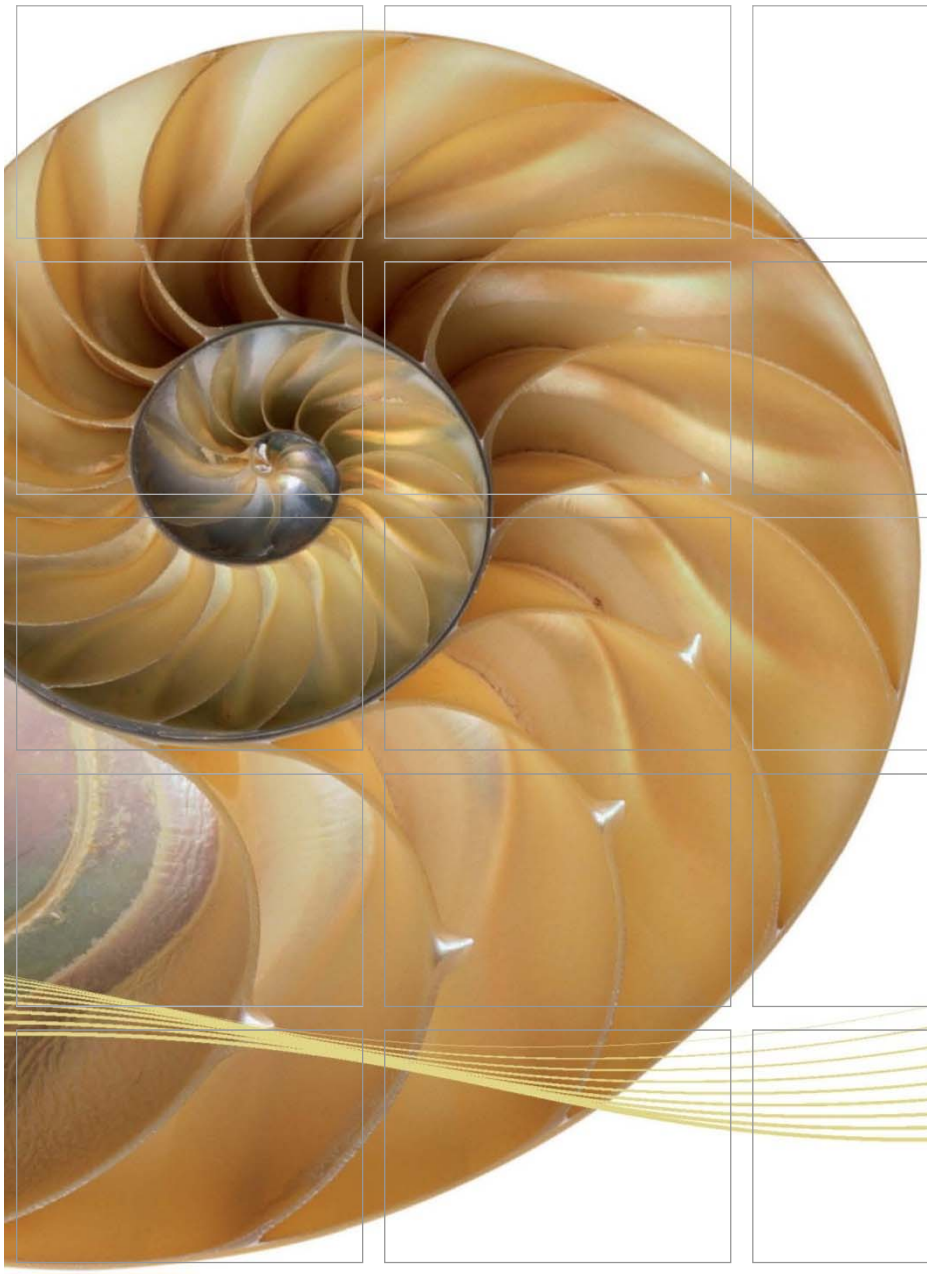
MONITORING REPORT



Asia Submarine-cable Express (ASE) – Tseung Kwan O

Second Weekly Impact Water Quality Monitoring Report

24 October 2012

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Asia Submarine-cable Express (ASE) – Tseung Kwan O

2nd Weekly Impact Water Quality Monitoring Report

Environmental Resources Management

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Client:	GMS No:
NTT Com Asia Ltd	0171870
Summary: This report presents the monitoring requirements, methodologies and results of the impact marine water quality measurements at the monitoring locations near Tseung Kwan O in accordance with the EM&A Manual.	Date: 24 October 2012 Approved by:  *Terence Fong* *Project Director*

0	2nd Weekly Impact Water Quality Monitoring Report	YL	GYANG	TFONG	24 Oct 12
Revision	Description	By	Checked	Approved	Date

Distribution

☒ Internal

☒ Public

☐ Confidential

Asia Submarine-cable Express (ASE) – Tseung Kwan O
Environmental Certification Sheet
EP-433/2011

Reference Document/Plan

Document/~~Plan~~ to be ~~Certified~~/ Verified:	Second Weekly Impact Water Quality Monitoring Report
Date of Report:	24 October 2012
Date prepared by ET:	ERM-Hong Kong Ltd
Date received by IEC:	Ecosystem Ltd

Reference EM&A Manual/ EP Requirement

EM&A Manual Requirement: Section 2

Content: *Water Quality Monitoring*

2.5 "The Impact Monitoring Report will be provided weekly within three days after the relevant monitoring data are collected or become available during the cable laying work....."

"The Weekly Impact Monitoring shall include, but not limited to, the following details: Basic Project Information..., Operating practices of the cable burial machine during sampling and an interpretation of monitoring results; and the monitoring data should be provided graphically to show the relationship between the Control and the Impact monitoring stations and compliance or non-compliance with respect to the Action/Limit Levels"

EP Condition: Condition No. 2.4

Content: *Impact Monitoring Report on Water Quality*

(ii)(b) To monitor the environmental impacts and timely implementation of the recommended mitigation measures, the Permit Holder shall submit to the Director four hard copies and one electronic copy of the weekly impact monitoring and site audit reports within three days after the relevant monitoring data are collected or become available.

ET Certification

I hereby certify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-433/2011.

Terence Fong, Environmental Team Leader: Date: 24 October 2012

IEC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-433/2011.

Vincent Lai, Independent Environmental Checker: Date: 24 October 2012

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LIST OF TABLES

LIST OF ANNEXES

The submarine cable installation works for the Asia Submarine-cable Express (ASE) cable system were commenced on 8 October 2012. This is the **Second Weekly Impact Water Quality Monitoring Report** presenting the impact water quality monitoring conducted during the period from **15 October 2012** to **21 October 2012** in accordance with the *Monitoring and Audit Manual* (*EM&A Manual*).

Summary of Construction Works Undertaken during the Reporting Period

During the reporting period, submarine cable laying works were conducted in Zone C and from Zone C eastward to the boundary of Hong Kong marine waters.

Water Quality Monitoring

Two monitoring events were scheduled in the reporting period in Zone C. Monitoring events at designated monitoring stations in Zone C were performed on schedule.

Environmental Non-conformance

Exceedances of Action and Limit Levels were recorded during the reporting week. However, the exceedances were considered to reflect natural background fluctuation rather than impact caused by the Project.

No complaint and summons/prosecution was received during the reporting week.

Future Key Issues

During the following week, there will be cable installation works from Zone C eastward to the boundary of Hong Kong marine waters which are outside Zone A, Zone B and Zone C. Hence, no impact water quality monitoring will be conducted in the coming week.

1 INTRODUCTION

ERM-Hong Kong, Limited (ERM) was appointed by NTT Com Asia (NTTCA) as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for the installation of a telecommunication cable (Asia-Submarine-cable Express (ASE)) of approximately 7,200 km in length, connecting Japan and Singapore with branches to the Philippines, Hong Kong SAR (HKSAR) and Malaysia (thereinafter called the Project).

1.1 PURPOSE OF THE REPORT

This is the **Second Weekly Impact Water Quality Monitoring Report**, which summarises the results of impact water quality monitoring as part of the EM&A programme during the reporting period from **15 October 2012** to **21 October 2012**.

1.2 STRUCTURE OF THE REPORT

The structure of the Report is as follows:

Section 1 : ***Introduction***
Provides details of the background, purpose and report structure.

Section 2 : ***Project Information***
Summarises background and scope of the project, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3 : ***Water Quality Monitoring Requirements***
Summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, and Event Action Plan.

Section 4 : ***Monitoring Results***
Summarises the water quality monitoring results obtained in the reporting period.

Section 5 : ***Environmental Non-conformance***
Summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 6 : ***Future Key Issues***
Summarises the monitoring schedule for the next reporting period.

Section 7 : ***Conclusions***
Presents the key findings of the impact monitoring results.

2 PROJECT INFORMATION

2.1 BACKGROUND

NTT Com Asia (NTTCA) proposes to install a telecommunication cable (Asia Submarine-cable Express (ASE) cable) of approximately 7,200 km in length, connecting Japan and Singapore with branches to the Philippines, Hong Kong SAR (HKSAR) and Malaysia. NTTCA is responsible for securing the approval to land the ASE cable in Tseung Kwan O, Hong Kong SAR (HKSAR). The proposed landing site will be at a new Beach Manhole (BMH) and ultimately connect with a Data Centre in Tseung Kwan O (TKO) Industrial Estate which is scheduled for completion in 2012. From Tseung Kwan O, the cable will extend eastward approaching the Tathong Channel. Near to Cape Collinson, the cable is approximately parallel to the Tathong Channel until north of Waglan Island where the cable travels eastward to the boundary of HKSAR waters where it enters the South China Sea. The total length of cable in Hong Kong SAR waters is approximately 33.5 km. A map of the proposed cable route is presented in *Figure 2.1*.

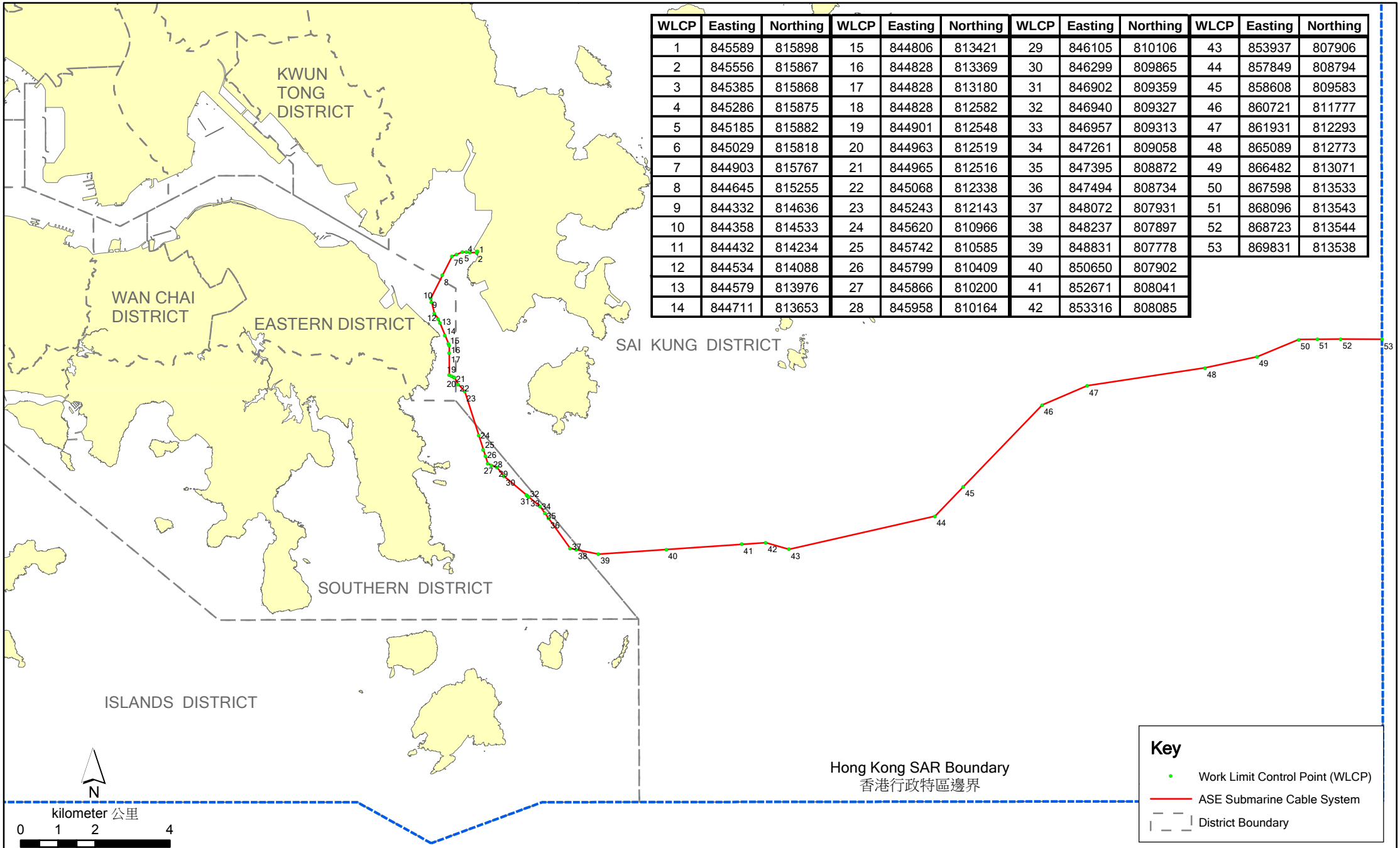
A Project Profile (PP-452/2011) which includes an assessment of the potential environmental impacts associated with the installation of the submarine telecommunications cable system was prepared and submitted to the Environmental Protection Department (EPD) under section 5. (1)(b) and 5.(11) of the Environmental Impact Assessment Ordinance (EIAO) for the application for Permission to apply directly for Environmental Permit (EP). The Environmental Protection Department, subsequently issued an Environmental Permit (EP- 433/2011).

Pursuant to Condition 2.4 of the EP, an environmental monitoring and audit programme as set out in the *Environmental Monitoring and Audit Manual* (*EM&A Manual*) is required to be implemented. In accordance with Section 2 of the *EM&A Manual*, impact monitoring of marine water quality should be undertaken when the cable installation barge works in Zone A , Zone B and Zone C.

