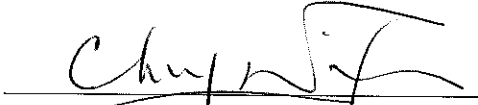


Zhen Hua Engineering Co., Ltd

Contract No. KL/2013/01

**Site Formation for Kai Tak Cruise Terminal
Development – Remaining Works**

**Final EM&A Report for Capital Dredging
(Version 1.0)**

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

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EXECUTIVE SUMMARY**Introduction**

1. This is the Final Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited to summarize the EM&A Works of the Capital Dredging (Stage 1 and Stage 2 Dredging) for Cruise Terminal at Kai Tak under the Environmental Permit (EP-328/2009/A), (Hereafter referred to as “the Project”).
2. The Capital Dredging (Stage 1 and Stage 2 Dredging) for Cruise Terminal at Kai Tak under the Environmental Permit (EP-328/2009/A) comprise the construction works of Contract No. KL/2009/01, Contract No. CV/2013/02 (Task Order No. MD/007/1302) and Contract No. KL/2013/01. The status of capital dredging works under Environmental Permit (EP-328/2009/A) are tabulated in the **Table I**.

Table I Summary Table of Capital Dredging Works under Environmental Permit (EP-328/2009/A)

Stage	Dredging Zone	Contract No.	Date of Commencement	Date of Completion
1 ⁽¹⁾	A & B	KL/2009/01	28 th June 2010	2 nd January 2014
2 ⁽²⁾	C(1) ⁽³⁾	CV/2013/02 (Task Order No. MD/007/1302)	20 th April 2014	31 st August 2014
2 ⁽²⁾	C(2) & C(3) ⁽³⁾	KL/2013/01	6 th May 2015	4 th December 2015

Remarks:

⁽¹⁾ Stage 1 Dredging Within Existing Seawall For Berth Construction & Stage 1 Dredging For Manoeuvre Basin For Phase I Berth under EP-328/2009A⁽²⁾ Stage 2 Dredging For Manoeuvre Basin For Phase II Berth under EP-328/2009A.⁽³⁾ Dredging Zone C, as indicated in the EIA Report, are divided into Dredging Zone C(1), C(2) and C(3).

3. The Proposal of Temporary Suspension of EM&A Programme of the Project was approved by EPD on 31st May 2016.
4. The major construction activities undertaken in the construction period were:
 - Contract No. KL/2009/01
 - Stage 1 Dredging within existing seawall for berth construction
 - Stage 1 Dredging for manoeuvre Basin for phase I berth dredging works
 - Contract No. CV/2013/02 (Task Order No. MD/007/1302)
 - Stage 2 Dredging for manoeuvre basin for phase II berth
 - Contract No. KL/2013/01
 - Remaining works of Stage 2 Dredging for manoeuvre basin for phase II berth

Environmental Monitoring Works

4. Environmental monitoring for the Project was performed in accordance with the Project Specific EM&A Manual and the monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event/Action Plans and environmental complaint handling procedures were also checked.
5. According to the Environmental Monitoring and Audit Manual (EM&A Manual) of the Project, the baseline and impact monitoring at the designated monitoring stations as required in Dredging Works for Proposed Cruise Terminal at Kai Tak – Environmental Impact Assessment (EIA) Report under EP (EP-328/2009/A), were conducted. The baseline and impact water quality monitoring periods are summarized in **Table II**.

Table II Summary Table for Baseline and Impact Water Quality Monitoring Periods

Activity	Dredging Stage	Contract No.	Monitoring Stations	Monitoring Period
Baseline Monitoring	-	KL/2009/01 ⁽¹⁾	WSD9 WSD10 WSD 15 WSD 17 WSD 19 WSD 21	21 February 2010 – 19 March 2010
Impact Monitoring	Stage 1	KL/2009/01 ⁽¹⁾	WSD 9 WSD10 WSD 15 WSD 17 WSD 19 WSD 21	28 June 2010 – 14 April 2014
	Stage 2	CV/2013/02 (Task Order No. MD/007/1302) ⁽²⁾	WSD9 WSD10 WSD17	15 April 2014 – 15 April 2015
	Stage 2	KL/2013/01 ⁽³⁾	WSD9 WSD10 WSD17	16 April 2015 – 30 May 2016

Remarks:

⁽¹⁾ Water quality monitoring works were conducted by the ET of Contract No. KL/2009/01 (Lam Environmental Service Limited)

⁽²⁾ Water quality monitoring works were conducted by the ET of Contract No. CV/2013/02 (Cinotech Consultants Limited)

⁽³⁾ Water quality monitoring works were conducted by the ET of Contract No. KL/2013/01 (Cinotech Consultants Limited)

6. The Proposal of Temporary Suspension of EM&A Programme of the Project was approved by EPD on 31st May 2016. Therefore, the EM&A programme of the Project including water quality monitoring and site audits were temporary suspended starting from 1st June 2016.
7. The implementation of the environmental mitigation measures and environmental complaint handling procedures were also checked.
8. Summary of the environmental exceedances recorded during the monitoring period is tabulated in **Table III**.

Table III Summary Table for Environmental Exceedance Recorded during the monitoring period

Contract No.	Dredging Stage	Parameter	No. of Exceedances	
			Action Level	Limit Level
KL/2009/01	Stage 1	Water Quality	183	162
CV/2013/02 (Task Order No. MD/007/1302)	Stage 2		0	0
KL/2013/01	Stage 2		0	0

Water Quality

9. Water quality monitoring was conducted in accordance with the EM&A Manual at designated monitoring stations.
10. A total of 40 Action level and 8 Limit Level exceedances of turbidity were recorded in the period between July 2010 to February 2014. A total of 143 Action level and 154 Limit Level exceedances of suspended solid (SS) were recorded in the period between July 2010 to February 2014.
11. No direct evidence demonstrated the exceedances of Action/Limit level for water monitoring parameters were caused by the Project during the construction period.

Complaints and Prosecutions

12. No project-related environmental complaint was received since the commencement of the Project.
13. No warning, summons and successful environmental prosecution was received since the commencement of the Project.
14. The summary of environmental complaint, warning, summons and successful environmental prosecution was shown in **Appendix F**.

Conclusion

15. The EM&A programme were found to be effective in monitoring impacts arising from the Project. The findings of the environmental monitoring program suggest that no adverse impacts on sensitive receivers at the designated monitoring locations were brought about by the Project.
16. In conclusion the Project was environmentally acceptable in terms of water quality.

1. INTRODUCTION

Background

- 1.1 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.
- 1.2 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.
- 1.3 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**.
- 1.4 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).
- 1.5 The Capital Dredging (Stage 1 and Stage 2 Dredging) for Cruise Terminal at Kai Tak under the Environmental Permit (EP-328/2009/A) comprise the construction works of Contract No. KL/2009/01, Contract No. CV/2013/02 (Task Order No. MD/007/1302) and Contract No. KL/2013/01.
- 1.6 Stage 1 dredging and removal and reconstruction of existing seawall were commenced and completed on 28th June 2010 and 2nd January 2014 respectively. Stage 2 dredging works were commenced on 20th April 2014 and also completed on 31st August 2014. The Remaining Works for Stage 2 dredging works were commenced on 6th May 2015 and completed on 4th December 2015.
- 1.7 This Final EM&A Summary Report was prepared by Cinotech to summarize the finding of all EM&A Works of the Capital Dredging for Cruise Terminal at Kai Tak under the Environmental Permit (EP-328/2009/A).

Project Organizations

- 1.8 Different parties with different levels of involvement in the Project organization include:
- Project Proponent – Civil Engineering and Development Department (CEDD)
 - Engineer’s Representative (ER) – AECOM Consulting Service Limited (AECOM)
 - Independent Environmental Checker (IEC) – Fugro (HK) Limited (Furgo)
 - Contract No. KL/2009/01
 - Contractor – Penta-Ocean Construction Co., Ltd (Penta-Ocean)
 - Environmental Team (ET) – Lam Environmental Services Limited (Lam)
 - Contract No. CV/2013/02 (Task Order No. MD/007/1302)
 - Contractor – China International Water & Electric Corp (CIWEC)
 - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
 - Contract No. KL/2013/01
 - Contractor – Zhen Hua Engineering Co., Ltd (ZHEC)
 - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
- 1.9 The key contacts of the Project and lines of communication with respect to the on-site environmental management structure at the time of the construction works carried out are shown in **Table 1.1** and **Figure 4**.

Table 1.1 Key Project Contacts

Party	Role	Position	Name	Phone No.	Fax No.
CEDD	Project Proponent	Senior Engineer	Ms. Esther Yung	2301 1302	2301 1277
AECOM	Engineer’s Representative	Resident Engineer	Ms. Doris Lau	6790 0355	2428 9922
Penta-Ocean	Contractor	Project Manager	Mr. H Taguchi	2833 1098	2572 4080
		Site Agent	Mr. Yuen Tit		
		Environmental Officer	Mr. Gideon Cheng		
CIWEC	Contractor	Project Manager	Mr. YF Cho	2727 0128	2379 5931
		Site Agent	Mr. KM Mok	2727 0128	
		Environmental Officer	Mr. Jerry Lau	6353 5489	
ZHEC	Contractor	Project Manager	Mr. YF Cho	9493 9201	2379 5931
		Site Agent	Mr. Joe Cheung	9263 6339	
		Environmental Officer	Mr. CK Kwan	9506 3074	
Lam	Environmental Team Leader (ETL)	ETL	Mr. Raymond Dai	2882 3939	2882 3331
Cinotech	Environmental Team Leader (ETL)	ETL	Dr. Priscilla Choy	2151 2089	3107 1388

Fugro	Independent Environmental Checker (IEC)	IEC	Mr. Joseph Poon	2450 8238	2450 6138
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Summary of EM&A Requirements

- 1.10 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of water quality due to the Project. The Project area and monitoring locations are depicted in **Figures 1 and 2**.
- 1.11 Monitoring works/ equipments were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly Reports.
- 1.12 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix A**.
- 1.13 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in **Appendix C**.

2. NOISE

Monitoring Requirements

- 2.1 According to Section 3.1.1 of the EM&A Manual, 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.
- 2.2 These nearest NSRs are designated for construction noise monitoring as listed in **Table 2.1** and **Figure 3**.

Table 2.1 Planned Noise Monitoring Stations during Construction Phase

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

- 2.3 As no noise sensitive receivers (NSR) was identified within 300m from the works area of this Project throughout whole construction period, no impact monitoring for construction noise was carried out.

3. WATER QUALITY

Monitoring Requirements

- 3.1 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 to monitor the water quality.
- 3.2 **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works. Supplementary to Baseline Water Quality Monitoring Report – Review of Action and Limit Levels (Revision 1.2) was submitted by the ET of Contract No. KL/2009/01 (Lam Environmental Services Limited) to EPD on 13th October 2011. With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19th October 2011, the new set Action and Limit Levels for turbidity and SS was adopted from 19th October 2011.
- 3.3 The impact water quality monitoring exercise was started from 28th June 2010 and temporary suspended from 1st June 2016 with the approval of EPD.

Monitoring Locations

- 3.4 Locations of designated Water Quality Monitoring Stations are shown in **Figure 2** and described in **Table 3.1**. Samples were taken at all designated Monitoring and Control Stations.

Table 3.1 Locations for Water Quality Monitoring

Monitoring Stations ⁽¹⁾	Coordinates	
	Easting	Northing
WSD 9 – Tai Wan	837921.0	818330.0
WSD 10 – Cha Kwo Ling	841900.9	817700.1
WSD 15 – Sai Wan Ho	841110.4	816450.1
WSD 17 – Quarry Bay	839790.3	817032.2
WSD 19 – Sheung Wan	833415.0	816771.0
WSD 21 – Wan Chai	836220.8	815940.1

Remarks:

⁽¹⁾ Water quality monitoring works at WSD9, WSD 10, WSD 15, WSD 17, WSD 19 and WSD 21 were conducted in Stage 1 Dredging and water quality monitoring works at WSD 9, WSD 10 and WSD 17 were conducted in Stage 2 Dredging.

Monitoring Equipment

- 3.5 **Table 3.2** summarizes the equipment used in the water quality monitoring program. All the monitoring equipment complied with the specifications stipulated in the Updated EM&A Manual.

Table 3.2 Water Quality Monitoring Equipment

Equipment	Model and Make
Water Sampler	Kahlsico Water-Bottle Model 135DW 150
Multi-parameter Water Quality System	YSI 6820 / YSI 6920 / Aquaread AP-2000-D
Monitoring Position Equipment	“Magellan” Handheld GPS Model GPS-320

Monitoring Parameters, Frequency and Duration

3.6 **Table 3.3** summarizes the monitoring parameters, monitoring period and frequencies of water quality monitoring.

Table 3.3 Frequency and Parameters of Water Quality Monitoring

Monitoring Stations ⁽¹⁾	Parameters, unit	Depth	Frequency
WSD 9 WSD 10 WSD 15 WSD 17 WSD 19 WSD 21	<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • mid-depth 	<ul style="list-style-type: none"> • 3 days per week, at mid-flood and mid-ebb tides

Remarks:

⁽¹⁾ Water quality monitoring works at WSD9, WSD 10, WSD 15, WSD 17, WSD 19 and WSD 21 were conducted in Stage 1 Dredging and water quality monitoring works at WSD 9, WSD 10 and WSD 17 were conducted in Stage 2 Dredging.

