China International Water & Electric Corp

Contract No. CV/2013/02

CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016)

Dredging at Cruise Terminal Stage 2

Monthly EM&A Report January 2015 (Version 2.0)

Certified By

(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

CINOTECH CONSULTANTS LTD

Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong Tel: (852) 2151 2083 Fax: (852) 3107 1388 Email: info@cinotech.com.hk

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EXECUTIVE SUMMARY

Introduction

1. This is the 10th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the project "Contract No. CV/2013/02 – CEDD Maintenance Contract for Seawalls and Navigation Channels (2013 – 2016) Dredging at Cruise Terminal Stage 2" (hereinafter called the "Project"). This report documents the findings of EM&A Works conducted in January 2015.

Environmental Monitoring and Audit Progress

2. A summary of the monitoring activities under the Project in this reporting month is listed in **Table I** below:

Table I Summary Table for Monitoring Activities under Project in the Reporting Month

Parameter(s)	Date(s)
Water Quality Monitoring	2 nd , 5 th , 7 th , 9 th , 12 th , 14 th , 16 th , 19 th , 21 st , 23 rd , 26 th , 28 th and 30 th January 2015
Environmental Site Inspection	2 nd , 9 th , 15 th , 23 rd and 30 th January 2015

Breaches of Action and Limit Levels

3. Summary of the environmental exceedances of the reporting month is tabulated in **Table II**.

Table II Summary Table for Events Recorded in the Reporting Month

Environmental	Parameter	No. of Exceedance Action Limit		No. of Exceedance related to the Dredging Activities of this Project Action Limit	
Monitoring		Level	Level	Level	Level
	Turbidity	0	0	0	0
	Suspended Solids (SS)	0	0	0	0

Water Quality

4. All water quality monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Noise Monitoring

5. Due to the non-existence of planned NSRs during the reporting period, no noise monitoring was required to be conducted at the planned noise monitoring locations NM1 and NM2.

Complaint Log

6. No environmental complaints were received in the reporting month.

Notification of Summons and Successful Prosecutions

7. No notification of summons and successful prosecution was received in the reporting month.

Reporting Changes

8. This report has been developed in compliance with the reporting requirements for the monthly EM&A Report as required by the EM&A Manual for Dredging Works for Proposed Cruise Terminal at Kai Tak (EM&A Manual).

Future Key Issues

9. The dredging works were completed in August 2014 and no dredging operation will be carried out in the coming month.

1 INTRODUCTION

- 1.1 Cinotech Consultants Limited (Cinotech) was appointed by China International Water & Electric Corp (hereinafter called "the Contractor") as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during dredging works of the Contract No. CV/2013/02 CEDD Maintenance Contract for Seawalls and Navigation Channels (2013 2016) Dredging at Cruise Terminal Stage 2" (hereinafter called the "Project") in accordance with EP Conditions 2.1.
- 1.2 The dredging works under the Project was commenced on 20th April 2014 and completed in August 2014.

Purpose of the report

1.3 This is the 10th EM&A report which summarises the monitoring results and audit findings for the EM&A programme in January 2015.

Structure of the report

- 1.4 The structure of the report is as follows:
 - Section 1: **Introduction -** purpose and structure of the report.
 - Section 2: **Project Information** summarises background and scope of the Project, site description, project organization and contact details, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting month.
 - Section 3: **Water Quality Monitoring -** summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.
 - Section 4: **Environmental Site Inspection -** summarises the audit findings of the weekly site inspections undertaken within the reporting month.
 - Section 5: **Environmental Non-conformance** summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.
 - Section 6: **Future Key Issues -** summarises the impact forecast and monitoring schedule for the next three months.

Section 7: Conclusions and Recommendation

2 PROJECT INFORMATION

Background

- 2.1 The former Kai Tak Airport located in the south-eastern part of Kowloon Peninsula was the international airport of Hong Kong. The Kai Tak Airport had come into operations since 1920s. The operation of the Kai Tak Airport was ceased and replaced by the new airport at Chek Lap Kok in July 1998. After closure, the disused airport site has been occupied by various temporary uses, including a golf driving range on the runway area.
- 2.2 In 2002, the Chief Executive in Council approved the Kai Tak Outline Zoning Plans (No. S/K19/3 and S/K21/3) to provide the statutory framework to proceed with the South East Kowloon Development at the former Kai Tak Airport. However, following the judgment of the Court of Final Appeal in January 2004 regarding the Harbour reclamation, the originally proposed development which involves reclamation has to be reviewed. The Kai Tak Planning Review (KTPR) has resulted with a Preliminary Outline Development Plan (PODP) for Kai Tak in October 2006. Subsequently, the Administration announced in October 2006 a plan to implement a cruise terminal at Kai Tak, as part of the development.
- 2.3 Development of the cruise terminal at Kai Tak would require dredging at the existing seawall at the southern tip of the former Kai Tak Airport runway for construction of a quay deck structure for two berths, and dredging the seabed fronting the new quay to provide necessary manoeuvring basin. The general layout of the proposed cruise terminal construction is shown in **Figure 1**.
- 2.4 The current Project involves a dredging operation exceeding 500,000m³ for construction and operation of the proposed cruise terminal at Kai Tak and is therefore classified as a Designated Project under Item C.12, Part I, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO). An Environmental Impact Assessment (EIA) Study for the Project has been undertaken in accordance with the EIA Study Brief (No. ESB-159/2006) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).
- 2.5 Stage 1 dredging and removal and reconstruction of existing seawall were completed and Stage 2 dredging works were commenced on 20th April 2014 and also completed in August 2014.

Project Organisation

- 2.6 Different parties with different levels of involvement in the Project organization include:
 - Project Proponent Civil Engineering and Development Department (Kowloon Development Office) (CEDD)
 - Engineer's Representative (ER) URS Hong Kong Ltd.
 - Contractor China International Water & Electric Corp (CIWEC)
 - Environmental Team (ET) Cinotech Consultants Ltd. (Cinotech)
 - Independent Environmental Checker (IEC) Fugro (HK) Limited (Furgo)
- 2.7 The proposed project organization and lines of communication with respect to the onsite environmental management structure are shown in **Figure 4**. The key personnel

contact names and numbers are summarized in Table 2.1.

Table 2.1 Key Contacts of the Project

Party	Role	Position	Name	Phone No.	Fax No.
CEDD	Project Proponent	Senior Engineer	Ms. Esther Yung	2301 1302	2301 1277
URS Hong Kong Ltd.	Engineer's Representative	Resident Engineer	Mr. Tsui Shiu Kai	2148 7638	2148 7277
		Project Manager	Mr. YF Cho	2727 0128	2379 5931
CIWEC	Contractor	Site Agent	Mr. KM Mok	2727 0128	
		Environmental Officer	Mr. Jerry Lau	6353 5489	2379 5931
Fugro	Independent Environmental Checker (IEC)	IEC	Mr. Joseph Poon	2450 8238	2450 6138
Cinotech	Environmental Team Leader (ETL)	ETL	Dr. Priscilla Choy	2151 2089	3107 1388

Summary of Construction Works Undertaken During Reporting Month

2.8 The dredging works were completed in August 2014 and no further dredging operation was carried out in the reporting month.

Status of Environmental Licences, Notification and Permits

2.9 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.2**.

Table 2.2 Status of Environmental Licences, Notification and Permits

Downit / License No	Valid Period		Status		
Permit / License No.	From	То	Status		
Environmental Permit (EP)					
EP-328/2009/A	15/06/2009	N/A	Valid		

3 NOISE MONITORING

- 3.1 In accordance with the EIA Report and the EM&A Manual, it is anticipated that construction activities, if unmitigated, would not cause any adverse noise impact to the nearest NSRs in the vicinity of the work site. The predicted noise levels at the NSRs would comply with construction noise criteria.
- 3.2 These nearest NSRs are designated for construction noise monitoring as listed in Table 3.1 and **Figure 3**.

Table 3.1 Planned Noise Monitoring Stations during Construction Phase

Monitoring Stations	Description
NM1	Planned Residential Development (R3 site)
NM2	Planned Residential Development (R3 site)

3.3 As per Section 3.1.1 of the EM&A Manual states that "Noise levels shall be monitored to evaluate the construction noise impact if there is any planned noise sensitive receivers (NSRs) occupied within 300m from the works area of this Project during the proposed dredging works". Therefore, the impact monitoring for construction noise shall only be carried out when the planned residential development at the two identified monitoring stations are occupied at a later stage.

4 WATER QUALITY MONITORING

Monitoring Requirements

- 4.1 According to EM&A Manual, impact water quality monitoring shall be carried out three days per week during the course of the dredging works. The interval between two sets of monitoring will not be less than 36 hours except there are exceedances of Action and/or Limit levels in which the monitoring frequency will be increased according to the Action/Event Plan. For selection of tides for *in-situ* measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5m.
- 4.2 Duplicate in-situ measurements and samples shall be carried out in each sampling event.
- 4.3 Impact water quality monitoring was conducted two times per monitoring day during mid ebb and mid flood tides. Dissolved oxygen, Suspended solids (SS), turbidity, pH, salinity and temperature were monitored in accordance with the requirements set out in the EM&A Manual and specification.
- 4.4 **Appendix A** shows the established Action/Limit Levels for the water quality monitoring works.

Monitoring Locations

4.5 Water quality monitoring was conducted at 3 monitoring stations under the Project which are summarized in **Table 4.1**. The monitoring station is also shown in **Figure 2**.

 Table 4.1
 Location for Marine Water Quality Monitoring Locations

Monitoring Stations	Cod	ordinates
Monitoring Stations	Easting	Northing
WSD9 – Tai Wan	837921.0	818330.0
WSD10 – Cha Kwo Ling	841900.9	817700.1
WSD17 – Quarry Bay	839790.3	817032.2

Monitoring Equipment

Instrumentation

4.6 A multi-parameter meters (Model YSI 6820-C-M and YSI 6920-M) were used to measure DO, turbidity, salinity, pH and temperature.

Dissolved Oxygen (DO) and Temperature Measuring Equipment

- 4.7 The instrument for measuring dissolved oxygen and temperature was portable and weatherproof complete with cable, sensor, comprehensive operation manuals and use DC power source. It was capable of measuring:
 - a dissolved oxygen level in the range of 0-20 mg/L and 0-200% saturation; and
 - a temperature of 0-45 degree Celsius.
- 4.8 It has a membrane electrode with automatic temperature compensation complete with a

cable.

- 4.9 Sufficient stocks of spare electrodes and cables were available for replacement where necessary.
- 4.10 Salinity compensation was built-in in the DO equipment.

Turbidity

4.11 Turbidity was measured in situ by the nephelometric method. The instrument was portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment was capable of measuring turbidity between 0-1000 NTU. The probe cable was not less than 25m in length. The meter was calibrated in order to establish the relationship between NTU units and the levels of suspended solids.

Sampler

4.12 A water sampler, consisting of a transparent PVC or glass cylinder of a capacity of not less than two litres which can be effectively sealed with cups at both ends was used. The water sampler has a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler was at the selected water depth.

Water Depth Detector

4.13 A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

<u>pH</u>

4.14 The instrument was consisting of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It was readable to 0.1 pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 were used for calibration of the instrument before and after use.

Salinity

4.15 A portable salinometer capable of recording salinity within the range of 0-40 ppt was used for salinity measurements.

Monitoring Position Equipment

4.16 A hand held Global Positioning System (GPS) was used during water quality monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

Sample Container and Storage

4.17 Following collection, water samples for laboratory analysis were stored in high density polythene bottles (250ml/1L) with no preservatives added, packed in ice (cooled to 4°C without being frozen) and kept in dark during both on-site temporary storage and shipment to the testing laboratory. The samples were delivered to the laboratory as soon as possible and the laboratory determination works were started within 24 hours after collection of the water samples. Sufficient volume of samples was collected to achieve the detection limit.

Calibration of In Situ Instruments

- 4.18 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring programme. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring event.
- 4.19 For the on-site calibration of field equipment (Multi-parameter Water Quality System), the BS 1427:2009, "Guide to on-site test methods for the analysis of waters" was observed.
- 4.20 Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also being made available so that monitoring can proceed uninterrupted even when some equipment was under maintenance, calibration, etc.
- 4.21 The equipment used for impact water quality monitoring is shown in **Table 4.2** and copies of the calibration certificates are shown in **Appendix B**. All the monitoring equipment complied with the requirements set out in the EM&A Manual.

Table 4.2 Water Quality Monitoring Equipment

Equipment	Model and Make	Qty
Multi-parameter Water Quality	YSI 6820-C-M	1
System	YSI 6920-M	1

Monitoring Parameters, Frequency

4.22 **Table 4.3** summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring. The water quality monitoring schedule for the reporting month is shown in **Appendix C**.

 Table 4.3
 Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameters, unit	Depth	Frequency
WSD9 WSD10 WSD17	 Temperature(°C) pH (pH unit) turbidity (NTU) water depth (m) salinity (ppt) dissolved oxygen(DO) (mg/L and % of saturation) suspended solids (SS) (mg/L) 	• mid-depth	3 days per week, at mid-flood and mid-ebb tides

4.23 Monitoring location/position, time, water depth, sampling depth, pH, salinity, DO saturation, water temperature, tidal stages, weather conditions and any special phenomena or work underway nearby were recorded.