Impact monitoring started on 8 October 2012 in parallel with the submarine cable laying works in Zone A and Zone B. During this reporting week, the impact monitoring was continually conducted on a daily basis as the cable laying works proceeded in Zone C and ceased when the barge moved outside Zone C. This Report therefore presents the monitoring results from the monitoring stations within Zone C. .

2.2 MARINE CONSTRUCTION WORKS UNDERTAKEN DURING REPORTING WEEK

During the reporting period from 15 October 2012 to 21 October 2012, submarine cable laying works were conducted in Zone C and from Zone C eastward to the boundary of Hong Kong marine waters.



WLCP	Easting	Northing	WLCP	Easting	Northing	WLCP	Easting	Northing	WLCP	Easting	Northing
1	845589	815898	15	844806	813421	29	846105	810106	43	853937	807906
2	845556	815867	16	844828	813369	30	846299	809865	44	857849	808794
3	845385	815868	17	844828	813180	31	846902	809359	45	858608	809583
4	845286	815875	18	844828	812582	32	846940	809327	46	860721	811777
5	845185	815882	19	844901	812548	33	846957	809313	47	861931	812293
6	845029	815818	20	844963	812519	34	847261	809058	48	865089	812773
7	844903	815767	21	844965	812516	35	847395	808872	49	866482	813071
8	844645	815255	22	845068	812338	36	847494	808734	50	867598	813533
9	844332	814636	23	845243	812143	37	848072	807931	51	868096	813543
10	844358	814533	24	845620	810966	38	848237	807897	52	868723	813544
11	844432	814234	25	845742	810585	39	848831	807778	53	869831	813538
12	844534	814088	26	845799	810409	40	850650	807902			
13	844579	813976	27	845866	810200	41	852671	808041			
14	844711	813653	28	845958	810164	42	853316	808085			

Figure 2.1

Proposed ASE Submarine Cable System (Layout Plan)

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Date: 17/09/2012

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2.3 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the relevant permits, licences and reports on environmental protection for this Project is presented in *Table 2.1*.

Table 2.1 Summary of Environmental Licensing, Notification, Permit and Reporting Status

Permit / Licence / Notification / Report	Reference	Validity Period	Remarks
Environmental Permit	EP 433/2011	Throughout the construction and operation stages	Granted on 20 December 2011
EM&A Manual	-	Throughout the construction stage	Revised EM&A Manual submitted on 18 September 2012
Baseline Water Quality Monitoring Report (Zone A)	-	Throughout the construction period for Zone A	Submitted on 19 September 2012
Baseline Water Quality Monitoring Report (Zone B)	-	Throughout the construction period for Zone B	Submitted on 25 September 2012
Baseline Water Quality Monitoring Report (Zone C)		Throughout the construction period for Zone C	Submitted on 1 October 2012

3.1 MONITORING LOCATIONS

In accordance with the *EM&A Manual,* during the installation of the cable system in Zone C, water quality samplings were collected at the stations situated around the cable laying works in Zone C. The locations of the sampling stations within Zone C are shown in *Figure 3.1*.

- E4 is the Impact Station to monitor the impacts of cable installation works on the coral communities at the coast of Sung Kong;
- E5 is the Impact Station to monitor the impacts of cable installation works on the coral communities at the coast of Waglan Island;
- G5 is the Gradient Station between E4 and the alignment;
- G6 is the Gradient Station between E5 and the alignment; and
- C3 is a Control Station (approximately 3 km from the proposed cable alignment) for Zone C. It is not supposed to be influenced by the cable laying works due to its remoteness to the construction works.

The co-ordinates of the above monitoring stations in Zone C are listed in *Table 3.1*.

Table 3.1 Co-ordinates of Water Quality Monitoring Stations in Zone C

Monitoring Station	Nature	Easting	Northing
E4	Impact Station (Coral Communities)	843210	816322
E5	Impact Station (Coral Communities)	844627	813609
G5	Gradient Station	847795	806678
G6	Gradient Station	849703	806636
C3	Control Station	848556	804750

3.2 MONITORING PARAMETERS

The impact water quality monitoring was conducted in accordance with the requirements stated in the *EM&A Manual*. Monitoring parameters are presented as below.

Parameters measured *in situ* were:

- dissolved oxygen (DO) (% saturation and mg L^{-1});
- temperature (°C);
- turbidity (NTU); and

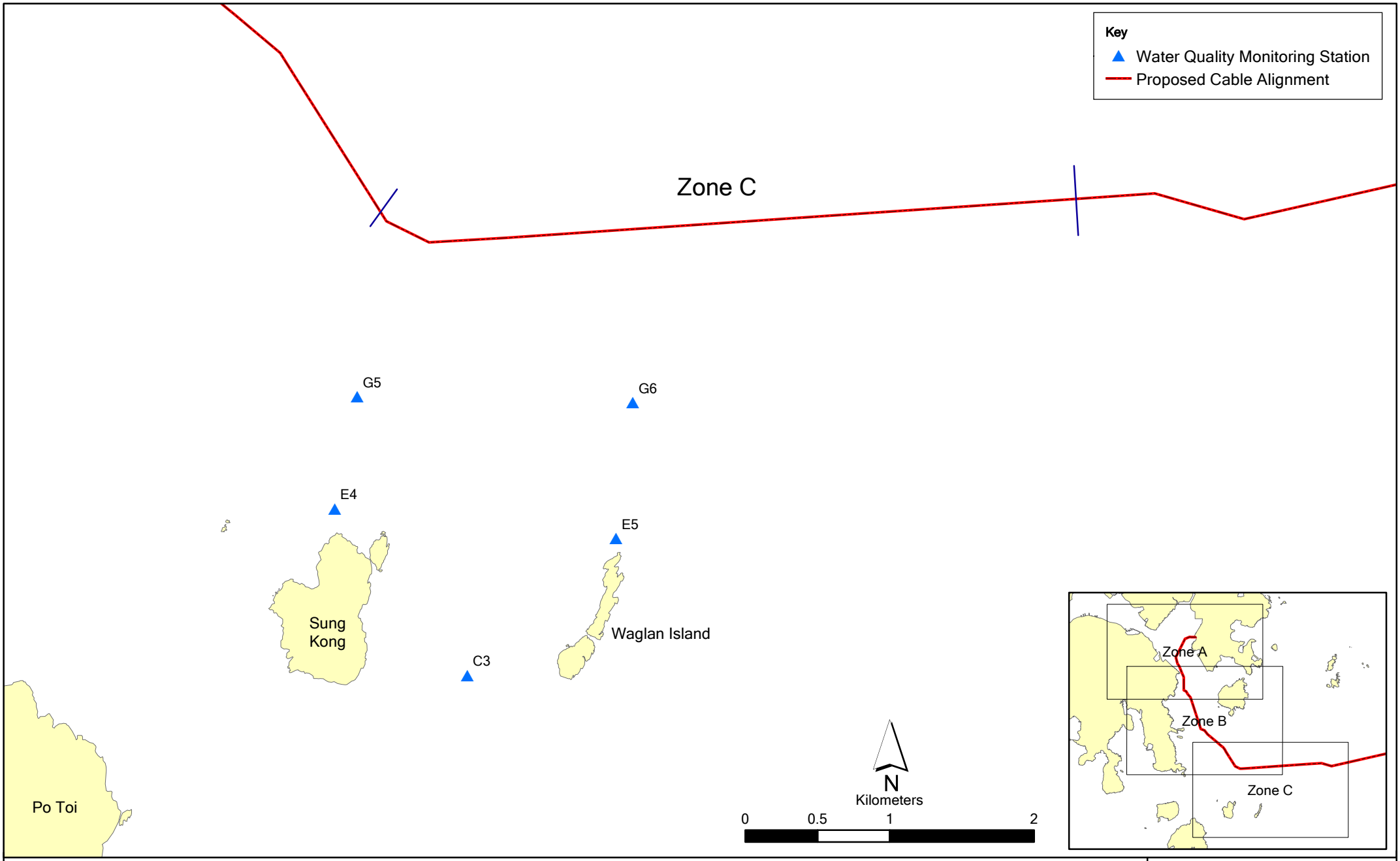

Figure 3.1

Water Quality Monitoring Station (Zone C)

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Date: 20/09/2012

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- salinity (‰).

The only parameter measured in the laboratory was:

- suspended solids (SS) (mgL^{-1}).

In addition to the water quality parameters, other relevant data were measured and recorded in field logs, including the location of the sampling stations, water depth, time, weather conditions, sea conditions, special phenomena and work activities undertaken around the monitoring and works area that may influence the monitoring results.

3.3 MONITORING EQUIPMENT AND METHODOLOGY

3.3.1 Monitoring Equipment

Table 3.2 summaries the equipment used for the impact water quality monitoring.

Table 3.2 Equipment Used during the Impact Water Quality Monitoring

Equipment	Model
Global Positioning Device	Garmin etrex 10
Water Depth Gauge	Speedtech Instrument SM-5A
Water Sampling Equipment	1510 Kemmerer Water Sampler
Salinity, DO, Temperature Measuring Meter	YSI Pro 2030
Current Velocity and Direction	Flow Probe FP11
Turbidity Meter	HACH Model 2100Q Turbid Meter

3.3.2 Monitoring Methodology

Timing & Frequency

In-situ data and SS data were collected during the cable installation works from 7:00 to 23:00 on a daily basis. The impact monitoring schedule for the reporting period is presented in *Annex A*.

Impact monitoring at E4, E5, G5, G6 and C3 was commenced once the cable installation works started within Zone C. The monitoring ceased once the cable installation barge moved outside Zone C or no cable laying works were being undertaken within Zone C.

Due to the weather conditions and travelling time between stations, *in-situ* and SS measurements were taken at the impact monitoring stations with approximately 2-hour interval in Zone C. The monitoring frequency and parameters for water quality impact monitoring are summarised in *Table 3.3*.

Table 3.3 Monitoring Frequency and Parameters for Impact Monitoring in Zone C

Zone	Station Type	Monitoring Station	Monitoring Frequency	Monitoring Parameter
C	Control	C3	Daily at ~2-hour interval while cable installation works were being undertaken in Zone C	Temperature, Turbidity, Salinity, DO and SS
	Gradient	G5, G6		
	Impact	E4, E5		

Duplicate samples were collected from each of the monitoring events for *in situ* measurements and laboratory analysis.

Depths

Each station was sampled and measurements/ water samples were taken at three depths, namely, 1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth less than 6 m, the mid-depth station may be omitted. For stations that are less than 3 m in depth, only the mid-depth sample was taken.

For in situ measurements, duplicate readings were made at each water depth at each station. Duplicate water samples were collected at each water depth at each station.

Sampling/ Testing Protocols

All *in situ* monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at-monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use.

For the on-site calibration of field equipment, the *BS 1427: 1993, Guide to Field and On-Site Test Methods for the Analysis of Waters* was observed. Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was made available.

Water samples for SS measurements were collected in high density polythene bottles, packed in ice (cooled to 4° C without being frozen), and delivered to a HOKLAS laboratory as soon as possible after collection.

Two replicate samples were collected from each of the monitoring events for *in situ* measurement and lab analysis.

Laboratory Analysis

All laboratory work was carried out in a HOKLAS accredited laboratory. Water samples of about 1,000 mL were collected at the monitoring and control stations for carrying out the laboratory determinations. The determination work started within the next working day after collection of the water

samples. The SS laboratory measurements were provided within 2 days of the sampling event (48 hours). The analyses followed the standard methods as described in APHA Standard Methods for the *Examination of Water and Wastewater*, *19th Edition*, unless otherwise specified (APHA 2540D for SS).

The QA/QC details were in accordance with requirements of HOKLAS or another internationally accredited scheme (*Annex B*)

3.3.3 Action and Limit Levels

The Action and Limit levels for Zones C, which were established based on the results of *Baseline Water Quality Monitoring Report (Zone C)*, are presented in *Table 3.4*.

Table 3.4 Action and Limit Levels of Water Quality for Zones C

Parameter	Action Level	Limit Level
SS in mgL^{-1} (Depth-averaged) [a] [c]	95%-ile of baseline data ($2.44\ mg\ L^{-1}$), or	99%-ile of baseline data ($2.48\ mg\ L^{-1}$) , and
	20% exceedance of value at any impact station compared with corresponding data from control station	30% exceedance of value at any impact station compared with corresponding data from control station
DO in mgL^{-1} [b]	Surface and Middle[d] 5%-ile of baseline data for surface and middle layer (5.62 mg L-1)	Surface and Middle[d] 5mg/L or 1%-ile of baseline for surface and middle layer (5.58 mg L-1)
	Bottom 5%-ile of baseline data for bottom layers ($5.46\ mg\ L^{-1}$)	Bottom 2mg/L or 1%-ile of baseline data for bottom layer ($5.41\ mg\ L^{-1}$)
Turbidity in NTU (Depth-averaged) [a] [c]	95%-ile of baseline data (1.44 NTU), or	99%-ile of baseline data (1.50 NTU), and
	20% exceedance of value at any impact station compared with corresponding data from control station	30% exceedance of value at any impact station compared with corresponding data from control station

Notes:

a. "Depth-averaged" is calculated by taking the arithmetic means of reading of all sampled depths.

b. For DO, non-compliance of the water quality limits occurs when the 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. The Action and Limit Level for DO for surface and middle layer were calculated from the combined pool of baseline surface layer data and baseline middle layer data.

3.3.4 Event and Action Plan

The Event and Action Plan for water quality monitoring which was stipulated in *EM&A Manual* is presented in *Table 3.5*.

Table 3.5 Event Action Plan for Water Quality

Event	Contractor
Action Level Exceedance	**Step 1** - repeat sampling event. **Step 2 –** identify source(s) of impact and confirm whether exceedance was due to the construction works; **Step 3 –** inform EPD, AFCD and LCSD and confirm notification of the non-compliance in writing; **Step 4 -** discuss with cable installation contractor the most appropriate method of reducing suspended solids during cable installation (e.g. reduce cable laying speed/volume of water used during installation). **Step 5** - repeat measurements after implementation of mitigation for confirmation of compliance. **Step 6** - if non compliance continues - increase measures in Step 4 and repeat measurements in Step 5. If non compliance occurs a third time, suspend cable laying operations.
Limit Level Exceedance	Undertake **Steps 1-5** immediately, if further non compliance continues at the Limit Level, suspend cable laying operations until an effective solution is identified.

