



CONTRACT NO: KL/2009/01

**SITE FORMATION FOR
KAI TAK CRUISE TERMINAL DEVELOPMENT**

**QUARTERLY ENVIRONMENTAL MONITORING & AUDIT
REPORT**

- SEPTEMBER TO NOVEMBER 2011 -

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Subject	Agreement No. CE 19/2009 (EP) Dredging Works for Proposed Cruise Terminal at Kai Tak – Quarterly Environmental Monitoring & Audit Report for September to November 2011		

We refer to the revised Quarterly EM&A Report for September to November 2011 that we received through email on 28 December 2011 and are pleased to confirm we have no further comment on the report.

Should you require further information, please feel free to contact us.

Best regards,

Joseph Poon
Independent Environmental Checker

JP/CY/by

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EXECUTIVE SUMMARY

- i. This is the sixth Quarterly Environmental Monitoring and Audit (EM&A) Report – September to November 2011 for the Site Formation for Kai Tak Cruise Terminal Development under Contract No. KL/2009/01. Dredging of marine sediment has been commenced since 28 June 2010 while removal and reconstruction of existing seawall has been commenced since 22 November 2010. This report presents the environmental monitoring findings and information recorded during the period from September to November 2011.

Construction Activities in the Reported Period

- ii. During the reporting period, the principle work activities are summarized as below:

Table I Principle Work Activities in the Reporting Quarter

September 2011	October 2011	November 2011
<ul style="list-style-type: none"> • Removal of Existing Seawall; • Dredging of marine sediment; • Fabrication and installation of silt curtain for seawall removal; • Maintenance of Silt Curtain and Silt Screens; • Sorting of inert C&D material from existing seawall; • Disposal of surplus fill material off-site; and • Reconstruction of New Seawall 	<ul style="list-style-type: none"> • Removal of Existing Seawall; • Fabrication and installation of silt curtain for seawall removal; • Maintenance of Silt Curtain and Silt Screens; • Sorting of inert C&D material from existing seawall; • Disposal of surplus fill material off-site; and • Reconstruction of New Seawall 	<ul style="list-style-type: none"> • Removal of Existing Seawall; • Dredging of marine sediment; • Fabrication and installation of silt curtain for seawall removal; • Maintenance of Silt Curtain and Silt Screens; • Sorting of inert C&D material from existing seawall; • Disposal of surplus fill material off-site; and • Reconstruction of New Seawall

Noise Monitoring

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

Water Quality Monitoring

- iv. Water quality monitoring was conducted at 6 designated monitoring stations namely WSD9, WSD10, WSD15, WSD17, WSD19 and WSD21. Total 40 SS and 9 turbidity exceedances were recorded in the reporting period. Investigation found that the all exceedances were not related to the Project works.
- v. Supplementary to Baseline Water Quality Monitoring Report – Review of Action and Limit Levels (Revision 1.2) was submitted to EPD on 13 October 2011. With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was started to use from 19 October 2011.

Water Quality against the Tidal Movement along Victoria Harbour

- vi. Comparison of the monitoring station at project downstream stations with the upstream monitoring stations indicates the extent of the remaining 9 SS exceedances recorded at the

WSD intakes downstream to the project were attributed to the variation in ambient conditions due to natural variation or change around the stations and not related to project works.

- vii. In the recorded upstream exceedances in reporting quarter, no apparent rising SS level in downstream across the Victoria Harbour after passing the project location. It concluded that no water quality impact was arising from the Project works.

Natural Variation Comparison

- viii. Based on the determination of upper bound of the natural variation levels from the Supplementary to Baseline Water Quality Monitoring Report, all SS results except the SS results recorded on 30 September and 5 November 2011 in reporting month were well within the upper bound of natural variation levels. SS and turbidity exceedances recorded on 30 September 2011 were due to the water quality was being substantially affected after Typhoon signal no. 3 enforced on 28 and 30 September and Typhoon no. 8 on 29 September 2011. For the turbidity and SS exceedances recorded at WSD15 on 5 November 2011, accumulation of algae was found around the intake which might cause higher levels of turbidity and SS during the measurement. It definitely concluded that these exceedances were not related to the Project works.

Water Quality Surveillance System

- ix. With reference to the upper bound of natural variation levels and water quality surveillance conducting in reporting period, it shows no fluctuation over the upper bound and hence this further supports such exceedances are not caused by dredging activities.
- x. Since the investigations found that the exceedances recorded in the reporting quarter were not related to the Project, it was concluded that all necessary steps under Event and Action Plan had been taken. The details of Event and Action Plans and Notification of Exceedance summarizing the finding of investigation, possible causes can be referred to the Monthly EM&A Reports.

Waste Management

- xi. In this reporting quarter, there was marine sediment (Type 1 – Open Sea Disposal) disposed to South Cheung Chau Spoil Disposal Area denoted “KTCT-1” and “KTCT -2”. The dredging and disposal of the sediment (Type 1 – Open Sea Disposal (Dedicate Sites) and Type 2 – Confined Marine Disposal) to East Sha Chau Contaminated Mud Disposal Site – Pit IVc was completed in June 2011.
- xii. There were 8,000m³ inert surplus fill materials and 45m³ non-inert C&D material related to dredging works were disposed off site in this reporting quarter.

Complaints, Notifications of Summons and Successful Prosecutions

- xiii. No complaint, notification of prosecutions or summons was received in the reporting quarter.

1. INTRODUCTION

1.1 Scope of the Report

- 1.1.1. Lam Environmental Services Limited (LES) has been appointed to work as the Environmental Team (ET) for dredging works to implement the Environmental Monitoring and Audit (EM&A) programme for the Site Formation for Kai Tak Cruise Terminal Development under Contract No. KL/2009/01. Dredging of marine sediment and removal and reconstruction of existing seawall were commenced on 28 June and 22 November 2010 respectively.
- 1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 10.7 under Environmental Monitoring and Audit (EM&A) Manual.
- 1.1.3. This report documents the finding of EM&A works during the quarter from September to November 2011.

1.2 Structure of the Report

- Section 1** ***Introduction*** – details the scope and structure of the report.
- Section 2** ***Project Background*** – summarizes background and scope of the Project, site description, project organization and contact details of key personnel during the reporting period.
- Section 3** ***Monitoring Requirements*** – summarizes all monitoring parameters, monitoring locations, monitoring frequency, duration and action plan.
- Section 4** ***Monitoring Results*** – summarizes the monitoring results obtained in the reporting period.
- Section 5** ***Compliance Audit, Review of the Reasons for and the Implication of Non-compliance*** – summarizes the auditing of monitoring results, all exceedances environmental parameters, review the reasons for and the implication of non-compliance.
- Section 6** ***Complaints, Notification of summons and Prosecution*** – summarizes the cumulative statistics on complaints, notification of summons and prosecution
- Section 7** ***Conclusion***

2. PROJECT BACKGROUND

2.1 Background

- 2.1.1. 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.
- 2.1.2. 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.
- 2.1.3. 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 2.1**.
- 2.1.4. 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).

2.2 Scope of the Project and Site Description

- 2.2.1. The scope of the Project comprises:
- Dredging of marine sediment of about 700,000m³ from the existing seabed (Stage 1 dredging) in the Harbour area off the southern tip of the former Kai Tak Airport runway to provide the necessary water depth within the manoeuvring area for cruise vessels; and
 - Removal of existing seawall of about 322,300m³ by dredging at the southern tip of the former Kai Tak Airport runway for cruise berth construction.

2.3 Project Organization

- 2.3.1. Kowloon Development Office of Civil Engineering and Development Department is the overall project controller. For the construction phase of the Project, Project Engineer, Contractor,

Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.

- 2.3.2. The proposed project organization and lines of communication with respect to environmental protection works are shown in **Figure 2.2**. Key personnel and contact particulars are summarized in **Table 2.2**:

Table 2.2 Contact Details of Key Personnel

Party	Role	Name	Post	Contact No.	Contact Fax
Civil Engineering and Development Department (Kowloon Development Office)	Project Proponent	Ir. KY Shin	Senior Engineer	2301 1461	2301 1277
URS / Scott Wilson Limited	Engineer's Representative	Mr. Stephen Cheng	Chief Resident Engineer	2148 7638	2148 7277
Penta-Ocean Construction Company Limited	Contractor	Mr. H. Taguchi	Project Manager	2148 7238	2148 7138
		Mr. Warren Tse	Site Agent		
		Mr. Perry Yam	Environmental Officer		
Fugro (HK) Limited	Independent Environmental Checker (IEC)	Mr. Joseph Poon	Independent Environmental Checker (IEC)	2450 8238	2450 6138
Lam Environmental Services Limited	Environmental Team Leader	Mr. Raymond Dai	Environmental Team Leader (ETL)	2882 3939	2882 3331

2.4 Principal Work and Activities

- 2.4.1. During this reporting quarter, the principal work activities are summarized in **Table 2.4**.

Table 2.4 Principle Work Activities during the Reporting Quarter

September 2011	October 2011	November 2011
<ul style="list-style-type: none"> Removal of Existing Seawall; Dredging of marine sediment; Fabrication and installation of silt curtain for seawall removal; Maintenance of Silt Curtain and Silt Screens; Sorting of inert C&D material from existing seawall; Disposal of surplus fill material off-site; and Reconstruction of New Seawall 	<ul style="list-style-type: none"> Removal of Existing Seawall; Fabrication and installation of silt curtain for seawall removal; Maintenance of Silt Curtain and Silt Screens; Sorting of inert C&D material from existing seawall; Disposal of surplus fill material off-site; and Reconstruction of New Seawall 	<ul style="list-style-type: none"> Removal of Existing Seawall; Dredging of marine sediment; Fabrication and installation of silt curtain for seawall removal; Maintenance of Silt Curtain and Silt Screens; Sorting of inert C&D material from existing seawall; Disposal of surplus fill material off-site; and Reconstruction of New Seawall

- 2.4.2. Implementation status of the recommended mitigation measures during this reporting period is presented in **Appendix 2.1**.

3. MONITORING REQUIREMENTS

3.1. Noise Monitoring

- 3.1.1. In accordance with the EIA Report and the approved 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. These nearest NSRs are designated for construction noise monitoring as listed in **Table 3.1**.

Table 3.1 Noise Monitoring Stations

Station	Description
NM1	Planned Residential Development (R3 site)
NM2	Planned Residential Development (R3 site)

- 3.1.2. As per S.3.1.1 of the approved 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.

3.2. Water Quality Monitoring

- 3.2.1. The EIA Report has identified that suspended solids (SS) would be the most critical water quality parameter during the dredging operations. Water quality monitoring for SS and turbidity is therefore recommended to be carried out at selected WSD flushing water intakes. The impact monitoring should be carried out during the proposed dredging works for cruise terminal construction to ensure the compliance with the water quality standards.

- 3.2.2. It is proposed to monitor the water quality at six WSD flushing water intakes along the seafront of the Victoria Harbour. The proposed water quality monitoring stations are shown in **Table 3.2** and **Figure 3.1**.

Table 3.2 Marine Water Quality Stations for Water Quality Monitoring

Station Ref.	WSD Flushing Water Intake	Easting	Northing
WSD9	Tai Wan	837921.0	818330.0
WSD10	Cha Kwo Ling	841900.9	817700.1
WSD15	Sai Wan Ho	841110.4	816450.1
WSD17	Quarry Bay	839790.3	817032.2
WSD21	Wan Chai	836220.8	815940.1
WSD19	Sheung Wan	833415.0	816771.0

WATER QUALITY PARAMETERS AND FREQUENCY

- 3.2.3. During the period of dredging, monitoring should be undertaken three days per week, at mid-flood and mid-ebb tides, with sampling / measurement at the designated monitoring stations as shown in **Table 3.2**. The interval between two sets of monitoring should not be less than 36 hours except where there are exceedances of Action and/or Limit Levels, in which case the monitoring frequency will be increased. **Table 3.3** shows the proposed monitoring frequency and water quality parameters. Duplicate in-situ measurements and water sampling should be carried out in each sampling event. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should not be less than 0.5m.
- 3.2.4. Silt screens in frame type or floating type shall be deployed at these intakes during the dredging period. It is recommended to conduct the monitoring behind the silt screens at the seawater intake culvert at each seawater pumping station to collect information on the water quality condition after passed the silt screen.

Table 3.3 Water Quality Monitoring Frequency and Parameters

Activities	Monitoring Frequency ¹	Parameters ²
During the 4-week baseline monitoring period	Three days per week, at mid-flood and mid-ebb tides	Turbidity (in NTU), Suspended Solids (SS in mg/L)
During dredging works for proposed cruise terminal at Kai Tak	Three days per week, at mid-flood and mid-ebb tides	Turbidity (in NTU), Suspended Solids (SS in mg/L)

Notes:

- 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.
- Turbidity should be measured in situ whereas SS should be determined by laboratory.

- 3.2.5. Supplementary to Baseline Water Quality Monitoring Report – Review of Action and Limit Levels (Revision 1.2) was submitted to EPD on 13 October 2011. With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was started to use from 19 October 2011. The established Action and Limit levels can be referred to **Appendix 3.1**.

4. MONITORING RESULTS

4.1. Water Monitoring Results

4.1.1. The water quality monitoring was commenced concurrently with the commencement of dredging works on 28 June 2010. Water quality monitoring was conducted at 6 designated monitoring stations namely WSD9, WSD10, WSD15, WSD17, WSD19 and WSD21 during the reporting quarter.

4.1.2. Water monitoring results measured in this reporting period are reviewed and summarized. Details of graphical presentation can be referred in [Appendix 4.1](#). The details of exceedances are summarized in **Table 4.1.1**.

Table 4.1.1 Summary of Exceedances Recorded in the Reporting Quarter

Period		Level	WSD9		WSD10		WSD15		WSD17		WSD19		WSD21	
			Turb	SS	Turb	SS	Turb	SS	Turb	SS	Turb	SS	Turb	SS
			NTU	mg/L	NTU	mg/L	NTU	mg/L	NTU	mg/L	NTU	mg/L	NTU	mg/L
Mid-flood	Sep-11	AL	1	0	0	2	0	0	0	2	0	0	0	0
	Oct-11		0	0	0	2	0	0	0	2	0	0	0	0
	Nov-11		0	0	0	1	1	0	0	0	0	1	0	1
Mid-ebb	Sep-11	AL	1	0	0	1	1	0	0	1	0	0	1	0
	Oct-11		0	2	0	2	0	0	0	0	0	0	0	1
	Nov-11		0	0	0	0	0	0	0	0	0	0	0	0
Total of AL Exceedances:			2	2	0	8	2	0	0	5	0	1	1	2
Mid-flood	Sep-11	LL	0	0	1	2	1	1	1	1	0	0	0	0
	Oct-11		0	3	0	2	0	4	0	3	0	0	0	0
	Nov-11		0	0	0	0	0	1	0	0	0	0	0	1
Mid-ebb	Sep-11	LL	0	1	1	1	0	1	0	0	0	0	0	0
	Oct-11		0	0	0	0	0	1	0	0	0	0	0	0
	Nov-11		0	0	0	0	0	0	0	0	0	0	0	0
Total of LL Exceedances:			0	4	2	5	1	8	1	4	0	0	0	1
Total of Exceedances:			8		15		11		10		1		4	

4.1.3. Total 40 SS and 9 turbidity exceedances were recorded in the reporting period. Investigation found that the exceedances located at the upstream stations of the Project site were not due to the Project work except the SS results recorded on 30 September and 5 November 2011. SS and turbidity exceedances recorded on 30 September 2011 were due to the water quality was being substantially affected after Typhoon signal no. 3 enforced on 28 and 30 September and Typhoon no. 8 on 29 September 2011. For the turbidity and SS exceedances recorded at WSD15 on 5 November 2011, accumulation of algae was found around the intake which might cause higher levels of turbidity and SS during the measurement. In the exceedances located at the downstream stations of the Project site, further investigations in term of Water Quality against the Tidal Movement along Victoria Harbour, Natural Variation Comparison and Water Quality Surveillance System revealed that those exceedances were considered as localized natural variation. It concluded that no adverse water quality impact was arising from the Project works. Details of investigations can be referred in Section 5.

4.2. Water Quality Surveillance System

4.2.1. Six self water quality surveillance monitoring events for removal of existing seawall were conducted in the reporting period. Turbidity and SS monitoring were conducted at 12 locations as follows and shown in **Figure 4.1**.

- One sampling point inside the silt curtain (SP1);
- Four sampling points outside the silt curtain (MP1-MP4);
- Seven control points (C1-C7)

4.2.2. The graphical presentation of the SS levels at SP1, sampling points outside the silt curtain, control points and impact water quality monitoring stations against the distance are shown in **Appendix 4.2**.

4.3. Dredging and Disposal

4.3.1. Implementation of mitigation measures for dredging work and the associated dredging records were checked and the findings are summarized in **Table 4.2.1**.

Table 4.2.1 Compliance with EP Conditions in the Reporting Quarter

EP Condition	Compliance Status and/or Recommendation
2.6 Silt Curtain Deployment	In accordance with the EP requirement
2.6 For removal of the existing seawall and the seabed, Daily Dredging Rate $\leq 4,000\text{m}^3/\text{d}$ Hourly Dredging Rate $\leq 334\text{m}^3/\text{hr}$	Complied with the EP requirement in reporting quarter: Maximum daily Dredging Rate was at $2,502\text{m}^3/\text{day}$ and Maximum hourly Dredging Rate was at $181\text{m}^3/\text{hr}$.
2.7 Daily Dredging Rate $\leq 4,000\text{m}^3/\text{d}$ Hourly Dredging Rate $\leq 334\text{m}^3/\text{hr}$	Complied with the EP requirement in reporting month: Maximum daily Dredging Rate was at $1,124\text{m}^3/\text{day}$ and Maximum hourly Dredging Rate was at $47\text{m}^3/\text{hr}$.
2.8 Silt Screen Deployment	In accordance with the Silt Screen Deployment Plan for all 6 intakes

4.3.2. The daily and hourly dredging rates were checked and reviewed that were below the EP requirements. It was concluded that the dredging was conducted in compliance with the specific EP requirements.

4.3.3. The dredging and disposal of the sediment (Type 1 – Open Sea Disposal (Dedicate Sites) and Type 2 – Confined Marine Disposal) to East Sha Chau Contaminated Mud Disposal Site – Pit IVc was completed.

4.3.4. There were $8,000\text{m}^3$ inert surplus fill materials and 45m^3 non-inert C&D material related to dredging works were disposed off site in this reporting quarter.

4.3.5. Details of the marine sediment dumping are summarized in **Table 4.2.2**.

Table 4.2.2 Waste Quantities Related To Dredging Works

Waste Type	Quantity this quarter, m ³ , (Bulk Volume)	Cumulative Quantity- to-Date,m ³ , (Bulk Volume)	Disposal / Dumping Grounds
Marine Sediment (Type 1 – Open Sea Disposal)	5,107	241,515	South Cheung Chau Spoil Disposal Area denoted “KTCT-1” and “KTCT -2”
Marine Sediment (Type 1 – Open Sea Disposal (Dedicated Sites) & Type 2 – Confined Marine Disposal) *	NIL	174,649	East Sha Chau Contaminated Mud Disposal Site – Pit IVc

* Remarks: The disposal of marine sediment (Type 1 – Open Sea Disposal (Dedicated Sites) and Type 2 – Confined Marine Disposal) was completed.

5. COMPLIANCE AUDIT, REVIEW OF THE REASONS FOR AND THE IMPLICATIONS OF NON-COMPLIANCE

5.0.1. The Event Action Plan for construction noise and water quality is presented in **Appendix 5.1**.

5.1. Noise Monitoring

5.1.1. Noise monitoring was not necessary in the reporting period.

5.2. Water Quality Monitoring

5.2.1. For the suspended solid, the details of exceedances in the reporting period are as follows:

- 2 Action Level turbidity exceedances; 2 Action Level and 4 Limit Level SS exceedances were recorded at WSD9;
- 2 Limit Level turbidity exceedances; 8 Action Level and 5 Limit Level SS exceedances were recorded at WSD10;
- 2 Action Level and 1 Limit Level turbidity exceedances; 8 Limit Level SS exceedances were recorded at WSD15;
- 1 Limit Level turbidity exceedances; 5 Action Level and 4 Limit Level SS exceedances were recorded at WSD17;
- 1 Action Level SS exceedance was recorded at WSD19; and
- 1 Action Level turbidity exceedances; 2 Action Level and 1 Limit Level SS exceedances were recorded at WSD21

5.2.2. Total 40 SS exceedances and 9 Turbidity exceedances were recorded in the reporting period. Silt curtain and silt screens were checked and confirmed in proper condition during the water monitoring. Investigation found that the all exceedances were not related to the Project works.

5.2.3. For the exceedances, further investigations were conducted to determine the cause of impact in terms of the following areas:

- Water Quality against the Tidal Movement along Victoria Harbour;
- Natural Variation Comparison; and
- Water Quality Surveillance System

5.2.4. More details on the investigation are given in Section 5.3 to 5.5.

5.3. Water Quality against the Tidal Movement along Victoria Harbour

5.3.1. In order to conclude the cause of an adverse water quality impact, the trend across the 6 monitoring stations is reviewed. Whether the adverse impact is due to project work will be evaluated from the trend of SS level in downstream across the Victoria Harbour after passing the project location. By observing this trend of SS, contribution of the adverse water quality impact from the dredging activities under the project can be evaluated by checking if there is a significant rising up trend in the SS level in the WSD intakes at project downstream.

5.3.2. Moreover, a comparison of the monitoring station at project downstream stations with the upstream monitoring stations can also indicate whether the extent of exceedance in SS content recorded at the WSD intakes downstream to the project is likely to be caused by

upstream source or not. If the SS values of the upstream and downstream show similar levels, the impact at the project downstream stations shall probably be due to the project upstream streams and the contribution from project work can be eliminated. A review on the tidal movement across the Victoria Harbour is plotted against the SS results against and graphical presentation is presented in **Appendix 5.2**.

- 5.3.3. Investigations on the recorded upstream exceedances revealed that there were no significant rising up trend of SS levels across the Victoria Harbour after passing the project location. It concluded that no adverse water quality impact was arising from the Project works.

5.4. Natural Variation Comparison

- 5.4.1. Referring to the ER Letter ref. CEDD/KL/2009/01/M45/130(369767) dated 14 February 2011, a Supplementary to Baseline Water Quality Monitoring Report – Review Action and Limit Levels (Revision 1.0) has been provided to EPD by ER in February 2011 in according to Sections 4.92 and 10.7 of EM&A Manual. This report in Revision 1.1 has been provided on 26 April 2011 in response to EPD's comments dated 1 April 2011. This report presents the methodology for enlargement baseline database and the review and determination of the Action and Limit Levels in dry and wet seasons.
- 5.4.2. On the basis of this Supplementary to Baseline Water Quality Monitoring Report, the maximum SS levels in the establishment of larger baseline database will be applied and acted as the upper bound of natural variation levels for the comparison with SS results in reporting quarter. The upper bound of natural variation levels are shown in **Table 5.4**. The graphic presentation of water quality results with respect to local variation is shown in **Appendix 5.3**.

Table 5.4 Upper Bound of Natural Variation Levels at Water Monitoring Stations

Upper Bound of Natural Variation Levels (mg/L)	WSD9	WSD10	WSD15	WSD17	WSD19	WSD21
Dry Season	12.0	19.0	14.0	16.0	18.0	15.0
Wet Season	15.1	21.2	22.7	17.9	17.1	18.8

- 5.4.3. According to the graphic presentation, all SS results except 1 SS exceedance recorded on 5 November were well within the upper bound of natural variation levels. It exceeded the upper bound of natural variation level due to accumulation of algae around the intake. It definitely concluded that these exceedances were not related to the Project works.
- 5.4.4. Based on the graphic presentation and the trend description of the SS levels in **Appendix 4.2**, conclusion of the water quality surveillance can be draw as follows:
- SS level of MP is lower than SP1 generally;
 - When the WSD intakes were located at upstream of the Project, it found that SS level was occasionally higher than the control points and sampling points near dredging area. Thus, uncertain interference of water quality was apparently interfering in the vicinity of intakes frequently;

- For WSD intakes located at downstream of the Project, a higher SS level than the sampling points MP and/or control points were recorded. The trend in the projections indicated that no significant rising of SS in the projection from the dredging area to the control points and the WSD pumping stations.
 - Besides, the distance between the WSD intakes and the SP1 are at least more than 1km, the water quality impact was unlikely to cause impact to the WSD intakes.
- 5.4.5. With reference to the upper bound of natural variation levels and water quality surveillance conducting in reporting period, it shows no fluctuation over the upper bound and hence this further supports such exceedances are not caused by dredging activities.