Monitoring Methodology

Instrumentation

4.24 Multi-parameter meters (Model YSI 6820-C-M and YSI 6920-M) were used to measure DO, turbidity, salinity, pH and temperature.

Operating/Analytical Procedures

- 4.25 The monitoring stations were accessed by the guide of a hand-held Global Positioning System (GPS) during water quality monitoring in accordance with the EM&A Manual. The depth of the monitoring location was measured using depth meter in order to determine the sampling depths. Afterwards, the probes of the in-situ measurement equipment were lowered to the mid-depth and the measurements were carried out accordingly.
- 4.26 At each measurement, two consecutive measurements of DO concentration, DO saturation, salinity, turbidity, pH and temperature were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.
- 4.27 Water sampler was lowered into the water to the required depths of sampling. Upon reaching the pre-determined depth, a messenger to activate the sampler was then released to travel down the wire. The water sample was sealed within the sampler before retrieving. At each station, water samples at mid-depth were collected accordingly. Water samples were stored in a cool box and kept at less than 4°C but without frozen and sent to the laboratory as soon as possible. In addition, field information as described

in Section 4.23 was also recorded.

Laboratory Analytical Methods

4.28 The testing of all parameters was conducted by WELLAB Ltd. (HOKLAS Registration No.083) and comprehensive quality assurance and control procedures in place in order to ensure quality and consistency in results. The testing method, reporting limit and detection limit are provided in **Table 4.4**.

Table 4.4 Methods for Laboratory Analysis for Water Samples

Determinant	Instrumentation	Analytical Method	Detection Limit	Reporting Limit
Suspended Solid (SS)	Weighing	APHA 17e 2540D	0.5 mg/L	2.5 mg/L

QA/QC Requirements

Decontamination Procedures

4.29 Water sampling equipment used during the course of the monitoring programme was decontaminated by manual washing and rinsed clean seawater/distilled water after each sampling event. All disposal equipment was discarded after sampling.

Sampling Management and Supervision

- 4.30 All sampling bottles were labelled with the sample I.D (including the indication of sampling station and tidal stage e.g. IS1_me_a), laboratory number and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.
- 4.31 The laboratory determination works were started within 24 hours after collection of the water samples.

Quality Control Measures for Sample Testing

- 4.32 The samples testing were performed by HOKLAS accredited laboratories.
- 4.33 The following quality control programme was performed by the CMA Testing and Certification Laboratories for every batch of 20 samples:
 - ♦ One set of quality control (QC) samples.

Maintenance and Calibration

4.34 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water

quality monitoring programme.

Results and Observations

- 4.35 The monitoring results and graphical presentation of water quality at the monitoring stations is shown in **Appendix D.**
- 4.36 The summary of exceedance record in reporting month is shown in **Appendix F.**
- 4.37 All water quality monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedances for suspended solids and turbidity were recorded.

Event and Action Plan

4.38 Should non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix E** shall be carried out.

5 ENVIRONMENTAL SITE INSPECTION

Site Audits

- 5.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix G**.
- 5.2 Site audits were conducted on 2nd, 9th, 15th, 23rd and 30th January 2015 by ET with the representative of ER and the Contractor after the commencement of dredging works for the Project. A joint site audit with the representative of IEC, ER, the Contractor and the ET was carried out on 23rd January 2015. The details of observations during site audit can refer to **Table 5.1**.

Implementation Status of Environmental Mitigation Measures

- 5.3 According to the EIA Study Report, Environmental Permit and the EM&A Manual, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. As the dredging works were completed on August 2014, no environmental impact was anticipated in the reporting month. The mitigation measures detailed in the documents are recommended to be implemented once the dredging works are re-commenced. An updated summary of the EMIS is provided in **Appendix H**.
- 5.4 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 5.1**.

Table 5.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
Air Quality	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
Noise	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
Waste / Chemical Management	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
Cultural Heritage Measures	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
Permits/Licences	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
Other	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾

Remark: N/A⁽¹⁾-No major environmental deficiency was identified during the site inspection in the reporting month.

Advice on the Solid and Liquid Waste Management Status

- 5.5 The dredging works were completed in August 2014 and no further dredging operation was carried out in the reporting month.
- 5.6 According to the Contractor, no marine sediment (Type 1 Open Sea Disposal and Type 2 Confined Marine Disposal) were generated and disposed during the reporting month.

6 ENVIRONMENTAL NON-CONFORMANCE (EXCEEDANCES)

Summary of Exceedances

- 6.1 Summary of exceedance is provided in **Appendix L**.
- 6.2 No Action/Limit Level exceedance was recorded for water quality.

Summary of Environmental Complaint

6.3 No environmental related complaint was received in the reporting month. The Complaint Log is attached in **Appendix I**.

Summary of Notification of Summons and Successful Prosecution

6.4 There was no prosecution or notification of summons received since the Project commencement.

7 FUTURE KEY ISSUES

Key Issues in the Coming Month

7.1 The dredging works were completed in August 2014 and no further dredging operation will be carried out in the coming month.

Monitoring Schedule for the Next Month

7.2 The tentative water quality monitoring schedule for the next month is shown in **Appendix C**.

Construction Programme for the Next Month

7.3 The dredging works were completed in August 2014 and no further dredging operation will be carried out in the coming month.

8 CONCLUSIONS AND RECOMMENDATIONS

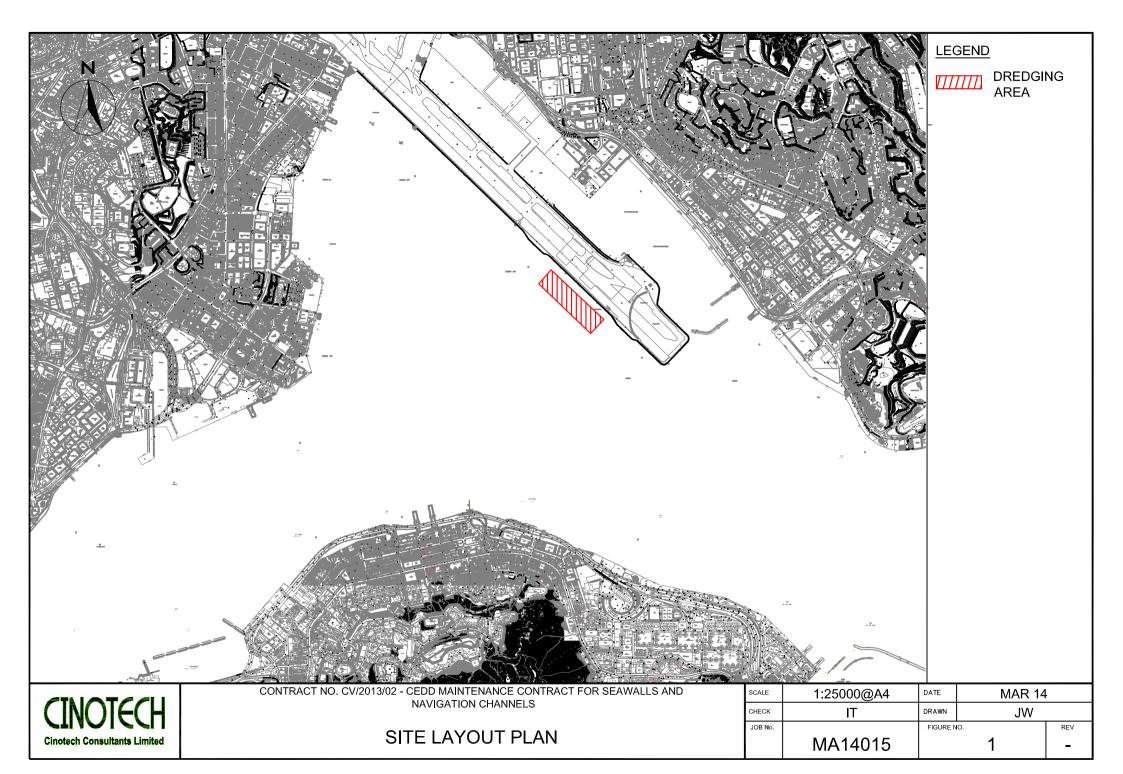
Conclusions

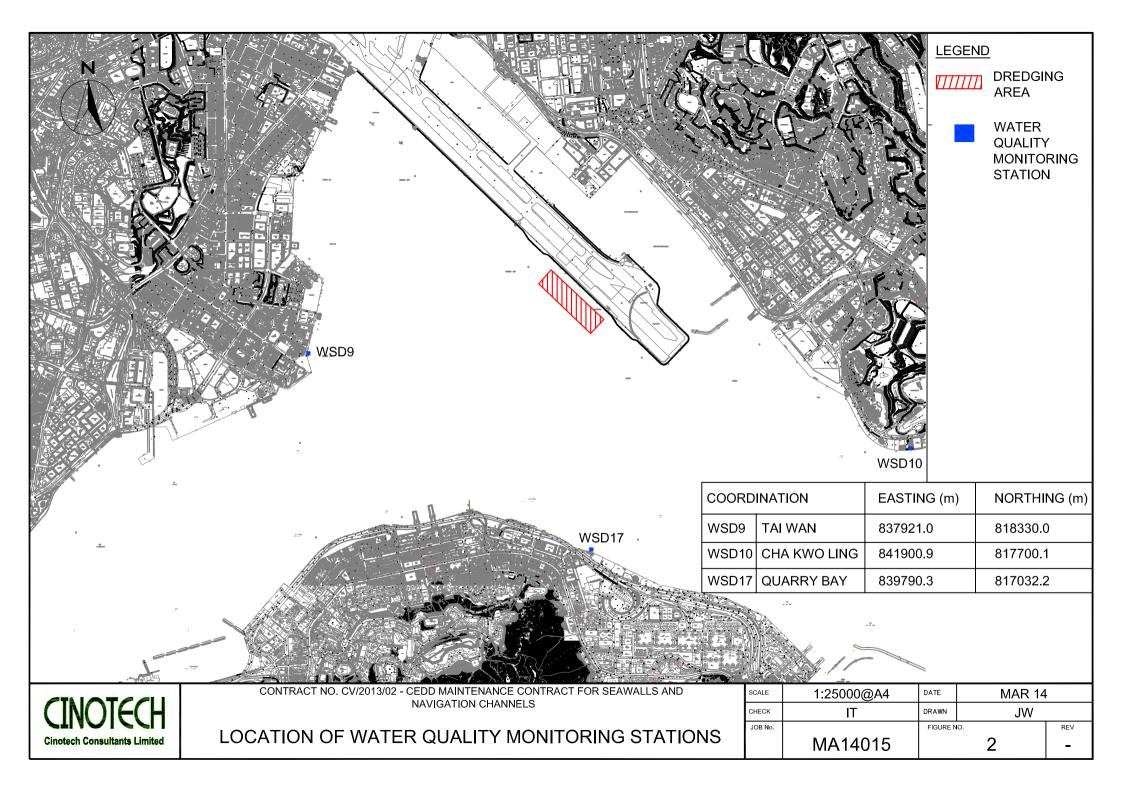
- 8.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken in January 2015 in accordance with EM&A Manual.
- 8.2 No Action/Limit Level exceedance was recorded for water quality.
- 8.3 Environmental site inspection was conducted on 2nd, 9th, 15th, 23rd and 30th January 2015 by ET in the reporting month. No major environmental deficiency was identified during the site inspection in the reporting month.
- 8.4 There were no environmental complaint, no notification of summons and successful prosecution received.
- 8.5 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