4 IMPACT MONITORING RESULTS

A total of two monitoring events were scheduled between 15 October 2012 and 21 October 2012 (*Annex A*). Monitoring events at all designated monitoring stations within Zone C were generally performed on schedule. No major activities influencing the water quality were identified during the reporting period.

4.1 DATA COLLECTED DURING REPORTING PERIOD

Continuous water sampling was taken at the impact monitoring stations in Zone C at approximately 2-hour intervals (subject to the weather conditions and travelling time between stations) on a daily basis. In general, water quality in Zone C was stable throughout each sampling day though natural fluctuation existed. Neither sudden drop in dissolved oxygen concentrations nor sharp increase in turbidity levels and suspended solid levels were observed on each monitoring day. The results of the impact monitoring and their graphical presentations are included in *Annex C*.

Despite relatively stable water quality, exceedances of the Action and Limit Levels were recorded during the reporting week. A summary of stations where exceedances were recorded is presented in *Table 4.1*. Exceedances with detailed information of location and time were presented in *Annex C*.

Table 4.1 Summary of Exceedances Occurring during the Reporting Week

Date	Surface DO		Middle DO		Bottom DO		Depth-averaged Turbidity		Depth-averaged SS	
	Exceedances									
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
15/10			E5	E5			E4, E5		E4, E5	
16/10			E4	E4	E4		E4, E5		E4, E5	

4.2 EXCEEDANCES DURING REPORTING PERIOD

4.2.1 Exceedances on 15 October 2012

Exceedances of the Action Levels in depth-averaged Turbidity and depth-averaged SS were recorded at Impact Station E4 and E5 in the 1st, 2nd, 3rd and 4th sampling rounds on 15 October 2012 (*Table 4.2*). Exceedances of Action and Limit Levels in mid-depth DO were also observed at Station E5 in the 8th sampling round on 15 October 2012 (*Table 4.2*)

According to the daily barge operation report, there were some preparation and maintenance works carried out by the Contractor before burial operation.

The burial operation (i.e. jetting works) was conducted from 10:15 to 18:30 on 15 October 2012, which overlapped with the marine water quality monitoring.

Jetting works for the Project were not being undertaken when the exceedances in middle DO, depth-averaged Turbidity and depth-averaged SS were recorded at E4 and E5 in the 1st (07:00 – 09:00), 2nd (09:07 – 10:07) and 8th (21:01 – 22:52) rounds of marine water quality monitoring. Therefore, the exceedances of the Action and Limit Levels at E4 and E5 are considered to represent natural background fluctuations.

During 3rd and 4th rounds of water sampling, the mean depth-averaged Turbidity and mean depth-averaged SS at Impact Station E4 and E5 where exceedances were recorded are similar to the average levels at Control Station C3 (Turbidity = 1.67 NTU, SS = 2.60 mg/L). Since Control Station C3 is far away (~3 km) from the jetting locations and should not be affected by the Project, the similar levels between impact stations and the control station would indicate that the exceedances observed at the Impact Station E4 and E5 were unlikely to be caused by the jetting works but represented natural background fluctuations during monitoring period.

Table 4.2 Exceedances of Action and Limit Levels on 15 October 2012

Date	15 October 2012 (Measured) 17 October 2012 (*In situ* results received by ERM) 19 October 2012 (Laboratory results received by ERM)		
Monitoring Station	E4 and E5		
Parameter(s) with Exceedance(s)	Middle DO (mg/L)	Depth-averaged Turbidity (NTU)	Depth-averaged SS (mg/L)
Action Levels	5.62 mg/L	1.44 NTU or 20% exceedance of data at control station	2.44 mg/L or 20% exceedance of data at control station
Limit Levels	5.58 mg/L	1.50 NTU and 30% exceedance of data at control station	2.48 mg/L and 30% exceedance of data at control station
Measured Levels at Impact Stations Where Exceedances Were Recorded	1st Round	Turbidity: E4=1.52 NTU; E5=1.63 NTU. SS: E4=2.53 mg/L; E5=2.67 mg/L.	
	2nd Round	Turbidity: E4=1.77 NTU; E5=1.69 NTU. SS: E4=2.78 mg/L; E5=2.68 mg/L.	
	3rd Round	Turbidity: E4=1.73 NTU; E5=1.61 NTU. SS: E4=2.75 mg/L; E5=2.60 mg/L.	
	4th Round	Turbidity: E4=1.69 NTU; E5=1.68 NTU. SS: E4=2.72 mg/L; E5=2.67 mg/L.	
	8th Round	Middle DO: E5=5.56 mg/L.	
Exceedances	1st Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.	
	2nd Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.	
	3rd Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.	
	4th Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.	
	8th Round	Exceedance of Limit Level in Middle DO: E5.	

4.2.2 Exceedances on 16 October 2012

Exceedances of Action Level in depth-averaged Turbidity and depth-averaged SS were recorded at StationsE4 and E5 in all eight sampling rounds on 16 October 2012. Additionally, exceedances of Action and Limit Levels in middle/bottom DO were recorded at Station E4 in the 5th, 6th and 8th sampling rounds (*Table 4.3*).

According to the daily barge operation report, there were some preparation and maintenance works carried out by the Contractor before burial operation. It is also noted the bad sea condition (i.e. strong swell) in the morning which only allows the burial operation (i.e. jetting works) to have been conducted between 15:20 to 19:20 on 16 October 2012, which overlapped with the marine water quality monitoring.

As stated above, jetting works for the Project were not being undertaken when the exceedances in depth-averaged Turbidity and depth-averaged SS were recorded at E4 and E5 in the first four rounds of marine water quality monitoring (07:00 – 15:01). Therefore, the exceedances of Action Levels at E4 and E5 in this period are considered to represent natural background fluctuations.

During the 5th, 6th,7th and 8th rounds of water sampling, the mean depth-averaged Turbidity and mean depth-averaged SS levels at Impact Station (E4 and E5) where exceedances were recorded were lower than the average levels at Control Station C3 (Turbidity = 1.70 NTU, SS = 2.74 mg/L). Since the control station is far away (~3 km) from the jetting locations and should not be affected by the Project, the lower Turbidity and SS levels at impact stations than those at Control Station C would indicate the exceedances observed at the Impact Station E4 and E5 were unlikely to be caused by the jetting works but represent natural background fluctuations during the monitoring period.

During the 5th and 6th rounds of water sampling, exceedances of Action and Limit levels in middle DO were recorded at the impact station E4. However in the same sampling rounds, the middle DO values were recorded to be compliant with the Action Level at both gradient stations G5 and G6, which are situated between the cable installation barge and E4 and should be more susceptible to the impact of the Project (if any). Therefore the exceedances measured at E4 in the 5th and 6th rounds, as well as in the last round when cable installation works of the Project were ceased for the day, were unlikely to be caused by the jetting works but represent natural background fluctuations during monitoring events.

Table 4.3 Exceedances of Action and Limit Levels on 16 October 2012

Date	16 October 2012 (Measured) 17 October 2012 (*In situ* results received by ERM) 19 October 2012 (Laboratory results received by ERM)			
Monitoring Station	E4 and E5			
Parameter(s) with Exceedance(s)	Middle DO (mg/L)	Bottom DO (mg/L)	Depth-averaged Turbidity (NTU)	Depth-averaged SS (mg/L)

Action Levels	5.62 mg/L	5.46 mg/L	1.44 NTU or 20% exceedance of data at control station	2.44 (mg/L) or 20% exceedance of data at control station
Limit Levels	5.58 mg/L	5.41 mg/L	1.50 NTU and 30% exceedance of data at control station	2.48 (mg/L) and 30% exceedance of data at control station
Measured Levels at Impact Stations Where Exceedances Were Recorded	1st Round	Turbidity: E4=1.49 NTU; E5=1.63 NTU. SS: E4=2.47 mg/L; E5=2.50 mg/L.		
	2nd Round	Turbidity: E4=1.82 NTU; E5=1.67 NTU. SS: E4=2.80 mg/L; E5=2.73 mg/L.		
	3rd Round	Turbidity: E4=1.71 NTU; E5=1.55 NTU. SS: E4=2.68 mg/L; E5=2.57 mg/L.		
	4th Round	Turbidity: E4=1.73 NTU; E5=1.65 NTU. SS: E4=2.78 mg/L; E5=2.67 mg/L.		
	5th Round	Turbidity: E4=1.50 NTU; E5=1.58 NTU. SS: E4=2.52 mg/L; E5=2.57 mg/L; Middle DO: E4=5.60 mg/L.		
	6th Round	Turbidity: E4=1.57 NTU; E5=1.68 NTU. SS: E4=2.62 mg/L; E5=2.70 mg/L. Middle DO: E4=5.52 mg/L.		
	7th Round	Turbidity: E4=1.53 NTU; E5=1.71 NTU. SS: E4=2.55 mg/L; E5=2.68 mg/L.		
	8th Round	Turbidity: E4=1.52 NTU; E5=1.68 NTU. SS: E4=2.62 mg/L; E5=2.70 mg/L. Middle DO: E4=5.55 mg/L. Bottom DO: E4=5.44 mg/L.		
Exceedances	1st Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.		
	2nd Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.		
	3rd Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.		
	4th Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.		
	5th Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5; Exceedance of Action Level in Middle DO: E4.		
	6th Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5; Exceedance of Action and Limit Levels in Middle DO: E4.		
	7th Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5.		
	8th Round	Exceedance of Action Level in Turbidity: E4 and E5; Exceedance of Action Level in SS: E4 and E5; Exceedance of Action and Limit Levels in Middle DO: E4; Exceedance of Action Level in Bottom DO: E4.		

5 ENVIRONMENTAL NON-CONFORMANCES

5.1 SUMMARY OF ENVIRONMENTAL EXCEEDANCE

Exceedances of the Action and Limit Levels were recorded during the reporting period. The Event and Action Plan for the identified exceedances were implemented and followed the procedures as stipulated in the *EM&A Manual* and *Table 3.5*. It was concluded that the exceedances were considered to reflect natural background fluctuation rather than the impact caused by the Project (See *Section 4.2* for details).

5.2 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

No non-compliance events were recorded during the reporting period.

5.3 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaints were received during the reporting period.

5.4 SUMMARY OF ENVIRONMENTAL SUMMONS AND PROSECUTION

No summons or prosecution on environmental matters were received during the reporting period.

6 FUTURE KEY ISSUES

6.1 KEY ISSUES FOR THE COMING REPORTING PERIOD

The cable installation works will be continually conducted outside Zone C (from Zone C eastward to the boundary Hong Kong marine waters).

6.2 MONITORING SCHEDULE FOR THE COMING REPORTING PERIOD

Based on the current construction programme, no impact water quality monitoring will be carried out since no jetting works will be undertaken within Zone A, Zone B or Zone C.

7 CONCLUSIONS

This Weekly Impact Monitoring Report presents the results of impact water quality monitoring undertaken in Zone C during the period from **15 October 2012** to **21 October 2012** in accordance with the *EM&A Manual* and the requirements under Environmental Permit (EP - 433/2011).

Water quality in Zone C was generally stable throughout the sampling period. Neither sudden drop in dissolved oxygen concentrations nor sharp increase in turbidity levels and suspended solid levels were observed. Exceedances of Action and Limit Levels were recorded during the reporting week, but they are considered to reflect natural background fluctuation rather than impact caused by the Project.

It is concluded that no deterioration of water quality was observed and hence the impact of the Project on water quality is considered to be negligible.

Annex A

Impact Water Quality Monitoring Schedule

ASE Submarine Cable System - Tseung Kwan O
Impact Water Quality Monitoring Schedule - Second Week

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Oct	2-Oct	3-Oct	4-Oct	5-Oct	6-Oct
7-Oct	8-Oct	9-Oct	10-Oct	11-Oct	12-Oct	13-Oct
14-Oct	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct
	07:00 -23:00 **(Zone C, 5 stations)** *Impact Monitoring*	07:00 -23:00 **(Zone C, 5 stations)** *Impact Monitoring*				
21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct
28-Oct	29-Oct	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov

Annex B

QA/QC Results for Suspended Solids Testing

QA/QC Results of Laboratory Analysis of Total Suspended Solids

Sampling Date (Hour)	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
10/15/2012	106.6	E4-S1 (0700)	8.70	G6-S2 (0700)	94.0
	102.7	G6-M1 (0700)	0.00	G5-B2 (0700)	93.9
	101.4	E4-S1 (0900)	7.41	G6-S2 (0900)	94.0
	106.3	G6-M1 (0900)	0.00	G5-B2 (0900)	105.7
	106.3	E4-S1 (1100)	0.00	G6-S2 (1100)	100.0
	101.8	G6-M1 (1100)	6.45	G5-B2 (1100)	102.1
	92.8	E4-S1 (1300)	0.00	G6-S2 (1300)	104.1
	100.0	G6-M1 (1300)	6.90	G5-B2 (1300)	97.9
	101.9	E4-S1 (1500)	8.70	G6-S2 (1500)	106.0
	104.3	G6-M1 (1500)	8.00	G5-B2 (1500)	98.1
	102.5	E4-S1 (1700)	8.70	G6-S2 (1700)	103.9
	93.1	G6-M1 (1700)	9.52	G5-B2 (1700)	106.0
	105.5	E4-S1 (1900)	0.00	G6-S2 (1900)	98.0
	104.4	G6-M1 (1900)	0.00	G5-B2 (1900)	104.0
	103.3	E4-S1 (2100)	8.70	G6-S2 (2100)	104.1
	99.2	G6-M1 (2100)	8.70	G5-B2 (2100)	105.9

Note: (*) % Recovery of QC sample should be between 80% to 120%.

(#) % Error of Sample Duplicate should be between 0% to 10%.

(@) % Recovery of Sample Spike should be between 80% to 120%.

(**) % Error of Sample Duplicate >10% but invalid due to sample results less than MDL.