Monitoring Methodology, Calibration Details and QA/QC ProceduresInstrumentation

3.7 A multi-parameter meter (Model YSI 6820 C-M / YSI 6920 / Aquaread AP-2000-D) was used to measure DO, DO saturation, turbidity, salinity and temperature.

Operating/Analytical Procedures

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

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

of suspended solids concentrations within 24 hours.

Maintenance and Calibration

- 3.10 Before each round of monitoring, a zero check in distilled water was performed with the turbidity probe of YSI 6820 C-M / YSI 6920 / Aquaread AP-2000-D. The probe was then calibrated with a solution of known NTU.
- 3.11 QA/QC procedures are available for the SS analyzed in the HOKLAS-accredited laboratory.

Results and Observations

- 3.12 Graphical presentations of the impact water quality monitoring results for the whole construction period are shown in **Appendix B**, the impact monitoring results were returned to ambient environmental conditions in comparison with baseline data. The monitoring data and the Quality Control reports for the laboratory analysis could be found in the monthly reports.
- 3.13 A total of 40 Action level and 8 Limit Level exceedances of turbidity were recorded in the period between July 2010 to February 2014. A total of 143 Action level and 154 Limit Level exceedances of suspended solid (SS) were recorded in the period between July 2010 to February 2014. The summary of exceedance is attached in **Appendix D**.
- 3.14 According to the ET's investigation, no direct evidence demonstrated the exceedances of Action/Limit level for water monitoring parameters were caused by the Project during the construction period. The exceedances were considered as caused by localized impact or changes in ambient conditions at upstream.
- 3.15 Since the investigations found that the exceedances recorded during the construction period were not related to the Project, it was concluded that all necessary steps under Event and Action Plan had been taken.

4. ENVIRONMENTAL AUDIT

Site Audits

- 4.1 Site audit provided a direct means to check and enforce the specified environmental protection and pollution control measures. The ET undertook site audits routinely to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented. Additionally, the ET was responsible for defining the scope of the inspections, detailing any deficiencies that are identified, and reporting any necessary action or mitigation measures that were implemented as a result of the audit.
- 4.2 Site audits were carried out by ET on weekly basis in construction phase. The areas of inspection included the general environmental conditions in the vicinity of site, pollution control and mitigation measure within the site, and also review the environmental conditions outside the site area which are likely to be affected, directly or indirectly, by the site activities.
- 4.3 The implementation of the environmental mitigation measures and environmental complaint handling procedures were also checked.
- 4.4 The Proposal of Temporary Suspension of EM&A Programme of the Project was approved by EPD on 31st May 2016. The site audits were temporary suspended starting from 1st June 2016.

Review of Environmental Monitoring Procedures

- 4.5 The monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the monitoring works:

Water Quality Monitoring

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
 - The monitoring team recorded the weather conditions on the monitoring day.
- 4.6 The monitoring methodology was found effective to obtain representative monitoring results by applying appropriate monitoring equipment, procedure and laboratory analysis to evaluate the environmental impacts on the sensitive receivers by the Project.

Implementation Status of Environmental Mitigation Measures

- 4.7 The mitigation measures detailed in the Environmental Permit, the EM&A Manual and in the EIA report were implemented throughout the whole project period.
- 4.8 The EM&A programme was found effective in monitoring the environmental impacts of the Project. The data collected were useful in determining whether the Project has caused unacceptable impacts on the sensitive receivers. During the construction phase, the impact data indicated whether exceedances would occurred and helped determine whether the exceedances were due to the works. Analysis of all EM&A data collected throughout the

construction periods demonstrated the environmental acceptability of the Project.

- 4.9 No non-compliance was recorded during the site inspections throughout the construction period. Observations and recommendations recorded during the site inspections were summarized in each of the Monthly EM&A Reports.

Waste management

- 4.10 Waste generated from this Project mainly includes marine sediments.
- 4.11 Marine sediment (Type 1 – Open Sea Disposal, and Type 1 Open Sea Disposal (Dedicated Site) and Type 2 – Confined Marine Disposal) was generated and disposed during the construction period of capital dredging. The quantity of disposed marine sediments is presented in **Table 4.1** below.

Table 4.1 Summary of Quantity of Disposed Marine Sediments

Dredging Stage	Contract No.	Waste Type	Cumulative-to-Date m ³ (Bulk Volume)	Disposal / Dumping Ground
Stage 1	KL/2009/01	Marine Sediment (Type1 – Open Sea Disposal)	561,891	South Cheung Chau Spoil Disposal Area denoted “KTCT-1” and “KTCT - 2”
		Marine Sediment (Type 1 Open Sea Disposal (Dedicated Site) and Type 2 – Confined Marine Disposal)	147,649	East Sha Chau Contaminated Mud Disposal Site – Pit IVc
Stage 2	CV/2013/02 (Task Order No. MD/007/1302)	Marine Sediment (Type1 – Open Sea Disposal)	124,000	East of Sha Chau / The South of Brothers
		Marine Sediment (Type 1 Open Sea Disposal (Dedicated Site) and Type 2 – Confined Marine Disposal)	35,200	The South of Brothers
Stage 2	KL/2013/01	Marine Sediment (Type1 – Open Sea Disposal)	266,500	East of Sha Chau
		Marine Sediment (Type 1 Open Sea Disposal (Dedicated Site) and Type 2 – Confined Marine Disposal)	132,500	The South of Brothers

Summary of Record of All Complaints Received

- 4.12 No environmental complaint has been received since the commencement of the project. A complaint log is given in **Appendix F**.

Summary of Record of Notifications of Summons and Successful Prosecutions

- 4.13 No warning, summon and notification of successful prosecution was received since the commencement of project. A summary table is given in **Appendix F**.

Comparison with EIA predictions

- 4.14 The environmental impacts caused by the Project during the construction phase were generally in line with the predictions in EIA report based on the following.

Water Quality

It is predicted in the EIA Report that with the implementation of the recommended mitigation measures, there would be no unacceptable water quality impacts arising from the Project-related construction works.

For the 345 Action/Limit Level exceedances were recorded during the period of Stage 1 capital dredging works, all exceedances were considered as non-project related according to the ET's investigation. In addition, there was no Action/Limit Level exceedance recorded since March 2014 and during period of Stage 2 dredging works. The impact water quality monitoring data obtained was in-line with the predictions as no Action/Limit Level exceedance was considered to be caused by the Project works.

- 4.15 With the environmental monitoring and site inspection to directly ensure the timely implementation of mitigation measures during the Project, the environmental performance of the capital dredging was acceptable based on the reasons stated in Sections 4.9 and 4.14.

5. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

Comments on Overall EM&A Programme

- 5.1 The mitigation measures detailed in the Environmental Permit, the EM&A Manual and in the EIA report were implemented throughout the whole project period. With the environmental monitoring and site inspection to directly ensure the timely implementation of mitigation measures during the Project, the environmental performance of the Project was acceptable. Analysis of all EM&A data collected throughout the construction periods also demonstrated the environmental acceptability of the Project.
- 5.2 The overall performance of the monitoring methodology adopted and environmental management system in this Project was effective.

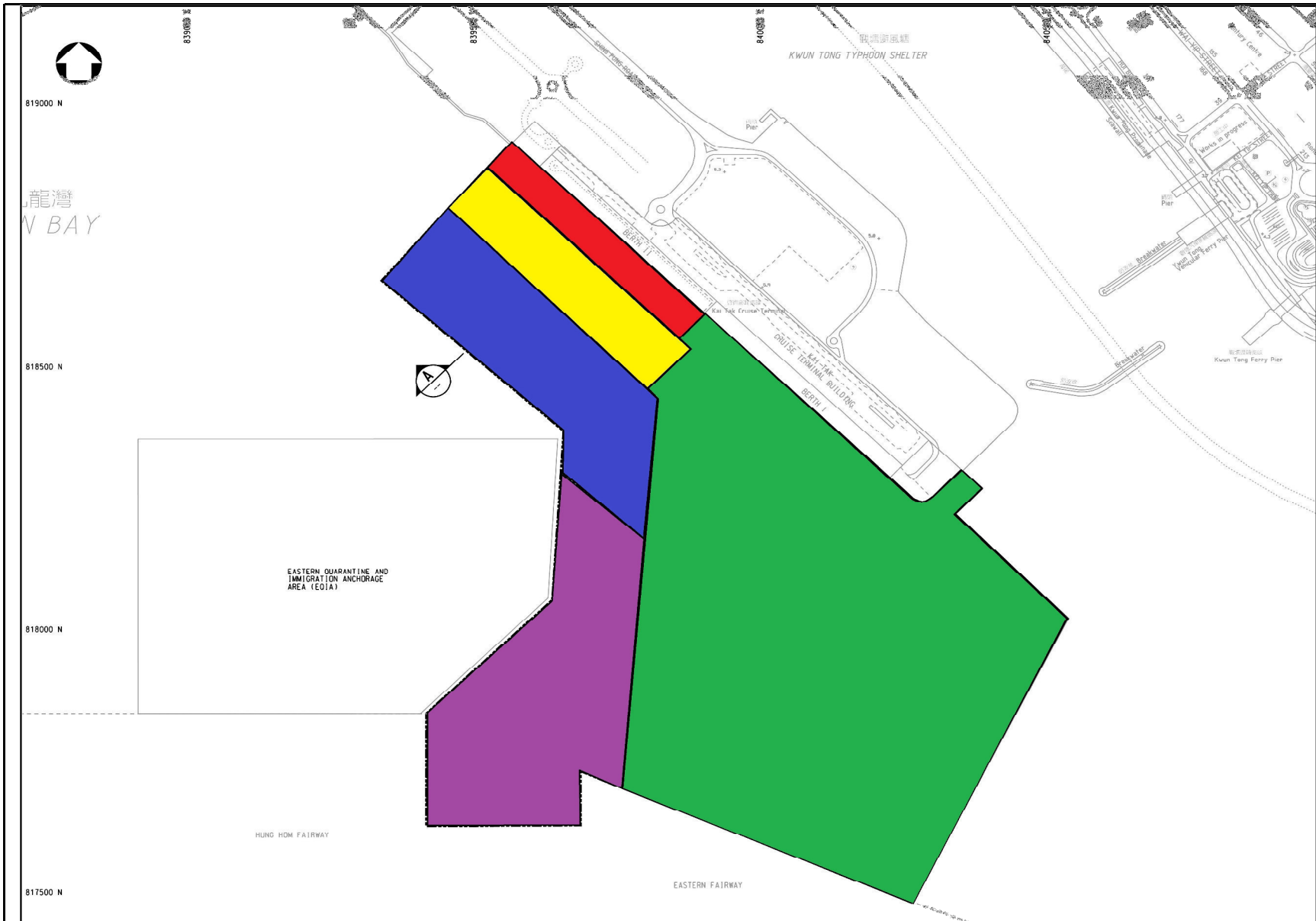
Overall EM&A Data

- 5.3 Baseline, impact water quality monitoring were conducted at the designated monitoring stations according to the requirements in the EM&A Manual.
- 5.4 No project-related exceedance of the Action and Limit Levels of water quality monitoring was recorded at the designated monitoring stations during the whole construction period.
- 5.5 No project-related complaint was received throughout the whole Project with the appropriate implementation of mitigation measures.

Recommendations and Conclusions

- 5.6 The EM&A programme was found to be effective in monitoring impacts arising from the Project. The findings of the environmental monitoring program suggest that no adverse impacts on sensitive receivers were brought about by the Project. In conclusion, the Project was environmentally acceptable in terms of water quality since no project-related exceedance of Action and Limit Levels were recorded throughout the Project with the proper implementation of mitigation measures, which is as predicted in the EIA.
- 5.7 With the success of the overall EM&A programme, the deterioration of the environment caused by the Project was cost-effectively identified and necessary prompt effective mitigation measures were implemented to avoid any unacceptable impacts.