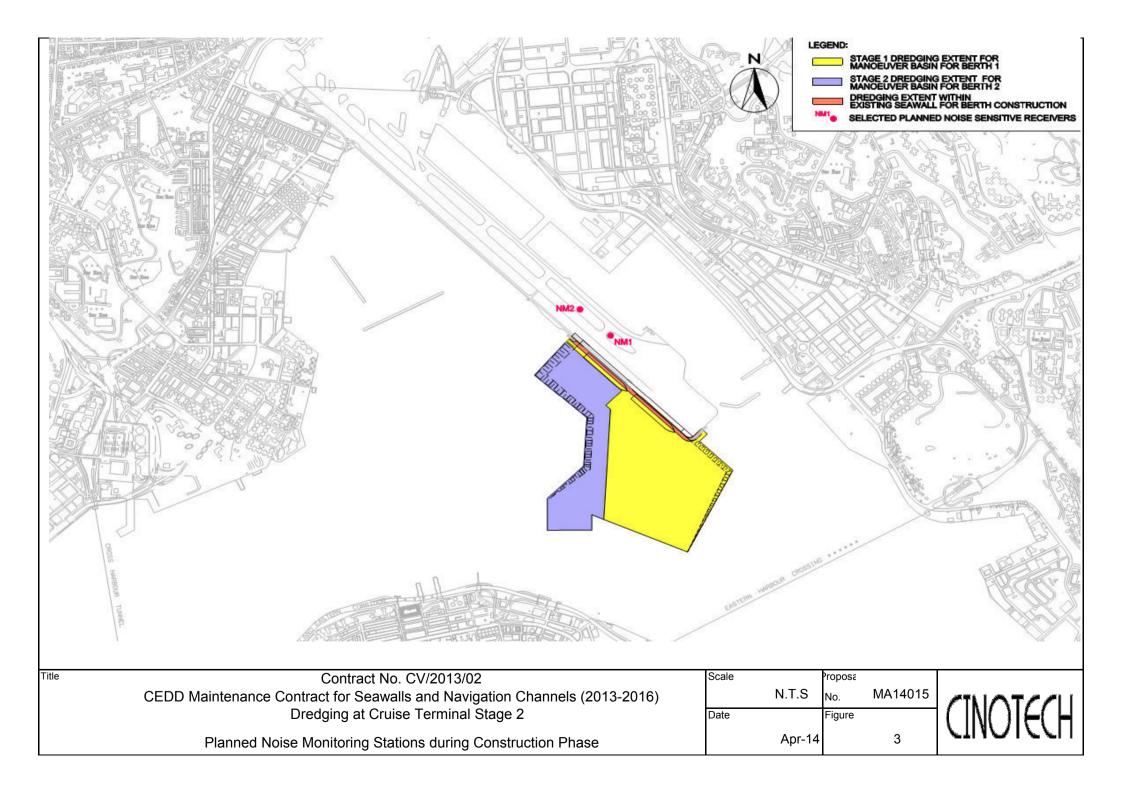
Recommendations

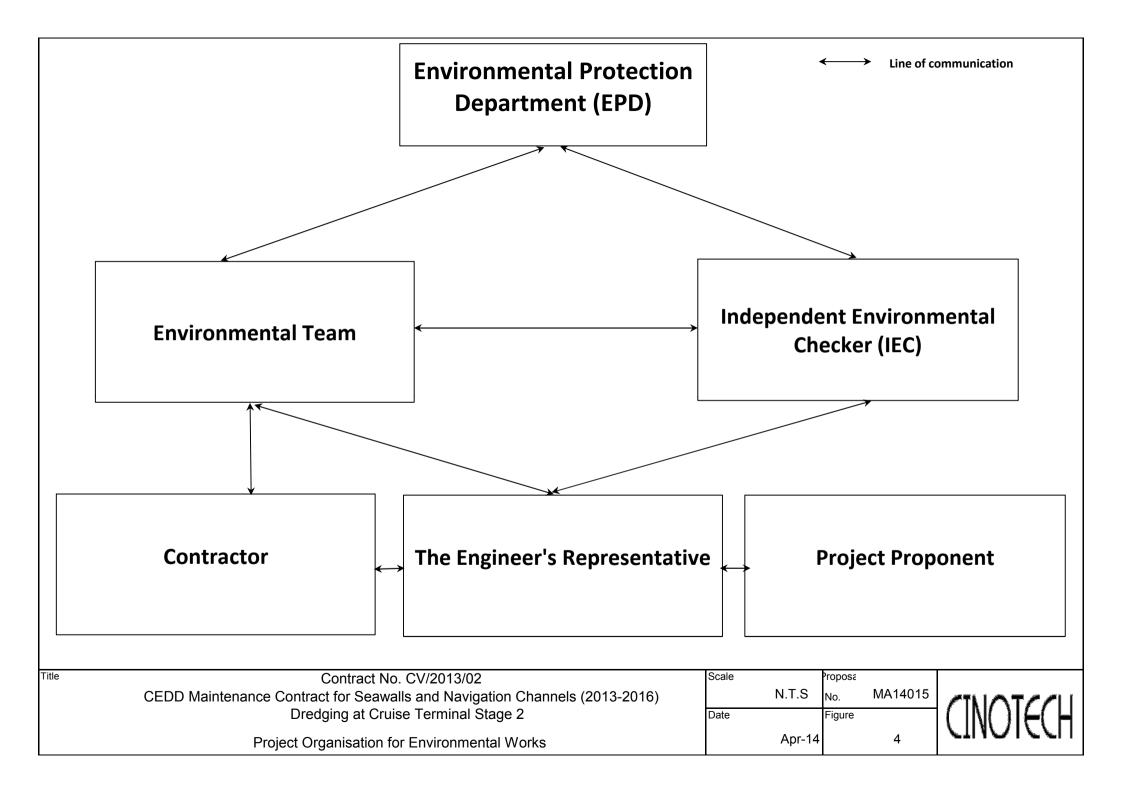
- 8.6 The dredging works were completed in August 2014, marine water quality monitoring will be continuous carried out to monitor the water quality and weekly site inspection will be also continuous conducted to check the following:
 - Conditions of the Tai Wan, Cha Kwo Ling and Quarry Bay WSD Flushing Water Intakes:
 - Conditions of site area; and
 - Environmental situation outside the site area.

FIGURE(S)









APPENDIX A ACTION AND LIMIT LEVELS

Appendix A - Action and Limit Levels

Action and Limit Levels for Water Quality Monitoring

Turbidity (NTU)			Suspended Solid (mg/L)					
Station	Action	Level	Limit	Level	Action	Level	Limit	Level
Station	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
	Season	Season	Season	Season	Season	Season	Season	Season
WSD9	5.6	7.0	10.6	13.4	10.2	12.8	10.8	13.5
WSD10	6.3	8.1	9.4	12.1	10.0	11.2	11.8	13.2
WSD17	10.0	12.9	15.3	19.7	13.2	14.7	15.3	17.0

APPENDIX B COPIES OF CALIBRATION CERTIFCATES





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/141031-1
Date of Issue:	2014-10-31
Date Received:	2014-10-31
Date Tested:	2014-10-31
Date Completed:	2014-10-31
Next Due Date:	2015-01-30

ATTN:

Mr. W.K. Tang

Page:

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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

Test conditions:

Room Temperature

: 20 degree Celsius

Relative Humidity

: 56%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, L/N: 11J100025

- 1. Conductivity performance check with Potassium Chloride standard solution
- 2. Salinity performance check with Sodium Chloride standard solution

Dissolved Oxygen Sensor, Model: 6562, L/N: 07E100029

1. Performance check against Winkler titration

Turbidity Sensor, Model: 6136, S/N: 12B100900

1. Calibration check with Formazin standard solution

pH Meter, Model: 6561, L/N: 11H

1. Calibration check with standard pH buffer

Depth Meter

1. Calibration check at 1m water level depth

Methodologies:

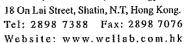
- 1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
- 2. In-house method with reference to APHA and ISO standards
 Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
 Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B),
 pH (APHA 19th 4500-H+ B)

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Laboratory Manager





TEST REPORT

Test Report No.:	C/W/141031-1
Date of Issue:	2014-10-31
Date Received:	2014-10-31
Date Tested:	2014-10-31
Date Completed:	2014-10-31
Next Due Date:	2015-01-30

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Results:

1. Conductivity performance check

Specific Conductivity, μS/cm		Correction, µS/cm	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	D = C1 - C2	
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.0	30.0	0.0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in	Dissolved Oxygen, mg O ₂ /L		Correction, mg	Acceptable
water at 20°C	D.O. Meter Winkler Titration		O ₂ /L	range
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 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 ± 0.05
100	100	0	100 ± 5
1000	1000	0	1000 ± 100

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH _i , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH _s , pH unit	0.01	Less than 0.02
Noise ΔpH _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 ± 0.05



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/150124-2
Date of Issue: 2015-01-24
Date Received: 2015-01-24
Date Tested: 2015-01-24
Date Completed: 2015-01-24
Next Due Date: 2015-04-23

ATTN:

Mr. W.K. Tang

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Certificate of Calibration

Item for calibration:

Description

: Sonde Environmental Monitoring System

Manufacturer

: YSI : 6920-M

Model No. Serial No.

: 03H1764AA

Equipment No.

: W.03.03

Test conditions:

Room Temperature

: 21 degree Celsius

Relative Humidity

: 68%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, L/N: 03H1461

- 1. Conductivity performance check with Potassium Chloride standard solution
- 2. Salinity performance check with Sodium Chloride standard solution

Dissolved Oxygen Sensor, Model: 6562, L/N: 08C100610

1. Performance check against Winkler titration

Turbidity Sensor, Model: 6136, S/N: 09M100672

1. Calibration check with Formazin standard solution

pH Meter, Model: 6561, L/N: 07E

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
- In-house method with reference to APHA and ISO standards Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B)
 Dissolved Oxygen (ΛΡΗΛ 20ed 4500-O C), Turbidity (APHA 19cd 2130 B), pH (APHA 19th 4500-H+B)

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Laboratory Manager



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

Test Report No.: C/W/150124-2
Date of Issue: 2015-01-24
Date Received: 2015-01-24
Date Tested: 2015-01-24
Date Completed: 2015-01-24
Next Due Date: 2015-04-23

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Results:

1. Conductivity performance check

TO COMMUNICATION POSICO			
Specific (Conductivity, µS/cm	Correction, µS/cm	Acceptable range
Salinity Meter (C1) Theoretical Value (C2)		D = C1 - C2	
1420	1420	0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading Theoretical Value			
30.0 30.0		0.0	30.0 ± 3

3. Dissolved Oxygen check

	,			
Oxygen level in	Dissolved Ox	ygen, mg O ₂ /L	Correction, mg	Acceptable
water at 20°C	D.O. Meter Winkler Titration		O_2/L	range
Saturated	9.1	9.1	0.0	± 0.2
Half-saturated	5.6	5.6	0.0	± 0.2
Zero	0.0	0.0	0.0	± 0.2

4. Turbidity check

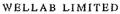
Turbidity value in solution, NTU			Acceptable range	
0.00	0.00	0.00	0.00 ± 0.05	
100	100	0	100 ± 5	
1000	1000	0	1000 ± 100	

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH _i , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH _s , pH unit	0.01	Less than 0.02
Noise ΔpH _n , pH unit	0.00	Less than 0.02

6. Depth Meter check

Instrument Reading, m	nstrument Reading, m Calibration Value, m		Acceptable range
1.00		0.00	1.00 ± 0.05





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/141212-1
Date of Issue: 2014-12-12
Date Received: 2014-12-12
Date Tested: 2014-12-12
Date Completed: 2014-12-12

Next Due Date:

2015-03-11

ATTN:

Mr. W.K. Tang

Page:

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Certificate of Calibration

Item for calibration:

Description

: Sonde Environmental Monitoring System

Manufacturer

: YSI

Model No.

: 6820-C-M

Serial No.

: 12B100803

Equipment No.

: W.03.12

Test conditions:

Room Temperature

: 21 degree Celsius

Relative Humidity

: 58%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, L/N: 12B10055

- 1. Conductivity performance check with Potassium Chloride standard solution
- 2. Salinity performance check with Sodium Chloride standard solution

Dissolved Oxygen Sensor, Model: 6562, L/N: 12A100930

1. Performance check against Winkler titration

Turbidity Sensor, Model: 6136, S/N: 12B100644

1. Calibration check with Formazin standard solution

pH Meter, Model: 6561, L/N: 11H

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 Conductivity (APHA 20ed 2510), Salinity (APHA 20ed 2520B) Dissolved Oxygen (APHA 20ed 4500-O C), Turbidity (APHA 19ed 2130 B), pH (APHA 19th 4500-H+ B)

PREPARED AND CHECKED BY:

For and On Behalf of WELLAB Ltd.

PATRICK TSE

Laboratory Manager



18 On Lai Street, Shatin, N.T, Hong Kong. Tel: 2898 7388 Fax: 2898 7076 Website: www.wellab.com.hk

TEST REPORT

Test Report No.: C/W/141212-1 Date of Issue: 2014-12-12 Date Received: 2014-12-12 Date Tested: 2014-12-12 Date Completed: 2014-12-12 Next Due Date: 2015-03-11

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Results:

1. Conductivity performance check

Specific (Conductivity, µS/cm	Correction, µS/cm	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	D = C1 - C2	
1420 1420		0	1420 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading Theoretical Value			
30.0	30.0	0	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in	Dissolved Ox	xygen, mg O ₂ /L	Correction, mg	Acceptable
water at 20°C	water at 20°C D.O. Meter		O ₂ /L	range
Saturated	9.0	9.0	0.0	± 0.2
Half-saturated	5.8	5.8	0.0	± 0.2
Zero	0.0	0.0	0.0	± 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 ± 0.05	
100	100	0	100 ± 5	
1000	1000	0	1000 ± 100	

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH _i , pH unit	0.01	Less than 0.05
Shift on stirring ΔpH _s , pH unit	0.01	Less than 0.02
Noise ΔpH_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 ± 0.05	

APPENDIX C WATER QUALITY MONITORING SCHEDULES

Contract No. CV/2013/02 - CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016) Dredging at Cruise Terminal Stage 2 Water Quality Monitoring Schedule (January 2015)

Sunday	Monday		Tuesday	Wednes	day	Thursday	Frida		Saturday
						1-Jan		2-Jan	3-Jan
							Mid-Ebb Mid-Flood	10:26 16:00	
4-Jan	,	5-Jan	6-Jan		7-Jan	8-Jan		9-Jan	10-Jan
		2:39 7:57		Mid-Flood Mid-Ebb	8:25 13:46		Mid-Flood Mid-Ebb	9:23 14:51	
11-Jan	1	2-Jan	13-Jan		14-Jan	15-Jan		16-Jan	17-Jan
		1:15 7:11		Mid-Flood Mid-Ebb	12:40 19:33		Mid-Ebb Mid-Flood	8:49 14:16	
18-Jan	1	9-Jan	20-Jan		21-Jan	22-Jan		23-Jan	24-Jan
		1:37 6:50		Mid-Ebb Mid-Flood	13:07 18:33		Mid-Flood Mid-Ebb	8:52 14:39	
25-Jan	2	6-Jan	27-Jan		28-Jan	29-Jan		30-Jan	31-Jan
		1:05 7:21		Mid-Flood Mid-Ebb	12:44 20:02		Mid-Ebb Mid-Flood	9:07 14:33	

