

**Emission Control Project at Castle Peak Power Station "B" Units**



**Environmental Monitoring  
and Audit Monthly Report**

January 2010



## Table of Content

Executive Summary .....	1
1. Basic Project Information .....	6
1.1 Background .....	6
1.2 Project Organisation.....	6
1.3 Construction Activities and Project Programme.....	6
1.4 Summary of EM&A Requirements .....	7
2. Environmental Status .....	12
2.1 Project Works undertaken during the Reporting Month.....	12
2.2 Construction Works to be undertaken in the Coming Month .....	12
2.3 Status of Submissions to EPD .....	13
3. Monitoring Results.....	15
3.1 Groundwater Monitoring .....	15
3.2 Marine Water Quality Monitoring .....	15
3.2.1 Water Quality Monitoring Parameters.....	16
3.2.2 Monitoring Stations .....	16
3.2.3 Monitoring Frequency .....	19
3.2.4 Monitoring Equipment.....	19
3.2.5 Monitoring Methodology, Calibration details and QA/QC Procedures	20
3.2.6 Monitoring Result .....	20
3.2.7 Event and Action Plan .....	20
3.3 Dredged Sediments .....	21
3.4 Ecology Monitoring .....	23
4. Implementation Status of EIA Recommendations.....	24
4.1 Environmental Mitigation Implementation Schedule.....	24
4.2 Implementation status of Event and Action Plan.....	24
4.3 Site Environmental Inspection and Audit .....	24
4.4 Implementation Status of Complaint Handling Procedure .....	24

## **List of Figures**

Figure 1.1	Location of the EC Project Site .....	9
Figure 1.2	EC Project Site General Layout Arrangement.....	10
Figure 1.3	Integrated Project Environmental Team .....	11
Figure 3.1	Location of Water Quality Monitoring Stations.....	18
Figure 3.2	Daily and Cumulative Dredging Production Rates.....	22

## **List of Tables**

Table 2.1	Key construction works undertaken in the reporting month.....	12
Table 2.2	Environmental Permit No. EP-251/2006 - Submissions for Decommissioning / Construction Stage .....	14
Table 3.1	Summary of Water Quality Monitoring Parameters .....	16
Table 3.2	Co-ordinates of Baseline, Impact & Post Project Monitoring Stations (HK Grid)17	
Table 3.3	Water Quality Monitoring Equipment .....	19
Table 3.4	Action and Limit Levels for Water Quality Monitoring.....	21
Table 3.5	Monthly Cumulative Quantity of Dredged and Dumped Sediment .....	22
Table 4.1	Summary of Bi-weekly IEC Site Inspections .....	25
Table 4.2	Summary of Weekly ET Site Inspection .....	26

## **List of Photos**

E.1	Unit B1 and Unit B2 FGD Areas.....	4
E.2	Limestone Handling Area .....	4
E.3	Gypsum Handling Area .....	5
E.4	Unit B3 and Unit B4 FGD Areas.....	5

**Appendices**

Appendix A Copies of Calibration Certificates..... i

Appendix B Quality Control Report for SS Laboratory Analysis..... v

Appendix C Marine Water Quality Monitoring Results and Graphical Presentation..... xi

Appendix D Impact and Post Project Water Quality Monitoring Schedule..... lxvi

Appendix E Event and Action Plan for Water Quality .....lxviii

Appendix F Construction Phase - Environmental Mitigation Implementation Schedule..... lxx

## **Executive Summary**

This is the 27<sup>th</sup> monthly Environmental Monitoring and Audit (EM&A) report for the Emissions Control Project at Castle Peak Power Station 'B' Units (EC Project) prepared by the Environmental Team (ET), with reference to the EPD's Environmental Monitoring and Audit – Guidelines for Development Projects in Hong Kong.

This report presents the implementation status of EM&A requirements in January 2010 as per the Project Environmental Impact Assessment (EIA) Report (EIAO Register No.: AEIAR-102/2006) and Environmental Permit (EP) No. EP-251/2006.

### **Key Project Works in the reporting month**

The key project activities in the reporting month are summarized below:

- Flue Gas Desulphurization Absorbers
  - Mechanical erection works of Unit B1 – B4 FGD Absorbers (*Photo E.1 & E.4*).
  - Plant erection works at the Unit B1 – B4 Gas-to-Gas Heater Area, Common Limestone Preparation and Gypsum Dewatering Areas, Limestone Handling Area (*Photo E.2*), Gypsum Handling Area (*Photo E.3*), Waste Water Treatment Plant Area.
- Civil Works
  - Pile caps at Unit B1 Gas-to-Gas Heater Booster Fans Area.
  - Minor civil works at Unit B4 Gas-to-Gas Heaters Area and drainage works.
- Material Handling Berth Work
  - Quay construction works for the Material Handling Berth.
  - Dredging works for the Material Handling Berth
- NO<sub>x</sub> Reduction Facilities Erection
  - Plant erection works of Unit B2 BOFA and Unit B1 Selective Catalytic Reduction System.

### **Environmental Monitoring**

The implementation status of the Project EM&A programmes are summarized below:

- Groundwater monitoring
  - The Groundwater monitoring program for 2009 was completed in October and the results indicated that the TPH levels has consistently remained well below the relevant Risk-based Remediation Goals (RBRGs) value.

The groundwater monitoring program for 2010 is to be confirmed with EPD. (*Section 3.1*)

- Marine water quality monitoring
  - Baseline water quality monitoring programme was completed on 21 December 2007 according to the schedule submitted to EPD on 6 November 2007. The Baseline Water Quality Monitoring Report was revised to address EPD's comments on the first submission and re-submitted to EPD on 4 March 2008.
  - According to the EIA report, impact monitoring on marine water quality shall be carried out 3 days a week, at mid-flood and mid-ebb tides, during the dredging works. Dredging works were undertaken in the reporting month and completed on 15th January 2010. Final impact monitoring on marine water quality was carried out on 15th January 2010.
  - According to the EIA report, post project monitoring on marine water quality shall be carried out 3 days a week, at mid-flood and mid-ebb tides, for at least 4 weeks after completion of the dredging works. The post project monitoring on marine water quality was commenced on 18 January 2009 as per the EM&A requirement. The Post Project Water Quality Report will be submitted to EPD separately. (*Section 3.2*)
  
- Ecology monitoring
  - Dredging works were completed on 15th January 2010. Dredged sediment was disposed at designated disposal sites allocated by the Marine Fill Committee (MFC) as per the requirement of Marine Dumping Permit. (*Section 3.3*)
  
- Ecology monitoring
  - According to the EIA report, visual cetaceans monitoring is required solely during underwater percussive piling works. There was no underwater percussive piling works conducted during the reporting month and hence visual cetaceans monitoring was not required. (*Section 3.4*)

### **Environmental Mitigation Implementation Schedule**

Environmental mitigation measures for the construction stage were implemented as per the EIA Report. (*Section 4.1*)

### **Implementation Status of Event and Action Plan**

Dredging works were conducted in the reporting month and impact monitoring was carried out as per the EM&A requirement. All monitoring results were evaluated against the Action and Limit levels stipulated in the Baseline Water Quality Monitoring Report and confirmed in full compliance. (*Section 4.2*)

### **Site Environmental Inspection**

Joint site inspection was conducted by the ET and contractors on a weekly basis, and independent audit was conducted by the Independent Environmental Checker (IEC) on a bi-weekly basis. All required follow-up actions were implemented by the relevant contractors and verified by the Integrated Project Environmental Team in the subsequent site inspections. (*Section 4.3*)

### **Environmental Complaint and Enquiries**

No complaint or enquiries were received in the reporting month. (*Section 4.4*)



## Key Project Works in the reporting month



E.1 Unit B1 and Unit B2 FGD Areas



E.2 Limestone Handling Area



E.3 Gypsum Handling Area



E.4 Unit B3 and Unit B4 FGD Areas

## **1. Basic Project Information**

### **1.1 Background**

The Emissions Control Project at Castle Peak Power Station “B” Units (the Project) involves the installation of additional emissions control facilities to further reduce air emissions from the operation of these units. The emissions control facilities to be installed in the Castle Peak Power Station “B” Units (CPB) include NO<sub>x</sub> reduction facilities and Limestone Flue Gas Desulphurisation (LS FGD) for SO<sub>2</sub> reduction. The location of the Site is presented in *Figure 1.1*. An overview of the Project Site general arrangement is presented in *Figure 1.2*.

### **1.2 Project Organisation**

An Integrated Project Environmental Team has been set up to manage the environmental issues associated with the EC Project. The Project Environmental Team comprises the Project Environmental Team Leader (ETL), the Project Regulatory Compliance and Environmental Officer, and the Project Environmental Officer. The Project Environmental Team organisation is depicted in *Figure 1.3*.

### **1.3 Construction Activities and Project Programme**

The construction of the Project involves demolition and relocation of certain existing facilities. While the existing generating units will remain in their current locations, some of the auxiliary and common facilities to the south of the generating units at CPB will be demolished or relocated to provide space for the emission control and related facilities. The scope of the Project is as follows:

- Demolition of some existing facilities at CPB including the Fuel Oil Day Tank, Fuel Oil Pump House and Dangerous Goods (DG) Store;
- Relocation or re-routing of existing facilities including Ash and Dust Control Room, Underground Pipeworks, Carbon Dioxide (CO<sub>2</sub>) Storage Tank, Liquefied Petroleum Gas (LPG) Storage Tanks, Intermediate Pressure Reduction Station, Oil Interceptors, Oils Sump, Oil Sewer Manholes and Foul Water Pumping Station;
- Provision of Reagent and By-Product Handling and Storage Facilities including limestone store, limestone slurry tanks, gypsum dewatering and storage facilities;
- Installation of new emission control equipment and facilities for NO<sub>x</sub> and SO<sub>2</sub> control;
- Provision of additional berthing facilities for loading and unloading of the additional reagents and gypsum.

The civil works of the EC Project were commenced on 26 September 2007. These included piling works, foundation works, roads and other civil engineering works and would be executed in a phased manner. Start-up of the retrofitted units are scheduled from 2010 to 2011.

#### **1.4 Summary of EM&A Requirements**

An Environmental Impact Assessment (EIA) for the Project was undertaken and the EIA Report was approved under the *Environmental Impact Assessment Ordinance* (EIAO) (Cap499) on 25 October 2006 (EIAO Register No. AEIAR-102/2006). Environmental Permit (EP) No. EP-251/2006 for the Project was granted on 10 November 2006. Condition 3.2 of the EP requires an EM&A programme to be implemented in accordance with the procedures and requirements set out in the approved EIA Report (EIAO Register No. AEIAR-102/2006).

The EM&A requirements for the EC Project are summarized below:

- Establish baseline water quality levels at designated locations;
- Implement construction impact monitoring programmes for water quality and dolphin monitoring;
- Implement inspection and audit programmes for water quality and dolphin monitoring;
- Liaise with, and provide environmental advice (as requested or when otherwise necessary) to construction site staff on the comprehension and consequences of the environmental monitoring data and exceedances;
- Identify and resolve environmental issues and other functions as they may arise from the works;
- Check and advise the Contractor's overall environmental performance, the implementation of Event and Action Plans (EAPs), and remedial actions taken to mitigate adverse environmental impacts as they may arise from the works;
- Conduct monthly reviews of monitored impact data as the basis for assessing compliance with the defined criteria and to ensure that necessary mitigation measures are identified and implemented, and to undertake additional ad hoc monitoring and auditing as required by special circumstances;
- Evaluate and interpret all environmental monitoring data to provide an early indication should any of the environmental control measures or practices fail to achieve the acceptable standards, and to verify the environmental impacts predicted in the EIA Report;
- Manage and liaise with other individuals or parties concerning other environmental issues deemed to be relevant to the construction process;

- Conduct regular site inspections to assess:
  - the level of the Contractor's general environmental awareness;
  - the Contractor's implementation of the conditions in the EP and the recommendations in the EIA Report;
  - the Contractor's performance as measured by the EM&A programme;
  - the need for specific mitigation measures to be implemented or the continued usage of those previously agreed; and
  - to advise the Site Staff of any identified potential environmental issues.
  
- Submit Monthly EM&A Reports which summarize environmental monitoring and auditing data, with interpretation illustrating the acceptability or otherwise of any environmental impacts and identification or assessment of the implementation status of agreed mitigation measures.

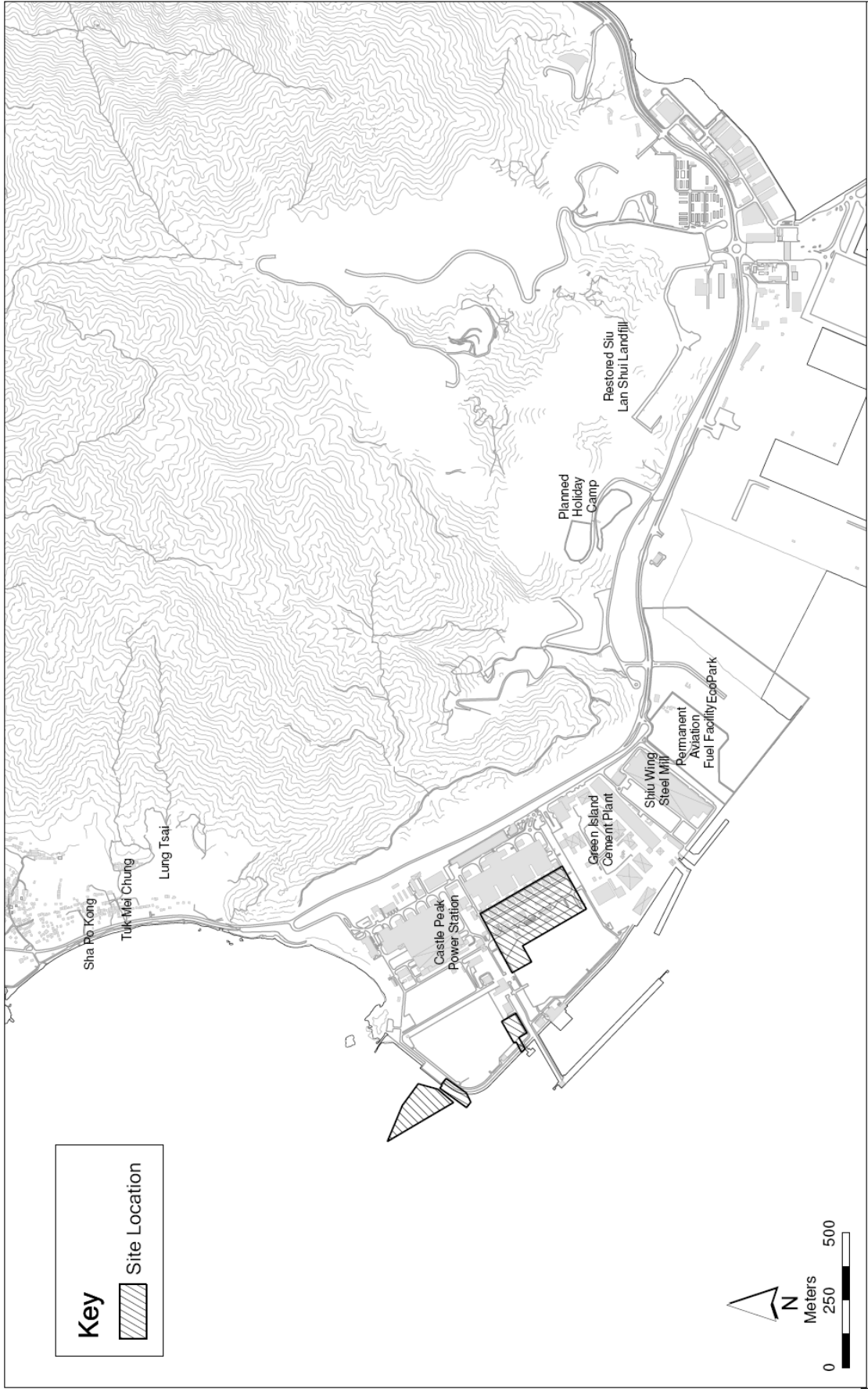


Figure 1.1 Location of the EC Project Site

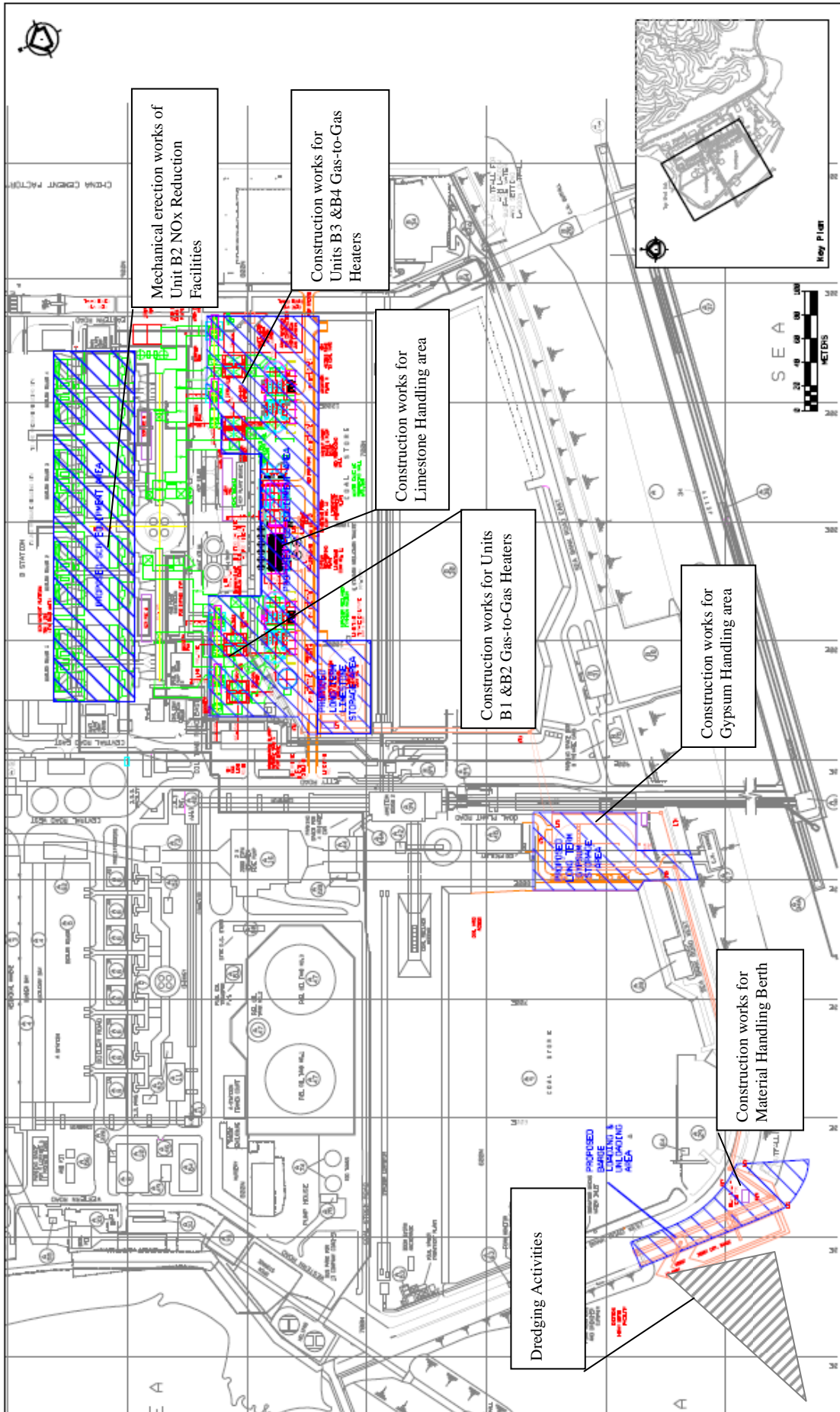


Figure 1.2 EC Project Site General Layout Arrangement

## Integrated Project Environmental Team

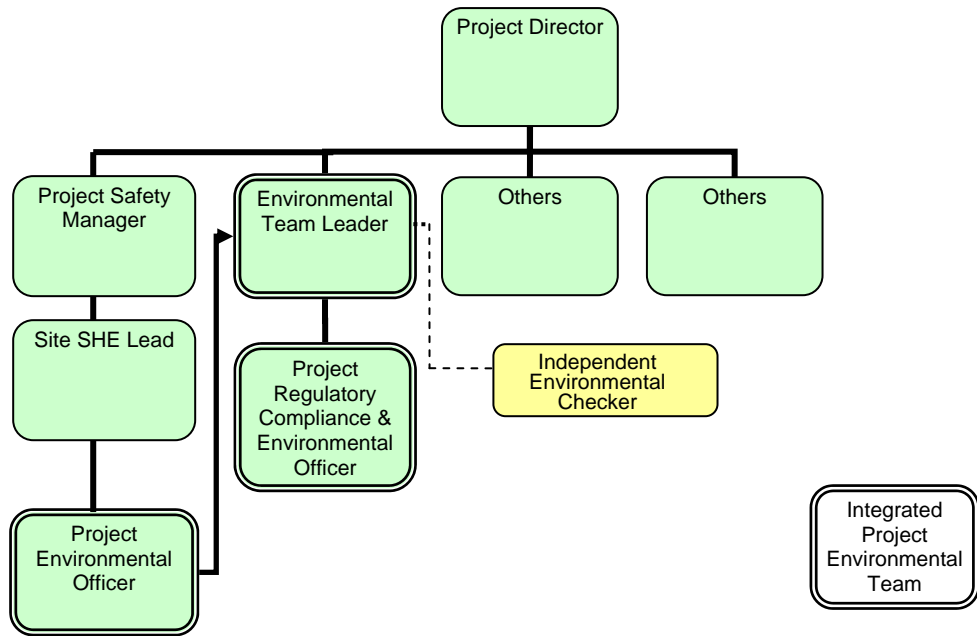


Figure 1.3 Integrated Project Environmental Team



## 2. Environmental Status

### 2.1 Project Works undertaken during the Reporting Month

The key site works undertaken in the reporting month and implementation of the required environmental protection measures are summarized in *Table 2.1* below.

**Table 2.1 Key construction works undertaken in the reporting month**

	Construction Activities	Environmental Protection Measures
FGD Erection & Civil Works	<ul style="list-style-type: none"> <li>Plant erection at the Unit B1 - Unit B4 Gas-to-Gas Heater Area, Common Limestone Preparation and Gypsum Dewatering Areas, Limestone Handling Area, Gypsum Handling Area, Waste Water Treatment Plant, Unit B1 – B4 FGD Absorbers.</li> <li>Minor civil works at Unit B4 Gas-to-Gas Heaters Area and drainage works.</li> <li>Pile caps at Unit B1 Gas-to-Gas Heater Booster Fans Area.</li> </ul>	<ul style="list-style-type: none"> <li>Dust suppression on access roads and dusty activities;</li> <li>Temporary stockpiles were either wetted or covered by tarpaulin sheet to prevent dust emission;</li> <li>Spillage control measures (e.g. drip tray, spill kit) were implemented;</li> <li>Proper on-site chemical waste store was provided.</li> </ul>
NOx Reduction Facilities Erection	<ul style="list-style-type: none"> <li>Plant erection works at Unit B2 BOFA and Unit B1 Selective Catalytic Reduction System</li> </ul>	<ul style="list-style-type: none"> <li>Spillage control measures (e.g. drip tray, spill kit) were implemented;</li> <li>Proper on-site chemical waste store was provided.</li> </ul>
Material Handling Berth Work	<ul style="list-style-type: none"> <li>Quay construction works for Material Handling Berth.</li> <li>Dredging works for Material Handling Berth.</li> </ul>	<ul style="list-style-type: none"> <li>Dust suppression measures in place;</li> <li>Silt curtain was deployed;</li> <li>Closed grab dredger was used;</li> <li>Spillage control measures (e.g. drip tray, spill kit) were implemented;</li> <li>Proper on-site chemical waste store was provided.</li> </ul>

### 2.2 Construction Works to be undertaken in the Coming Month

The key site activities in the coming month are summarized below:

- Material Handling Berth Work
  - Continue quay construction works for the Material Handling Berth.
  
- NO<sub>x</sub> Reduction Facilities
  - Complete erection of the Unit B2 BOFA and Selective Catalytic Reduction System.
  - Continue plant erection works at Unit B1 Selective Catalytic Reduction System
  
- Flue Gas Desulphurization Absorbers
  - Continue mechanical erection of the Unit B1 - Unit B4 FGD Absorbers.
  - Continue plant erection at the Unit B1 - Unit B4 Gas-Gas Heaters, Common Limestone Preparation and Gypsum Dewatering Areas, Gypsum Handling Area, Waste Water Treatment Plant.

The potential environmental impacts associated with the above construction works include dust emission, construction surface runoff, oil spillage and chemical wastes. Preventive measures have been and will continue to be implemented as per the Environmental Mitigation Implementation Schedule for the EC Project Construction Phase.

### **2.3 Status of Submissions to EPD**

The status of submissions to EPD as required under the Environmental Permit No. EP-251/2006 is summarized in *Table 2.2* below.

**Table 2.2 Environmental Permit No. EP-251/2006 - Submissions for Decommissioning / Construction Stage**

EP Condition Ref	Submission	Timing for Submission	Target Submission Date	Actual Submission Date
<b>General Conditions</b>				
1.11	Commencement Dates of decommissioning and construction of the Project	At least 2 weeks before the commencement of decommissioning and construction respectively	As per schedule	4/07/07 & 20/08/07 respectively
<b>Submission before/after Commencement of Decommissioning/Construction of the Project</b>				
2.3	Management organisation of the main decommissioning/construction companies and/or any form of JV associated with the Project (including organisation chart, names of responsible persons and their contact details)	At least 1 month after commencement of decommissioning/construction of the Project	As per schedule	26/10/07
2.4	Details of any change to emission reduction process described and assessed in the EIA Report (Register No.: AEIAR - 102/2006) for	At least 3 months before commencement of construction of relevant facilities	If applicable	
<b>EM&amp;A Requirements</b>				
3.1	Groundwater Monitoring Plan	At least 1 month before commencement of construction of the Project	As per schedule	1st issue - 20/07/07 2nd issue - 5/09/07 3rd issue - 20/11/07 4th issue - 27/02/08
3.3	Baseline Water Quality Monitoring Report	At least 1 month before commencement of dredging works	As per schedule	1st issue - 29/01/08 2nd issue - 4/03/08
3.4	Monthly EM&A Report	Within 10 working days at the end of the reporting month	As per schedule	As per schedule
3.5	Post-Project Monitoring Report for Dredging Works	Within 1 week of completion of the Post-Project Monitoring for the dredging works	As per schedule	
<b>Electronic Reporting of EM&amp;A Information</b>				
4.2	Written notification on the internet address of EM&A website to Director of Environmental	Within 6 weeks after the commencement of construction of the Project	As per schedule	06/11/07

### **3. Monitoring Results**

#### **3.1 Groundwater Monitoring**

With respect to the requirement specified in the Environmental Permit No. EP-251/2006, monitoring of the total petroleum hydrocarbon (TPH) in the groundwater within the Project site during construction and operation of the Project is required. A Groundwater Monitoring Plan has been developed to define the groundwater monitoring locations, methodology for groundwater monitoring as well as the monitoring schedule.

Bi-weekly Groundwater Monitoring Programme for the initial period of three months after the commencement of major piling and foundation works was successfully concluded on 25 January 2008. The TPH monitoring results for the initial three-month period consistently remained well below the relevant Risk-based Remediation Goals (RBRGs) values, and therefore the remaining groundwater monitoring for 2008 was conducted on a quarterly basis in accordance with the Groundwater Monitoring Plan (Rev 4), which had been accepted by EPD.

The Groundwater Monitoring Program for 2008 was completed in October 2008 with all results well within the Risk-Based Remediation Goals (RBRGs) stated in the EPD's Guidance Note for Contaminated Land Assessment and Remediation. In view of this, the groundwater monitoring frequency for 2009 is reduced to twice a year as per the email confirmation (dated 07 November 2008) from EPD to the Independent Environmental Checker.

The 2<sup>nd</sup> half-yearly Groundwater Monitoring for 2009 was conducted in October 2009. Groundwater samples were taken from the three designated sampling points on 15 October 2009 for TPH measurement and all results indicated that TPH levels continue to remain well below the relevant RBRGs value.

The groundwater monitoring program for 2010 is to be confirmed with EPD.

#### **3.2 Marine Water Quality Monitoring**

With respect to the requirement specified in the Environmental Permit No. EP-251/2006, monitoring of marine water quality during the construction phase is required to evaluate whether any impacts would be posed by the dredging operations on the surrounding waters during the construction period of the dredging works. Baseline monitoring (prior to the dredging works), impact monitoring (during any works related to the dredging works) and post-project monitoring (after completion of the dredging) shall be carried out according to the

monitoring locations, monitoring parameters and frequency specified in the EIA Report.

Baseline water quality monitoring programme was completed on 21 December 2007 according to the schedule submitted to EPD on 6 November 2007. The Baseline Water Quality Monitoring Report was revised to address EPD's comments on the first submission and re-submitted to EPD on 4 March 2008.

According to the EIA report, impact monitoring on marine water quality shall be carried out 3 days a week, at mid-flood and mid-ebb tides, during the dredging works. Dredging works were undertaken in the reporting month and completed on 15th January 2010. Final impact monitoring on marine water quality was carried out on 15th January 2010.

According to the EIA report, post project monitoring on marine water quality shall be carried out 3 days a week, at mid-flood and mid-ebb tides, for at least 4 weeks after completion of the dredging works. The post project monitoring on marine water quality was commenced on 18 January 2009 as per the EM&A requirement. The Post Project Water Quality Report will be submitted to EPD separately.

### 3.2.1 Water Quality Monitoring Parameters

The Water Quality Monitoring Parameters are summarised in *Table 3.1* below:

**Table 3.1 Summary of Water Quality Monitoring Parameters**

---

<b>Monitoring Parameters</b>
The parameters measured <i>in situ</i> include:
<ul style="list-style-type: none"><li>• Dissolved oxygen (DO) (saturation and <math>\text{mg L}^{-1}</math>);</li><li>• Temperature;</li><li>• Turbidity (NTU); and</li><li>• Salinity (‰ or ppt).</li></ul>
The parameter measured in the laboratory include:
<ul style="list-style-type: none"><li>• Suspended solids (SS) (<math>\text{mg L}^{-1}</math>)</li></ul>

---

### 3.2.2 Monitoring Stations

Water quality sampling was undertaken at the following designated monitoring stations:

- **C1** is a Control Station (during ebb tide) located to the north of the dredging area, which is not supposed to be influenced by the construction works;
- **C2** is a Control Station (during flood tide) located to the south of the dredging area with the same coordinates as EPD routine monitoring station NM3, which is not supposed to be influenced by the construction works;
- **SR1** and **SR2** represent Lung Kwu Sheung Tan Beach and Lung Kwu Tan Beach respectively, located to the north of the dredging area;
- **SR3**, **SR4** and **SR5** represent the Castle Peak Power Station Intake, the Shiu Wing Steel Mill Intake and the EcoPark Intake, located to the south of the dredging area;
- **SR6**, **SR7** and **SR8** represent the eastern boundary of Sha Chau and Lung Kwu Chau Marine Park; and
- **G1**, and **G2** are regarded as a Gradient Station in-between the dredging area and the Marine Park, whereas G1 situates at the same location as EPD routine monitoring station NM5.