Summary of Investigation

- 5.4.6. To summarize, it was found in this reporting period that:
- SS exceedances were located at upstream of the Project site and no rising SS level in downstream across the Victoria Harbour after passing the project location. It definitely concluded that these exceedances were not related to the Project works.
 - Only one SS results at WSD15 on 5 November was fluctuation over the upper bound of natural variation levels and water quality surveillance conducting was observed and this further support such exceedances are not caused by dredging activities.
- 5.4.7. Since the investigations found that the exceedances recorded in the reporting quarter were not related to the Project, it was concluded that all necessary steps under Event and Action Plan had been taken. The details of Event and Action Plans and Notification of Exceedance summarizing the finding of investigation, possible causes can be referred to the Monthly EM&A Reports.



5.5. Site Audit

- 5.5.1. There was no non-compliance from the site audits in the reporting period. During environmental site inspections conducted during the reporting quarter, no particular finding was obtained on the dredging works during the site inspections.

5.6. Summary of action taken in the event of and follow-up on non-compliance

- 5.6.1. Since all exceedances recorded were not project-related, follow-up mitigation measures were therefore not required.

6. COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

6.0.1. In the reporting quarter, no complaints, notification of summons or prosecution was received in the reporting period. Cumulative statistic on complaints and successful prosecutions are summarized in **Table 6.1**, **Table 6.2** and **Table 6.3** respectively.

Table 6.1 Environmental Complaints Log

Complaint Log No.	Date of Receipt	Received From and Received By	Nature of Complaint	Date Investigated	Outcome	Date of Reply
NIL	-	-	-	-	-	-

Table 6.2 Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative No. Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

Table 6.3 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this month (Offence Date)	Cumulative No. Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

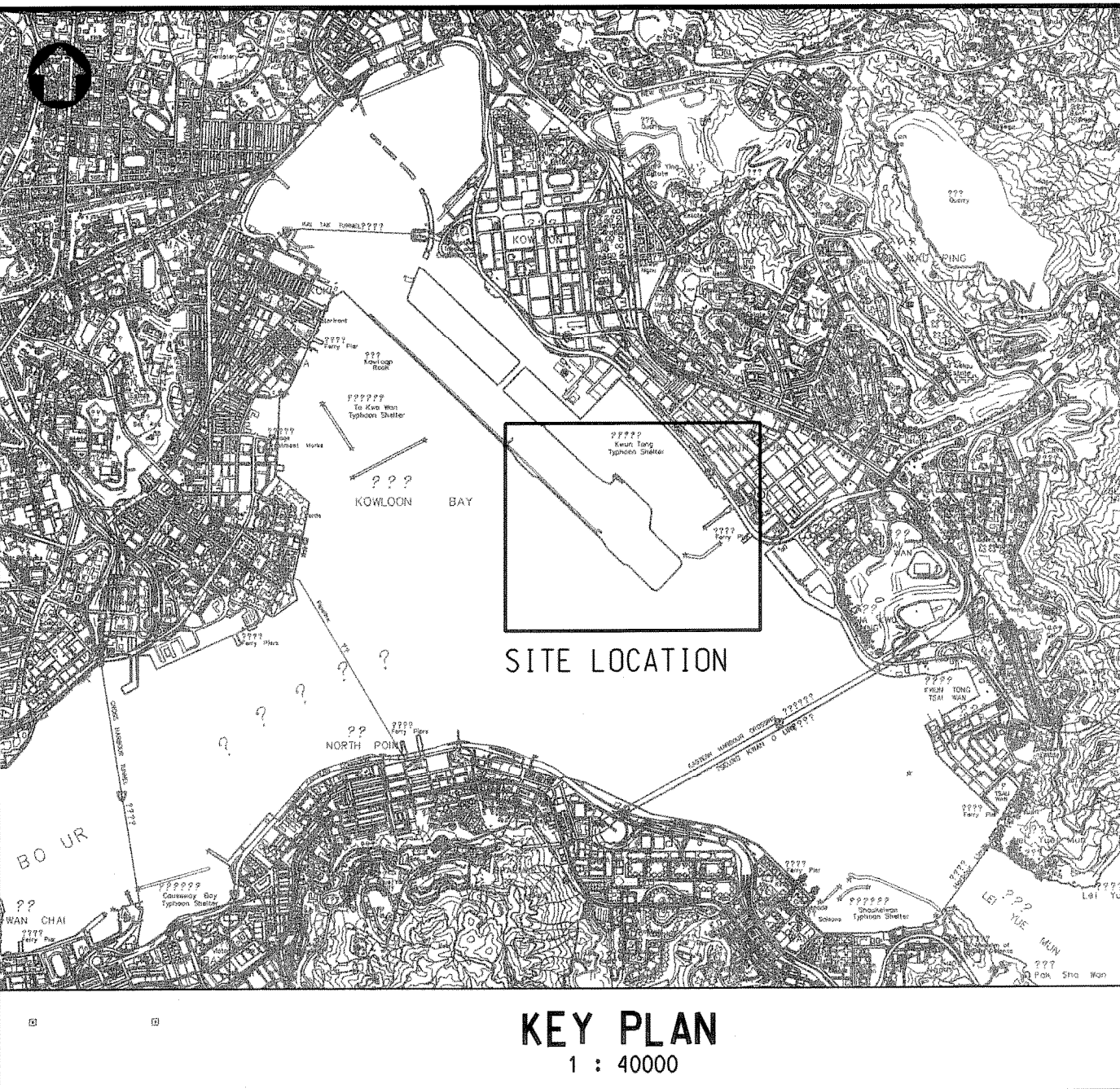
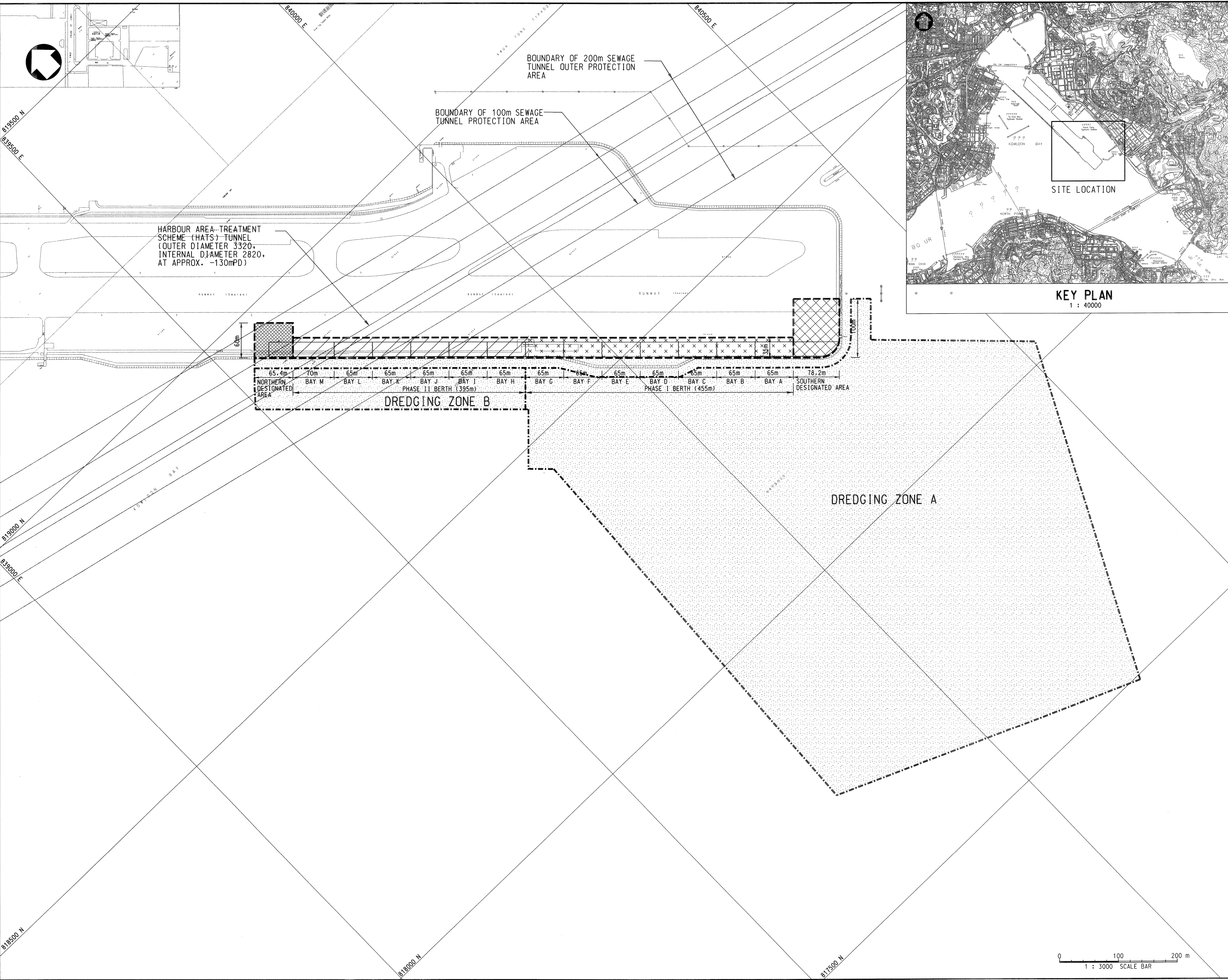
7. CONCLUSION

- 7.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.
- 7.0.2. Occasional action and limit level exceedances of turbidity and SS concentration were recorded in the reporting period. Investigation found that the exceedances located at the upstream stations of the Project site were not due to the Project work except the SS results recorded on 30 September and 5 November 2011. SS and turbidity exceedances recorded on 30 September 2011 were due to the water quality was being substantially affected after Typhoon signal no. 3 enforced on 28 and 30 September and Typhoon no. 8 on 29 September 2011. For the turbidity and SS exceedances recorded at WSD15 on 5 November 2011, accumulation of algae was found around the intake which might cause higher levels of turbidity and SS during the measurement. In the exceedances located at the downstream stations of the Project site, further investigations in term of Water Quality against the Tidal Movement along Victoria Harbour, Natural Variation Comparison and Water Quality Surveillance System revealed that those exceedances were considered as localized natural variation. It concluded that no adverse water quality impact was arising from the Project works.
- 7.0.3. Supplementary to Baseline Water Quality Monitoring Report – Review of Action and Limit Levels (Revision 1.2) was submitted to EPD on 13 October 2011. With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was started to use from 19 October 2011.
- 7.0.4. Noise monitoring was not necessary in the reporting period.
- 7.0.5. The construction programmes in reporting quarter are provided in **Appendix 7.1**.



Figure 2.1

General Layout



NOTES:

1. ALL COORDINATES ARE RELATED TO HONG KONG METRIC GRID (1980).
2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
3. SETTING OUT REFER TO DRAWING NO.08290/1021.

LEGEND:

- SOUTHERN DESIGNATED AREA
- NORTHERN DESIGNATED AREA
- DREDGING ZONE / SEAWALL REMOVAL
- PHASE I BERTH AREA
- PHASE II BERTH AREA

Rev.	06/09	TENDER		LC	CS
修訂	日期	內容摘要		繪圖	校核

土木工程拓展署
Civil Engineering and
Development Department

Contract No.KL2009/01
Site Formation for Kai Tak Cruise
Terminal Development

GENERAL LAYOUT PLAN

Drawing No. 圖則編號	08290/1011			
Designed 設計	Drawn 繪圖	Checked 校核	Scale 比例	1:3000
Approved 批准	Date 日期	Status 現況	TENDER	

Scott Wilson Ltd
偉信顧問集團有限公司



Figure 2.2

Project Organization Chart



Project Organization Chart

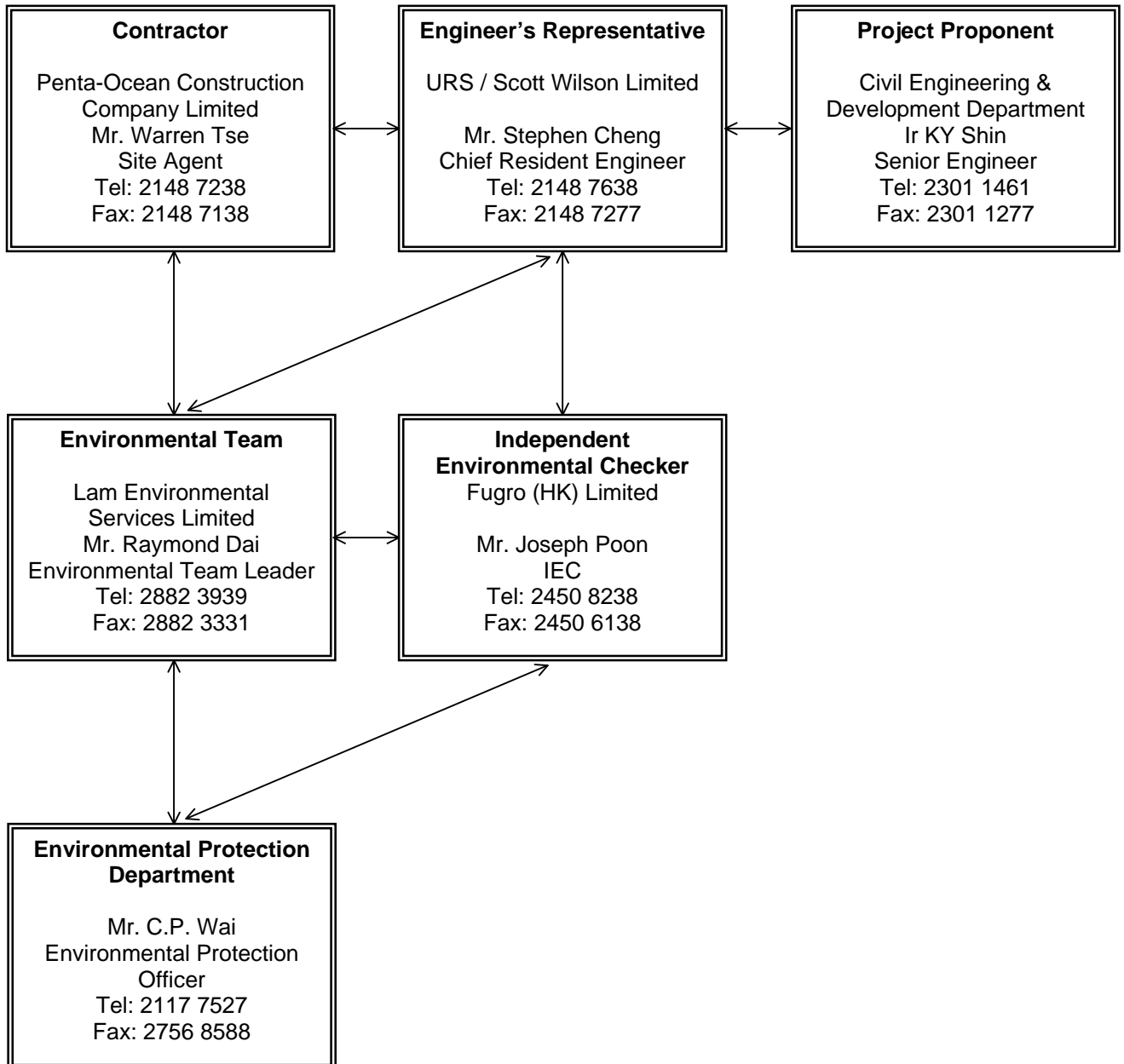
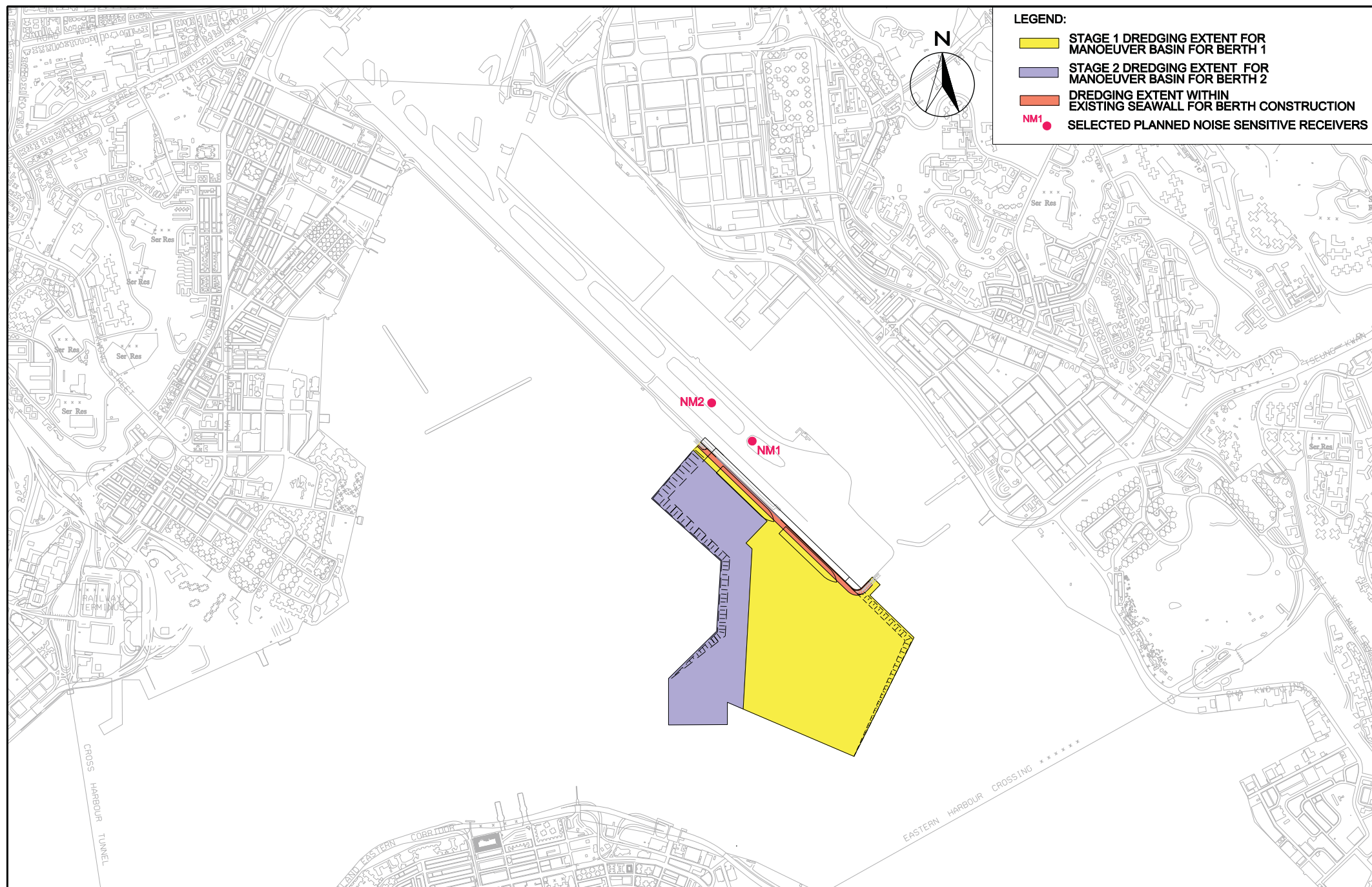




Figure 3.1

Layout of Environmental Monitoring Stations



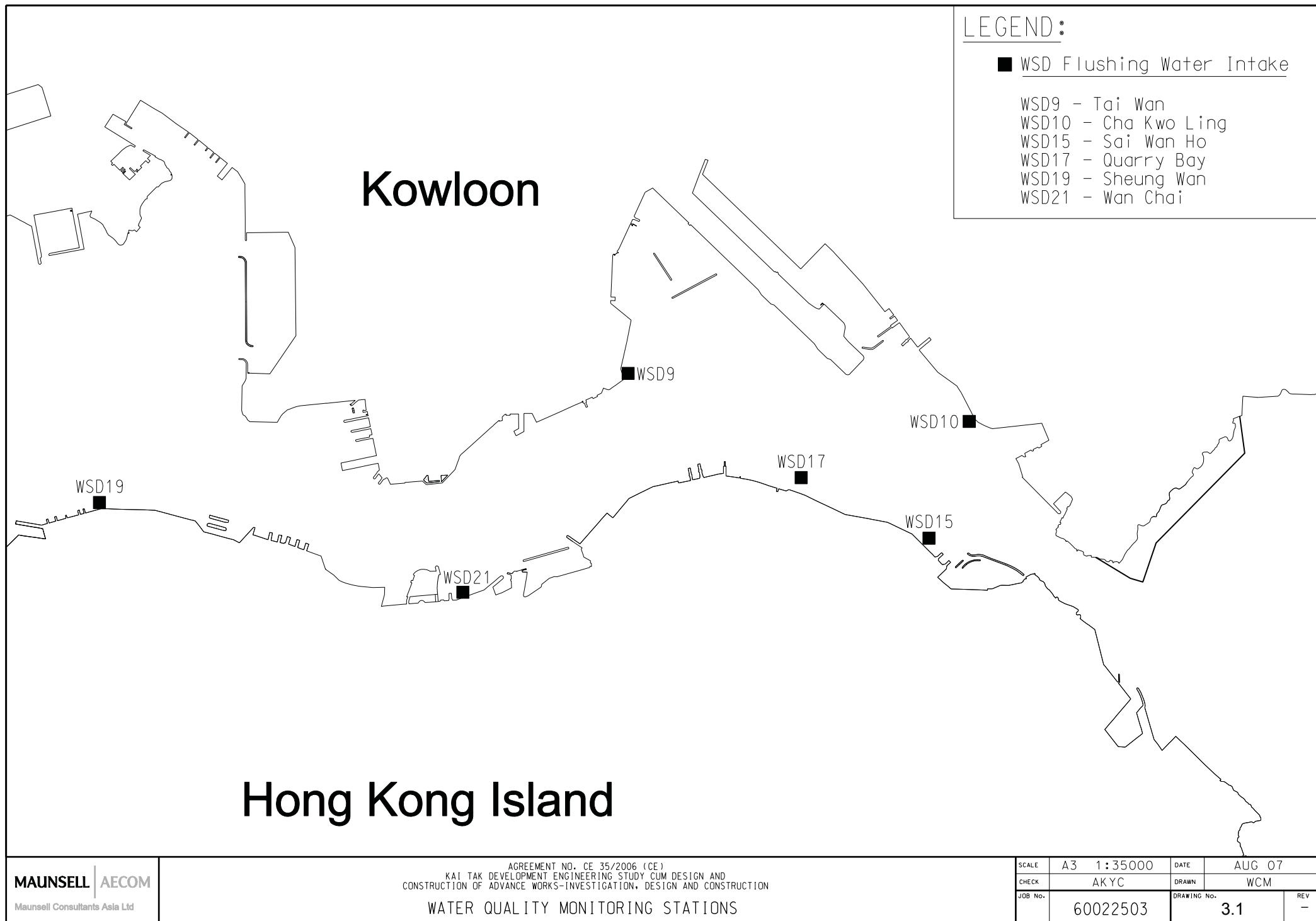




Figure 4.1

Layout of Monitoring Stations for Water Quality Surveillance System



FLOOD TIDE
DIRECTION

EBB TIDE
DIRECTION

ESTIMATED LIMIT
OF DREDGING

EASTERN FAIRWAY

Scope of Works for Water Quality Surveillance System

1. The water quality monitoring works comprised of Set A and Set B. The Contractor shall carry out both sets of works (7 sampling stations in total).

2. Set A (4 sampling stations), the water quality monitoring works shall be taken at the Control Points (i.e. C1 to C4). Set B (3 sampling stations), the water quality monitoring works shall be taken at approximate 100m outside the silt curtain (i.e. C5 to C7) which the locations shall be changed from time to time to follow the movement of silt curtain.