Contract No. CV/2013/02 - CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016) Dredging at Cruise Terminal Stage 2 Touteting Water Overlite Manifesting School No. (Enhancer 2015)

Tentative Water Quality Monitoring Schedule (February 2015)

Sunday	Monday		Tuesday	Wednesday		Thursday	Friday		Saturday
1-Feb		2-Feb	3-Feb		4-Feb	5-Feb		6-Feb	7-Feb
	Mid-Ebb Mid-Flood	11:48 17:08		Mid-Ebb Mid-Flood	12:51 18:23		Mid-Flood Mid-Ebb	8:09 13:46	
8-Feb		9-Feb	10-Feb		11-Feb	12-Feb		13-Feb	14-Feb
	Mid-Flood Mid-Ebb	9:35 15:33		Mid-Flood Mid-Ebb	10:49 17:16		Mid-Flood Mid-Ebb	12:22 19:56	
15-Feb		16-Feb	17-Feb		18-Feb	19-Feb		20-Feb	21-Feb
	Mid-Flood Mid-Ebb	10:34 15:40		Mid-Flood Mid-Ebb	12:05 17:36				
22-Feb		23-Feb	24-Feb		25-Feb	26-Feb		27-Feb	28-Feb
	Mid-Flood Mid-Ebb	9:33 15:47		Mid-Flood Mid-Ebb	11:05 18:02		Mid-Flood Mid-Ebb	12:47 20:47	

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

Remark: With respect to the Chinese New Year Holiday, the water quality monitoring on 20 February 2015 was cancelled

APPENDIX D WATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATION

Water Quality Monitoring Results at WSD9 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dont	h (m)	Tempera	ature (°C)	ļ	Н	Salin	ity ppt	DO Satu	ration (%)	Dissolved O	xygen (mg/L)	Turbidi	ty(NTU)	Suspended	Solids (mg/L)
Date	Condition	Condition**	Time	Бері	11 (111)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
2-Jan-15	Sunny	Moderate	10:08	Middle	3.8	17.4 17.4	17.4	7.2 7.2	7.2	31.2 31.2	31.2	91.1 91.5	91.3	7.2 7.3	7.3	1.8 1.5	1.7	5 5	5.0
5-Jan-15	Sunny	Moderate	13:16	Middle	3.5	17.6 17.6	17.6	7.6 7.6	7.6	27.1 27.1	27.1	90.0 89.9	90.0	7.3 7.3	7.3	2.6 2.3	2.5	4 4	4.0
7-Jan-15	Sunny	Moderate	14:34	Middle	3.6	31.0 31.0	31.0	7.5 7.5	7.5	26.3 27.8	27.1	93.0 93.0	93.0	6.0 5.9	6.0	1.2 1.2	1.2	7 8	7.5
9-Jan-15	Sunny	Moderate	16:05	Middle	3.9	17.6 17.6	17.6	7.6 7.6	7.6	31.7 31.6	31.7	76.2 76.2	76.2	6.0 6.0	6.0	5.3 4.9	5.1	5 5	5.0
12-Jan-15	Rainy	Moderate	17:07	Middle	3.8	17.4 17.4	17.4	7.6 7.9	7.8	31.6 32.0	31.8	93.6 93.7	93.7	7.4 7.4	7.4	3.8 4.3	4.1	9 8	8.5
14-Jan-15	Cloudy	Moderate	19:32	Middle	3.9	17.0 17.0	17.0	7.6 7.6	7.6	32.9 32.8	32.9	96.0 95.5	95.8	7.6 7.6	7.6	1.1 1.1	1.1	5 5	5.0
16-Jan-15	Cloudy	Moderate	10:14	Middle	3.5	16.2 16.2	16.2	7.9 8.0	8.0	33.1 33.1	33.1	70.5 71.9	71.2	5.7 5.8	5.8	5.5 4.9	5.2	5 5	5.0
19-Jan-15	Sunny	Moderate	11:26	Middle	3.5	16.2 16.3	16.3	7.6 7.5	7.6	31.6 31.7	31.7	103.3 103.3	103.3	7.2 7.2	7.2	2.3 2.5	2.4	4 4	4.0
21-Jan-15	Sunny	Moderate	13:49	Middle	3.9	17.1 17.1	17.1	8.0 8.0	8.0	28.9 29.0	29.0	96.4 96.8	96.6	7.8 7.8	7.8	3.3 4.1	3.7	5 5	5.0
23-Jan-15	Sunny	Moderate	14:21	Middle	3.8	16.7 16.7	16.7	7.8 7.9	7.9	27.5 27.5	27.5	62.4 62.8	62.6	5.1 5.2	5.2	4.4 4.4	4.4	6 6	6.0
26-Jan-15	Sunny	Moderate	16:44	Middle	3.7	17.0 17.1	17.1	8.0 7.9	8.0	32.7 32.8	32.8	88.9 88.5	88.7	7.1 7.0	7.1	1.6 1.5	1.6	7 7	7.0
28-Jan-15	Fine	Moderate	20:55	Middle	3.6	16.7 16.7	16.7	8.2 8.2	8.2	27.9 30.6	29.3	79.7 81.2	80.5	6.6 6.6	6.6	1.7 1.7	1.7	8 8	8.0
30-Jan-15	Sunny	Moderate	08:36	Middle	3.7	16.8 16.8	16.8	7.7 7.7	7.7	32.7 32.7	32.7	55.2 54.7	55.0	4.4 4.4	4.4	1.2 1.2	1.2	3	3.0

Water Quality Monitoring Results at WSD9 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dont	h (m)	Tempera	ature (°C)		рН	Salir	ity ppt	DO Satu	ıration (%)	Dissolved O	xygen (mg/L)	Turbid	ity(NTU)	Suspended	Solids (mg/L)
Date	Condition	Condition**	Time	Бері	11 (111)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Ave	erage
2-Jan-15	Sunny	Moderate	15:03	Middle	3.7	17.7 17.5	17.6	7.3 7.3	7.3	31.2 31.2	31.2	89.1 89.4	89.3	7.0 7.1	7.1	1.6 1.4	1.5	7 7	7.0
5-Jan-15	Sunny	Moderate	16:33	Middle	3.5	17.4 17.4	17.4	7.6 7.6	7.6	27.3 27.3	27.3	96.8 95.7	96.3	7.9 7.8	7.9	2.5 2.2	2.4	5 5	5.0
7-Jan-15	Sunny	Moderate	09:20	Middle	3.6	30.9 30.6	30.8	7.7 7.7	7.7	25.8 26.8	26.3	94.9 94.7	94.8	6.1 6.1	6.1	1.1 1.1	1.1	6 6	6.0
9-Jan-15	Sunny	Moderate	10:12	Middle	3.5	17.6 17.6	17.6	7.6 7.6	7.6	30.4 30.6	30.5	63.4 63.1	63.3	5.0 5.0	5.0	5.8 4.9	5.4	7 8	7.5
12-Jan-15	Rainy	Moderate	11:05	Middle	3.6	17.4 17.4	17.4	8.0 7.9	8.0	30.9 30.9	30.9	91.8 92.0	91.9	7.3 7.3	7.3	4.6 4.1	4.4	6 7	6.5
14-Jan-15	Cloudy	Moderate	13:52	Middle	3.9	17.1 17.1	17.1	7.7 7.7	7.7	32.9 32.7	32.8	95.3 95.6	95.5	7.5 7.6	7.6	1.2 1.2	1.2	8 8	8.0
16-Jan-15	Cloudy	Moderate	15:57	Middle	3.7	16.4 16.3	16.4	8.0 7.9	8.0	32.9 33.3	33.1	66.5 67.7	67.1	5.3 5.4	5.4	5.0 5.3	5.2	9	9.0
19-Jan-15	Sunny	Moderate	15:41	Middle	3.6	16.3 16.3	16.3	7.5 7.5	7.5	31.8 31.9	31.9	99.1 98.1	98.6	6.9 6.8	6.9	2.2 2.4	2.3	8 7	7.5
21-Jan-15	Fine	Moderate	17:29	Middle	4	16.7 16.7	16.7	7.9 7.9	7.9	29.6 29.7	29.7	90.4 86.7	88.6	7.4 7.1	7.3	2.1 2.3	2.2	8 8	8.0
23-Jan-15	Sunny	Moderate	08:47	Middle	3.6	16.7 16.7	16.7	8.0 7.9	8.0	28.1 28.2	28.2	62.8 62.9	62.9	5.2 5.2	5.2	3.0 3.2	3.1	7 8	7.5
26-Jan-15	Sunny	Moderate	11:26	Middle	3.5	17.0 16.9	17.0	7.9 7.9	7.9	33.7 33.7	33.7	85.9 87.0	86.5	6.8 6.9	6.9	1.1 1.1	1.1	6	6.0
28-Jan-15	Fine	Moderate	12:13	Middle	3.6	16.7 16.7	16.7	8.2 8.2	8.2	30.5 28.1	29.3	76.3 78.8	77.6	6.2 6.5	6.4	2.0 1.8	1.9	7 6	6.5
30-Jan-15	Sunny	Moderate	14:36	Middle	3.8	16.8 16.8	16.8	7.5 7.5	7.5	32.7 32.7	32.7	56.1 55.7	55.9	4.5 4.4	4.5	1.5 1.4	1.5	6 6	6.0

Remarks: **Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher.

Water Quality Monitoring Results at WSD10 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Н	Salin	ity ppt	DO Satu	ration (%)	Dissolved O	xygen (mg/L)	Turbidi	ty(NTU)	Suspended	Solids (mg/L)
Date	Condition	Condition**	Time	Бері	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
2-Jan-15	Sunny	Moderate	10:36	Middle	4.1	17.4 17.4	17.4	7.5 7.5	7.5	31.4 31.4	31.4	91.0 91.4	91.2	7.2 7.3	7.3	1.9 1.7	1.8	9 8	8.5
5-Jan-15	Sunny	Moderate	13:44	Middle	3.6	17.3 17.3	17.3	7.4 7.4	7.4	25.6 28.7	27.2	89.7 86.6	88.2	7.3 7.0	7.2	3.3 3.1	3.2	4	4.0
7-Jan-15	Sunny	Moderate	14:02	Middle	4.2	31.1 31.1	31.1	7.5 7.5	7.5	26.0 28.6	27.3	93.2 93.1	93.2	6.0 5.9	6.0	2.5 2.5	2.5	6 7	6.5
9-Jan-15	Sunny	Moderate	15:41	Middle	4.1	17.6 17.6	17.6	7.6 7.6	7.6	31.4 31.6	31.5	74.5 74.3	74.4	5.9 5.9	5.9	5.5 5.1	5.3	4 4	4.0
12-Jan-15	Rainy	Moderate	17:30	Middle	4	17.4 17.4	17.4	7.7 7.7	7.7	31.8 31.8	31.8	93.7 93.4	93.6	7.4 7.4	7.4	4.0 4.1	4.1	6 6	6.0
14-Jan-15	Cloudy	Moderate	19:50	Middle	4.2	17.0 17.0	17.0	7.7 7.7	7.7	32.9 32.6	32.8	96.3 96.8	96.6	7.6 7.7	7.7	1.2 1.2	1.2	7 7	7.0
16-Jan-15	Cloudy	Moderate	09:40	Middle	3.8	16.4 16.4	16.4	8.1 8.1	8.1	32.5 32.1	32.3	69.9 70.4	70.2	5.6 5.7	5.7	4.3 5.3	4.8	6 6	6.0
19-Jan-15	Sunny	Moderate	11:43	Middle	3.7	15.5 15.5	15.5	7.7 7.7	7.7	29.9 33.4	31.7	88.8 87.6	88.2	6.4 6.2	6.3	3.2 3.2	3.2	5 6	5.5
21-Jan-15	Sunny	Moderate	14:31	Middle	4.2	17.9 17.8	17.9	8.2 8.2	8.2	32.7 32.8	32.8	78.0 79.1	78.6	6.1 6.2	6.2	3.2 3.6	3.4	3 3	3.0
23-Jan-15	Sunny	Moderate	14:46	Middle	3.9	23.4 23.3	23.4	8.0 8.0	8.0	27.8 27.8	27.8	71.7 71.9	71.8	5.2 5.2	5.2	3.4 3.6	3.5	9 10	9.5
26-Jan-15	Sunny	Moderate	17:03	Middle	4.2	17.4 17.4	17.4	8.1 8.2	8.2	32.2 32.4	32.3	77.3 76.9	77.1	6.1 6.1	6.1	2.9 3.0	3.0	8 8	8.0
28-Jan-15	Fine	Moderate	21:12	Middle	4.2	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	74.1 76.1	75.1	6.0 6.2	6.1	1.9 2.0	2.0	8 8	8.0
30-Jan-15	Sunny	Moderate	09:07	Middle	3.9	16.8 16.8	16.8	7.5 7.5	7.5	32.7 32.7	32.7	52.5 53.7	53.1	4.2 4.3	4.3	1.6 1.8	1.7	8 8	8.0