The co-ordinates of these monitoring stations are listed in *Table 3.2*. and the locations are shown in *Figure 3.1*

**Table 3.2 Co-ordinates of Baseline, Impact & Post Project Monitoring Stations (HK Grid)**

<b>Station</b>	<b>Easting</b>	<b>Northing</b>
C1	806561	829624
C2	811762	823728
SR1	808295	828795
SR2	809242	827496
SR3	809444	826076
SR4	810241	825355
SR5	810763	825047
SR6	806198	827886
SR7	806959	824749
SR8	807571	822187
G1	807729	826440
G2	808608	824832

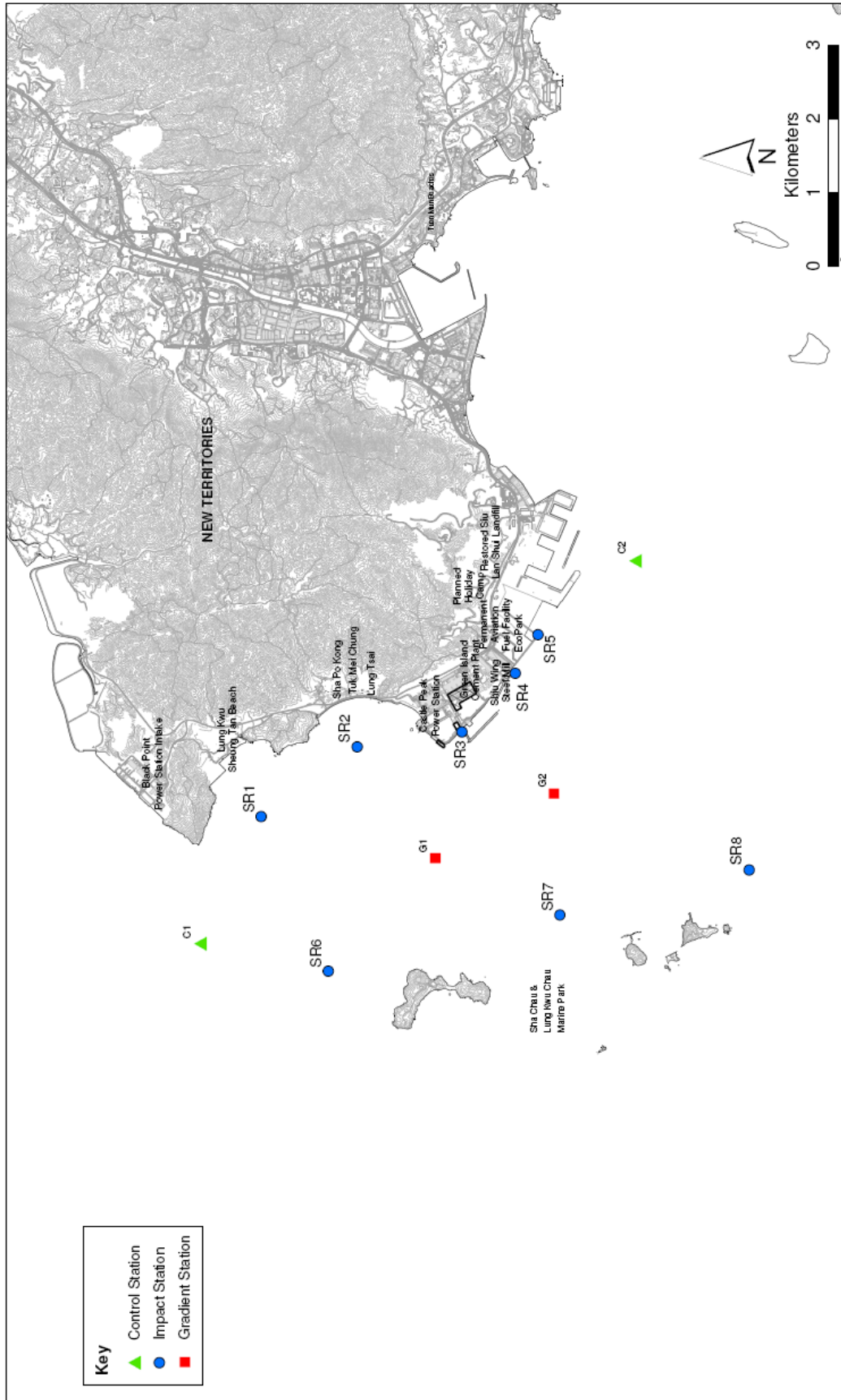


Figure 3.1 Location of Water Quality Monitoring Stations

### 3.2.3 Monitoring Frequency

The impact and post-project monitoring were undertaken 3 days per week, at mid-flood and mid-ebb tides, with sampling / measurement at the designated stations. The intervals between 2 consecutive sets of monitoring was at least or more than 36 hours except where there were exceedances of Action and/or Limit Level, in which case monitoring frequency would be increased. The tidal range for each of the flood and ebb tide was at least or more than 0.5m.

The water quality sampling was undertaken within a 3-hour window of 1.5 hour before and 1.5 hour after mid flood and mid-ebb tides. The environmental contractor was responsible for liaison with the engineering contractor to confirm whether dredging works were being undertaken during the water quality sampling.

Each station was sampled and measurements were taken at three depths, 1 m below the sea surface, mid depth and 1m above the sea bed. For stations that are less than 3 m in depth, only the mid depth sample was taken.

Replicate *in-situ* measurements and sample collected from each independent sampling event were required for all parameters to ensure a robust statistically interpretable dataset.

The Impact Water Quality Monitoring Schedule for January 2010 and the Post Project Water Quality Monitoring Schedule for January 2010 and February 2010 are given in *Appendix D*.

### 3.2.4 Monitoring Equipment

Table 3.3 summarizes the equipment used in the water quality monitoring program. All the monitoring equipment complied with the requirements set out in the approved EIA Report.

**Table 3.3 Water Quality Monitoring Equipment**

Equipment	Model and Make	Qty.
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	1
Multi-parameter Water Quality System	YSI 6820	2
Monitoring Position Equipment	"Magellan" Handheld GPS Model GPS-320	1



### **3.2.5 Monitoring Methodology, Calibration details and QA/QC Procedures**

#### Instrumentation

A multi-parameter meter (Model YSI 6820 C-M) was used to measure DO, DO saturation, turbidity, salinity and temperature.

Copies of the calibration certificates of the equipment are shown in *Appendix A*.

#### Monitoring Methodology

At each measurement, two consecutive measurements of DO concentration, DO saturation, salinity, turbidity and temperature were taken. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.

For SS measurement, duplicate water samples for SS were taken and analysed at each monitoring station at each sample depth. The sample bottles were then packed in cool-boxes (without being frozen), and delivered to a HOKLAS accredited laboratory for analysis of suspended solids concentrations within 24 hours.

#### QA/QC Procedures

Before each round of monitoring, a zero check in distilled water was performed with the turbidity probe of YSI 6820-C-M. The probe was then calibrated with a solution of known NTU.

Quality Control Report as attached in *Appendix B* are available for the SS analyzed in the HOKLAS-accredited laboratory, WELLAB Ltd.

### **3.2.6 Monitoring Result**

The monitoring results are given in *Appendix C*.

All water quality monitoring results were evaluated against the Action and Limit levels stipulated in the Baseline Water Quality Monitoring Report (*Table 3.4*) and confirmed in full compliance.

### **3.2.7 Event and Action Plan**

The Event and Action Plan for Water Quality is shown in *Appendix E* for reference.

**Table 3.4 Action and Limit Levels for Water Quality Monitoring**

Parameter		Action	Limit
DO (mg/L) <sup>b</sup>	Surface and Middle	6.0	5.5
	Bottom	5.7	5.4
Turbidity (NTU) <sup>c</sup>	Depth average <sup>a</sup>	13.1 and 20% exceedance of value at any impact station compared with corresponding data from control stations at the same tide of the same day <sup>d, e</sup> .	13.7 and 30% exceedance of value at any impact station compared with corresponding data from control stations at the same tide of the same day <sup>d, e</sup>
SS (mg/L) <sup>c</sup>	Depth average <sup>a</sup>	34.3 and 20% exceedance of value at any impact station compared with corresponding data from control stations at the same tide of the same day <sup>d, e</sup> .	36.7 and 30% exceedance of value at any impact station compared with corresponding data from control stations at the same tide of the same day and specific sensitive receiver water quality requirements <sup>d, e, f</sup>

Note:

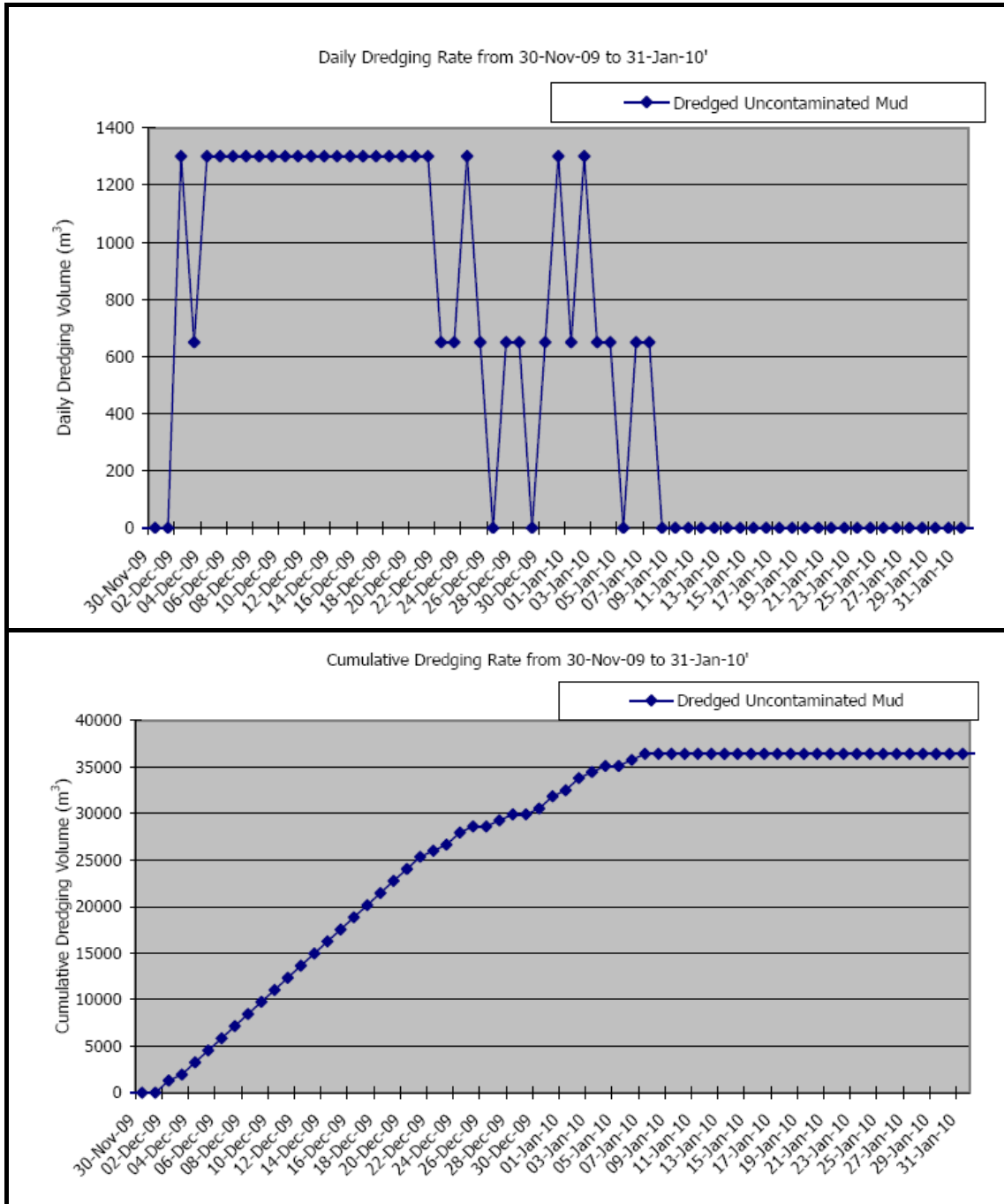
- (a) “Depth-averaged” is calculated by taking the arithmetic means of reading of all three depth.
- (b) For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- (c) For SS and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- (d) An exceedance of Action Level and Limit Level is defined as exceeding both criteria. The comparison of the results of impact stations and control stations will aid to determine then background influence to the water quality sensitive receivers.
- (e) C1 is regarded as the Control Station during ebb tide, whereas C2 is regarded as the Control Station during flood tide.
- (f) For WSD and Black Point/Castle Peak Power Station intakes (SR3), the specific SS criteria are not greater than 20 mg/L and 764 mg/L.

### 3.3 Dredged Sediments

Dredging works were undertaken in the reporting month and completed on 15th January 2010. Dredged sediment was disposed at designated disposal sites allocated by the Marine Fill Committee (MFC) as per the requirement of Marine Dumping Permit No. EP/MD/10-053. The monthly cumulative quantity of dredged and dumped sediment are listed in *Table 3.5*. Daily and cumulative dredging production rates are shown in *Figure 3.2*.

**Table 3.5 Monthly Cumulative Quantity of Dredged and Dumped Sediment**

Month	Cumulative Dredged Volume (m3)	Cumulative Bulk Dumped Volume (m3)
Nov 2009	0	0
Dec 2009	30550	39715
Jan 2010	36400	47320



**Figure 3.2 Daily and Cumulative Dredging Production Rates**

### **3.4 Ecology Monitoring**

With respect to the requirement specified in the Environmental Permit No. EP-251/2006, visual cetacean monitoring should be conducted during the underwater percussive piling works to evaluate whether there have been any effects on the animals.

There was no underwater percussive piling works conducted during the reporting month and hence visual cetaceans monitoring was not required.

## **4. Implementation Status of EIA Recommendations**

### **4.1 Environmental Mitigation Implementation Schedule**

Environmental mitigation measures for the construction stage were implemented as per the EIA Report.

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in *Appendix F*.

### **4.2 Implementation status of Event and Action Plan**

Dredging works were conducted in the reporting month and impact monitoring was conducted as per the EM&A requirement. All monitoring results were evaluated against the Action and Limit levels stipulated in the Baseline Water Quality Monitoring Report and confirmed in full compliance.

The Event and Action Plan for Water Quality is shown in *Appendix E* for reference.

### **4.3 Site Environmental Inspection and Audit**

Independent Environmental Checker (IEC) conducted bi-weekly site inspection on the 8<sup>th</sup> January and 22<sup>nd</sup> January 2010 respectively. All the follow-up actions to respond to the IEC observations have been completed by the relevant contractors and verified in the subsequent site inspections by the Integrated Project Environmental Team.

Summary of the IEC site inspections is shown in *Table 4.1*.

Joint site audits were carried out by the Integrated Project Environmental Team (ET) with contractors on a weekly basis to monitor environmental issues at the construction sites to ensure that all mitigation measures were implemented timely and properly. All required mitigation measures were implemented by the relevant contractors and verified in the subsequent site inspections by the Integrated Project Environmental Team.

Summary of the weekly ET site inspections is shown in *Table 4.2*.

### **4.4 Implementation Status of Complaint Handling Procedure**

No complaint or enquiries were received in the reporting month.

**Table 4.1 Summary of Bi-weekly IEC Site Inspections**

Date of Inspection	Observations	Follow-up action
08/01/10	A drum of chemical with a pumping hose was placed on the ground without secondary spillage containments near the marine seawall of the Material Handling Berth work site.	Chemical was stored in the chemical cabinet by the Contractor.
	Oil sheens were observed near the marine seawall of the Material Handling Berth work site.	The oil sheens were cleaned up by the Contractor.
	Stagnant water was observed to have accumulated in the trench on the marine seawall of the Material Handling Berth work site.	Larvicidal oil was sprayed at the identified locations weekly by the Contractor.
22/01/10	Drips of oil sheens were observed near the out of order track crane adjacent to the entrance of the quay work site.	The oil sheens were cleaned up by the Contractor.

**Table 4.2 Summary of Weekly ET Site Inspection**

Week of Inspection	Observations	Follow-up action
03/01/10-09/01/10	- Stagnant water trapped in the drip tray of diesel drum at GGH duct preparation area to be cleared up.	- Stagnant water in the drip tray was cleared up by the Contractor.
	- Chemical waste near Unit B4 BOFA area to be labeled and relocated to central chem. waste store regularly.	- The identified chemicals waste was labeled and relocated to central chemical waste store.
	- Chemical container stored inside one of the chemical storages at the FGD work area to be closed all the times.	- The identified chemical container was closed by the Contractor.
10/01/10-16/01/10	- Oily water found inside the trench at the Material Handling Berth work site to be cleaned up.	- Oily water inside the trench was cleaned up by the Contractor.
	- Stockpile at the Sea Bank Road east area to be covered properly.	- Stockpile was covered properly by the Contractor.
	- Chemical in one of the chemical storages of the FGD work area to be stored inside the drip tray.	- The identified chemical was stored inside the drip tray by the Contractor.
17/01/10-23/01/10	- Chemical at the Material Handling Berth work site to be placed in chemical cabinet after use.	- The identified chemical was placed in chemical cabinet.
	- Container to be provided for chemical waste storage in the chemical storages area of FGD work area.	- Container was provided for chemical waste storage by the Contractor.
	- Empty oil containers near the proposed limestone preparation plant to be stored in the chemical waste cabinet.	- The identified empty oil containers were stored in the chemical waste cabinet.
24/01/10-30/01/10	- General waste to be removed from the drip tray of an air compressor at Unit B1 BOFA work area.	- The identified general waste was removed to the waste skip by the Contractor.
	- Grit waste at GGH duct preparation area to be cleaned up after grit blasting.	- Grit waste was cleaned up by the Contractor.
	- Oil stain found on the concrete floor at the proposed Gypsum Handling Plant in the West Coal Yard to be cleaned up.	- Oil stain was cleaned up by the Contractor.

# Appendices



## Appendix A Copies of Calibration Certificates



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

### TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/W/91031-1
Date of Issue:	2009-10-31
Date Received:	2009-10-30
Date Tested:	2009-10-30
Date Completed:	2009-10-31
Next Due Date:	2010-01-30

**ATTN:** Mr. Henry Leung

Page: 1 of 2

### Certificate of Calibration

**Item for calibration:**

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6820-C-M
Serial No.	: 02D0126AA
Equipment No.	: W.03.01
Project No.	: C013

**Test conditions:**

Room Temperature	: 24 degree Celsius
Relative Humidity	: 66%

**Test Specifications:**

Conductivity & Salinity Sensor, Model: 6560, S/N: 05A1209  
1. Conductivity performance check with Potassium Chloride standard solution  
2. Salinity performance check with Sodium Chloride standard solution  
Dissolved Oxygen Sensor, Model: 6562, S/N: 04A0145  
1. Performance check against Winkler titration  
Turbidity Sensor, Model: 6136, S/N: 05A1610AJ  
1. Calibration check with Formazin standard solution  
pH Meter, Model: 6561, S/N: 01J  
1. Calibration check with standard pH buffer  
Depth Meter  
1. Calibration check at 1m water level depth

**Methodologies:**

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards

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

  
\_\_\_\_\_  
**PATRICK TSE**  
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

**TEST REPORT**

Test Report No.:	C/W/91031-1
Date of Issue:	2009-10-31
Date Received:	2009-10-30
Date Tested:	2009-10-30
Date Completed:	2009-10-31
Next Due Date:	2010-01-30

Page: 2 of 2

**Results:**

1. Conductivity performance check

Specific Conductivity, $\mu\text{S}/\text{cm}$		Correction, $\mu\text{S}/\text{cm}$	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	D = C1 - C2	
1421	1420	2	1420 $\pm$ 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 $\pm$ 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O <sub>2</sub> /L		Correction, mg O <sub>2</sub> /L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	$\pm$ 0.2
Half-saturated	5.6	5.6	0.0	$\pm$ 0.2
Zero	0.0	0.0	0.0	$\pm$ 0.2

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 $\pm$ 0.05
100	100	0	100 $\pm$ 5

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error $\Delta\text{pH}_j$ , pH unit	0.01	Less than 0.05
Shift on stirring $\Delta\text{pH}_s$ , pH unit	0.01	Less than 0.02
Noise $\Delta\text{pH}_n$ , pH unit	0.00	Less than 0.02

6. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 $\pm$ 0.05

\*\*\*\*\*END OF REPORT\*\*\*\*\*

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

### TEST REPORT

**APPLICANT:** Cinotech Consultants Limited  
Room 1710, Technology Park,  
18 On Lai Street,  
Shatin, NT, Hong Kong

Test Report No.:	C/W/91031-2
Date of Issue:	2009-10-31
Date Received:	2009-10-30
Date Tested:	2009-10-30
Date Completed:	2009-10-31
Next Due Date:	2010-01-30

**ATTN:** Mr. Henry Leung

Page: 1 of 2

### Certificate of Calibration

**Item for calibration:**

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6820-C-M
Serial No.	: 02D0293AA
Equipment No.	: W.03.02
Project No.	: C013

**Test conditions:**

Room Temperature	: 24 degree Celsius
Relative Humidity	: 66%

**Test Specifications:**

Conductivity & Salinity Sensor, Model: 6560, S/N: 02C0886  
1. Conductivity performance check with Potassium Chloride standard solution  
2. Salinity performance check with Sodium Chloride standard solution  
Dissolved Oxygen Sensor, Model: 6562, S/N: 0261137  
1. Performance check against Winkler titration  
Turbidity Sensor, Model: 6136, S/N: 05F2030AQ  
1. Calibration check with Formazin standard solution  
pH Meter, Model: 6561, S/N: 02A  
1. Calibration check with standard pH buffer  
Depth Meter  
1. Calibration check at 1m water level depth

**Methodologies:**

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards

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

  
**PATRICK TSE**  
*Laboratory Manager*

### TEST REPORT

Test Report No.:	C/W/91031-2
Date of Issue:	2009-10-31
Date Received:	2009-10-30
Date Tested:	2009-10-30
Date Completed:	2009-10-31
Next Due Date:	2010-01-30

Page: 2 of 2

**Results:**

1. Conductivity performance check

Specific Conductivity, $\mu\text{S}/\text{cm}$		Correction, $\mu\text{S}/\text{cm}$	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	$D = C1 - C2$	
1420	1420	0	$1420 \pm 20$

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.1	30.0	0.1	$30.0 \pm 3$

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O <sub>2</sub> /L		Correction, mg O <sub>2</sub> /L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.0	9.0	0.0	$\pm 0.2$
Half-saturated	5.8	5.8	0.0	$\pm 0.2$
Zero	0.0	0.0	0.0	$\pm 0.2$

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	$0.00 \pm 0.05$
100	100	0	$100 \pm 5$

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error $\Delta\text{pH}_l$ , pH unit	0.01	Less than 0.05
Shift on stirring $\Delta\text{pH}_s$ , pH unit	0.01	Less than 0.02
Noise $\Delta\text{pH}_n$ , pH unit	0.01	Less than 0.02

6. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	$1.00 \pm 0.05$

\*\*\*\*\*END OF REPORT\*\*\*\*\*

## Appendix B Quality Control Report for SS Laboratory Analysis



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

### QC REPORT

**APPLICANT: Cinotech Consultants Limited**  
 Rm1710, Technology Park,  
 18 On Lai Street,  
 Shatin, N.T.

Laboratory No.:	10153
Date of Issue:	2010/01/05
Date Received:	2010/01/04
Date Tested:	2010/01/04
Date Completed:	2010/01/05

**ATTN: Mr. Henry Leung**

Page: 1 of 1

Sampling Site: Maintenance Dredging for Castle Peak Power Company  
 Project No.: MA7038  
 Sampling Date: 2010/01/04  
 Number of Sample: 120  
 Custody No.: MA7038/100104

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
SR1se	8	8	1	95

\*\*\*\*\*END OF REPORT\*\*\*\*\*

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

**PATRICK TSE**  
 Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

**QC REPORT**

**APPLICANT: Cinotech Consultants Limited**  
Rm1710, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Laboratory No.:	10174
Date of Issue:	2010/01/07
Date Received:	2010/01/06
Date Tested:	2010/01/06
Date Completed:	2010/01/07

**ATTN: Mr. Henry Leung**

Page: 1 of 1

Sampling Site: Maintenance Dredging for Castle Peak Power Company  
Project No.: MA7038  
Sampling Date: 2010/01/06  
Number of Sample: 120  
Custody No.: MA7038/100106

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
SR1se	15	18	18	103

\*\*\*\*\*END OF REPORT\*\*\*\*\*

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



**PATRICK TSE**  
*Laboratory Manager*

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

**QC REPORT**

**APPLICANT: Cinotech Consultants Limited**  
Rm1710, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Laboratory No.:	10196
Date of Issue:	2010/01/11
Date Received:	2010/01/08
Date Tested:	2010/01/08
Date Completed:	2010/01/11

**ATTN: Mr. Henry Leung**

Page: 1 of 1

Sampling Site: Maintenance Dredging for Castle Peak Power Company  
Project No.: MA7038  
Sampling Date: 2010/01/08  
Number of Sample: 120  
Custody No.: MA7038/100108

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
SR1se	12	12	2	106

\*\*\*\*\*END OF REPORT\*\*\*\*\*

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



**PATRICK TSE**  
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

**QC REPORT**

**APPLICANT: Cinotech Consultants Limited**  
Rm1710, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Laboratory No.:	10207
Date of Issue:	2010/01/12
Date Received:	2010/01/11
Date Tested:	2010/01/11
Date Completed:	2010/01/12

**ATTN: Mr. Henry Leung**

Page: 1 of 1

Sampling Site: Maintenance Dredging for Castle Peak Power Company  
Project No.: MA7038  
Sampling Date: 2010/01/11  
Number of Sample: 120  
Custody No.: MA7038/100111

\*\*\*\*\*

Total Suspended Solids Sampling Point	Duplicate Analysis			QC Recovery, %
	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
SR1se	16	15	5	101

\*\*\*\*\*END OF REPORT\*\*\*\*\*

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



**PATRICK TSE**  
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.



**QC REPORT**

**APPLICANT: Cinotech Consultants Limited**  
Rm1710, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Laboratory No.:	10234
Date of Issue:	2010/01/14
Date Received:	2010/01/13
Date Tested:	2010/01/13
Date Completed:	2010/01/14

**ATTN: Mr. Henry Leung**

Page: 1 of 1

Sampling Site: Maintenance Dredging for Castle Peak Power Company  
Project No.: MA7038  
Sampling Date: 2010/01/13  
Number of Sample: 120  
Custody No.: MA7038/100113

\*\*\*\*\*

Total Suspended Solids Sampling Point	Duplicate Analysis			QC Recovery, %
	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
SR1se	13	15	16	104

\*\*\*\*\*END OF REPORT\*\*\*\*\*

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



**PATRICK TSE**  
Laboratory Manager

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

**QC REPORT**

**APPLICANT: Cinotech Consultants Limited**  
Rm1710, Technology Park,  
18 On Lai Street,  
Shatin, N.T.

Laboratory No.:	10255
Date of Issue:	2010/01/18
Date Received:	2010/01/15
Date Tested:	2010/01/15
Date Completed:	2010/01/18

**ATTN: Mr. Henry Leung**

Page: 1 of 1

Sampling Site: Maintenance Dredging for Castle Peak Power Company  
Project No.: MA7038  
Sampling Date: 2010/01/15  
Number of Sample: 120  
Custody No.: MA7038/100115

\*\*\*\*\*

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
SR1se	12	13	1	90

\*\*\*\*\*END OF REPORT\*\*\*\*\*

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



**PATRICK TSE**  
*Laboratory Manager*

This report may not be reproduced except with prior written approval from WELLAB LIMITED and the results relate only to the items calibrated or tested.