FIGURES



Legend:

Stage 1 Dredging Area (Dredging Zone A & B)

Works completed by KL/2009/01

- Dredging Zone A
- Dredging Zone B

Stage 2 Dredging Area (Dredging Zone C)

Works completed by CV/2013/02 (Task Order MD/007/1302)

- Dredging Zone C(1)
- Dredging Zone C(2)
- Dredging Zone C(3)

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Environmental Permit No. : EP-328/2009/A
Dredging Works for Proposed Cruise Terminal at Kai Tak

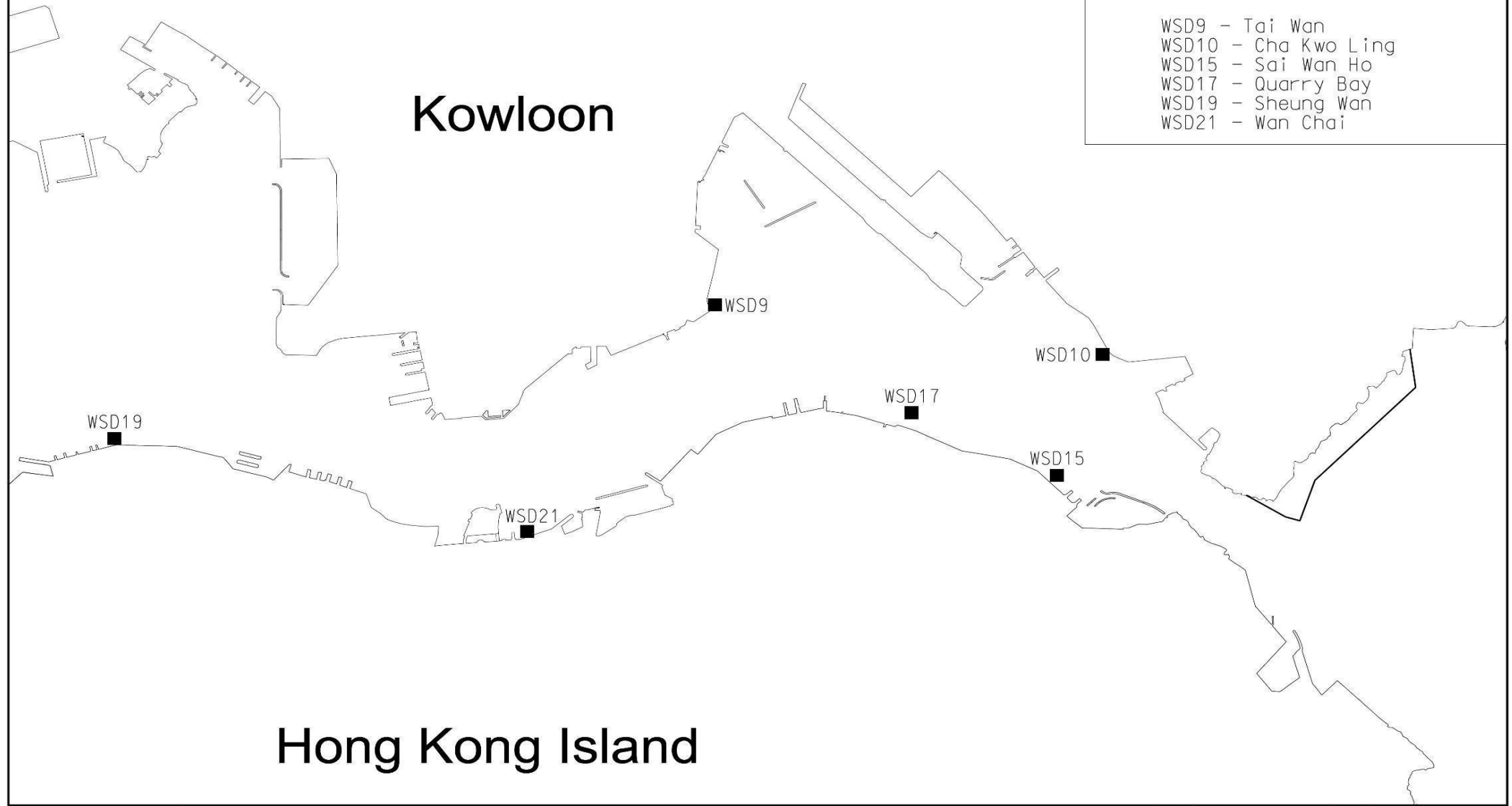
Layout Plan Showing Dredging Areas For Capital Dredging at Cruise Terminal at Kai Tak

SCALE	N.T.S.	DATE	Apr-16	
CHECK	-	DRAWN	KC	
JOB NO.	MA15011	DRAWING No.	1	Rev
			-	

LEGEND:

■ WSD Flushing Water Intake

- WSD9 - Tai Wan
- WSD10 - Cha Kwo Ling
- WSD15 - Sai Wan Ho
- WSD17 - Quarry Bay
- WSD19 - Sheung Wan
- WSD21 - Wan Chai

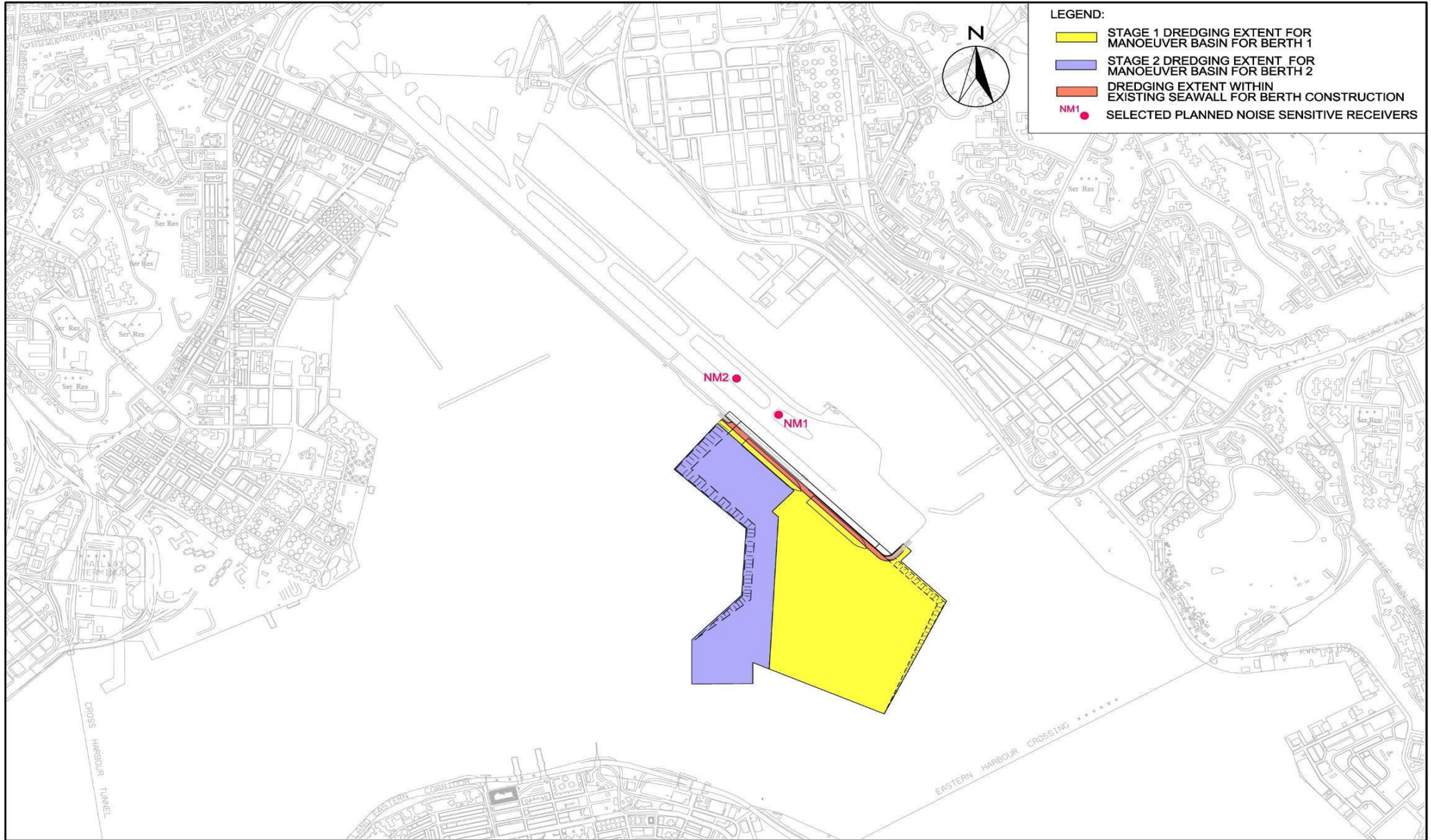


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Contract No. KL/2013/01
Dredging Works for Proposal Cruise Terminal at Kai Tak

Location of Water Quality Monitoring Stations

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		Rev	-

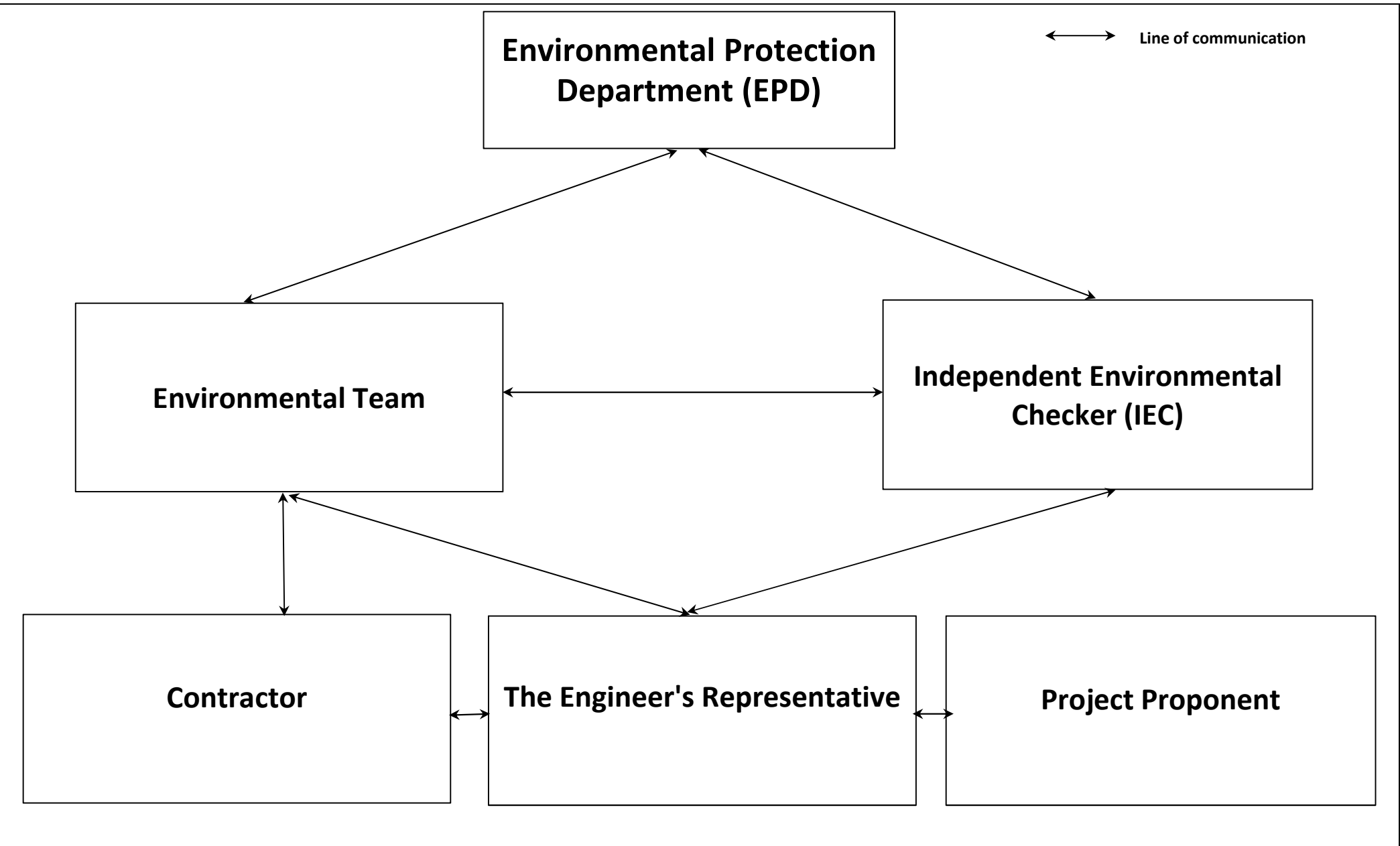


- LEGEND:**
- STAGE 1 DREDGING EXTENT FOR MANOEUVER BASIN FOR BERTH 1
 - STAGE 2 DREDGING EXTENT FOR MANOEUVER BASIN FOR BERTH 2
 - DREDGING EXTENT WITHIN EXISTING SEAWALL FOR BERTH CONSTRUCTION
 - NM1 ● NM2

CINOTECH
Cinotech Consultants Limited

Contract No. KL/2013/01
Dredging Works for Proposal Cruise Terminal at Kai Tak
Planned Noise Monitoring Stations during Construction Phase

SCALE	N.T.S.	DATE	Jun-16
CHECK	-	DRAWN	KC
JOB NO.	MA15011	DRAWING No.	3
		Rev	-



Title
 Contract No. KL/2013/01
 Site Formation for Kai Tak Cruise Terminal Development - Remaining Works
 Project Organisation for Environmental Works

Scale
 N.T.S
 Date
 Apr-15

Propose
 No. MA15011
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**APPENDIX A
ACTION AND LIMIT LEVELS FOR
WATER QUALITY MONOTIROING**

Appendix A - Action and Limit Levels

Action and Limit Levels for Water Quality Monitoring

Station	Turbidity (NTU)		Suspended Solid (mg/L)					
	Action Level		Limit Level		Action Level		Limit Level	
	All Season	All Season	Dry Season	Wet Season	Dry Season	Wet Season		
WSD9	5.67	12.27	6.9	9.7	7.8	10.9		
WSD10	6.26	10.47	7.7	9.1	10.3	12.2		
WSD15	8.15	14.41	7.8	13.5	8.4	14.5		
WSD17	11.60	16.91	9.5	11.2	13.7	16.2		
WSD19	13.09	15.34	16.3	15.1	17.0	15.7		
WSD21	9.11	15.38	13.3	17.1	13.9	17.8		

