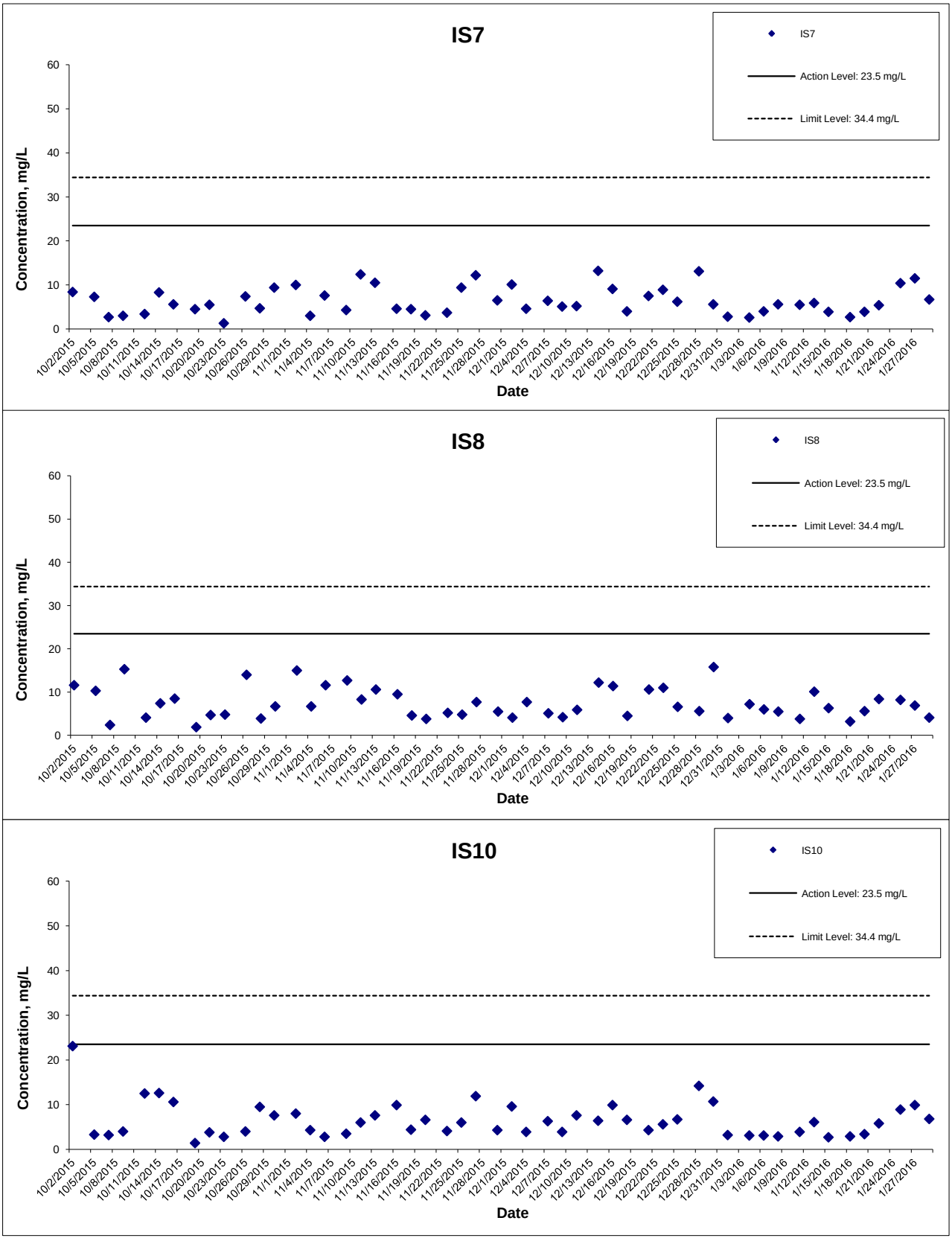
Suspended Solids at Mid-Flood Tide







Suspended Solids at Mid-Flood Tide



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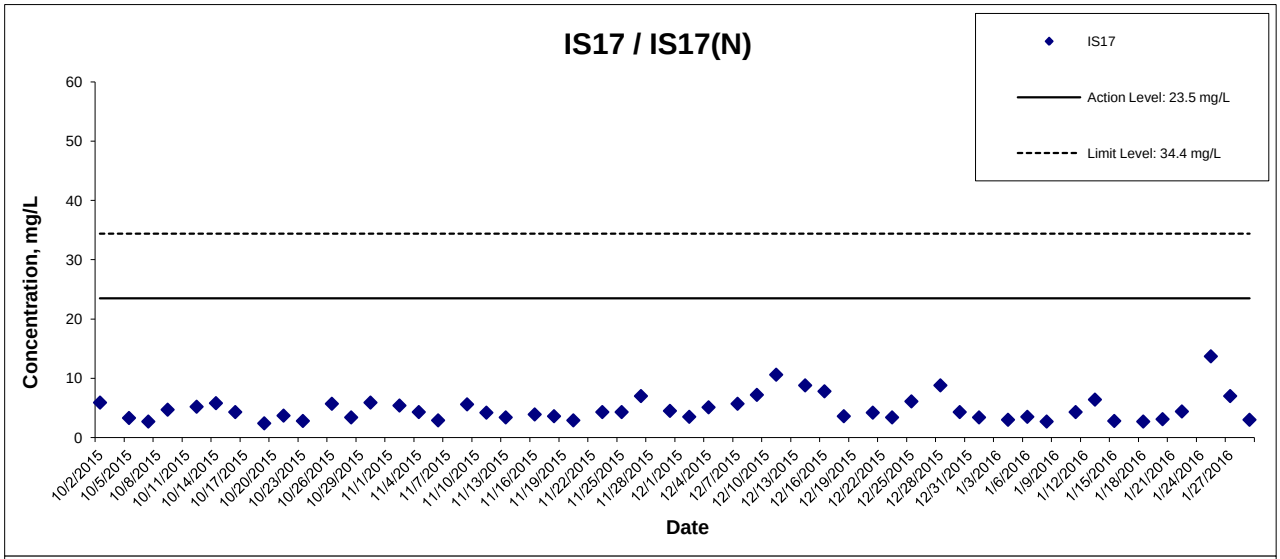
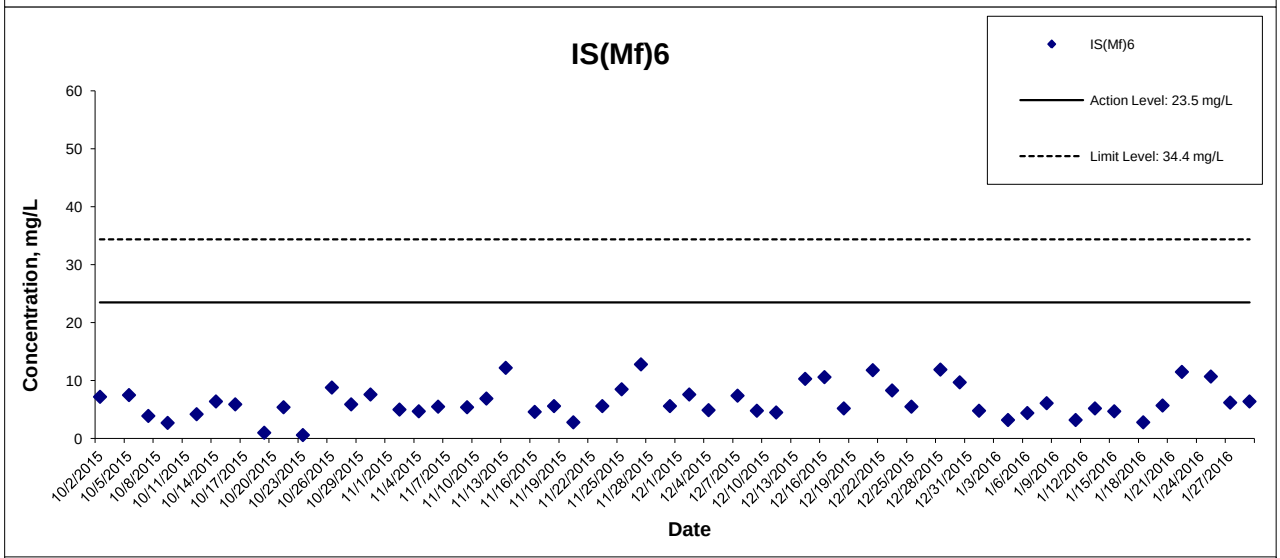
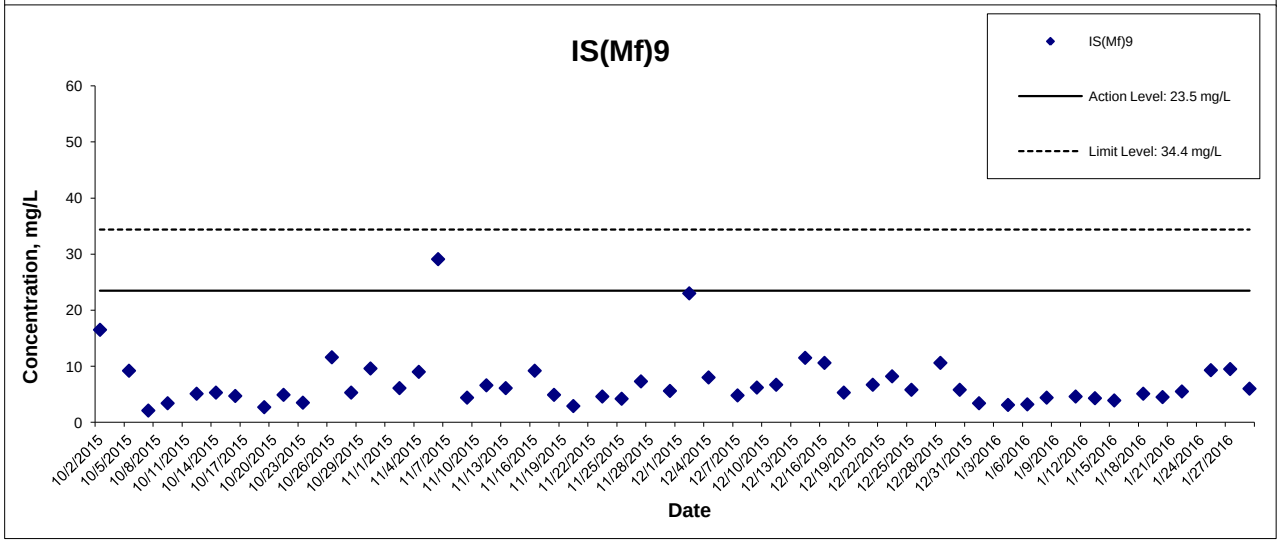
Graphical Presentation of Impact Water Quality Monitoring Results