## **Appendix C Marine Water Quality Monitoring Results and Graphical Presentation**

*Remark: Action and limit levels for the monitoring parameters at each monitoring station are listed in Table 3.4*

**Water Quality Monitoring Results at C2 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition*	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Sunny	Moderate	08:50	Surface	21.7	21.8	33.1	33.0	90.2	90.1	7.4	7.4	6.9	6.8	9	9.0
				Middle	21.9	21.6	32.9	33.1	88.2	88.1	7.3	7.2	6.6	7.7	8	8.0
				Bottom	21.5	21.4	33.0	33.1	88.0	88.1	7.1	7.1	7.8	7.9	8	8.0
6-Jan-10	Fine	Moderate	10:11	Surface	21.5	21.4	33.0	33.1	86.2	86.1	7.2	7.1	9.4	9.3	12	12.0
				Middle	21.3	21.7	33.1	33.1	87.9	87.9	7.0	7.3	9.2	6.9	12	12.0
				Bottom	21.7	21.7	33.1	33.1	90.1	90.1	7.3	7.3	6.9	6.9	17	17.0
8-Jan-10	Fine	Moderate	11:32	Surface	21.8	20.9	33.2	33.0	88.3	88.2	7.1	7.1	7.5	7.5	20	20.0
				Middle	21.5	20.7	33.0	33.1	88.0	88.2	7.1	7.1	7.5	7.5	20	20.0
				Bottom	21.5	21.4	33.0	33.0	86.2	88.1	7.0	7.1	7.5	7.5	19	19.0
11-Jan-10	Rainy	Moderate	13:36	Surface	20.9	20.8	33.0	33.1	89.1	89.1	7.4	7.4	7.2	7.2	7	7.5
				Middle	20.8	20.7	33.0	33.1	89.3	88.3	7.2	7.1	7.2	7.8	8	7.5
				Bottom	20.6	20.5	33.1	33.1	89.2	89.1	7.0	7.0	7.9	7.6	11	11.0
13-Jan-10	Fine	Moderate	15:03	Surface	20.5	20.4	33.1	33.1	89.1	89.1	7.0	7.0	10.2	10.1	10	10.0
				Middle	20.4	20.8	33.0	33.1	89.0	89.0	6.9	7.3	10.0	5.7	10	10.0
				Bottom	20.3	20.7	33.1	33.1	91.0	91.0	7.3	7.3	5.8	5.8	11	11.0
15-Jan-10	Fine	Moderate	06:47	Surface	20.8	20.8	33.1	33.1	91.0	91.0	7.2	7.2	7.3	7.3	11	11.0
				Middle	20.8	20.7	33.2	33.1	89.4	89.3	7.2	7.2	7.5	7.6	10	10.0
				Bottom	20.6	20.6	33.0	33.1	89.2	89.3	7.2	7.2	7.7	7.7	10	10.0
15-Jan-10	Fine	Moderate	06:47	Surface	20.6	20.5	33.2	33.2	89.2	89.1	7.1	7.0	7.6	7.6	9	9.0
				Middle	20.5	20.5	33.2	33.2	89.2	89.2	7.0	7.0	10.6	10.6	9	9.0
				Bottom	20.4	20.4	33.1	33.1	89.0	89.0	6.9	7.0	11.1	10.9	12	12.0
15-Jan-10	Fine	Moderate	06:47	Surface	20.9	20.9	32.9	33.0	91.2	91.1	7.4	7.4	6.5	6.6	10	10.0
				Middle	20.8	20.7	33.1	33.1	91.0	89.4	7.4	7.2	6.6	7.8	10	10.0
				Bottom	20.7	20.4	33.0	33.1	89.0	89.2	7.1	7.2	7.8	7.8	10	10.0
15-Jan-10	Fine	Moderate	06:47	Surface	20.4	20.4	33.2	33.1	89.2	89.1	6.9	6.9	9.5	10.1	14	13.5
				Middle	20.3	20.4	32.9	33.1	89.0	89.1	6.9	6.9	10.6	10.6	13	13.5
				Bottom	20.3	20.4	32.9	33.1	89.0	89.1	6.9	6.9	10.6	10.6	13	13.5

**Water Quality Monitoring Results at C2 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition*	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value
4-Jan-10	Sunny	Moderate	08:50	Surface	21.7	21.8	33.1	33.0	90.2	90.1	7.4	7.4	6.9	6.8	9	9.0	9.7
				Middle	21.6	21.6	33.1	33.1	88.2	88.1	7.2	7.2	6.6	7.3	8	8.0	
				Bottom	21.5	21.4	33.0	33.1	88.0	88.1	7.1	7.1	7.8	7.9	8	12.0	
6-Jan-10	Fine	Moderate	10:11	Surface	21.7	21.7	33.1	33.1	90.1	90.1	7.3	7.3	6.9	6.9	17	17.0	18.7
				Middle	21.8	21.7	33.2	33.1	88.3	88.2	7.1	7.1	6.9	7.2	17	20.0	
				Bottom	21.5	21.4	33.0	33.0	88.0	88.1	7.1	7.1	7.5	7.5	20	19.0	
8-Jan-10	Fine	Moderate	11:32	Surface	20.9	20.9	33.0	33.0	91.1	91.0	7.4	7.4	7.2	7.2	7	7.5	9.5
				Middle	20.8	20.7	33.0	33.1	89.3	89.3	7.2	7.1	7.6	7.8	11	11.0	
				Bottom	20.5	20.5	33.1	33.1	89.2	89.1	7.0	7.0	7.9	8.4	11	10.0	
11-Jan-10	Rainy	Moderate	13:36	Surface	20.8	20.8	33.0	33.1	91.0	91.0	7.3	7.3	5.7	5.8	11	11.0	12.7
				Middle	20.8	20.7	33.2	33.1	89.4	89.3	7.2	7.2	5.8	7.3	11	10.0	
				Bottom	20.4	20.4	33.0	33.1	89.2	89.1	7.2	7.2	7.7	8.2	10	17.0	
13-Jan-10	Fine	Moderate	15:03	Surface	20.7	20.8	32.9	33.1	91.2	91.1	7.2	7.2	6.1	6.8	9	9.0	10.0
				Middle	20.6	20.6	33.0	33.1	89.2	89.2	7.2	7.2	7.5	7.5	9	9.0	
				Bottom	20.5	20.5	33.2	33.2	89.2	89.1	7.1	7.0	7.6	8.5	9	12.0	
15-Jan-10	Fine	Moderate	06:47	Surface	20.9	20.9	32.9	33.0	91.2	91.1	7.4	7.4	6.5	6.6	10	10.0	11.2
				Middle	20.7	20.7	33.1	33.1	89.4	89.2	7.1	7.2	6.6	7.3	10	10.0	
				Bottom	20.4	20.4	33.2	33.1	89.2	89.1	6.9	6.9	7.8	8.2	10	13.5	

**Water Quality Monitoring Results at G1 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Fine	Moderate	16:00	Surface	21.9	21.9	33.2	33.2	88.0	87.9	7.2	7.1	7.2	7.0	5	5.0
				Middle	21.8	21.8	33.1	33.0	89.0	89.0	6.9	7.4	6.7	6.6	5	5.0
				Bottom	21.7	21.7	32.9	33.0	88.9	88.7	7.3	7.3	6.9	11.9	17	17.0
6-Jan-10	Fine	Moderate	17:19	Surface	21.9	21.9	33.2	33.3	88.1	88.0	7.1	7.0	7.1	6.5	18	18.0
				Middle	21.8	21.8	33.3	32.9	87.8	89.0	6.9	7.3	5.6	5.6	18	14.0
				Bottom	21.7	21.7	32.8	33.1	89.0	88.7	7.2	7.3	5.6	12.2	14	15.0
8-Jan-10	Fine	Moderate	08:20	Surface	21.0	20.9	33.2	33.1	89.1	88.9	7.0	7.1	6.8	6.9	13	12.5
				Middle	20.7	20.7	33.0	32.9	88.7	90.0	7.1	7.4	6.9	7.0	12	10.0
				Bottom	20.5	20.6	32.8	33.1	89.9	89.8	7.3	7.3	6.9	11.7	10	13.2
11-Jan-10	Rainy	Moderate	10:45	Surface	20.8	20.9	33.0	33.0	89.6	88.9	7.3	7.0	10.8	6.8	17	17.0
				Middle	20.6	20.6	33.1	33.0	88.8	90.0	7.1	7.3	12.5	7.5	7	7.0
				Bottom	20.6	20.6	33.0	33.0	88.8	89.7	6.9	7.4	7.5	11.3	13	13.0
13-Jan-10	Fine	Moderate	12:27	Surface	20.8	20.8	32.9	33.0	89.8	88.8	7.4	7.0	11.5	6.5	15	15.0
				Middle	20.7	20.7	33.0	33.1	89.5	90.0	7.3	7.3	11.1	5.5	15	12.0
				Bottom	20.7	20.7	33.1	33.1	88.9	89.7	7.0	7.2	6.3	5.5	12	5.5
15-Jan-10	Fine	Moderate	13:38	Surface	20.8	20.8	33.1	33.1	89.5	89.7	7.2	7.3	12.1	11.6	7	7.0
				Middle	20.6	20.7	33.0	33.0	88.1	89.0	7.3	7.0	11.0	6.9	7	7.0
				Bottom	20.6	20.7	32.9	33.0	88.8	90.0	6.9	7.2	6.9	6.8	14	14.0
					20.7	20.7	33.0	33.0	89.4	89.7	7.1	7.2	10.7	11.5	9	9.0

**Water Quality Monitoring Results at G1 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)		
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value
4-Jan-10	Sunny	Moderate	10:45	Surface	22.0	22.0	32.9	32.9	91.8	91.8	7.3	7.3	8.2	8.2	11	11.0	9.7
				Middle	21.6	21.7	33.0	33.0	90.0	89.9	7.2	7.2	7.8	8.6	9	9.0	
				Bottom	21.8	21.8	32.7	32.8	89.8	89.8	7.1	7.2	11.4	11.2	9	9.0	
6-Jan-10	Fine	Moderate	12:05	Surface	22.0	21.9	33.0	33.0	91.8	91.8	7.3	7.4	7.7	7.7	5	5.5	10.5
				Middle	21.7	21.7	32.8	32.9	90.0	90.0	7.2	7.2	7.7	8.0	13	13.0	
				Bottom	21.6	21.7	33.0	32.9	89.9	89.9	7.2	7.2	8.3	12.3	13	13.0	
8-Jan-10	Fine	Moderate	13:27	Surface	20.8	20.9	33.0	33.0	92.8	92.8	7.3	7.4	8.3	8.2	8	8.0	7.3
				Middle	20.8	20.8	33.0	33.0	90.9	90.9	7.3	7.2	9.3	9.3	9	9.0	
				Bottom	20.7	20.6	32.6	32.7	90.7	90.7	7.1	7.1	9.2	12.1	9	5.0	
11-Jan-10	Rainy	Moderate	15:31	Surface	20.7	20.8	33.1	33.1	92.7	92.8	7.6	7.6	8.2	7.7	15	15.0	12.2
				Middle	20.6	20.7	33.0	33.1	91.0	91.0	7.1	7.1	7.6	7.6	14	13.5	
				Bottom	20.7	20.6	33.1	32.8	90.9	90.9	7.1	7.3	7.6	11.9	13	8.0	
13-Jan-10	Fine	Moderate	16:57	Surface	20.8	20.9	33.0	33.1	92.8	92.8	7.5	7.5	7.7	7.7	4	4.0	5.7
				Middle	20.9	20.6	33.1	32.9	92.7	90.9	7.4	7.3	7.7	8.6	4	5.0	
				Bottom	20.6	20.7	32.9	32.7	90.7	90.8	7.2	7.2	9.1	11.8	5	8.0	
15-Jan-10	Fine	Moderate	08:42	Surface	20.7	20.9	32.7	33.0	90.8	92.8	7.2	7.6	11.4	7.1	8	8.0	8.7
				Middle	20.8	20.7	33.2	33.1	92.7	91.0	7.5	7.1	7.0	9.2	8	8.0	
				Bottom	20.6	20.7	33.0	32.7	90.7	90.9	7.1	7.1	8.6	12.4	8	10.0	
					20.5	20.7	32.7	32.7	90.7	90.8	7.2	7.3	12.4	12.4	10	10.0	

**Water Quality Monitoring Results at G2 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Fine	Moderate	16:38	Surface	22.1	22.0	32.8	32.8	90.9	90.9	7.3	7.4	6.0	6.5	5	5.0
				Middle	21.7	21.8	32.8	32.9	90.8	91.0	7.2	7.3	7.0	8.2	8	8.0
				Bottom	21.8	21.7	32.9	33.0	91.2	91.1	7.3	7.4	8.2	8.2	8	8.0
6-Jan-10	Fine	Moderate	17:57	Surface	21.6	21.7	33.0	33.1	91.0	90.8	7.3	7.4	11.0	10.3	7	7.0
				Middle	21.7	22.0	33.1	32.9	91.1	90.8	7.4	7.4	9.6	6.9	15	15.0
				Bottom	21.7	21.9	32.9	32.9	91.0	91.0	7.4	7.5	6.7	6.8	15	15.0
8-Jan-10	Fine	Moderate	08:58	Surface	21.9	21.9	32.8	33.0	91.1	91.2	7.4	7.5	6.9	6.8	13	13.0
				Middle	21.6	21.7	33.0	33.1	91.2	91.0	7.5	7.5	6.7	6.8	13	13.0
				Bottom	21.7	21.7	33.0	33.0	90.7	91.0	7.4	7.5	10.0	9.9	13	13.5
11-Jan-10	Rainy	Moderate	11:23	Surface	20.9	21.0	32.9	32.9	91.9	91.9	7.4	7.4	6.6	6.8	11	11.0
				Middle	21.0	20.9	32.9	33.0	92.0	92.1	7.4	7.5	6.9	7.4	11	11.0
				Bottom	20.8	20.8	33.0	32.9	92.2	92.0	7.5	7.3	7.4	7.4	16	16.0
13-Jan-10	Fine	Moderate	13:05	Surface	20.8	20.8	32.9	33.1	91.9	91.9	7.3	7.3	9.3	9.5	14	14.0
				Middle	20.7	21.1	32.7	32.8	91.8	91.9	7.4	7.4	7.2	7.0	7	7.0
				Bottom	20.8	20.7	33.1	33.0	92.0	92.0	7.3	7.3	6.7	6.3	7	7.0
15-Jan-10	Fine	Moderate	14:15	Surface	20.6	20.7	33.0	33.1	92.2	92.0	7.3	7.3	6.3	6.3	11	11.0
				Middle	20.8	20.9	32.8	32.9	91.9	91.9	7.5	7.5	9.2	9.5	7	7.0
				Bottom	20.9	20.8	32.9	33.0	91.8	92.1	7.4	7.3	9.8	9.8	7	7.0
15-Jan-10	Fine	Moderate	14:15	Surface	20.7	20.8	33.0	33.0	92.0	92.0	7.3	7.4	7.4	7.4	12	12.0
				Middle	20.8	21.1	32.6	32.7	91.8	91.9	7.4	7.4	9.9	9.6	12	12.0
				Bottom	20.9	20.9	33.0	33.0	92.0	91.9	7.3	7.4	6.9	7.0	10	10.0
15-Jan-10	Fine	Moderate	14:15	Surface	20.9	20.9	33.0	33.0	91.7	91.9	7.3	7.4	7.1	7.2	13	13.0
				Middle	20.7	20.8	33.1	33.1	92.0	91.9	7.4	7.4	7.2	7.2	13	13.0
				Bottom	20.8	20.8	33.0	33.1	91.7	91.9	7.4	7.4	9.8	10.0	12	12.0



**Water Quality Monitoring Results at G2 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition*	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)				
				Value	Average	Value	Average	Value	Average	Value	Average	Value	DA*	Value	Average	Value	DA*	Average	DA*	
4-Jan-10	Sunny	Moderate	11:18	Surface	21.7	21.6	32.8	32.9	92.0	92.0	7.6	7.6	6.6	6.6	12	12.0	8.3			
				Middle	21.5	21.6	32.7	32.7	91.9	92.3	7.4	7.4	6.5	7.5	7.7	7.9			9	9.0
				Bottom	21.6	21.7	32.8	32.7	92.1	92.3	7.4	7.4	8.0	8.0	8.0	8.0			9	9.0
6-Jan-10	Fine	Moderate	12:38	Surface	21.7	21.7	32.8	32.8	92.0	92.0	7.5	7.5	12.1	11.3	4	4.0	8.7			
				Middle	21.8	21.8	32.7	32.8	91.8	92.0	7.4	7.6	10.4	7.9	4	8.0				
				Bottom	21.8	21.7	32.9	32.9	92.0	92.0	7.5	7.5	8.1	8.1	8	8.0				
8-Jan-10	Fine	Moderate	14:00	Surface	21.6	21.7	32.9	32.9	92.2	92.1	7.6	7.5	8.1	8.1	9	9.0	6.7			
				Middle	21.7	21.7	32.7	32.8	92.2	92.2	7.6	7.5	8.1	8.1	9	9.0				
				Bottom	20.8	20.8	32.9	32.8	92.1	93.0	7.3	7.5	10.3	10.6	9	9.0				
11-Jan-10	Rainy	Moderate	16:04	Surface	20.6	20.7	32.9	32.9	93.0	93.0	7.4	7.4	7.3	7.6	5	5.0	9.7			
				Middle	20.7	20.7	32.9	32.9	92.9	93.0	7.3	7.5	7.8	7.8	5	8.0				
				Bottom	20.7	20.7	33.0	33.0	93.3	93.0	7.4	7.5	7.0	7.4	8	8.0				
13-Jan-10	Fine	Moderate	17:30	Surface	20.4	20.6	32.7	32.9	93.2	93.0	7.3	7.4	11.5	11.0	7	7.0	6.8			
				Middle	20.7	20.7	32.8	32.8	92.7	92.9	7.5	7.5	10.1	10.5	10	10.0				
				Bottom	20.7	20.7	32.8	32.8	92.7	93.1	7.5	7.5	10.9	10.9	10	10.0				
15-Jan-10	Fine	Moderate	09:15	Surface	20.7	20.7	32.9	32.9	93.1	93.0	7.4	7.4	6.7	6.7	8	8.0	10.2			
				Middle	20.8	20.8	32.9	32.9	93.0	93.0	7.4	7.5	6.7	6.3	8	8.0				
				Bottom	20.7	20.7	33.0	33.0	92.9	92.9	7.4	7.5	6.3	8.4	7	7.0				
15-Jan-10	Fine	Moderate	09:15	Surface	20.8	20.8	32.9	32.9	93.3	93.1	7.5	7.5	8.5	8.3	5	5.5	10.2			
				Middle	20.7	20.7	32.9	33.0	93.1	92.9	7.5	7.5	11.3	11.8	6	5.5				
				Bottom	20.5	20.5	32.9	32.8	93.2	93.1	7.4	7.4	12.2	11.8	6	5.5				
15-Jan-10	Fine	Moderate	09:15	Surface	20.5	20.5	32.7	32.7	92.9	93.0	7.4	7.4	6.5	6.9	11	11.0	10.2			
				Middle	20.5	20.5	32.9	32.9	93.0	93.0	7.4	7.5	7.2	7.2	11	11.0				
				Bottom	20.5	20.5	32.9	33.0	92.7	92.9	7.4	7.5	8.1	8.6	10	10.0				
15-Jan-10	Fine	Moderate	09:15	Surface	20.5	20.5	32.9	32.8	93.2	93.1	7.5	7.4	10.4	10.3	9	9.5	10.2			
				Middle	20.5	20.5	32.9	32.8	93.2	93.1	7.5	7.4	10.4	10.3	9	9.5				
				Bottom	20.5	20.5	32.7	32.7	92.9	93.1	7.3	7.4	10.2	10.3	10	9.5				

**Water Quality Monitoring Results at SR1 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	DA*
4-Jan-10	Fine	Moderate	15:19	Surface	22.0	21.9	33.4	33.4	86.3	88.2	7.3	7.2	8.1	7.8	8	8.0	6.5	
				Middle	-	-	-	-	-	-	-	-	-	-	-	-		-
				Bottom	21.9	21.9	33.2	33.3	86.4	86.3	7.0	7.0	10.6	9.9	5	5.0		
6-Jan-10	Fine	Moderate	16:38	Surface	21.8	21.9	33.2	33.3	88.3	88.3	7.3	7.3	8.6	7.9	15	15.0	13.5	
				Middle	-	-	-	-	-	-	-	-	-	-	-	-		
				Bottom	21.7	21.7	33.3	33.4	86.2	86.3	7.0	6.9	11.1	10.0	12	12.0		
8-Jan-10	Fine	Moderate	07:39	Surface	20.8	20.9	33.3	33.3	89.3	89.3	7.2	7.2	6.6	6.6	12	12.0	12.5	
				Middle	-	-	-	-	-	-	-	-	-	-	-	-		
				Bottom	20.6	20.7	33.3	33.4	87.2	87.2	7.0	7.0	9.5	9.3	13	13.0		
11-Jan-10	Rainy	Moderate	10:04	Surface	20.8	20.9	33.3	33.3	89.3	89.3	7.2	7.1	6.3	6.9	16	16.0	13.0	
				Middle	-	-	-	-	-	-	-	-	-	-	-	-		
				Bottom	20.6	20.7	33.5	33.5	87.4	87.3	7.0	7.0	9.6	9.5	10	10.0		
13-Jan-10	Fine	Moderate	11:46	Surface	20.9	20.9	33.3	33.3	89.2	89.2	7.0	7.1	7.7	7.7	13	13.0	11.0	
				Middle	-	-	-	-	-	-	-	-	-	-	-	-		
				Bottom	20.7	20.7	33.5	33.5	87.3	87.2	6.9	6.9	9.8	9.9	9	9.0		
15-Jan-10	Fine	Moderate	12:57	Surface	20.9	20.9	33.4	33.3	89.2	89.2	7.2	7.2	7.0	7.3	12	12.0	10.0	
				Middle	-	-	-	-	-	-	-	-	-	-	-	-		
				Bottom	20.6	20.7	33.5	33.5	87.4	87.3	6.9	6.9	10.0	10.1	8	8.0		



**Water Quality Monitoring Results at SR2 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)		
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value
4-Jan-10	Fine	Moderate	15:09	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	21.6 21.8	33.1 33.3	33.2	89.0 89.5	7.2 7.2	7.2	8.1 7.7	7.9	5 6	5.5	7.9	5.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-
6-Jan-10	Fine	Moderate	16:29	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	21.7 21.7	33.1 33.3	33.2	89.0 89.3	7.1 7.1	7.1	9.4 9.3	9.4	7 7	7.0	9.4	7.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Jan-10	Fine	Moderate	07:30	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	20.7 20.6	33.1 33.2	33.2	90.0 90.4	7.1 7.2	7.2	8.8 8.8	8.8	9 10	9.5	8.8	9.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Jan-10	Rainy	Moderate	09:54	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	20.8 20.7	33.2 33.2	33.2	90.1 90.5	7.1 7.3	7.2	9.0 9.1	9.1	8 9	8.5	9.1	8.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jan-10	Fine	Moderate	11:37	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.3	20.7 20.8	33.2 33.3	33.3	90.2 90.4	7.3 7.2	7.3	8.4 7.8	8.1	8 8	8.0	8.1	8.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Jan-10	Fine	Moderate	12:47	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	20.7 20.8	33.4 33.1	33.3	90.2 90.3	7.3 7.2	7.3	9.3 9.6	9.5	7 8	7.5	9.5	7.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-

**Water Quality Monitoring Results at SR2 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition*	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)		
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value
4-Jan-10	Sunny	Moderate	09:49	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	21.6	32.9	32.8	92.8	7.4	7.9	8.5	5	5.0	8.5	5	5.0	
				Bottom	-	21.8	32.7	-	93.0	7.6	9.0	-	-	-	-	-	-	-
6-Jan-10	Fine	Moderate	11:09	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	21.8	32.9	32.8	92.7	7.5	8.3	8.8	9	9.0	8.8	9	9.0	
				Bottom	-	21.8	32.7	-	93.0	7.5	9.2	-	-	-	-	-	-	-
8-Jan-10	Fine	Moderate	12:31	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	20.8	32.7	32.7	93.6	7.5	7.9	8.5	6	6.0	8.5	6	6.0	
				Bottom	-	20.8	32.7	-	94.2	7.7	9.0	-	-	-	-	-	-	-
11-Jan-10	Rainy	Moderate	14:35	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	20.8	32.7	32.8	93.8	7.4	7.7	8.2	15	15.0	8.2	15	15.0	
				Bottom	-	20.5	32.8	-	94.0	7.6	8.7	-	-	-	-	-	-	-
13-Jan-10	Fine	Moderate	16:01	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	20.7	32.7	32.8	93.6	7.6	8.9	8.3	5	5.5	8.3	6	5.5	
				Bottom	-	20.7	32.8	-	94.2	7.6	7.6	-	-	-	-	-	-	-
15-Jan-10	Fine	Moderate	07:46	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	20.8	32.8	32.8	93.8	7.6	8.6	8.5	13	13.0	8.5	13	13.0	
				Bottom	-	20.6	32.7	-	94.2	7.4	8.3	-	-	-	-	-	-	-

Water Quality Monitoring Results at SR3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Fine	Moderate	14:49	Surface	21.6	21.6	33.2	33.2	88.8	89.7	7.1	7.2	6.9	7.2	7	7.0
				Middle	21.8	21.9	33.4	33.4	90.8	90.8	7.3	7.3	9.3	8.5	6	6.0
				Bottom	22.0	21.9	33.3	33.6	90.8	90.5	7.3	7.4	7.7	10.0	6	5.0
6-Jan-10	Fine	Moderate	16:08	Surface	21.6	21.7	33.4	33.3	89.9	89.7	7.3	7.2	6.8	6.8	12	12.0
				Middle	21.8	22.0	33.1	33.4	89.4	90.8	7.0	7.4	6.7	7.6	12	6.0
				Bottom	21.9	21.8	33.4	33.5	90.7	90.5	7.3	7.4	7.5	9.6	6	7.8
8-Jan-10	Fine	Moderate	07:09	Surface	21.8	20.6	33.5	33.4	90.6	90.7	7.4	7.2	9.4	6.8	9	9.0
				Middle	21.8	20.9	33.5	33.4	90.4	91.9	7.3	7.4	6.7	8.9	9	8.0
				Bottom	20.6	20.8	33.3	33.5	92.0	91.7	7.4	7.4	9.4	10.2	8	11.0
11-Jan-10	Rainy	Moderate	09:33	Surface	20.9	20.8	33.4	33.3	91.8	90.7	7.4	7.2	10.1	6.6	7	7.0
				Middle	20.9	20.9	33.5	33.4	91.4	91.8	7.4	7.4	10.3	6.7	7	8.0
				Bottom	20.8	20.7	33.3	33.4	91.8	91.5	7.3	7.4	9.7	9.6	8	13.0
13-Jan-10	Fine	Moderate	11:16	Surface	20.7	20.7	33.4	33.2	91.3	90.7	7.4	7.2	10.9	7.2	14	14.0
				Middle	20.7	20.9	33.2	33.4	90.4	92.0	7.1	7.5	6.8	8.6	14	15.0
				Bottom	20.9	20.8	33.5	33.4	91.9	91.5	7.4	7.4	7.8	10.4	15	5.0
15-Jan-10	Fine	Moderate	12:26	Surface	20.8	20.8	33.4	33.4	91.7	90.7	7.5	7.2	11.2	8.0	8	8.0
				Middle	20.7	20.9	33.4	33.5	90.8	91.8	7.2	7.4	8.4	9.4	8	10.0
				Bottom	20.8	20.9	33.4	33.2	90.5	91.8	7.2	7.3	7.5	9.5	10	9.0
				Bottom	21.0	20.9	33.2	33.4	91.8	91.6	7.4	7.5	9.2	9.7	9	9.0
				Bottom	20.9	20.9	33.4	33.4	91.3	91.3	7.4	7.5	9.7	9.5	9	9.0

**Water Quality Monitoring Results at SR3 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition*	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Sunny	Moderate	09:35	Surface	21.9	21.8	32.8	32.6	91.7	91.5	7.3	7.3	5.9	6.6	8	8.0
				Middle	21.7	21.6	32.3	32.9	92.7	7.5	7.3	7.3	9.1	8.4	7	7.5
				Bottom	21.5	21.6	32.9	32.6	92.6	7.4	7.7	7.4	7.7	11.6	12.2	8
6-Jan-10	Fine	Moderate	10:55	Surface	21.6	21.7	32.8	32.7	92.2	92.4	7.6	7.6	7.7	7.4	7	7.0
				Middle	21.5	21.5	32.5	32.8	91.7	7.4	7.1	7.4	7.7	7.4	7	7.0
				Bottom	21.5	21.5	32.7	32.8	92.9	7.5	7.5	7.4	8.8	8.3	12	12.0
8-Jan-10	Fine	Moderate	12:17	Surface	21.5	21.5	32.6	32.7	92.7	92.4	7.6	7.5	11.6	11.2	8	8.0
				Middle	21.4	21.5	32.8	32.7	92.2	7.4	7.5	7.5	10.7	11.2	8	8.0
				Bottom	20.7	20.8	32.9	32.6	92.6	7.4	7.4	7.4	6.1	6.0	11	11.0
11-Jan-10	Rainy	Moderate	14:21	Surface	20.8	20.9	32.3	32.9	93.8	93.7	7.4	7.4	5.9	5.7	11	11.0
				Middle	20.5	20.6	32.9	32.8	92.4	7.4	7.4	7.4	9.4	8.6	7	7.0
				Bottom	20.7	20.6	32.8	32.7	93.6	7.4	7.7	7.4	7.7	8.6	7	7.0
13-Jan-10	Fine	Moderate	15:47	Surface	20.7	20.6	32.7	32.8	93.6	93.5	7.6	7.5	10.6	11.7	8	7.5
				Middle	20.4	20.6	32.6	32.7	93.3	7.4	7.5	7.5	12.7	11.7	7	7.5
				Bottom	20.8	20.9	32.8	32.6	92.6	7.3	7.3	7.3	5.7	5.7	12	12.0
15-Jan-10	Fine	Moderate	07:32	Surface	20.6	20.5	32.7	32.7	93.7	93.7	7.4	7.4	9.2	9.4	12	12.0
				Middle	20.5	20.5	32.9	32.9	93.7	7.4	7.4	7.4	9.6	9.6	12	12.0
				Bottom	20.7	20.6	32.8	32.8	93.7	7.5	7.5	7.5	10.5	10.8	9	9.0
15-Jan-10	Fine	Moderate	07:32	Surface	20.9	20.8	32.7	32.6	93.1	93.4	7.5	7.5	11.0	10.8	9	9.0
				Middle	20.7	20.8	32.4	32.6	92.5	7.2	7.2	7.2	6.3	6.4	6	6.0
				Bottom	20.7	20.5	32.7	32.7	92.2	7.6	7.5	7.5	6.4	9.5	6	6.0
15-Jan-10	Fine	Moderate	07:32	Surface	20.6	20.6	32.8	32.8	93.8	93.8	7.4	7.4	11.9	12.2	6	6.0
				Middle	20.5	20.6	32.8	32.8	93.6	7.5	7.6	7.6	12.5	12.2	6	6.0
				Bottom	20.5	20.5	32.8	32.7	93.3	7.6	7.5	7.5	6.5	6.2	10	10.0
15-Jan-10	Fine	Moderate	07:32	Surface	20.7	20.7	32.9	32.7	92.7	92.5	7.4	7.5	5.8	6.2	10	10.0
				Middle	20.8	20.8	32.5	32.9	92.2	7.4	7.4	7.4	8.9	8.6	13	13.0
				Bottom	20.7	20.7	32.7	32.7	93.8	7.5	7.5	7.5	8.3	8.6	13	13.0
15-Jan-10	Fine	Moderate	07:32	Surface	20.5	20.5	32.6	32.7	93.6	93.5	7.5	7.5	11.4	11.0	12	12.0
				Middle	20.5	20.5	32.7	32.7	93.6	7.5	7.5	7.5	10.6	11.0	12	12.0
				Bottom	20.5	20.5	32.7	32.7	93.3	7.5	7.5	7.5	10.6	11.0	12	12.0

**Water Quality Monitoring Results at SR4 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Fine	Moderate	14:28	Surface	21.7	21.7	33.2	33.3	90.8	90.6	7.1	7.2	7.2	7.0	4	4.5
				Middle	21.6	21.8	33.3	33.3	90.3	91.9	7.2	7.5	6.7	8.3	5	4.0
				Bottom	21.7	21.8	33.2	33.1	91.7	91.5	7.5	7.4	7.9	8.6	4	7.0
6-Jan-10	Fine	Moderate	15:47	Surface	21.7	21.7	33.2	33.2	90.7	90.5	7.4	7.3	8.0	7.9	12	12.0
				Middle	21.6	21.8	33.2	33.3	90.3	91.9	7.2	7.6	7.7	7.4	12	10.0
				Bottom	21.7	21.7	33.3	33.4	91.8	91.5	7.6	7.4	7.1	9.9	10	10.0
8-Jan-10	Fine	Moderate	06:48	Surface	20.8	20.7	33.1	33.2	91.8	91.6	7.2	7.3	7.4	7.4	7	7.0
				Middle	20.6	20.8	33.2	33.2	91.4	92.8	7.4	7.4	7.4	7.0	7	9.0
				Bottom	20.8	20.7	33.1	33.3	92.8	92.6	7.3	7.4	6.6	9.6	9	9.0
11-Jan-10	Rainy	Moderate	09:13	Surface	20.6	20.7	33.1	33.3	92.7	92.6	7.4	7.4	8.5	8.6	9	9.0
				Middle	20.8	20.7	33.4	33.3	92.4	91.5	7.4	7.2	10.6	6.9	12	12.0
				Bottom	20.7	20.8	33.3	33.2	91.6	92.9	7.2	7.5	7.1	6.7	12	12.0
13-Jan-10	Fine	Moderate	10:55	Surface	20.8	20.6	33.1	33.3	92.9	92.9	7.5	7.5	6.8	6.7	14	14.0
				Middle	20.8	20.6	33.2	33.3	92.9	92.6	7.5	7.5	6.6	9.6	14	10.0
				Bottom	20.6	20.7	33.1	33.1	92.8	92.6	7.5	7.5	8.5	8.6	10	10.0
15-Jan-10	Fine	Moderate	12:06	Surface	20.9	20.6	33.1	33.3	92.4	91.6	7.5	7.2	8.7	7.3	10	10.0
				Middle	20.7	20.9	33.4	33.3	91.5	93.0	7.2	7.6	7.5	7.0	10	6.5
				Bottom	20.9	20.7	33.3	33.3	93.0	92.6	7.6	7.5	7.1	9.6	7	7.2
15-Jan-10	Fine	Moderate	12:06	Surface	20.6	20.7	33.3	33.3	92.8	91.6	7.4	7.2	8.0	7.7	14	14.0
				Middle	20.8	20.9	33.2	33.2	92.9	92.8	7.4	7.4	7.4	7.4	14	11.0
				Bottom	20.9	20.8	33.2	33.3	92.7	92.5	7.4	7.5	8.2	8.5	11	8.5