Revised Action and Limit Levels for Water Quality Monitoring

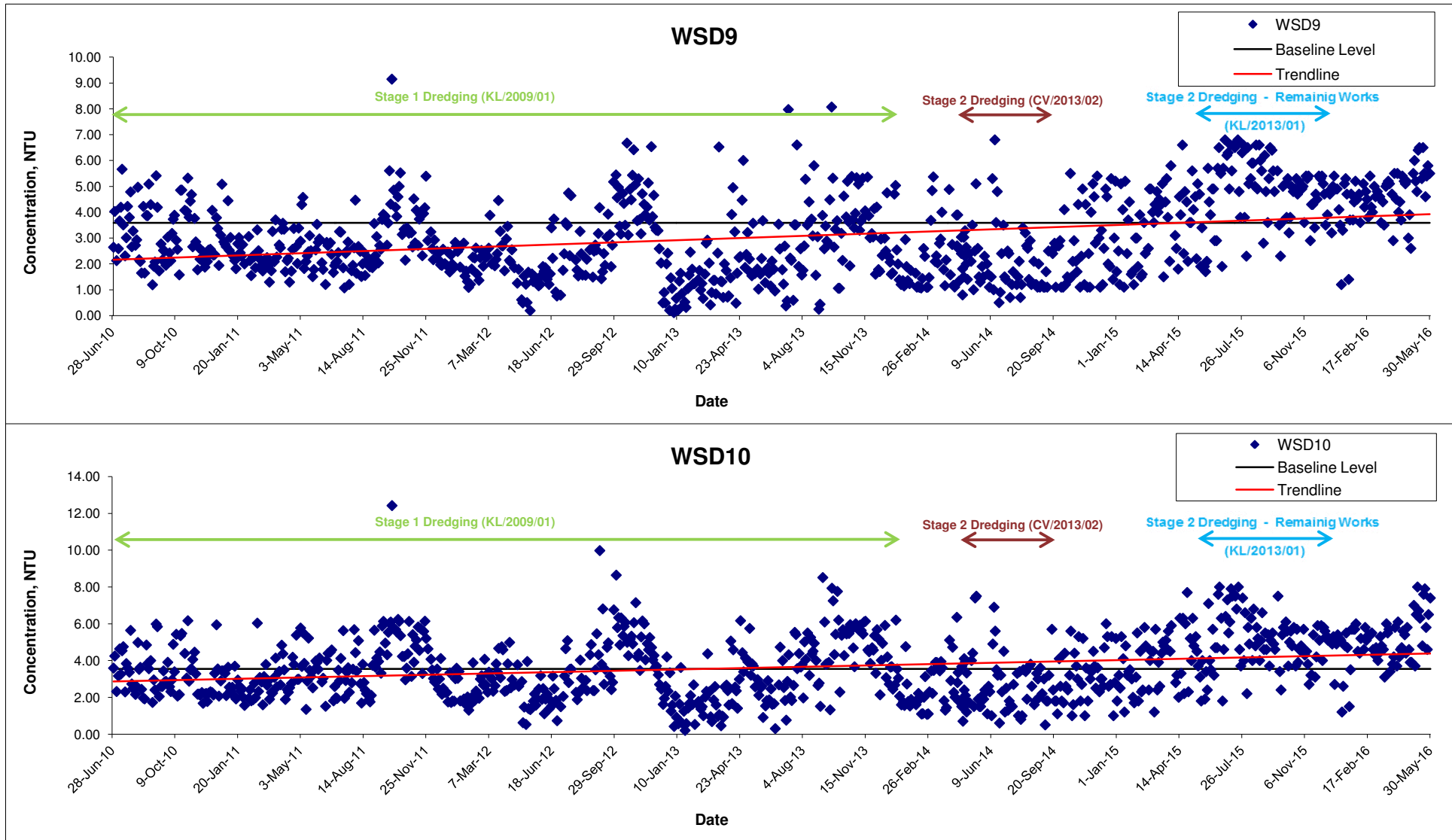
Station	Turbidity (NTU)				Suspended Solid (mg/L)			
	Action Level		Limit Level		Action Level		Limit Level	
	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season
WSD9	5.6	7.0	10.6	13.4	10.2	12.8	10.8	13.5
WSD10	6.3	8.1	9.4	12.1	10.0	11.2	11.8	13.2
WSD15	7.5	11.9	12.5	19.6	10.8	17.5	11.8	19.1
WSD17	10.0	12.9	15.3	19.7	13.2	14.7	15.3	17.0
WSD19	10.9	13.7	14.7	18.4	14.0	13.3	17.0	16.2
WSD21	8.9	11.6	13.4	17.6	13.3	16.7	14.0	17.5

Remarks:

- Revised Action and Limit Levels for water monitoring was approved by EPD on 19 October 2011.
- Wet season is the period from April to September.
- Dry season is the period from October to March.