Sampling Date (Hour)	QC Sample	Sample Duplicate		Sample Spike	
	% Recovery *	Sample ID	% Error #	Sample ID	% Recovery @
10/16/2012	105.0	E4-S1 (0700)	0.0	G6-S2 (0700)	95.7
	103.0	G6-M1 (0700)	6.9	G5-B2 (0700)	104.1
	103.8	E4-S1 (0900)	7.4	G6-S2 (0900)	95.9
	107.3	G6-M1 (0900)	0.0	G5-B2 (0900)	103.9
	105.7	E4-S1 (1100)	8.0	G6-S2 (1100)	94.2
	106.7	G6-M1 (1100)	0.00	G5-B2 (1100)	96.2
	92.7	E4-S1 (1300)	0.00	G6-S2 (1300)	94.2
	97.8	G6-M1 (1300)	6.90	G5-B2 (1300)	93.9
	106.1	E4-S1 (1500)	0.00	G6-S2 (1500)	98.0
	103.3	G6-M1 (1500)	6.90	G5-B2 (1500)	95.9
	93.7	E4-S1 (1700)	0.00	G6-S2 (1700)	100.0
	96.8	G6-M1 (1700)	0.00	G5-B2 (1700)	106.0
	96.5	E4-S1 (1900)	0.00	G6-S2 (1900)	94.0
	94.9	G6-M1 (1900)	0.00	G5-B2 (1900)	94.2
	103.8	E4-S1 (2100)	0.00	G6-S2 (2100)	94.1
	107.0	G6-M1 (2100)	6.90	G5-B2 (2100)	97.9

Note: (*) % Recovery of QC sample should be between 80% to 120%.

(#) % Error of Sample Duplicate should be between 0% to 10%.

(@) % Recovery of Sample Spike should be between 80% to 120%.

(**) % Error of Sample Duplicate >10% but invalid due to sample results less than MDL.

Annex C

Impact Water Quality Monitoring Results

Annex C1 Impact Water Quality Monitoring Results during First Round Monitoring on 15 October 2012

Date: 15-Oct-12
Weather: Cloudy
Sea Conditions: Great Wave
Zone C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	0730-0741	21.6	E	0.4	*Surface*	27.2	27.2	27.2	26.7	26.7	26.7	5.8	5.9	5.8	85.8	86.2	86.0	1.2	1.3	1.3		2.2	2.3	2.3	
					Middle	27.1	27.0	27.1	26.8	26.7	26.8	5.7	5.7	5.7	84.6	84.0	84.3	1.7	1.7	1.7	1.5	2.6	2.7	2.7	2.5
					Bottom	27.0	27.0	27.0	26.9	26.9	26.9	5.7	5.7	5.7	83.8	84.4	84.1	1.6	1.6	1.6		2.7	2.7	2.7	
C3	0749-0800	30.8	E	0.4	*Surface*	27.2	27.3	27.3	26.7	26.7	26.7	5.9	5.9	5.9	86.5	86.8	86.7	1.4	1.4	1.4		2.3	2.5	2.4	
					Middle	27.0	26.9	27.0	26.9	27.0	27.0	5.7	5.6	5.7	83.5	83.0	83.3	1.9	1.8	1.8	1.8	2.9	2.6	2.8	2.7
					Bottom	27.0	27.0	27.0	27.0	27.1	27.1	5.5	5.5	5.5	81.5	80.9	81.2	2.0	2.0	2.0		2.9	3.1	3.0	
E5	0807-0820	36.8	E	0.5	*Surface*	27.3	27.3	27.3	26.8	26.8	26.8	5.9	5.9	5.9	87.0	87.4	87.2	1.4	1.5	1.5		2.5	2.6	2.6	
					Middle	27.1	27.0	27.1	27.0	26.9	27.0	5.8	5.8	5.8	85.6	85.2	85.4	1.5	1.6	1.5	1.6	2.5	2.6	2.6	2.7
					Bottom	3.0	27.0	15.0	27.0	27.1	27.1	5.8	5.7	5.8	85.1	84.6	84.9	1.9	1.9	1.9		3.0	2.8	2.9	
G6	0825-0838	31.4	E	0.4	*Surface*	27.3	27.3	27.3	26.8	26.9	26.9	5.9	5.9	5.9	86.2	86.7	86.5	1.7	1.7	1.7		2.8	3.0	2.9	
					Middle	27.2	27.1	27.2	26.9	27.0	27.0	5.6	5.6	5.6	83.0	82.5	82.8	1.8	1.9	1.8	1.8	3.0	2.8	2.9	3.0
					Bottom	27.0	27.0	27.0	27.0	27.1	27.1	5.7	5.7	5.7	83.6	83.1	83.4	2.0	1.9	2.0		3.0	3.1	3.1	
G5	0845-0900	28.6	E	0.5	*Surface*	27.3	27.2	27.3	26.8	26.8	26.8	5.8	5.8	5.8	85.3	84.7	85.0	1.6	1.7	1.7		2.7	2.6	2.7	
					Middle	27.1	27.1	27.1	26.9	26.9	26.9	5.7	5.7	5.7	84.0	83.5	83.8	1.9	1.9	1.9	1.9	2.9	3.1	3.0	2.9
					Bottom	27.1	27.0	27.1	27.0	27.1	27.1	5.6	5.6	5.6	81.9	82.5	82.2	2.1	2.0	2.0		3.1	3.0	3.1	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C2 Impact Water Quality Monitoring Results during Second Round Monitoring on 15 October 2012

Date: 15-Oct-12
Weather: Cloudy
Sea Conditions: Great Wave
Zone C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	0907-0922	21.4	E	0.5	*Surface*	27.3	27.3	27.3	26.8	26.9	26.9	5.9	6.0	5.9	87.3	87.7	87.5	1.7	1.7	1.7		2.6	2.5	2.6	
					Middle	27.2	27.2	27.2	26.9	26.9	26.9	5.8	5.7	5.7	84.7	84.3	84.5	1.8	1.7	1.8	1.8	2.8	2.9	2.9	2.8
					Bottom	27.1	27.0	27.1	27.0	27.1	27.1	5.6	5.7	5.7	82.8	83.4	83.1	1.8	1.9	1.8		2.8	3.1	3.0	
C3	0930-0944	30.8	E	0.3	*Surface*	27.3	27.2	27.3	26.9	26.9	26.9	6.0	6.0	6.0	88.6	88.9	88.8	1.6	1.5	1.5		2.6	2.5	2.6	
					Middle	27.2	27.1	27.2	26.9	27.0	27.0	5.7	5.7	5.7	83.4	84.0	83.7	1.6	1.7	1.6	1.7	2.6	2.7	2.7	2.7
					Bottom	27.0	27.1	27.1	27.1	27.2	27.2	5.7	5.7	5.7	83.9	84.1	84.0	1.9	2.0	2.0		3.1	2.8	3.0	
E5	0950-1003	37.2	E	0.4	*Surface*	27.3	27.4	27.4	26.9	26.8	26.9	6.0	5.9	6.0	88.2	87.6	87.9	1.5	1.5	1.5		2.5	2.5	2.5	
					Middle	27.1	27.1	27.1	27.0	27.1	27.1	5.8	5.8	5.8	85.6	86.1	85.9	1.7	1.7	1.7	1.7	2.8	2.6	2.7	2.7
					Bottom	27.1	27.1	27.1	27.2	27.2	27.2	5.8	5.7	5.8	85.0	84.6	84.8	1.9	1.8	1.9		2.8	2.9	2.9	
G6	1011-1036	31.6	E	0.3	*Surface*	27.4	27.4	27.4	26.9	26.8	26.9	5.9	5.8	5.8	86.2	85.5	85.9	1.8	1.9	1.8		3.0	2.8	2.9	
					Middle	27.3	27.2	27.3	27.2	27.1	27.2	5.8	5.7	5.7	84.9	84.4	84.7	1.9	2.0	2.0	2.0	3.0	2.9	3.0	3.0
					Bottom	27.2	27.1	27.2	27.3	27.3	27.3	5.6	5.5	5.6	82.1	81.5	81.8	2.0	2.1	2.0		3.0	3.2	3.1	
G5	1043-1057	28.4	E	0.3	*Surface*	27.4	27.4	27.4	27.0	26.9	27.0	5.8	5.8	5.8	85.9	85.5	85.7	2.0	1.9	1.9		2.9	2.8	2.9	
					Middle	27.3	27.3	27.3	27.1	27.2	27.2	5.7	5.6	5.7	83.4	83.0	83.2	2.1	2.0	2.1	2.0	2.9	3.2	3.1	3.0
					Bottom	27.1	27.1	27.1	27.3	27.3	27.3	5.7	5.7	5.7	83.7	84.3	84.0	2.1	2.0	2.0		3.0	3.2	3.1	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C3 Impact Water Quality Monitoring Results during Third Round Monitoring on 15 October 2012

Date:	15-Oct-12
Weather:	Cloudy
Sea Conditions:	Small Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1105-1120	22.2	E	0.4	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	6.0	6.0	6.0	88.4	87.9	88.2	1.6	1.6	1.6		2.6	2.5	2.6	
					Middle	27.4	27.3	27.4	26.8	26.9	26.9	5.8	5.8	5.8	85.3	85.7	85.5	1.7	1.7	1.7	1.7	2.8	2.7	2.8	2.8
					Bottom	27.1	27.1	27.1	27.1	27.0	27.1	5.6	5.6	5.6	82.6	82.2	82.4	1.9	1.9	1.9		2.9	3.0	3.0	
C3	1134-1150	31.0	E	0.4	*Surface*	27.4	27.3	27.4	26.9	27.0	27.0	5.7	5.8	5.7	84.4	85.2	84.8	1.4	1.5	1.5		2.3	2.4	2.4	
					Middle	27.2	27.2	27.2	27.0	27.1	27.1	5.6	5.6	5.6	83.2	82.6	82.9	1.6	1.6	1.6	1.7	2.6	2.3	2.5	2.6
					Bottom	27.1	27.0	27.1	27.1	27.2	27.2	5.7	5.8	5.7	84.3	84.9	84.6	2.0	2.0	2.0		3.0	3.1	3.1	
E5	1200-1215	37.0	E	0.3	*Surface*	27.4	27.4	27.4	26.8	26.9	26.9	5.9	5.9	5.9	87.5	86.7	87.1	1.4	1.5	1.4		2.2	2.5	2.4	
					Middle	27.2	27.2	27.2	27.1	27.1	27.1	5.7	5.7	5.7	84.3	83.8	84.1	1.6	1.7	1.6	1.6	2.7	2.5	2.6	2.6
					Bottom	27.0	27.0	27.0	27.2	27.2	27.2	5.6	5.7	5.6	83.5	84.0	83.8	1.8	1.8	1.8		2.9	2.8	2.9	
G6	1222-1235	31.8	E	0.4	*Surface*	27.4	27.4	27.4	26.9	26.9	26.9	5.9	5.9	5.9	87.1	86.6	86.9	1.8	1.8	1.8		2.9	2.8	2.9	
					Middle	27.4	27.3	27.4	27.0	27.0	27.0	5.7	5.7	5.7	84.3	83.8	84.1	1.9	2.0	1.9	1.9	3.0	3.1	3.1	3.0
					Bottom	27.2	27.2	27.2	27.2	27.3	27.3	5.6	5.6	5.6	82.7	82.2	82.5	2.1	2.1	2.1		2.9	3.2	3.1	
G5	1246-1300	28.6	E	0.4	*Surface*	27.4	27.4	27.4	27.0	27.0	27.0	5.8	5.8	5.8	85.0	85.4	85.2	1.8	1.9	1.8		2.9	2.8	2.9	
					Middle	27.4	27.4	27.4	27.2	27.2	27.2	5.7	5.6	5.6	83.5	82.8	83.2	2.0	2.0	2.0	2.0	2.8	3.1	3.0	2.9
					Bottom	27.2	27.3	27.3	27.2	27.2	27.2	5.5	5.6	5.6	81.6	82.5	82.1	2.1	2.1	2.1		3.0	3.0	3.0	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C4 Impact Water Quality Monitoring Results during Forth Round Monitoring on 15 October 2012

Date:	15-Oct-12
Weather:	Cloudy
Sea Conditions:	Small Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1307-1322	22.0	E	0.3	*Surface*	27.4	27.4	27.4	26.8	26.7	26.8	5.9	5.9	5.9	87.1	86.5	86.8	1.5	1.6	1.5		2.6	2.5	2.6	
					Middle	27.4	27.4	27.4	26.8	26.8	26.8	5.8	5.8	5.8	85.5	84.9	85.2	1.7	1.7	1.7	1.7	2.6	2.8	2.7	2.7
					Bottom	27.2	27.2	27.2	27.0	27.0	27.0	5.6	5.6	5.6	82.9	82.5	82.7	1.8	1.9	1.8		2.9	2.9	2.9	
C3	1335-1350	31.2	E	0.4	*Surface*	27.4	27.4	27.4	26.9	26.9	26.9	5.8	5.8	5.8	85.0	85.6	85.3	1.4	1.4	1.4		2.4	2.3	2.4	
					Middle	27.3	27.2	27.3	27.1	27.0	27.1	5.7	5.7	5.7	83.7	84.1	83.9	1.6	1.6	1.6	1.6	2.3	2.5	2.4	2.6
					Bottom	27.1	27.1	27.1	27.1	27.1	27.1	5.6	5.6	5.6	82.8	83.1	83.0	1.9	2.0	1.9		2.9	3.1	3.0	
E5	1358-1414	36.8	E	0.3	*Surface*	27.4	27.4	27.4	26.8	26.9	26.9	5.9	5.8	5.8	86.3	85.9	86.1	1.5	1.5	1.5		2.5	2.4	2.5	
					Middle	27.2	27.3	27.3	27.1	27.1	27.1	5.7	5.7	5.7	84.0	84.6	84.3	1.6	1.7	1.7	1.7	2.6	2.7	2.7	2.7
					Bottom	27.1	27.0	27.1	27.1	27.2	27.2	5.6	5.6	5.6	82.7	82.2	82.5	1.9	1.9	1.9		2.9	2.9	2.9	
G6	1420-1436	31.8	E	0.4	*Surface*	27.4	27.4	27.4	26.8	26.9	26.9	5.9	5.8	5.8	86.3	85.8	86.1	1.7	1.8	1.7		2.7	3.0	2.9	
					Middle	27.4	27.4	27.4	27.0	27.0	27.0	5.6	5.7	5.7	83.2	83.7	83.5	1.8	1.9	1.9	1.9	2.8	2.9	2.9	2.9
					Bottom	27.3	27.3	27.3	27.2	27.2	27.2	5.5	5.5	5.5	81.3	81.8	81.6	2.0	2.0	2.0		2.8	2.9	2.9	
G5	1444-1458	28.4	E	0.4	*Surface*	27.4	27.4	27.4	26.9	27.0	27.0	5.8	5.8	5.8	85.6	86.1	85.9	1.8	1.8	1.8		2.8	2.7	2.8	
					Middle	27.4	27.4	27.4	27.1	27.2	27.2	5.7	5.7	5.7	84.3	83.8	84.1	1.9	2.0	2.0	1.9	2.7	3.0	2.9	2.9
					Bottom	27.3	27.3	27.3	27.2	27.2	27.2	5.6	5.6	5.6	82.2	82.8	82.5	2.0	2.1	2.0		2.9	3.0	3.0	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C5 Impact Water Quality Monitoring Results during Fifth Round Monitoring on 15 October 2012