Project No.: 60249820 **Date: February 2016** **Appendix J**

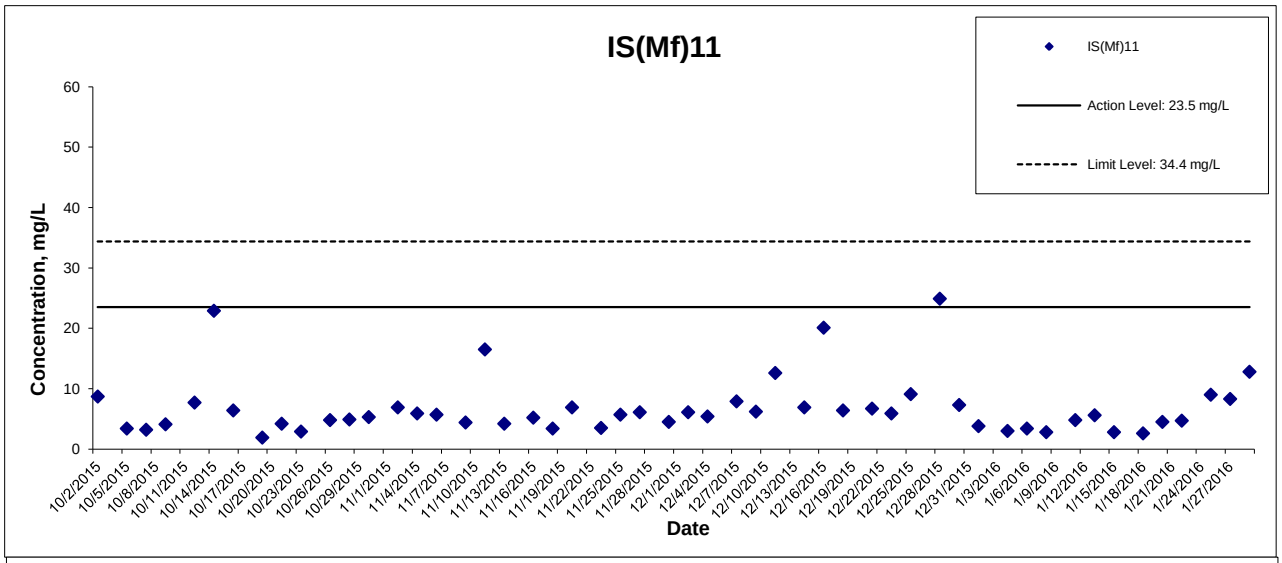
Suspended Solids at Mid-Flood Tide

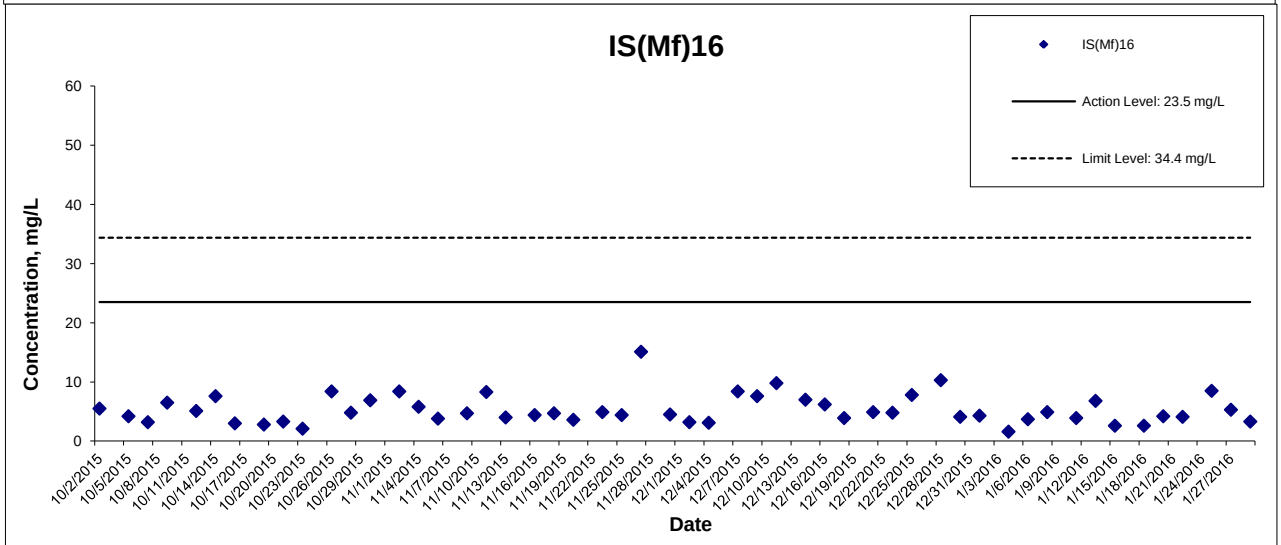


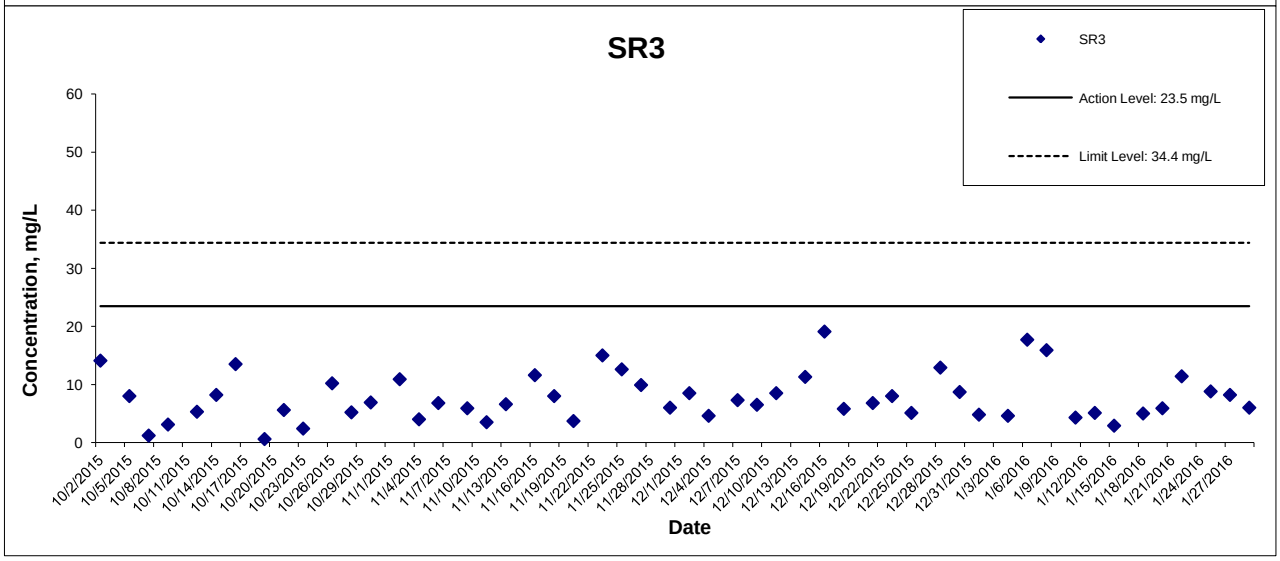




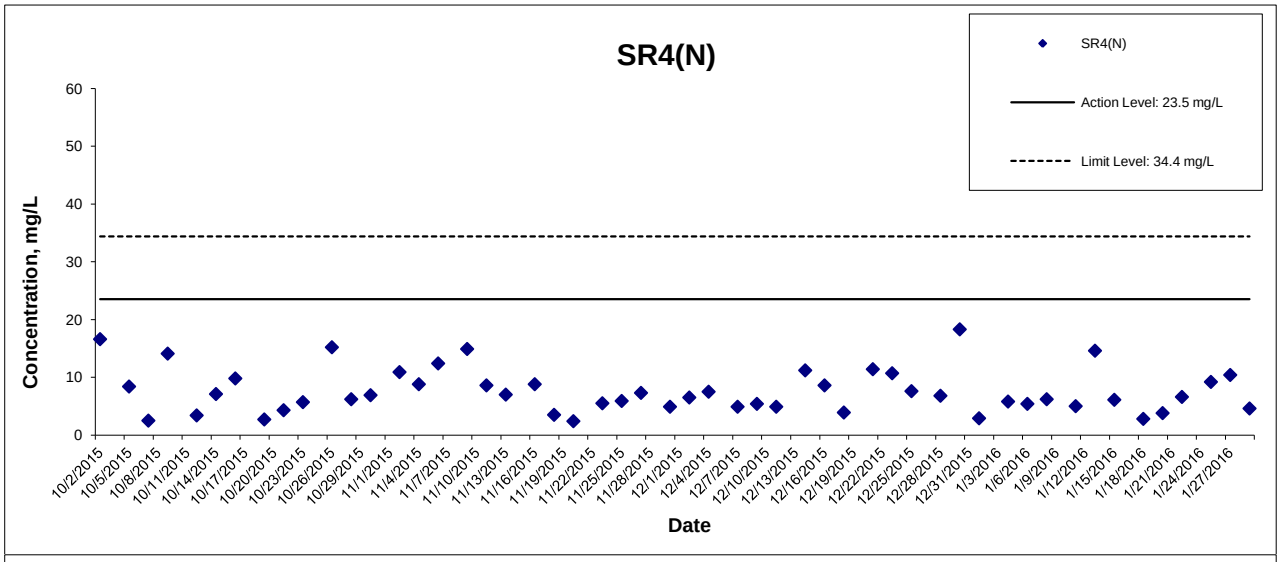
Suspended Solids at Mid-Flood Tide

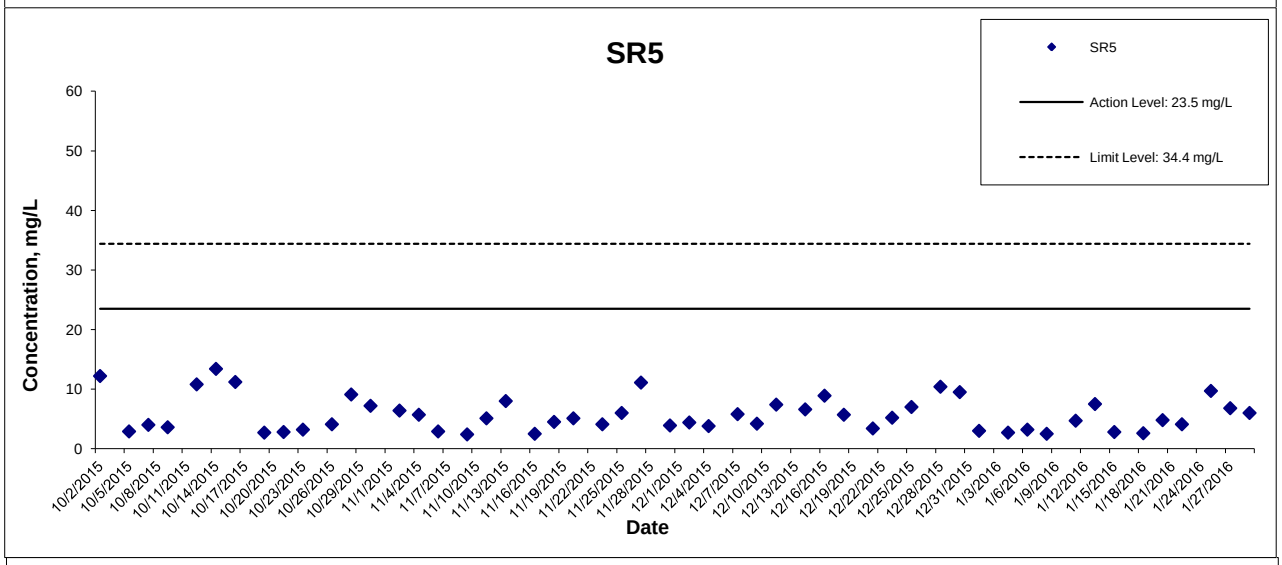


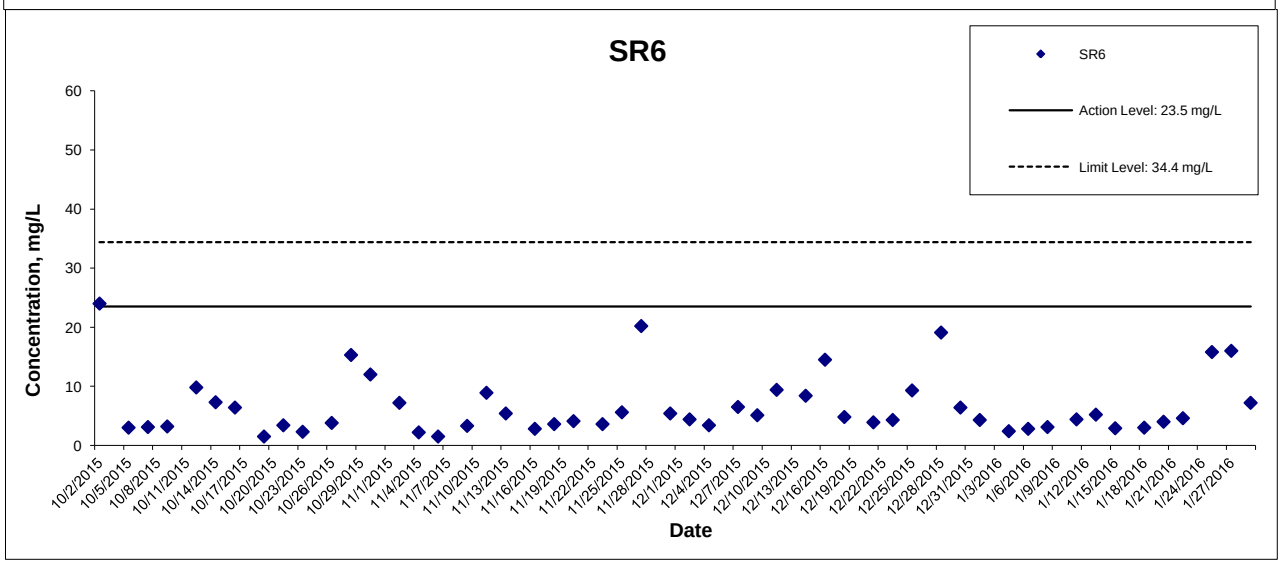