**APPENDIX B
GRAPHICAL PRESENTATION OF
WATER QUALITY OVER THE PROJECT
PERIOD**

Turbidity at Mid-Ebb Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

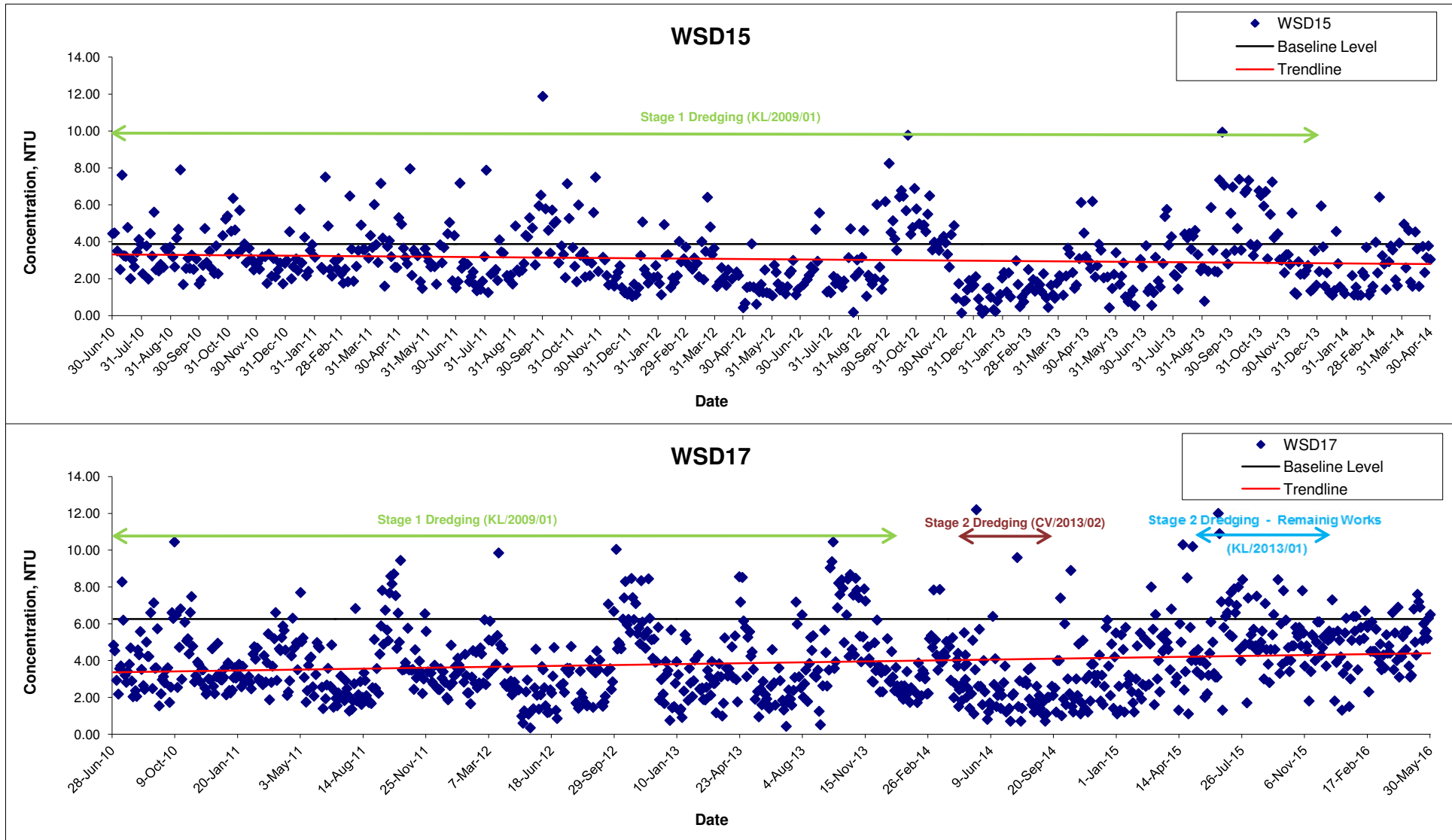
Project No. MA15011

Date Jun 16

Appendix B



Turbidity at Mid-Ebb Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

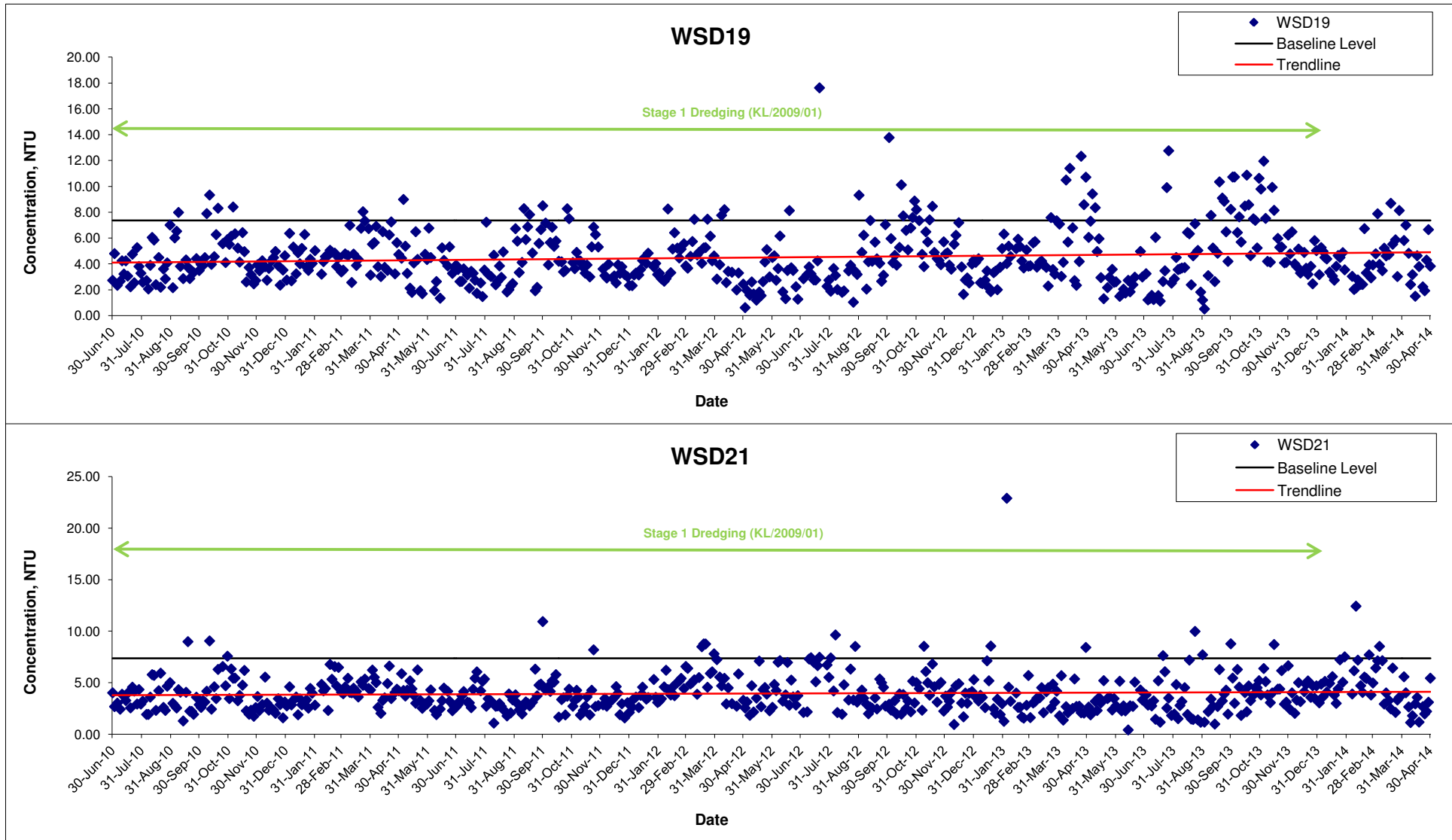
Date Jun 16

Project No. MA15011

Appendix B



Turbidity at Mid-Ebb Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

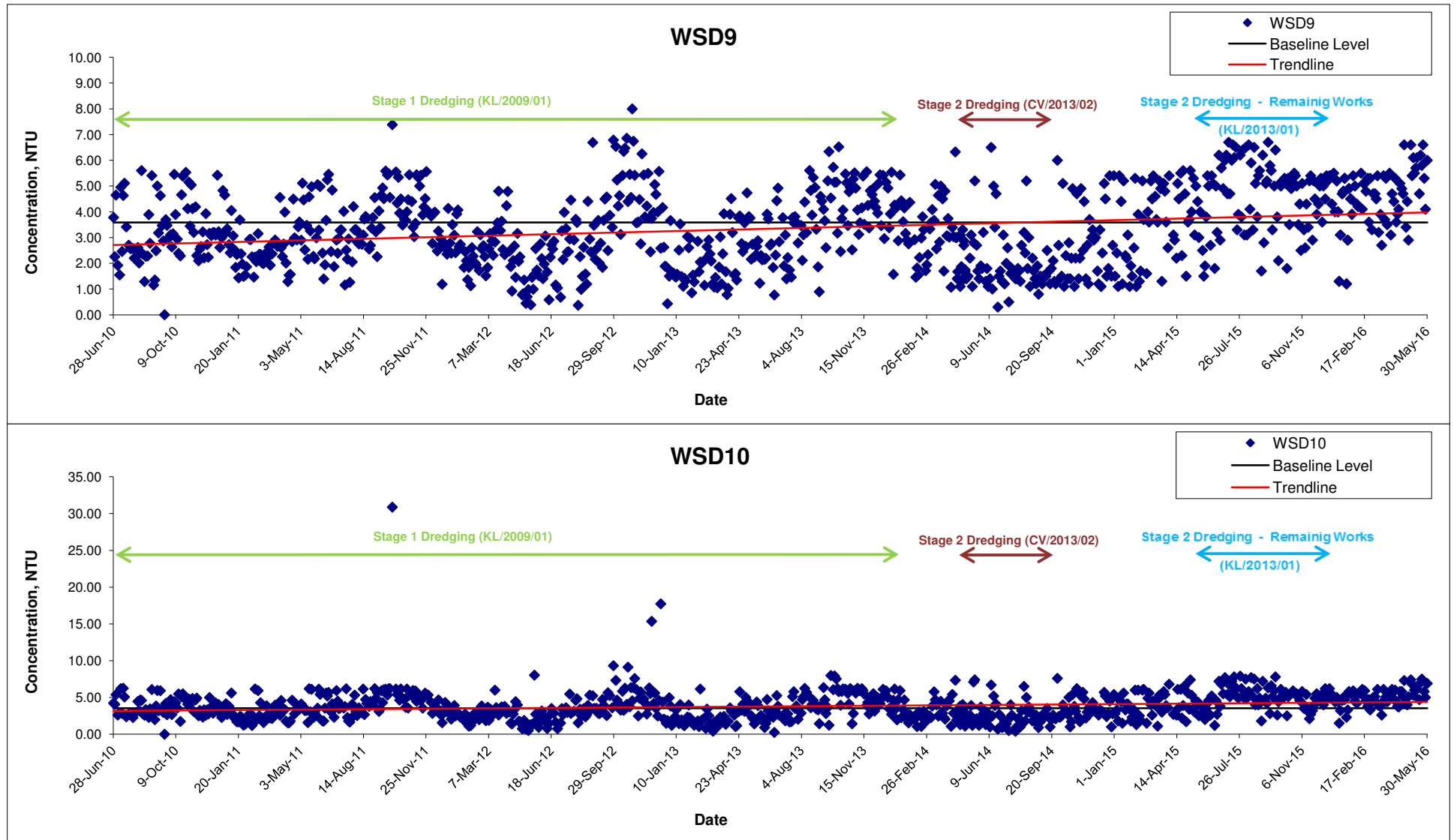
Date Jun 16

Project No. MA15011

Appendix B



Turbidity at Mid-Flood Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

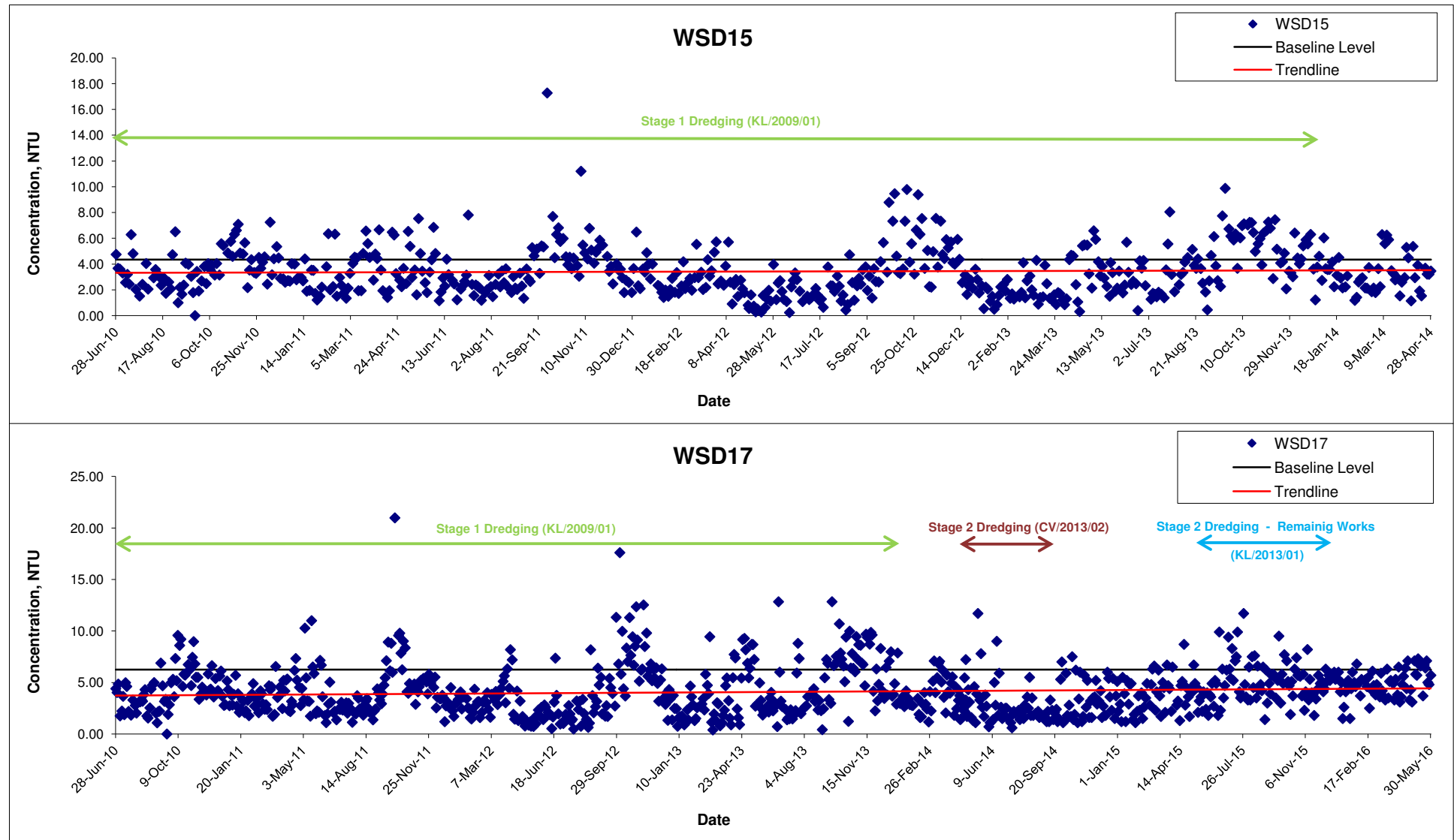
Date Jun 16

Project No. MA15011

Appendix B