**Water Quality Monitoring Results at SR4 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Sunny	Moderate	09:22	Surface	21.8	21.9	32.9	33.1	90.2	90.2	7.5	7.5	7.5	7.7	10	10.0
				Middle	21.9	21.6	33.2	33.1	90.0	90.2	7.4	7.4	7.8	9.6	10	13.0
				Bottom	21.6	21.6	33.1	33.2	90.3	90.3	7.3	7.4	9.2	9.9	13	11.0
6-Jan-10	Fine	Moderate	10:42	Surface	21.6	21.9	33.2	33.1	90.2	90.3	7.4	7.4	9.0	9.8	11	10.0
				Middle	21.8	21.7	33.0	33.1	90.3	90.3	7.4	7.4	5.9	5.9	10	10.0
				Bottom	21.9	21.6	33.1	33.2	90.2	90.3	7.3	7.4	7.8	7.8	10	9.7
8-Jan-10	Fine	Moderate	12:03	Surface	21.6	21.6	33.0	33.1	90.5	90.3	7.4	7.4	10.5	10.6	9	9.0
				Middle	20.9	20.8	33.2	33.1	91.3	91.3	7.3	7.4	7.4	7.4	5	5.0
				Bottom	20.7	20.7	33.0	33.1	91.2	91.2	7.4	7.4	7.4	7.4	5	7.0
11-Jan-10	Rainy	Moderate	14:07	Surface	20.7	20.6	33.1	33.1	91.4	91.3	7.3	7.3	8.0	9.0	7	6.7
				Middle	20.6	20.6	33.2	33.1	91.3	91.3	7.2	7.3	12.8	13.0	8	8.0
				Bottom	20.5	20.5	33.0	33.0	91.2	91.2	7.3	7.3	13.2	13.2	8	12.0
13-Jan-10	Fine	Moderate	15:34	Surface	20.9	20.9	33.1	33.2	91.1	91.2	7.4	7.5	6.4	6.5	12	10.0
				Middle	20.7	20.6	33.0	33.1	91.0	91.3	7.2	7.3	8.2	8.7	10	10.0
				Bottom	20.6	20.6	33.1	33.1	91.5	91.3	7.3	7.4	9.2	9.2	10	9.5
15-Jan-10	Fine	Moderate	07:19	Surface	20.5	20.6	33.0	33.1	91.4	91.3	7.4	7.4	13.2	13.4	9	9.5
				Middle	20.7	20.7	33.2	33.2	91.2	91.3	7.3	7.3	13.5	13.1	10	11.0
				Bottom	20.8	20.8	33.1	33.2	91.3	91.2	7.4	7.4	7.6	7.6	11	7.0
15-Jan-10	Fine	Moderate	07:19	Surface	20.6	20.7	33.0	33.1	91.3	91.2	7.4	7.5	7.4	7.4	11	10.0
				Middle	20.8	20.8	33.1	33.2	91.1	91.2	7.5	7.5	8.1	8.1	7	7.0
				Bottom	20.6	20.7	33.2	33.2	91.3	91.3	7.2	7.3	8.1	8.1	7	4.0
15-Jan-10	Fine	Moderate	07:19	Surface	20.6	20.7	33.0	33.1	91.2	91.2	7.4	7.5	7.4	7.4	10	10.0
				Middle	20.8	20.8	33.1	33.2	91.1	91.2	7.5	7.5	7.5	7.5	10	10.0
				Bottom	20.7	20.7	33.2	33.2	91.3	91.3	7.3	7.4	8.5	8.6	5	5.5
15-Jan-10	Fine	Moderate	07:19	Surface	20.6	20.7	33.0	33.1	91.2	91.2	7.4	7.4	7.4	7.4	7	7.0
				Middle	20.7	20.7	33.1	33.2	91.3	91.3	7.5	7.5	12.1	12.1	6	5.5
				Bottom	20.7	20.7	33.2	33.2	91.2	91.3	7.3	7.4	12.6	12.4	7	7.0

**Water Quality Monitoring Results at SR5 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)		DA*	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average		Value
4-Jan-10	Fine	Moderate	14:14	Surface	21.6	21.5	33.3	33.3	93.3	93.3	7.5	7.4	7.5	6.8	7.1	8	8.0	8.5
				Middle	21.6	21.5	33.3	33.4	94.7	94.7	7.8	7.8	7.7	7.7	7.8	16	15.5	
				Bottom	21.4	21.5	33.5	33.5	94.6	94.2	7.7	7.6	7.7	7.8	10.2	10.7	9	
6-Jan-10	Fine	Moderate	15:33	Surface	21.5	21.6	33.3	33.3	93.4	93.2	7.6	7.3	7.5	7.4	7.8	11	11.0	9.0
				Middle	21.6	21.5	33.2	33.3	93.0	94.6	7.5	7.8	7.7	8.1	8.4	12	12.0	
				Bottom	21.4	21.5	33.3	33.5	94.6	94.2	7.5	7.7	7.7	8.6	10.3	10.8	16	
8-Jan-10	Fine	Moderate	06:34	Surface	20.5	20.5	33.3	33.4	94.5	94.3	7.4	7.4	7.5	7.9	7.4	9	9.0	8.2
				Middle	20.5	20.4	33.4	33.4	94.0	95.5	7.5	7.8	7.7	6.8	6.3	11	11.0	
				Bottom	20.4	20.4	33.4	33.5	95.4	95.2	7.7	7.5	7.7	6.3	9.9	10	10.0	
11-Jan-10	Rainy	Moderate	08:59	Surface	20.4	20.4	33.5	33.5	95.3	94.4	7.5	7.4	7.4	12.0	11.0	10	10.0	8.4
				Middle	20.6	20.6	33.1	33.2	95.1	94.3	7.8	7.4	7.5	7.2	7.4	10	10.0	
				Bottom	20.5	20.5	33.3	33.3	94.2	95.6	7.5	7.5	7.6	7.5	7.1	17	17.0	
13-Jan-10	Fine	Moderate	10:41	Surface	20.5	20.4	33.2	33.6	95.4	95.3	7.7	7.7	7.7	10.9	10.8	8	8.5	8.8
				Middle	20.3	20.7	33.6	33.3	95.1	94.2	7.5	7.5	7.5	8.0	7.7	10	10.0	
				Bottom	20.7	20.6	33.3	33.5	94.1	95.5	7.8	7.8	7.7	7.3	7.8	3	3.0	
15-Jan-10	Fine	Moderate	11:51	Surface	20.5	20.5	33.5	33.5	95.3	95.2	7.7	7.6	7.7	10.6	10.8	5	5.5	8.5
				Middle	20.4	20.6	33.4	33.3	94.3	94.2	7.6	7.5	7.6	7.5	7.1	10	10.0	
				Bottom	20.7	20.5	33.3	33.4	94.0	95.5	7.5	7.8	7.7	6.6	8.0	11	11.0	
15-Jan-10	Fine	Moderate	11:51	Surface	20.4	20.5	33.4	33.5	95.3	94.9	7.6	7.7	7.7	10.5	10.4	10	10.0	8.5
				Middle	20.5	20.5	33.4	33.5	95.3	95.1	7.6	7.5	7.7	8.0	8.0	11	11.0	
				Bottom	20.4	20.4	33.6	33.5	94.9	95.1	7.7	7.6	7.7	10.2	10.2	10	10.0	

**Water Quality Monitoring Results at SR5 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition*	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Sunny	Moderate	09:11	Surface	21.8	21.8	33.1	33.1	89.8	89.8	7.1	7.1	8.1	7.1	10	10.0
				Middle	21.5	21.5	33.2	33.1	90.9	90.9	7.5	7.4	7.2	7.2	10	10.0
				Bottom	21.5	21.5	33.0	33.1	90.8	90.8	7.3	7.3	8.1	8.6	9	9.5
6-Jan-10	Fine	Moderate	10:32	Surface	21.4	21.5	33.1	33.1	90.8	90.7	7.3	7.3	10.4	10.5	10	10.0
				Middle	21.8	21.8	33.0	33.0	89.9	89.8	7.2	7.2	6.1	6.2	9	9.0
				Bottom	21.7	21.5	33.1	33.2	89.7	90.9	7.1	7.5	6.2	8.9	9	10.0
8-Jan-10	Fine	Moderate	11:53	Surface	21.6	21.3	33.1	33.1	90.9	90.6	7.4	7.4	9.3	8.9	10	10.0
				Middle	21.4	21.3	33.2	33.1	90.9	90.6	7.5	7.4	8.4	12.0	10	9.0
				Bottom	21.4	20.8	33.1	33.2	90.9	90.7	7.2	7.1	11.8	8.0	9	6.0
11-Jan-10	Rainy	Moderate	13:57	Surface	21.2	20.8	33.1	33.1	90.8	90.9	7.1	7.1	12.2	7.5	6	6.0
				Middle	20.8	20.5	33.0	33.1	90.5	91.9	7.0	7.4	8.5	8.1	6	8.0
				Bottom	20.7	20.2	33.2	33.1	90.7	91.8	7.2	7.3	7.8	8.1	8	9.0
13-Jan-10	Fine	Moderate	15:24	Surface	20.5	20.4	33.1	33.1	91.9	91.6	7.4	7.3	7.3	12.5	10	10.0
				Middle	20.4	20.4	33.0	33.1	92.0	91.7	7.3	7.4	7.4	11.8	6	6.0
				Bottom	20.4	20.3	33.2	33.1	92.0	90.8	7.4	7.2	7.3	7.6	6	6.0
15-Jan-10	Fine	Moderate	07:08	Surface	20.3	20.3	33.0	33.0	90.7	90.9	7.3	7.3	7.9	7.7	12	12.0
				Middle	20.7	20.5	33.1	33.2	90.7	92.0	7.2	7.3	7.8	8.2	12	13.0
				Bottom	20.3	20.4	33.2	33.1	92.1	91.7	7.4	7.3	9.1	11.6	13	10.0

**Water Quality Monitoring Results at SR6 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Fine	Moderate	15:48	Surface	21.7	21.8	33.0	33.0	90.5	90.5	7.3	7.3	6.1	6.4	11	11.0
				Middle	21.7	21.7	32.9	32.9	91.7	91.6	7.6	7.5	7.2	7.7	14	14.0
				Bottom	21.7	21.7	33.0	33.0	91.5	91.4	7.4	7.4	8.2	9.4	14	11.5
6-Jan-10	Fine	Moderate	17:07	Surface	21.7	21.8	33.1	33.1	90.7	90.6	7.2	7.2	6.1	6.2	11	10.5
				Middle	21.7	21.7	32.9	33.0	91.7	91.7	7.4	7.5	6.2	7.5	10	11.0
				Bottom	21.7	21.7	33.2	33.1	91.6	91.3	7.4	7.5	7.5	10.7	11	18.0
8-Jan-10	Fine	Moderate	08:08	Surface	20.9	20.9	33.0	33.0	91.7	91.5	7.1	7.1	6.9	7.4	11	11.0
				Middle	20.8	20.8	33.0	33.1	92.8	92.7	7.6	7.6	7.9	6.9	11	5.0
				Bottom	20.7	20.7	33.1	33.1	92.6	92.3	7.6	7.6	6.8	9.7	5	10.0
11-Jan-10	Rainy	Moderate	10:33	Surface	20.9	20.9	33.1	33.1	91.6	91.5	7.4	7.4	7.5	7.4	13	13.0
				Middle	20.8	20.8	32.9	33.0	91.4	92.6	7.3	7.4	7.3	8.3	13	6.0
				Bottom	20.7	20.7	33.0	33.1	92.6	92.2	7.5	7.5	7.7	10.7	6	8.0
13-Jan-10	Fine	Moderate	12:15	Surface	20.9	20.8	33.2	33.1	91.6	91.5	7.3	7.3	6.7	7.0	8	8.0
				Middle	20.6	20.7	32.9	33.0	91.4	92.7	7.4	7.5	7.3	8.0	8	6.0
				Bottom	20.6	20.7	33.1	32.9	92.6	92.4	7.5	7.6	8.1	9.7	6	10.5
15-Jan-10	Fine	Moderate	13:26	Surface	20.9	20.9	33.1	33.2	91.5	91.5	7.3	7.3	7.0	7.1	7	7.5
				Middle	20.7	20.8	33.1	33.0	91.4	92.6	7.6	7.5	7.1	8.5	8	12.0
				Bottom	20.8	20.7	33.0	32.9	92.6	92.4	7.3	7.5	8.7	10.3	12	11.0

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	DA*	Value	Average
4-Jan-10	Sunny	Moderate	10:36	Surface	21.9	21.9	33.7	33.9	93.7	93.7	7.6	7.6	7.4	7.5	10	10.0
				Middle	21.6	21.7	33.2	33.3	93.7	93.9	7.5	7.6	8.7	8.7	10	10.0
				Bottom	21.8	21.8	33.3	33.2	94.1	94.1	7.7	7.6	8.7	8.7	12	12.0
6-Jan-10	Fine	Moderate	11:57	Surface	21.7	21.8	33.2	33.2	93.8	93.8	7.6	7.6	11.5	11.5	12	12.0
				Middle	21.8	21.7	33.2	33.2	93.5	93.5	7.5	7.6	11.4	11.4	12	12.0
				Bottom	21.8	21.9	33.9	33.8	93.8	93.8	7.6	7.6	6.8	6.8	10	10.0
8-Jan-10	Fine	Moderate	13:18	Surface	22.0	21.9	33.7	33.7	93.9	93.9	7.5	7.6	6.8	6.8	10	10.0
				Middle	21.6	21.6	33.1	33.2	93.5	93.8	7.5	7.6	7.2	7.3	9	9.0
				Bottom	21.6	21.7	33.3	33.3	94.1	94.1	7.6	7.6	7.3	7.3	9	9.0
11-Jan-10	Rainy	Moderate	15:22	Surface	21.7	21.7	33.0	33.1	93.8	93.8	7.5	7.6	12.8	13.1	8	7.5
				Middle	21.6	21.0	33.1	33.7	93.6	94.8	7.6	7.7	13.3	13.3	7	7.5
				Bottom	21.6	20.9	33.1	33.7	94.8	94.8	7.7	7.7	7.8	7.8	8	8.5
13-Jan-10	Fine	Moderate	16:49	Surface	20.8	20.7	33.3	33.3	94.7	94.7	7.6	7.7	7.7	7.7	8	8.0
				Middle	20.8	20.7	33.2	33.2	95.0	94.9	7.7	7.7	9.5	9.5	8	8.0
				Bottom	20.6	20.6	33.2	33.1	95.1	94.9	7.7	7.6	9.5	9.5	8	8.0
15-Jan-10	Fine	Moderate	08:33	Surface	20.6	20.6	33.1	33.1	94.9	94.9	7.7	7.6	11.5	11.6	8	8.0
				Middle	20.6	20.6	33.1	33.1	94.6	94.6	7.5	7.6	11.6	11.6	8	8.0
				Bottom	20.8	20.9	33.7	33.7	94.8	94.8	7.6	7.6	6.4	6.4	13	13.0
11-Jan-10	Moderate	Moderate	15:22	Surface	20.9	20.9	33.7	33.7	94.8	94.8	7.6	7.6	6.4	6.4	13	13.0
				Middle	20.7	20.7	33.2	33.2	94.5	94.7	7.7	7.7	7.7	7.7	10	10.0
				Bottom	20.7	20.7	33.1	33.2	94.9	94.7	7.6	7.7	7.9	7.7	10	10.0
13-Jan-10	Fine	Moderate	16:49	Surface	20.6	20.7	33.0	33.0	95.1	94.8	7.5	7.6	12.6	13.0	6	6.0
				Middle	20.7	20.7	33.0	33.0	94.5	94.5	7.7	7.6	13.4	13.4	6	6.0
				Bottom	21.0	20.9	33.8	33.8	94.9	94.9	7.5	7.6	6.9	7.0	5	5.0
15-Jan-10	Fine	Moderate	08:33	Surface	20.8	20.8	33.7	33.7	94.8	94.8	7.7	7.6	7.0	7.0	5	5.0
				Middle	20.6	20.7	33.0	33.2	94.6	94.8	7.5	7.6	8.5	8.8	5	5.0
				Bottom	20.6	20.6	33.3	33.2	95.0	94.8	7.6	7.6	9.1	9.6	5	5.0
11-Jan-10	Moderate	Moderate	15:22	Surface	20.6	20.6	33.1	33.2	94.9	94.9	7.6	7.6	12.6	13.0	3	3.0
				Middle	20.6	21.0	33.2	33.2	94.7	94.7	7.5	7.6	13.3	13.3	3	3.0
				Bottom	20.6	21.0	33.2	33.2	94.7	94.7	7.6	7.6	7.6	7.6	11	11.0
15-Jan-10	Fine	Moderate	08:33	Surface	21.0	21.0	33.8	33.9	94.7	94.7	7.6	7.6	7.6	7.6	11	11.0
				Middle	20.9	21.0	33.9	33.9	94.7	94.7	7.6	7.6	7.6	7.6	11	11.0
				Bottom	20.6	20.6	33.1	33.2	94.5	94.7	7.5	7.6	8.5	8.5	11	11.0
11-Jan-10	Moderate	Moderate	15:22	Surface	20.6	20.6	33.3	33.3	94.9	94.9	7.6	7.6	12.1	12.1	10	10.5
				Middle	20.6	20.7	33.0	33.2	95.0	94.9	7.7	7.6	12.1	12.1	10	10.5
				Bottom	20.8	20.7	33.3	33.2	94.7	94.9	7.5	7.6	12.1	12.1	11	11.0

**Water Quality Monitoring Results at SR7 - Mid-Ebb Tide**

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Fine	Moderate	16:16	Surface	21.7	21.7	33.2	33.2	88.3	88.3	7.3	7.3	7.7	7.8	7	7.0
				Middle	21.9	21.8	33.2	33.1	88.3	88.4	7.2	7.2	8.2	7.5	11	11.0
				Bottom	21.8	21.8	33.0	33.0	88.6	88.5	7.2	7.3	10.4	10.2	6	6.0
6-Jan-10	Fine	Moderate	17:35	Surface	21.9	21.9	33.0	33.1	88.4	88.4	7.3	7.3	5.9	6.2	14	14.0
				Middle	21.9	21.9	33.0	33.0	88.2	88.4	7.1	7.2	7.3	7.6	8	8.0
				Bottom	21.8	21.8	33.2	33.1	88.4	88.3	7.1	7.1	11.1	10.6	18	18.0
8-Jan-10	Fine	Moderate	08:36	Surface	20.8	20.8	33.1	33.1	89.3	89.3	7.2	7.2	6.8	6.8	6	6.0
				Middle	20.7	20.8	33.1	33.1	89.3	89.5	7.2	7.2	7.5	7.0	6	6.0
				Bottom	20.6	20.7	32.9	32.9	89.5	89.4	7.3	7.2	11.5	10.7	7	7.0
11-Jan-10	Rainy	Moderate	11:01	Surface	20.9	21.0	33.1	33.1	89.4	89.3	7.2	7.3	6.0	6.5	7	7.5
				Middle	20.9	20.8	32.9	33.0	89.2	89.4	7.1	7.2	6.7	6.7	10	10.0
				Bottom	20.8	20.8	33.1	33.1	89.4	89.3	7.2	7.2	9.9	10.5	10	10.0
13-Jan-10	Fine	Moderate	12:43	Surface	20.8	20.9	33.1	33.1	89.2	89.3	7.0	7.1	6.1	6.6	9	9.0
				Middle	20.7	20.7	33.0	33.0	89.3	89.4	7.2	7.3	7.7	7.1	11	11.0
				Bottom	20.6	20.6	32.9	33.0	89.4	89.3	7.1	7.2	11.3	10.6	5	5.0
15-Jan-10	Fine	Moderate	13:53	Surface	20.9	20.9	33.1	33.2	89.3	89.4	7.1	7.2	6.7	6.4	7	7.0
				Middle	20.9	20.9	32.9	33.1	89.1	89.4	7.2	7.2	7.8	7.2	7	7.0
				Bottom	20.6	20.7	33.1	33.1	89.4	89.4	7.2	7.2	10.1	10.6	6	6.0

Water Quality Monitoring Results at SR7 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
4-Jan-10	Sunny	Moderate	11:01	Surface	21.8	21.8	32.9	32.9	92.4	92.3	7.5	7.5	6.4	6.5	8	8.0	9.1	8.5
				Middle	21.9	21.9	32.8	32.9	93.6	93.6	7.7	7.7	8.4	8.5	5	5.5		
				Bottom	21.8	21.8	32.9	32.8	93.6	93.6	7.6	7.6	8.6	12.5	12	12.0		
6-Jan-10	Fine	Moderate	12:22	Surface	21.7	21.8	32.7	32.8	92.4	92.4	7.4	7.4	7.9	7.8	7	7.0	9.2	7.7
				Middle	21.7	21.8	32.9	32.9	93.7	93.7	7.6	7.6	7.6	7.9	7	7.0		
				Bottom	21.9	21.8	32.8	32.8	93.6	93.6	7.6	7.6	8.2	12.0	9	9.0		
8-Jan-10	Fine	Moderate	13:43	Surface	20.7	20.8	32.9	32.8	93.5	93.4	7.3	7.3	8.1	8.1	8	8.0	9.9	8.3
				Middle	20.7	20.7	32.7	32.8	94.8	94.8	7.7	7.7	9.1	9.0	6	6.0		
				Bottom	20.7	20.7	32.9	32.8	94.7	94.5	7.6	7.5	8.8	13.5	11	11.0		
11-Jan-10	Rainy	Moderate	15:47	Surface	20.6	20.9	32.9	32.7	94.0	94.3	7.4	7.4	11.8	12.7	11	7.0	9.8	9.0
				Middle	20.9	20.9	32.6	32.7	93.5	93.4	7.3	7.4	7.2	7.2	7	7.0		
				Bottom	20.7	20.7	32.8	32.9	94.6	94.6	7.5	7.6	8.1	8.2	8	8.0		
13-Jan-10	Fine	Moderate	17:14	Surface	20.5	20.6	32.9	32.8	94.6	94.3	7.6	7.6	13.9	14.0	12	12.0	9.8	4.5
				Middle	20.6	20.9	32.7	32.8	94.0	94.6	7.5	7.6	14.0	7.6	12	4.0		
				Bottom	20.8	20.9	32.7	32.8	93.6	93.4	7.4	7.3	8.2	7.6	4	4.0		
15-Jan-10	Fine	Moderate	08:58	Surface	20.8	20.9	32.9	32.8	93.1	94.7	7.2	7.6	6.9	8.7	4	3.5	9.4	7.3
				Middle	20.9	20.9	32.7	32.8	94.7	94.7	7.7	7.6	9.5	8.7	3	3.5		
				Bottom	20.6	20.6	32.8	32.8	94.6	94.6	7.5	7.5	7.9	13.2	6	6.0		
				Surface	20.7	20.7	32.7	32.7	94.1	94.4	7.7	7.7	12.7	13.2	6	6.0	7.5	12.6
				Middle	20.9	20.9	32.9	32.9	93.5	93.4	7.5	7.5	7.3	7.0	10	10.0		
				Bottom	20.9	20.9	32.9	32.9	93.2	93.2	7.4	7.5	6.7	7.0	10	10.0		
				Surface	20.6	20.6	32.8	32.8	94.7	94.7	7.5	7.6	9.1	8.7	3	3.0	9.4	7.3
				Middle	20.6	20.6	32.8	32.8	94.6	94.6	7.7	7.6	8.3	8.7	3	3.0		
				Bottom	20.6	20.6	32.7	32.8	94.5	94.3	7.5	7.5	13.1	12.6	9	9.0		
					20.6	20.6	32.8	32.8	94.1	94.3	7.5	7.5	12.1	12.6	9	9.0		

**Water Quality Monitoring Results at SR8 - Mid-Ebb Tide**

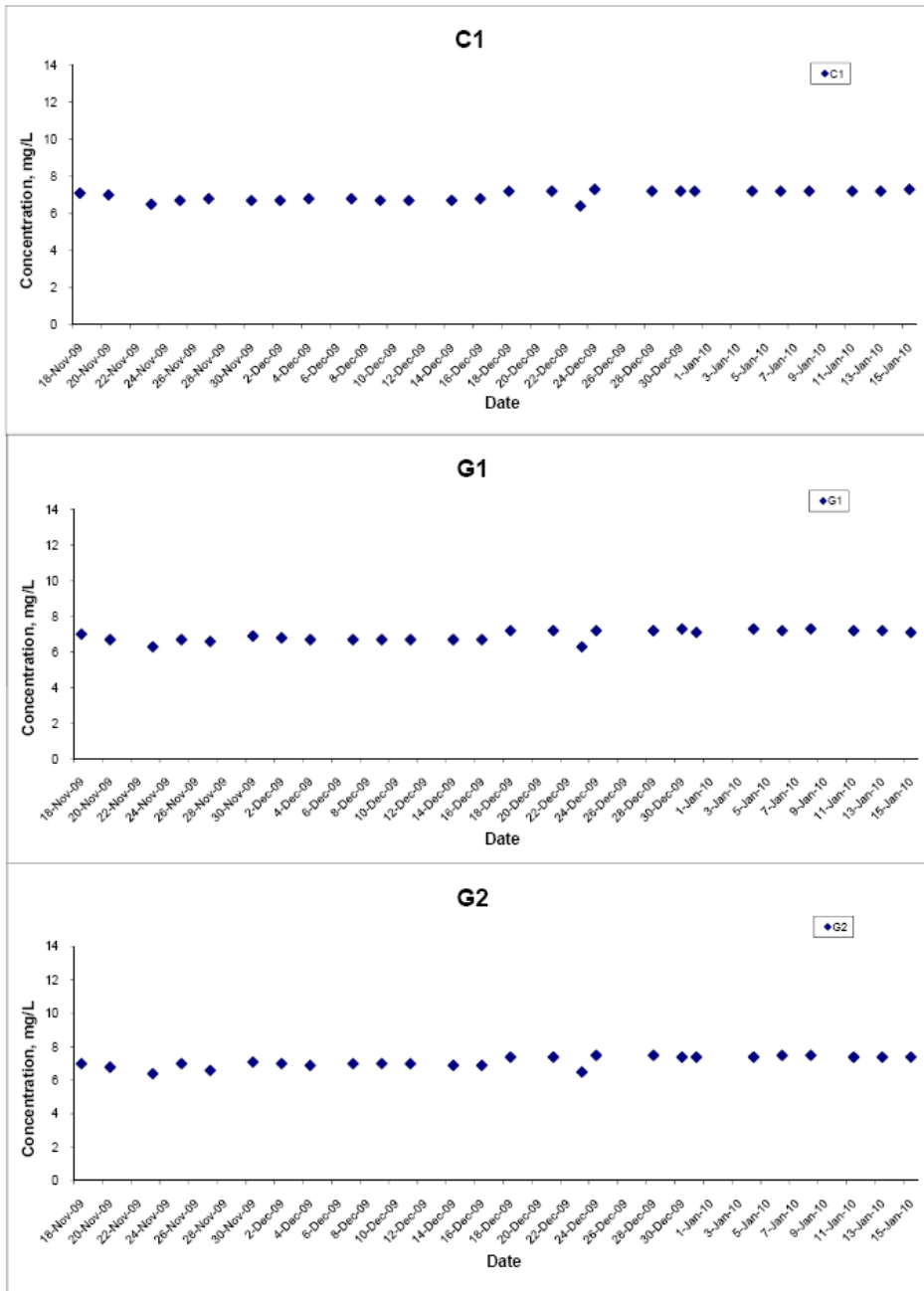
Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)		
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value
4-Jan-10	Fine	Moderate	16:56	Surface	21.8	21.8	32.9	33.0	89.0	89.0	7.3	7.3	6.5	7.3	13	13.0	
				Middle	21.8	21.9	32.8	32.9	87.3	87.2	6.9	7.0	7.2	7.6	13	13.0	
				Bottom	21.6	21.7	32.9	33.1	87.1	87.1	7.1	7.0	7.7	7.6	13	13.0	
6-Jan-10	Fine	Moderate	18:15	Surface	21.7	21.7	32.9	33.0	87.1	87.1	6.9	7.0	9.1	9.0	7	7.0	
				Middle	22.0	22.0	32.9	33.1	89.1	89.1	7.3	7.2	6.0	6.0	16	16.0	
				Bottom	21.8	21.8	33.2	33.1	87.1	87.1	7.1	7.1	7.1	7.1	16	16.0	
8-Jan-10	Fine	Moderate	09:16	Surface	21.0	21.1	32.9	33.0	90.1	90.0	7.1	7.1	6.4	6.5	11	11.0	
				Middle	20.8	20.9	33.0	32.9	88.4	88.3	7.1	7.0	7.1	7.2	15	14.5	
				Bottom	20.8	20.8	33.0	33.0	88.2	88.1	6.8	7.0	7.2	7.2	14	14.5	
11-Jan-10	Rainy	Moderate	11:41	Surface	20.8	20.9	33.0	33.1	88.1	88.1	7.0	7.0	7.9	7.9	8	8.0	
				Middle	20.9	20.9	33.1	33.0	90.2	90.1	7.2	7.2	5.5	5.5	8	8.0	
				Bottom	20.9	21.0	33.0	33.0	88.2	88.2	7.0	7.0	7.1	7.6	9	9.0	
13-Jan-10	Fine	Moderate	13:23	Surface	20.9	20.9	33.0	33.0	88.0	88.0	6.9	6.9	8.4	9.2	7	7.0	
				Middle	21.0	21.0	32.8	32.9	90.2	90.1	7.2	7.2	5.8	5.9	5	5.0	
				Bottom	20.9	20.9	32.9	32.9	88.2	88.3	7.1	7.1	6.8	6.8	9	9.0	
15-Jan-10	Fine	Moderate	14:34	Surface	20.8	20.8	32.9	33.0	88.1	88.1	7.0	7.0	10.3	9.5	9	9.0	
				Middle	21.0	21.1	32.8	33.0	90.1	90.0	7.3	7.3	6.3	6.9	10	10.0	
				Bottom	20.7	20.8	33.1	33.0	88.2	88.2	6.9	7.0	7.4	7.7	10	10.0	



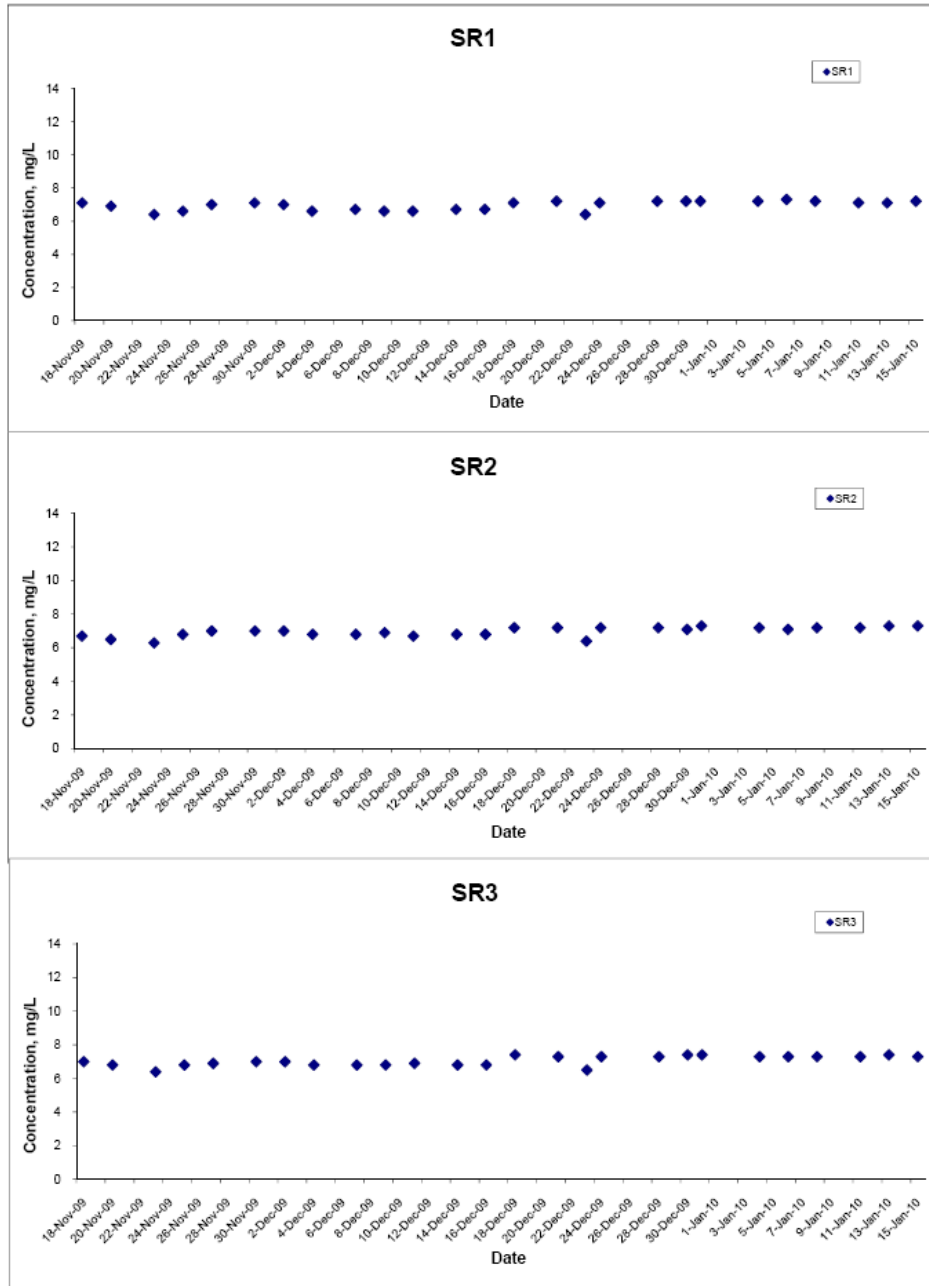
**Water Quality Monitoring Results at SR8 - Mid-Flood Tide**