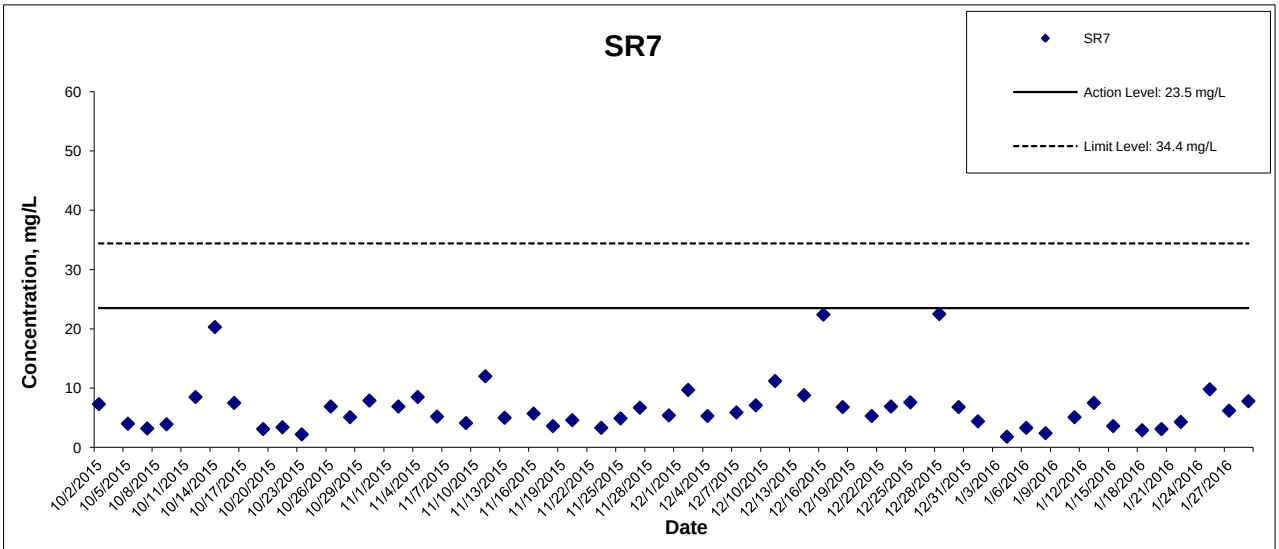
Suspended Solids at Mid-Flood Tide

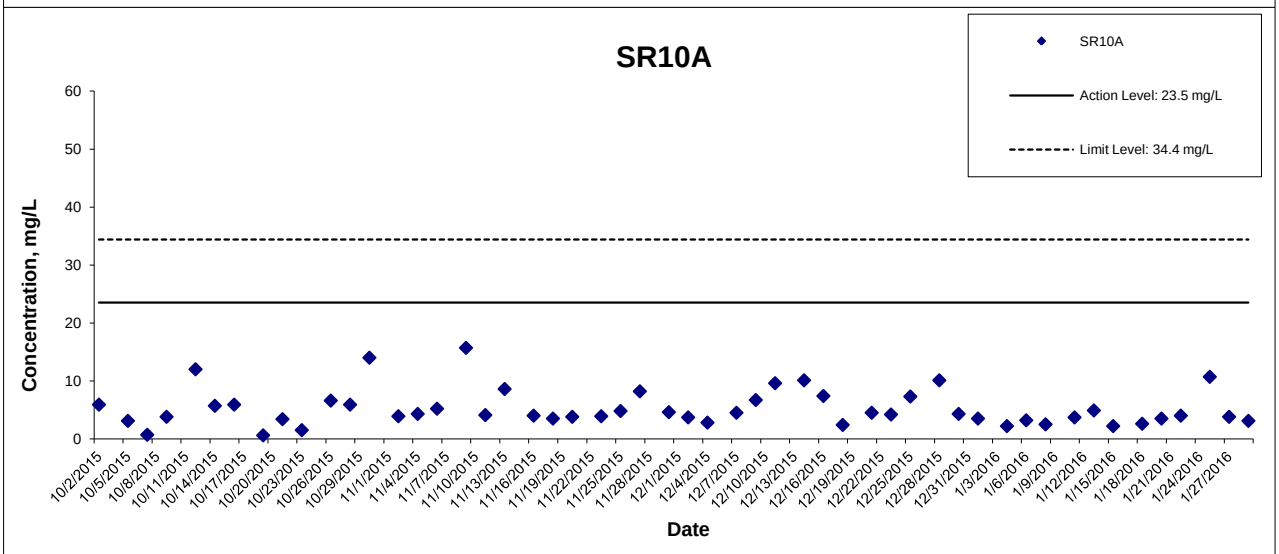


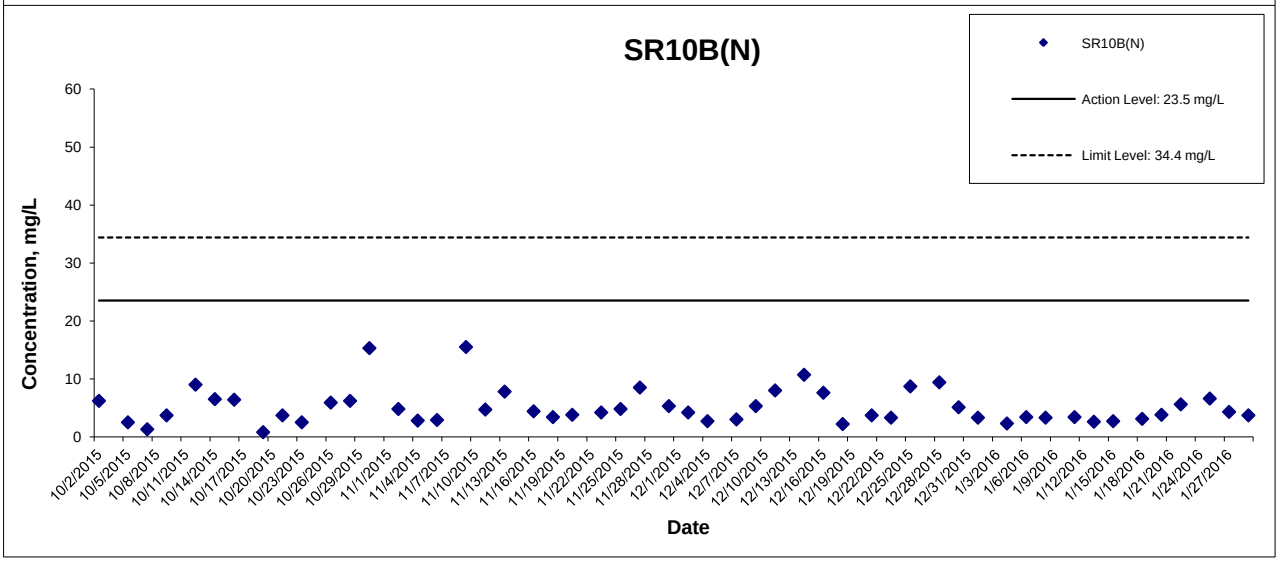




Suspended Solids at Mid-Flood Tide







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	07-Jan-16	1189	11:03:13	2	NWL	2	102	On	Impact	830701.5	805624.6	Winter	No
HKBCF	HY/2010/02	18-Jan-16	1193	12:27:56	2	NWL	1	N/A	Opp	Impact	819034.4	805457	Winter	No
HKBCF	HY/2010/02	18-Jan-16	1194	12:59:55	2	NWL	1	N/A	Opp	Impact	819289.9	806704.3	Winter	No

KEY:

Sighting Opp Opportunistic
On On effort
PSD Perpendicular Sighting Distance
Group Size Represents best estimate for group encountered
NEL North East Lantau
NWL North West Lantau
PS = Purse Seine trawler (active)
HT = Hang Trawler (not active but sorting fish and cleaning nets)