Turbidity at Mid-Flood Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

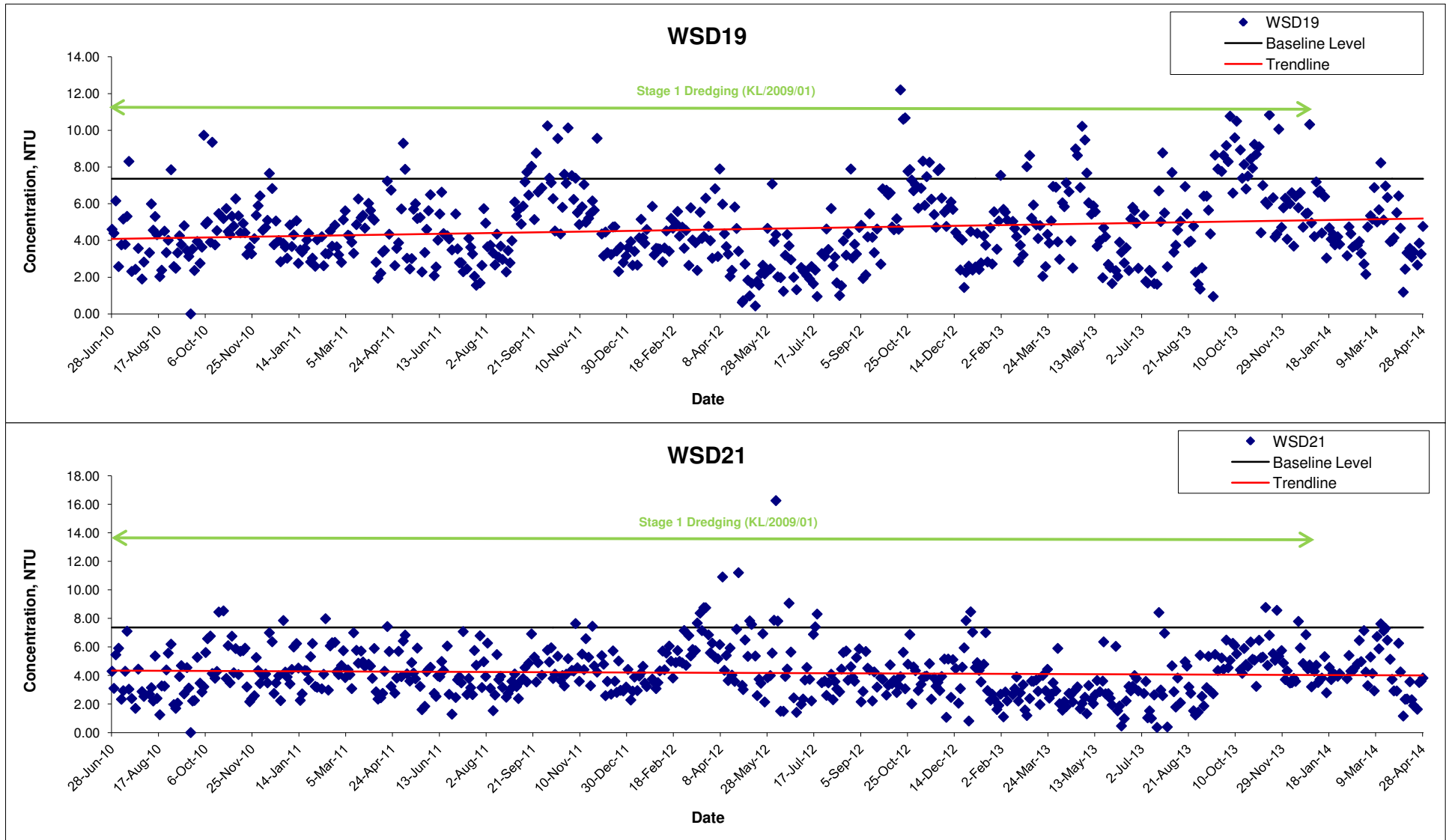
Date Jun 16

Project No. MA15011

Appendix B



Turbidity at Mid-Flood Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

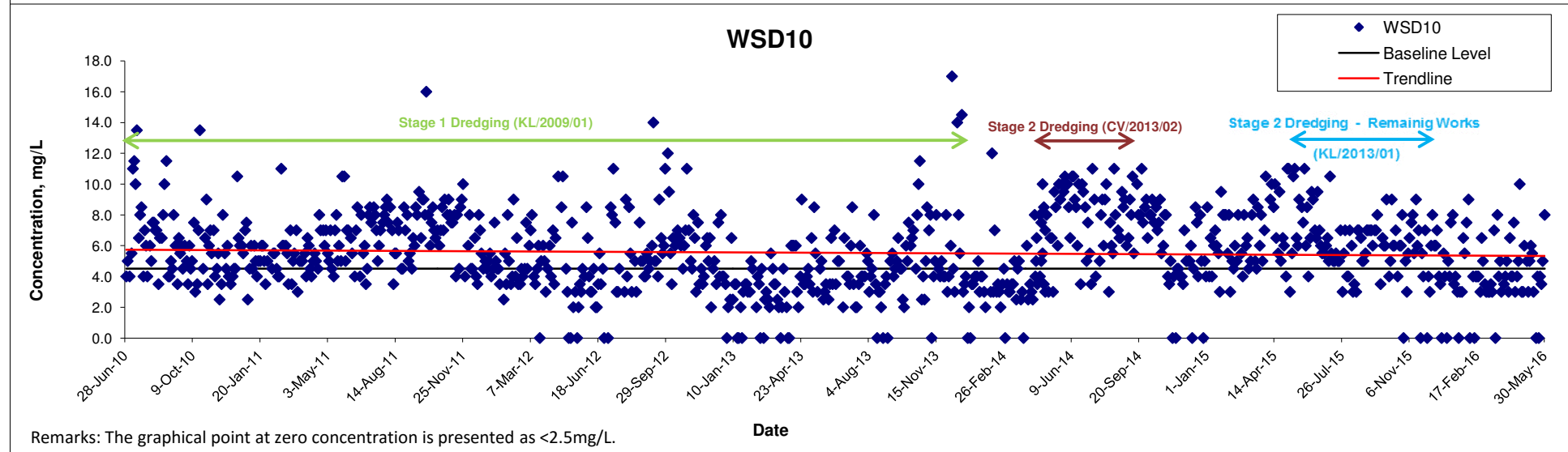
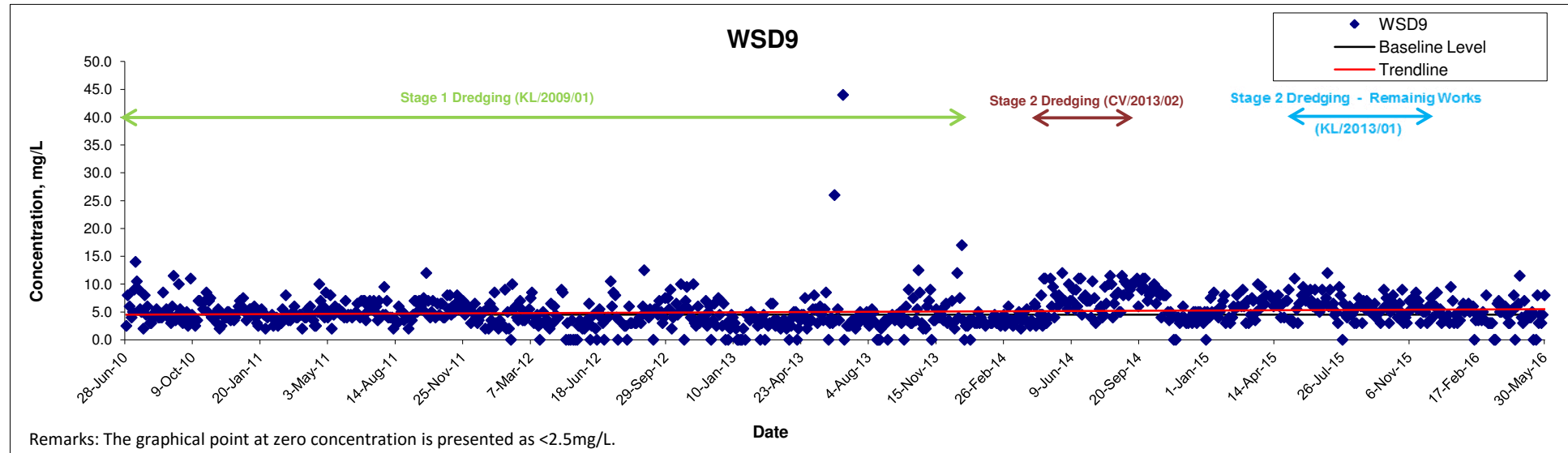
Date Jun 16

Project No. MA15011

Appendix B

CINOTECH

Suspended Solids at Mid-Ebb Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

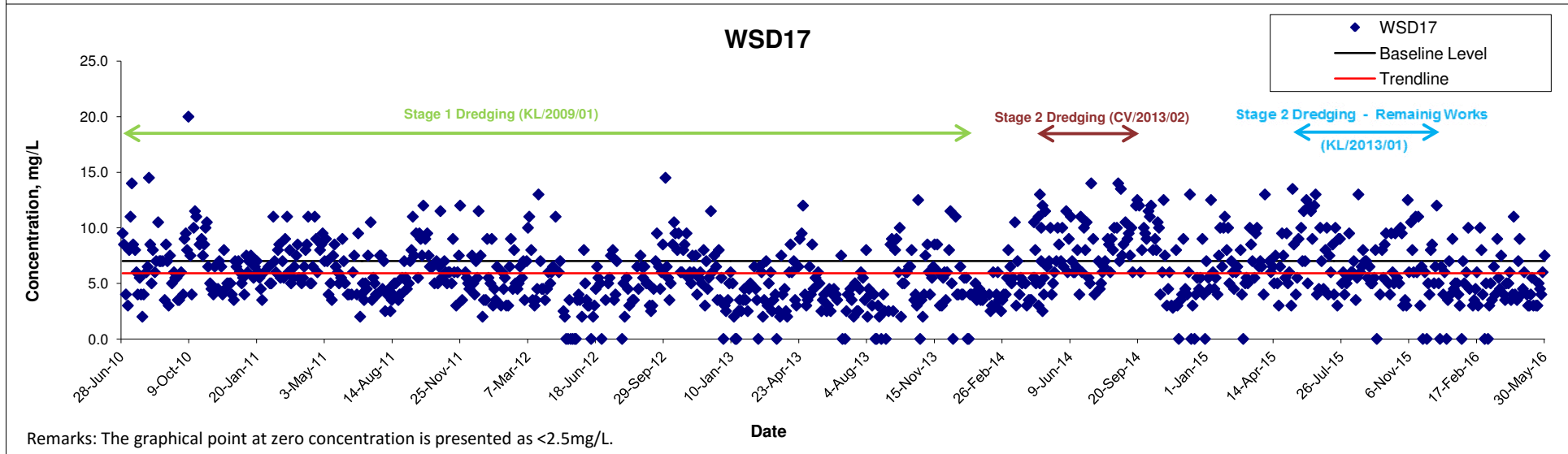
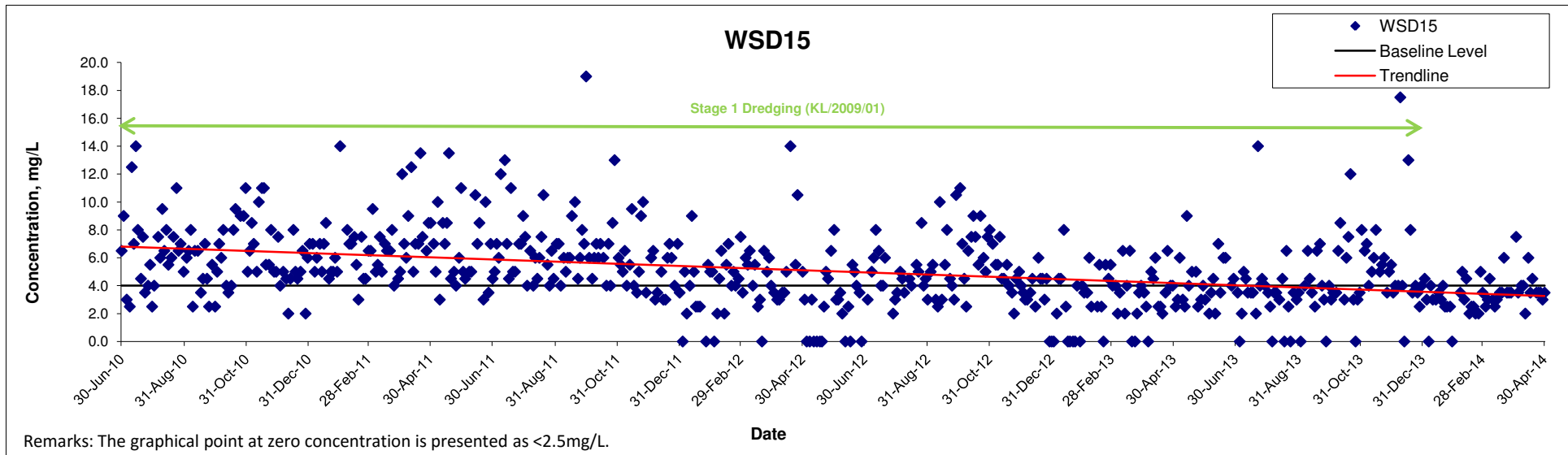
Project No. MA15011

Date Jun 16

Appendix B



Suspended Solids at Mid-Ebb Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

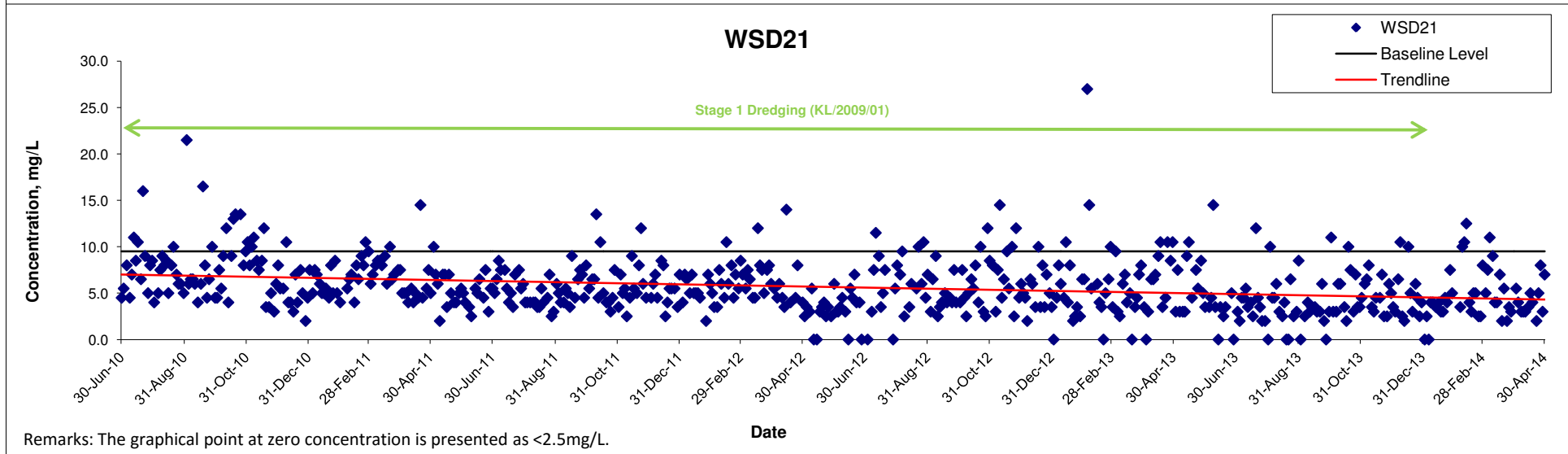
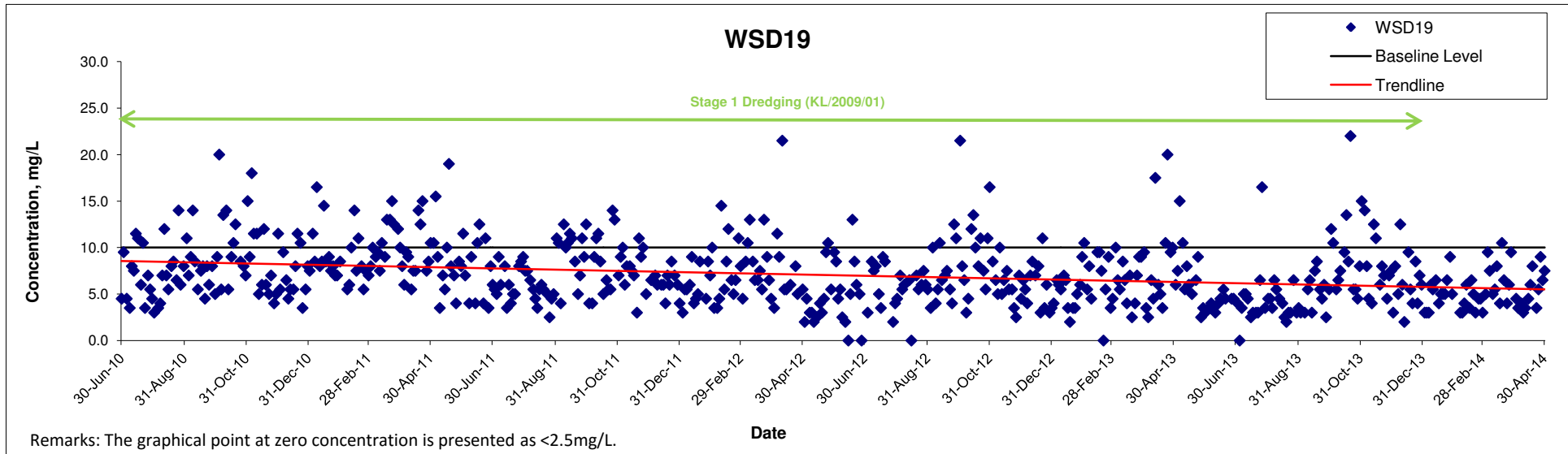
Date Jun 16