3. The water quality monitoring works shall be carried out during the dredging period.

4. The water quality monitoring works shall be carried out at a frequency to be agreed by the Engineer. The date and time of monitoring should be in line with the impact water quality monitoring schedule under the EM&A manual. Each sampling event shall be carried out at 3 depth (i.e. 1m below the surface, mid depth, and 1m above the seabed) of the water column at each location. Duplicate in-situ measurements and water sampling shall be carried out in each sampling event. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides shall not less than 0.5m. The schedule of water quality monitoring shall be reviewed by the Engineer and the Independent Environmental Checker (IEC) depending on whether the water quality monitoring results could indicate any trend of water quality for determination of trigger/action level or whether there is a ad-hoc requirement (e.g. change of working methods, complaints, etc.). The Contractor shall carry out the works according to the revised schedule if instructed by the Engineer.

5. As the key parameters, turbidity shall be measured in situ whereas Suspended Solids (SS) shall be determined by laboratory. Analysis of SS level shall be carried out in a HOKLAS or other international accredited laboratory. Sufficient water samples of not less than 1 liter shall be collected at the monitoring stations for carrying out the laboratory SS determinations.

6. Requirements on the monitoring equipments and calibration shall be referred to Paragraph 4.7 "Monitoring Equipment" of the Environmental Monitoring and Audit Manual for the Dredging Works for Proposed Cruise Terminal at Kai Tak.

7. Laboratory analysis of the sampling data shall be carried out in a HOKLAS or other international accredited laboratory and follow the requirements as stated in Paragraph 4.8 "Laboratory Measurement/Analysis" of the Environmental Monitoring and Audit Manual for the Dredging Works for Proposed Cruise Terminal at Kai Tak. Monitoring data together with the report shall be reported to the Engineer and the IEC on monthly basis.

8. Other relevant data shall also be recorded including monitoring location/position, time, water depth, sampling depth, water temperature, tidal stages, weather conditions and any special phenomena or work underway nearby.

LEGEND:

- [] SILT CURTAIN (20m x 20m)
- SAMPLING POINT INSIDE SILT CURTAIN (CONTRACTOR'S PROPOSED SAMPLING POINT TO MONITOR EFFECTIVENESS OF SILT CURTAINS)
- SAMPLING POINT AT ABOUT 10m OUTSIDE SILT CURTAIN (CONTRACTOR'S PROPOSED SAMPLING POINT TO MONITOR EFFECTIVENESS OF SILT CURTAINS)
- ⊕ SAMPLING POINT AS CONTROL POINT (C1 TO C4) (ADDITIONAL)
- ⊕ SAMPLING POINT AS CONTROL POINT (C5 TO C7) AT ABOUT 100m AWAY FROM SILT CURTAIN (ADDITIONAL)

ADDITIONAL WATER QUALITY MONITORING STATIONS

COORDINATE	NORTH	EAST
C1	018667.763	839495.740
C2	018152.875	839775.604
C3	017702.158	839531.601
C4	017780.765	840334.093
C5	POSITIONS CHANGE WITH SILT CURTAIN	
C6		
C7		

— SITE BOUNDARY

Control Copy
No. 35

RECEIVED
22 SEP 2010

BY: 001367
(341819) Y.C.#5

B	02/10	REVISION AS SHOWN	EW	✓
A	07/10	REVISION AS SHOWN	JY	✓
Scale	Date	Revision	Drawn	Checked

CEED CONTRACT KL/2009/01
SITE FORMATION FOR KATAK
CRUISE TERMINAL DEVELOPMENT

WATER QUALITY
SURVEILLANCE SYSTEM

SKETCH NO. (CEEDKL/2009/01)SK0067B

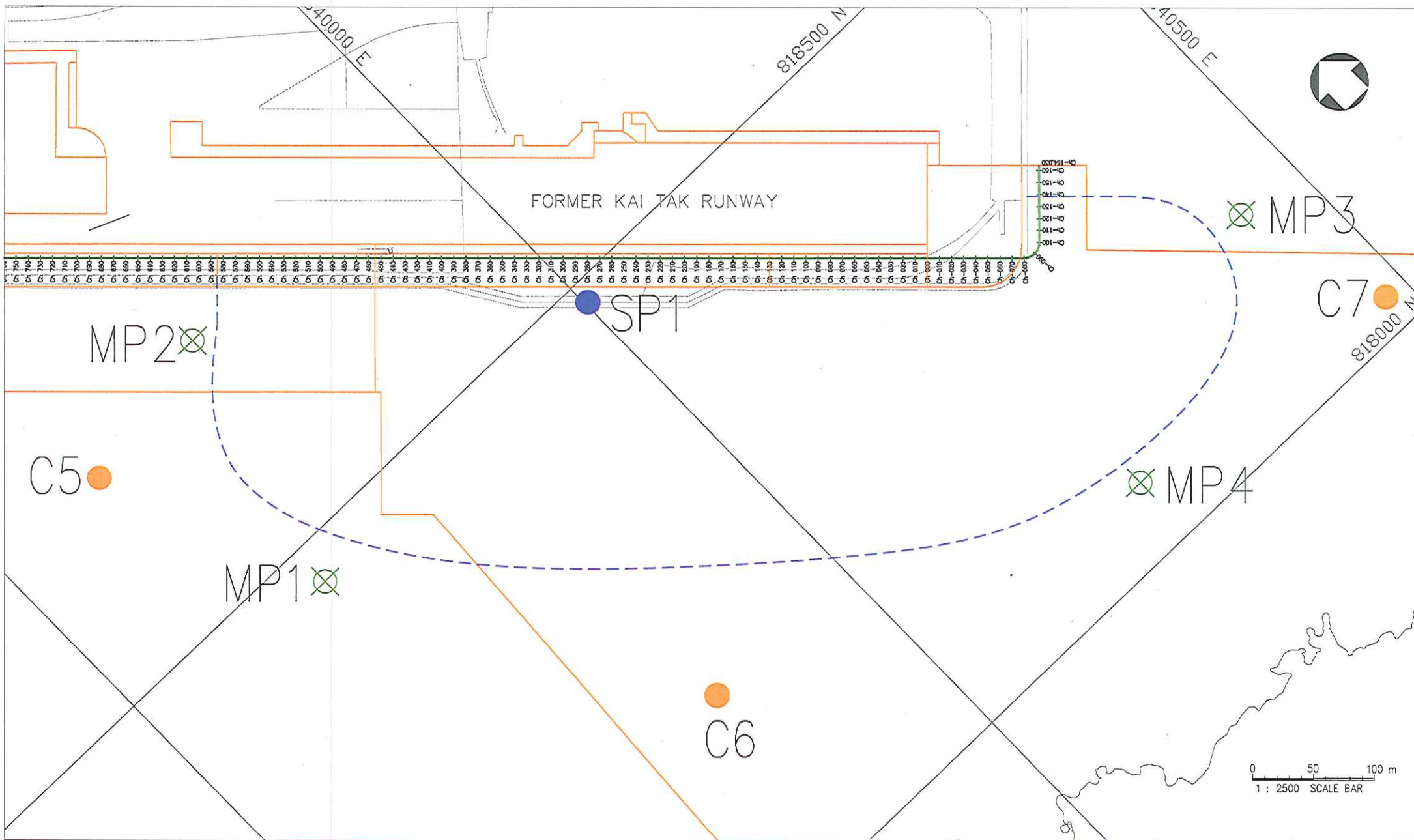
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AFFECTED Dwg. NO.

URS SCOTT WILSON LTD
Engineers for the Contract
ENGINEERS REPRESENTATIVE OFFICE





PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

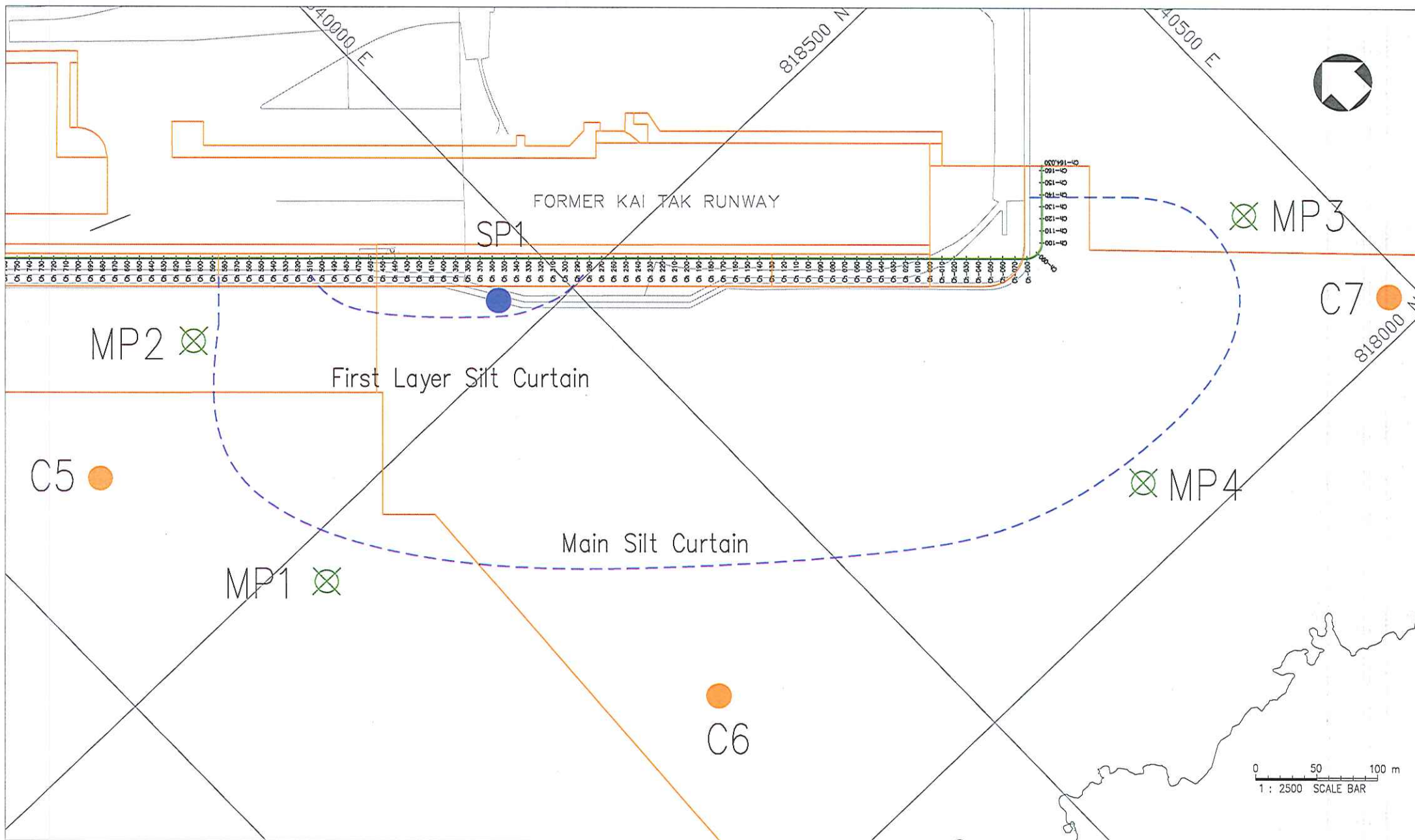
TITLE
Water Quality Surveillance System – September 2011

DATE
11 Oct 2011

PREPARED BY
PY

SCALE
NOT TO SCALE

SKETCH No.
SK-0652



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

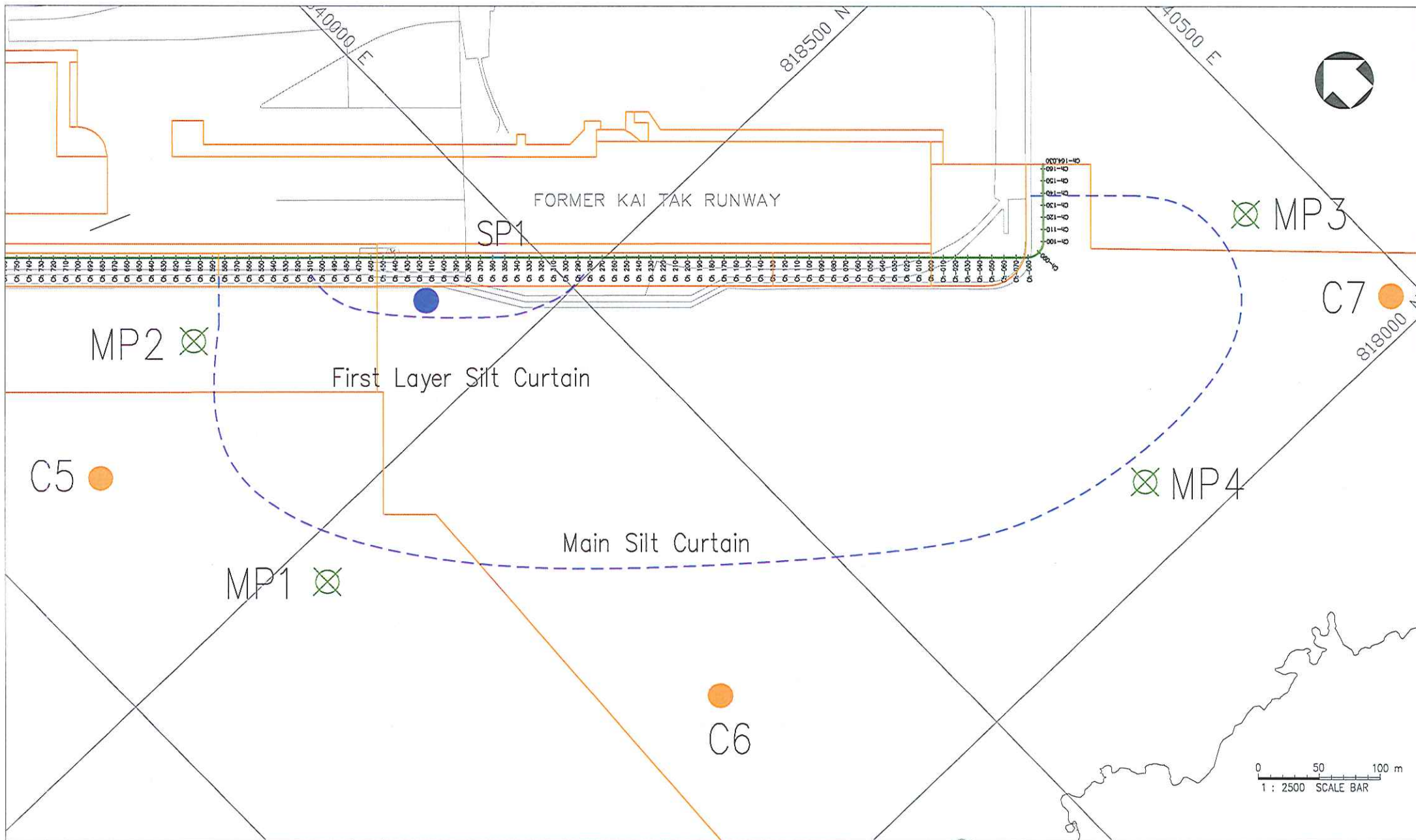
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Water Quality Surveillance System – October 2011

DATE
8 Nov 2011

PREPARED BY
PY

SCALE
NOT TO SCALE

SKETCH No.
SK-0677



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE
Water Quality Surveillance System – November 2011

DATE
23 Nov 2011

PREPARED BY
PY

SCALE
NOT TO SCALE

SKETCH No.
SK-0686



Appendix 2.1

Implementation Schedule of Environmental Mitigation Measures



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S3.6	Requirements of the Air Pollution Control (Construction Dust) Regulation shall be adhered to during the construction period.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	Air Pollution Control (Construction Dust) Regulation
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 minimise the exposed area and hence the potential odour emissions during the transportation of the dredged sediment.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM
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 be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	NCO EIAO-TM



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S4.9	If there is any planned NSRs within 300m from the work area occupied during the dredging period, an EM&A programme is recommended to be 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.	Representative NSRs at the former Kai Tak Airport runway / Upon formal occupation	N/A	Not applicable	NCO EIAO-TM
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 (and no more than 1 closed grab dredger) during 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.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM WPCO
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 Airport runway for construction of the cruise berth structures.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
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.	Seawater intakes in Victoria Harbour/ During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO
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.	Seawater intakes in Victoria Harbour / During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO
S5.9	If the opening has been introduced at the northern runway, silt screens 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.	Seawater intake at Sai Wan Ho, Sheung Wan and Wan Chai / During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	<p>Other good site practices that should be undertaken during dredging include:</p> <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.	Work site and adjacent waters / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO, EIAO-TM, WPCO, WDO
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.	Work site and adjacent waters / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO, WDO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
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.	Work site and adjacent waters / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO, WDO
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 of works should be implemented as necessary.	6 selected WSD flushing water intakes in Victoria Harbour/ During dredging in construction stage	Environmental Team and verified by Independent Environmental Checker	Implemented	EIAO-TM, WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	Silt screens are recommended to be deployed at 6 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 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.	6 selected WSD flushing water intakes in Victoria Harbour/ During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	<p>Good Site Practices</p> <p>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, to 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 measures to minimise 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.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7 (cont.)	<ul style="list-style-type: none">Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the workforce.Any unused chemicals or those with remaining functional capacity shall be recycled.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM
S6.7	<p>Marine Sediments</p> <p>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. Contaminated sediment would require either 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>	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	ETWB TCW No. 34/2002



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	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.	Work site / During dredging in construction stage	Contractor for capital dredging	Dumping Permits were issued by EPD	ETWB TCW No. 34/2002
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 minimise potential impacts on water quality:</p> <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 of 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.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	WDO; WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	Chemical Wastes After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled 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.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S6.7	General Refuse 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.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	WDO, WPCO



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	<p>Construction and Demolition Material</p> <p>It is recommended that the extent 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 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 within 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.	Work site / During the construction period	Contractor for capital dredging	Implemented	ETWB TCW No. 33/2002, 31/2004, 19/2005



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7 (cont.)	<ul style="list-style-type: none">• 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 generation from unloading.	Work site / During the construction period	Contractor for capital dredging	Implemented	ETWB TCW No. 33/2002, 31/2004, 19/2005
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 the Contractor under the Waste Management Plan certified by the Environmental Team and verified by the Independent Environmental Checker who should be responsible for auditing the results of the system.	Work site / During the construction period	Contractor for capital dredging, Engineer, Environmental Team and Independent Environmental Checker	Not applicable	ETWB TCW No. 31/2004



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
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.	Work site/ During construction of cruise terminal	Contractor for capital dredging as per CEDD's advice	Implemented	Antiquities and Monuments Ordinance EIAO, EIAO-TM Guidance Notes on Assessment of Impact on Sites of Cultural Heritage in Environmental Impact Assessment Studies (GN-CH) Hong Kong Planning Standards and Guidelines (HKPSG)
S7.10, App. 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 on the dredging barge.	Work site / during dredging in construction stage	Contractor for capital dredging, Environmental Team	Implemented	Antiquities and Monuments Ordinance EIAO, EIAO-TM GN-CH HKPSG Marine Archaeological Investigation Guidelines



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
8.7	Translocate those existing coral colonies attached on boulders that are manually movable by a diver underwater (possibly longest dimension of less than 50cm) located within the hard substrata sea area within the dredging site as far as practicable prior to the commencement of the capital dredging activities. The entire translocation exercise include the preparation of a detailed translocation plan, the pre-translocation coral survey, the coral translocation, and the quarterly post-translocation monitoring for one year. Pre-translocation survey would be focused on identifying and mapping of coral colonies that would be directly impacted by the proposed dredging and investigating the translocation feasibility of these coral colonies. A detailed translocation plan (including pre-translocation coral survey, translocation methodology and monitoring of transplanted corals) should be prepared during the detailed design stage of the Project which, together with the ecologist involved in coral translocation, should be approved by AFCD prior to commencement of the translocation exercises. The proposed relocation of the coral colonies should not affect any private/public marine rights at the recipient site.	Along the section of the former Kai Tak Airport runway that will be directed affected by the cruise terminal construction / During detailed design stage	Other ET specifically employed for coral translocation works	Final Detailed Coral Translocation Plan was approved by EPD in letter ref. (18) in EP2/K19/C/19 Pt.5 dated 5 June 2009. Form 5 was submitted under CEDD's memo ref. (6) in KD 2/31/4 Pt.3 dated 10 June 2009 regarding minor alteration of the position of the coral recipient site. Coral Translocation Report was submitted in Scott Wilson letter ref. 08290/325723 dated 2 July 2009. Post-translocation report shall be referred to the submissions by another ET specifically employed for coral translocation works.	EIAO-TM



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES

EIA Ref #	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S8.7	New seawalls at the berth structure of the cruise terminal shall be constructed in order to provide large area of hard substrata for settlement and recruitment of intertidal and subtidal assemblages similar to those previously recorded from existing habitats.	The section of the former Kai Tak Airport runway that will be directed affected by the cruise terminal construction / During detailed design stage	To be confirmed at later stage	To be confirmed at later stage	EIAO-TM
9.6	No fisheries-specific mitigation measures would be required.	-	Not applicable	Not applicable	-



Appendix 3.1

Action and Limit Levels

**Action and Limit Levels***Action and Limit Levels for Noise Monitoring*

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)

Remarks: No noise monitoring was conducted due to no planned noise sensitive receivers (NSRs) occupied within 300m from the works area of this Project during the dredging works.

Action and Limit Levels for Water Monitoring

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

Remarks:

Wet season is the period from April to September.

Dry season is the period from October to March.