Annex I

December 2015
Photo Identification Information

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 129		2015/10/22	1156	NWL
		2015/09/07	1143	NWL
		2015/08/25	1138	NWL
HZMB 128		2015/01/03	1056	NWL
HZMB 127		2015/01/03	1056	NWL
HZMB 126		2015/02/23	1068	NWL
		2015/01/03	1054	NWL
HZMB 125		2014/10/13	1019	NWL
HZMB 124		2014/09/22	1005	NWL
HZMB 123		2014/08/25	998	NWL
HZMB 122		2015/10/22	1156	NWL
		2014/08/04	989	NWL
HZMB 121		2014/07/14	968	NWL
HZMB 120		2014/05/31	951	NWL
HZMB 119		2014/04/19	940	NWL
HZMB 118		2014/01/06	890	NWL
HZMB 117		2014/06/17	964	NWL
		2014/01/06	888	NWL
HZMB 116		2014/08/25	999	NWL
HZMB 115		2014/07/14	972	NWL
		2014/07/14	971	NWL
		2013/12/26	879	NWL
		2013/12/26	879	NWL
HZMB 114		2015/11/05	1162	NWL
		2013/10/24	827	NWL
HZMB 113		2013/10/24	827	NWL
HZMB 112		2013/10/15	815	NWL
HZMB 111		2013/10/15	815	NWL
HZMB 110		2013/10/15	812	NWL
HZMB 108		2015/06/11	1118	NWL
		2013/08/30	780	NEL
HZMB 107		2015/07/28	1126	NWL
		2014/10/13	1019	NWL
		2014/05/31	951	NWL
		2013/08/21	770	NWL
HZMB 106		2013/08/21	769	NWL
HZMB 105		2014/05/31	951	NWL
		2013/07/08	711	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 104		2013/07/08	711	NWL
HZMB 103		2013/07/08	711	NWL
HZMB 102		2013/07/08	706	NWL
HZMB 101		2013/07/08	706	NWL
HZMB 100		2013/07/08	706	NWL
HZMB 099		2013/06/13	681	NWL
		2013/06/13	680	NWL
HZMB 098	NL104	2015/02/23	1077	NWL
		2014/12/18	1044	NWL
		2014/08/04	992	NWL
		2014/01/06	888	NWL
		2013/11/02	849	NWL
		2013/11/02	845	NWL
		2013/10/24	831	NWL
		2013/07/08	711	NWL
		2013/05/24	659	NWL
		2011/11/07	Baseline	NWL
		2011/11/05	Baseline	NWL
		2011/11/05	Baseline	NWL
		2011/11/02	Baseline	NWL
		2011/10/28	Baseline	NWL
		2011/09/23	Baseline	NWL
		2011/09/16	Baseline	NWL
HZMB 097		2013/05/09	647	NWL
HZMB 096		2013/04/01	621	NWL
HZMB 095		2013/08/30	780	NEL
		2013/06/25	697	NWL
		2013/06/13	682	NWL
		2013/04/01	621	NWL
HZMB 094		2014/10/13	1019	NWL
		2014/05/31	954	NWL
		2014/02/17	910	NWL
		2013/06/26	703	NWL
		2013/06/25	698	NWL
		2013/03/18	601	NWL
HZMB 093		2013/05/24	657	NWL
		2013/02/21	587	NWL
HZMB 092		2015/04/20	1097	NWL
		2013/02/21	589	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2013/02/15	581	NWL
HZMB 091		2013/02/15	579	NWL
HZMB 090		2013/06/25	697	NWL
		2013/06/13	682	NWL
		2013/02/15	579	NWL
HZMB 089		2013/02/15	579	NWL
HZMB 088		2013/02/15	579	NWL
HZMB 087		2013/02/15	579	NWL
HZMB 086	NL242	2015/03/19	1086	NWL
		2013/05/09	642	NWL
		2013/02/15	579	NWL
		2011/10/10	Baseline	NWL
HZMB 085		2014/10/13	1019	NWL
		2014/05/31	954	NWL
HZMB 084		2013/06/26	703	NWL
		2013/02/15	579	NWL
		2013/02/14	575	NWL
HZMB 083	NL136	2015/12/01	1180	NWL
		2015/05/11	1104	NWL
		2013/12/19	863	NWL
		2013/03/28	607	NWL
		2013/02/15	579	NWL
		2013/01/28	568	NWL
		2013/01/28	564	NWL
		2012/04/19	267	NWL
		2011/10/28	Baseline	NWL
		2011/10/28	Baseline	NWL
		2011/10/10	Baseline	NEL
		2011/09/06	Baseline	NWL
HZMB 082		2014/10/20	1024	NWL
		2013/02/21	587	NWL
		2013/02/15	579	NWL
		2013/01/28	563	NWL
HZMB 081		2013/01/28	559	NWL
		2013/01/28	557	NWL
HZMB 080		2013/01/28	556	NWL
HZMB 079		2013/01/28	556	NWL
HZMB 078		2013/02/15	579	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2013/01/08	552	NWL
HZMB 077		2013/12/26	878	NWL
		2013/07/08	706	NWL
		2012/12/11	541	NWL
HZMB 076		2013/07/08	706	NWL
		2012/12/11	541	NWL
HZMB 075		2012/12/06	525	NEL
HZMB 074		2013/05/09	647	NWL
		2013/04/01	623	NWL
		2013/04/01	621	NWL
		2013/02/21	594	NEL
		2012/12/10	529	NEL
		2012/12/06	525	NEL
HZMB 073		2013/05/09	647	NWL
		2013/04/01	623	NWL
		2013/04/01	621	NWL
		2013/02/21	594	NEL
		2012/12/10	529	NEL
		2012/12/06	525	NEL
HZMB 072		2012/10/24	476	NWL
HZMB 071		2012/10/24	475	NWL
		2012/10/12	466	NWL
HZMB 070		2012/10/24	476	NWL
HZMB 069		2015/06/04	1116	NWL
		2013/08/21	774	NWL
		2013/07/08	711	NWL
		2012/10/24	476	NWL
HZMB 068		2014/10/20	1025	NWL
		2013/11/01	839	NWL
		2012/10/24	476	NWL
HZMB 067		2012/10/24	475	NWL
HZMB 066	NL93	2013/01/28	559	NWL
		2012/12/11	537	NWL
		2012/10/24	475	NWL
		2012/10/12	466	NWL
		2011/11/07	Baseline	NWL
		2011/11/05	Baseline	NWL
HZMB 064		2015/03/19	1086	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2014/06/17	964	NWL
		2013/05/09	647	NWL
		2013/01/28	561	NWL
		2012/10/24	475	NWL
		2012/10/12	466	NWL
HZMB 063		2013/05/09	647	NWL
		2012/10/12	466	NWL
HZMB 062		2012/12/06	525	NEL
		2012/10/11	457	NWL
HZMB 060		2012/09/18	447	NWL
HZMB 059		2013/02/21	591	NWL
		2012/09/18	445	NWL
HZMB 057		2012/09/18	440	NWL
HZMB 056		2012/09/18	442	NWL
		2012/09/05	433	NEL
HZMB 055		2012/09/04	425	NWL
HZMB 054	CH34	2015/12/01	1180	NWL
		2015/04/20	1097	NWL
		2015/01/15	1062	NWL
		2014/05/31	953	NWL
		2014/01/06	888	NWL
		2013/11/07	854	NWL
		2013/11/02	845	NWL
		2013/10/24	831	NWL
		2013/08/30	780	NEL
		2013/07/08	711	NWL
		2013/09/18	448	NWL
		2012/09/05	432	NEL
		2011/11/07	Baseline	NWL
		2011/11/05	Baseline	NWL
		2011/11/02	Baseline	NWL
		2011/11/01	Baseline	NEL
		2011/11/01	Baseline	NEL
		2011/10/28	Baseline	NWL
		2011/10/06	Baseline	NWL
HZMB 053		2012/09/04	425	NWL
HZMB 052		2012/09/04	423	NWL
HZMB 051	NL213	2015/05/11	1104	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2014/08/04	989	NWL
		2013/05/09	644	NWL
		2013/04/01	622	NWL
		2013/02/15	582	NWL
		2013/02/15	581	NWL
		2013/01/28	559	NWL
		2013/01/28	556	NWL
		2012/09/04	422	NWL
HZMB 050		2014/07/14	971	NWL
		2014/01/10	900	NWL
		2014/01/06	888	NWL
		2013/02/15	579	NWL
		2012/09/04	421	NWL
HZMB 049		2015/10/09	1151	NWL
		2014/07/29	982	NWL
		2012/09/03	419	NWL
HZMB 048		2012/09/03	419	NWL
HZMB 047		2015/04/28	1100	NWL
		2012/09/03	412	NWL
HZMB 046		2012/09/03	412	NWL
HZMB 045		2014/02/17	910	NWL
		2013/06/13	682	NWL
		2013/02/15	579	NWL
		2012/11/01	495	NWL
HZMB 044	NL98	2014/10/13	1019	NWL
		2014/02/17	910	NWL
		2013/12/19	864	NWL
		2013/11/02	845	NWL
		2013/11/01	842	NWL
		2013/10/15	819	NWL
		2013/05/09	648	NWL
		2013/05/09	647	NWL
		2013/04/01	623	NWL
		2013/04/01	621	NWL
		2013/02/15	579	NWL
		2012/11/01	495	NWL
		2011/11/07	Baseline	NWL