Date: 15-Oct-12
Weather: Cloudy
Sea Conditions: Small Wave
Zone C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1502-1518	22.4	W	0.4	*Surface*	27.4	27.4	27.4	26.7	26.7	26.7	5.7	5.7	5.7	85.0	84.7	84.9	1.3	1.2	1.2		2.4	2.1	2.3	
					Middle	27.4	27.4	27.4	26.8	26.9	26.9	5.8	5.8	5.8	85.9	85.7	85.8	1.1	1.1	1.1	1.2	2.2	2.0	2.1	2.3
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.8	5.7	5.7	85.4	84.9	85.2	1.4	1.3	1.3		2.4	2.5	2.5	
C3	1523-1541	31.5	W	0.4	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	5.9	5.9	5.9	87.5	86.7	87.1	1.2	1.2	1.2		2.2	2.1	2.2	
					Middle	27.4	27.4	27.4	26.9	26.9	26.9	5.7	5.7	5.7	84.9	85.4	85.2	1.2	1.3	1.3	1.3	2.2	2.3	2.3	2.3
					Bottom	27.3	27.3	27.3	27.1	27.1	27.1	5.6	5.6	5.6	83.3	83.0	83.2	1.5	1.6	1.5		2.5	2.5	2.5	
E5	1545-1604	32.7	W	0.5	*Surface*	27.5	27.4	27.5	26.9	26.9	26.9	5.9	5.8	5.9	87.0	86.1	86.6	1.1	1.2	1.2		2.1	2.3	2.2	
					Middle	27.4	27.4	27.4	26.9	26.9	26.9	5.7	5.7	5.7	84.9	84.5	84.7	1.3	1.3	1.3	1.3	2.3	2.4	2.4	2.3
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.6	5.5	5.6	82.7	81.5	82.1	1.5	1.4	1.4		2.5	2.2	2.4	
G6	1610-1628	32.5	W	0.5	*Surface*	27.5	27.5	27.5	26.8	26.8	26.8	5.9	5.8	5.8	86.7	86.1	86.4	1.2	1.2	1.2		2.2	2.6	2.4	
					Middle	27.4	27.4	27.4	26.9	27.0	27.0	5.8	5.8	5.8	85.5	85.4	85.5	1.3	1.3	1.3	1.2	2.4	2.4	2.4	2.4
					Bottom	27.3	27.3	27.3	27.1	27.1	27.1	5.8	5.8	5.8	85.7	85.4	85.6	1.2	1.3	1.3		2.3	2.4	2.4	
G5	1634-1652	29.1	W	0.5	*Surface*	27.5	27.5	27.5	26.7	26.8	26.8	5.7	5.7	5.7	84.7	84.1	84.4	1.1	1.1	1.1		2.3	2.5	2.4	
					Middle	27.4	27.4	27.4	26.9	26.9	26.9	5.7	5.7	5.7	84.9	84.5	84.7	1.1	1.1	1.1	1.2	2.1	2.2	2.2	2.2
					Bottom	27.3	27.3	27.3	27.1	27.1	27.1	5.6	5.6	5.6	83.3	82.9	83.1	1.3	1.2	1.3		2.2	2.0	2.1	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C6 Impact Water Quality Monitoring Results during Sixth Round Monitoring on 15 October 2012

Date: 15-Oct-12
Weather: Fine
Sea Conditions: Small Wave
Zone C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1700-1718	22.5	W	0.4	*Surface*	27.5	27.5	27.5	26.8	26.8	26.8	5.7	5.7	5.7	84.9	84.4	84.7	1.2	1.2	1.2		2.2	2.5	2.4	
					Middle	27.4	27.4	27.4	26.9	26.9	26.9	5.7	5.8	5.7	84.8	85.3	85.1	1.2	1.3	1.3	1.2	2.2	2.3	2.3	2.3
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.7	5.7	5.7	84.2	84.1	84.2	1.3	1.3	1.3		2.2	2.3	2.3	
C3	1723-1742	31.6	W	0.4	*Surface*	27.5	27.5	27.5	26.7	26.8	26.8	5.6	5.7	5.6	83.2	83.8	83.5	1.2	1.2	1.2		2.3	2.0	2.2	
					Middle	27.4	27.4	27.4	26.9	26.9	26.9	5.7	5.7	5.7	84.4	84.7	84.6	1.3	1.3	1.3	1.3	2.3	2.4	2.4	2.3
					Bottom	27.3	27.3	27.3	27.1	27.1	27.1	5.7	5.7	5.7	84.1	83.7	83.9	1.3	1.3	1.3		2.5	2.5	2.5	
E5	1746-1803	32.7	W	0.4	*Surface*	27.4	27.5	27.5	26.8	26.8	26.8	5.9	5.8	5.9	86.9	86.3	86.6	1.1	1.1	1.1		2.0	2.1	2.1	
					Middle	27.4	27.4	27.4	26.9	26.9	26.9	5.8	5.7	5.8	85.3	85.0	85.2	1.2	1.3	1.2	1.2	2.2	2.3	2.3	2.3
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.6	5.6	5.6	83.3	82.9	83.1	1.3	1.3	1.3		2.4	2.5	2.5	
G6	1809-1827	32.6	W	0.4	*Surface*	27.5	27.5	27.5	26.7	26.7	26.7	5.8	5.8	5.8	86.1	85.8	86.0	1.1	1.2	1.1		2.1	2.4	2.3	
					Middle	27.4	27.4	27.4	26.8	26.8	26.8	5.8	5.7	5.7	85.2	86.2	85.7	1.2	1.2	1.2	1.2	2.2	2.1	2.2	2.2
					Bottom	27.3	27.3	27.3	26.9	27.0	27.0	5.7	5.7	5.7	84.2	83.8	84.0	1.3	1.3	1.3		2.3	2.3	2.3	
G5	1832-1852	29.2	W	0.5	*Surface*	27.5	27.5	27.5	26.7	26.8	26.8	5.7	5.7	5.7	84.4	84.9	84.7	1.1	1.1	1.1		2.0	2.2	2.1	
					Middle	27.4	27.4	27.4	26.9	26.9	26.9	5.7	5.7	5.7	84.9	84.5	84.7	1.2	1.2	1.2	1.2	2.1	2.2	2.2	2.3
					Bottom	27.3	27.3	27.3	27.1	27.1	27.1	5.6	5.6	5.6	83.2	82.9	83.1	1.3	1.3	1.3		2.4	2.6	2.5	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C7 Impact Water Quality Monitoring Results during Seventh Round Monitoring on 15 October 2012

Date:	15-Oct-12
Weather:	Fine
Sea Conditions:	Small Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1901-1920	22.7	W	0.6	*Surface*	27.4	27.4	27.4	26.7	26.7	26.7	5.9	5.9	5.9	87.2	87.5	87.4	1.2	1.2	1.2		2.2	2.1	2.2	
					Middle	27.4	27.4	27.4	26.8	26.8	26.8	5.8	5.8	5.8	85.7	85.6	85.7	1.2	1.3	1.2	1.3	2.3	2.2	2.3	2.3
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.6	5.7	5.6	83.2	83.8	83.5	1.4	1.3	1.4		2.3	2.4	2.4	
C3	1925-1946	31.6	W	0.6	*Surface*	27.4	27.4	27.4	26.7	26.8	26.8	5.8	5.9	5.8	85.8	86.6	86.2	1.2	1.2	1.2		2.2	2.2	2.2	
					Middle	27.4	27.4	27.4	26.5	26.5	26.5	5.8	5.7	5.8	85.4	84.9	85.2	1.3	1.4	1.3	1.3	2.3	2.4	2.4	2.3
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.6	5.6	5.6	83.8	83.3	83.6	1.4	1.4	1.4		2.5	2.4	2.5	
E5	1951-2010	32.8	W	0.6	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	5.7	5.7	5.7	84.5	84.9	84.7	1.1	1.1	1.1		1.9	2.1	2.0	
					Middle	27.3	27.3	27.3	26.9	27.0	27.0	5.7	5.7	5.7	83.8	83.6	83.7	1.2	1.3	1.3	1.2	2.2	2.3	2.3	2.2
					Bottom	27.3	27.3	27.3	27.1	27.1	27.1	5.5	5.5	5.5	81.7	81.4	81.6	1.4	1.4	1.4		2.5	2.3	2.4	
G6	2016-2034	32.7	W	0.5	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	5.9	5.8	5.8	86.7	85.9	86.3	1.2	1.3	1.2		2.2	2.4	2.3	
					Middle	27.4	27.4	27.4	26.9	26.9	26.9	5.8	5.7	5.8	85.4	84.9	85.2	1.3	1.3	1.3	1.3	2.4	2.3	2.4	2.4
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.6	5.7	5.6	83.2	83.8	83.5	1.4	1.5	1.4		2.4	2.4	2.4	
G5	2039-2056	29.4	W	0.5	*Surface*	27.4	27.4	27.4	26.7	26.7	26.7	5.8	5.7	5.7	85.2	84.8	85.0	1.1	1.2	1.1		2.5	2.6	2.6	
					Middle	27.4	27.3	27.4	26.8	26.9	26.9	5.6	5.6	5.6	83.7	83.0	83.4	1.2	1.2	1.2	1.3	2.2	2.2	2.2	2.4
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.6	5.5	5.6	82.6	82.2	82.4	1.4	1.4	1.4		2.5	2.6	2.6	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C8 Impact Water Quality Monitoring Results during Eighth Round Monitoring on 15 October 2012

Date:	15-Oct-12
Weather:	Fine
Sea Conditions:	Small Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	2101-2119	22.8	W	0.6	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	5.9	5.8	5.9	87.0	85.3	86.2	1.2	1.2	1.2		2.4	2.3	2.4	
					Middle	27.3	27.3	27.3	26.9	26.9	26.9	5.8	5.7	5.7	85.4	84.6	85.0	1.2	1.3	1.3	1.3	2.1	2.3	2.2	2.3
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.7	5.7	5.7	84.1	83.9	84.0	1.4	1.4	1.4		2.4	2.5	2.5	
C3	2124-2143	31.7	W	0.5	*Surface*	27.4	27.4	27.4	26.7	26.7	26.7	5.7	5.8	5.8	84.9	85.2	85.1	1.1	1.1	1.1		2.0	2.1	2.1	
					Middle	27.4	27.3	27.4	26.8	26.9	26.9	5.7	5.7	5.7	84.1	84.0	84.1	1.2	1.2	1.2	1.2	2.2	2.2	2.2	2.2
					Bottom	27.3	27.3	27.3	27.0	27.1	27.1	5.6	5.5	5.6	82.4	82.0	82.2	1.3	1.4	1.3		2.3	2.5	2.4	
E5	2148-2207	32.9	W	0.6	*Surface*	27.4	27.4	27.4	26.7	26.7	26.7	5.7	5.7	5.7	84.1	83.8	84.0	1.2	1.1	1.1		2.2	2.1	2.2	
					Middle	27.3	27.3	27.3	26.8	26.8	26.8	5.6	5.5	5.6	82.6	81.8	82.2	1.2	1.3	1.2	1.2	2.2	2.4	2.3	2.3
					Bottom	27.3	27.3	27.3	27.0	27.0	27.0	5.5	5.4	5.5	80.9	80.3	80.6	1.4	1.4	1.4		2.5	2.5	2.5	
G6	2212-2229	32.8	W	0.5	*Surface*	27.4	27.4	27.4	26.7	26.8	26.8	5.7	5.7	5.7	84.7	84.4	84.6	1.3	1.2	1.2		2.3	2.4	2.4	
					Middle	27.3	27.3	27.3	26.9	26.9	26.9	5.7	5.7	5.7	84.2	83.8	84.0	1.3	1.3	1.3	1.3	2.4	2.3	2.4	2.4
					Bottom	27.2	27.2	27.2	27.0	27.1	27.1	5.6	5.6	5.6	83.0	82.7	82.9	1.4	1.4	1.4		2.5	2.4	2.5	
G5	2234-2252	29.5	W	0.5	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	5.7	5.7	5.7	84.2	85.0	84.6	1.2	1.2	1.2		2.0	2.2	2.1	
					Middle	27.3	27.3	27.3	26.9	27.0	27.0	5.7	5.6	5.6	83.6	83.3	83.5	1.3	1.2	1.3	1.3	2.1	2.0	2.1	2.2
					Bottom	27.2	27.2	27.2	27.1	27.1	27.1	5.6	5.6	5.6	82.7	82.3	82.5	1.4	1.4	1.4		2.5	2.6	2.6	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C9 Summary of Compliance with Action and Limit Level for Zone C

Compliance with Action Level and Limit Level for Zone C - Round 1 (07:30-09:00), 15 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.82	3.04
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.97	3.29
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 2 (09:30-10:57), 15 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	2.12	3.34
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	2.29	3.62
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 3 (11:05-12:35), 15 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	2.08	3.30
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	2.25	3.58
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 4 (13:07-14:58), 15 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	2.02	3.26
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	2.19	3.53
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Annex C10 Summary of Compliance with Action and Limit Level for Zone C

Compliance with Action Level and Limit Level for Zone C - Round 5 (15:02-16:52), 15 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.46	2.72
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.59	2.95
E4	Exceedance of Action Level	N	N	N	N	N
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	N	N
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 6 (17:00-18:52), 15 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.49	2.74
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.62	2.97
E4	Exceedance of Action Level	N	N	N	N	N
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	N	N
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 7 (19:01-20:56), 15 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.50	2.70
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.63	2.93
E4	Exceedance of Action Level	N	N	N	N	N
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	N	N
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 8 (21:01-22:52), 15 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.52	2.80
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.64	3.03
E4	Exceedance of Action Level	N	N	N	N	N
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	Y	N	N	N
	Exceedance of Limit Level	N	Y	N	N	N