Project No. MA15011

Appendix B



Suspended Solids at Mid-Ebb Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

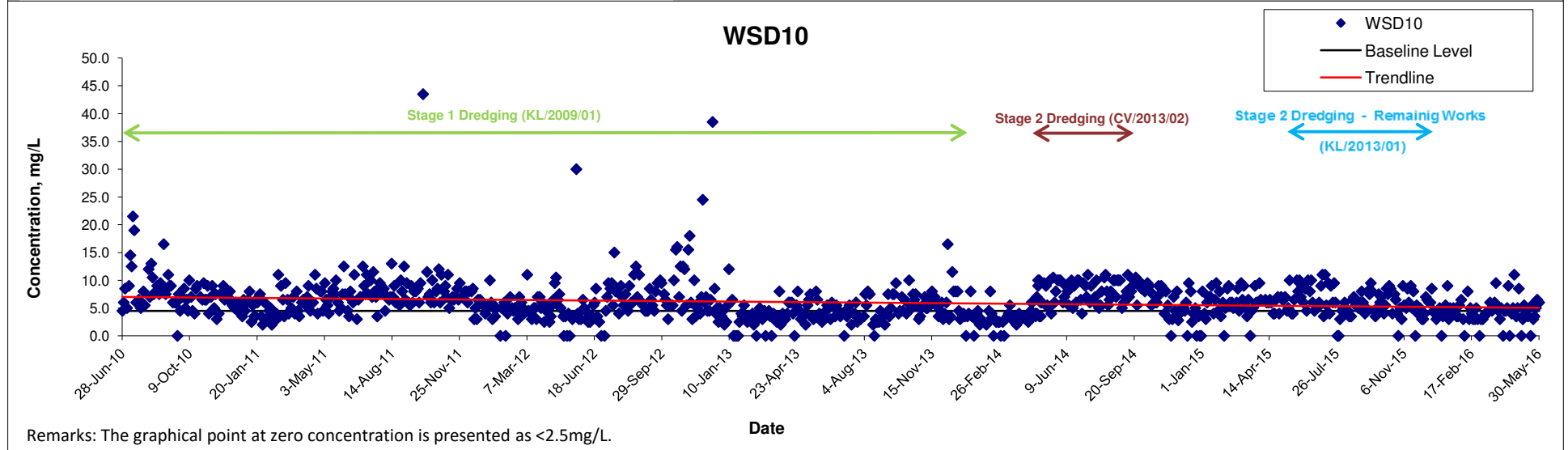
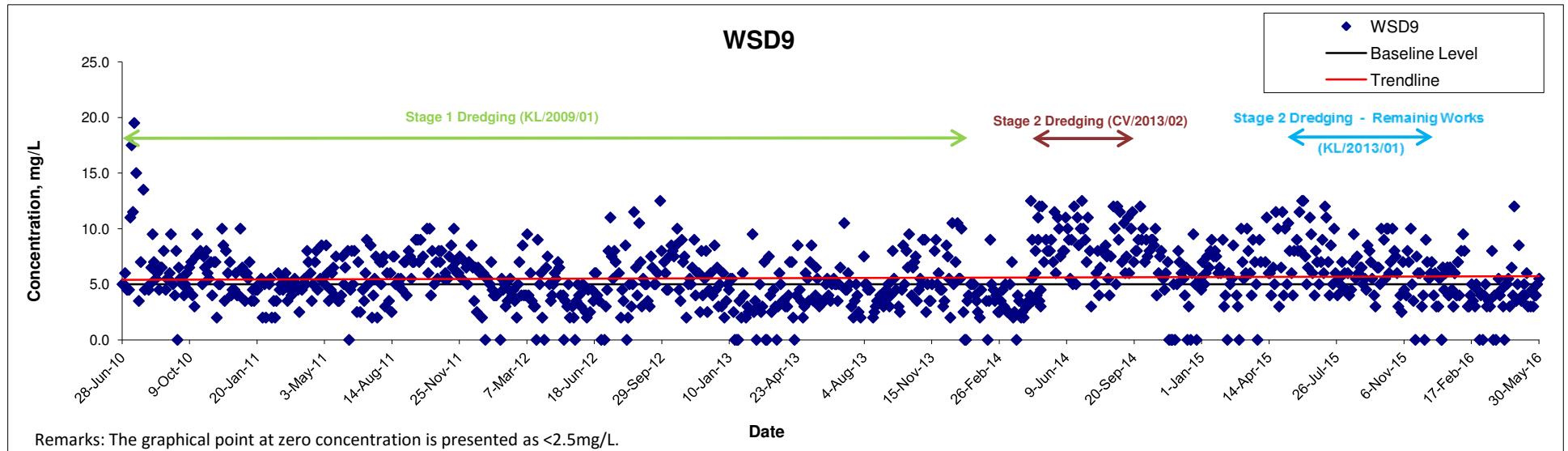
Date Jun 16

Project No. MA15011

Appendix B



Suspended Solids at Mid-Flood Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

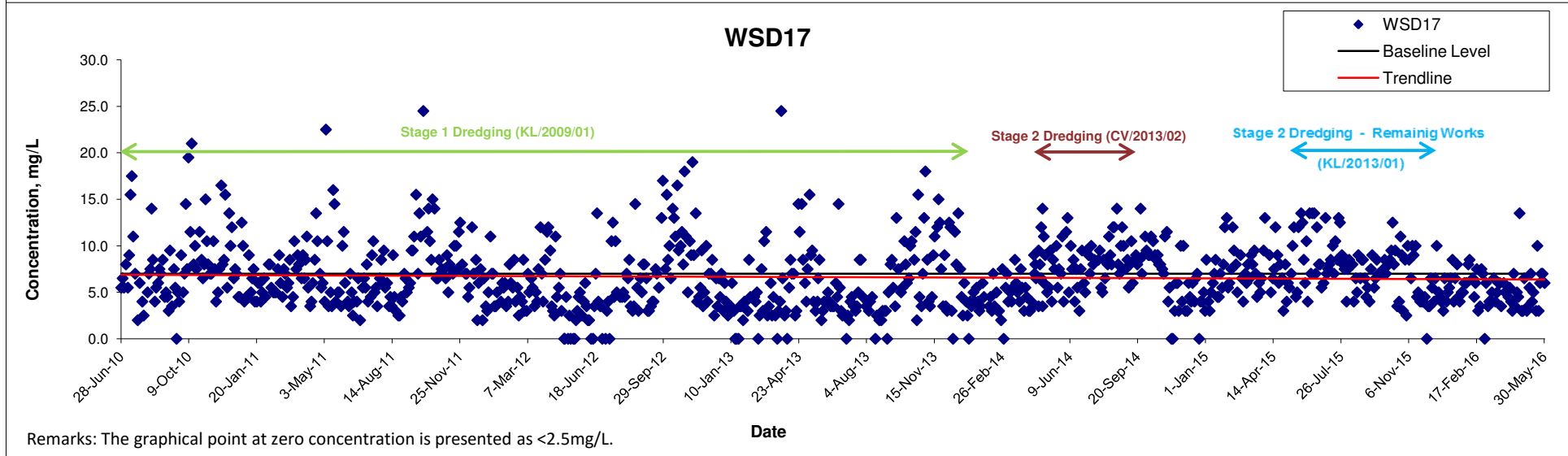
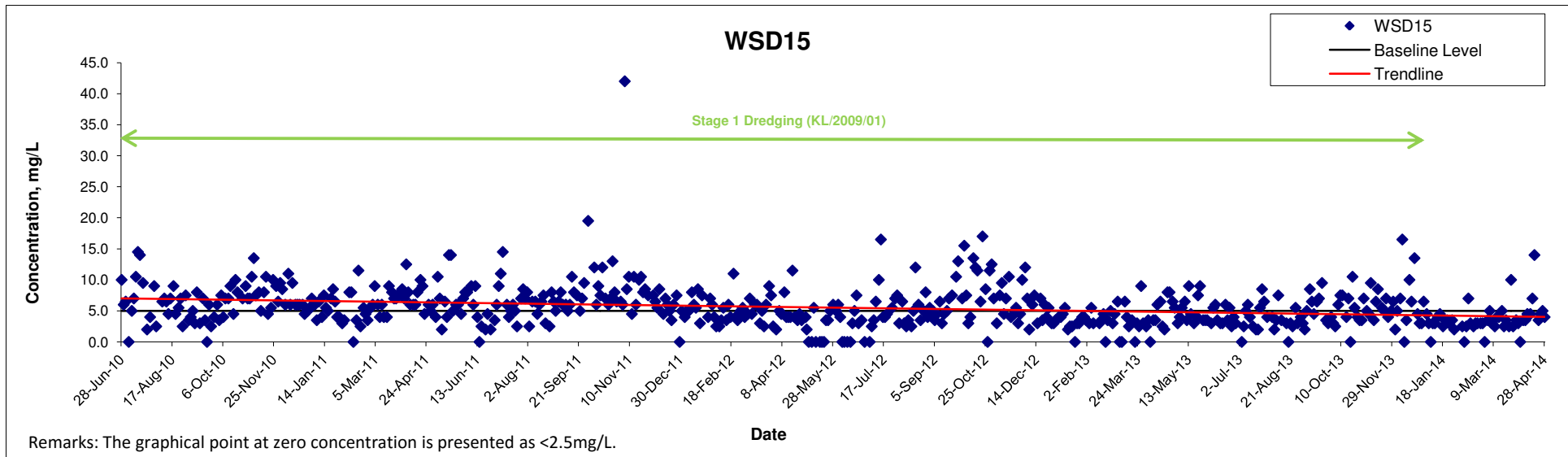
Date Jun 16

Project No. MA15011

Appendix B



Suspended Solids at Mid-Flood Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

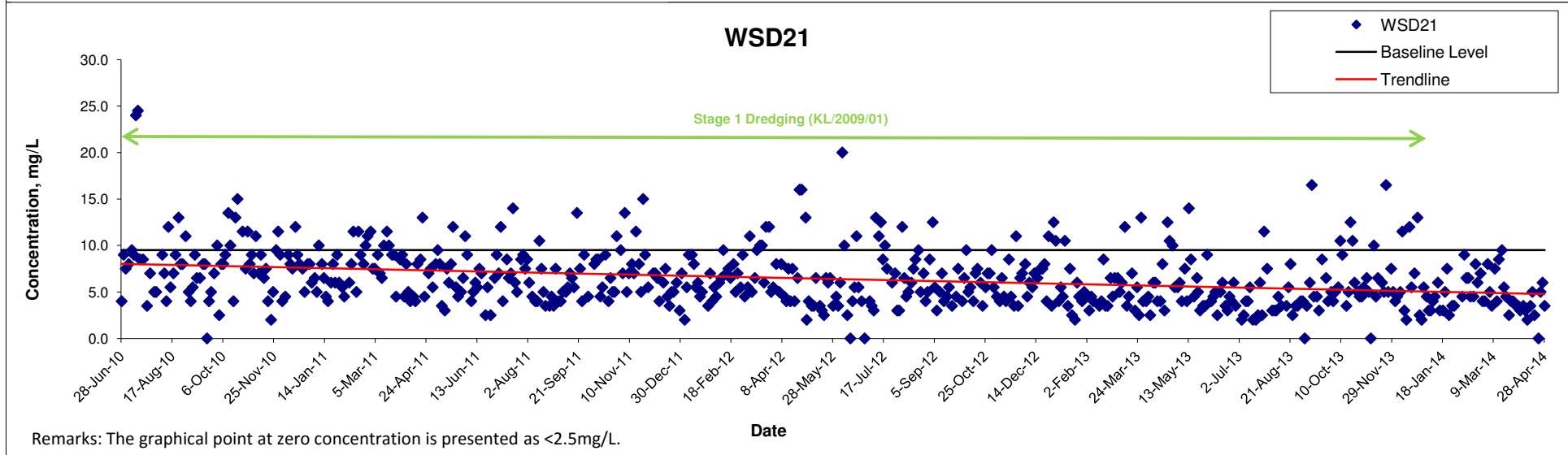
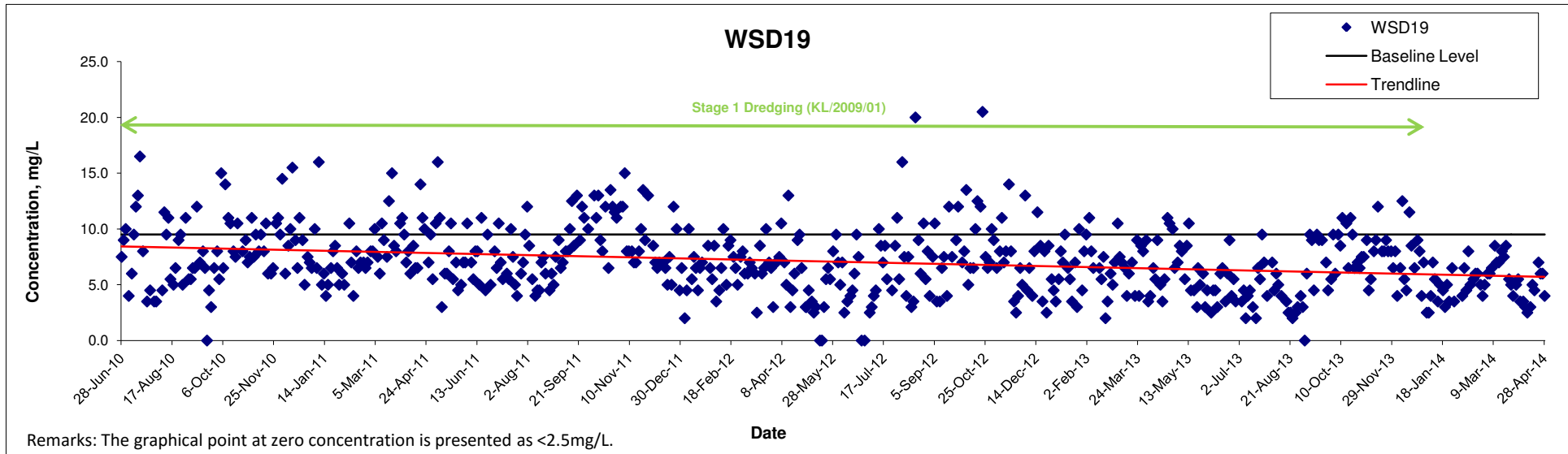
Date Jun 16

Project No. MA15011

Appendix B



Suspended Solids at Mid-Flood Tide



Title Contract No. KL/2013/01 - Site Formation For Kai Tak Cruise Terminal Development - Remaining Works