		2011/11/06	Baseline	NEL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2011/11/01	Baseline	NEL
		2011/10/06	Baseline	NEL
HZMB 043		2012/09/03	407	NWL
HZMB 042	NL260	2015/10/22	1156	NWL
		2013/12/19	863	NWL
		2012/11/01	495	NWL
		2011/11/07	Baseline	NWL
HZMB 041	NL24	2014/06/05	960	NEL
		2014/02/17	910	NWL
		2013/11/02	845	NWL
		2013/05/09	648	NWL
		2013/05/09	647	NWL
		2013/04/01	623	NWL
		2013/04/01	621	NWL
		2013/02/15	579	NWL
		2012/11/01	495	NWL
		2011/11/06	Baseline	NEL
		2011/11/05	Baseline	NWL
		2011/11/05	Baseline	NWL
		2011/10/10	Baseline	NWL
HZMB 040		2014/02/17	910	NWL
		2014/01/06	893	NWL
		2013/10/15	821	NWL
		2013/07/08	714	NWL
		2013/07/08	711	NWL
		2013/02/21	589	NWL
		2012/11/01	493	NWL
HZMB 038		2012/11/01	490	NWL
HZMB 037		2012/11/01	490	NWL
HZMB 036		2012/09/03	407	NWL
		2012/11/01	490	NWL
HZMB 035		2013/02/15	579	NWL
		2012/11/01	490	NWL
HZMB 034		2012/11/01	493	NWL
HZMB 028		2014/11/17	1035	NWL
		2013/04/01	625	NWL
		2012/08/06	373	NWL
HZMB 027		2013/12/19	863	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2013/02/15	579	NWL
		2013/01/28	568	NWL
		2013/01/28	564	NWL
		2012/06/14	299	NWL
HZMB 026		2014/10/13	1018	NWL
		2013/06/25	697	NWL
		2013/05/09	642	NWL
		2013/01/28	561	NWL
		2012/06/13	295	NEL
HZMB 025		2013/02/22	596	NEL
		2013/02/21	591	NWL
		2012/12/06	525	NEL
		2012/10/11	457	NWL
		2012/06/13	295	NEL
HZMB 024		2013/03/18	601	NWL
		2012/06/13	295	NEL
HZMB 023		2015/10/09	1153	NWL
		2015/10/09	1152	NWL
		2015/04/20	1097	NWL
		2014/12/18	1044	NWL
		2014/11/17	1035	NWL
		2014/01/06	888	NWL
		2013/07/08	715	NWL
		2013/07/08	711	NWL
		2013/04/01	619	NWL
		2013/02/21	589	NWL
		2013/02/15	579	NWL
		2012/07/10	330	NWL
HZMB 022		2015/07/09	1143	NWL
		2015/04/20	1097	NWL
		2014/12/18	1044	NWL
		2014/11/17	1035	NWL
		2014/08/04	991	NWL
		2014/01/06	888	NWL
		2013/10/24	827	NWL
		2013/07/08	715	NWL
		2013/07/08	711	NWL
		2013/04/01	619	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2013/02/21	589	NWL
		2013/02/15	579	NWL
		2012/07/10	330	NWL
HZMB 021	NL37	2012/07/10	330	NWL
		2011/09/16	Baseline	NWL
HZMB 020		2012/07/10	330	NWL
HZMB 019		2012/07/10	330	NWL
HZMB 018		2014/02/17	910	NWL
		2013/05/09	647	NWL
		2013/02/21	594	NEL
		2012/12/10	529	NEL
		2012/07/10	330	NWL
HZMB 017		2012/07/10	330	NWL
HZMB 016		2013/07/08	706	NWL
		2012/12/11	539	NWL
		2012/09/18	446	NWL
		2012/09/04	421	NWL
		2012/07/10	330	NWL
HZMB 015		2012/07/10	330	NEL
HZMB 014	NL176	2015/08/25	1139	NWL
		2013/12/26	880	NWL
		2012/08/06	373	NWL
		2012/06/13	295	NEL
		2011/11/06	Baseline	NEL
		2011/11/01	Baseline	NEL
		2011/11/01	Baseline	NEL
HZMB 013		2012/05/28	281	NWL
HZMB 012		2012/05/28	281	NWL
HZMB 011	EL01	2013/02/22	597	NEL
		2013/02/21	592	NEL
		2013/02/14	572	NEL
		2012/11/06	517	NEL
		2012/09/19	452	NWL
		2012/03/31	261	NEL
		2011/11/02	Baseline	NWL
		2011/11/01	Baseline	NEL
HZMB 009		2015/03/19	1084	NWL
		2012/05/28	281	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
HZMB 008		2015/07/06	1122	NWL
		2012/05/28	281	NWL
HZMB 007	NL246	2012/12/10	529	NEL
		2011/11/06	Baseline	NEL
		2011/09/16	Baseline	NWL
HZMB 006		2015/10/22	1158	NWL
		2013/02/21	594	NEL
		2012/12/11	539	NWL
		2012/11/01	495	NWL
		2012/03/29	250	NWL
HZMB 005		2015/02/09	1070	NWL
		2015/02/09	1069	NWL
		2013/11/09	860	NWL
		2013/11/07	858	NWL
		2013/10/15	813	NWL
		2012/12/10	532	NWL
		2012/08/06	374	NWL
		2012/05/28	287	NWL
HZMB 004		2015/07/28	1126	NWL
		2012/09/04	421	NWL
		2012/03/31	262	NWL
HZMB 003	NL179	2013/10/15	812	NWL
		2013/06/25	697	NWL
		2012/12/10	529	NEL
		2012/03/31	261	NWL
		2011/11/06	Baseline	NEL
		2011/09/16	Baseline	NWL
HZMB 002	WL111	2014/05/31	951	NWL
		2013/12/26	878	NWL
		2013/12/19	863	NWL
		2013/11/01	839	NWL
		2013/10/15	819	NWL
		2013/09/24	798	NWL
		2013/02/14	573	NWL
		2012/12/11	536	NWL
		2012/12/11	535	NWL
		2012/10/12	466	NWL
		2012/10/24	475	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2012/05/28	281	NWL
		2012/03/29	250	NWL
		2011/11/02	Baseline	NWL
HZMB 001	WL46	2014/08/25	997	NWL
		2013/08/21	771	NWL
		2013/06/13	681	NWL
		2013/04/01	617	NWL
		2013/02/14	573	NWL
		2012/03/29	250	NWL
	CH98	2011/11/02	Baseline	NWL
	NL11	2011/11/02	Baseline	NWL
		2011/11/07	Baseline	NWL
	NL12	2011/11/02	Baseline	NWL
	NL33	2011/09/23	Baseline	NWL
		2011/11/01	Baseline	NEL
		2011/11/05	Baseline	NWL
		2011/11/07	Baseline	NWL
	NL46	2011/10/28	Baseline	NWL
	CH153	2011/10/11	Baseline	NWL
	NL48	2001/11/07	Baseline	NWL
		2011/11/02	Baseline	NWL
		2011/09/16	Baseline	NWL
	NL75	2011/09/16	Baseline	NWL
		2011/09/16	Baseline	NWL
		2011/11/01	Baseline	NEL
	NL80	2011/11/02	Baseline	NWL
	NL118	2011/09/06	Baseline	NWL
	NL120	2011/11/06	Baseline	NEL
		2011/10/10	Baseline	NWL
	NL123	2011/11/06	Baseline	NEL
		2011/10/10	Baseline	NWL
		2011/10/06	Baseline	NWL
	NL139	2011/11/01	Baseline	NEL
		2011/10/10	Baseline	NEL
		2011/09/16	Baseline	NWL
	NL165	2011/11/05	Baseline	NWL
		2011/11/02	Baseline	NWL
	NL170	2011/10/06	Baseline	NEL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
	NL188	2011/11/07	Baseline	NWL
		2011/11/01	Baseline	NWL
		2011/10/28	Baseline	NWL
	NL191	2011/09/07	Baseline	NWL
	NL202	2011/11/07	Baseline	NWL
		2011/10/28	Baseline	NWL
	NL210	2011/11/07	Baseline	NWL
		2011/11/05	Baseline	NWL
		2011/11/02	Baseline	NWL
		2011/09/07	Baseline	NWL
	NL214	2011/11/05	Baseline	NWL
		2011/11/02	Baseline	NWL
		2011/10/28	Baseline	NWL
	NL220	2011/10/10	Baseline	NEL
	NL224	2011/10/28	Baseline	NWL
	NL226	2011/11/05	Baseline	NWL
		2011/10/17	Baseline	WL
	NL230	2011/11/02	Baseline	NWL
		2011/10/17	Baseline	WL
	NL233	2011/10/28	Baseline	NWL
		2011/10/06	Baseline	NWL
		2011/09/16	Baseline	NWL
	NL241	2011/11/07	Baseline	NWL
		2011/11/02	Baseline	NWL
		2011/09/16	Baseline	NWL
	NL244	2011/11/01	Baseline	NEL
		2011/11/01	Baseline	NWL
		2011/09/05	Baseline	WL
	NL256	2011/11/02	Baseline	NWL
	NL258	2011/09/16	Baseline	NWL
		2011/09/05	Baseline	WL
	NL259	2011/11/07	Baseline	NWL
	NL261	2011/11/01	Baseline	NEL
	NL264	2011/11/06	Baseline	NEL
		2011/10/06	Baseline	NEL
		2011/09/23	Baseline	NWL
	NL269	2011/11/02	Baseline	NWL
	NL272	2011/11/05	Baseline	NWL