Date	Weather Condition	Sea Condition*	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)		
				Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value
4-Jan-10	Sunny	Moderate	11:33	Surface	33.2	21.9	33.1	90.9	7.4	7.4	7.1	7.0	11	11.0	8.9	8.9	10	10.0
				Middle	32.9	21.7	33.0	89.0	7.0	7.1	8.8	8.2	10	10.0				
				Bottom	33.1	21.8	33.0	89.0	7.2	7.1	7.6	8.2	10	10.0				
6-Jan-10	Fine	Moderate	12:53	Surface	32.9	21.6	33.0	88.8	7.3	7.2	12.2	11.4	12	12.0	8.6	8.6	9	9.0
				Middle	33.0	21.7	32.9	88.9	7.0	7.2	10.6	11.4	12	12.0				
				Bottom	33.3	21.8	33.2	91.0	7.5	7.5	7.0	7.0	8	8.0				
8-Jan-10	Fine	Moderate	14:15	Surface	33.1	21.9	33.1	90.8	7.5	7.4	6.9	7.0	8	8.0	8.5	8.5	9	9.0
				Middle	32.8	21.7	33.0	88.9	7.2	7.2	8.2	7.5	9	9.0				
				Bottom	33.1	21.6	32.9	88.8	7.2	7.1	6.8	7.5	9	9.0				
8-Jan-10	Fine	Moderate	14:15	Surface	32.9	21.6	32.9	89.0	7.2	7.1	10.9	11.3	8	8.5	8.5	8.5	8	8.0
				Middle	33.3	20.8	33.2	91.8	7.4	7.4	6.9	7.0	8	8.0				
				Bottom	33.1	20.7	33.0	91.9	7.4	7.4	7.0	7.0	8	8.0				
11-Jan-10	Rainy	Moderate	16:19	Surface	32.8	20.7	32.8	89.8	7.0	7.1	11.5	11.3	13	12.5	8.6	8.6	9	9.0
				Middle	32.8	20.7	32.8	89.8	7.0	7.1	6.9	7.2	8	8.0				
				Bottom	33.1	20.7	33.1	90.0	7.2	7.3	7.5	7.2	8	8.0				
13-Jan-10	Fine	Moderate	17:45	Surface	32.8	20.7	32.9	89.9	7.0	7.1	10.6	11.5	7	7.0	8.5	8.5	10	10.0
				Middle	33.1	20.6	33.0	89.7	7.2	7.2	12.3	11.5	6	6.5				
				Bottom	33.1	20.7	33.1	89.7	7.2	7.1	10.6	11.5	7	7.0				
15-Jan-10	Fine	Moderate	09:30	Surface	33.2	20.8	33.1	91.9	7.3	7.4	5.9	5.7	7	7.0	8.8	8.8	6	6.0
				Middle	32.9	20.8	32.9	91.7	7.5	7.4	5.5	5.7	7	7.0				
				Bottom	32.8	20.6	33.0	90.0	7.2	7.2	8.2	8.6	10	10.0				
15-Jan-10	Fine	Moderate	09:30	Surface	33.1	20.6	32.9	89.8	7.2	7.2	11.1	11.2	5	5.0	8.8	8.8	6	6.0
				Middle	32.9	20.7	32.9	89.9	7.2	7.2	11.1	11.2	5	5.0				
				Bottom	33.0	20.5	33.0	89.7	7.2	7.2	11.2	11.2	5	5.0				
15-Jan-10	Fine	Moderate	09:30	Surface	33.1	20.7	33.1	92.0	7.2	7.2	6.4	6.5	8	8.0	8.8	8.8	6	6.0
				Middle	33.1	20.7	33.1	91.7	7.2	7.2	6.6	6.5	8	8.0				
				Bottom	32.8	20.7	32.9	90.1	7.0	7.1	7.9	8.0	6	6.0				
15-Jan-10	Fine	Moderate	09:30	Surface	32.9	20.6	32.9	90.0	7.2	7.2	8.0	8.0	5	5.0	8.8	8.8	6	6.0
				Middle	32.9	20.6	32.9	90.0	7.2	7.2	8.0	8.0	5	5.0				
				Bottom	33.0	20.5	33.0	89.8	7.2	7.2	13.0	12.0	6	6.0				

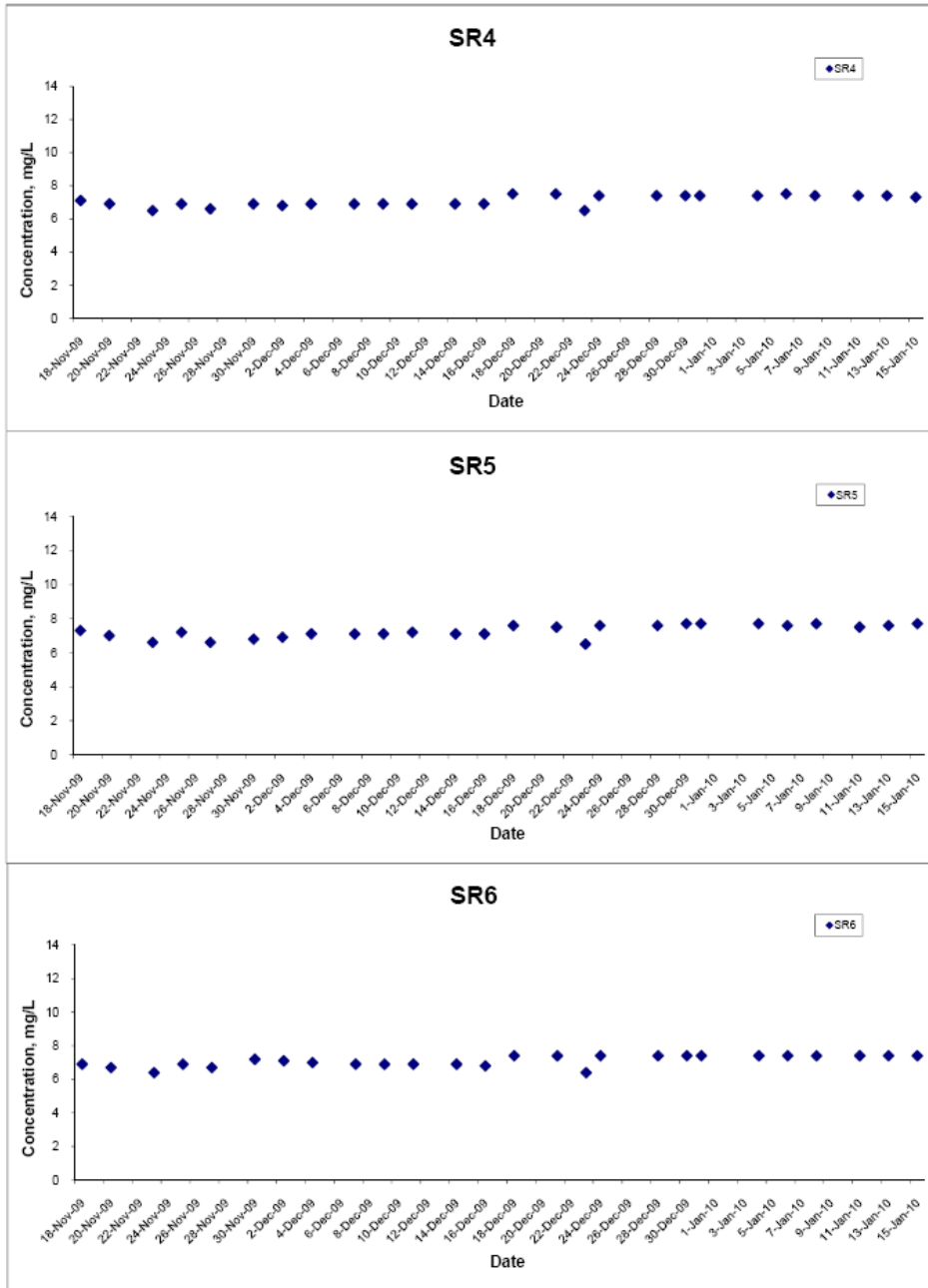
### Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



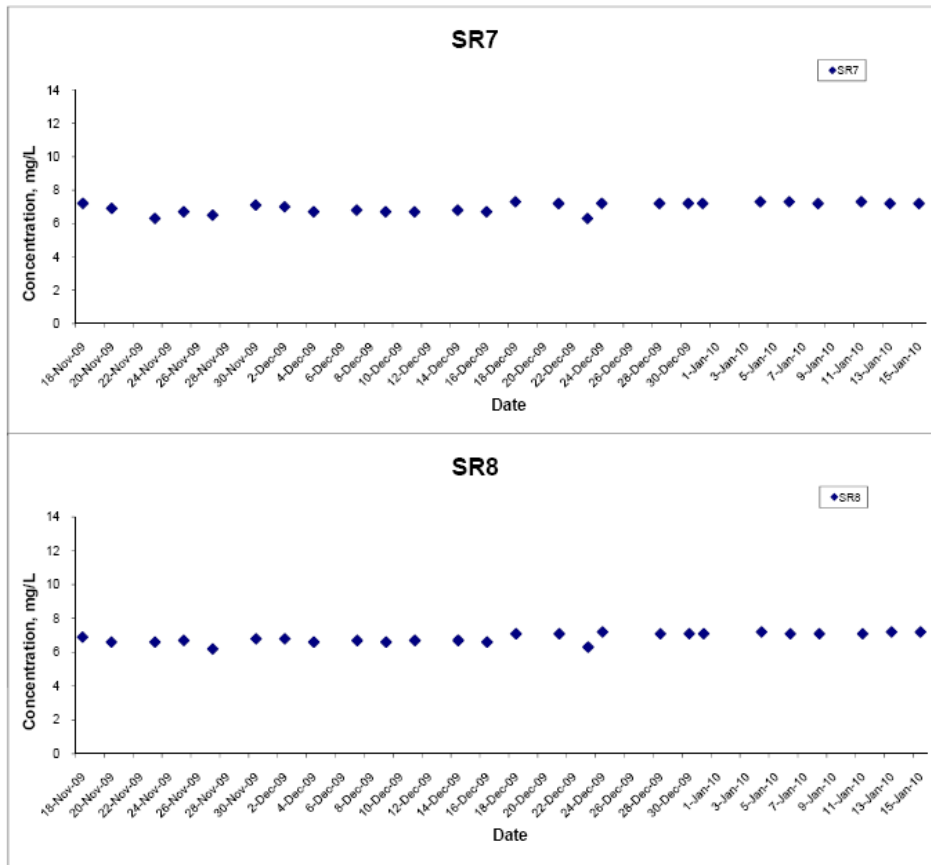
### Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



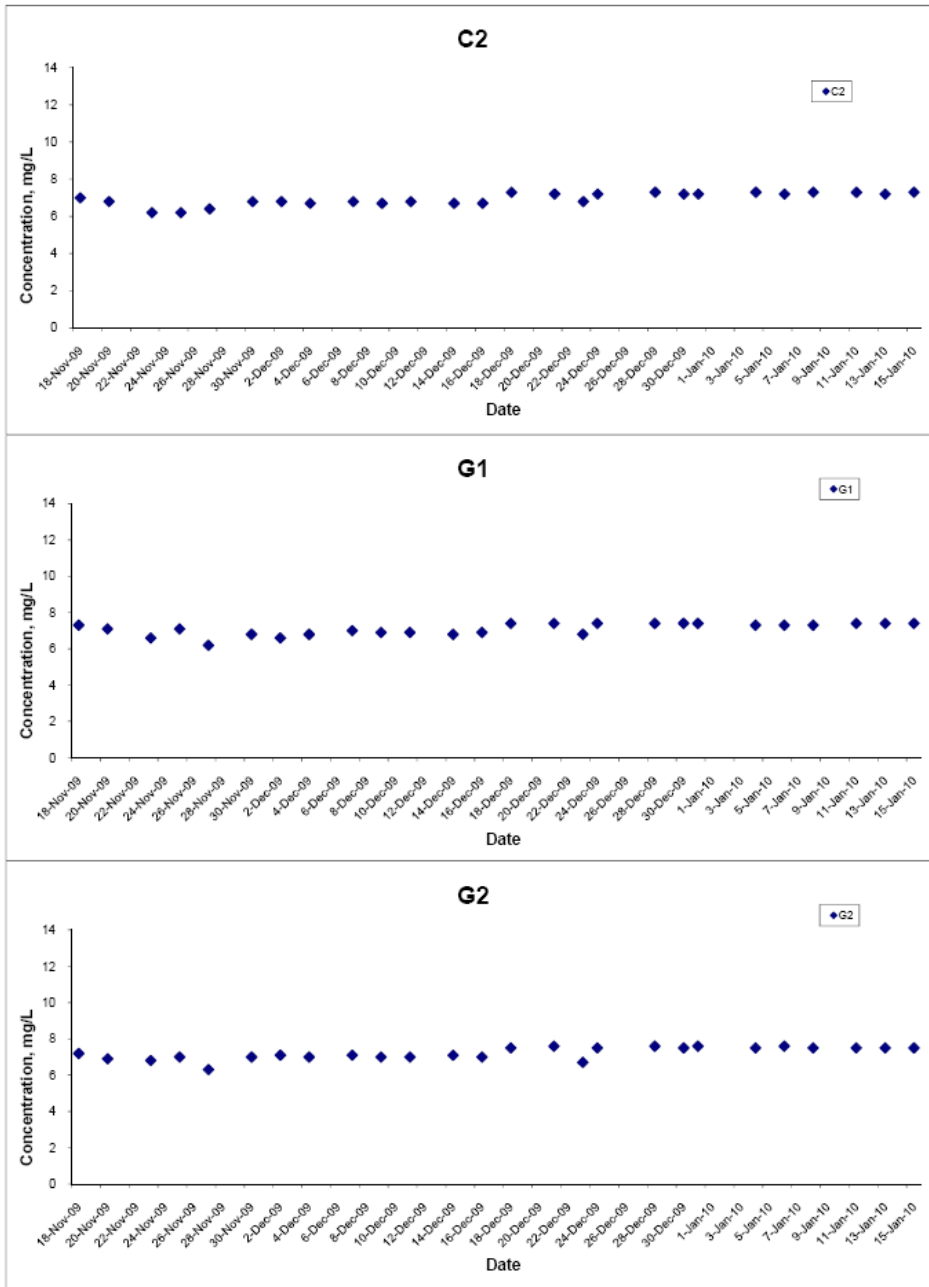
### Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



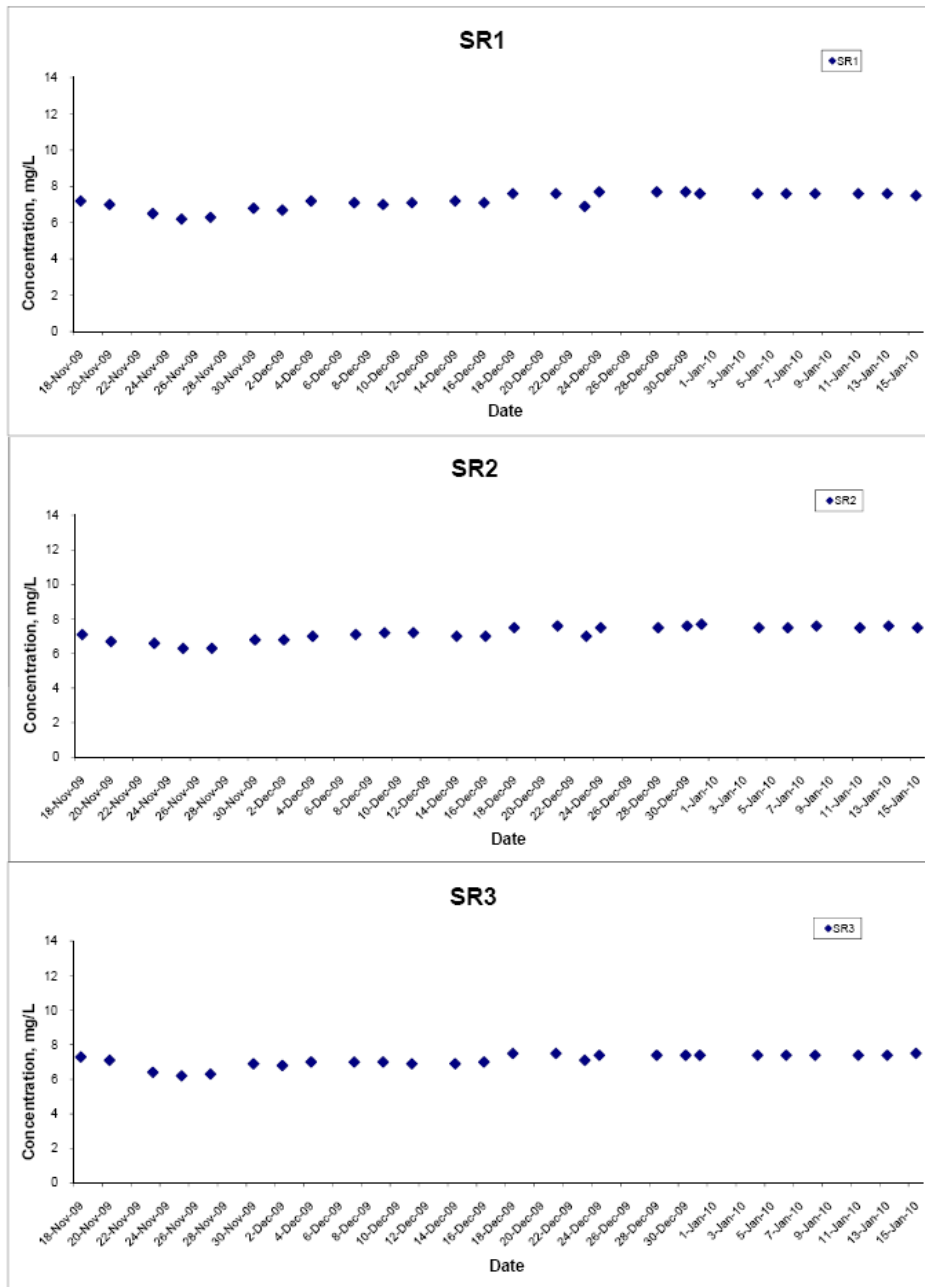
### Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



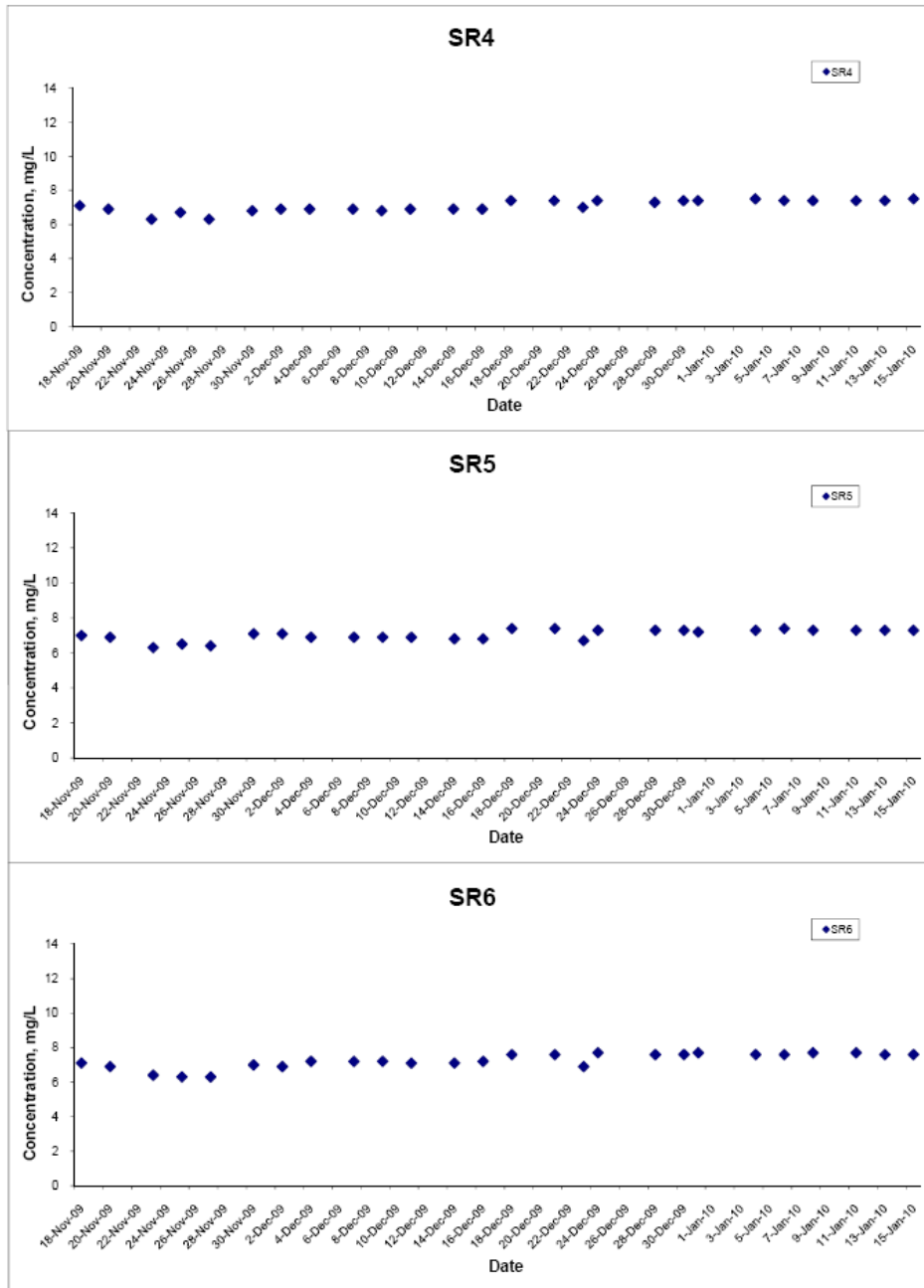
### Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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

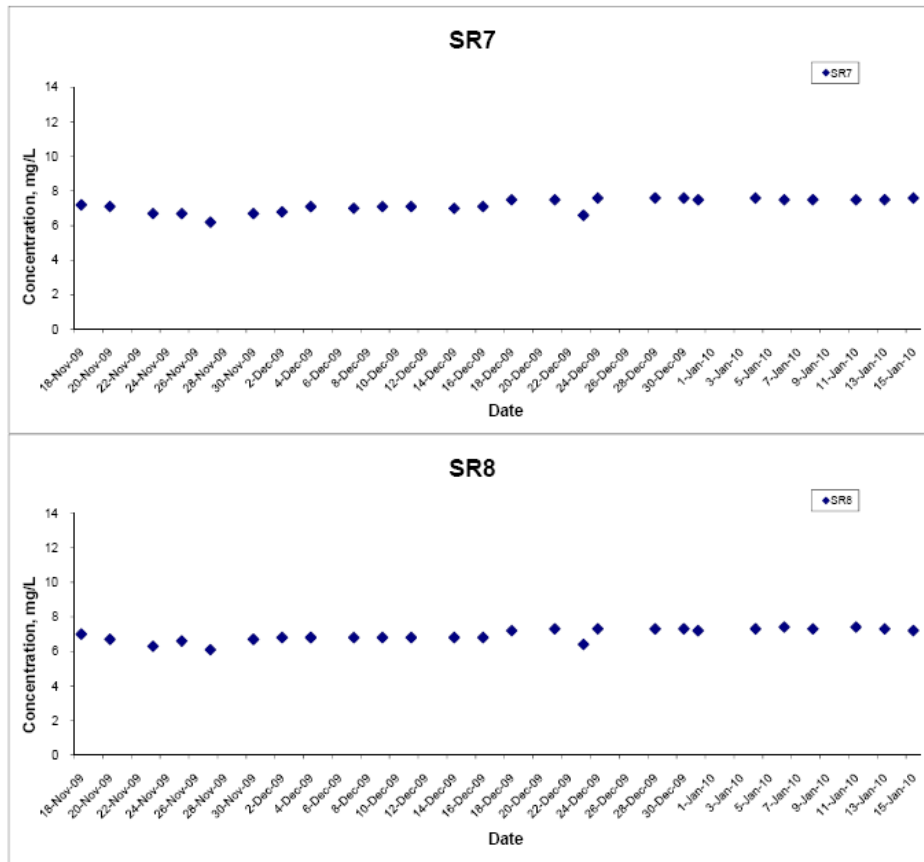


### Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

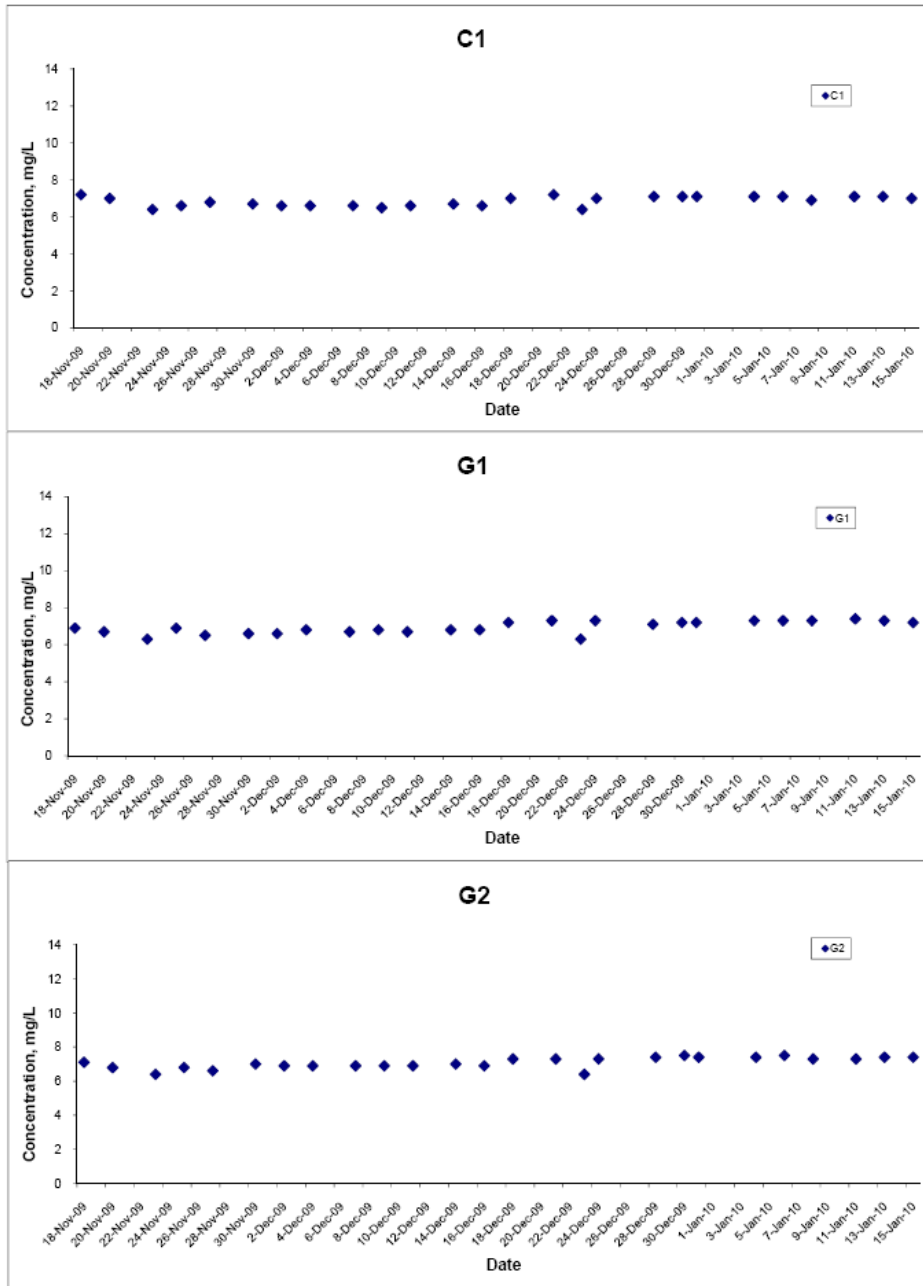




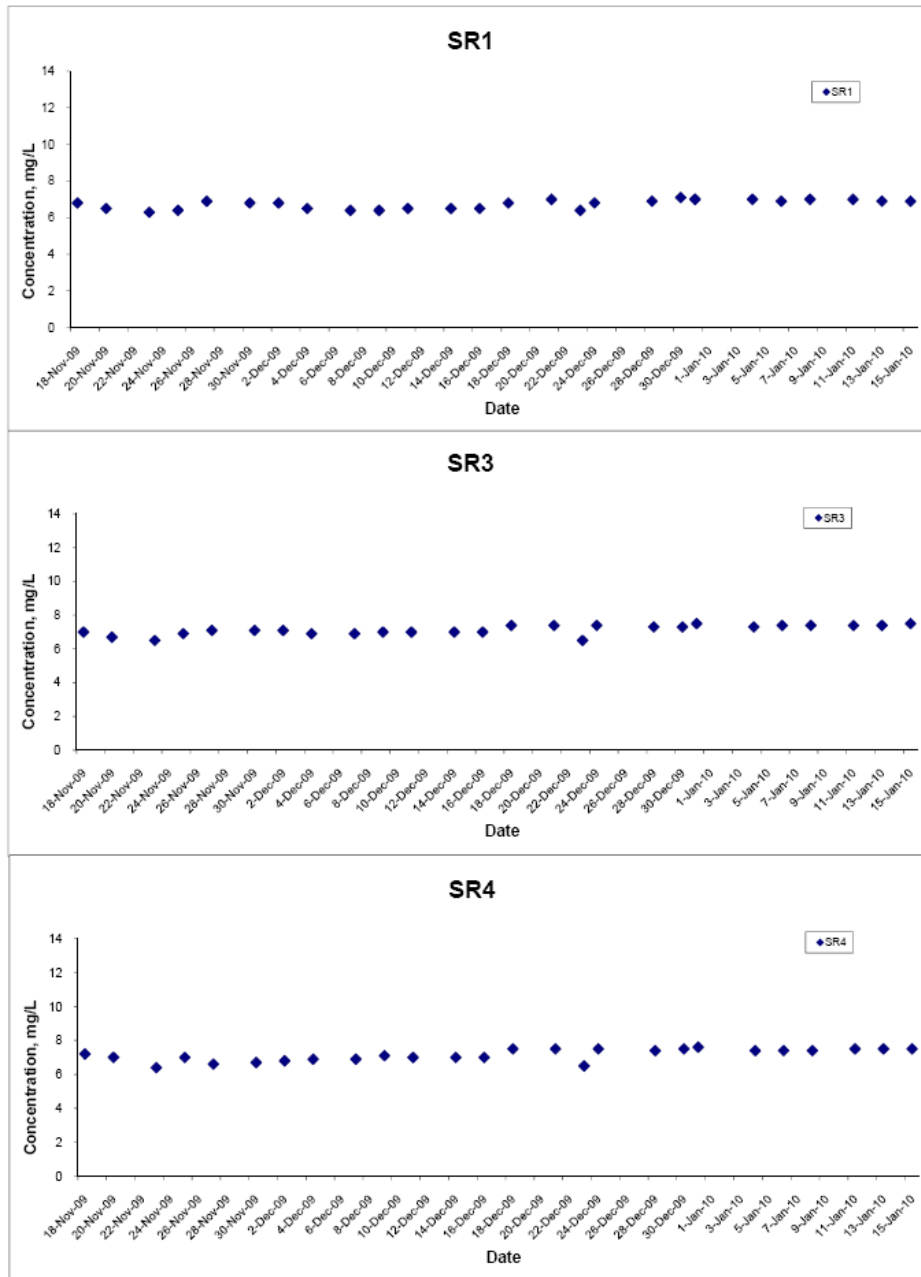
### Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