Revised Action and Limit Levels for Water Monitoring

Station	Turbidity (NTU)				Suspended Solid (mg/L)			
	Action Level for individual stations		Limit Level for individual stations		Action Level for individual stations		Limit Level for individual stations	
	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



Station	Turbidity (NTU)				Suspended Solid (mg/L)			
	Action Level for individual stations		Limit Level for individual stations		Action Level for individual stations		Limit Level for individual stations	
	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season
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

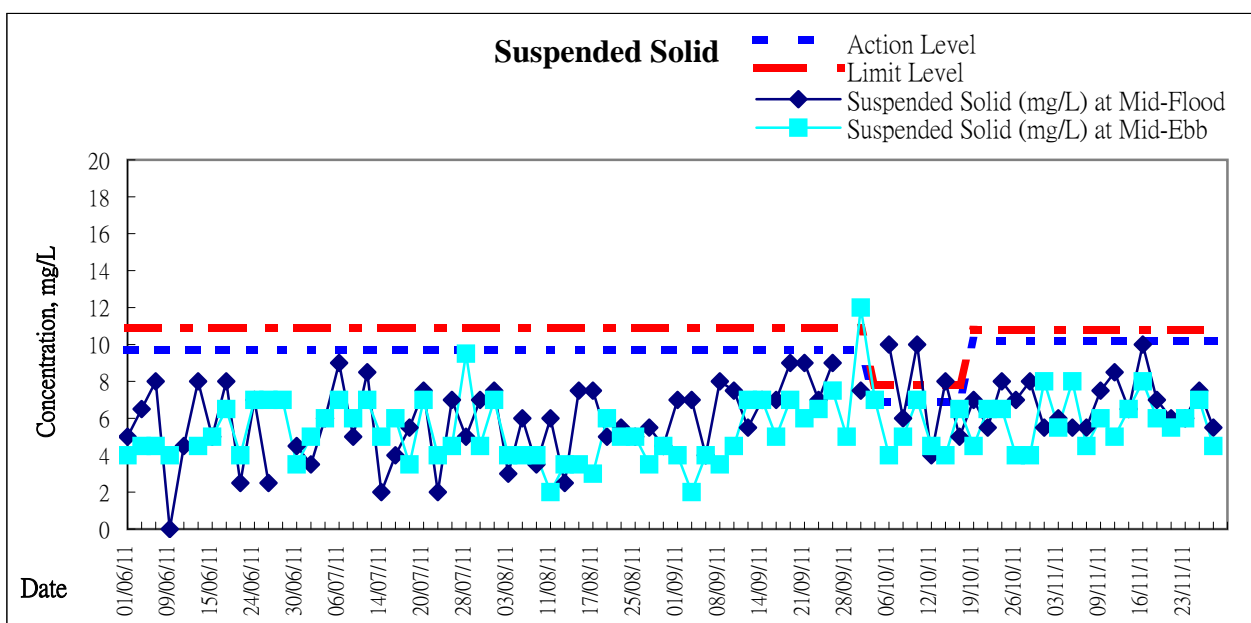
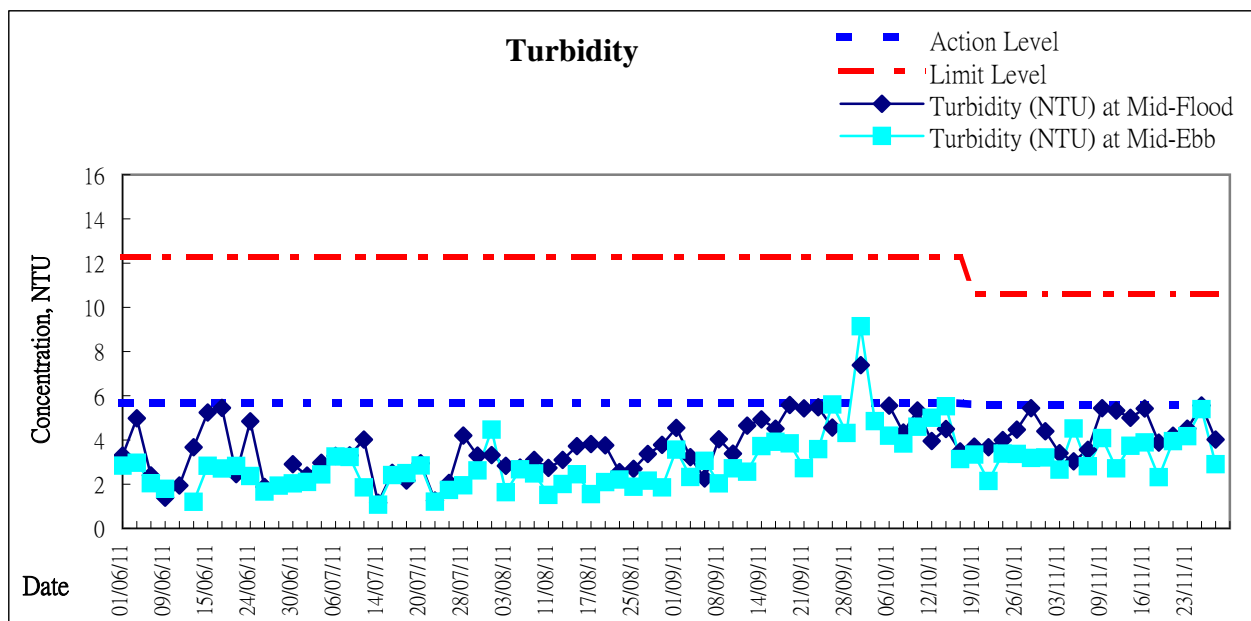
Remarks:

Revised Action and Limit Levels for water monitoring was approved on 19 October 2011.



Appendix 4.1

Graphical Presentation of Water Quality Monitoring Results

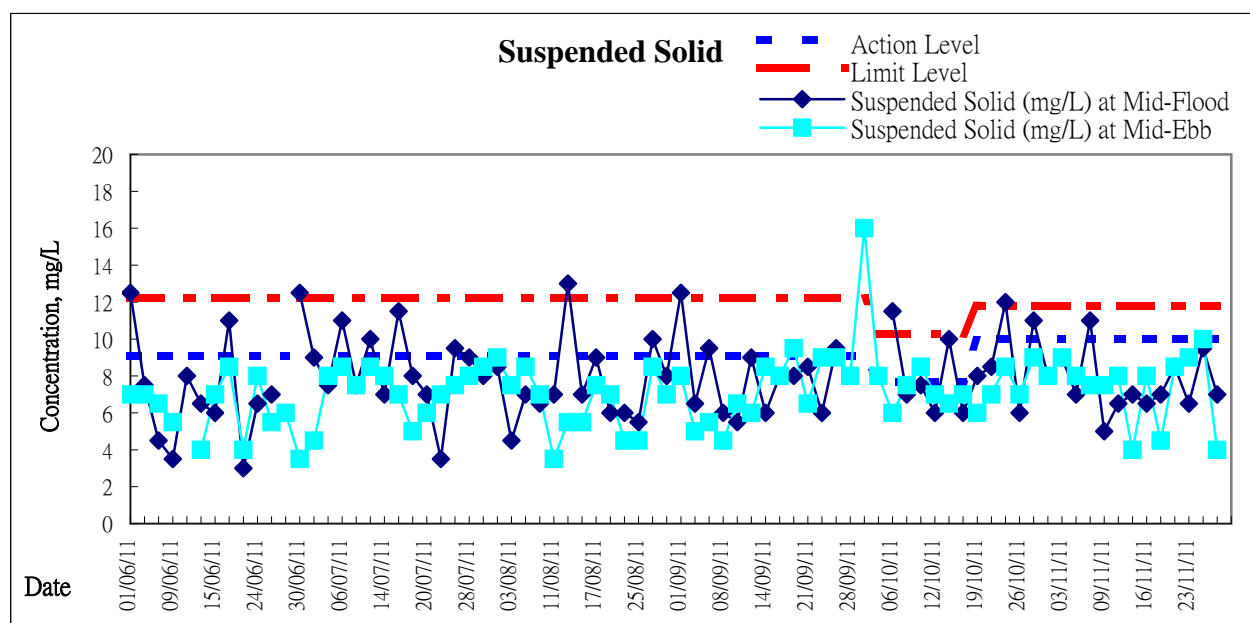
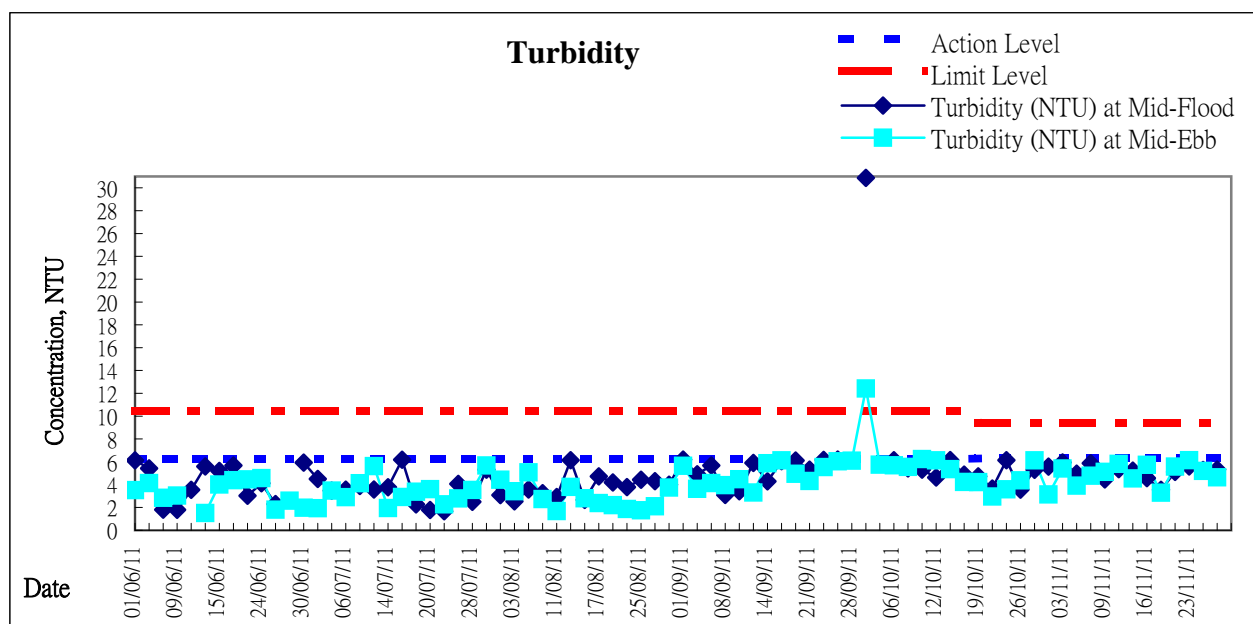


Remarks:

- Two sets of Suspended Solid Action and Limit levels for the dry season (the period from October to March) and wet season (the period from April to September).
- New sets Turbidity and SS Action Level and Limit Level for dry and wet season were approved by EPD on 19 Oct 2011



Graphic Presentation of Water Quality Result of WSD10 - Cha Kwo Ling

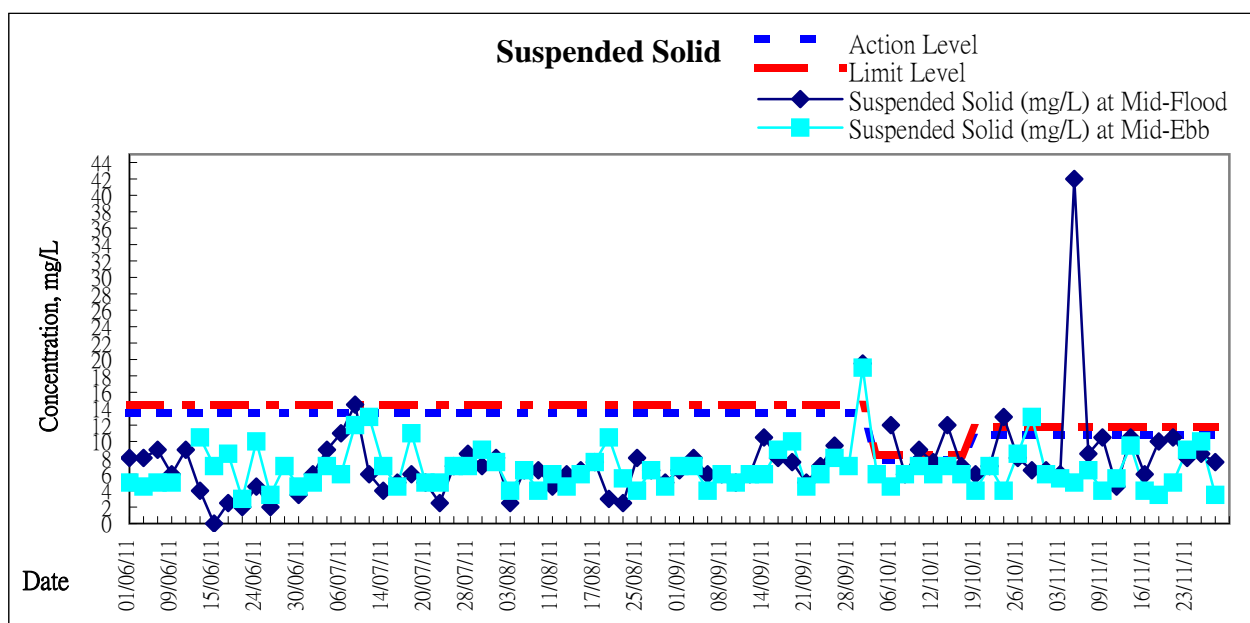
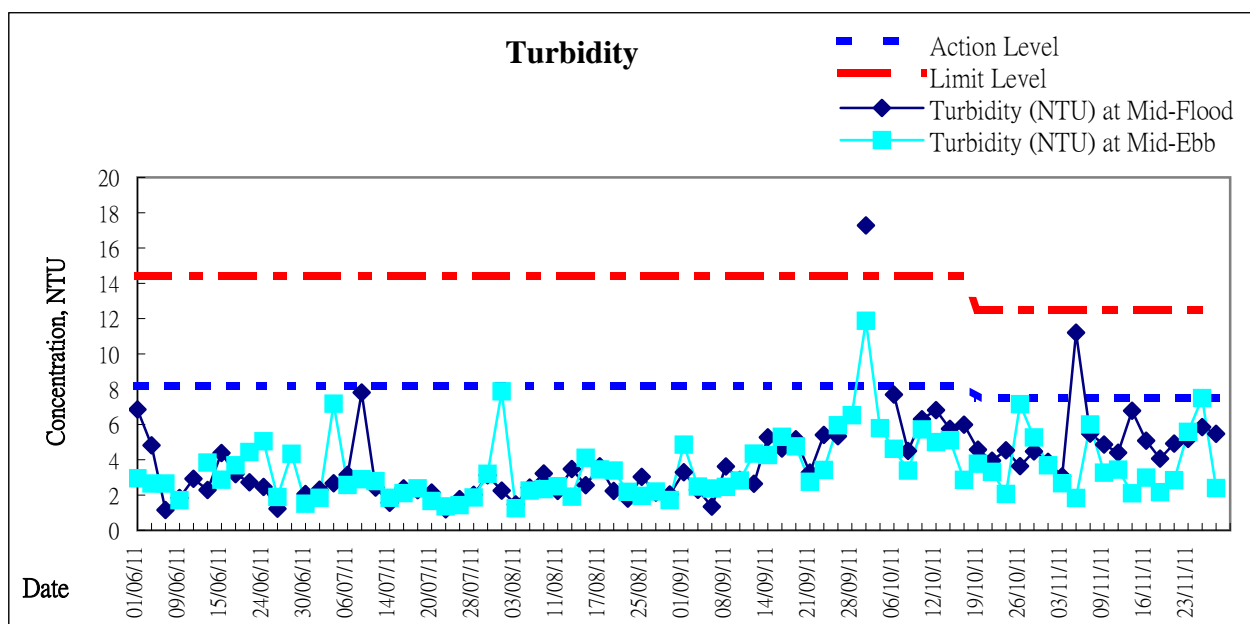


Remarks:

- Two sets of Suspended Solid Action and Limit levels for the dry season (the period from October to March) and wet season (the period from April to September).
- New sets Turbidity and SS Action Level and Limit Level for dry and wet season were approved by EPD on 10 Oct 2011.

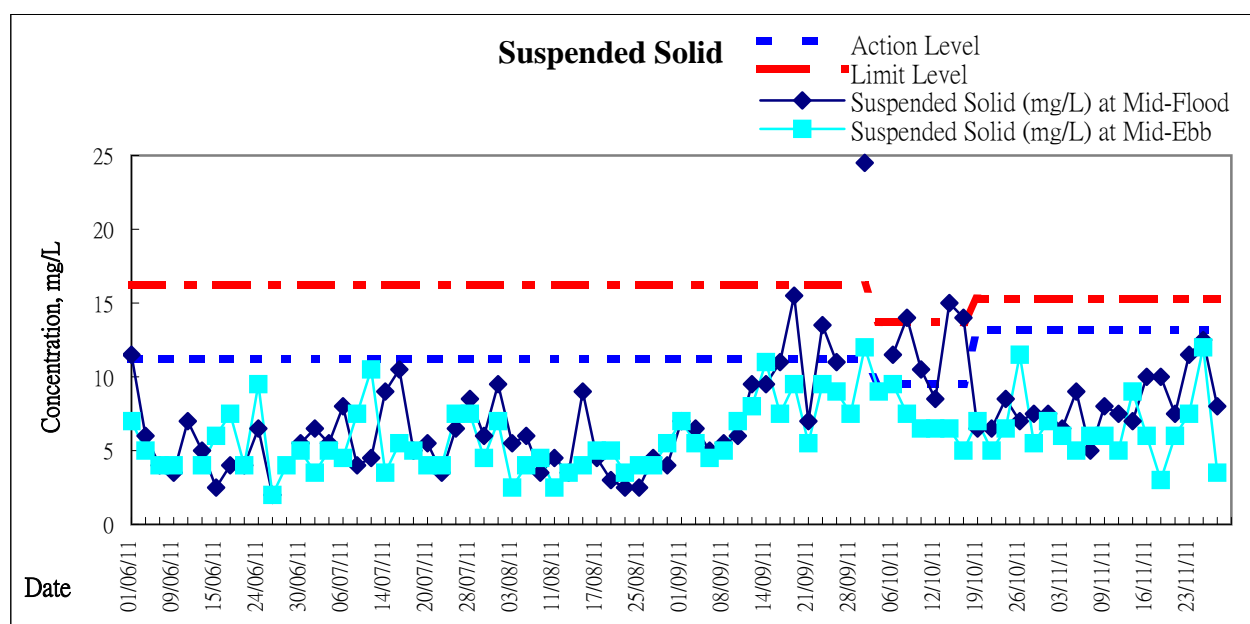
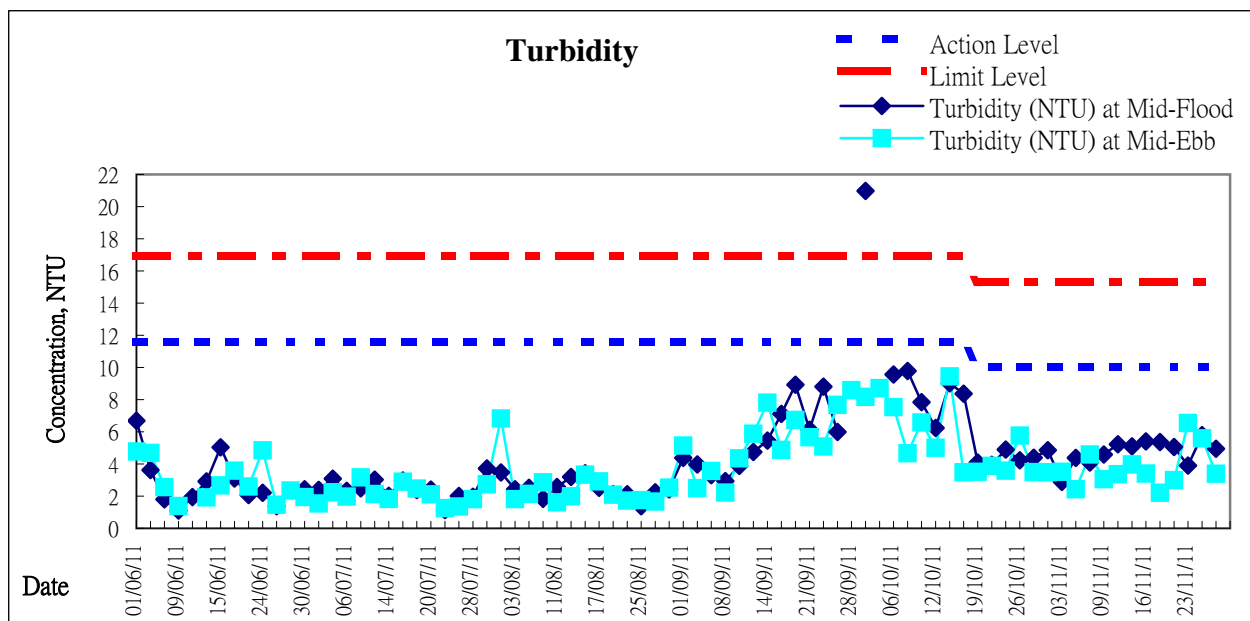


Graphic Presentation of Water Quality Result of WSD15 - Sai Wan Ho



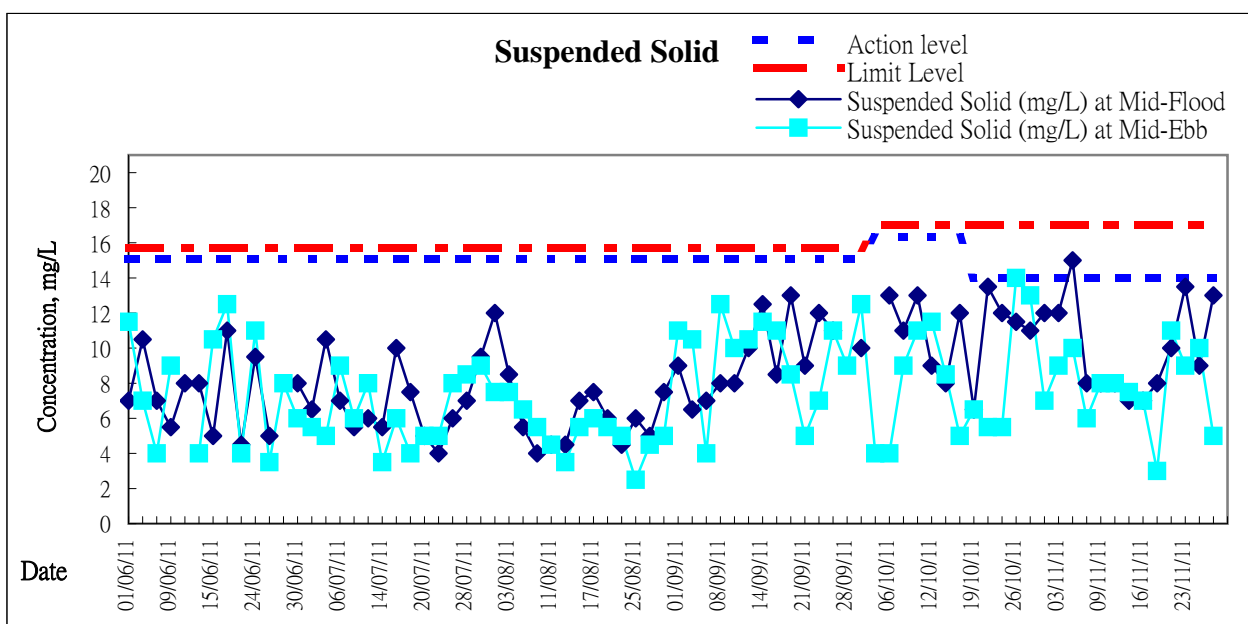
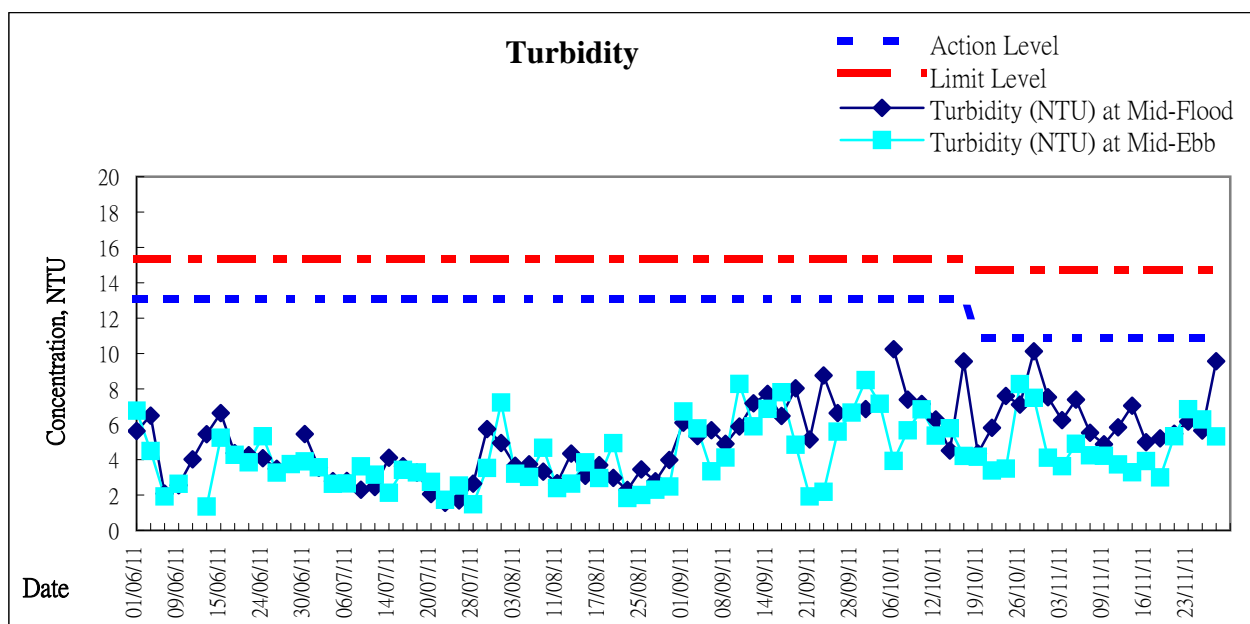
Remarks:

- Two sets of Suspended Solid Action and Limit levels for the dry season (the period from October to March) and wet season (the period from April to September).
- New sets Turbidity and SS Action Level and Limit Level for dry and wet season were approved by EPD on 10 Oct 2014.