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2011/11/02	Baseline	NWL
		2011/10/28	Baseline	NWL
		2011/09/16	Baseline	NWL
	NL278	2011/11/02	Baseline	NWL
	NL279	2011/11/02	Baseline	NWL
	SL42	2011/11/02	Baseline	NWL
	SL43	2011/10/28	Baseline	NWL
	WL04	2011/11/05	Baseline	NWL
		2011/11/02	Baseline	NWL
		2011/10/17	Baseline	WL
		2011/10/10	Baseline	NWL
		2011/09/16	Baseline	NWL
	WL05	2011/11/01	Baseline	NEL
		2011/11/01	Baseline	NEL
	WL11	2011/11/07	Baseline	NWL
	WL25	2011/10/17	Baseline	WL
		2011/09/23	Baseline	WL
		2011/09/16	Baseline	NWL
	WL88	2011/11/02	Baseline	WL
		2011/09/16	Baseline	NWL
	WL116	2011/09/16	Baseline	NWL
	WL124	2011/11/02	Baseline	NWL
	WL156	2011/10/28	Baseline	NWL
		2011/09/23	Baseline	WL
	WL162	2011/09/16	Baseline	NWL
	NL275	*2011/09/23*	*Baseline*	*WL*
	SL48	*2011/11/02*	*Baseline*	*WL*
		2011/10/17	*Baseline*	*WL*
		2011/09/23	*Baseline*	*WL*
	CH108	*2011/11/02*	*Baseline*	*WL*
		2011/11/02	*Baseline*	*WL*
	CH157	*2011/11/02*	*Baseline*	*WL*
	NL206	*2011/10/07*	*Baseline*	*WL*
	WL28	*2011/09/23*	*Baseline*	*WL*
	WL42	*2011/11/02*	*Baseline*	*WL*
		2011/09/05	*Baseline*	*WL*
	WL47	*2011/10/17*	*Baseline*	*WL*
	WL61	*2011/10/17*	*Baseline*	*WL*