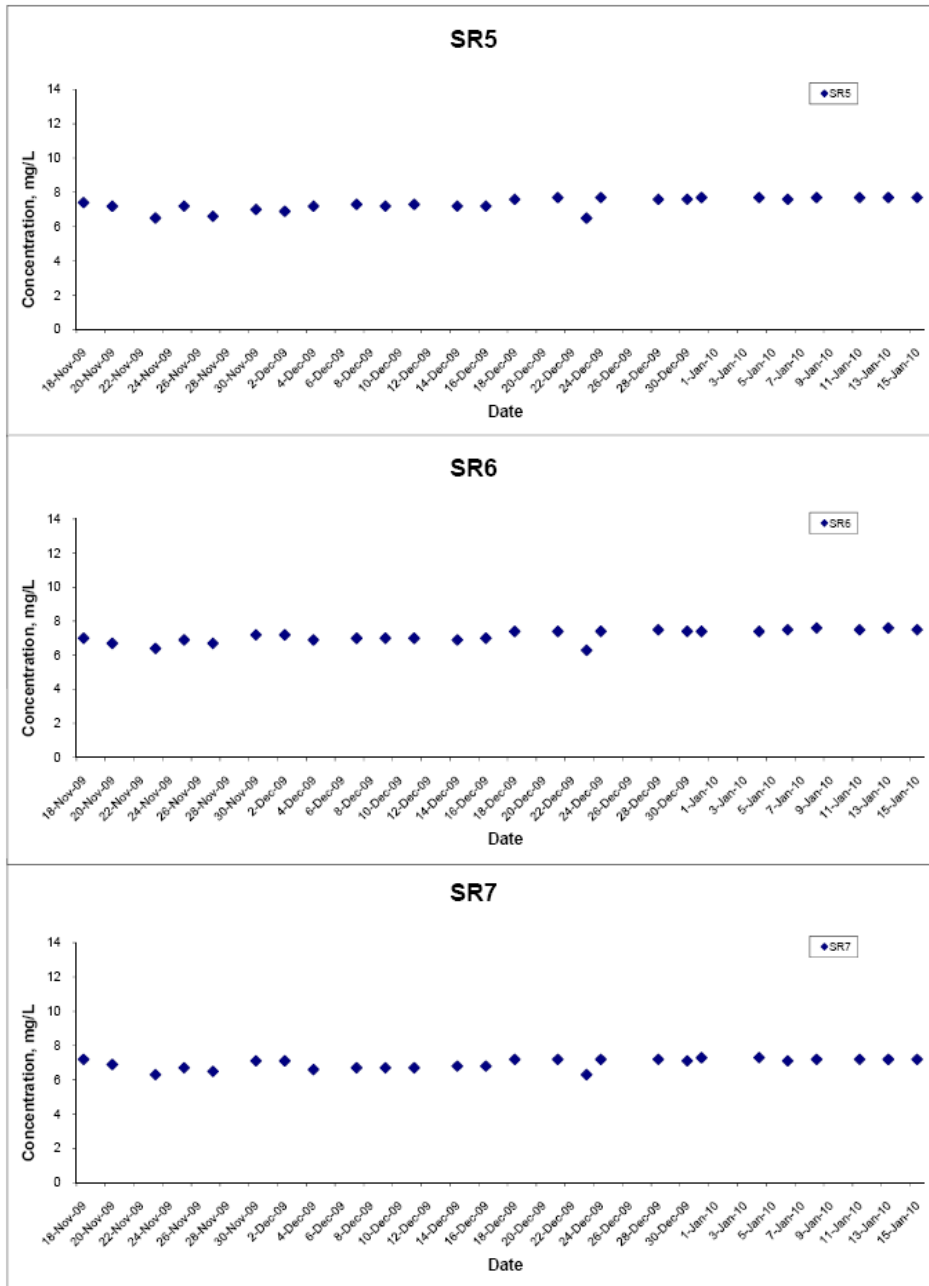
### Dissolved Oxygen (Bottom) at Mid-Ebb Tide



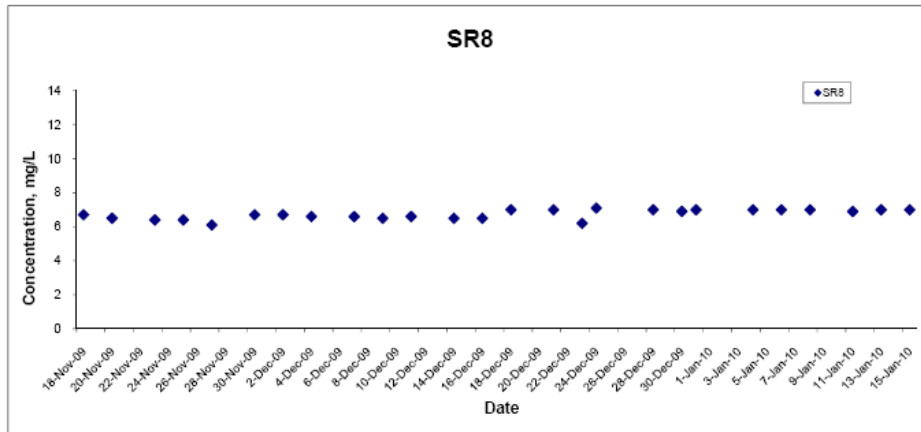
### Dissolved Oxygen (Bottom) at Mid-Ebb Tide



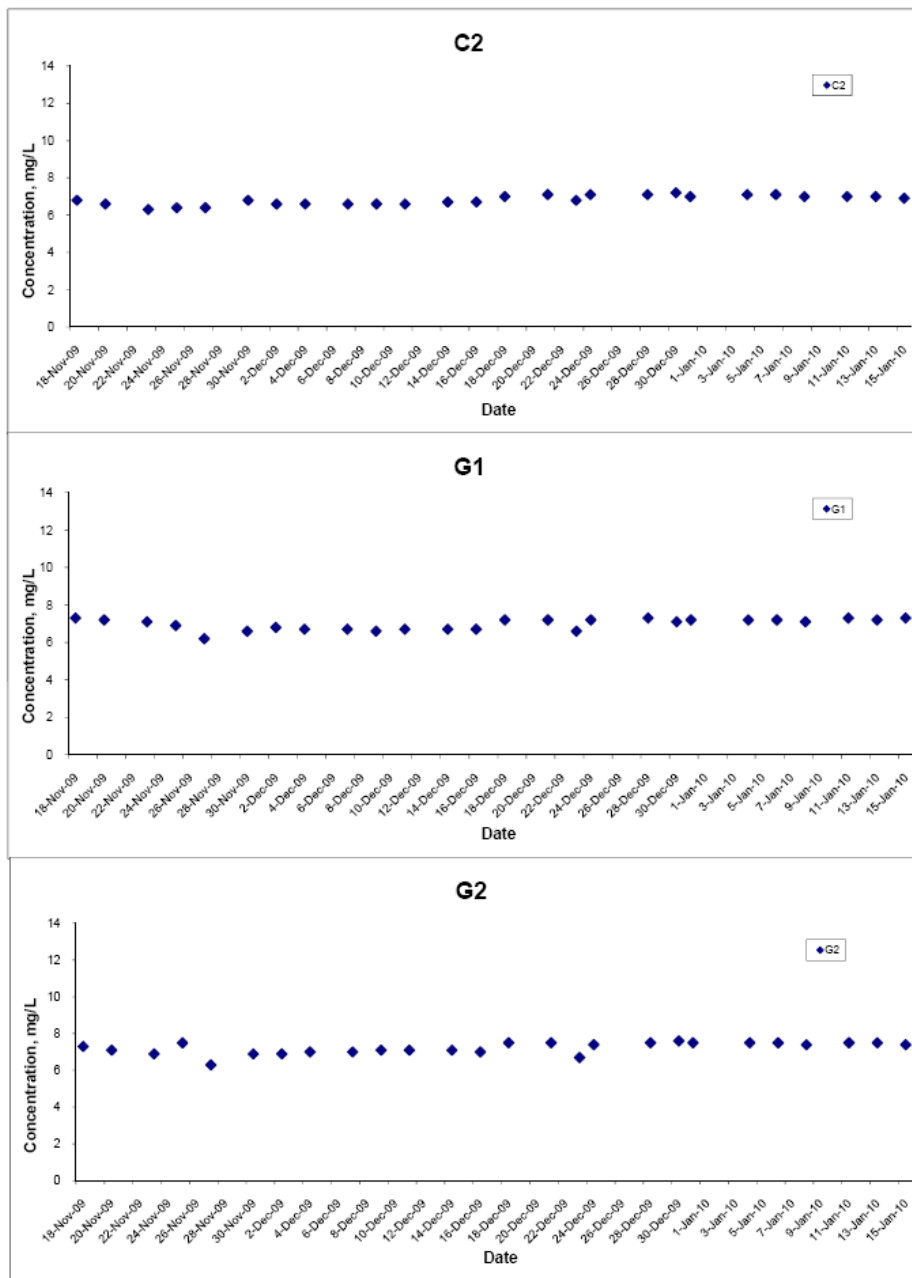
### Dissolved Oxygen (Bottom) at Mid-Ebb Tide



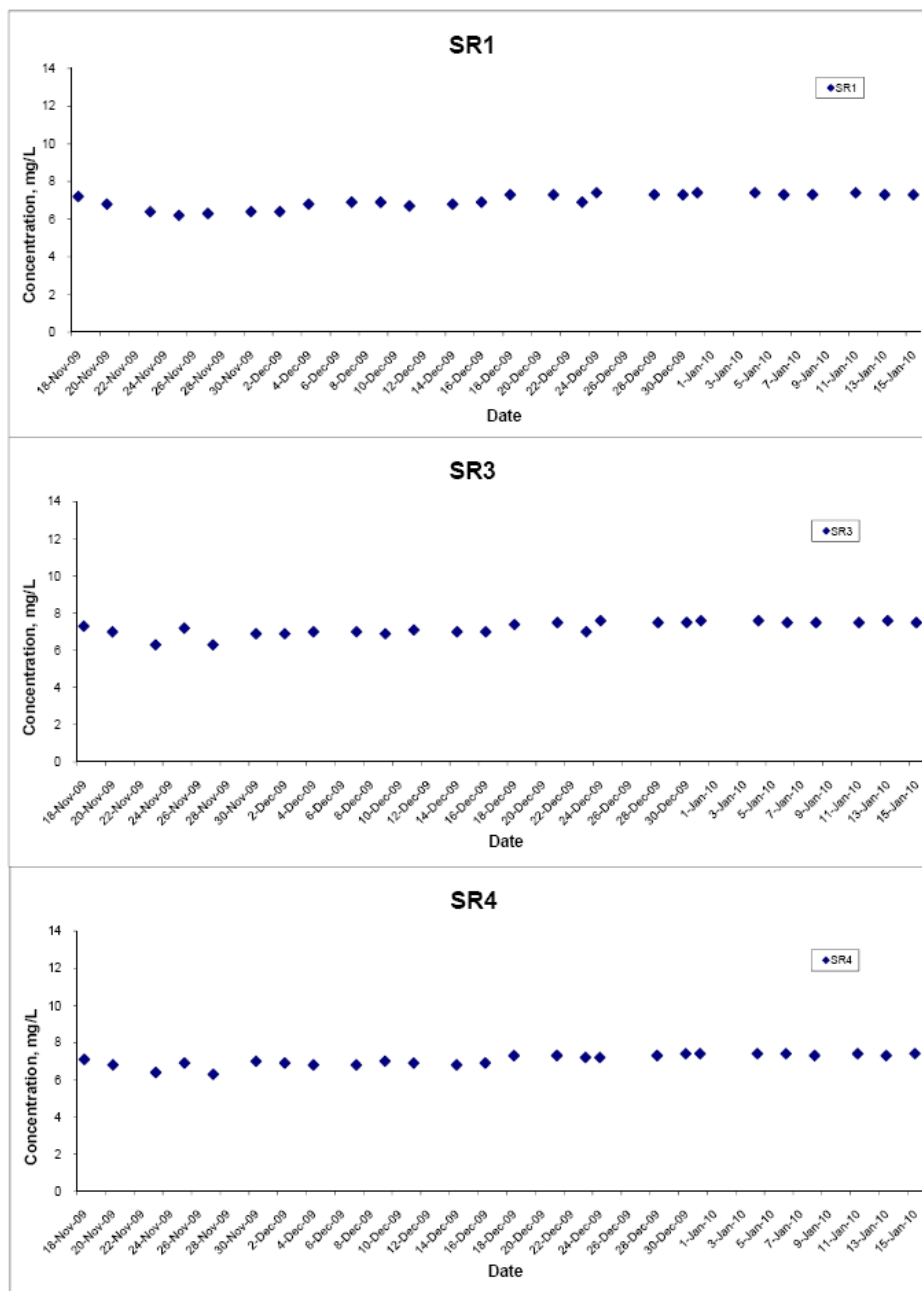
### Dissolved Oxygen (Bottom) at Mid-Ebb Tide



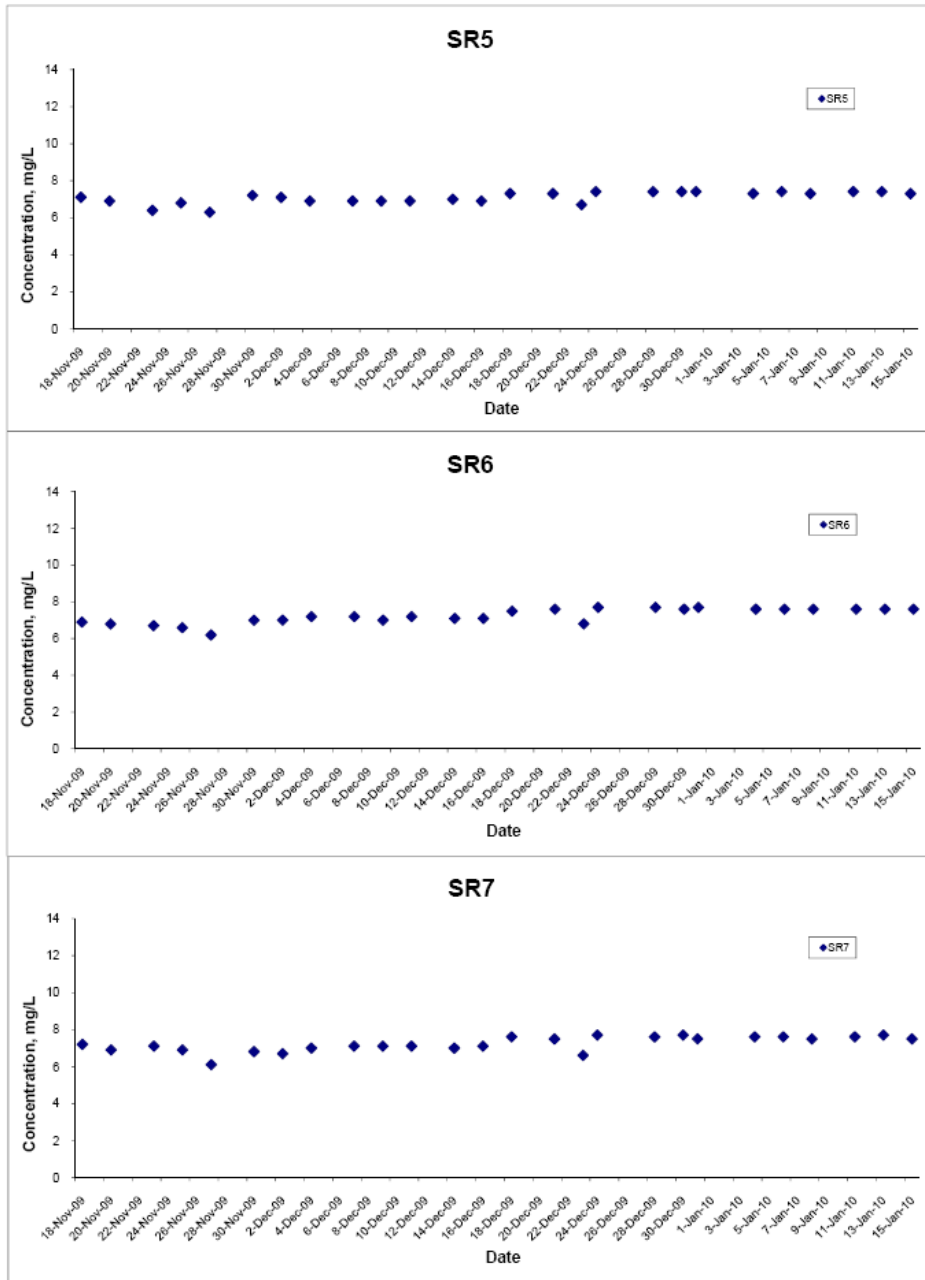
### Dissolved Oxygen (Bottom) at Mid-Flood Tide



### Dissolved Oxygen (Bottom) at Mid-Flood Tide

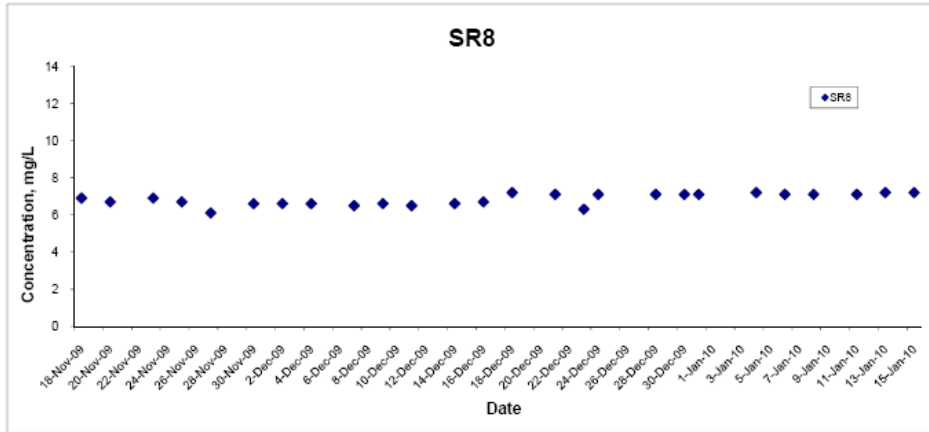


### Dissolved Oxygen (Bottom) at Mid-Flood Tide

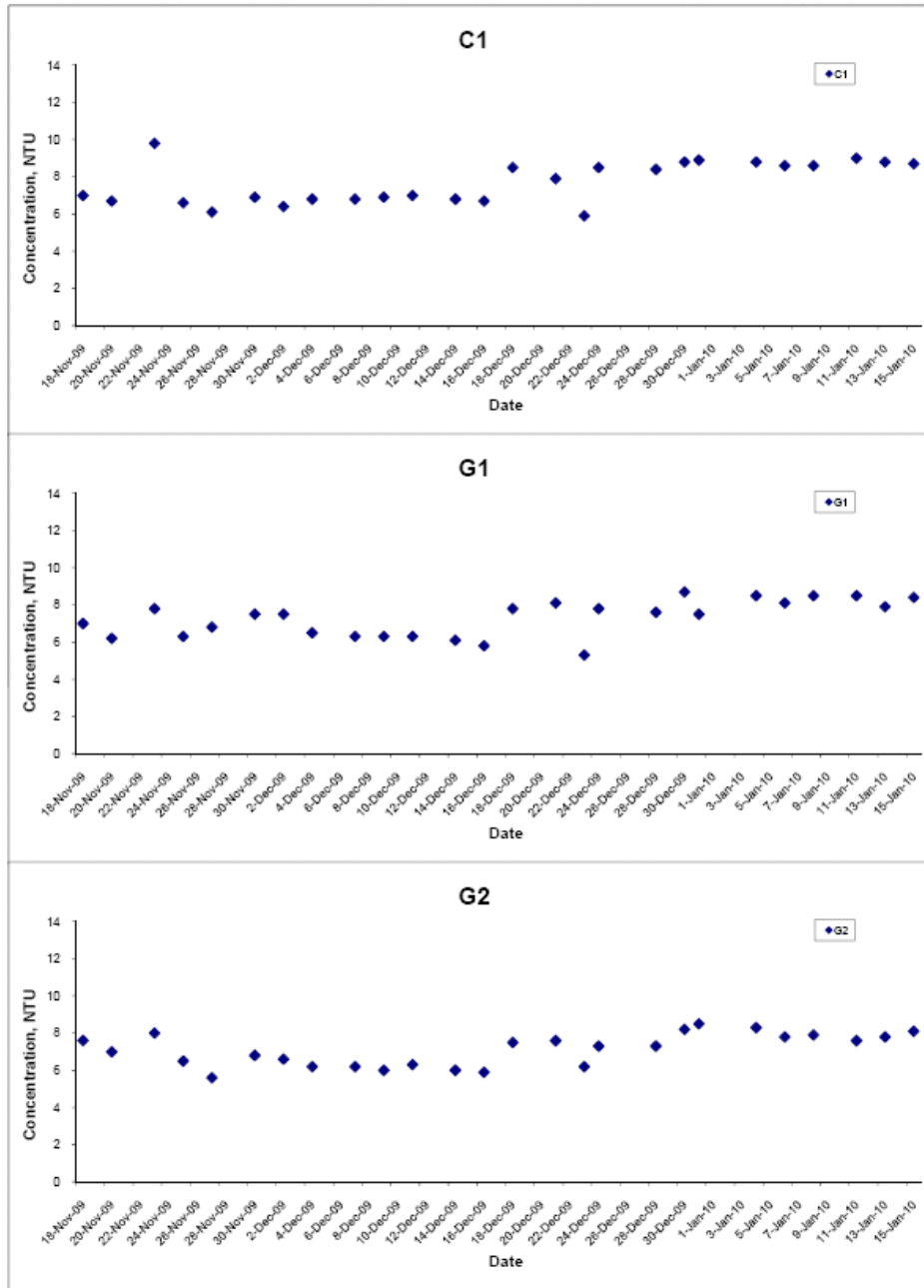




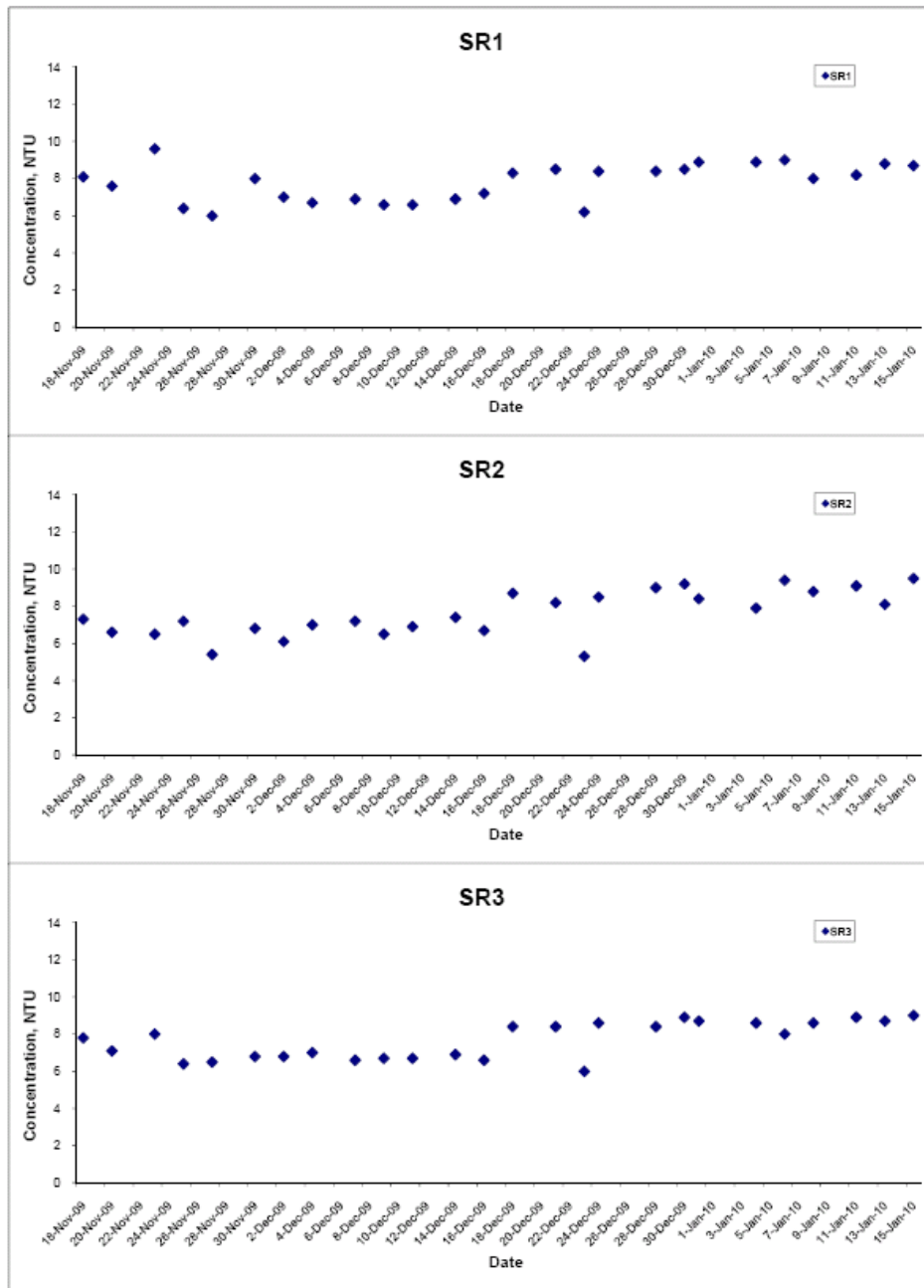
### Dissolved Oxygen (Bottom) at Mid-Flood Tide



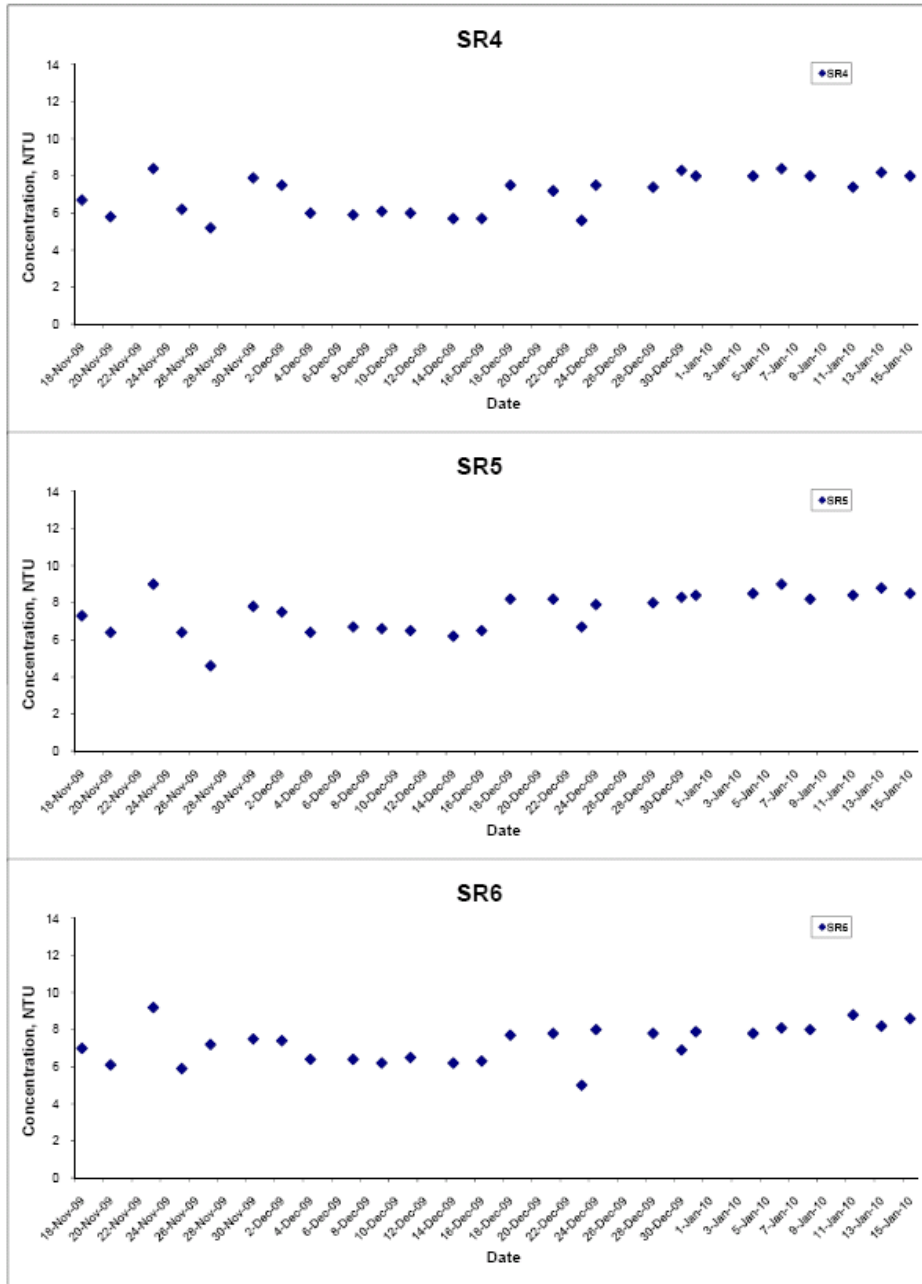
### Turbidity (Depth-averaged) at Mid-Ebb Tide



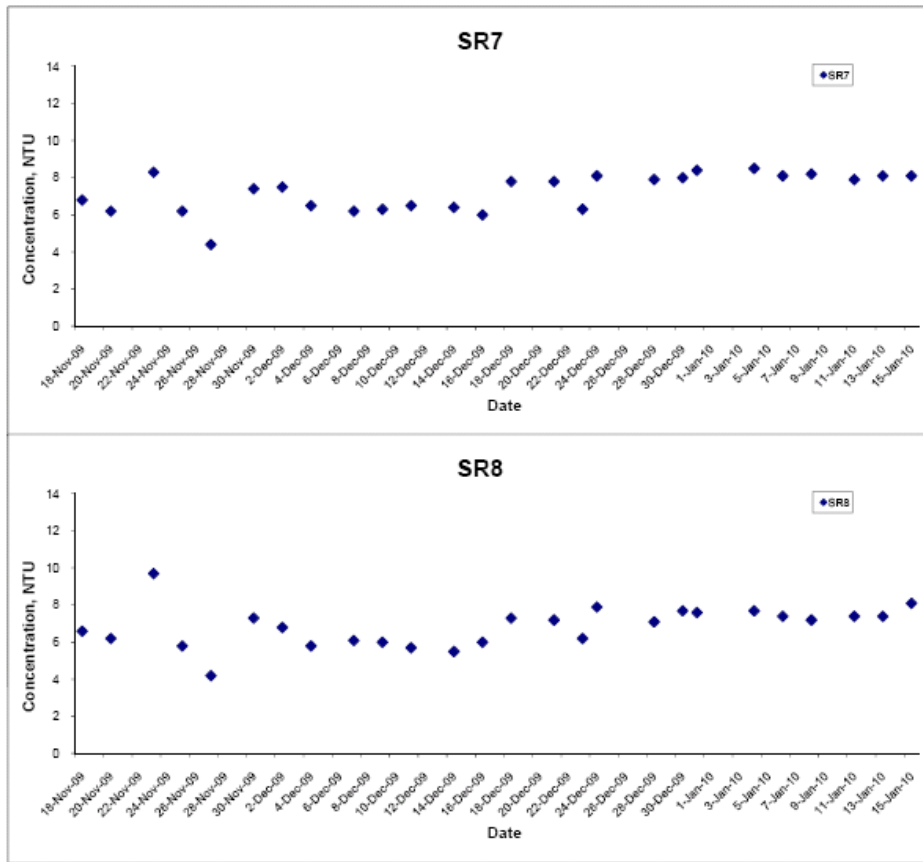
### Turbidity (Depth-averaged) at Mid-Ebb Tide