*DA: Depth-averaged

Annex C11 Impact Water Quality Monitoring Results during First Round Monitoring on 16 October 2012

Date:	16-Oct-12
Weather:	Cloudy
Sea Conditions:	Great Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	0707-0722	21.5	E	0.4	*Surface*	27.2	27.2	27.2	26.7	26.8	26.8	5.8	5.9	5.9	85.8	86.3	86.1	1.2	1.3	1.3		2.2	2.3	2.3	
					Middle	27.1	27.0	27.1	26.8	26.9	26.9	5.8	5.7	5.7	84.6	84.2	84.4	1.6	1.7	1.6	1.5	2.6	2.5	2.6	2.5
					Bottom	27.0	26.9	27.0	27.0	27.0	27.0	5.7	5.7	5.7	83.7	84.0	83.9	1.6	1.6	1.6		2.6	2.6	2.6	
C3	0730-0744	30.7	E	0.3	*Surface*	27.3	27.2	27.3	26.8	26.9	26.9	5.9	5.9	5.9	86.6	87.0	86.8	1.4	1.4	1.4		2.4	2.3	2.4	
					Middle	27.2	27.1	27.2	27.0	27.1	27.1	5.7	5.7	5.7	83.8	83.2	83.5	1.9	1.8	1.9	1.8	2.9	2.8	2.9	2.8
					Bottom	27.1	27.0	27.1	27.1	27.2	27.2	5.5	5.5	5.5	81.2	80.6	80.9	2.0	2.1	2.0		3.0	3.1	3.1	
E5	0750-0803	36.8	E	0.5	*Surface*	27.3	27.3	27.3	26.7	26.8	26.8	6.0	6.0	6.0	87.8	87.5	87.7	1.4	1.5	1.4		2.2	2.3	2.3	
					Middle	27.2	27.1	27.2	26.8	26.9	26.9	5.8	5.8	5.8	85.7	85.2	85.5	1.5	1.6	1.6	1.6	2.3	2.4	2.4	2.5
					Bottom	27.0	27.0	27.0	27.0	27.1	27.1	5.8	5.7	5.8	85.0	84.6	84.8	1.9	1.9	1.9		2.9	2.9	2.9	
G6	0811-0836	31.4	E	0.4	*Surface*	27.3	27.2	27.3	26.7	26.8	26.8	5.8	5.9	5.9	85.7	86.3	86.0	1.7	1.7	1.7		2.8	2.8	2.8	
					Middle	27.2	27.2	27.2	26.9	27.0	27.0	5.7	5.6	5.7	83.5	82.9	83.2	1.8	1.9	1.8	1.8	2.8	2.9	2.9	2.9
					Bottom	27.1	27.0	27.1	27.1	27.1	27.1	5.7	5.7	5.7	84.5	83.9	84.2	2.0	2.0	2.0		3.0	2.9	3.0	
G5	0845-0901	28.7	E	0.5	*Surface*	27.3	27.2	27.3	26.7	26.8	26.8	5.8	5.8	5.8	85.6	85.3	85.5	1.6	1.7	1.6		2.6	2.7	2.7	
					Middle	27.1	27.1	27.1	26.9	26.9	26.9	5.7	5.7	5.7	84.5	84.1	84.3	2.0	1.9	1.9	1.9	3.0	2.8	2.9	2.9
					Bottom	27.0	26.9	27.0	27.0	27.1	27.1	5.6	5.6	5.6	82.4	83.1	82.8	2.1	2.0	2.0		3.0	3.0	3.0	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C12 Impact Water Quality Monitoring Results during Second Round Monitoring on 16 October 2012

Date:	16-Oct-12
Weather:	Cloudy
Sea Conditions:	Great Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	0909-0924	21.4	E	0.5	*Surface*	27.3	27.3	27.3	26.8	26.9	26.9	5.9	6.0	6.0	87.3	87.8	87.6	1.6	1.7	1.7		2.6	2.6	2.6	
					Middle	27.2	27.2	27.2	26.9	27.0	27.0	5.7	5.8	5.7	84.1	84.8	84.5	2.0	2.0	2.0	1.8	2.9	3.0	3.0	2.8
					Bottom	27.1	27.0	27.1	27.0	27.1	27.1	5.7	5.7	5.7	83.6	83.9	83.8	1.8	1.9	1.8		2.8	2.9	2.9	
C3	0932-0946	30.8	E	0.3	*Surface*	27.3	27.2	27.3	26.8	26.9	26.9	6.0	6.1	6.1	88.8	89.1	89.0	1.6	1.5	1.5		2.6	2.5	2.6	
					Middle	27.2	27.1	27.2	27.0	27.0	27.0	5.7	5.7	5.7	83.8	84.5	84.2	1.6	1.6	1.6	1.7	2.6	2.5	2.6	2.6
					Bottom	27.1	27.0	27.1	27.1	27.2	27.2	5.7	5.8	5.7	83.7	84.9	84.3	1.9	1.9	1.9		2.8	2.8	2.8	
E5	0952-1005	37.0	E	0.4	*Surface*	27.3	27.4	27.4	26.8	26.8	26.8	6.0	6.0	6.0	88.1	87.6	87.9	1.5	1.5	1.5		2.5	2.7	2.6	
					Middle	27.3	27.2	27.3	26.9	27.0	27.0	5.9	5.9	5.9	86.1	86.6	86.4	1.7	1.7	1.7	1.7	2.7	2.8	2.8	2.7
					Bottom	27.2	27.1	27.2	27.1	27.1	27.1	5.8	5.8	5.8	85.3	85.0	85.2	1.9	1.8	1.9		2.9	2.8	2.9	
G6	1013-1038	31.6	E	0.3	*Surface*	27.4	27.3	27.4	26.8	26.9	26.9	5.8	5.8	5.8	85.6	84.8	85.2	1.9	1.9	1.9		2.9	3.0	3.0	
					Middle	27.3	27.2	27.3	27.0	27.1	27.1	5.8	5.8	5.8	85.2	84.6	84.9	1.9	2.0	2.0	2.0	3.0	2.9	3.0	3.0
					Bottom	27.2	27.1	27.2	27.2	27.2	27.2	5.6	5.5	5.5	82.0	81.4	81.7	2.0	2.1	2.1		3.0	3.1	3.1	
G5	1047-1103	28.4	E	0.4	*Surface*	27.4	27.4	27.4	26.9	27.0	27.0	5.8	5.7	5.8	85.0	84.4	84.7	2.0	2.0	2.0		3.2	3.0	3.1	
					Middle	27.3	27.2	27.3	27.1	27.2	27.2	5.6	5.6	5.6	82.6	82.4	82.5	2.0	2.1	2.0	2.0	3.1	3.0	3.1	3.1
					Bottom	27.1	27.1	27.1	27.2	27.3	27.3	5.7	5.7	5.7	83.6	83.9	83.8	2.1	2.0	2.0		3.2	3.2	3.2	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C13 Impact Water Quality Monitoring Results during Third Round Monitoring on 16 October 2012

Date:	16-Oct-12
Weather:	Cloudy
Sea Conditions:	Great Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1107-1122	22.2	E	0.4	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	6.0	6.0	6.0	87.9	87.5	87.7	1.6	1.6	1.6		2.6	2.5	2.6	
					Middle	27.3	27.2	27.3	26.9	27.0	27.0	5.8	5.8	5.8	85.4	86.0	85.7	1.7	1.7	1.7	1.7	2.7	2.7	2.7	2.7
					Bottom	27.1	27.0	27.1	27.1	27.1	27.1	5.6	5.6	5.6	83.1	82.4	82.8	1.8	1.9	1.9		2.9	2.7	2.8	
C3	1130-1144	31.0	E	0.4	*Surface*	27.4	27.3	27.4	26.8	26.9	26.9	5.7	5.7	5.7	84.4	83.8	84.1	1.4	1.5	1.5		2.5	2.4	2.5	
					Middle	27.3	27.2	27.3	27.0	27.0	27.0	5.7	5.7	5.7	83.5	83.8	83.7	1.6	1.5	1.5	1.7	2.6	2.6	2.6	2.7
					Bottom	27.2	27.1	27.2	27.1	27.2	27.2	5.7	5.8	5.7	84.5	84.8	84.7	2.0	2.0	2.0		2.9	3.1	3.0	
E5	1150-1203	37.0	E	0.3	*Surface*	27.4	27.3	27.4	26.8	26.9	26.9	5.9	5.9	5.9	87.3	86.6	87.0	1.4	1.4	1.4		2.5	2.4	2.5	
					Middle	27.3	27.4	27.4	27.0	27.1	27.1	5.7	5.7	5.7	84.2	83.8	84.0	1.5	1.4	1.5	1.5	2.5	2.5	2.5	2.6
					Bottom	27.3	27.3	27.3	27.2	27.2	27.2	5.6	5.7	5.7	83.1	83.6	83.4	1.8	1.8	1.8		2.8	2.7	2.8	
G6	1211-1236	31.8	E	0.4	*Surface*	27.4	27.4	27.4	26.9	27.0	27.0	5.9	5.9	5.9	87.0	86.6	86.8	1.8	1.8	1.8		2.7	2.8	2.8	
					Middle	27.3	27.2	27.3	27.1	27.1	27.1	5.8	5.7	5.7	84.5	84.1	84.3	1.9	2.0	1.9	1.9	3.0	2.9	3.0	2.9
					Bottom	27.2	27.1	27.2	27.2	27.3	27.3	5.6	5.6	5.6	83.0	82.7	82.9	2.0	2.1	2.1		3.1	2.9	3.0	
G5	1246-1302	28.6	E	0.4	*Surface*	27.4	27.3	27.4	26.9	26.9	26.9	5.8	5.8	5.8	84.8	85.1	85.0	1.8	1.9	1.8		2.8	2.9	2.9	
					Middle	27.3	27.2	27.3	27.0	27.1	27.1	5.7	5.6	5.6	83.2	82.4	82.8	2.0	2.0	2.0	2.0	3.0	3.1	3.1	3.0
					Bottom	27.2	27.1	27.2	27.1	27.2	27.2	5.5	5.6	5.6	81.4	82.2	81.8	2.1	2.1	2.1		3.0	3.2	3.1	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C14 Impact Water Quality Monitoring Results during Forth Round Monitoring on 16 October 2012

Date:	16-Oct-12
Weather:	Cloudy
Sea Conditions:	Great Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1307-1322	22.0	E	0.3	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	5.9	5.9	5.9	86.9	86.4	86.7	1.5	1.6	1.5		2.6	2.6	2.6	
					Middle	27.3	27.2	27.3	26.9	27.0	27.0	5.8	5.8	5.8	85.5	84.9	85.2	1.8	1.9	1.9	1.7	2.8	2.9	2.9	2.8
					Bottom	27.2	27.1	27.2	27.1	27.2	27.2	5.6	5.6	5.6	83.1	82.7	82.9	1.8	1.8	1.8		2.8	3.0	2.9	
C3	1330-1344	31.2	E	0.4	*Surface*	27.4	27.3	27.4	26.8	26.9	26.9	5.8	5.8	5.8	85.0	85.6	85.3	1.4	1.4	1.4		2.4	2.5	2.5	
					Middle	27.3	27.2	27.3	27.0	27.1	27.1	5.7	5.7	5.7	83.8	84.2	84.0	1.5	1.6	1.6	1.6	2.5	2.6	2.6	2.6
					Bottom	27.1	27.1	27.1	27.2	27.2	27.2	5.6	5.7	5.6	82.8	83.3	83.1	1.9	1.9	1.9		2.9	2.9	2.9	
E5	1350-1403	36.8	E	0.3	*Surface*	27.4	27.3	27.4	26.8	26.9	26.9	5.9	5.8	5.8	86.1	85.7	85.9	1.5	1.5	1.5		2.5	2.5	2.5	
					Middle	27.2	27.2	27.2	27.1	27.1	27.1	5.7	5.8	5.7	83.9	84.6	84.3	1.6	1.7	1.6	1.7	2.7	2.6	2.7	2.7
					Bottom	27.1	27.1	27.1	27.1	27.2	27.2	5.6	5.6	5.6	83.0	82.5	82.8	1.8	1.9	1.8		2.9	2.8	2.9	
G6	1411-1436	31.8	E	0.4	*Surface*	27.4	27.4	27.4	26.8	26.9	26.9	5.9	5.8	5.8	86.3	85.6	86.0	1.7	1.8	1.7		2.8	2.8	2.8	
					Middle	27.3	27.2	27.3	27.0	27.1	27.1	5.7	5.7	5.7	83.3	83.6	83.5	1.8	1.9	1.8	1.9	2.8	3.0	2.9	2.9
					Bottom	27.2	27.2	27.2	27.2	27.2	27.2	5.5	5.6	5.5	81.4	81.8	81.6	2.0	1.9	2.0		3.0	3.1	3.1	
G5	1445-1501	28.4	E	0.3	*Surface*	27.4	27.4	27.4	26.8	26.8	26.8	5.8	5.8	5.8	85.4	85.8	85.6	1.8	1.8	1.8		2.9	3.0	3.0	
					Middle	27.3	27.2	27.3	26.9	27.0	27.0	5.7	5.7	5.7	84.1	83.2	83.7	1.9	2.0	1.9	1.9	2.8	3.0	2.9	3.0
					Bottom	27.2	27.1	27.2	27.1	27.2	27.2	5.6	5.6	5.6	82.2	83.0	82.6	2.0	2.0	2.0		3.0	3.2	3.1	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C15 Impact Water Quality Monitoring Results during Fifth Round Monitoring on 16 October 2012