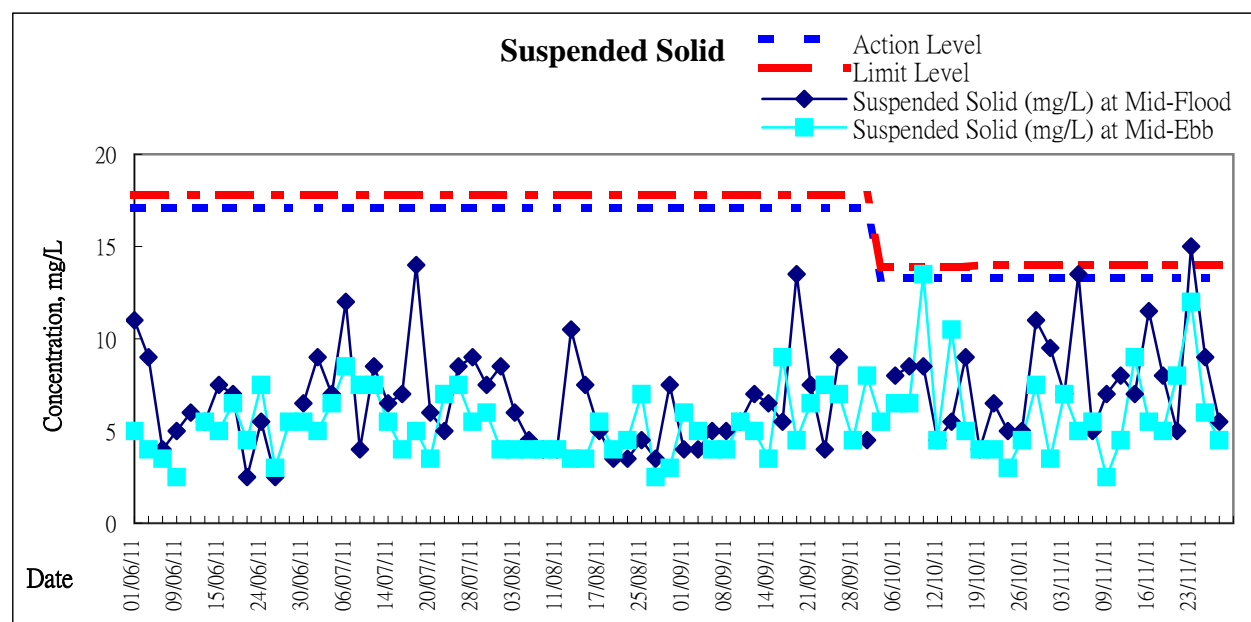
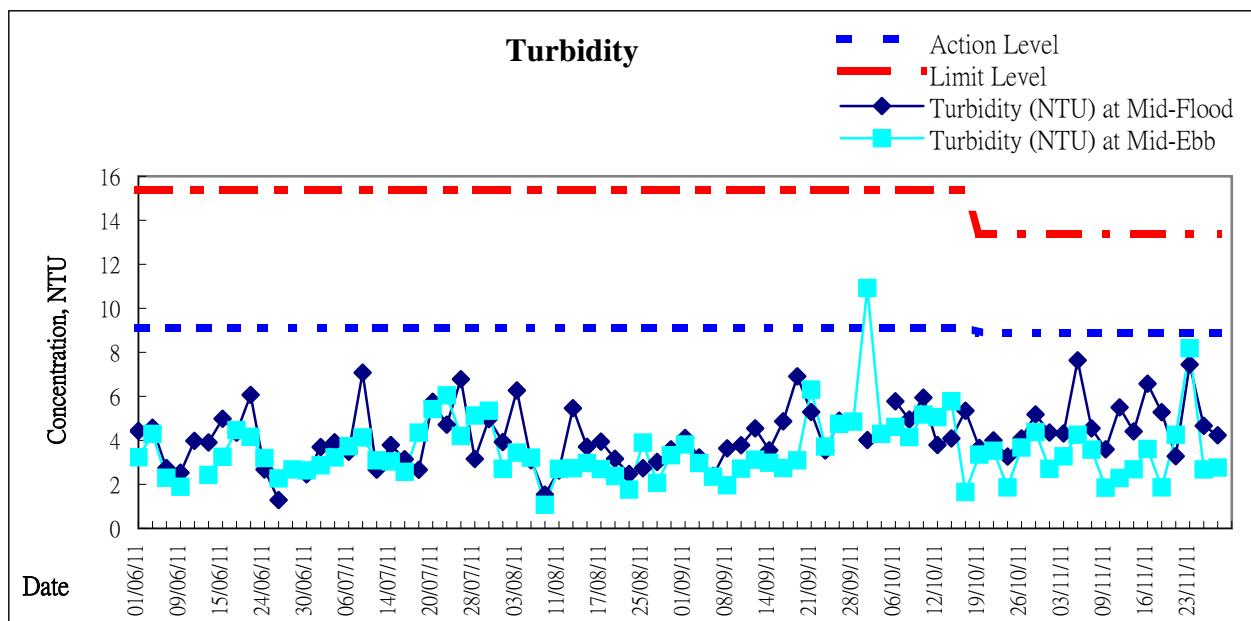
Remarks:

- Two sets of Suspended Solid Action and Limit levels for the dry season (the period from October to March) and wet season (the period from April to September).
- New sets Turbidity and SS Action Level and Limit Level for dry and wet season were approved by EPD on 10 Oct 2011



Remarks:

- Two sets of Suspended Solid Action and Limit levels for the dry season (the period from October to March) and wet season (the period from April to September).
- New sets Turbidity and SS Action Level and Limit Level for dry and wet season were approved by EPD on 19 Oct 2011



Remarks:

- Two sets of Suspended Solid Action and Limit levels for the dry season (the period from October to March) and wet season (the period from April to September).
- New sets Turbidity and SS Action Level and Limit Level for dry and wet season were approved by EPD on 19 Oct 2011



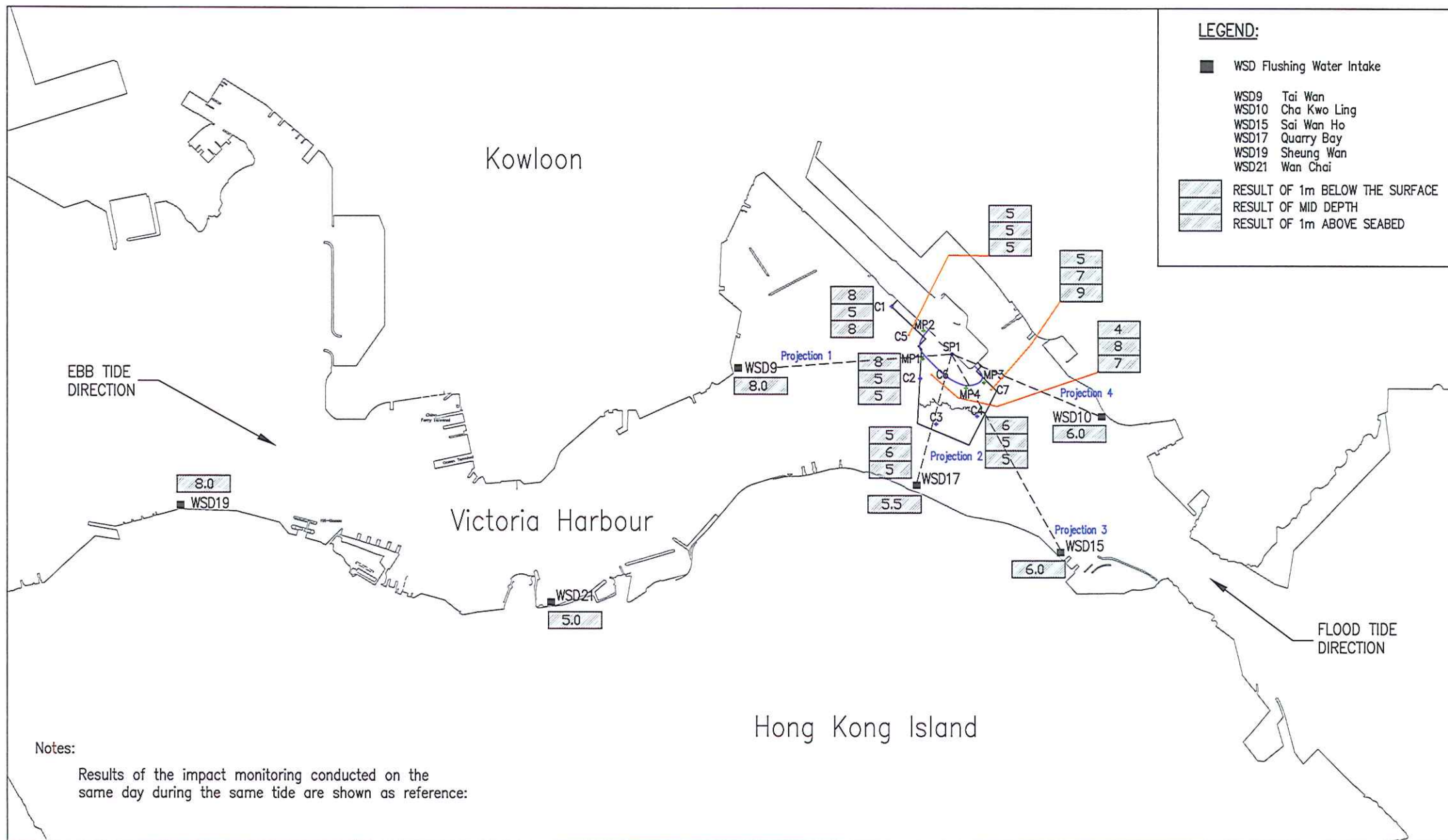
Appendix 4.2

Graphical Presentation of Water Quality Surveillance

Water Quality Surveillance System Monitoring Results - 8 September 2011 (Flood Tide)

Monitoring Location		Turbidity in NTU	Compare to Trigger Level	Suspended Solids in mg/L	Compare to Trigger Level
SP1	1m below the surface	4.03	N/A	14	N/A
	mid depth	6.05	N/A	19	N/A
	1m above the seabed	8.70	N/A	19	N/A
MP1	1m below the surface	3.40	N/A	4	N/A
	mid depth	2.76	N/A	5	N/A
	1m above the seabed	3.14	N/A	6	N/A
MP2	1m below the surface	2.57	N/A	6	N/A
	mid depth	2.43	N/A	5	N/A
	1m above the seabed	2.90	N/A	5	N/A
MP3	1m below the surface	2.85	N/A	4	N/A
	mid depth	2.51	N/A	5	N/A
	1m above the seabed	5.49	N/A	10	N/A
MP4	1m below the surface	2.98	N/A	6	N/A
	mid depth	3.16	N/A	5	N/A
	1m above the seabed	3.88	N/A	6	N/A
C1	1m below the surface	4.06	Lower	8	Lower
	mid depth	2.83	Lower	5	Lower
	1m above the seabed	2.85	Lower	8	Lower
C2	1m below the surface	2.92	Lower	8	Lower
	mid depth	3.06	Lower	5	Lower
	1m above the seabed	3.94	Lower	5	Lower
C3	1m below the surface	3.17	Lower	5	Lower
	mid depth	3.09	Lower	6	Lower
	1m above the seabed	2.91	Lower	5	Lower
C4	1m below the surface	2.60	Lower	6	Lower
	mid depth	3.27	Lower	5	Lower
	1m above the seabed	2.77	Lower	5	Lower
C5	1m below the surface	2.82	N/A	5	N/A
	mid depth	2.71	N/A	5	N/A
	1m above the seabed	2.95	N/A	5	N/A
C6	1m below the surface	3.05	N/A	4	N/A
	mid depth	3.46	N/A	8	N/A
	1m above the seabed	3.85	N/A	7	N/A
C7	1m below the surface	3.04	N/A	5	N/A
	mid depth	3.88	N/A	7	N/A
	1m above the seabed	4.95	N/A	9	N/A

Control Point	Trigger Level for Turbidity in NTU for All Season	Trigger Level for SS in mg/L for Wet Season (April- September)
C1	12.3 for Flood Tide	18.5
C2	12.3 for Flood Tide	
C3	16.9	
C4	10.5 for Ebb Tide	



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

RESULT OF 1m BELOW THE SURFACE
 RESULT OF MID DEPTH
 RESULT OF 1m ABOVE SEABED

Notes:

Results of the impact monitoring conducted on the same day during the same tide are shown as reference:



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

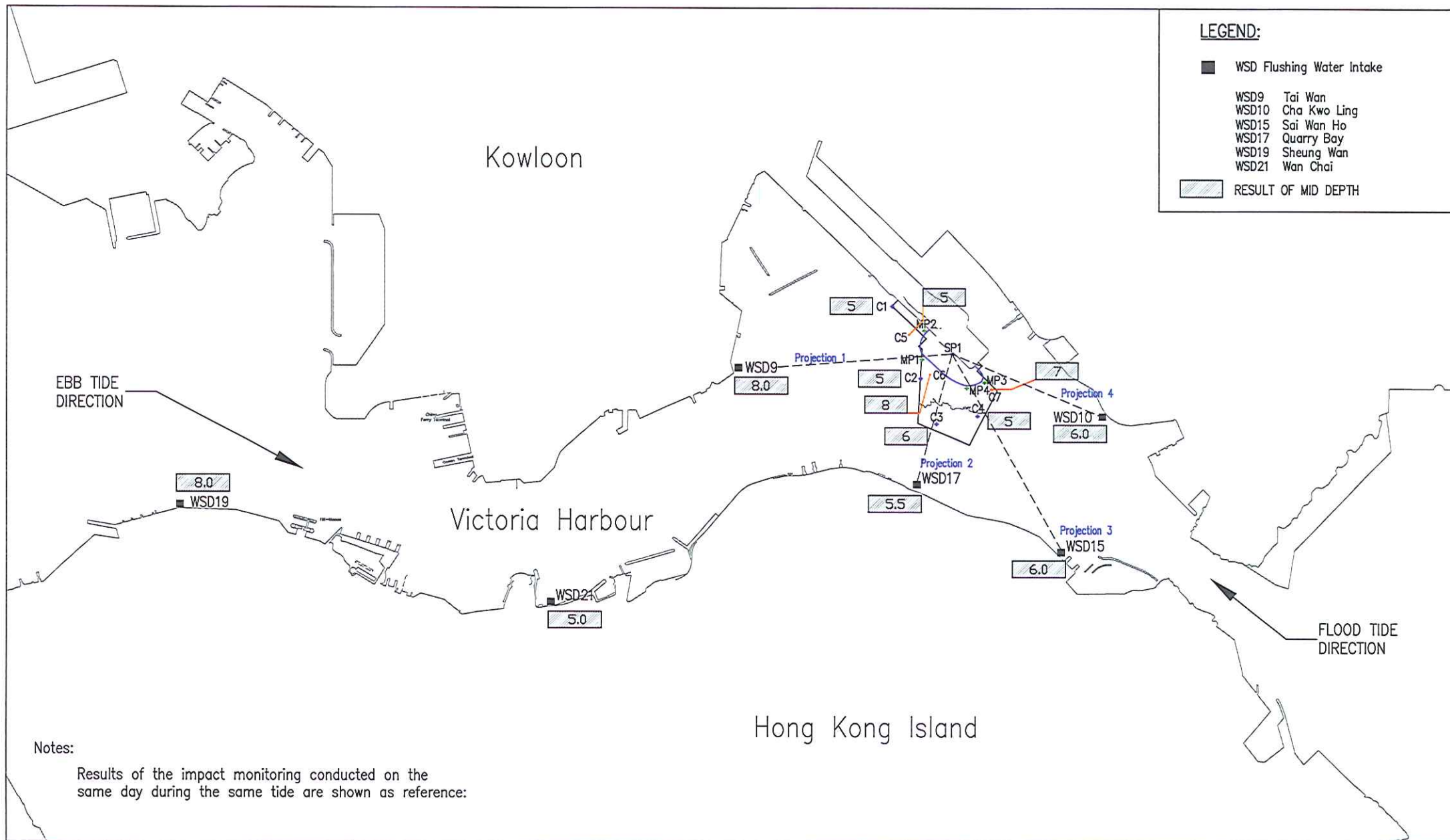
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WATER QUALITY SURVEILLANCE SYSTEM - (8 September 2011 FLOOD) - Page 1

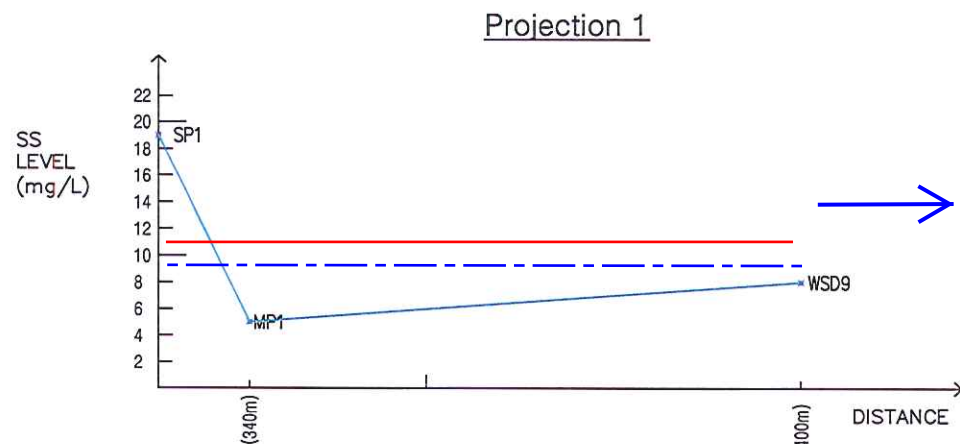
DATE
17-Sep-11

PREPARED BY
PY

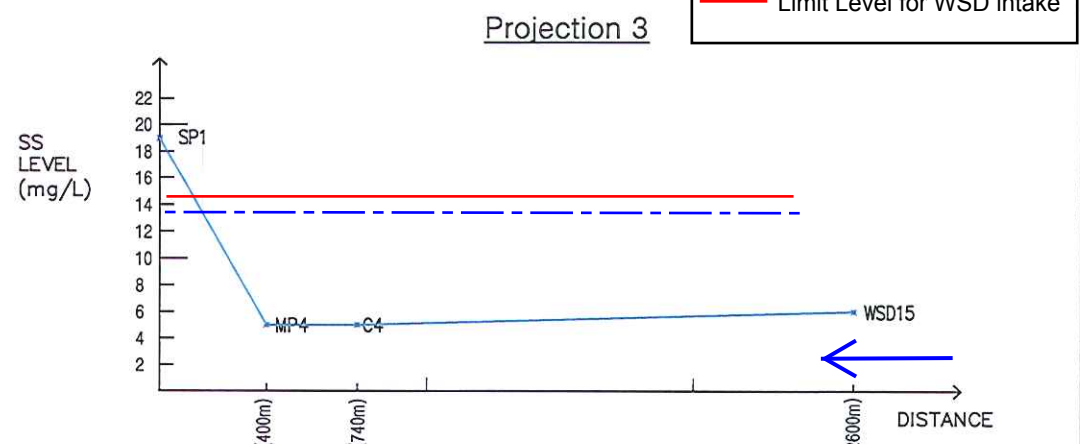
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SKETCH No.
SK-0640

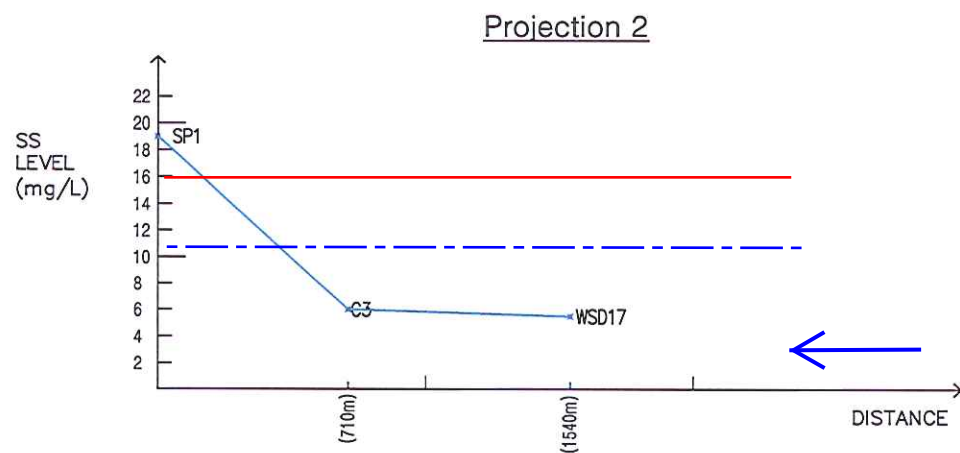




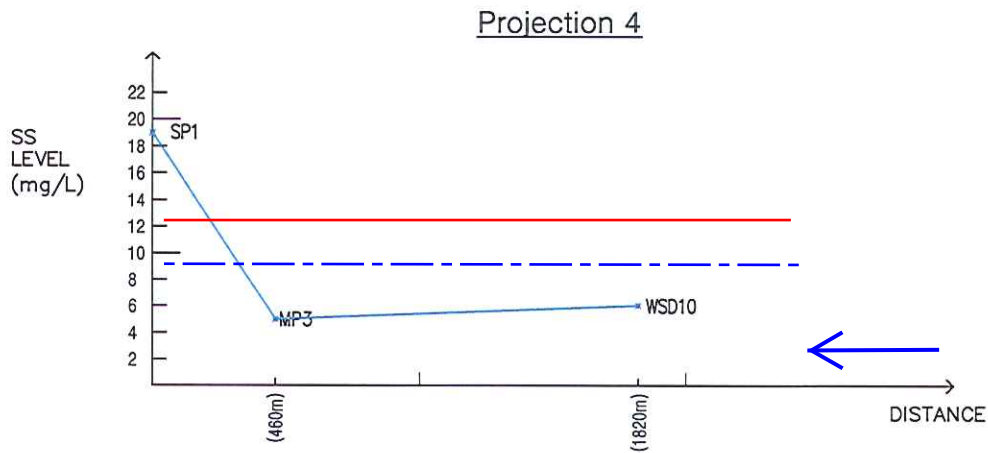
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Description: WSD15 was located at upstream which was well within the Action Level.



Description: WSD17 was located at upstream which was well within the Action Level.



Description: WSD10 was located at upstream which was well within the Action Level.