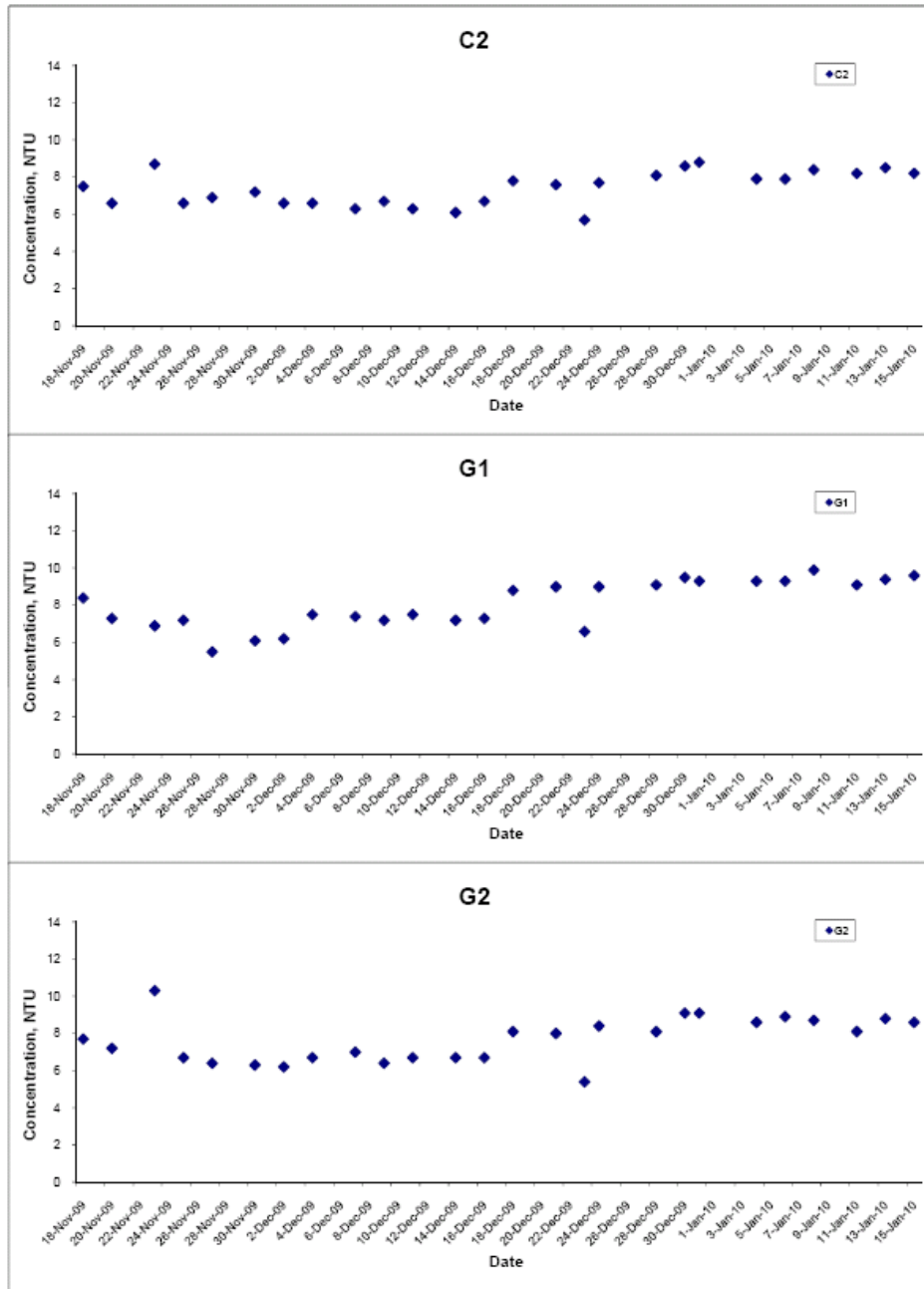
### Turbidity (Depth-averaged) at Mid-Ebb Tide



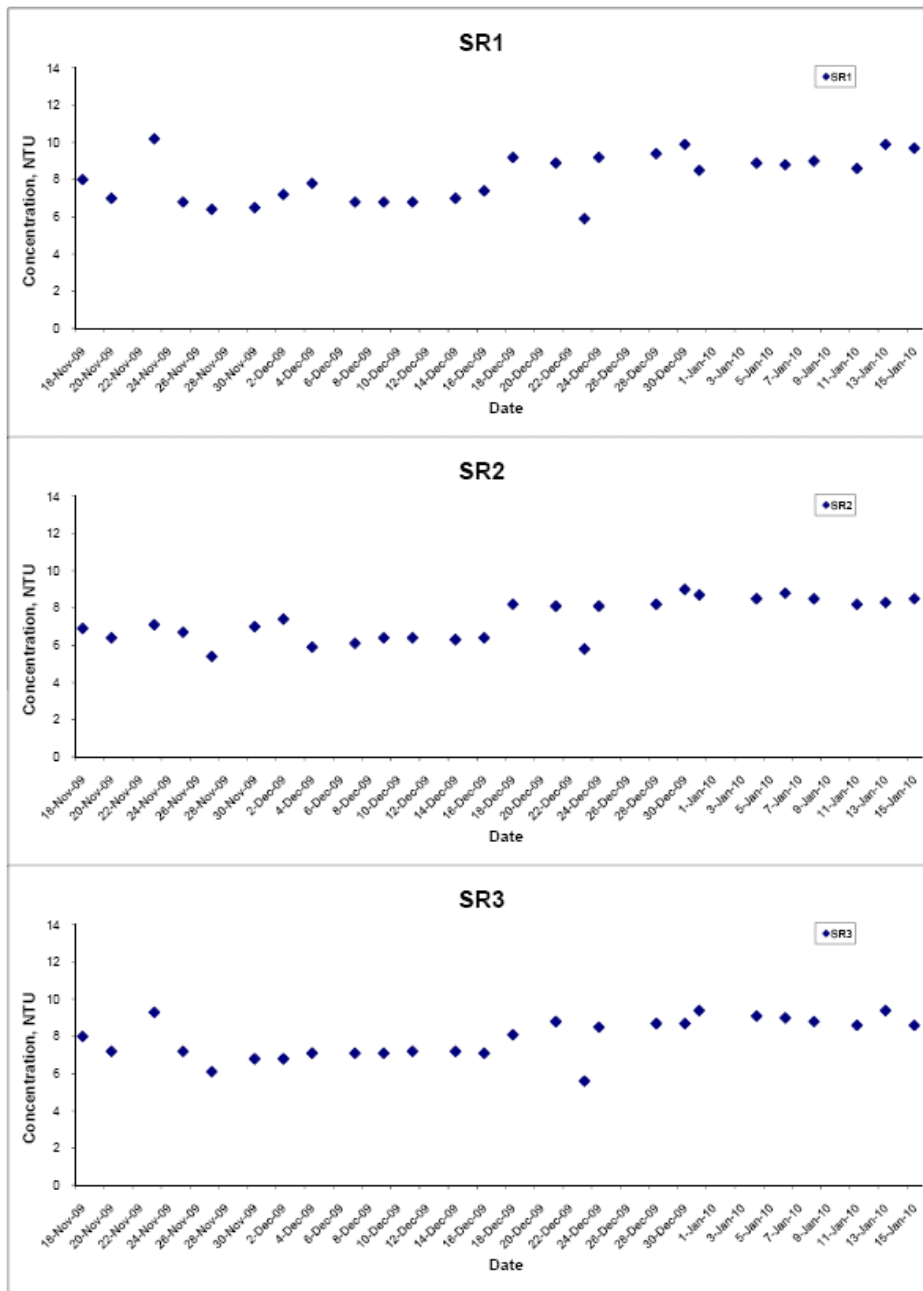
### Turbidity (Depth-averaged) at Mid-Ebb Tide



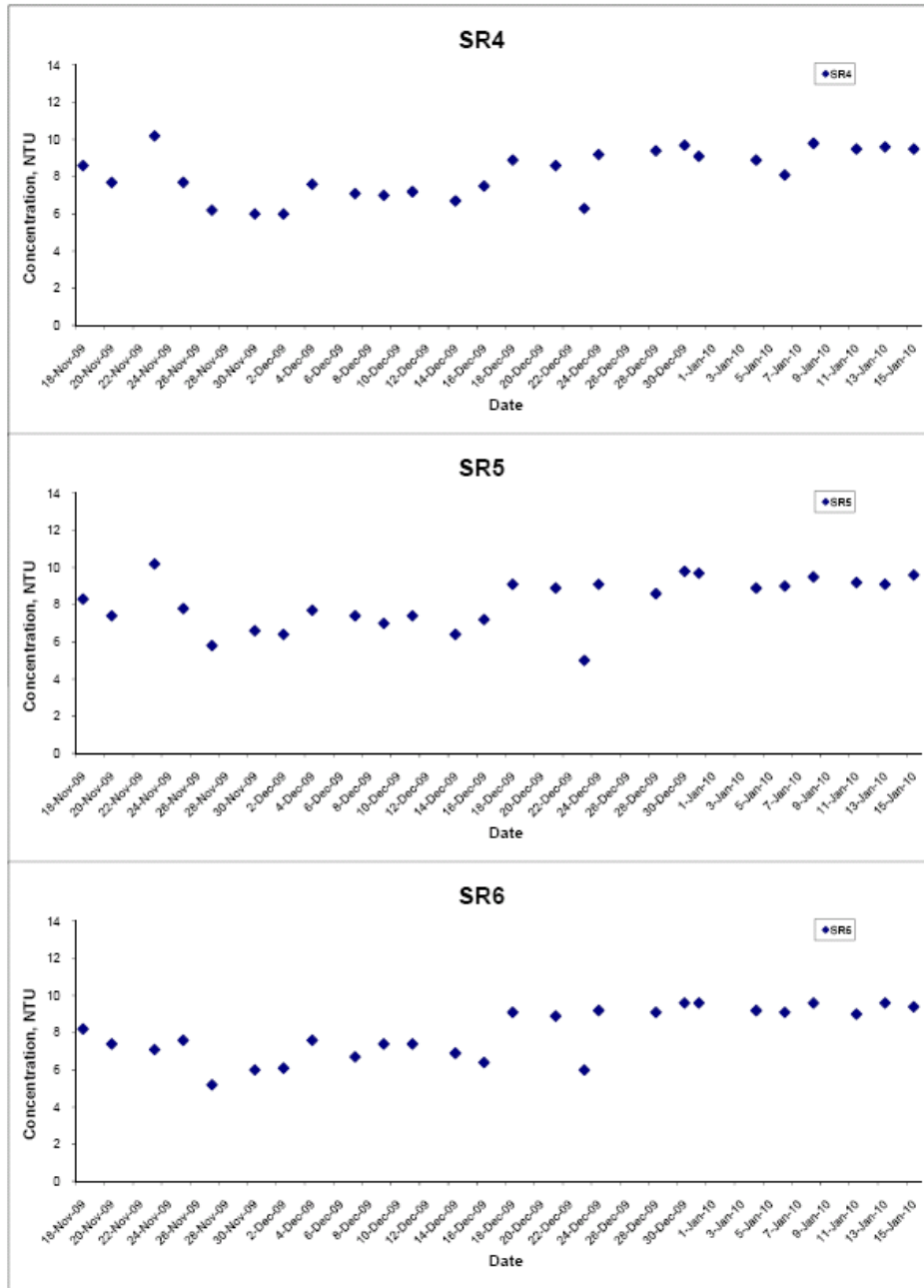
### Turbidity (Depth-averaged) at Mid-Flood Tide



### Turbidity (Depth-averaged) at Mid-Flood Tide

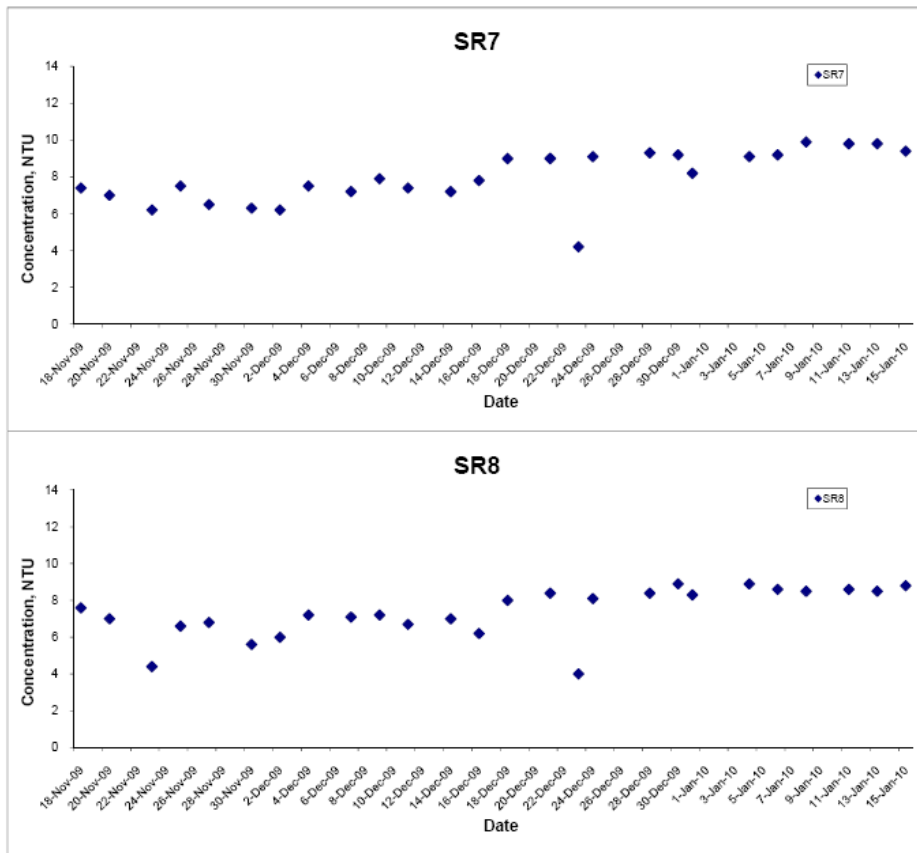


### Turbidity (Depth-averaged) at Mid-Flood Tide

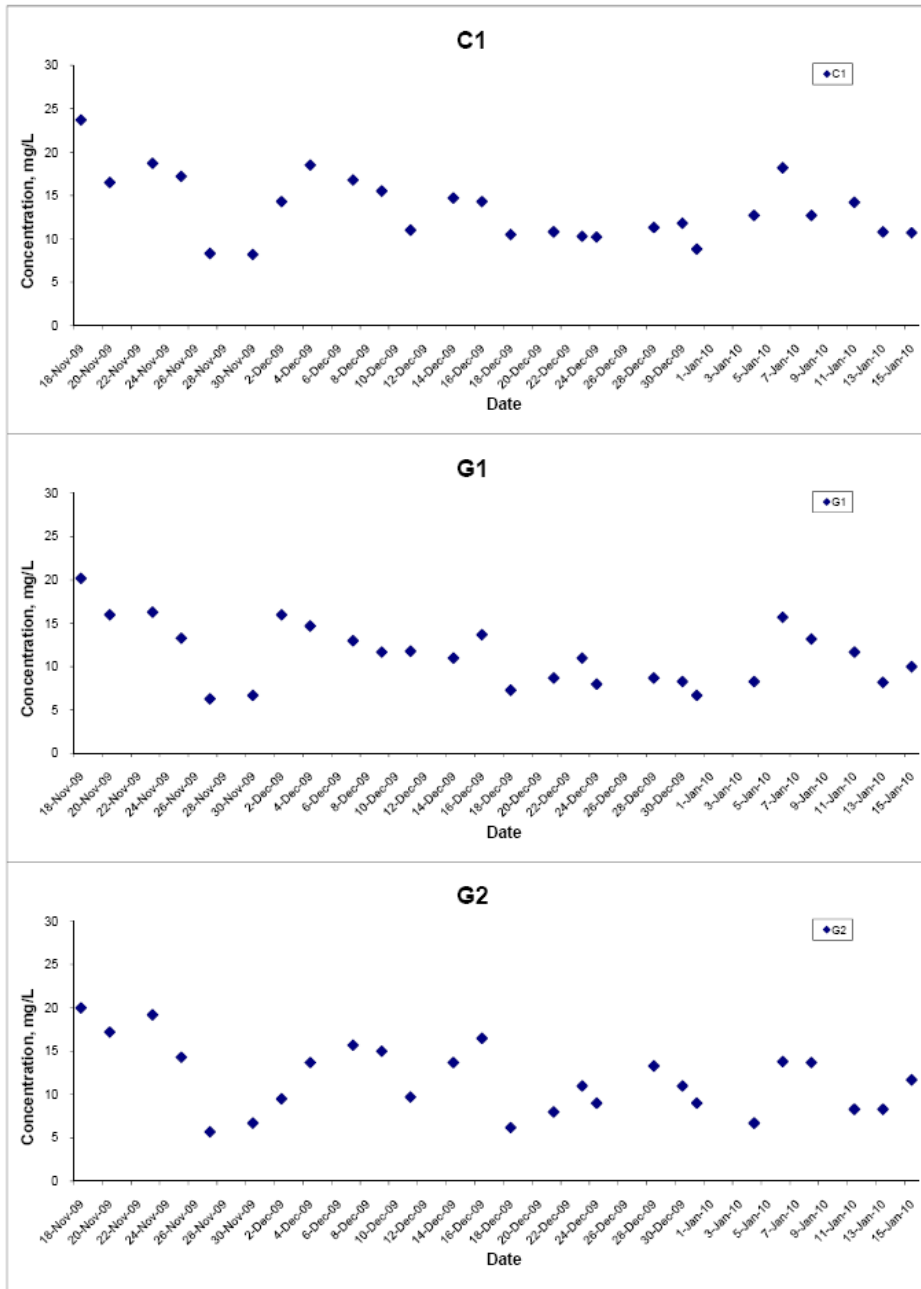




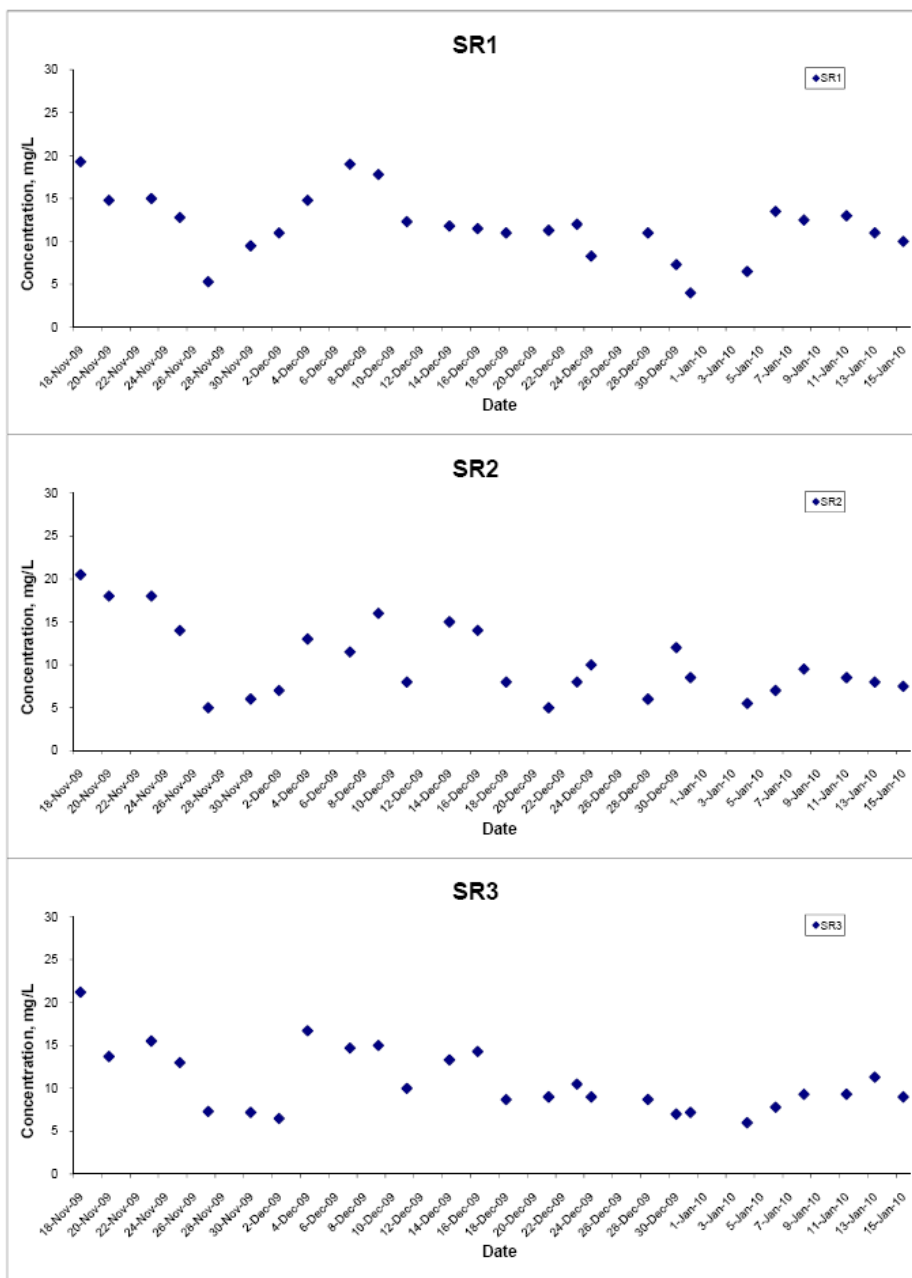
### Turbidity (Depth-averaged) at Mid-Flood Tide



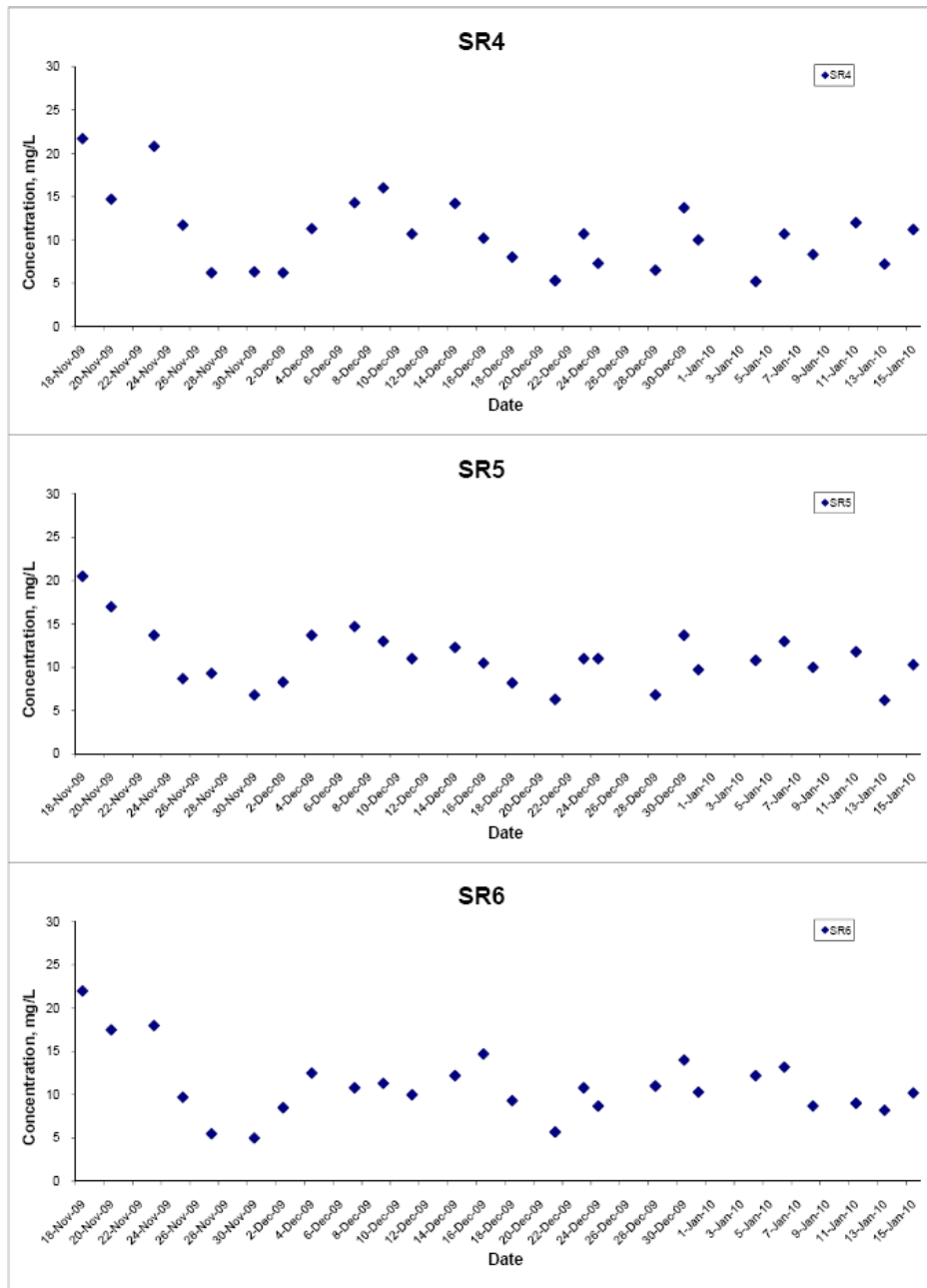
### Suspended Solids (Depth-averaged) at Mid-Ebb Tide



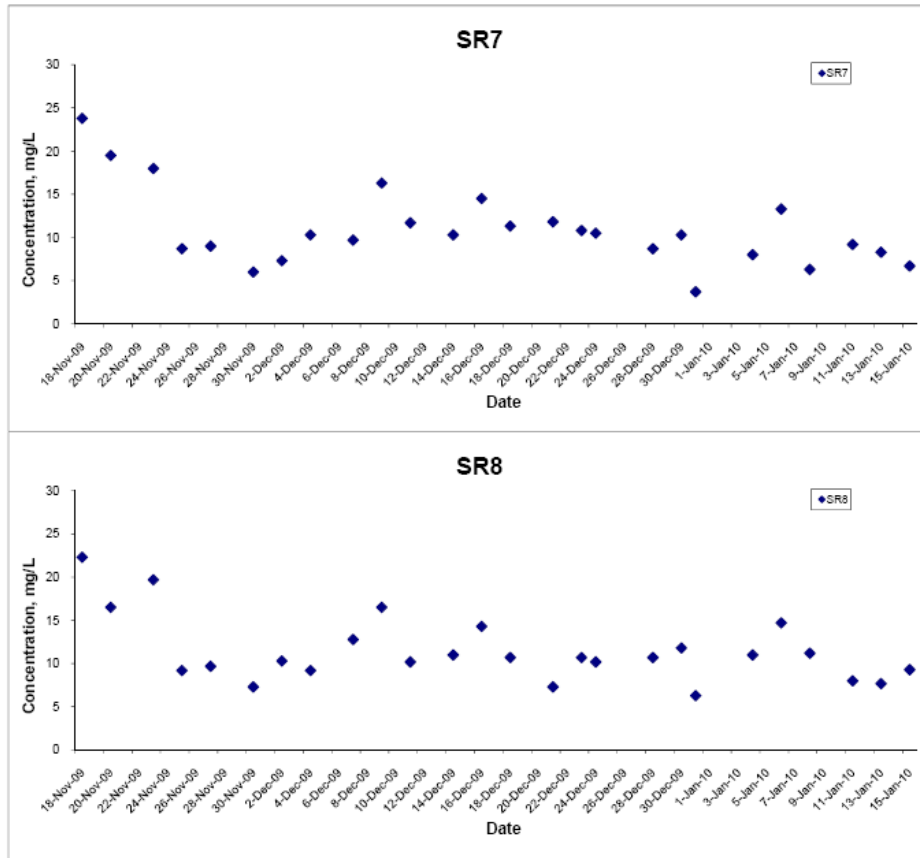
### Suspended Solids (Depth-averaged) at Mid-Ebb Tide



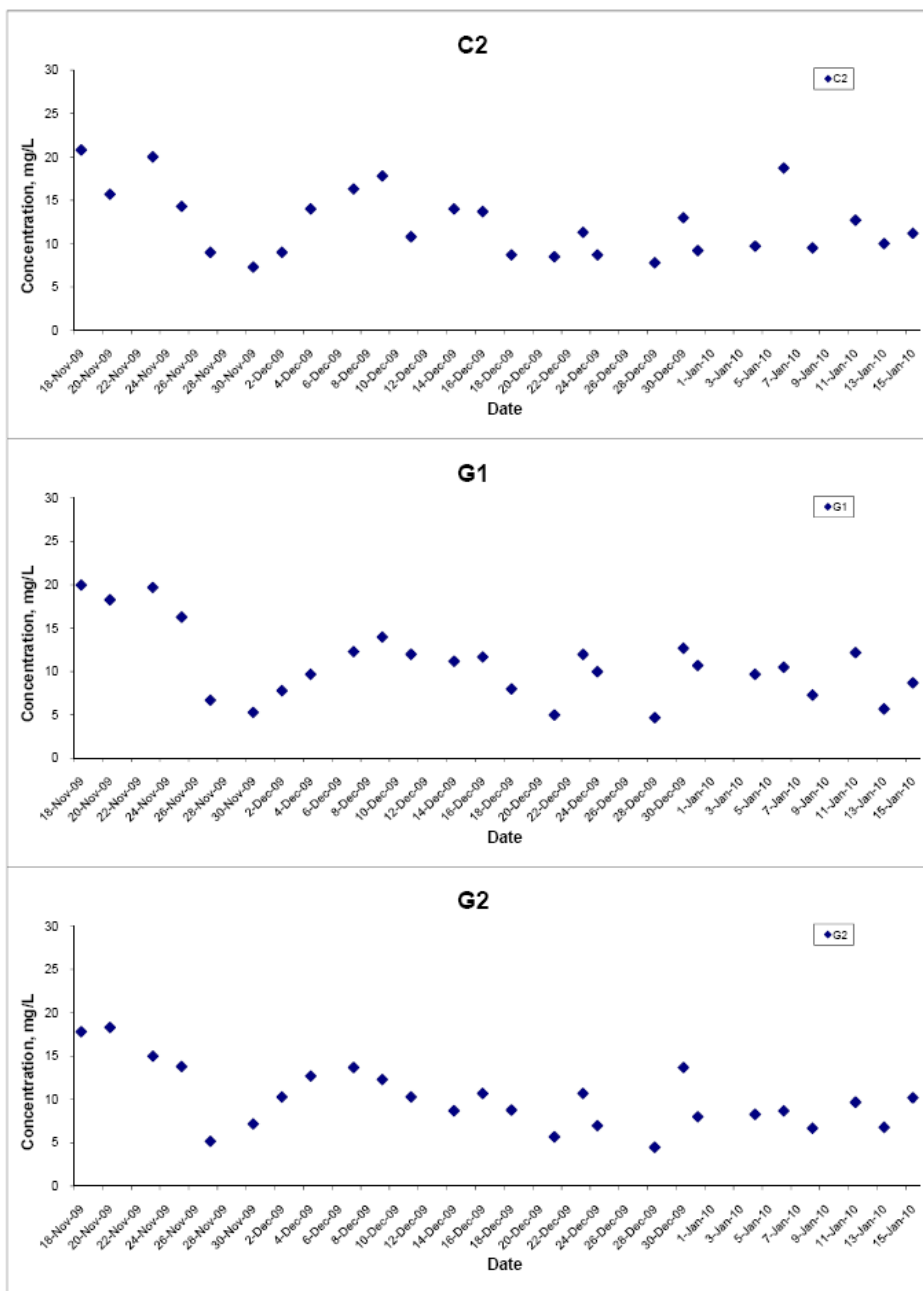
### Suspended Solids (Depth-averaged) at Mid-Ebb Tide