Water Quality Monitoring Results at WSD10 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dont	th (m)	Tempera	ature (°C)		рН	Salir	ity ppt	DO Satu	ıration (%)	Dissolved O	xygen (mg/L)	Turbidi	ty(NTU)	Suspended	Solids (mg/L)
Date	Condition	Condition**	Time	Бері	ui (iii <i>)</i>	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Ave	erage
2-Jan-15	Sunny	Moderate	15:34	Middle	4.1	17.4 17.4	17.4	7.6 7.6	7.6	31.1 31.1	31.1	87.2 87.0	87.1	6.9 6.9	6.9	2.6 2.9	2.8	8 8	8.0
5-Jan-15	Sunny	Moderate	16:50	Middle	3.9	17.3 17.3	17.3	7.3 7.3	7.3	28.7 28.8	28.8	83.9 83.4	83.7	6.8 6.8	6.8	3.4 3.2	3.3	4 4	4.0
7-Jan-15	Sunny	Moderate	09:49	Middle	4	31.1 31.1	31.1	7.5 7.5	7.5	26.2 26.3	26.3	96.9 96.9	96.9	6.2 6.2	6.2	1.8 1.8	1.8	3	3.0
9-Jan-15	Sunny	Moderate	09:51	Middle	3.7	17.6 17.6	17.6	7.6 7.6	7.6	30.4 30.3	30.4	63.3 63.3	63.3	5.0 5.0	5.0	4.3 5.0	4.7	6 6	6.0
12-Jan-15	Rainy	Moderate	11:26	Middle	4	17.4 17.4	17.4	7.7 7.7	7.7	31.1 31.0	31.1	93.2 93.4	93.3	7.4 7.4	7.4	4.6 4.1	4.4	7 7	7.0
14-Jan-15	Cloudy	Moderate	14:09	Middle	4.3	17.0 17.0	17.0	7.7 7.7	7.7	32.7 32.8	32.8	96.5 96.5	96.5	7.7 7.7	7.7	1.5 1.5	1.5	7 7	7.0
16-Jan-15	Cloudy	Moderate	15:28	Middle	4	15.9 16.1	16.0	8.1 8.1	8.1	33.1 33.3	33.2	71.2 74.4	72.8	5.8 6.0	5.9	5.3 5.9	5.6	9	9.0
19-Jan-15	Sunny	Moderate	15:57	Middle	3.8	15.5 15.5	15.5	7.7 7.7	7.7	33.5 33.6	33.6	84.9 84.3	84.6	6.0 5.9	6.0	3.3 3.3	3.3	4 4	4.0
21-Jan-15	Fine	Moderate	17:56	Middle	4.3	16.7 16.7	16.7	8.2 8.2	8.2	30.2 30.1	30.2	92.1 90.0	91.1	7.5 7.3	7.4	3.9 4.2	4.1	7 6	6.5
23-Jan-15	Sunny	Moderate	09:11	Middle	3.7	16.7 16.7	16.7	7.9 8.0	8.0	27.8 27.7	27.8	61.4 61.6	61.5	5.1 5.1	5.1	4.0 4.1	4.1	10 9	9.5
26-Jan-15	Sunny	Moderate	11:49	Middle	4	17.0 16.9	17.0	8.2 8.2	8.2	33.5 33.5	33.5	83.3 82.7	83.0	6.6 6.5	6.6	3.4 3.3	3.4	4 5	4.5
28-Jan-15	Fine	Moderate	12:30	Middle	4.3	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	77.7 74.5	76.1	6.3 6.0	6.2	1.8 1.7	1.8	8 8	8.0
30-Jan-15	Sunny	Moderate	15:07	Middle	4.2	16.8 16.8	16.8	7.5 7.5	7.5	32.7 32.7	32.7	52.9 52.9	52.9	4.2 4.2	4.2	2.3 2.3	2.3	3 4	3.5

 $Remarks: {}^{\star\star}Calm: Small \ or \ no \ wave; \ Moderate: \ Between \ calm \ and \ rough; \ Rough: \ White \ capped \ or \ rougher.$

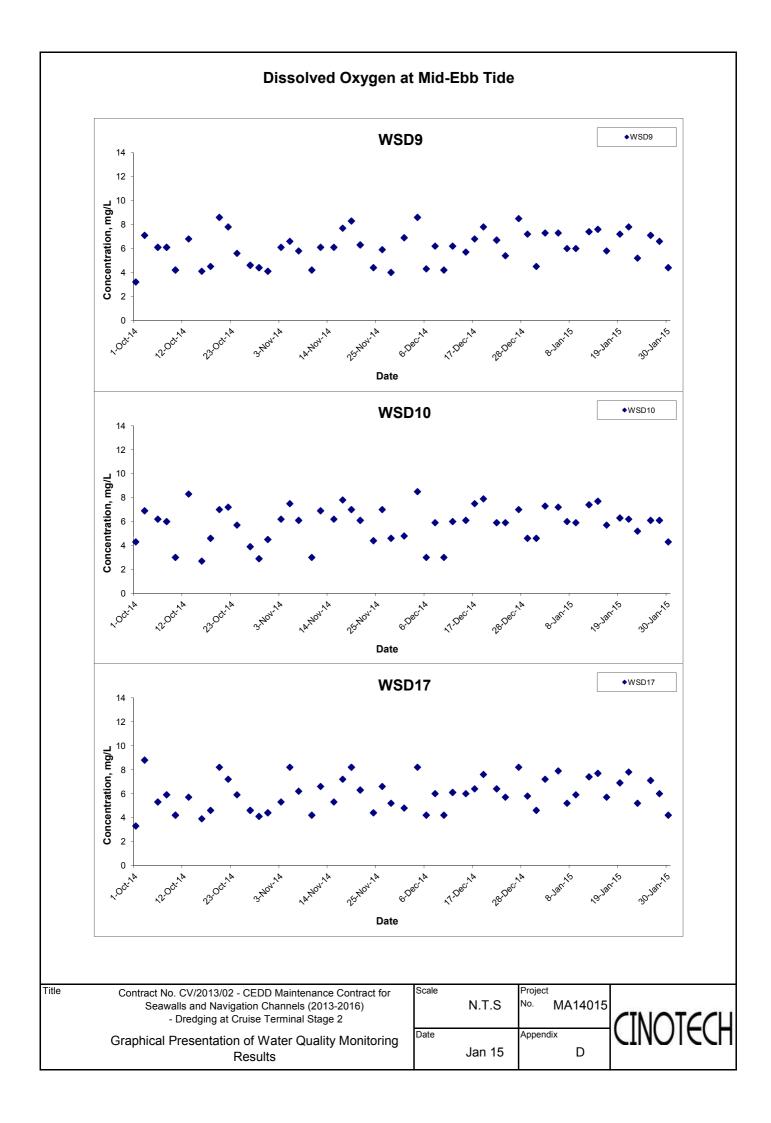
Water Quality Monitoring Results at WSD17 - Mid-Ebb Tide

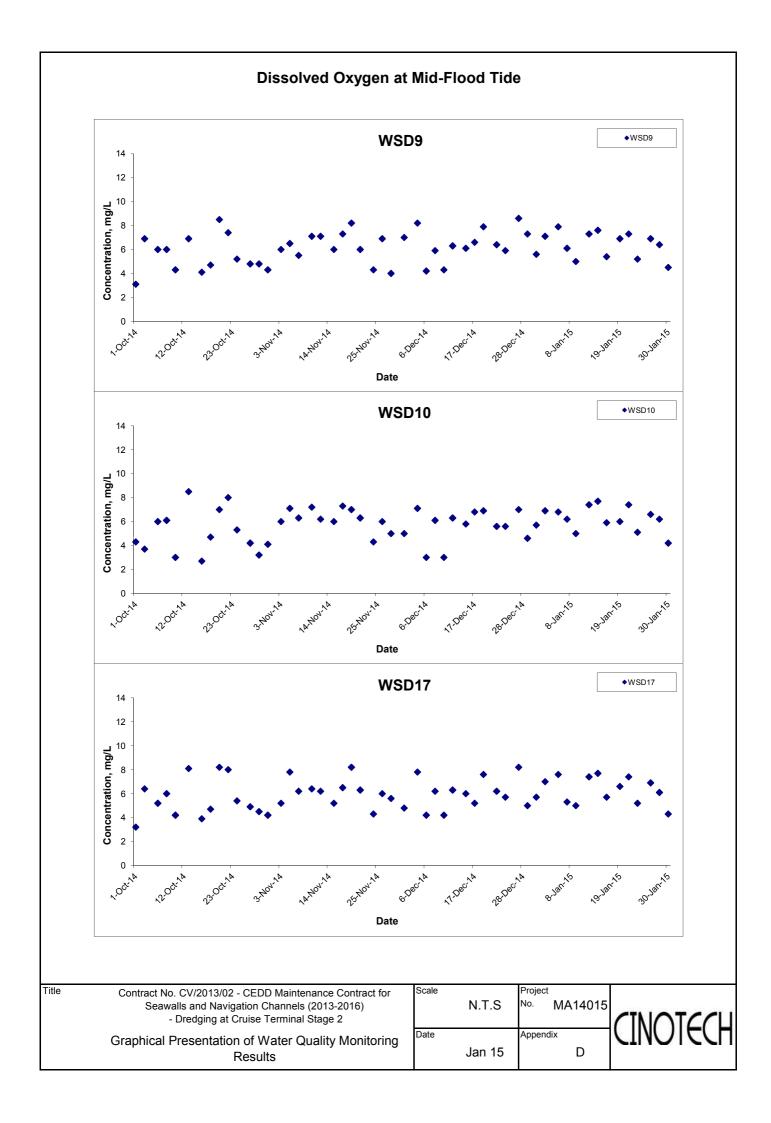
Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Н	Salin	ity ppt	DO Satu	ration (%)	Dissolved O	xygen (mg/L)	Turbidi	ty(NTU)	Suspended	Solids (mg/L)
Date	Condition	Condition**	Time	Бері	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
2-Jan-15	Sunny	Moderate	10:17	Middle	6.3	17.4 17.4	17.4	7.2 7.2	7.2	31.4 31.5	31.5	90.6 91.1	90.9	7.2 7.2	7.2	1.1 1.1	1.1	7 7	7.0
5-Jan-15	Sunny	Moderate	13:30	Middle	6.1	17.6 17.6	17.6	7.5 7.5	7.5	28.1 28.2	28.2	96.8 96.7	96.8	7.9 7.9	7.9	2.7 2.5	2.6	6 5	5.5
7-Jan-15	Sunny	Moderate	14:51	Middle	6.1	31.0 31.0	31.0	7.5 7.5	7.5	24.9 25.2	25.1	80.6 80.2	80.4	5.2 5.2	5.2	1.3 1.2	1.3	5 4	4.5
9-Jan-15	Sunny	Moderate	15:53	Middle	6.1	17.6 17.6	17.6	7.6 7.6	7.6	31.8 31.8	31.8	75.4 75.1	75.3	5.9 5.9	5.9	5.4 5.3	5.4	13 12	12.5
12-Jan-15	Rainy	Moderate	17:18	Middle	6.1	17.4 17.4	17.4	7.8 7.7	7.8	32.0 32.0	32.0	94.0 94.1	94.1	7.4 7.4	7.4	4.6 4.5	4.6	6 6	6.0
14-Jan-15	Cloudy	Moderate	19:42	Middle	6.1	17.0 17.0	17.0	7.8 7.8	7.8	32.6 32.5	32.6	96.7 96.0	96.4	7.7 7.6	7.7	1.1 1.2	1.2	4 5	4.5
16-Jan-15	Cloudy	Moderate	09:53	Middle	6.1	16.1 16.1	16.1	8.0 7.9	8.0	33.1 33.1	33.1	70.8 71.3	71.1	5.7 5.7	5.7	5.8 5.7	5.8	6 5	5.5
19-Jan-15	Sunny	Moderate	11:36	Middle	6.1	15.8 15.8	15.8	7.6 7.5	7.6	32.8 32.9	32.9	98.4 98.1	98.3	6.9 6.9	6.9	2.8 2.5	2.7	4	4.0
21-Jan-15	Sunny	Moderate	14:13	Middle	6.1	17.0 16.9	17.0	8.1 8.1	8.1	29.2 29.4	29.3	96.5 95.7	96.1	7.8 7.8	7.8	3.2 3.1	3.2	8 7	7.5
23-Jan-15	Sunny	Moderate	14:33	Middle	6.3	16.8 16.8	16.8	8.0 8.0	8.0	27.5 27.5	27.5	62.7 62.9	62.8	5.2 5.2	5.2	2.9 3.0	3.0	10 10	10.0
26-Jan-15	Sunny	Moderate	16:54	Middle	5.9	17.1 17.4	17.3	7.9 8.0	8.0	32.2 31.9	32.1	88.8 88.9	88.9	7.1 7.0	7.1	2.2 2.3	2.3	6 7	6.5
28-Jan-15	Fine	Moderate	21:29	Middle	5.8	16.7 16.7	16.7	8.2 8.2	8.2	30.6 27.3	29.0	73.6 72.1	72.9	6.0 5.9	6.0	1.7 1.7	1.7	10 10	10.0
30-Jan-15	Sunny	Moderate	08:53	Middle	6.1	16.8 16.8	16.8	7.5 7.5	7.5	32.7 32.7	32.7	52.5 53.0	52.8	4.2 4.2	4.2	1.2 1.1	1.2	11 11	11.0