Date:	16-Oct-12
Weather:	Cloudy
Sea Conditions:	Great Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1505-1521	22.2	W	0.6	*Surface*	27.5	27.4	27.5	26.7	26.8	26.8	5.8	5.8	5.8	85.3	84.5	84.9	1.2	1.2	1.2		2.2	2.3	2.3	
					Middle	27.3	27.3	27.3	26.9	26.9	26.9	5.6	5.6	5.6	82.7	82.1	82.4	1.5	1.6	1.5	1.5	2.5	2.6	2.6	2.5
					Bottom	27.2	27.1	27.2	27.1	27.0	27.1	5.7	5.7	5.7	83.4	83.9	83.7	1.7	1.8	1.7		2.8	2.7	2.8	
C3	1527-1544	31.3	W	0.5	*Surface*	27.4	27.5	27.5	26.8	26.9	26.9	6.0	6.0	6.0	87.9	87.5	87.7	1.5	1.5	1.5		2.4	2.4	2.4	
					Middle	27.3	27.2	27.3	27.0	27.1	27.1	5.8	5.8	5.8	85.4	84.9	85.2	1.8	1.8	1.8	1.7	2.8	2.9	2.9	2.8
					Bottom	27.1	27.0	27.1	27.2	27.1	27.2	5.6	5.7	5.6	82.8	83.3	83.1	2.0	2.0	2.0		3.0	3.1	3.1	
E5	1549-1606	37.1	W	0.6	*Surface*	27.5	27.5	27.5	26.7	26.8	26.8	5.9	5.9	5.9	87.0	86.6	86.8	1.4	1.4	1.4		2.3	2.3	2.3	
					Middle	27.3	27.3	27.3	27.0	26.9	27.0	5.7	5.7	5.7	84.4	83.9	84.2	1.5	1.5	1.5	1.6	2.5	2.6	2.6	2.6
					Bottom	27.1	27.1	27.1	27.1	27.2	27.2	5.6	5.6	5.6	83.1	82.5	82.8	1.8	1.9	1.9		2.8	2.9	2.9	
G6	1614-1631	32.1	W	0.6	*Surface*	27.5	27.5	27.5	26.7	26.7	26.7	5.9	5.9	5.9	87.0	86.6	86.8	1.7	1.7	1.7		2.7	2.8	2.8	
					Middle	27.3	27.2	27.3	27.0	27.0	27.0	5.8	5.7	5.7	84.6	84.1	84.4	1.8	1.8	1.8	1.8	2.8	2.9	2.9	2.8
					Bottom	27.0	27.1	27.1	27.1	27.2	27.2	5.7	5.6	5.6	83.3	83.0	83.2	2.0	2.1	2.0		2.8	3.0	2.9	
G5	1638-1656	29.2	W	0.6	*Surface*	27.5	27.4	27.5	26.8	26.8	26.8	5.9	5.8	5.9	86.3	85.8	86.1	1.6	1.6	1.6		2.6	2.6	2.6	
					Middle	27.2	27.2	27.2	26.9	26.9	26.9	5.7	5.7	5.7	83.9	84.4	84.2	1.8	1.9	1.9	1.8	2.9	3.0	3.0	2.8
					Bottom	27.0	27.0	27.0	27.1	27.1	27.1	5.6	5.6	5.6	82.7	82.1	82.4	2.0	2.0	2.0		2.9	3.0	3.0	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C16 Impact Water Quality Monitoring Results during Sixth Round Monitoring on 16 October 2012

Date:	16-Oct-12
Weather:	Cloudy
Sea Conditions:	Great Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1703-1720	22.5	W	0.5	*Surface*	27.5	27.4	27.5	26.7	26.7	26.7	5.7	5.8	5.7	83.9	84.1	84.0	1.3	1.4	1.3		2.4	2.3	2.4	
					Middle	27.3	27.3	27.3	26.8	26.9	26.9	5.5	5.5	5.5	81.0	81.6	81.3	1.6	1.6	1.6	1.6	2.7	2.6	2.7	2.6
					Bottom	27.1	27.1	27.1	27.0	27.0	27.0	5.8	5.8	5.8	84.7	85.3	85.0	1.8	1.7	1.8		2.8	2.9	2.9	
C3	1728-1745	31.7	W	0.6	*Surface*	27.5	27.5	27.5	26.9	26.8	26.9	5.9	5.9	5.9	87.0	86.6	86.8	1.4	1.4	1.4		2.5	2.4	2.5	
					Middle	27.3	27.3	27.3	27.1	27.0	27.1	5.8	5.7	5.7	84.6	84.2	84.4	1.7	1.7	1.7	1.7	2.7	2.7	2.7	2.7
					Bottom	27.1	27.0	27.1	27.2	27.2	27.2	5.6	5.6	5.6	82.5	82.1	82.3	1.9	1.9	1.9		3.1	2.9	3.0	
E5	1751-1808	37.2	W	0.6	*Surface*	27.4	27.5	27.5	26.8	26.8	26.8	6.0	5.9	5.9	87.6	87.2	87.4	1.4	1.4	1.4		2.4	2.5	2.5	
					Middle	27.2	27.3	27.3	26.9	27.0	27.0	5.9	5.8	5.9	86.6	85.7	86.2	1.6	1.6	1.6	1.7	2.6	2.6	2.6	2.7
					Bottom	27.1	27.0	27.1	27.1	27.1	27.1	5.7	5.7	5.7	83.9	83.3	83.6	2.0	2.0	2.0		3.1	3.0	3.1	
G6	1816-1833	32.4	W	0.6	*Surface*	27.5	27.4	27.5	26.7	26.7	26.7	6.0	6.0	6.0	87.5	87.9	87.7	1.7	1.8	1.7		2.7	2.8	2.8	
					Middle	27.3	27.2	27.3	26.9	27.0	27.0	5.8	5.8	5.8	85.7	85.2	85.5	1.9	1.9	1.9	1.9	3.0	2.9	3.0	2.9
					Bottom	27.1	27.0	27.1	27.2	27.1	27.2	5.6	5.6	5.6	82.2	82.7	82.5	2.0	2.1	2.1		3.0	3.1	3.1	
G5	1841-1858	29.4	W	0.5	*Surface*	27.4	27.4	27.4	26.8	26.7	26.8	5.8	5.8	5.8	85.7	85.1	85.4	1.7	1.7	1.7		2.7	2.8	2.8	
					Middle	27.3	27.2	27.3	26.9	26.9	26.9	5.7	5.7	5.7	83.3	83.8	83.6	2.0	2.1	2.0	1.9	3.0	2.9	3.0	2.9
					Bottom	27.1	27.1	27.1	27.0	27.1	27.1	5.6	5.5	5.5	81.8	81.2	81.5	1.9	1.9	1.9		2.9	3.0	3.0	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C17 Impact Water Quality Monitoring Results during Seventh Round Monitoring on 16 October 2012

Date:	16-Oct-12
Weather:	Cloudy
Sea Conditions:	Great Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	1907-1924	22.8	W	0.7	*Surface*	27.4	27.4	27.4	26.7	26.8	26.8	5.8	5.8	5.8	85.7	85.3	85.5	1.3	1.3	1.3		2.4	2.2	2.3	
					Middle	27.2	27.3	27.3	26.9	26.9	26.9	5.6	5.6	5.6	83.0	82.6	82.8	1.6	1.6	1.6	1.5	2.6	2.6	2.6	2.6
					Bottom	27.1	27.1	27.1	27.0	27.1	27.1	5.6	5.6	5.6	81.8	81.2	81.5	1.7	1.8	1.7		2.7	2.8	2.8	
C3	1931-1948	32.0	W	0.5	*Surface*	27.4	27.5	27.5	26.8	26.8	26.8	5.8	5.9	5.8	85.3	86.1	85.7	1.5	1.5	1.5		2.5	2.6	2.6	
					Middle	27.2	27.3	27.3	27.0	26.9	27.0	5.7	5.7	5.7	84.1	84.5	84.3	1.7	1.7	1.7	1.7	2.6	2.8	2.7	2.7
					Bottom	27.1	27.0	27.1	27.2	27.1	27.2	5.6	5.5	5.5	81.8	81.4	81.6	1.9	1.9	1.9		2.9	3.0	3.0	
E5	1954-2011	37.3	W	0.6	*Surface*	27.4	27.4	27.4	26.8	26.7	26.8	5.9	5.9	5.9	86.4	86.9	86.7	1.4	1.4	1.4		2.4	2.4	2.4	
					Middle	27.2	27.2	27.2	26.9	26.9	26.9	5.7	5.8	5.7	84.2	84.8	84.5	1.6	1.7	1.7	1.7	2.6	2.8	2.7	2.7
					Bottom	27.0	27.0	27.0	27.1	27.1	27.1	5.6	5.6	5.6	82.4	83.0	82.7	2.1	2.1	2.1		3.0	2.9	3.0	
G6	2020-2037	32.7	W	0.7	*Surface*	27.4	27.4	27.4	26.7	26.8	26.8	5.9	5.9	5.9	86.1	86.7	86.4	1.6	1.6	1.6		2.7	2.6	2.7	
					Middle	27.2	27.2	27.2	27.0	27.0	27.0	5.7	5.8	5.8	84.5	84.9	84.7	1.8	1.8	1.8	1.8	2.8	2.9	2.9	2.8
					Bottom	27.0	27.0	27.0	27.2	27.2	27.2	5.5	5.5	5.5	81.4	80.6	81.0	2.0	2.0	2.0		3.0	2.8	2.9	
G5	2045-2103	30.0	W	0.6	*Surface*	27.4	27.4	27.4	26.7	26.7	26.7	5.7	5.7	5.7	83.9	84.4	84.2	1.7	1.7	1.7		2.8	2.6	2.7	
					Middle	27.2	27.3	27.3	26.9	26.9	26.9	5.6	5.5	5.6	82.1	81.6	81.9	1.9	2.0	1.9	1.9	3.0	3.1	3.1	2.9
					Bottom	27.0	27.1	27.1	27.1	27.1	27.1	5.5	5.5	5.5	80.5	81.1	80.8	2.0	2.0	2.0		3.0	3.0	3.0	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C18 Impact Water Quality Monitoring Results during Eighth Round Monitoring on 16 October 2012

Date:	16-Oct-12
Weather:	Cloudy
Sea Conditions:	Great Wave
Zone	C

Location	Sampling Time	Water Depth (m)	Current direction	Current speed (ms^{-1})	Monitoring Depth	Temperrature (°C)			Salinity (ppt)			DO (mg/l)			DO Saturation (%)			Turbidity (NTU)				Suspended Solids (mg/l)			
						1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	1	2	Ave.*	D.A.**	1	2	Ave.*	D.A.**
E4	2108-2125	22.8	E	0.5	*Surface*	27.4	27.4	27.4	26.7	26.7	26.7	5.7	5.8	5.8	84.4	85.0	84.7	1.3	1.3	1.3		2.4	2.5	2.5	
					Middle	27.2	27.2	27.2	26.9	26.8	26.9	5.6	5.5	5.6	82.0	81.4	81.7	1.5	1.6	1.5	1.5	2.6	2.5	2.6	2.6
					Bottom	27.0	27.1	27.1	27.1	27.0	27.1	5.4	5.5	5.4	79.9	80.3	80.1	1.7	1.7	1.7		2.8	2.9	2.9	
C3	2132-2149	31.7	E	0.6	*Surface*	27.4	27.4	27.4	26.7	26.8	26.8	5.8	5.8	5.8	85.1	85.6	85.4	1.5	1.5	1.5		2.4	2.3	2.4	
					Middle	27.2	27.1	27.2	27.0	27.0	27.0	5.7	5.7	5.7	84.4	83.5	84.0	1.7	1.7	1.7	1.7	2.5	2.5	2.5	2.6
					Bottom	27.0	27.0	27.0	27.2	27.2	27.2	5.5	5.5	5.5	81.1	80.6	80.9	1.9	1.9	1.9		2.9	2.8	2.9	
E5	2156-2213	37.2	E	0.6	*Surface*	27.3	27.4	27.4	26.8	26.8	26.8	5.9	5.8	5.8	86.0	85.7	85.9	1.4	1.5	1.4		2.4	2.5	2.5	
					Middle	27.1	27.1	27.1	26.9	27.0	27.0	5.7	5.7	5.7	83.9	83.5	83.7	1.6	1.6	1.6	1.7	2.5	2.7	2.6	2.7
					Bottom	26.9	26.9	26.9	27.2	27.1	27.2	5.5	5.6	5.5	81.4	81.9	81.7	2.0	2.0	2.0		3.0	3.1	3.1	
G6	2222-2239	32.4	E	0.5	*Surface*	27.4	27.3	27.4	26.8	26.8	26.8	5.8	5.8	5.8	85.6	85.1	85.4	1.7	1.7	1.7		2.7	2.6	2.7	
					Middle	27.2	27.1	27.2	27.0	26.9	27.0	5.6	5.7	5.6	82.4	83.2	82.8	1.8	1.9	1.8	1.9	2.8	2.9	2.9	2.9
					Bottom	26.9	27.0	27.0	27.1	27.2	27.2	5.4	5.5	5.4	80.0	80.5	80.3	2.1	2.1	2.1		3.1	3.1	3.1	
G5	2247-2305	29.8	E	0.6	*Surface*	27.3	27.4	27.4	26.8	26.7	26.8	5.8	7.8	6.8	84.5	84.8	84.7	1.7	1.7	1.7		2.4	2.5	2.5	
					Middle	27.1	27.2	27.2	26.9	26.9	26.9	5.5	5.5	5.5	81.4	80.8	81.1	1.9	1.9	1.9	1.9	2.9	2.8	2.9	2.8
					Bottom	26.9	27.0	27.0	27.1	27.0	27.1	5.6	5.6	5.6	82.5	83.1	82.8	2.1	2.0	2.0		3.0	3.2	3.1	

Remark or Obsevation:

Note: * Average ** Depth Average

Annex C19 Summary of Compliance with Action and Limit Level for Zone C

Compliance with Action Level and Limit Level for Zone C - Round 1 (07:07-09:01), 16 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.79	2.96
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.94	3.21
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 2 (09:09-11:03), 16 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	2.18	3.36
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	2.36	3.64
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 3 (11:07-13:02), 16 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	2.05	3.22
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	2.22	3.49
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 4 (13:07-15:01), 16 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	2.07	3.34
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	2.24	3.62
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Annex C20 Summary of Compliance with Action and Limit Level for Zone C

Compliance with Action Level and Limit Level for Zone C - Round 5 (15:05-16:56), 16 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.80	3.02
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.95	3.27
E4	Exceedance of Action Level	N	Y	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 6 (17:03-18:58), 16 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.88	3.14
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	2.04	3.40
E4	Exceedance of Action Level	N	Y	N	Y	Y
	Exceedance of Limit Level	N	Y	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 7 (19:07-21:03), 16 October