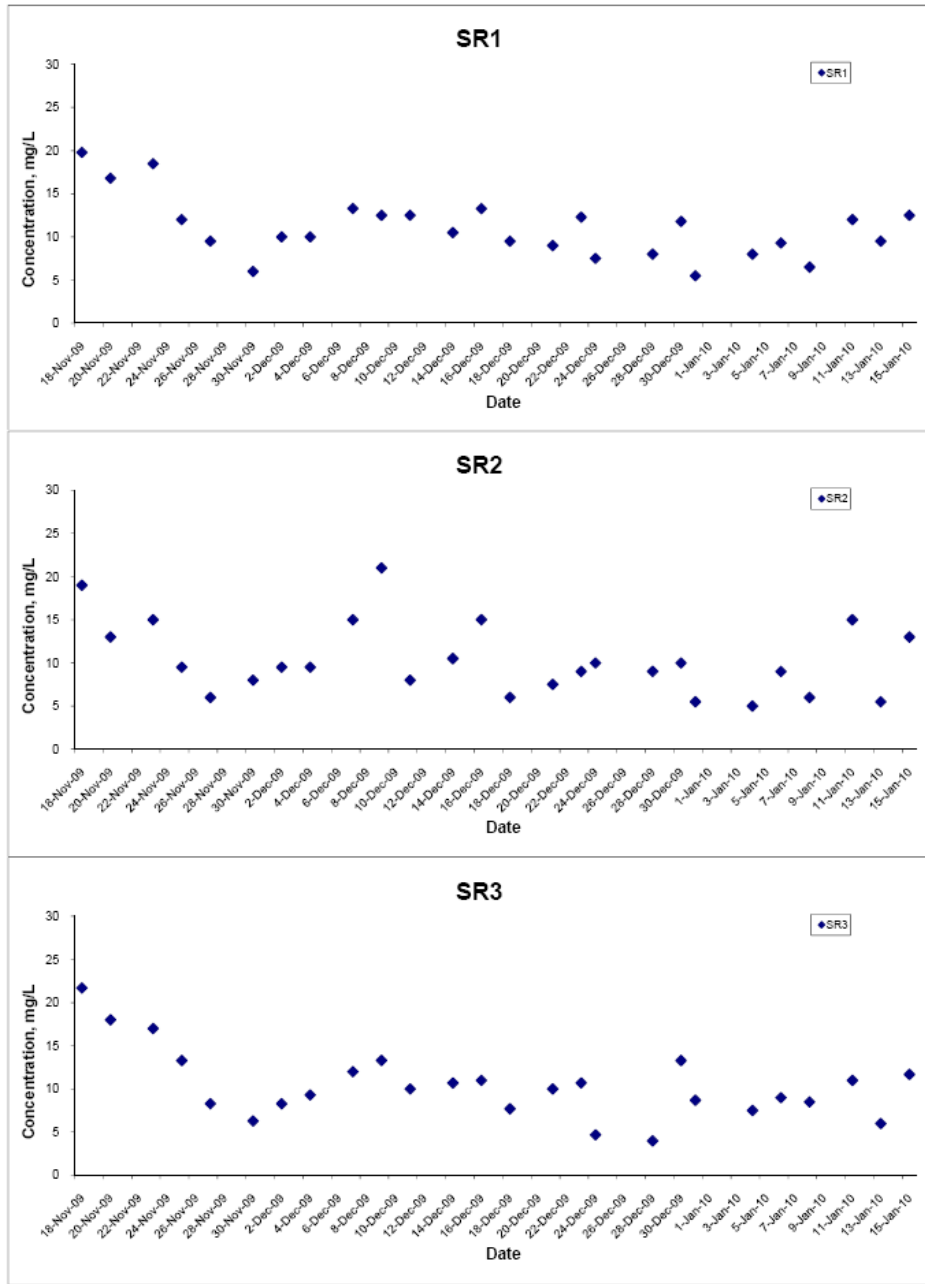
### Suspended Solids (Depth-averaged) at Mid-Ebb Tide



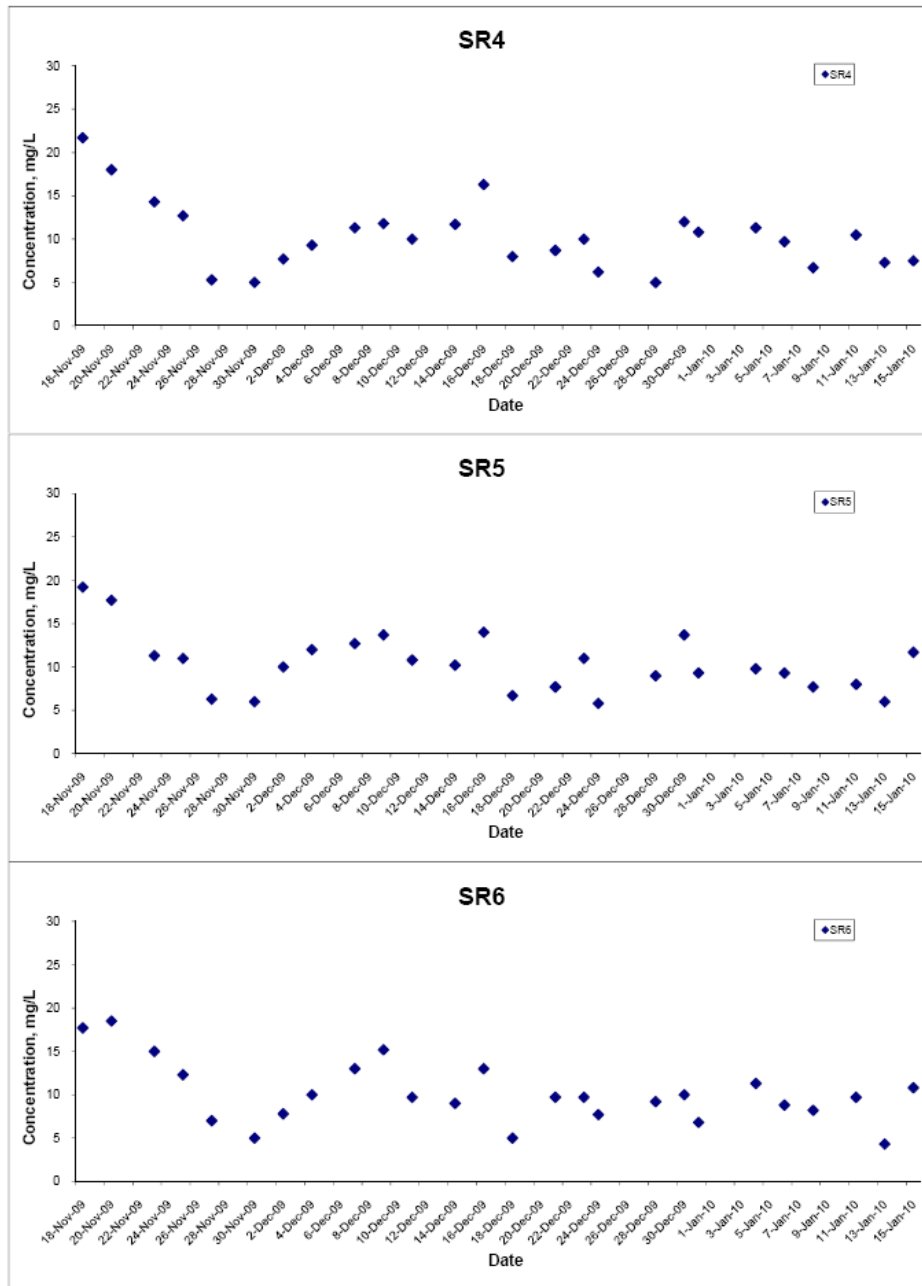
### Suspended Solids (Depth-averaged) at Mid-Flood Tide



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

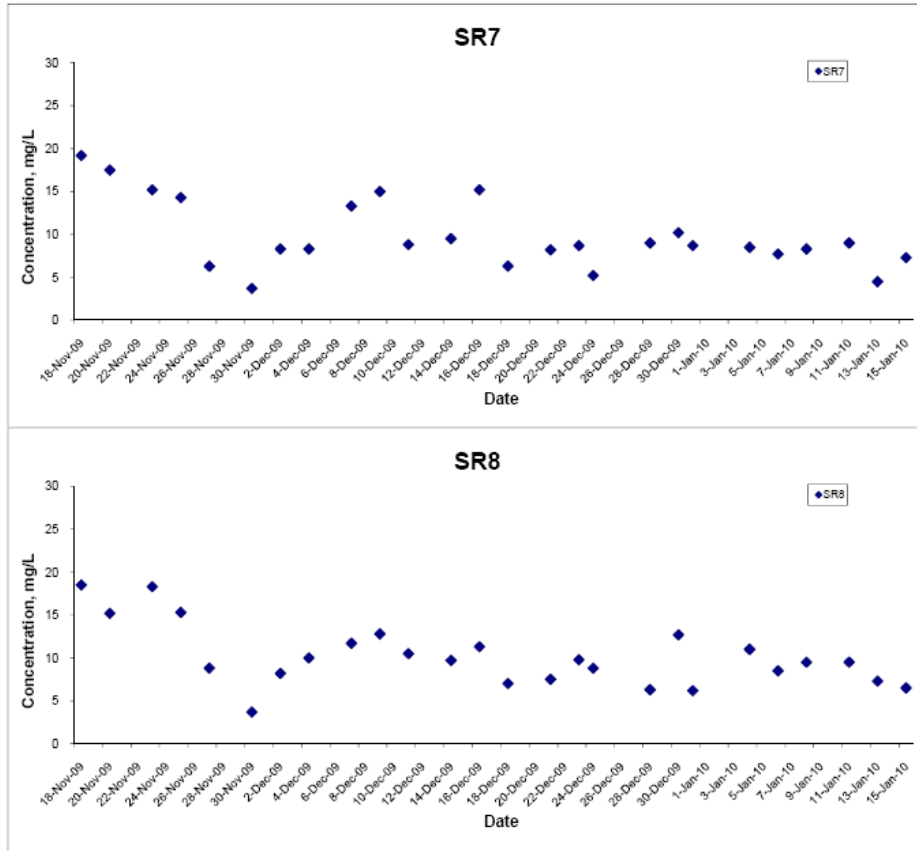


### Suspended Solids (Depth-averaged) at Mid-Flood Tide





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



## Appendix D Impact and Post Project Water Quality Monitoring Schedule

### Impact Water Quality Monitoring Schedule

Emission Control Project at Castle Peak Power Station "B"  
Impact Water Quality Monitoring Schedule for January 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jan	2-Jan
3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan
	Mid-Flood 10:18 Mid-Ebb 15:40		Mid-Flood 11:38 Mid-Ebb 17:00		Mid-Ebb 08:00 Mid-Flood 13:00	
10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
	Mid-Ebb 10:25 Mid-Flood 15:04		Mid-Ebb 12:08 Mid-Flood 16:54		Mid-Flood 08:15 Mid-Ebb 13:18	
17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan
31-Jan						

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

## Post Project Water Quality Monitoring Schedule

**Emission Control Project at Castle Peak Power Station "B"  
Tentative Post-Project Water Quality Monitoring Schedule for January 2010**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Jan	2-Jan
3-Jan	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan
10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan
	Mid-Flood 09:29 Mid-Ebb 14:52		Mid-Flood 10:07 Mid-Ebb 15:55		Mid-Flood 10:58 Mid-Ebb 17:00	
24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan
	Mid-Ebb 08:00 Mid-Flood 13:00		Mid-Ebb 10:23 Mid-Flood 15:06		Mid-Ebb 12:23 Mid-Flood 17:00	
31-Jan						

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

**Emission Control Project at Castle Peak Power Station "B"  
Tentative Post-Project Water Quality Monitoring Schedule for February 2010**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb
	Mid-Flood 09:00 Mid-Ebb 14:32		Mid-Flood 10:00 Mid-Ebb 15:55		Mid-Flood 11:00 Mid-Ebb 17:00	
7-Feb	8-Feb	9-Feb	10-Feb	11-Feb	12-Feb	13-Feb
	Mid-Flood 09:19 Mid-Ebb N/A		Mid-Ebb 11:20 Mid-Flood 15:47		Mid-Flood 08:00 Mid-Ebb 13:00	
14-Feb	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb
21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb
28-Feb	1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar

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

## Appendix E Event and Action Plan for Water Quality

EVENT	ACTION			
	ET	IEC	CAPCO	Contractor
Action Level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC and the Contractor and CAPCO;</li> <li>4. Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC and the Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET and the Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the CAPCO accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC on the proposed mitigation measures;</li> <li>2. Make agreement on the mitigation measures to be implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the CAPCO and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ET and the IEC and propose mitigation measures to the IEC and the CAPCO;</li> <li>6. Implement the agreed mitigation measures.</li> </ol>
Action Level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC and the Contractor and CAPCO;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC and the Contractor;</li> <li>6. Ensure mitigation measures are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET and the Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the CAPCO accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC on the proposed mitigation measures;</li> <li>2. Make agreement on the mitigation measures to be implemented;</li> <li>3. Assess effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the CAPCO and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ET and the IEC and propose mitigation measures to the IEC and CAPCO within 3 working days;</li> <li>6. Implement the agreed mitigation measures.</li> </ol>

EVENT	ACTION			
	ET	IEC	CAPCO	Contractor
Limit Level being exceeded by one consecutive sampling day	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC, the Contractor and the DEP;</li> <li>4. Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC, the CAPCO and the Contractor;</li> <li>6. Ensure mitigation measures are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET / Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the CAPCO accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures;</li> <li>2. Request the Contractor to critically review the working methods;</li> <li>3. Make agreement on the mitigation measures to be implemented;</li> <li>4. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the Engineer and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ET, the IEC and the CAPCO and propose mitigation measures to the IEC and the CAPCO within 3 working days;</li> <li>6. Implement the agreed mitigation measures.</li> </ol>
Limit Level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat <i>in-situ</i> measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC, the Contractor and DEP;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC, the CAPCO and the Contractor;</li> <li>6. Ensure mitigation measures are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with ET and Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the CAPCO accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures;</li> <li>2. Request Contractor to critically review working methods;</li> <li>3. Make agreement on the mitigation measures to be implemented;</li> <li>4. Assess effectiveness of the implemented mitigation measures;</li> <li>5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the CAPCO and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ET, the IEC and the CAPCO and propose mitigation measures to the IEC and the CAPCO within 3 working days;</li> <li>6. Implement the agreed mitigation measures;</li> <li>7. As directed by the CAPCO, slow down or stop all or part of the construction activities.</li> </ol>

## Appendix F Construction Phase - Environmental Mitigation Implementation Schedule

Legends:

C - Complied      NC - Not complied      N/A - Not Applicable

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
<i>Air Quality</i>						
EIA S3.6.1	<ul style="list-style-type: none"> <li>The area at which demolition work takes place should be sprayed with water prior to, during and immediately after the demolition activities so as to maintain the entire surface wet</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S3.6.1	<ul style="list-style-type: none"> <li>Dust screens or sheeting should be provided to enclose the structure to be demolished to a height of at least 1 m higher than the highest level of the structure;</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S3.6.1	<ul style="list-style-type: none"> <li>Any dusty materials should be wetted with water to avoid any fugitive dust emission;</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S3.6.1	<ul style="list-style-type: none"> <li>All temporary stockpiles should be wetted or covered by tarpaulin sheet to prevent fugitive emissions;</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S3.6.1	<ul style="list-style-type: none"> <li>All the dusty areas and roads should be wetted with water;</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S3.6.1	<ul style="list-style-type: none"> <li>All the dusty materials transported by lorries should be covered entirely by impervious sheet to avoid any leakage; and</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S3.6.1	<ul style="list-style-type: none"> <li>The falling height of fill materials should be controlled.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
<i>Water Quality</i>						

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EP Con 2.14, EIA S5.8.1	<ul style="list-style-type: none"> <li>Silt curtains should be deployed around the closed grab dredger to contain suspended solids within the construction site during dredging.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EP Cons 2.13 & 2.15, EIA S5.8.1	<ul style="list-style-type: none"> <li>A daily dredging rate of a closed grab dredger (with a minimum grab size of 8 m<sup>3</sup>) should be less than 5,200 m<sup>3</sup> day<sup>-1</sup>, with reference to the maximum rate for dredging, which was derived in the EIA.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EP Con 2.16, EIA S5.8.1	<ul style="list-style-type: none"> <li>Barges or hoppers should have tight fitting seals to their bottom openings to prevent leakage of material.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EP Con 2.9	<ul style="list-style-type: none"> <li>Any groundwater arising from the decommissioning and construction of the Project shall be collected and recharged back to the site of the Project. No groundwater shall be used for any industrial or domestic purposes.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EP Con 2.10	<ul style="list-style-type: none"> <li>All wastewater or effluent arising from the stockpiling, transportation and treatment of the excavated contaminated materials shall be properly collected and treated.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EP Con 2.11	<ul style="list-style-type: none"> <li>Surface run-off from the construction site shall be directed into sand/silt removal facilities such as sand/silt traps and sediment basins before discharge. The sand/silt removal facilities shall be adequately designed and properly operated and maintained.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EP Con 2.12, EIA S5.8.2	<ul style="list-style-type: none"> <li>All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks, where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or by other means.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.1	<ul style="list-style-type: none"> <li>Mechanical grabs should be designed and maintained to avoid spillage and should seal tightly while being lifted.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S5.8.1	<ul style="list-style-type: none"> <li>Loading of barges or hoppers should be controlled to prevent splashing of dredged material to the surrounding water.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.1	<ul style="list-style-type: none"> <li>Barges or hoppers should not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.1	<ul style="list-style-type: none"> <li>Excess material should be cleaned from the decks and exposed fittings of barges or hoppers before the vessel is moved.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.1	<ul style="list-style-type: none"> <li>Adequate freeboard should be maintained on barges to reduce the likelihood of decks being washed by wave action.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.1	<ul style="list-style-type: none"> <li>All vessels should be sized such that adequate clearance is maintained between vessels and the seabed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.1	<ul style="list-style-type: none"> <li>The works should not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed and internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of efficient silt removal facilities should be based on the guidelines in <i>Appendix A1 of ProPECC PN 1/94</i>.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>All the surface runoff or extracted ground water contaminated by silt and suspended solids should be collected by the on-site drainage system and diverted through the silt traps prior to discharge into storm drain.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C



Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S5.8.2	<ul style="list-style-type: none"> <li>All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Measures should be taken to reduce the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50 m<sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in <i>Appendix A2 of ProPECC PN 1/94</i>. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S5.8.2	<ul style="list-style-type: none"> <li>Oil interceptors should be provided in the drainage system and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	N/A
EIA S5.8.2	<ul style="list-style-type: none"> <li>All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment traps should be regularly cleaned and maintained. The temporary diverted drainage should be reinstated to the original condition when the construction work has finished or the temporary diversion is no longer required.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Sewage from toilets should be collected by a licensed waste collector.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should, as far as possible, be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal, in accordance with the <i>Waste Disposal Ordinance</i>.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Waste streams classifiable as chemical wastes should be properly stored, collected and treated for compliance with <i>Waste Disposal Ordinance</i> or <i>Disposal (Chemical Waste) (General) Regulation</i> requirements.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S5.8.2	<ul style="list-style-type: none"> <li>The Contractors should prepare guidelines and procedures for immediate clean-up actions following any spillages of oil, fuel or chemicals.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S5.8.2	<ul style="list-style-type: none"> <li>Surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	N/A
<i>Waste Management</i>						
EP Con 2.19	No wastes, spoil or excavated materials or materials alike arising from the demolition and/or decommissioning and construction works of the Project shall be dumped in any environmentally sensitive areas, including but not limited to Sites of Special Scientific Interest, coastal protection areas, conservation areas and agricultural land.	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.1	Dredged sediments should be disposed of only at designated disposal sites allocated by the Marine Fill Committee (MFC) based on the findings of further sediment quality tests. A dumping licence should also be obtained from EPD prior to the commencement of the dredging works.	Within designated disposal site/prior to commencement of the dredging works	Contractor		✓	C
EIA S6.6.1	Regardless of the disposal method and site, the Contractor should: <ul style="list-style-type: none"> <li>Dredge the sediments using closed grabs;</li> <li>Use split barges of not less than 750 m<sup>3</sup> capacity when transporting the sediment to the disposal site;</li> <li>Regularly maintain the barge hoppers to ensure that they are capable of rapid opening and discharge at the designated disposal site; and</li> <li>Monitor the barge load against loss of materials during transportation.</li> </ul>	Within the dredging area /Throughout the dredging works period	Contractor		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S6.6.3	The contractor should open a billing account with EPD in accordance with the <i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i> for the payment of disposal charges. Every waste load transferred to government waste disposal facilities such as public fill, sorting facilities, landfills or transfer station would required a valid “chit” which contain the information of the account holder to facilitate waste transaction recording and billing to the waste producer. A trip-ticket system should also be established in accordance with <i>Works Bureau Technical Circular No. 21/2002</i> to monitor the disposal of solid wastes at transfer station/landfills, and to control fly-tipping. The billing “chit” and trip-ticket system should be included as one of the contractual requirements and implemented by the contractor.	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.3	A recording system for the amount of waste generated, recycled and disposed of (including the disposal sites) should be established during the construction stage.	Within the construction site/Throughout the construction period	Contractor		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S6.6.3	<p><i>Measures for the Reduction of C&amp;DM Generation during Planning and Design Stages</i></p> <p>The various waste management options can be categorized in terms of preference from an environmental viewpoint. The options considered to be more preferable have the least impacts and are more sustainable in the long term. Hence, the waste management hierarchy is as follows:</p> <ul style="list-style-type: none"> <li>• Avoidance and minimization, that is, reduction of waste generation through changing or improving practices and design;</li> <li>• Reuse of materials, thus avoiding disposal (generally with only limited reprocessing);</li> <li>• Recovery and recycling, thus avoiding disposal (although reprocessing may be required); and</li> <li>• Treatment and disposal, according to relevant law, regulations, guidelines and good practice.</li> </ul> <p>This hierarchy should be used to evaluate the waste management options, thus allowing maximum waste reduction and reduced disposal costs. Records of quantities of wastes generated, recycled and disposed (locations) should be kept.</p>	Within the construction site/Throughout the construction period	Contractor	✓		C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S6.6.3	<p><i>Measures for the Reduction of C&amp;DM Generation during Construction</i></p> <ul style="list-style-type: none"> <li>• C&amp;D materials will be reused as far as possible within the Project. Public fill and construction waste should be segregated and stored in different containers or skips to facilitate reuse or recycling of materials and their proper disposal of construction waste. Specific areas of the work site should be designated for such segregation and temporary storage if immediate use is not practicable.</li> <li>• The construction waste should be collected by Contractor and transported to landfills for disposal.</li> <li>• The use of wooden hoardings should not be allowed. An alternative material, which can be reused or recycled, for example, metal (aluminium, alloy, etc) should be used.</li> <li>• To reduce the potential dust impact, C&amp;D materials should be wetted as quickly as possible during excavation works.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.4	<p>Containers used for storage of chemical wastes should:</p> <ul style="list-style-type: none"> <li>• be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>• have a capacity of less than 450 L unless the specifications have been approved by the EPD; and</li> <li>• display a label in English and Chinese in accordance with instructions prescribed in <i>Schedule 2 of the Regulations</i></li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S6.6.4	The storage area for chemical wastes should: <ul style="list-style-type: none"> <li>• be clearly labelled and used solely for the storage of chemical waste;</li> <li>• be enclosed on at least 3 sides;</li> <li>• have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;</li> <li>• have adequate ventilation;</li> <li>• be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and</li> <li>• be arranged so that incompatible materials are appropriately separated.</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.4	Disposal of chemical waste should be: <ul style="list-style-type: none"> <li>• via a licensed waste collector; and</li> <li>• to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers</li> </ul>	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.5	The sewage sludge from the portable toilet should be collected by a reputable collector on a regular basis.	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.6	General refuse should be stored in enclosed bins or compaction units separately from construction and chemical wastes.	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.6	General refuse should be removed from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts.	Within the construction site/Throughout the construction period	Contractor		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA S6.6.6	Burning of refuse on construction site is prohibited by law.	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.6	Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. As such, separate, labelled bins for their deposit should be provided if feasible. Materials recovered will be re-used on site or sold for recycling.	Within the construction site/Throughout the construction period	Contractor		✓	C
EIA S6.6.7	Training should be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling at the beginning of the Contract.	Within the construction site/Throughout the construction period	Contractor		✓	C
<i>Land Contamination</i>						
EP Con 2.5	The oil tanks shall be properly cleaned before their demolition. All wastes and effluent arising from the cleaning of the oil tanks shall be properly collected, stored, treated and disposed of.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EP Con 2.6	No contaminated soil arising from the demolition and/or decommissioning works shall be stockpiled, treated or disposed of outside the Castle Peak Power Station.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EP Con 2.7	The excavated soil arising from the demolition and/or decommissioning works shall be properly contained in container(s) during storage and transportation to avoid any discharge or leakage.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EP Con 2.8	The contaminated soil arising from the demolition and/or decommissioning works shall be decontaminated within the Castle Peak Power Station in accordance with the Land Contamination Remediation Action Plan contained in the EIA report (Register No. AEIAR-102/2006). Bio-remediation methods shall be used to remedy the petroleum hydrocarbon contamination in the excavated materials.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Potentially contaminated soil should be treated in accordance with the remediation actions specified in the Remediation Action Plan (RAP) of this EIA Report and the treated soil should be reused within the Project Site as far as possible.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A



Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA Annex E	The temporary stockpile of excavated potentially contaminated materials should be contained in a container covered by HDPE sheet on top	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Bioremediation by applying nutrient to the soil should be employed for the on-site treatment of excavated materials potentially contaminated by TPH.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	If disposal of the treated excavated soil to the public fill bank is required, vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or wastewater run-off, and truck bodies and tailgates will be sealed to minimise the risk of a discharge during transportation or during wet conditions.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Records of the quantities of soil generated for off-site disposal will be maintained.	Within the contaminated area /Throughout the construction period	Contractor		✓	C
EP Con 2.9, EIA Annex E	As groundwater is not used for either domestic or industrial purposes at the site or in the adjacent areas, remediation of groundwater is not considered to be necessary for the Project to proceed. If groundwater is encountered during the construction of foundations, the groundwater abstracted or collected will be recharged back to the site.	Within the contaminated area /Throughout the construction period	Contractor		✓	C
EIA Annex E	The FODT and the oil separator serving it should be cleaned prior to demolition.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Oily water and sludge collected from the cleaning should be treated at the on-site wastewater treatment facility. Oily water and sludge collected from the cleaning should be collected and disposed of as chemical waste at Government chemical waste treatment facility.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Only licensed waste contractors should be used to collect and transport any chemical waste. The necessary waste disposal permits will be obtained, as required, from the appropriate authorities, in accordance with the <i>Waste Disposal Ordinance (Cap 354)</i> and <i>Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)</i> , as required.	Within the contaminated area /Throughout the construction period	Contractor		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
EIA Annex E	Prior to commence any remediation work, a health and safety risk assessment should be performed for the remediation work to identify potential work related hazards and prepare appropriate control measures.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Appropriate Personal Protective Equipment (PPE) such as safety hat, chemical protective gloves, masks (for both dust and vapour), eye goggles, protective clothing and protective footwear should be provided to staff who would be involved in the tank cleaning and contaminated area (FODT and TP3) remediation works. No works should be allowed without the suitable PPE.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	The workers should inspect and check their PPE before, during and after use. In cases where any of the PPE is impaired, the workers should stop work immediately and inform their supervisor. The workers should not be allowed to re-start their work until the impaired PPE is replaced.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	The workers should always maintain basic hygiene standard (e.g. hand wash before leaving the contaminated work area). The workers should also be responsible for cleaning and storing their own PPE in a secure place before leaving the site.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Eating, drinking and smoking should be strictly prohibited within the contaminated site area.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	The designated site management representatives must be informed if any workers feel uncomfortable physically or mentally during the remediation works. All workers should leave the work areas and the work should be temporarily suspended until the reason for the uncomfortable feeling has been identified.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	The works should be stopped or discontinued when Typhoon Signal No. 3 or Rainstorm Warning signals are hoisted. All stockpile materials (if any) should be covered immediately by tarpaulin or other similar protective and waterproof materials.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A
EIA Annex E	Bulk earth-moving excavator equipment should be used to minimise construction workers' potential contact with contaminated materials.	Within the contaminated area /Throughout the construction period	Contractor		✓	N/A

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
<i>Ecological – Marine Mammal</i>						
EP Con 2.17, EIA S8.9	To limit potential impacts to cetaceans from underwater percussive piling, the following steps should be taken: <ul style="list-style-type: none"> <li>• Only hydraulic hammers should be used;</li> <li>• An exclusion zone of 500 m radius should be scanned around the work area for at least 30 minutes prior to the start of piling. If cetaceans are observed in the exclusion zone, piling should be delayed until they have left the area; and,</li> <li>• Acoustic decoupling of noisy equipment on work barges should be undertaken. These techniques include the use of a soft sling to retain the pile driving hammer, rubber tyred air compressor for bubble jacket/curtain, rubber pads on barge leaders and guides, and an air curtain around the pile barge.</li> </ul>	Within the dredging area /Throughout the construction period	Contractor		✓	C
EP Con 2.18	To minimize potential construction and operation impacts on dolphins and porpoises, no dumping of rubbish, food, oil, or chemicals from the marine vessels shall be allowed.	Within the dredging area /Throughout the construction period	Contractor		✓	C
EIA S8.9	The following recommendations should be considered to minimize potential construction impacts on dolphins and porpoises. <ul style="list-style-type: none"> <li>• All vessel operators working on the Project construction should be given a briefing, alerting them to the possible presence of dolphins in the area, and the guidelines for safe vessel operation in the presence of cetaceans. If high speed vessels are used, they should be required to slow to 10 knots when passing through a high density dolphin area (west Lantau, Sha Chau and Lung Kwu Chau);</li> <li>• The vessel operators should be required to use predefined and regular routes, as these will become known to dolphins using these waters;</li> <li>• The vessel operators should be required to control and manage all effluent from vessels;</li> <li>• A policy of no dumping of rubbish, food, oil, or chemicals should be</li> </ul>	Within the marine works area /Throughout the construction period of the additional berthing facility	Contractor / CLP Power (as CAPCO operator)		✓	C

Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage		Implementation Status during the reporting month
				Design	Construction	
	<p>strictly enforced. This should also be covered in the contractor briefings;</p> <ul style="list-style-type: none"> <li>• Every attempt should be made to minimize the effects of construction of the Project on the water quality of the area;</li> </ul>					
S9.3.5	The new structures associated with the Project, including those of the additional conveyor systems, should be painted in a colour scheme that complements the surrounding industrial setting of the existing CPPS.	New structures associated with the Project	Contractor		✓	C