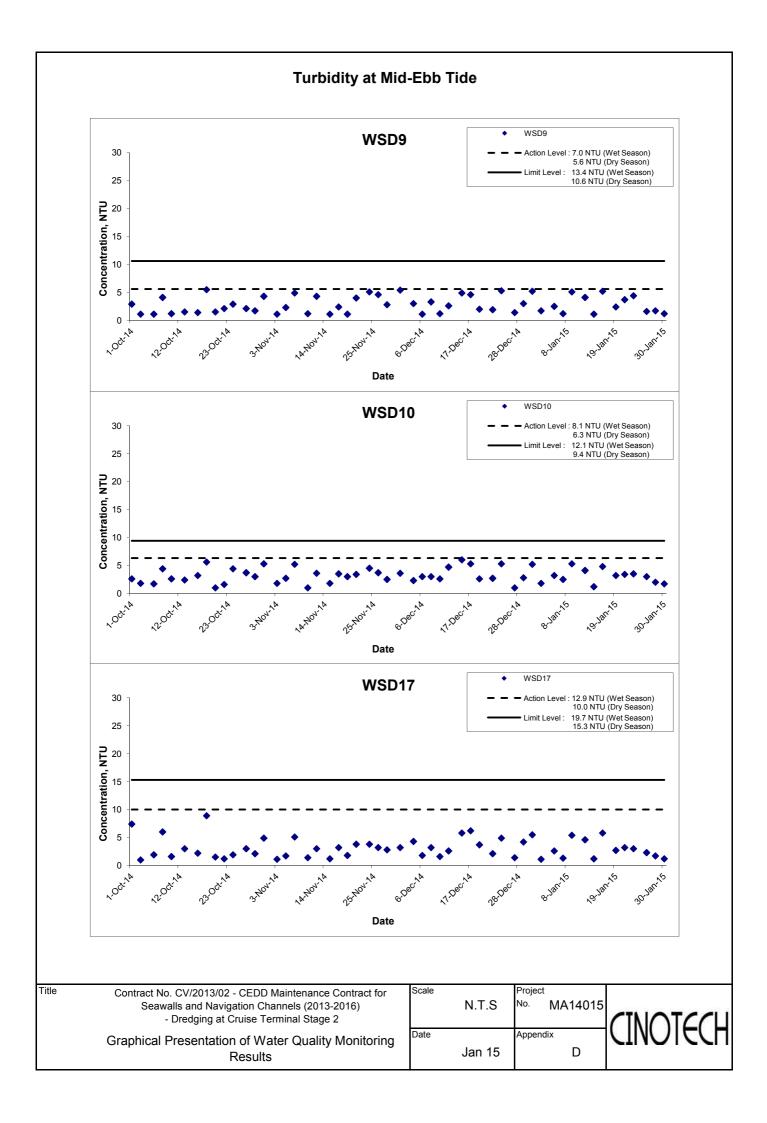
Water Quality Monitoring Results at WSD17 - Mid-Flood Tide

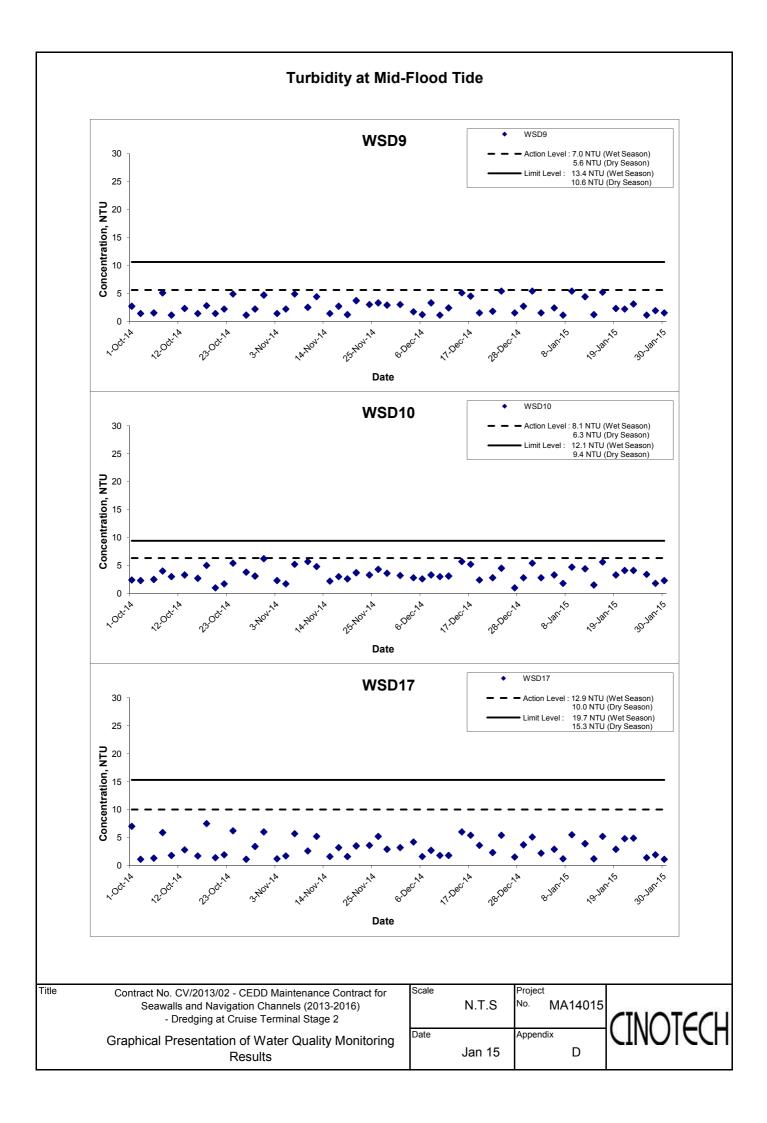
Date	Weather	Sea	Sampling	Dont	th (m)	Tempera	ature (°C)		рН	Salir	ity ppt	DO Satu	ıration (%)	Dissolved O	xygen (mg/L)	Turbid	ity(NTU)	Suspended	Solids (mg/L)
Date	Condition	Condition**	Time	Бері	(111)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Ave	erage
2-Jan-15	Sunny	Moderate	15:14	Middle	6.2	17.5 17.4	17.5	7.3 7.3	7.3	31.1 31.1	31.1	87.9 87.8	87.9	7.0 7.0	7.0	2.2 2.1	2.2	8 9	8.5
5-Jan-15	Sunny	Moderate	16:43	Middle	6.3	17.4 17.4	17.4	7.4 7.4	7.4	25.3 28.4	26.9	94.5 91.0	92.8	7.7 7.4	7.6	3.0 2.7	2.9	4 4	4.0
7-Jan-15	Sunny	Moderate	09:38	Middle	6.2	30.8 30.8	30.8	7.5 7.5	7.5	25.8 26.0	25.9	81.3 81.1	81.2	5.3 5.2	5.3	1.2 1.2	1.2	3 3	3.0
9-Jan-15	Sunny	Moderate	10:01	Middle	6.1	17.6 17.6	17.6	7.6 7.6	7.6	30.4 30.4	30.4	62.7 63.1	62.9	5.0 5.0	5.0	5.7 5.2	5.5	5 5	5.0
12-Jan-15	Rainy	Moderate	11:16	Middle	6.1	17.4 17.4	17.4	7.7 7.7	7.7	31.0 31.0	31.0	92.6 92.9	92.8	7.4 7.4	7.4	3.7 4.0	3.9	6 6	6.0
14-Jan-15	Cloudy	Moderate	14:02	Middle	6.2	17.0 17.0	17.0	7.8 7.9	7.9	33.1 32.6	32.9	95.7 96.4	96.1	7.6 7.7	7.7	1.2 1.1	1.2	7 7	7.0
16-Jan-15	Cloudy	Moderate	15:45	Middle	5.7	16.2 16.4	16.3	7.9 8.0	8.0	33.2 33.3	33.3	74.6 68.0	71.3	6.0 5.4	5.7	5.2 5.2	5.2	8 9	8.5
19-Jan-15	Sunny	Moderate	15:50	Middle	6.4	15.7 15.7	15.7	7.6 7.6	7.6	29.6 33.2	31.4	93.7 92.3	93.0	6.7 6.5	6.6	3.1 2.7	2.9	5 4	4.5
21-Jan-15	Fine	Moderate	17:19	Middle	6.2	16.7 16.9	16.8	8.1 8.1	8.1	29.1 28.7	28.9	87.1 94.3	90.7	7.1 7.7	7.4	4.5 5.1	4.8	4 5	4.5
23-Jan-15	Sunny	Moderate	08:59	Middle	6.1	16.7 16.7	16.7	8.1 8.0	8.1	28.1 28.1	28.1	63.2 62.9	63.1	5.2 5.2	5.2	4.9 4.8	4.9	7 7	7.0
26-Jan-15	Sunny	Moderate	11:40	Middle	5.9	16.8 17.0	16.9	8.0 8.0	8.0	33.7 33.6	33.7	87.2 87.0	87.1	6.9 6.9	6.9	1.4 1.4	1.4	6 5	5.5
28-Jan-15	Fine	Moderate	12:44	Middle	6.1	16.7 16.7	16.7	8.2 8.2	8.2	30.6 30.6	30.6	73.4 76.2	74.8	5.9 6.2	6.1	1.9 1.8	1.9	8 8	8.0
30-Jan-15	Sunny	Moderate	14:53	Middle	6.1	16.8 16.8	16.8	7.5 7.5	7.5	32.7 32.7	32.7	54.9 52.3	53.6	4.4 4.2	4.3	1.1 1.1	1.1	12 12	12.0

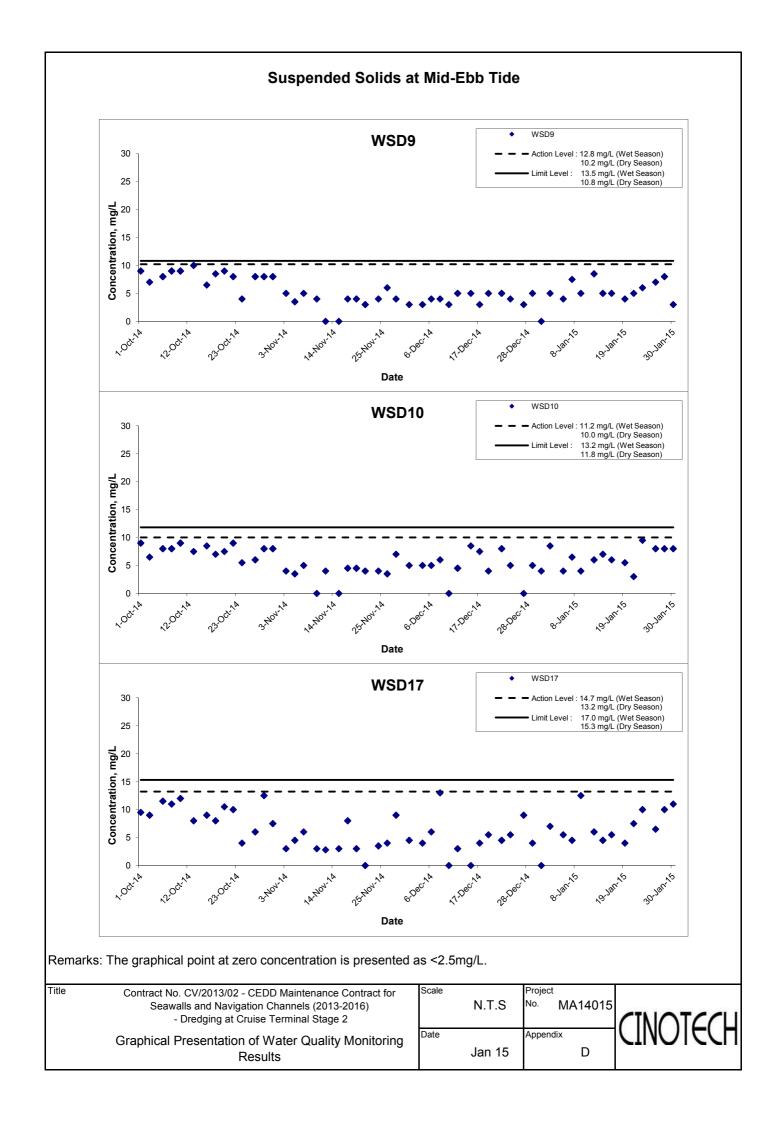
Remarks: **Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher.