Identification Number	Baseline Identification Number	Date (YYYY-MM-DD)	Sighting Number	Area Sighted
		2011/09/23	*Baseline*	*WL*
	WL66	*2011/11/07*	*Baseline*	*WL*
	WL68	*2011/09/05*	*Baseline*	*WL*
		2011/09/05	*Baseline*	*WL*
	WL72	*2011/11/02*	*Baseline*	*WL*
		2011/11/02	*Baseline*	*WL*
		2011/09/23	*Baseline*	*WL*
	WL87	*2011/09/23*	*Baseline*	*WL*
	WL88	*2011/11/02*	*Baseline*	*WL*
		2011/09/16	*Baseline*	*WL*
	WL116	*2011/09/16*	*Baseline*	*WL*
	WL118	*2011/11/02*	*Baseline*	*WL*
		2011/11/02	*Baseline*	*WL*
	WL123	*2011/11/02*	*Baseline*	*WL*
	WL124	*2011/11/02*	*Baseline*	*WL*
	WL128	*2011/11/07*	*Baseline*	*WL*
		2011/11/02	*Baseline*	*WL*
	WL131	*2011/11/02*	*Baseline*	*WL*
		2011/11/02	*Baseline*	*WL*
		2011/09/23	*Baseline*	*WL*
	WL132	*2011/09/23*	*Baseline*	*WL*
	WL137	*2011/11/02*	*Baseline*	*WL*
	WL138	*2011/11/02*	*Baseline*	*WL*
	WL144	*2011/11/02*	*Baseline*	*WL*
	WL145	*2011/09/05*	*Baseline*	*WL*
	WL146	*2011/10/17*	*Baseline*	*WL*
	WL153	*2011/11/07*	*Baseline*	*WL*
	WL157	*2011/09/23*	*Baseline*	*WL*
	WL158	*2011/09/23*	*Baseline*	*WL*
	WL163	*2011/11/07*	*Baseline*	*WL*
		2011/11/02	*Baseline*	*WL*
	WL165	*2011/10/17*	*Baseline*	*WL*
	WL167	*2011/10/17*	*Baseline*	*WL*
	WL170	*2011/11/07*	*Baseline*	*WL*
	WL171	*2011/10/28*	*Baseline*	*WL*

HZMB 054 2015-12-01_13-41-58_01 MED

HZMB 083 LL 2015-12-01_13-32-50 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 January / 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	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste (see Note 4)	Others, e.g. general refuse (see Note 3)
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m^3)
Jan-15	0.0000	0.0000	0.0000	0.0000	0.0000	52.4729	0.0000	0.2520	0.0000	0.8000	0.5200
Feb-15											
Mar-15											
Apr-15											
May-15											
Jun-15											
Sub-total	0.0000	0.0000	0.0000	0.0000	0.0000	52.4729	0.0000	0.2520	0.0000	0.8000	0.5200
Jul-15											
Aug-15											
Sep-15											
Oct-15											
Nov-15											
Dec-15											
Total	0.0000	0.0000	0.0000	0.0000	0.0000	52.4729	0.0000	0.2520	0.0000	0.8000	0.5200

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

(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.

(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

(4) Chemical waste refer to spent “battery” and “oil with water”.

Appendix N
Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

Cumulative statistics on Exceedances

		Total no. recorded in this month	Total no. recorded since project commencement
1-Hour TSP	Action	-	-
	Limit	-	-
24-Hour TSP	Action	-	-
	Limit	-	-
Noise	Action	-	-
	Limit	-	-
Water Quality	Action	-	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