Water Quality Surveillance System Monitoring Results - 26 September 2011 (Ebb Tide)

Monitoring Location		Turbidity in NTU	Compare to Trigger Level	Suspended Solids in mg/L	Compare to Trigger Level
SP1	1m below the surface	5.48	N/A	11	N/A
	mid depth	5.63	N/A	10	N/A
	1m above the seabed	7.60	N/A	12	N/A
MP1	1m below the surface	4.75	N/A	10	N/A
	mid depth	5.80	N/A	9	N/A
	1m above the seabed	5.68	N/A	8	N/A
MP2	1m below the surface	5.44	N/A	11	N/A
	mid depth	6.24	N/A	9	N/A
	1m above the seabed	5.95	N/A	8	N/A
MP3	1m below the surface	6.24	N/A	10	N/A
	mid depth	6.31	N/A	13	N/A
	1m above the seabed	5.86	N/A	16	N/A
MP4	1m below the surface	5.07	N/A	10	N/A
	mid depth	5.02	N/A	8	N/A
	1m above the seabed	4.85	N/A	7	N/A
C1	1m below the surface	5.16	Lower	9	Lower
	mid depth	5.43	Lower	10	Lower
	1m above the seabed	6.45	Lower	12	Lower
C2	1m below the surface	3.37	Lower	5	Lower
	mid depth	2.83	Lower	5	Lower
	1m above the seabed	3.48	Lower	6	Lower
C3	1m below the surface	4.19	Lower	7	Lower
	mid depth	4.64	Lower	5	Lower
	1m above the seabed	4.56	Lower	6	Lower
C4	1m below the surface	4.69	Lower	5	Lower
	mid depth	4.32	Lower	6	Lower
	1m above the seabed	3.66	Lower	5	Lower
C5	1m below the surface	4.68	N/A	7	N/A
	mid depth	4.37	N/A	7	N/A
	1m above the seabed	5.13	N/A	8	N/A
C6	1m below the surface	4.03	N/A	7	N/A
	mid depth	4.26	N/A	8	N/A
	1m above the seabed	4.11	N/A	10	N/A
C7	1m below the surface	6.50	N/A	12	N/A
	mid depth	6.28	N/A	10	N/A
	1m above the seabed	7.29	N/A	10	N/A

Control Point	Trigger Level for Turbidity in NTU for All Season	Trigger Level for SS in mg/L for Wet Season (April - September)
C1	12.3 for Flood Tide	18.5
C2	12.3 for Flood Tide	
C3	16.9	
C4	10.5 for Ebb Tide	

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

RESULT OF 1m BELOW THE SURFACE
RESULT OF MID DEPTH
RESULT OF 1m ABOVE SEABED

EBB TIDE
DIRECTION

FLOOD TIDE
DIRECTION

Notes:

Results of the impact monitoring conducted on the same day during the same tide are shown as reference:



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE
WATER QUALITY SURVEILLANCE SYSTEM – (26 September 2011 EBB) – Page 1

DATE
11-Oct-11

PREPARED BY
PY

SCALE
NOT TO SCALE

SKETCH No.
SK-0647

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
- ▨ RESULT OF MID DEPTH

Kowloon

Victoria Harbour

Hong Kong Island

EBB TIDE
DIRECTION

FLOOD TIDE
DIRECTION

Notes:

Results of the impact monitoring conducted on the same day during the same tide are shown as reference:



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

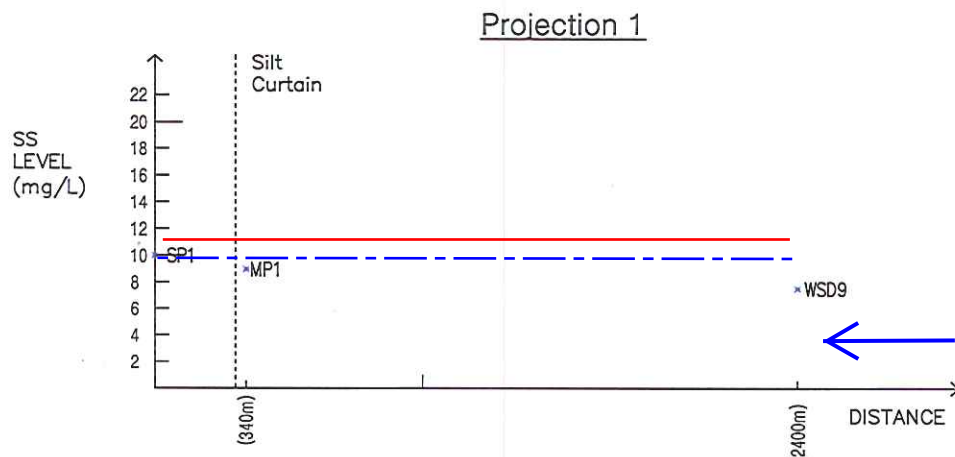
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WATER QUALITY SURVEILLANCE SYSTEM - (26 September 2011 EBB) - Page 2

DATE
11-Oct-11

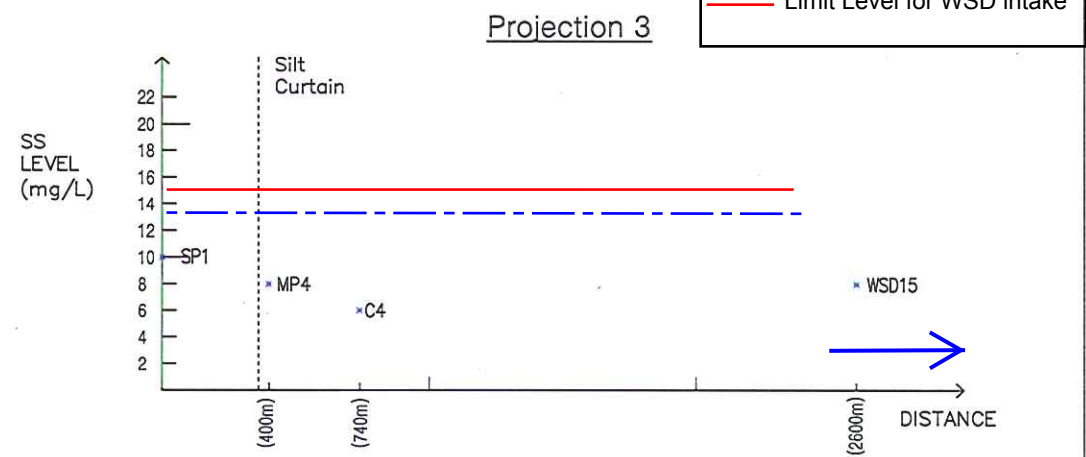
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PY

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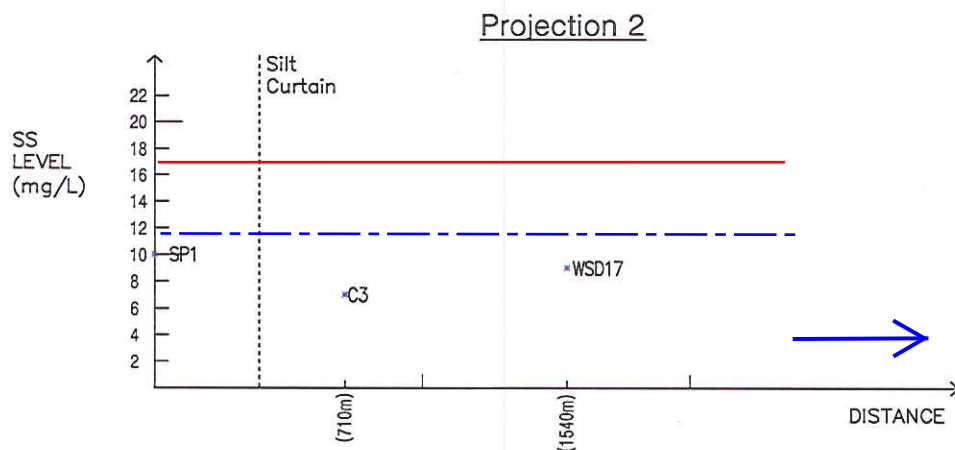
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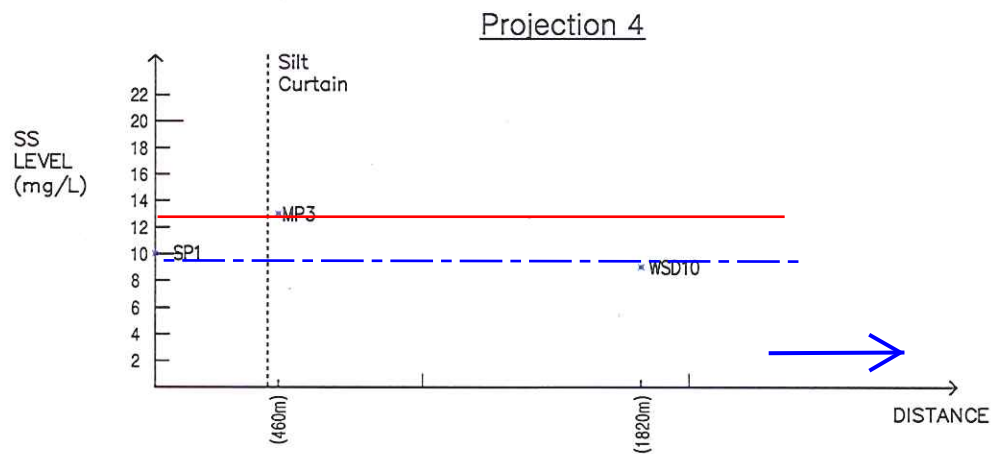
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Description: WSD15 was located at downstream which was well within the Action Level.



Description: WSD17 was located at downstream which had a SS level below the Action Level.



Description: WSD10 was located at downstream which had a SS level below the Action Level.



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE
GRAPHICAL PRESENTATION OF THE WATER
QUALITY SURVEILLANCE SYSTEM MONITORING
RESULTS AT MID DEPTH - (26 September 2011 EBB)

DATE
11-Oct-11

PREPARED BY
PY

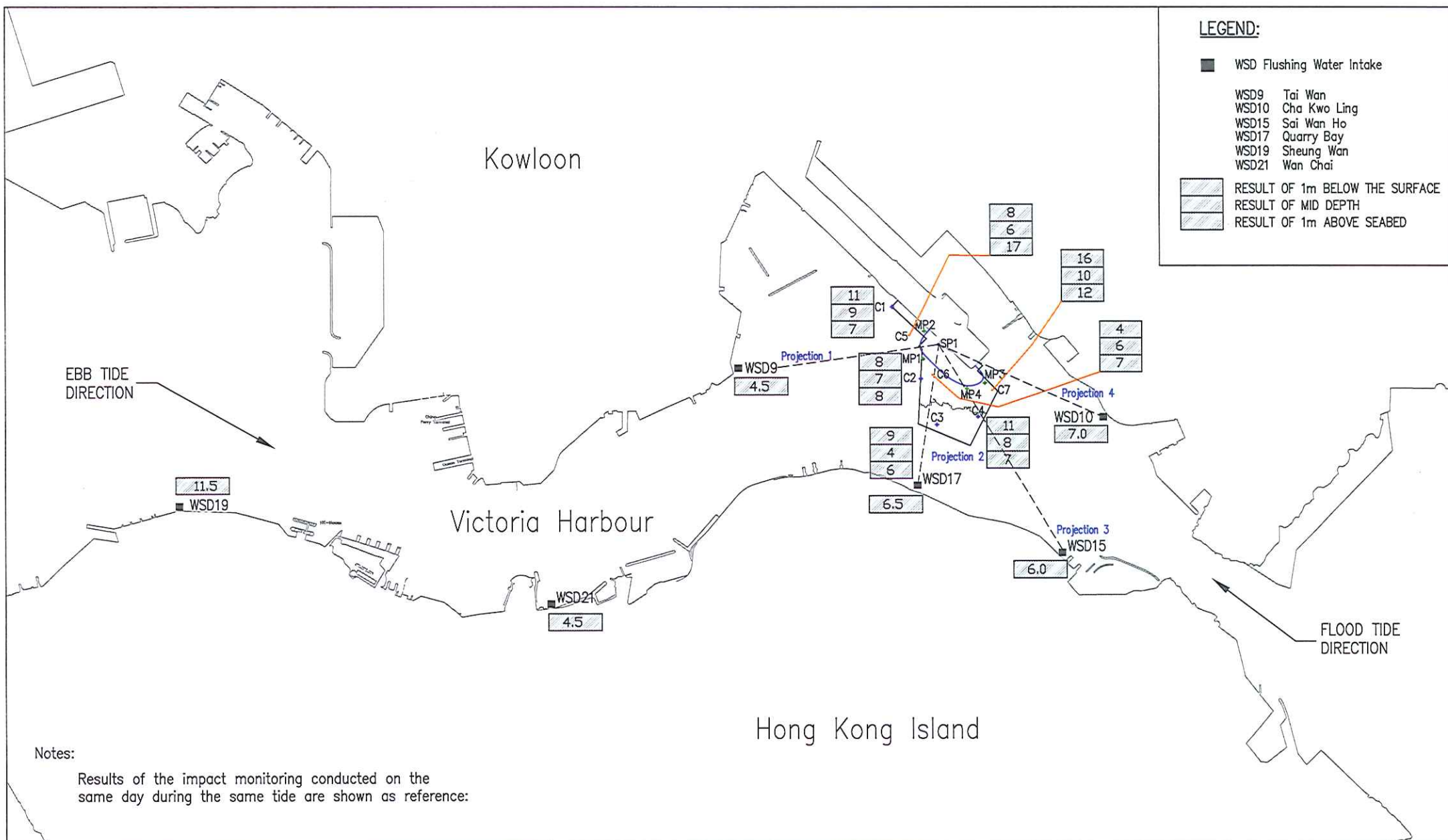
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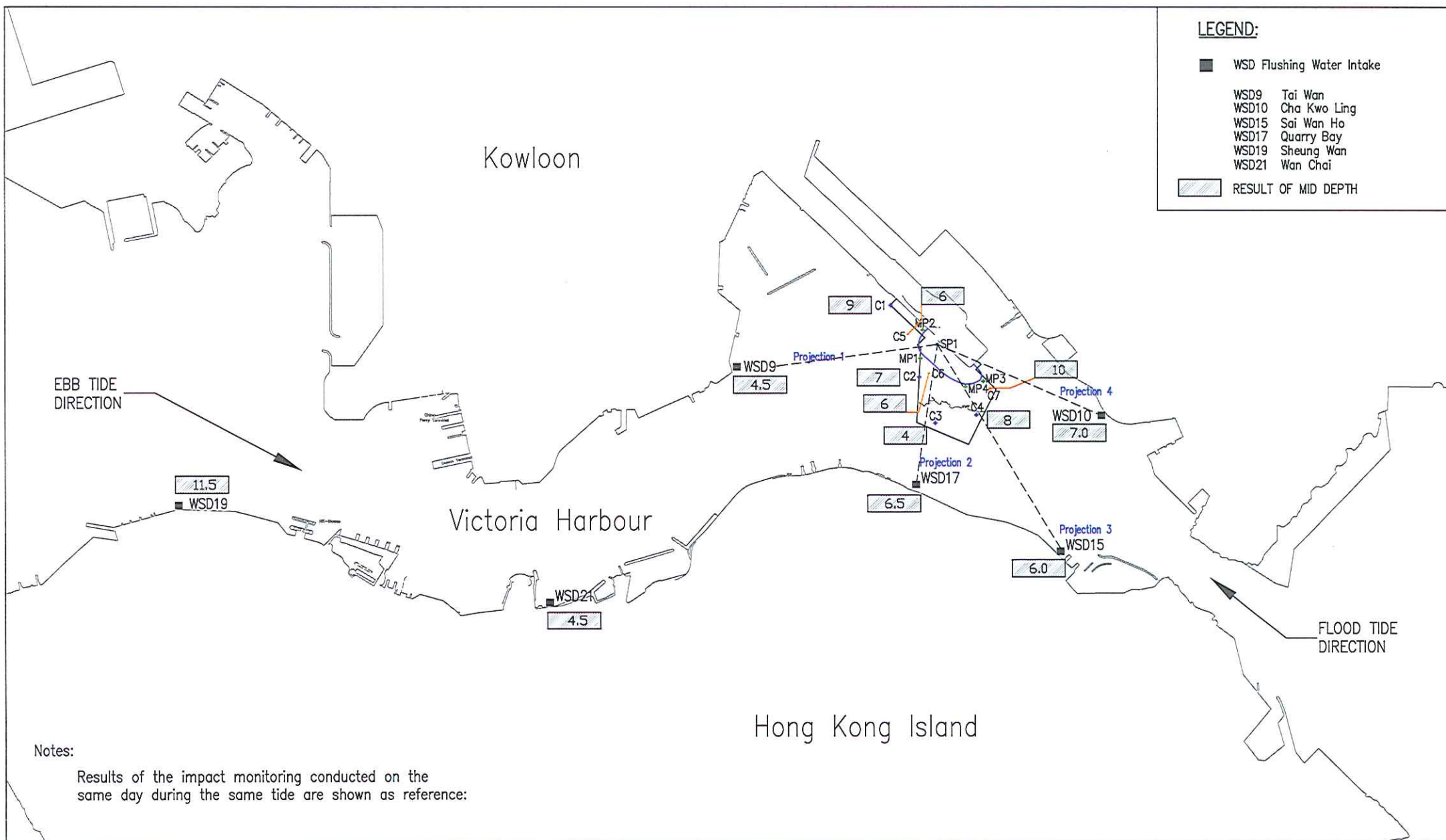
SKETCH No.
SK-0649

Water Quality Surveillance System Monitoring Results - 12 October 2011 (Ebb Tide)

Monitoring Location		Turbidity in NTU	Compare to Trigger Level	Suspended Solids in mg/L	Compare to Trigger Level
SP1	1m below the surface	144.5	N/A	183	N/A
	mid depth	85.7	N/A	108	N/A
	1m above the seabed	23.9	N/A	38	N/A
MP1	1m below the surface	4.89	N/A	12	N/A
	mid depth	5.44	N/A	7	N/A
	1m above the seabed	3.45	N/A	7	N/A
MP2	1m below the surface	4.52	N/A	10	N/A
	mid depth	4.65	N/A	8	N/A
	1m above the seabed	4.71	N/A	9	N/A
MP3	1m below the surface	18.8	N/A	25	N/A
	mid depth	10.9	N/A	18	N/A
	1m above the seabed	7.93	N/A	15	N/A
MP4	1m below the surface	3.71	N/A	8	N/A
	mid depth	3.67	N/A	6	N/A
	1m above the seabed	3.39	N/A	6	N/A
C1	1m below the surface	5.69	Lower	11	Lower
	mid depth	5.68	Lower	9	Lower
	1m above the seabed	5.04	Lower	7	Lower
C2	1m below the surface	3.73	Lower	8	Lower
	mid depth	3.59	Lower	7	Lower
	1m above the seabed	3.11	Lower	8	Lower
C3	1m below the surface	3.46	Lower	9	Lower
	mid depth	3.43	Lower	4	Lower
	1m above the seabed	3.76	Lower	6	Lower
C4	1m below the surface	6.76	Lower	11	Lower
	mid depth	6.22	Lower	8	Lower
	1m above the seabed	4.96	Lower	7	Lower
C5	1m below the surface	4.89	N/A	8	N/A
	mid depth	4.11	N/A	6	N/A
	1m above the seabed	5.12	N/A	17	N/A
C6	1m below the surface	2.91	N/A	4	N/A
	mid depth	3.87	N/A	6	N/A
	1m above the seabed	3.51	N/A	7	N/A
C7	1m below the surface	12.5	N/A	16	N/A
	mid depth	6.19	N/A	10	N/A
	1m above the seabed	7.22	N/A	12	N/A

Control Point	Trigger Level for Turbidity in NTU for All Season	Trigger Level for SS in mg/L for Dry Season (October - March)
C1	12.3 for Flood Tide	14.0
C2	12.3 for Flood Tide	
C3	16.9	
C4	10.5 for Ebb Tide	



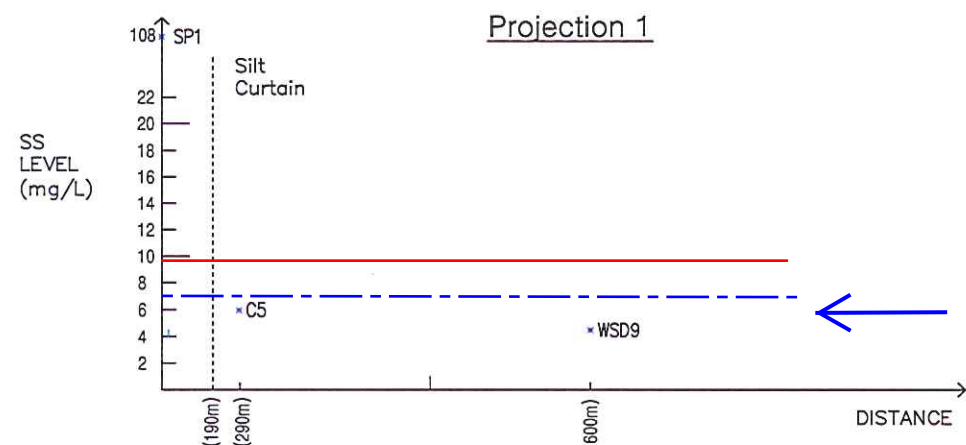


Legend

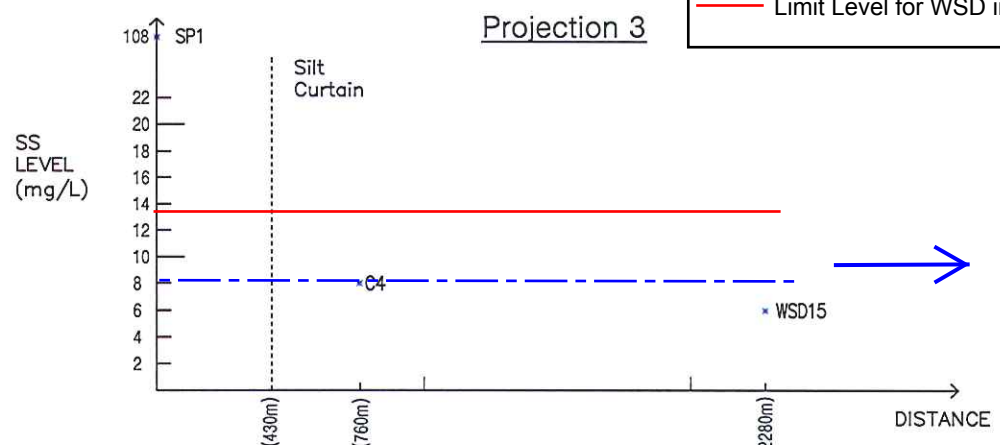
→ Tidal Direction

- - - Action Level for WSD intake

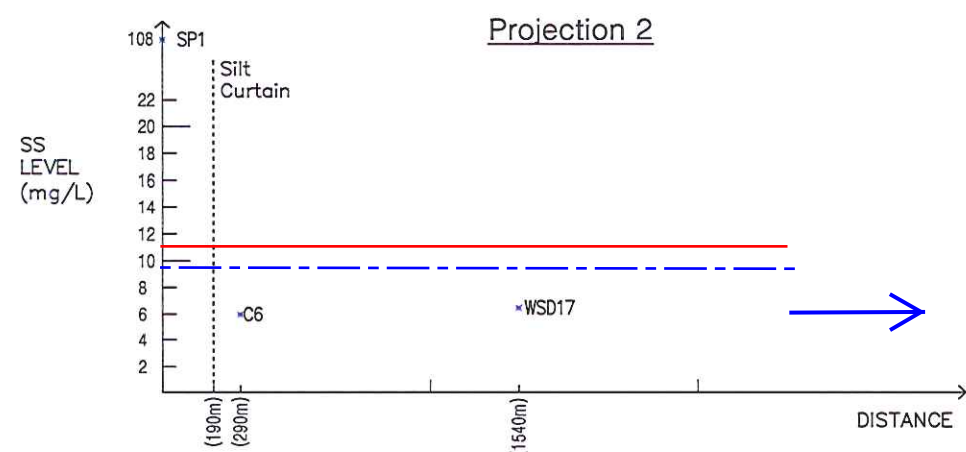
— Limit Level for WSD intake



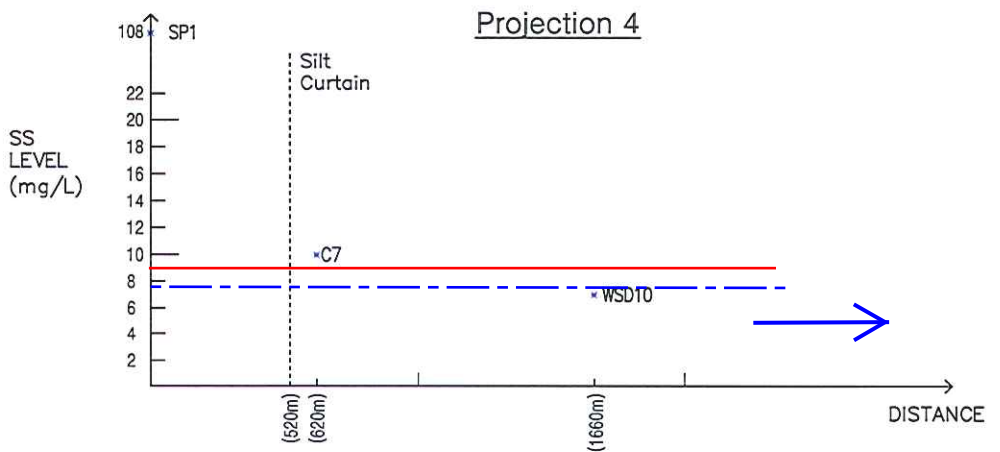
Description: WSD9 was located at upstream which was well within the Action Level.



Description: WSD15 was located at downstream which was well within the Action Level.



Description: WSD17 was located at downstream which had a SS level below the Action Level.



Description: WSD10 was located at downstream which had a SS level below the Action Level.