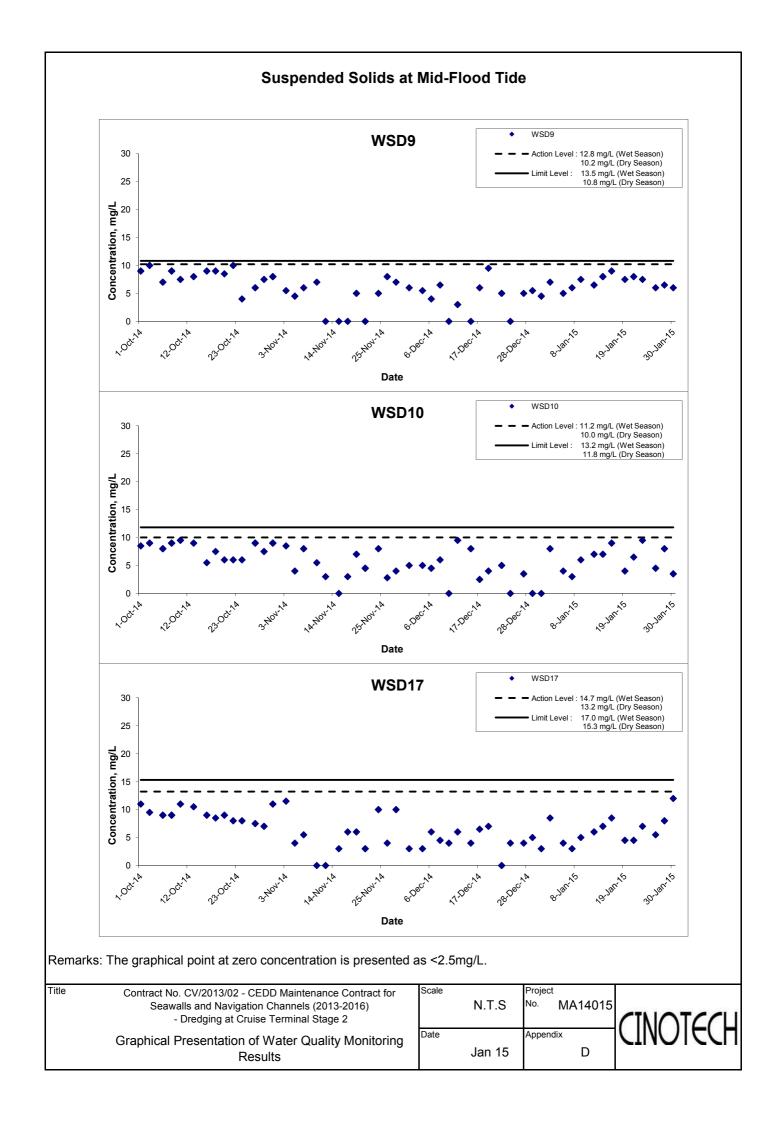












APPENDIX E EVENT ACTION PLANS

Event	ET	IEC	ER	Contractor
Action level being exceeded by one sampling day	 Repeat <i>in situ</i> measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods. Discuss mitigation measures with IEC and Contractor; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next day of exceedance. 	 Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified) 	 Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. (The above actions should be taken within 1 working day after the exceedance is identified) 	 Inform ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Review the working methods and consider additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; Discuss with ET and IEC and proposed mitigation measures to IEC and ER; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Action level being exceeded by more than one	 Identify source(s) of impact; Inform IEC and Contractor; 	Discuss with ET and Contractor on the mitigation measures;	Discuss with IEC on the proposed mitigation measures;	Inform ER and confirm notification of the non-compliance in writing;

Event		ET		IEC		ER		Contractor
consecutive sampling days	3.4.5.6.7.8.	Check monitoring data, all plant, equipment and Contractor's working methods. Discuss mitigation measures with IEC and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next day of exceedance.	3.	Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	 3. 4. 	Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	 3. 4. 5. 7. 	Rectify unacceptable practice; Check all plant and equipment; Review the working methods and consider additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; Discuss with ET and IEC and proposed mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Limit level being exceeded by one sampling day	 1. 2. 3. 4. 	Repeat <i>in situ</i> measurement to confirm findings; Identify source(s) of impact; Inform IEC, Contractor and EPD; Check monitoring data, all plant,	 2. 	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and	 2. 	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the	 2. 3. 	Inform ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment;

Event	ET	IEC	ER	Contractor
	5. Discuss mitigation measures with IEC, ER and Contractor;	 advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified) 	working methods; 3. Make agreement on the mitigation measures to be implemented. 4. Assess the effectiveness of the implemented mitigation measures. 5. (The above actions should be taken within 1 working day after the exceedance is identified)	 Review the working methods and consider additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; Discuss with ET and IEC and ER and proposed mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Limit level being exceeded by more than one consecutive sampling days	 Identify source(s) of impact; Inform IEC, Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's 	 Discuss with ET and Contractor on the mitigation measures; Review proposals on 	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to	Inform ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice;
	working methods. 4. Discuss mitigation measures with IEC, ER and Contractor;	mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of	critically review the working methods; 3. Make agreement on the mitigation measures to be	3. Check all plant and equipment;4. Review the working methods and consider additional measures such as use of

Event	ET	IEC	ER	Contractor
	 5. Ensure mitigation measures are implemented; 6. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days. 7. (The above actions should be taken within 1 working day after the exceedance is identified) 	the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified)	 implemented. 4. Assess the effectiveness of the implemented mitigation measures. 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. 6. (The above actions should be taken within 1 working day after the exceedance is identified) 	frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; 5. Discuss with ET and IEC and ER and proposed mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures. 7. As directed by the Engineer, to slow down or to stop all or part of construction activities. 8. (The above actions should be taken within 1 working day after the exceedance is identified)

APPENDIX F SUMMARY OF EXCEEDANCE

Appendix F - Exceedance Report

Exceedance Report for Water Quality

Environmental Monitoring	Parameter	No. of Ex	f Exceedance related Dredging of this n Limit Action	ceedance I to the Activities Project	
		Action Level	_		Limit Level
Water Quality	Turbidity	0	0	0	0
water Quality	Suspended Solids (SS)	0	0	0	0

APPENDIX G SITE AUDIT SUMMARY

CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016)

Dredging at Cruise Terminal Stage 2

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	150102	
Date	2 January 2015 (Friday)	
Time	14:30 - 15:15	

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	No environmental deficiency was identified during site inspection.	
	B. Air Quality No environmental deficiency was identified during site inspection.	
	C. Noise No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management No environmental deficiency was identified during site inspection.	
	E. Cultural Heritage Measures No environmental deficiency was identified during site inspection.	
	F. Permits/Licences No environmental deficiency was identified during site inspection.	
	 G. Others Follow-up on previous site audit session (Ref. No. 141224), no major environmental deficiency was identified. 	

	Name	Signature	Date
Recorded by	KC Chung	Climy	2 January 2015
Checked by	Dr. Priscilla Choy	WI	2 January 2015

CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016)

Dredging at Cruise Terminal Stage 2

Weekly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	150109
Date	9 January 2015 (Friday)
Time	14:30 - 15:00

Ref. No.	Non-Compliance	Related Item No.
_	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	No environmental deficiency was identified during site inspection.	
	B. Air Quality	
	No environmental deficiency was identified during site inspection.	
	C. Noise	
,	No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management	
	No environmental deficiency was identified during site inspection.	
	E. Cultural Heritage Measures	
	No environmental deficiency was identified during site inspection.	
	F. Permits/Licences	
	No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150102), no major environmental deficiency was identified.	

	Name	Signature	Date
Recorded by	KC Chung	Elm	9 January 2015
Checked by	Dr. Priscilla Choy	wI	9 January 2015

Contract No. CV/2013/02

CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016)

Dredging at Cruise Terminal Stage 2

Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	150115	
Date	15 January 2015 (Thursday)	
Time	14:30 - 15:30	

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	No environmental deficiency was identified during site inspection.	
	B. Air Quality No environmental deficiency was identified during site inspection.	
	C. Noise No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management No environmental deficiency was identified during site inspection.	
	E. Cultural Heritage Measures No environmental deficiency was identified during site inspection.	
	F. Permits/Licences No environmental deficiency was identified during site inspection.	
	 G. Others Follow-up on previous site audit session (Ref. No. 150109), no major environmental deficiency was identified. 	

	Name	Signature	Date
Recorded by	KC Chung	Chung	15 January 2015
Checked by	Dr. Priscilla Choy	INFA	15 January 2015

CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016)

Dredging at Cruise Terminal Stage 2

Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	150123
Date	23 January 2015 (Friday)
Time	10:00 - 10:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	No environmental deficiency was identified during site inspection.	
	B. Air Quality	
	No environmental deficiency was identified during site inspection.	
	C. Noise	
	No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management	
	No environmental deficiency was identified during site inspection.	
	E. Cultural Heritage Measures	
	No environmental deficiency was identified during site inspection.	
	F. Permits/Licences	
	No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150115), no major environmental deficiency was identified.	

	Name	Signature	Date
Recorded by	KC Chung	Chur	23 January 2015
Checked by	Dr. Priscilla Choy	WIT	23 January 2015

CEDD Maintenance Contract for Seawalls and Navigation Channels (2013-2016)

Dredging at Cruise Terminal Stage 2

Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	150130
Date	30 January 2015 (Friday)
Time	15:00 - 15:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	No environmental deficiency was identified during site inspection.	
	B. Air Quality No environmental deficiency was identified during site inspection.	
	C. Noise	
	No environmental deficiency was identified during site inspection.	
	D. Waste/Chemical Management	
	No environmental deficiency was identified during site inspection.	
	E. Cultural Heritage Measures	
	No environmental deficiency was identified during site inspection.	
	F. Permits/Licences	
	No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 150123), no major environmental deficiency was identified.	

	Name	Signature	Date
Recorded by	KC Chung	Chury	30 January 2015
Checked by	Dr. Priscilla Choy	WI	30 January 2015

APPENDIX H UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
					Status
Air Qual	ity				
S3.6	Requirements of the Air Pollution Control (Construction Dust) Regulation	Contractor for capital	Work site/ during dredging in the	Construction stage	
	shall be adhered to during the construction period.	dredging	construction stage and maintenance		N/A
			dredging during operation stage		
S3.6	In order to minimize the potential odour emissions, if any, the dredged	Contractor for capital and	Work site/ during dredging in the	Construction stage and	
	sediment placed on barge should be properly covered as far as	maintenance dredging	construction stage and maintenance	Operation stage	N/A
	practicable to minimize the exposed area and hence the potential odour		dredging during operation stage		
	emissions during the transportation of the dredged sediment.				
Construc	ction Noise (Air borne)				
S4.8	Good Site Practices:	Contractor for capital and	Work site/ during dredging in the	Construction stage and	
	Only well-maintained plant should be operated on-site and plant	maintenance dredging	construction stage and maintenance	Operation stage	N/A
	should be serviced regularly during the construction program.		dredging during operation stage		
	Mobile plant, if any, should be sited as far away from NSRs as				N/A
	possible.				
	Machines and plant (such as trucks) that may be in intermittent				
	use should be shut down between works periods or should be				N/A
	throttled down to a minimum.				
	Plant known to emit noise strongly in one direction should,				N/A
	wherever possible, be orientated so that the noise is directed away				
	from the nearby NSRs.				N/A
	Material stockpiles and other structures should effectively utilized,				
	wherever practicable, in screening noise from on-site construction				N/A
	activities.				
S4.9	If there is any planned NSRs within 300 m from the work area occupied	Developer of cruise	Representative NSRs at the former	Construction	N/A
	during the dredging period, an EM&A programme is recommended to be	terminal	Kai Tak Airport runway/ Prior and	Stage and Operation stage	

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
					Status
	established according to the predicted occurrence of noisy activities. All		during the capital and maintenance		
	the recommended mitigation measures for daytime normal working		dredging		
	activities should be incorporated into the EM&A programme for				
	implementation during dredging.				
Water Qu	ıality				
S5.9	Dredging will be carried out by closed grab dredger to minimize	Contractor for capital and	Work site/ during dredging in the	Construction	N/A
	release of sediment and other contaminants during both capital	maintenance dredging	construction stage and maintenance	Stage and Operation stage	
	and maintenance dredging.		dredging during operation stage		
	The maximum production rate for dredging from the seabed to				N/A
	provide necessary manoeuvering area would not be more than				
	4,000m³ per day (and no more than 2 closed grab dredgers)				
	during capital dredging and 2,000m³ per day maintenance				
	dredging.				
	The maximum production rate for dredging at or near the seawall				N/A
	area would not be more than 4,000m³ per day for berth				
	construction. No more than two closed grab dredger would be				
	operated at the same time at or near the seawall for berth				
	construction.				
S5.9	Silt curtains should be deployed around the closed grab dredgers used	Contractor for capital	Work site/ during dredging in the	Construction	N/A
	for dredging at and near the existing seawall of the former Kai Tak runway	dredging	construction stage	stage	
	for construction of the cruise berth structures.				
S5.9	Silt screens should be installed at the WSD flushing water intakes at Cha	Contractor for capital	Seawater intakes in Victoria	Construction	N/A
	Kwo Ling, Sai Wan Ho, Quarry Bay, Sheung Wan, Wan Chai and Tai Wan	dredging	Harbour/ During the construction of	stage	
	for dredging in the manoeuvring basin of the first berth during the capital		cruise terminal		
	dredging				

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
					Status
S5.9	Silt screens should be installed at the WSD flushing water intakes at Cha	Contractor for capital	Seawater intakes in Victoria	Construction stage	N/A
	Kwo Ling, Quarry Bay, and Tai Wan for dredging in the manoeuvring	dredging	Harbour/ During the construction of		
	basin of the second berth during the capital dredging.		cruise terminal		
S5.9	If the opening has been introduced at the northern runway, silt screen	CEDD	Seawater intake at Sai Wan Ho,	Construction stage	N/A
	should also be installed at the WSD flushing water intake at Sai Wan Ho,		Sheung Wan and Wan Chai/ During		
	Sheung Wan and Wan Chai for dredging in the manoeuvring basin of the		the construction of cruise terminal		
	second berth during the capital dredging.				
S5.9	Other good site practices that should undertaken during dredging include:	Contractor for capital and	Work site and adjacent waters/	Construction stage and	
	All vessels should be sized so that adequate clearance is	maintenance dredging	during dredging in the construction	Operation stage	N/A
	maintained between vessels and the seabed in all tide conditions,		stage and maintenance dredging		
	to ensure that undue turbidity is not generated by turbulence from		during operation stage		
	vessel movement or propeller wash;				
	All barges / dredgers should be fitted with tight fitting seals to their				N/A
	bottom openings to prevent leakage of material;				
	Construction activities should not cause foam, oil, grease, scum,				N/A
	litter or other objectionable matter to be present on the water				
	within the site or dumping grounds;				
	Barges or hoppers should not be filled to a level that will cause the				N/A
	overflow of materials or polluted water during loading or				
	transportation.				
S5.9	Appropriate numbers or portable chemical toilets shall be provided by a	Contractor for capital and	Work site and adjacent waters/	Construction stage and	N/A
	licensed contractor to serve the construction workers over the	maintenance dredging	during dredging in the construction	Operation stage	
	construction site. The Contractor shall also be responsible for waste		stage and maintenance dredging		
	disposal and maintenance practices		during operation stage		
S5.9	Collection and removal of floating refuse should be performed at regular	Contractor for capital and	Work site and adjacent waters/	Construction stage and	N/A