Graphical Presentation of Water Quality Monitoring Results

Scale N.T.S

Date Jun 16

Project No. MA15011

Appendix B



**APPENDIX C
SUMMARY OF ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE (EMIS)**

Appendix C –Updated Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation Status
Air Quality					
S3.6	Requirements of the Air Pollution Control (Construction Dust) Regulation shall be adhered to during the construction period.	Contractor for capital dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage	^
S3.6	In order to minimize the potential odour emissions, if any, the dredged sediment placed on barge should be properly covered as far as practicable to minimize the exposed area and hence the potential odour emissions during the transportation of the dredged sediment.	Contractor for capital and maintenance dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^
Construction Noise (Air borne)					
S4.8	<p>Good Site Practices:</p> <ul style="list-style-type: none"> Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible. Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. Material stockpiles and other structures should effectively utilized, wherever practicable, in screening noise from on-site construction activities. 	Contractor for capital and maintenance dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^ ^ ^ ^ ^
S4.9	If there is any planned NSRs within 300 m from the work area occupied during the dredging period, an EM&A programme is recommended to be	Developer of cruise terminal	Representative NSRs at the former Kai Tak Airport runway/ Prior and	Construction Stage and Operation stage	N/A

Appendix C –Updated Environmental Mitigation Implementation Schedule

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 the recommended mitigation measures for daytime normal working activities should be incorporated into the EM&A programme for implementation during dredging.		during the capital and maintenance dredging		
Water Quality					
S5.9	<ul style="list-style-type: none"> Dredging will be carried out by closed grab dredger to minimize release of sediment and other contaminants during both capital and maintenance dredging. The maximum production rate for dredging from the seabed to provide necessary manoeuvring 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 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. 	Contractor for capital and maintenance dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction Stage and Operation stage	^
S5.9	Silt curtains should be deployed around the closed grab dredgers used for dredging at and near the existing seawall of the former Kai Tak runway for construction of the cruise berth structures.	Contractor for capital dredging	Work site/ during dredging in the construction stage	Construction stage	^
S5.9	Silt screens should be installed at the WSD flushing water intakes at Cha Kwo Ling, Sai Wan Ho, Quarry Bay, Sheung Wan, Wan Chai and Tai Wan for dredging in the manoeuvring basin of the first berth during the capital dredging	Contractor for capital dredging	Seawater intakes in Victoria Harbour/ During the construction of cruise terminal	Construction stage	^

Appendix C –Updated Environmental Mitigation Implementation Schedule

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 Kwo Ling, Quarry Bay, and Tai Wan for dredging in the manoeuvring basin of the second berth during the capital dredging.	Contractor for capital dredging	Seawater intakes in Victoria Harbour/ During the construction of cruise terminal	Construction stage	^
S5.9	If the opening has been introduced at the northern runway, silt screen should also be installed at the WSD flushing water intake at Sai Wan Ho, Sheung Wan and Wan Chai for dredging in the manoeuvring basin of the second berth during the capital dredging.	CEDD	Seawater intake at Sai Wan Ho, Sheung Wan and Wan Chai/ During the construction of cruise terminal	Construction stage	^
S5.9	Other good site practices that should be undertaken during dredging include: <ul style="list-style-type: none"> All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; All barges / dredgers should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; Construction activities should not cause foam, oil, grease, scum, 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 overflow of materials or polluted water during loading or transportation. 	Contractor for capital and maintenance dredging	Work site and adjacent waters/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^ ^ ^
S5.9	Appropriate numbers of portable chemical toilets shall be provided by a licensed contractor to serve the construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices	Contractor for capital and maintenance dredging	Work site and adjacent waters/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^

Appendix C – Updated Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation Status
S5.9	Collection and removal of floating refuse should be performed at regular intervals on a daily basis. The Contractor should be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish during the dredging works.	Contractor for capital and maintenance dredging	Work site and adjacent waters/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^
S5.9	An environmental monitoring and audit programme should be implemented to verify whether or not impact predictions are representative, and to ensure that all the recommended mitigation measures are implemented properly. If the water quality monitoring data 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.	Developer of cruise terminal	Selected water receiver points in Victoria Harbour/ Prior and during the construction of cruise terminal and maintenance dredging	Construction stage and Operation stage	^
S5.9	Silt screens are recommended to be deployed at six selected WSD flushing water intakes during the capital dredging. The Contractor for capital dredging shall demonstrate and ensure that the design of the silt 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	Contractor for capital dredging	Selected water receiver points in Victoria Harbour/ during dredging in the construction stage	Construction stage	^

Appendix C –Updated Environmental Mitigation Implementation Schedule

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 keeping the water behind the silt screen free from floating rubbish and debris during the impact monitoring period.				
Waste Management					
S6.7	<p><i>Good Site Practices</i> It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during the dredging activities include:</p> <ul style="list-style-type: none"> • Nomination of an approved person, such as a site manager, be 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 chemical waste handling procedures. • Provision of sufficient waste disposal points and regular collection for disposal. • Appropriate measure to minimize windblown litter and dust during 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). • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. • Encourage collection of aluminium cans, PET bottles and paper by 	Contractor for capital and maintenance dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

Appendix C –Updated Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation Status
	<p>providing separate labeled bins to enable these wastes to be segregated from other general refuse generated by the work force.</p> <ul style="list-style-type: none"> Any unused chemicals or those with remaining functional capacity shall be recycled. 				^
S6.7	<p><i>Marine Sediments</i> 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.</p>	Contractor for capital and maintenance dredging	Work site/ during dredging in construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^
S6.7	<p>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.</p>	Contractor for capital and maintenance dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^
S6.7	<p>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:</p>	Contractor for capital and maintenance dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	

Appendix C – Updated Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation Status
	<ul style="list-style-type: none"> • Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from 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 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 cause the overflow of materials or sediment laden water during loading or transportation. 				<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
S6.7	<p><i>Chemical wastes</i> After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handles according to the Code of Practice on the Packaging, Labelling and Storage of 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.</p>	Contractor for capital and maintenance dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^
S6.7	<p><i>General Refuse</i> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from C&D material. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.</p>	Contractor for capital and maintenance dredging	Work site/ during dredging in the construction stage and maintenance dredging during operation stage	Construction stage and Operation stage	^
S6.7	<p><i>Construction and Demolition Material</i> It is recommended that the extend of dredging of the existing seawall should be kept to a minimum in the detailed design of the new cruise terminal to minimize generation of C&D</p>	Contractor for capital dredging	Work site/ during the construction period	Construction stage	

Appendix C –Updated Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation Status
	<p>material. Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include:</p> <ul style="list-style-type: none"> • 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 on-site should be covered with tarpaulin or similar fabric. • Skip hoist for material transport should be totally enclosed by impervious sheeting. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site. • The area where vehicle washing takes place and the section of the 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 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 dusty materials wet. • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust 				<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

Appendix C –Updated Environmental Mitigation Implementation Schedule

EIA Ref.	Recommended Mitigation Measures	Implementation Agent	Location/ Timing of the measures	Implementation Stage	Implementation Status
	generation from unloading.				
S6.7	When delivering inert C&D material to public fill reception facilities, the material shall consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill 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.	Contractor and Independent Environmental Checker	Work site/ During the construction period	Construction stage	^
Cultural Heritage					
S7.8	The dredging activities of the proposed cruise terminal should ensure that disturbance to the existing seawall masonry outside the Project boundary should be avoided as far as practicable.	Developer of cruise terminal	Work site/ During the design and construction of cruise terminal	Design stage and Construction stage	^
7.10, Appendix 7.1	It is recommended that the dredged spoil should be monitored for the presence of archaeological material. Guidelines for the monitoring brief have been prepared in consultation with the AMO. A qualified marine 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.	Developer of cruise terminal/ Contractor for capital dredging	Work site/ during dredging in the construction stage	During construction	^

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 period

**APPENDIX D
SUMMARY OF EXCEEDANCE
RECORDED OVER THE PROJECT
PERIOD**

App D - Summary of Exceedance Recorded Over the Project Period

(A) Exceedance Report for Water Quality

Contract No. KL/2009/01

(A total of 40 Action level and 8 Limit Level exceedances of turbidity were recorded in between July 2010 to February 2014. A total of 143 Action level and 154 Limit Level exceedances of suspended solid (SS) were recorded in between July 2010 to February 2014. No direct evidence demonstrated the exceedances of Action/Limit level for water monitoring parameters were caused by the Project during the construction period.)

Contract No. CV/2013/02 (Task Order No. MD/007/1302)

(NIL)

Contract No. KL/2013/01

(NIL)

APPENDIX E
EVENT ACTION PLANS

Appendix E - Event and Action Plan for Water Quality

Event	ET	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Repeat <i>in situ</i> measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods. 5. Discuss mitigation measures with IEC and Contractor; 6. (The above actions should be taken within 1 working day after the exceedance is identified) 7. Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and 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) 	<ol style="list-style-type: none"> 1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented. 3. (The above actions should be taken within 1 working day after the exceedance is identified) 	<ol style="list-style-type: none"> 1. Inform ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. 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; 5. Discuss with ET and IEC and proposed mitigation measures to IEC and ER; 6. Implement the agreed mitigation measures. 7. (The above actions should be taken within 1 working day after the exceedance is identified)
Action level being exceeded by more than one	<ol style="list-style-type: none"> 1. Identify source(s) of impact; 2. Inform IEC and Contractor; 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 	<ol style="list-style-type: none"> 1. Discuss with IEC on the proposed mitigation measures; 	<ol style="list-style-type: none"> 1. Inform ER and confirm notification of the non-compliance in writing;

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Event	ET	IEC	ER	Contractor
consecutive sampling days	<ol style="list-style-type: none"> 3. Check monitoring data, all plant, equipment and Contractor's working methods. 4. Discuss mitigation measures with IEC and Contractor; 5. Ensure mitigation measures are implemented; 6. Prepare to increase the monitoring frequency to daily; 7. (The above actions should be taken within 1 working day after the exceedance is identified) 8. Repeat measurement on next day of exceedance. 	<ol style="list-style-type: none"> 2. Review proposals on mitigation measures submitted by Contractor and 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) 	<ol style="list-style-type: none"> 2. Make agreement on the mitigation measures to be implemented. 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) 	<ol style="list-style-type: none"> 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. 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; 5. Discuss with ET and IEC and proposed mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures. 7. (The above actions should be taken within 1 working day after the exceedance is identified)
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Repeat <i>in situ</i> measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, 	<ol style="list-style-type: none"> 1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the 	<ol style="list-style-type: none"> 1. Inform ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment;

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Event	ET	IEC	ER	Contractor
	<p>equipment and Contractor's working methods.</p> <p>5. Discuss mitigation measures with IEC, ER and Contractor;</p> <p>6. Ensure mitigation measures are implemented;</p> <p>7. Increase the monitoring frequency to daily until no exceedance of Limit Level.</p> <p>8. (The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>advise the ER accordingly;</p> <p>3. Assess the effectiveness of the implemented mitigation measures.</p> <p>4. (The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>working methods;</p> <p>3. Make agreement on the mitigation measures to be implemented.</p> <p>4. Assess the effectiveness of the implemented mitigation measures.</p> <p>5. (The above actions should be taken within 1 working day after the exceedance is identified)</p>	<p>4. 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;</p> <p>5. Discuss with ET and IEC and ER and proposed mitigation measures to IEC and ER within 3 working days;</p> <p>6. Implement the agreed mitigation measures.</p> <p>7. (The above actions should be taken within 1 working day after the exceedance is identified)</p>
<p>Limit level being exceeded by more than one consecutive sampling days</p>	<p>1. Identify source(s) of impact;</p> <p>2. Inform IEC, Contractor and EPD;</p> <p>3. Check monitoring data, all plant, equipment and Contractor's working methods.</p> <p>4. Discuss mitigation measures with IEC, ER and Contractor;</p>	<p>1. Discuss with ET and Contractor on the mitigation measures;</p> <p>2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly;</p> <p>3. Assess the effectiveness of</p>	<p>1. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</p> <p>2. Request Contractor to critically review the working methods;</p> <p>3. Make agreement on the mitigation measures to be</p>	<p>1. Inform ER and confirm notification of the non-compliance in writing;</p> <p>2. Rectify unacceptable practice;</p> <p>3. Check all plant and equipment;</p> <p>4. Review the working methods and consider additional measures such as use of</p>

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Event	ET	IEC	ER	Contractor
	<ol style="list-style-type: none"> 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) 	<p>the implemented mitigation measures.</p> <ol style="list-style-type: none"> 4. (The above actions should be taken within 1 working day after the exceedance is identified) 	<p>implemented.</p> <ol style="list-style-type: none"> 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) 	<p>frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works;</p> <ol style="list-style-type: none"> 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
SUMMARIES OF ENVIRONMENTAL
COMPLAINT, WARNING, SUMMON
AND NOTIFICATION OF SUCCESSFUL
PROSECUTION**

Appendix F - Summary of environmental complaint, warning, summon and notification of successful prosecution

Contract No. KL/2009/01, CV/2013/02 (Task Order No. MD/007/1302) and KL/2013/01

Log Ref.	Location	Received Date	Details of Complaint/warning/summon and prosecution	Investigation/ Mitigation Action	Status
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