PENTA-OCEAN

CONSTRUCTION CO., LTD.

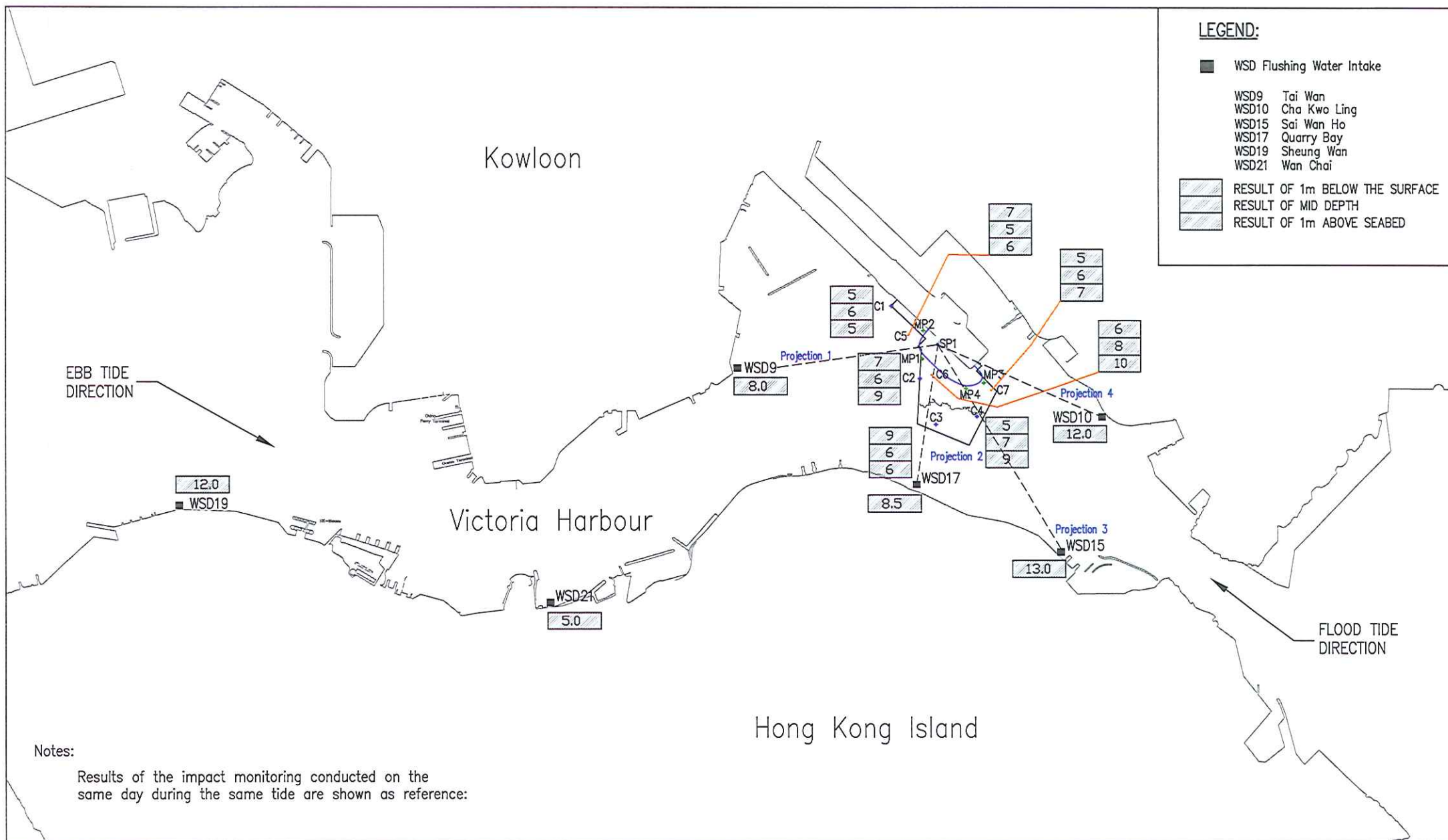
五洋建設

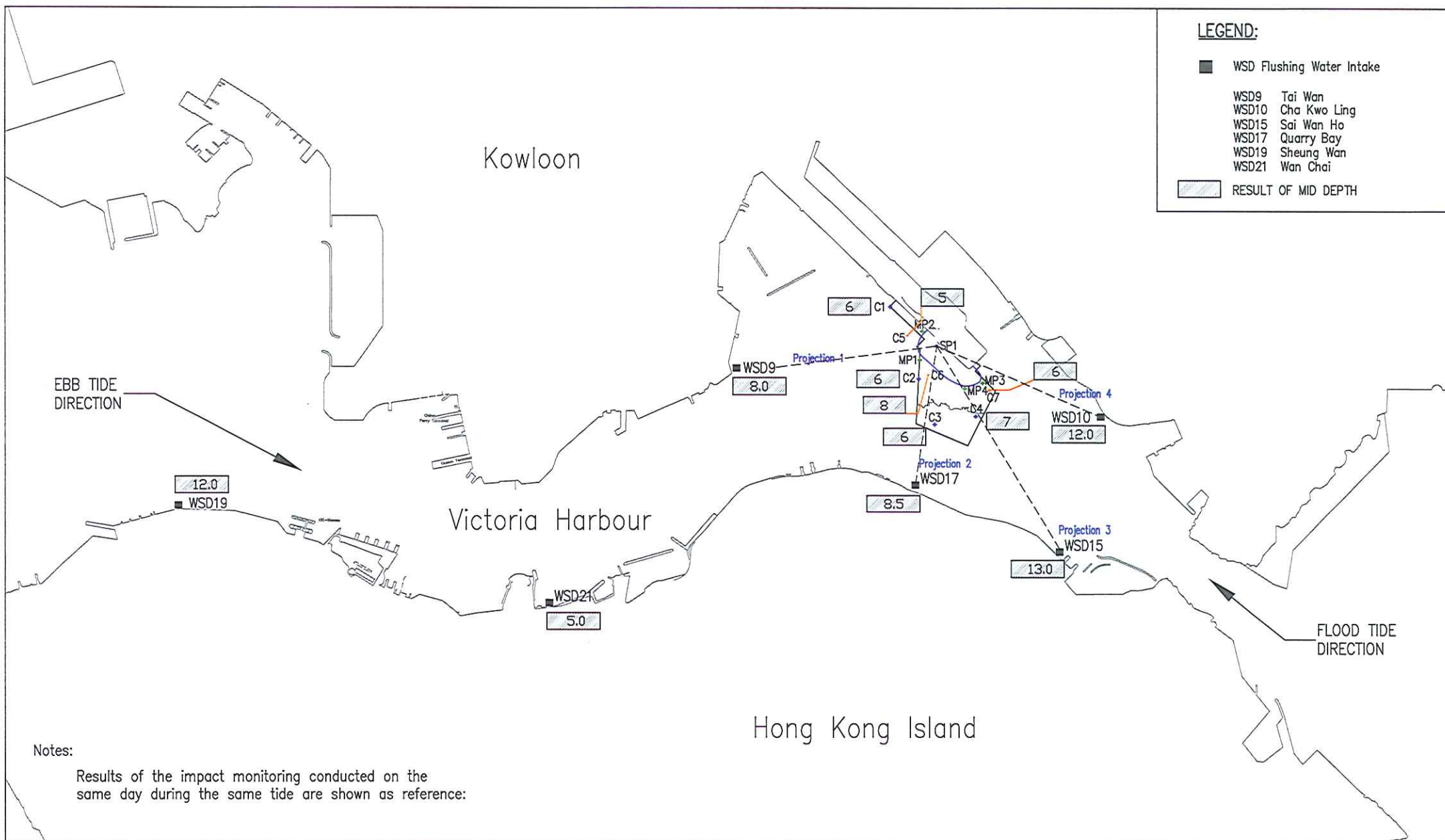
PROJECT		
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development		
TITLE	DATE	
	10-Mov-11	
GRAPHICAL PRESENTATION OF THE WATER QUALITY SURVEILLANCE SYSTEM MONITORING RESULTS AT MID DEPTH - (12 October 2011 EBB)	PREPARED BY	
	PY	
	SCALE	
	NOT TO SCALE	
	SKETCH No.	
	SK-0682	

Water Quality Surveillance System Monitoring Results - 24 October 2011 (Flood Tide)

Monitoring Location		Turbidity in NTU	Compare to Trigger Level	Suspended Solids in mg/L	Compare to Trigger Level
SP1	1m below the surface	6.50	N/A	15	N/A
	mid depth	6.53	N/A	27	N/A
	1m above the seabed	8.33	N/A	19	N/A
MP1	1m below the surface	2.63	N/A	17	N/A
	mid depth	2.84	N/A	6	N/A
	1m above the seabed	2.59	N/A	15	N/A
MP2	1m below the surface	3.75	N/A	5	N/A
	mid depth	2.55	N/A	13	N/A
	1m above the seabed	2.58	N/A	6	N/A
MP3	1m below the surface	2.50	N/A	8	N/A
	mid depth	2.81	N/A	4	N/A
	1m above the seabed	3.17	N/A	6	N/A
MP4	1m below the surface	2.57	N/A	5	N/A
	mid depth	2.36	N/A	7	N/A
	1m above the seabed	3.22	N/A	5	N/A
C1	1m below the surface	3.52	Lower	5	Lower
	mid depth	3.68	Lower	6	Lower
	1m above the seabed	3.45	Lower	5	Lower
C2	1m below the surface	4.12	Lower	7	Lower
	mid depth	4.11	Lower	6	Lower
	1m above the seabed	3.86	Lower	9	Lower
C3	1m below the surface	2.86	Lower	9	Lower
	mid depth	3.07	Lower	6	Lower
	1m above the seabed	2.58	Lower	6	Lower
C4	1m below the surface	2.64	Lower	5	Lower
	mid depth	3.58	Lower	7	Lower
	1m above the seabed	4.11	Lower	9	Lower
C5	1m below the surface	2.45	N/A	7	N/A
	mid depth	2.12	N/A	5	N/A
	1m above the seabed	3.15	N/A	6	N/A
C6	1m below the surface	3.31	N/A	6	N/A
	mid depth	3.99	N/A	8	N/A
	1m above the seabed	4.60	N/A	10	N/A
C7	1m below the surface	2.42	N/A	5	N/A
	mid depth	2.28	N/A	6	N/A
	1m above the seabed	2.83	N/A	7	N/A

Control Point	Trigger Level for Turbidity in NTU for All Season	Trigger Level for SS in mg/L for Dry Season (October - March)
C1	12.3 for Flood Tide	14.0
C2	12.3 for Flood Tide	
C3	16.9	
C4	10.5 for Ebb Tide	





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
- RESULT OF MID DEPTH

Notes:

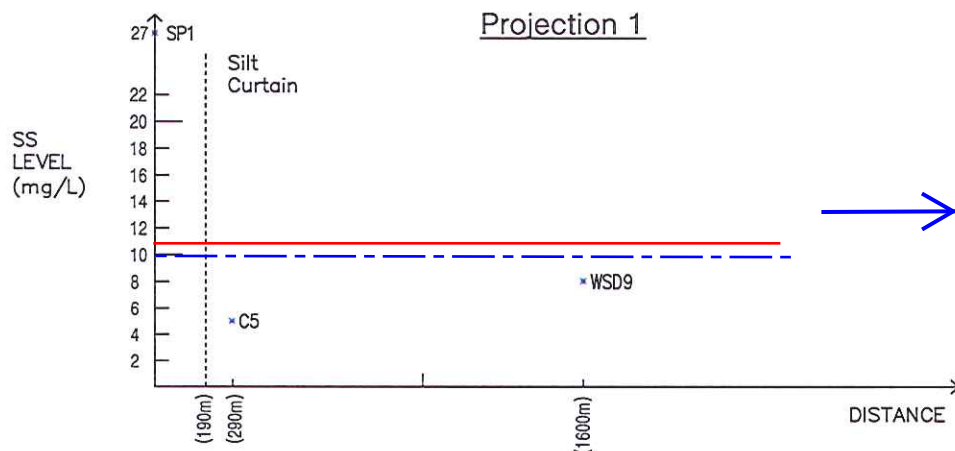
Results of the impact monitoring conducted on the same day during the same tide are shown as reference:



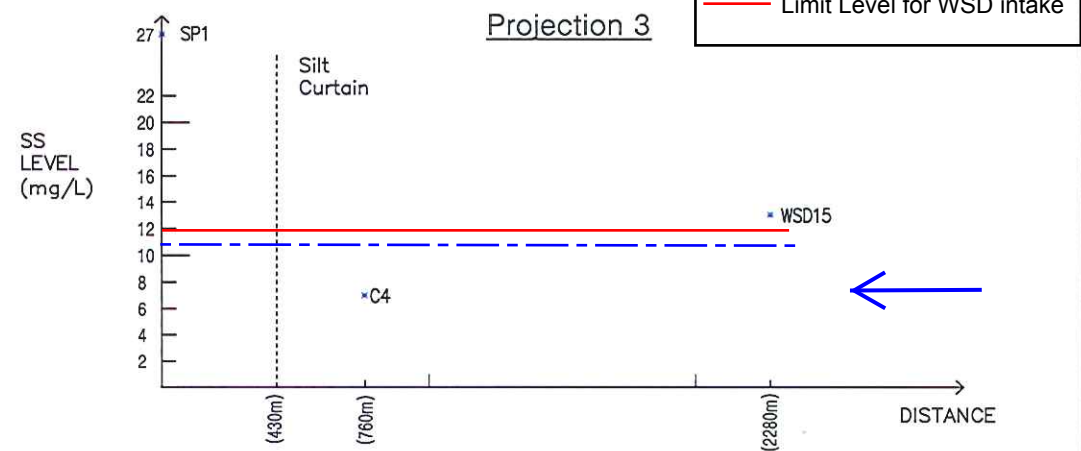
PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE
WATER QUALITY SURVEILLANCE SYSTEM – (24 October 2011 FLOOD) – Page 2

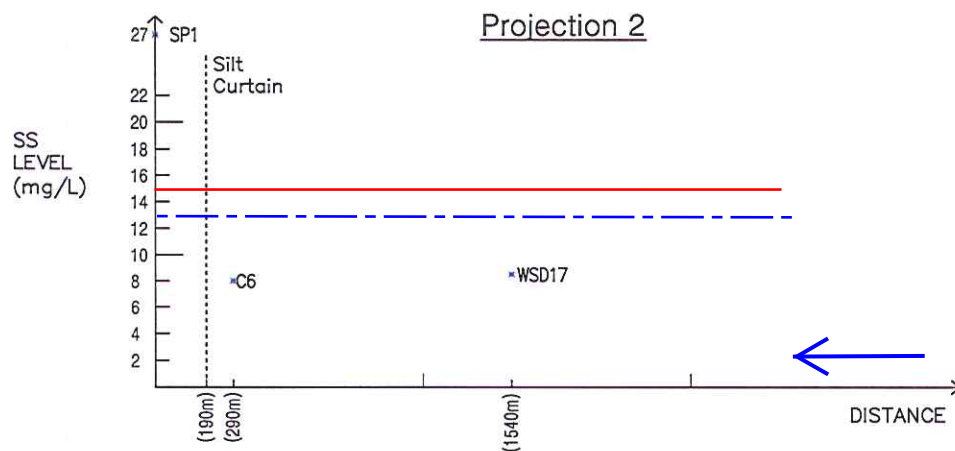
DATE 8–Nov–11	PREPARED BY PY
SCALE NOT TO SCALE	SKETCH No. SK–0681



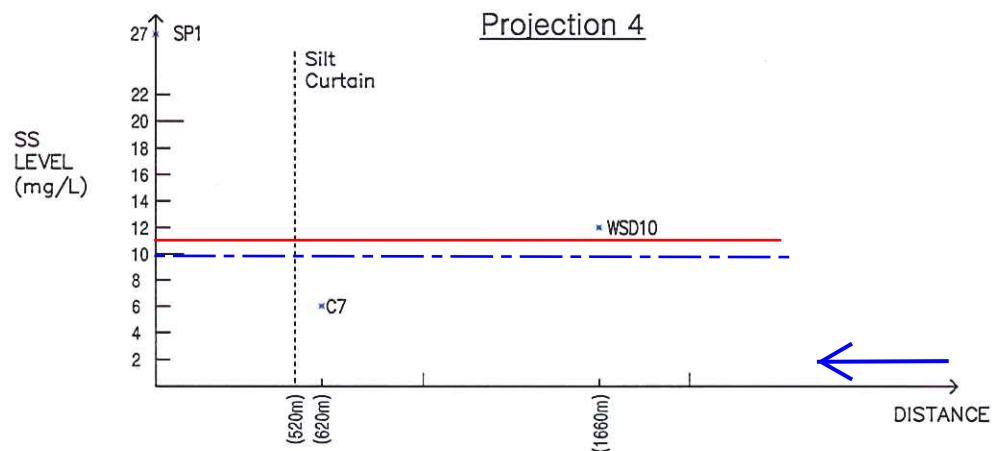
Description: WSD9 was located at downstream which had a higher SS level than MP1.



Description: WSD15 was located at upstream which was well within the Action Level.



Description: WSD17 was located at upstream which was well within the Action Level.



Description: WSD10 was located at upstream which was well within the Action Level.



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE
GRAPHICAL PRESENTATION OF THE WATER
QUALITY SURVEILLANCE SYSTEM MONITORING
RESULTS AT MID DEPTH - (24 October 2011 FLOOD)

DATE
10-Nov-11

PREPARED BY
PY

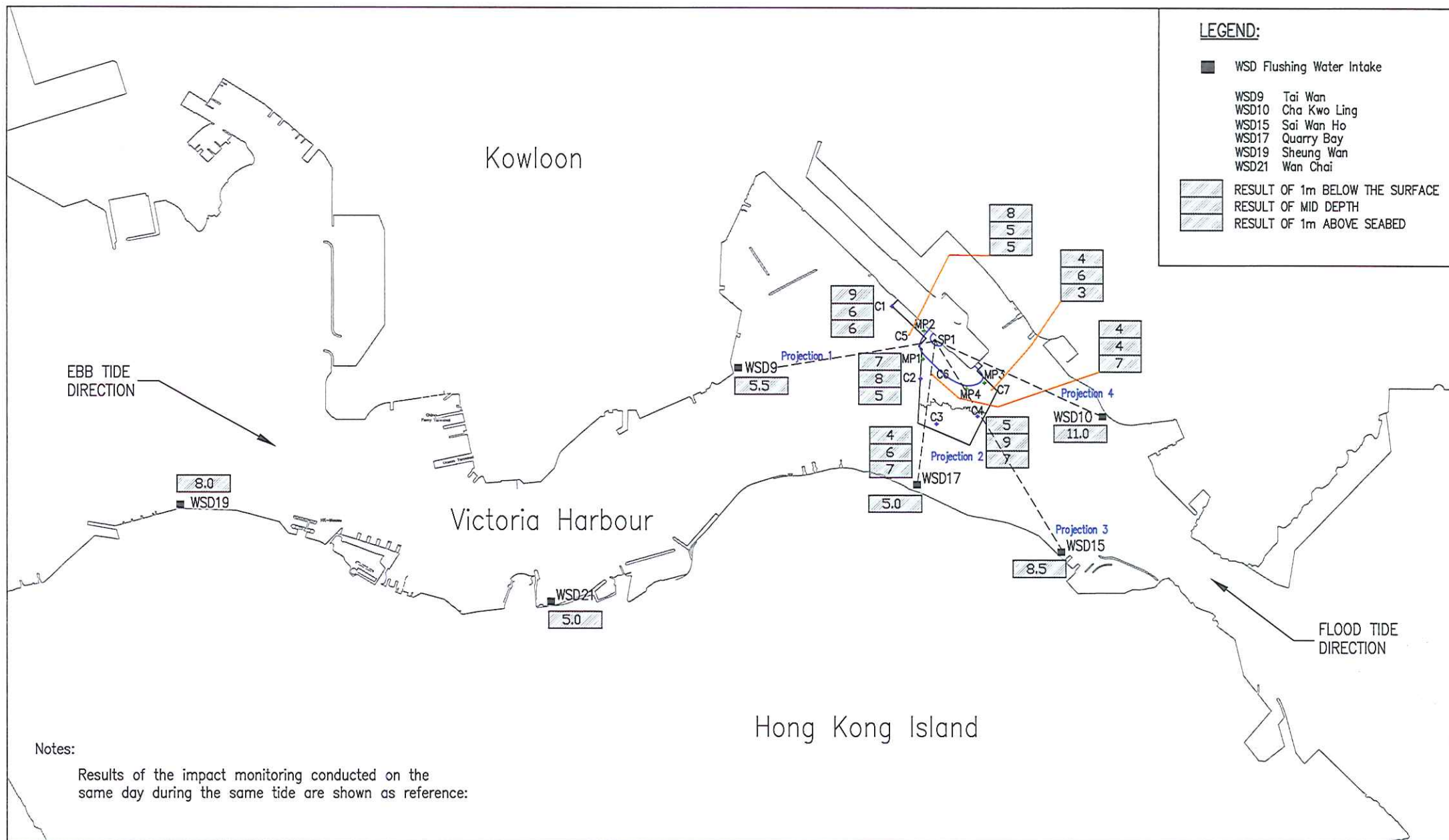
SCALE
NOT TO SCALE

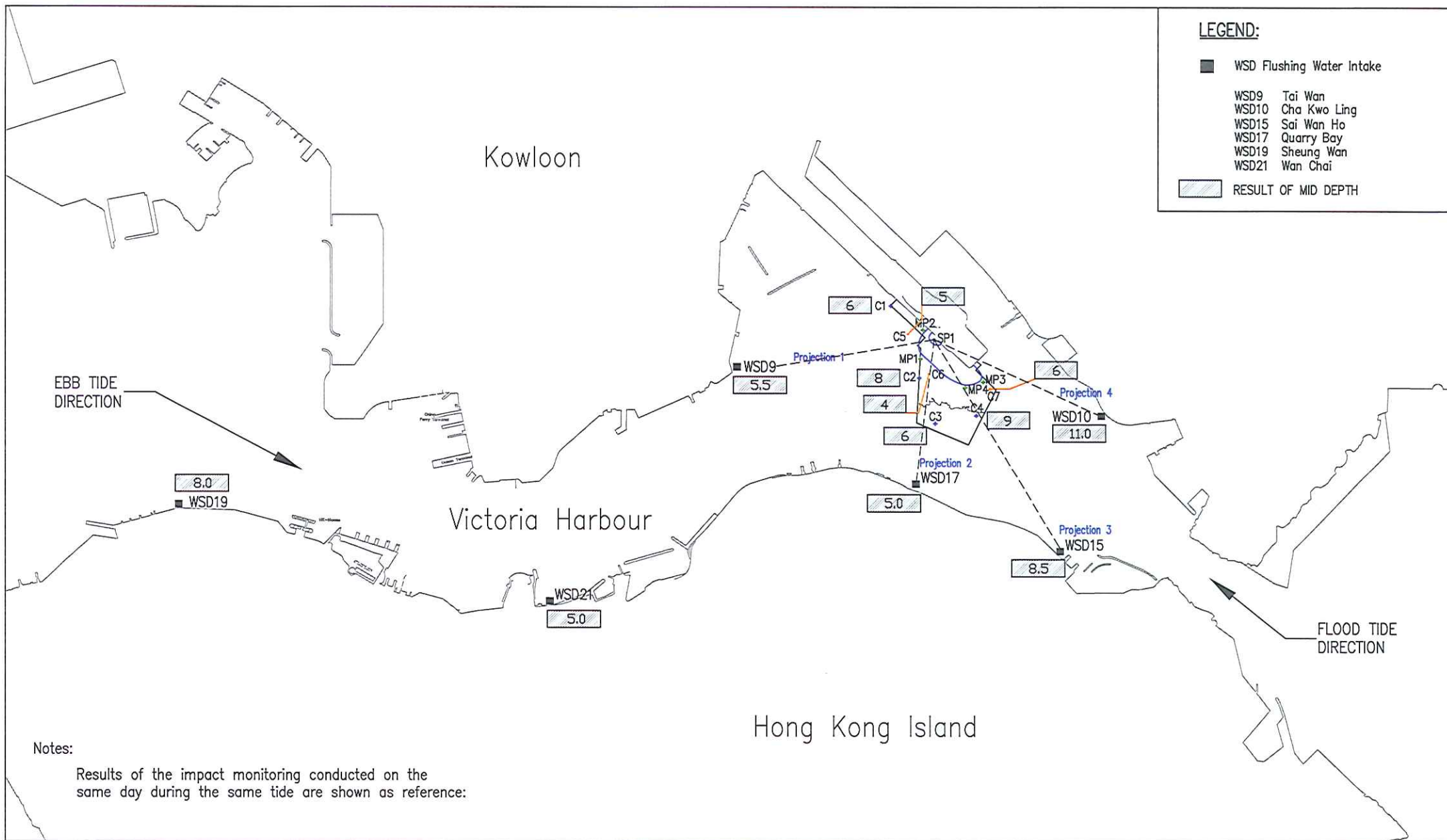
SKETCH No.
SK-0683

Water Quality Surveillance System Monitoring Results - 7 November 2011 (Flood Tide)