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
					Status
	intervals on a daily basis. The Contractor should be responsible for	maintenance dredging	during dredging in the construction	Operation stage	
	keeping the water within the site boundary and the neighbouring water		stage and maintenance dredging		
	free from rubbish during the dredging works.		during operation stage		
S5.9	An environmental monitoring and audit programme should be	Developer of cruise	Selected water receiver points in	Construction stage and	N/A
	implemented to verify whether or not impact predictions are	terminal	Victoria Harbour/ Prior and during	Operation stage	
	representative, and to ensure that all the recommended mitigation		the construction of cruise terminal		
	measures are implemented properly. If the water quality monitoring data		and maintenance dredging		
	indicate that the proposed dredging works result in unacceptable water				
	quality impacts in the receiving water, appropriate actions should be				
	taken to review the dredging operation and additional measures such as				
	use of frame-type silt curtain, deployment of double silt curtains, slowing				
	down, or rescheduling or works should be implemented as necessary.				
S5.9	Silt screens are recommended to be deployed at six selected WSD	Contractor for capital	Selected water receiver points in	Construction stage	N/A
	flushing water intakes during the capital dredging. The Contractor for	dredging	Victoria Habour/ during dredging in		
	capital dredging shall demonstrate and ensure that the design of the silt		the constriction stage		
	screen will not affect the normal operation of flushing water intake. The				
	Contractor shall obtain consensus from all relevant parties, including				
	WSD and Marine Department on the design of the silt screen at each of				
	the six selected flushing water intake points before installation of the silt				
	screen and commencement of the proposed dredging works. As a				
	mitigation measure to avoid the pollutant and refuse entrapment				
	problems and to ensure that the impact monitoring results are				
	representative, regular maintenance of the silt screens and refuse				
	collection should be performed at the monitoring stations at regular				
	intervals on a daily basis. The Contractor should be responsible for				

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
					Status
	keeping the water behind the silt screen free from floating rubbish and				
	debris during the impact monitoring period.				
Waste M	anagement				
S6.7	Good Site Practices It is not anticipated that adverse waste management	Contractor for capital and	Work site/ during dredging in the	Construction	
	related impacts would arise, provided that good site practices are	maintenance dredging	construction stage and maintenance	stage and Operation stage	
	adhered to. Recommendations for good site practices during the		dredging during operation stage		
	dredging activities include:				
	Nomination of an approved person, such as a site manager, o be				N/A
	responsible for good site practices, arrangements for collection				
	and effective disposal to an appropriate facility, of all wastes				
	generated at the site.				
	Training of site personnel in proper waste management and				N/A
	chemical waste handling procedures.				
	Provision of sufficient waste disposal points and regular collection				N/A
	for disposal.				
	Appropriate measure to minimize windblown litter and dust during				N/A
	transportation of waste by either covering trucks or by transporting				
	wastes in enclosed containers.				
	A recording system for the amount of wastes generated, recycled				
	and disposed of (including the disposal sites).				N/A
	Segregation and storage of different types of waste in different				
	containers, skips or stockpiles to enhance reuse or recycling of				N/A
	materials and their proper disposal.				
	Encourage collection of aluminium cans, PET bottles and paper by				N/A
	providing separate labeled bins to enable these wastes to be				

Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
				Status
segregated from other general refuse generated by the work force.				
Any unused chemicals or those with remaining functional capacity				N/A
shall be recycled.				
Marine Sediments The dredged marine sediments would be loaded onto	Contractor for capital and	Work site/ during dredging in	Construction stage and	N/A
barges and transported to the designated disposal sites allocated by the	maintenance dredging	construction stage and maintenance	Operation stage	
MFC depending on their level of contamination. Sediment classified as		dredging during operation stage		
Category L would be suitable for Type 1 –Open Sea Disposal (Dedicated				
Sites) or Type 2 -Confined Marine Disposal and must be dredged and				
transported with great care in accordance with ETWB TCW No. 34/2002.				
Subject to the final allocation of the disposal sites by MFC, the dredged				
contaminated sediment must be effectively isolated from the environment				
upon final disposal and shall be disposed of at the East Sha Chau				
Contaminated Mud Pits that are designated for the disposal of				
contaminated mud in Hong Kong.				
It will be the responsibility of the Contractor to satisfy the appropriate	Contractor for capital and	Work site/ during dredging in the	Construction stage and	N/A
authorities that the contamination levels of the marine sediment to be	maintenance dredging	construction stage and maintenance	Operation stage	
dredged have been analysed and recorded. According to the ETWB TCW		dredging during operation stage		
No. 34/2002, this will involve the submission of a formal Sediment Quality				
Report to the DEP, prior to the dredging contract being tendered. The				
Contractor for the dredging works shall apply for the allocation of marine				
sediment disposal sites from all relevant authorities.				
During transportation and disposal of the dredged marine sediments	Contractor for capital and	Work site/ during dredging in the	Construction stage and	
requiring Type 1 and Type 2 disposal, the following measures shall be	maintenance dredging	construction stage and maintenance	Operation stage	
taken to minimize potential impacts on water quality:		dredging during operation stage		
Bottom opening of barges shall be fitted with tight fitting seals to				
	segregated from other general refuse generated by the work force. Any unused chemicals or those with remaining functional capacity shall be recycled. Marine Sediments The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 –Open Sea Disposal (Dedicated Sites) or Type 2 –Confined Marine Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the East Sha Chau Contaminated Mud Pits that are designated for the disposal of contaminated mud in Hong Kong. It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The Contractor for the dredging works shall apply for the allocation of marine sediment disposal sites from all relevant authorities. During transportation and disposal of the dredged marine sediments requiring Type 1 and Type 2 disposal, the following measures shall be taken to minimize potential impacts on water quality:	segregated from other general refuse generated by the work force. Any unused chemicals or those with remaining functional capacity shall be recycled. Marine Sediments The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 –Open Sea Disposal (Dedicated Sites) or Type 2 –Confined Marine Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the East Sha Chau Contaminated Mud Pits that are designated for the disposal of contaminated mud in Hong Kong. It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The Contractor for tapital and maintenance dredging works shall apply for the allocation of marine sediment disposal sites from all relevant authorities. During transportation and disposal of the dredged marine sediments requiring Type 1 and Type 2 disposal, the following measures shall be taken to minimize potential impacts on water quality:	segregated from other general refuse generated by the work force. Any unused chemicals or those with remaining functional capacity shall be recycled. Marine Sediments The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 —Open Sea Disposal (Dedicated Sites) or Type 2 —Confined Marine Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the East Sha Chau Contaminated Mud Pits that are designated for the disposal of contaminated mud in Hong Kong. It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The Contractor for the dredging works shall apply for the allocation of marine sediment disposal sites from all relevant authorities. During transportation and disposal of the dredged marine sediments requiring Type 1 and Type 2 disposal, the following measures shall be taken to minimize potential impacts on water quality: Contractor for capital and maintenance dredging during operation stage and maintenance dredging during operation stage and maintenance dredging operation stage and maintenance dredging potential impacts on water quality:	segregated from other general refuse generated by the work force. Any unused chemicals or those with remaining functional capacity shall be recycled. Marine Sediments The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 — Open Sea Disposal (Dedicated Sites) or Type 2—Confined Marine Disposal and must be dredged and construction stage and maintenance dredging during operation stage. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the East Sha Chau Contaminated Mud Pits that are designated for the disposal of contaminated mud in Hong Kong. It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The Contractor for the dredging works shall apply for the allocation of marine sediment disposal sites from all relevant authorities. Contractor for capital and maintenance dredging the proposal sites from all relevant authorities. Contractor for capital and maintenance dredging during operation stage and maintenance dredging in the construction stage and maintenance dredging or design during operation stage. Contractor for capital and maintenance dredging during operation stage. Contractor for capital and maintenance dredging during operation stage. Contractor for capital and maintenance dredging in the construction stage and maintenance dredging during operation stage.

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
					Status
	prevent leakage of material. Excess material shall be cleaned from				N/A
	the decks and exposed fittings or barges and hopper dredgers				
	before the vessel is moved.				
	Monitoring of the barge loading shall be conducted to ensure that				N/A
	loss of material does not take place during transportation.				
	Transport barges or vessels shall be equipped with automatic				
	self-monitoring devices as specified by the DEP.				
	Barges or hopper barges shall not be filled to a level that would				N/A
	cause the overflow of materials or sediment laden water during				
	loading or transportation.				
S6.7	Chemical wastes After use, chemical wastes (for example, cleaning	Contractor for capital and	Work site/ during dredging in the	Construction stage and	N/A
	fluids, solvents, lubrication oil and fuel) should be handles according to	maintenance dredging	construction stage and maintenance	Operation stage	
	the Code of Practice on the Packaging, Labelling and Storage of		dredging during operation stage		
	Chemical Wastes. Spent chemicals should be collected by a licensed				
	collector for disposal at the CWTF or other licensed facility in accordance				
	with the Waste Disposal (Chemical Waste) (General) Regulation.				
S6.7	General Refuse General refuse should be stored in enclosed bins or	Contractor for capital and	Work site/ during dredging in the	Construction stage and	N/A
	compaction units separate from C&D material. A reputable waste	maintenance dredging	construction stage and maintenance	Operation stage	
	collector should be employed by the Contractor to remove general refuse		dredging during operation stage		
	from the site, separately from C&D material. An enclosed and covered				
	area is preferred to reduce the occurrence of 'wind blown' light material.				
S6.7	Construction and Demolition Material It is recommended that the extend	Contractor for capital	Work site/ during the construction	Construction stage	
	of dredging of the existing seawall should be kept to a minimum in the	dredging	period		
	detailed design of the new cruise terminal to minimize generation of C&D				
	material. Mitigation measures and good site practices should be				

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
					Status
	incorporated in the contract document to control potential environmental				
	impact from handling and transportation of C&D material. The mitigation				
	measures include:				N/A
	Where it is unavoidable to have transient stockpiles of C&D				
	material with the Project work site pending collection for disposal,				
	the transient stockpiles shall be located away from waterfront or				
	storm drains as far as possible.				
	Open stockpiles of construction materials or construction wastes				N/A
	on-site should be covered with tarpaulin or similar fabric.				
	Skip hoist for material transport should be totally enclosed by				N/A
	impervious sheeting.				
	Every vehicle should be washed to remove any dusty materials				N/A
	from its body and wheels before leaving a construction site.				
	The area where vehicle washing takes place and the section of the				N/A
	road between the washing facilities and the exit point should be				
	paved with concrete, bituminous materials or hardcores.				
	The load of dusty materials carried by vehicle leaving a				
	construction site should be covered entirely by clean impervious				N/A
	sheeting to ensure dust materials do not leak from the vehicle.				
	All dusty materials should be sprayed with water prior to any				
	loading, unloading or transfer operation so as to maintain the				N/A
	dusty materials wet.				
	The height from which excavated materials are dropped should be				N/A
	controlled to a minimum practical height to limit fugitive dust				
	generation from unloading.				

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation
					Status
S6.7	When delivering inert C&D material to public fill reception facilities, the	Contractor and	Work site/ During the construction	Construction stage	N/A
	material shall consist entirely of inert construction waste and of size less	Independent	period		
	than 250mm or other sizes as agreed with the Secretary of the Public Fill	Environmental Checker			
	Committee. In order to monitor the disposal of the surplus C&D material				
	at the designed public fill reception facility and to control fly tipping, a				
	trip-ticket system should be included as one of the contractual				
	requirements and implemented by an Environmental Team undertaking				
	the Environmental Monitoring and Audit work. An Independent				
	Environmental Checker should be responsible for auditing the results of				
	the system.				
Cultural	Heritage				
S7.8	The dredging activities of the proposed cruise terminal should ensure that	Developer of cruise	Work site/ During the design and	Design stage and	N/A
	disturbance to the existing seawall masonry outside the Project boundary	terminal	construction of cruise terminal	Construction stage	
	should be avoided as far as practicable.				
7.10,	It is recommended that the dredged spoil should be monitored for the	Developer of cruise	Work site/ during dredging in the	During construction	N/A
Appendix	presence of archaeological material. Guidelines for the monitoring brief	terminal/ Contractor for	construction stage		
7.1	have been prepared in consultation with the AMO. A qualified marine	capital dredging			
	archaeologist needs to be on standby to provide specialist advice, if				
	required, but the monitoring can be carried out by a member of staff of				
	dredging barge.				

Remarks: ^ Compliance of mitigation measure

* Recommendation was made during site audit but improved/rectified by the contractor

N/A Not Applicable at this stage as no such site activities were conducted in the reporting month

APPENDIX I COMPLAINT LOG

Appendix I - Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
		-			