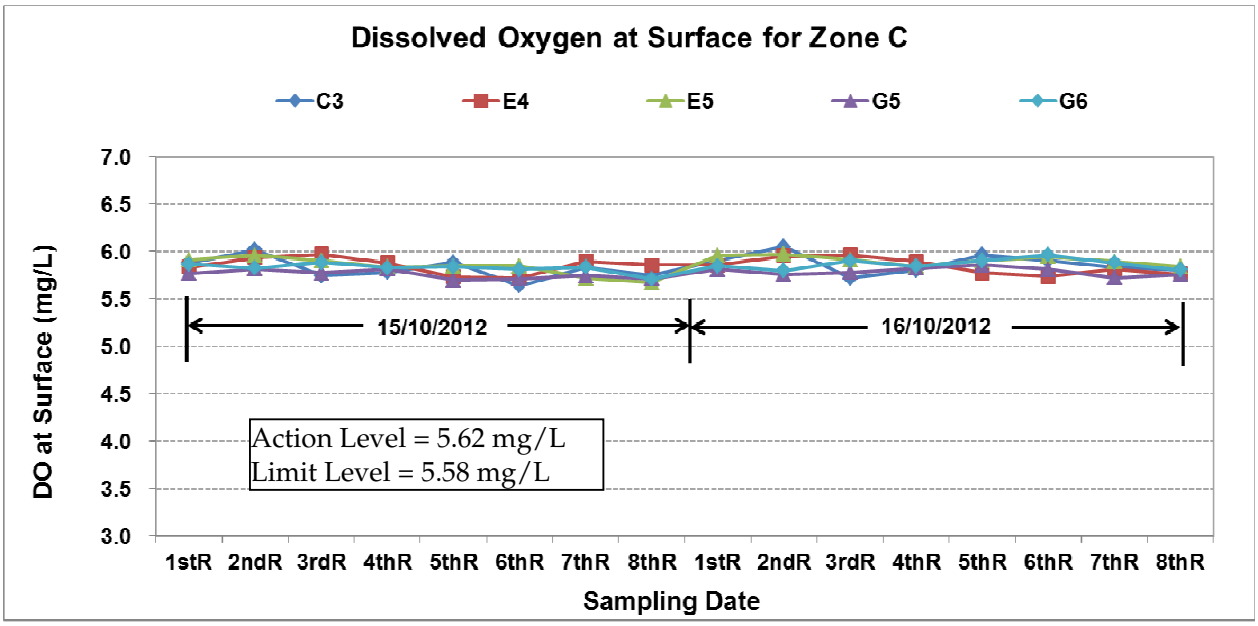
Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.83	3.06
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.98	3.32
E4	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N
E5	Exceedance of Action Level	N	N	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged

Compliance with Action Level and Limit Level for Zone C - Round 8 (21:08-23:05), 16 October

Station	Limits	Surface DO (mg/L)	Middle DO (mg/L)	Bottom DO (mg/L)	* DA Turbidity (NTU)	*DA SS (mg/L)
	Action Level (Baseline)	5.62	5.62	5.46	1.44	2.44
	Or Action Level (C2*1.2)	N.A.	N.A.	N.A.	1.82	3.14
	Limit Level (Baseline)	5.58	5.58	5.41	1.50	2.48
	And Limit Level (C2*1.3)	N.A.	N.A.	N.A.	1.97	3.40
E4	Exceedance of Action Level	N	Y	N	Y	Y
	Exceedance of Limit Level	N	Y	N	N	N
E5	Exceedance of Action Level	N	Y	N	Y	Y
	Exceedance of Limit Level	N	N	N	N	N

*DA: Depth-averaged



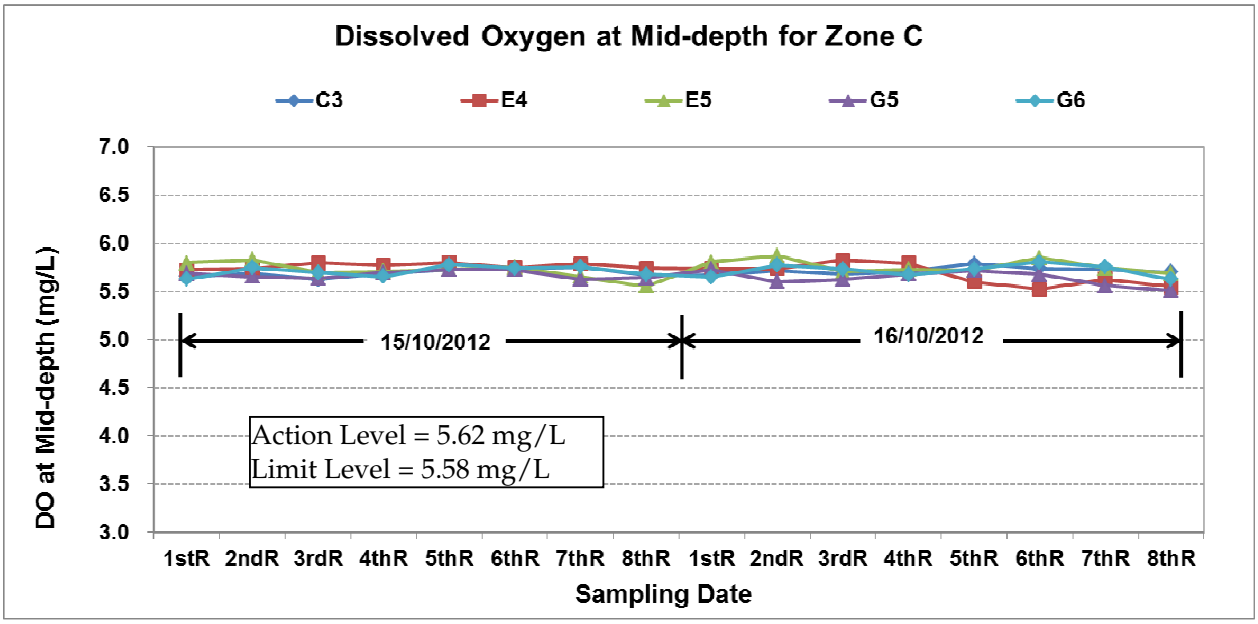
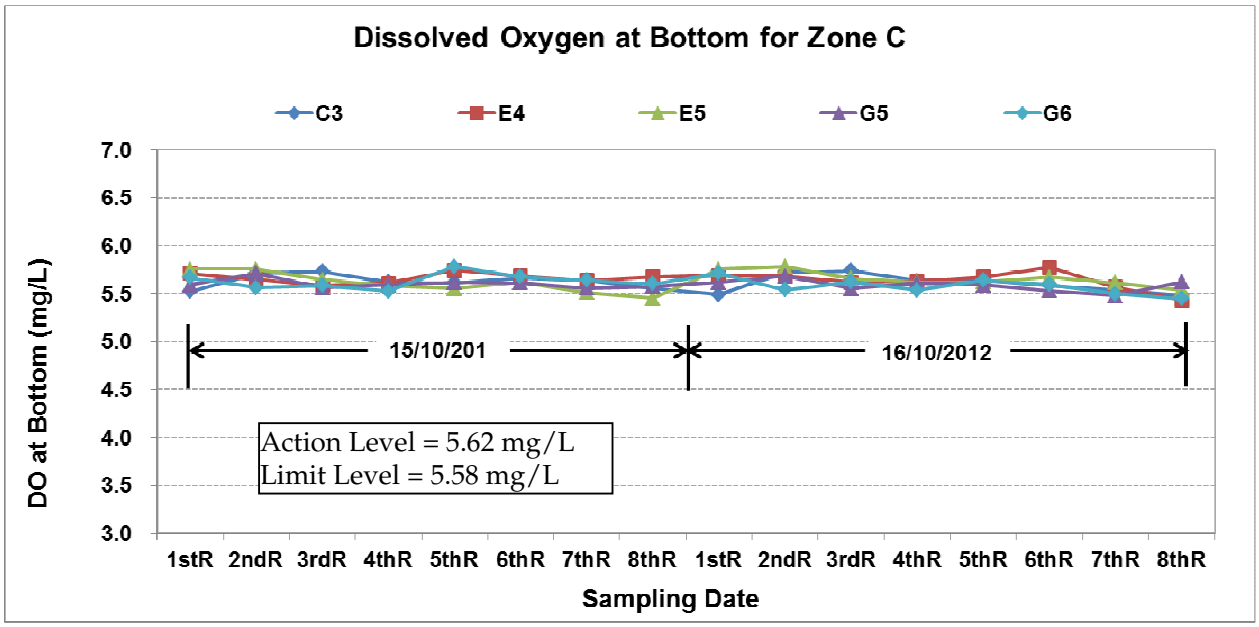


Figure C1 Dissolved oxygen (mg/L) at surface and mid-depth of water column measured during the impact monitoring period from 15 October to 16 October (1st Round to 8th Round) for Zone C



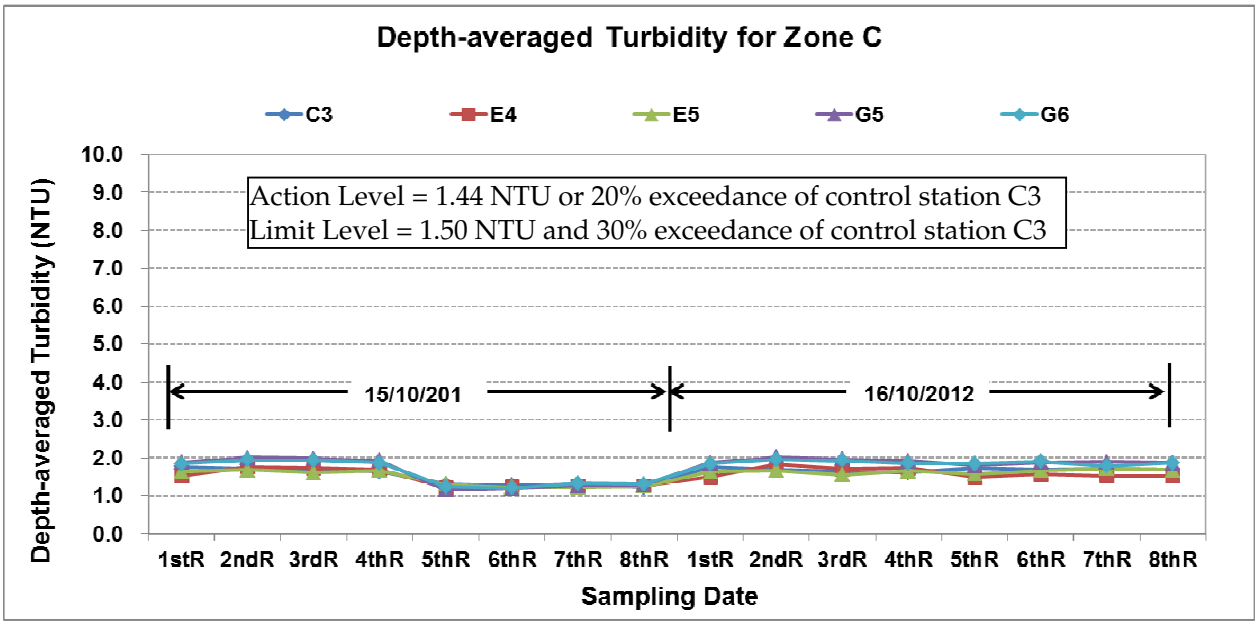


Figure C2 Dissolved oxygen (mg/L) at bottom of water column and depth-averaged Turbidity (NTU) measured during the impact monitoring period from 15 October to 16 October (1st Round to 8th Round) for Zone C

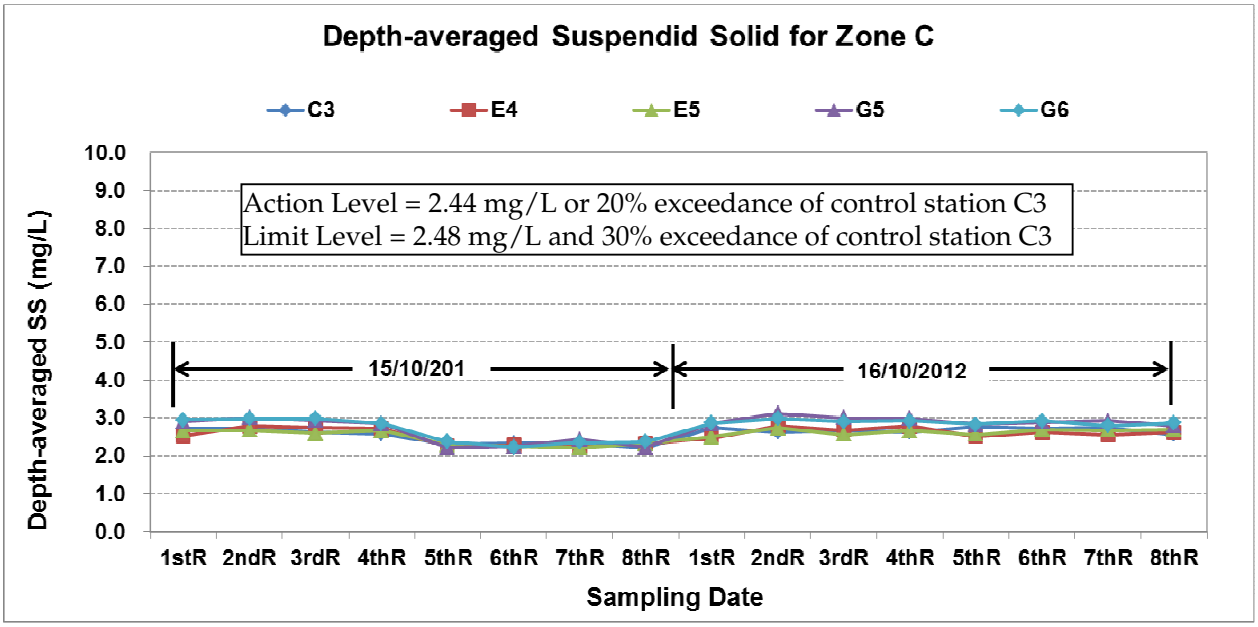


Figure C3 Depth-averaged suspended solid (mg/L) measured during the impact monitoring period from 15 October to 16 October (1st Round to 8th Round) for Zone C

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