Monitoring Location		Turbidity in NTU	Compare to Trigger Level	Suspended Solids in mg/L	Compare to Trigger Level
SP1	1m below the surface	3.03	N/A	6	N/A
	mid depth	4.25	N/A	11	N/A
	1m above the seabed	5.48	N/A	7	N/A
MP1	1m below the surface	2.72	N/A	5	N/A
	mid depth	3.80	N/A	8	N/A
	1m above the seabed	3.93	N/A	11	N/A
MP2	1m below the surface	2.99	N/A	9	N/A
	mid depth	2.84	N/A	8	N/A
	1m above the seabed	3.71	N/A	8	N/A
MP3	1m below the surface	2.97	N/A	7	N/A
	mid depth	2.45	N/A	4	N/A
	1m above the seabed	2.53	N/A	4	N/A
MP4	1m below the surface	2.32	N/A	8	N/A
	mid depth	2.40	N/A	8	N/A
	1m above the seabed	3.73	N/A	9	N/A
C1	1m below the surface	2.14	Lower	9	Lower
	mid depth	1.71	Lower	6	Lower
	1m above the seabed	3.00	Lower	6	Lower
C2	1m below the surface	3.47	Lower	7	Lower
	mid depth	3.55	Lower	8	Lower
	1m above the seabed	3.22	Lower	5	Lower
C3	1m below the surface	1.91	Lower	4	Lower
	mid depth	2.00	Lower	6	Lower
	1m above the seabed	2.55	Lower	7	Lower
C4	1m below the surface	2.01	Lower	5	Lower
	mid depth	2.67	Lower	9	Lower
	1m above the seabed	3.69	Lower	7	Lower
C5	1m below the surface	3.42	N/A	8	N/A
	mid depth	3.42	N/A	5	N/A
	1m above the seabed	2.54	N/A	5	N/A
C6	1m below the surface	2.32	N/A	4	N/A
	mid depth	2.35	N/A	4	N/A
	1m above the seabed	2.05	N/A	7	N/A
C7	1m below the surface	1.81	N/A	4	N/A
	mid depth	1.97	N/A	6	N/A
	1m above the seabed	1.87	N/A	3	N/A

Control Point	Trigger Level for Turbidity in NTU for All Season	Trigger Level for SS in mg/L for Dry Season (October - March)
C1	12.3 for Flood Tide	14.0
C2	12.3 for Flood Tide	
C3	16.9	
C4	10.5 for Ebb Tide	





Notes:

Results of the impact monitoring conducted on the same day during the same tide are shown as reference:



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

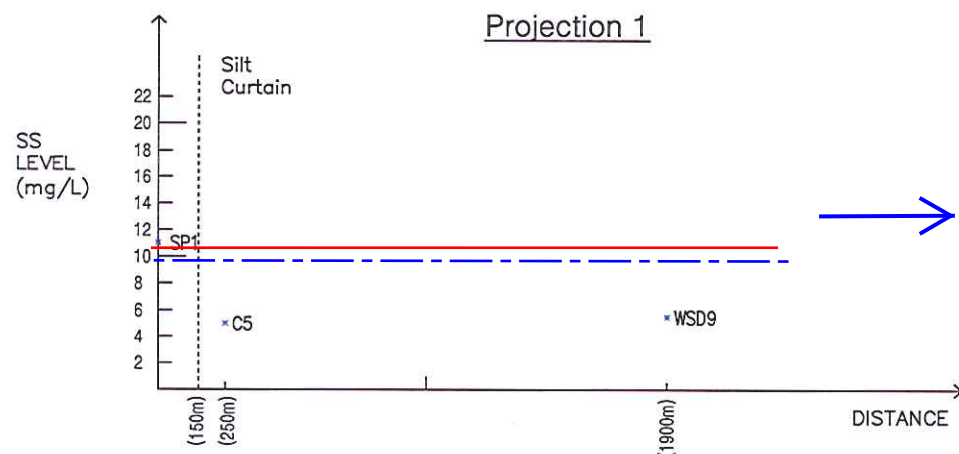
TITLE
WATER QUALITY SURVEILLANCE SYSTEM - (7 November 2011 FLOOD) - Page 2

DATE
23-Nov-11

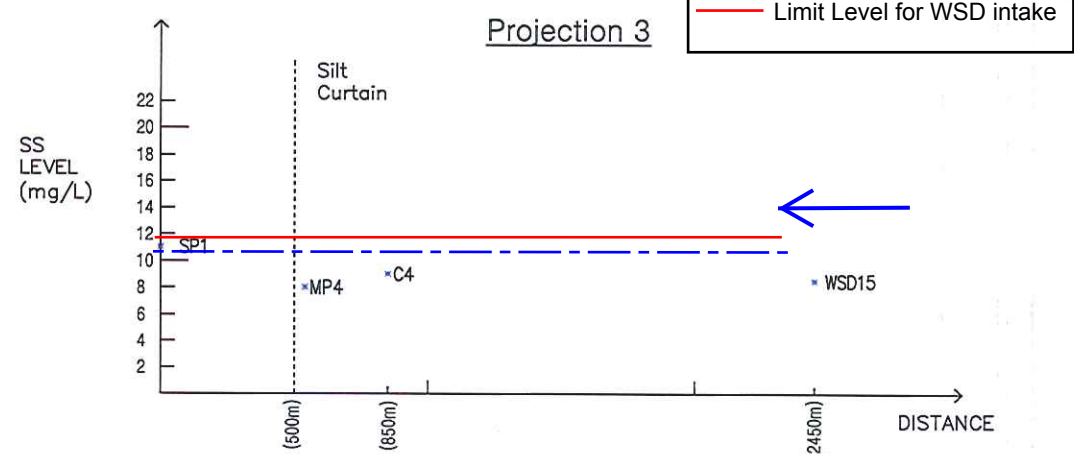
PREPARED BY
PY

SCALE
NOT TO SCALE

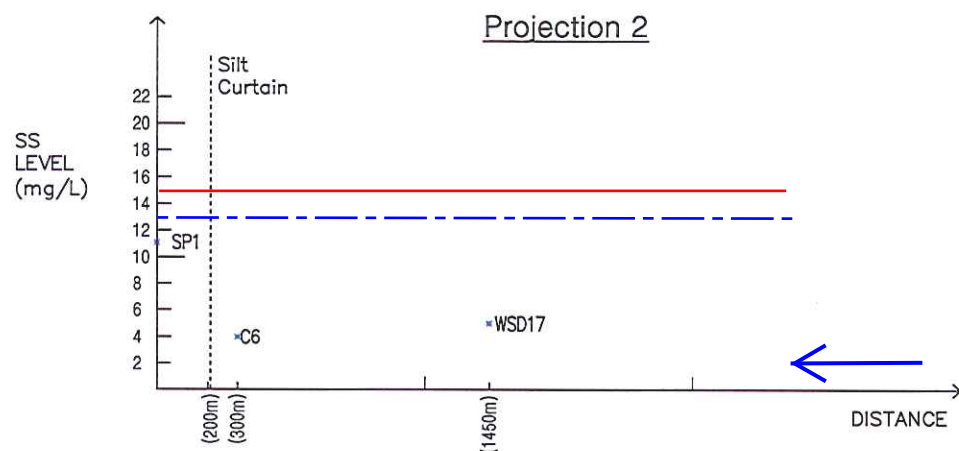
SKETCH No.
SK-0688



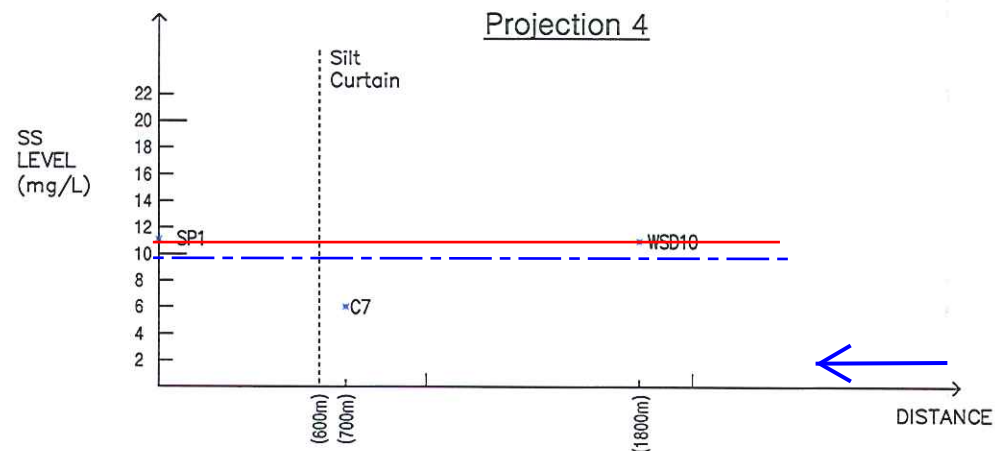
Description: WSD9 was located at downstream which had a higher SS level than C5.



Description: WSD15 was located at upstream which was well within the Action Level.



Description: WSD17 was located at upstream which had a higher SS level than C6 and well within the Action Level.



Description: WSD10 was located at upstream which had a higher SS level than C7 and exceeded the Action Level.



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE
GRAPHICAL PRESENTATION OF THE WATER
QUALITY SURVEILLANCE SYSTEM MONITORING
RESULTS AT MID DEPTH - (7 November 2011 FLOOD)

DATE
24-Nov-11

PREPARED BY
PY

SCALE
NOT TO SCALE

SKETCH No.
SK-0689

Water Quality Surveillance System Monitoring Results - 23 November 2011 (Ebb Tide)

Monitoring Location		Turbidity in NTU	Compare to Trigger Level	Suspended Solids in mg/L	Compare to Trigger Level
SP1	1m below the surface	13.6	N/A	22	N/A
	mid depth	7.26	N/A	16	N/A
	1m above the seabed	4.91	N/A	12	N/A
MP1	1m below the surface	4.29	N/A	10	N/A
	mid depth	3.52	N/A	5	N/A
	1m above the seabed	3.22	N/A	5	N/A
MP2	1m below the surface	2.69	N/A	9	N/A
	mid depth	3.48	N/A	6	N/A
	1m above the seabed	3.92	N/A	16	N/A
MP3	1m below the surface	5.36	N/A	10	N/A
	mid depth	7.58	N/A	14	N/A
	1m above the seabed	5.12	N/A	14	N/A
MP4	1m below the surface	3.08	N/A	6	N/A
	mid depth	3.65	N/A	8	N/A
	1m above the seabed	4.23	N/A	5	N/A
C1	1m below the surface	3.52	Lower	12	Lower
	mid depth	3.96	Lower	9	Lower
	1m above the seabed	7.45	Lower	21	Higher
C2	1m below the surface	3.23	Lower	5	Lower
	mid depth	2.58	Lower	6	Lower
	1m above the seabed	2.73	Lower	5	Lower
C3	1m below the surface	3.62	Lower	6	Lower
	mid depth	3.73	Lower	9	Lower
	1m above the seabed	3.29	Lower	6	Lower
C4	1m below the surface	3.41	Lower	8	Lower
	mid depth	3.54	Lower	4	Lower
	1m above the seabed	3.58	Lower	5	Lower
C5	1m below the surface	3.09	N/A	8	N/A
	mid depth	2.71	N/A	6	N/A
	1m above the seabed	2.88	N/A	4	N/A
C6	1m below the surface	3.00	N/A	6	N/A
	mid depth	2.80	N/A	5	N/A
	1m above the seabed	2.80	N/A	4	N/A
C7	1m below the surface	4.73	N/A	9	N/A
	mid depth	4.96	N/A	6	N/A
	1m above the seabed	4.61	N/A	8	N/A

Control Point	Trigger Level for Turbidity in NTU for All Season	Trigger Level for SS in mg/L for Dry Season (October - March)
C1	12.3 for Flood Tide	14.0
C2	12.3 for Flood Tide	
C3	16.9	
C4	10.5 for Ebb Tide	

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

▨ RESULT OF 1m BELOW THE SURFACE
▨ RESULT OF MID DEPTH
▨ RESULT OF 1m ABOVE SEABED

Kowloon

Victoria Harbour

Hong Kong Island

EBB TIDE
DIRECTION

FLOOD TIDE
DIRECTION

Notes:

Results of the impact monitoring conducted on the same day during the same tide are shown as reference:



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE
WATER QUALITY SURVEILLANCE SYSTEM – (23 November 2011 EBB) – Page 1

DATE
2-Dec-11

PREPARED BY
PY

SCALE
NOT TO SCALE

SKETCH No.
SK-0690

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
- RESULT OF MID DEPTH

Kowloon

Victoria Harbour

Hong Kong Island

EBB TIDE
DIRECTION

FLOOD TIDE
DIRECTION

9.0
WSD19

WSD21
12.0

WSD9
6.0

WSD17
7.5

WSD15
9.0

WSD10
9.0

9

6

5

9

6

6

4

9.0

Projection 1

Projection 2

Projection 3

Projection 4

C1

C2

C3

C4

C5

C6

C7

C8

C9

C10

C11

C12

C13

C14

C15

C16

C17

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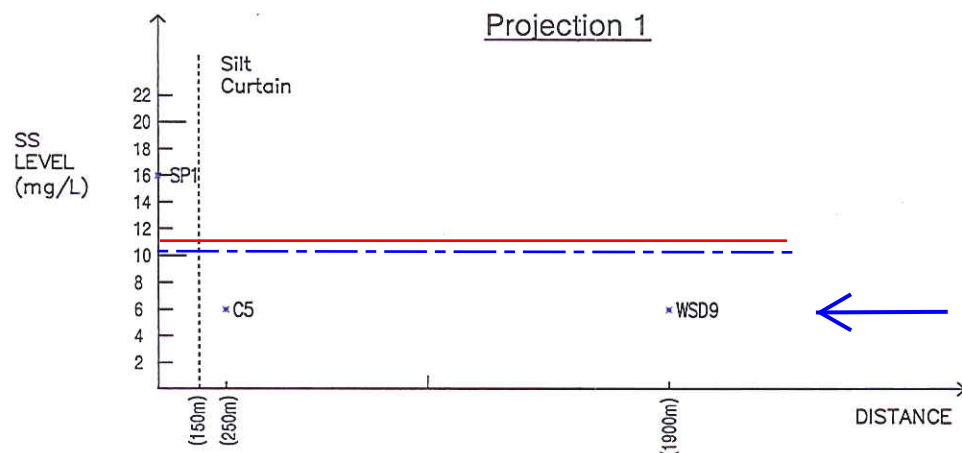
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C268

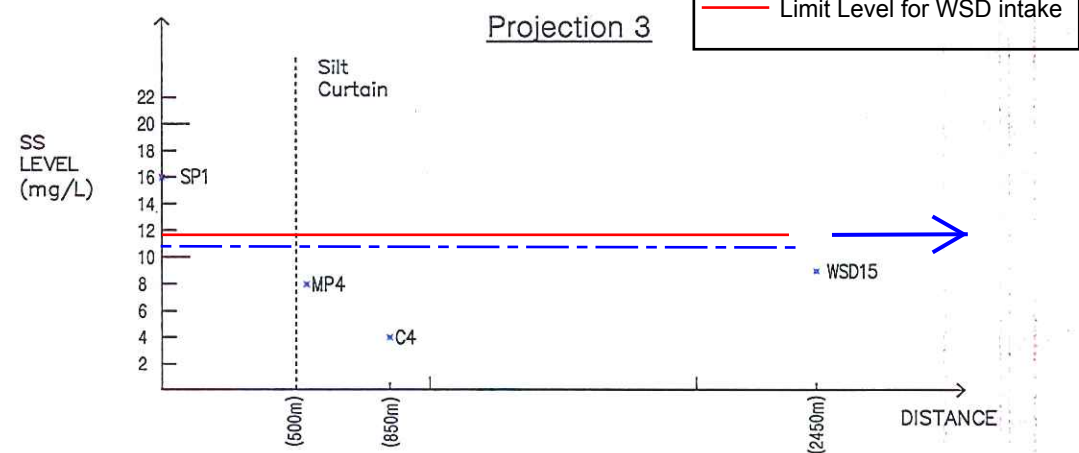
C269

C270

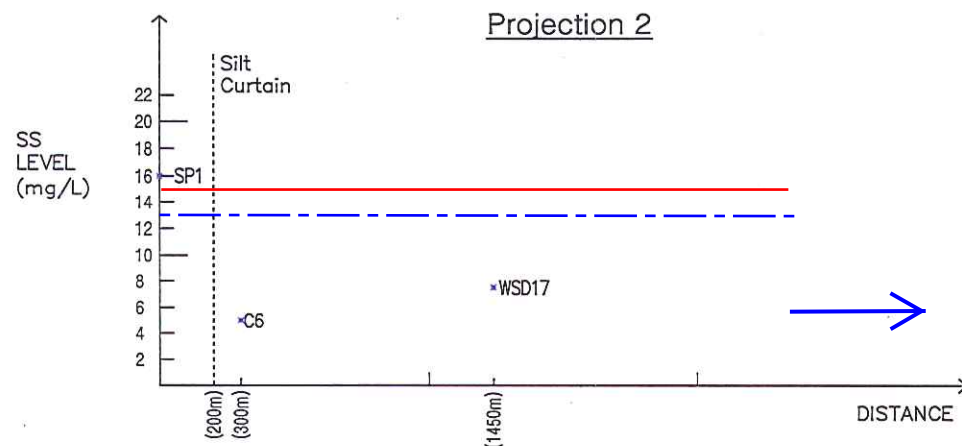
C271



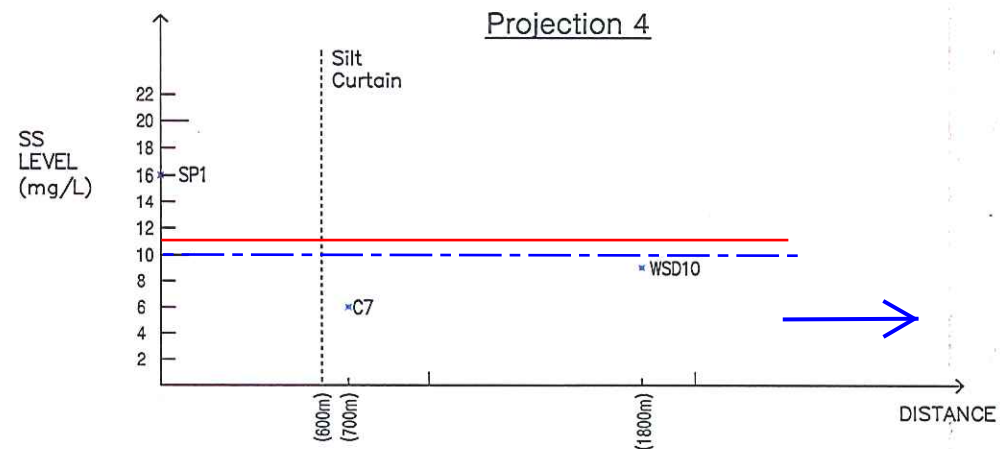
Description: WSD9 was located at upstream which was well within the Action Level.



Description: WSD15 was located at downstream which was higher than C4 but well within the Action Level.



Description: WSD17 was located at downstream which was higher than C6 but well below the Action Level.



Description: WSD10 was located at downstream which was higher than C7 but well below the Action Level.



PROJECT
KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE
GRAPHICAL PRESENTATION OF THE WATER
QUALITY SURVEILLANCE SYSTEM MONITORING
RESULTS AT MID DEPTH - (23 November 2011 EBB)

DATE
2-Dec-11

PREPARED BY
PY

SCALE
NOT TO SCALE

SKETCH No.
SK-0692



Appendix 5.1

Event and Action Plan



Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none">1. Notify IEC and Contractor;2. Carry out investigation;3. Report the results of investigation to the IEC, ER and Contractor;4. Discuss with the Contractor and formulate remedial measures;5. Increase monitoring frequency to check mitigation effectiveness.	<ol style="list-style-type: none">1. Review the analysed results submitted by the ET;2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;3. Supervise the implementation of remedial measures.	<ol style="list-style-type: none">1. Confirm receipt of notification of failure in writing;2. Notify Contractor;3. Require Contractor to propose remedial measures for the analysed noise problem;4. Ensure remedial measures are properly implemented.	<ol style="list-style-type: none">1. Submit noise mitigation proposals to IEC;2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none">1. Identify source;2. Inform IEC, ER, EPD and Contractor;3. Repeat measurements to confirm findings;4. Increase monitoring frequency;5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;8. If exceedance stops, cease additional monitoring.	<ol style="list-style-type: none">1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;3. Supervise the implementation of remedial measures.	<ol style="list-style-type: none">1. Confirm receipt of notification of failure in writing;2. Notify Contractor;3. Require Contractor to propose remedial measures for the analysed noise problem;4. Ensure remedial measures properly implemented;5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	<ol style="list-style-type: none">1. Take immediate action to avoid further exceedance;2. Submit proposals for remedial actions to IEC within 3 working days of notification;3. Implement the agreed proposals;4. Submit further proposal if problem still not under control;5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.



Event and Action Plan for Marine Water Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	<ol style="list-style-type: none">1. Repeat in-situ 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 the 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 propose 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 consecutive sampling days	<ol style="list-style-type: none">1. Identify source(s) of impact;2. Inform IEC and Contractor;3. Check monitoring data, all plant, equipment and Contractor's working methods;4. Discuss mitigation measures with IEC and Contractor;	<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	<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. Assess the effectiveness	<ol style="list-style-type: none">1. Inform the Engineer and confirm notification of the non-compliance in writing;2. Rectify unacceptable practice;3. Check all plant and



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	<ul style="list-style-type: none">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 working day of exceedance.	<ul style="list-style-type: none">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)	<ul style="list-style-type: none">of the implemented mitigation measures.4. (The above actions should be taken within 1 working day after the exceedance is identified)	<ul style="list-style-type: none">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 propose 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)



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by one sampling day	<ol style="list-style-type: none">1. Repeat in-situ measurement to confirm findings;2. Identify source(s) of impact;3. Inform IEC, Contractor and EPD;4. Check monitoring data, all plant, equipment and Contractor's working methods;5. Discuss mitigation measures with IEC, ER and Contractor;6. Ensure mitigation measures are implemented;7. Increase the monitoring frequency to daily until no exceedance of Limit Level.8. (The above actions should be taken within 1 working day after the exceedance is identified)	<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, ET and Contractor on the proposed mitigation measures;2. Request Contractor to critically review the 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)	<ol style="list-style-type: none">1. Inform the Engineer 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, IEC and ER and propose 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)



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none">1. Identify source(s) of impact;2. Inform IEC, Contractor and EPD;3. Check monitoring data, all plant, equipment and Contractor's working methods;4. Discuss mitigation measures with IEC, ER and 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)	<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, ET and Contractor on the proposed mitigation measures;2. Request Contractor to critically review the working methods;3. Make agreement on the mitigation measures to be 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)	<ol style="list-style-type: none">1. Inform the 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, IEC and ER and propose 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 the marine work or construction activities.8. (The above actions should be taken within 1 working day after the exceedance is identified)



Appendix 5.2

Graphic Presentation of SS Results against to Tidal Movement along Victoria Harbour

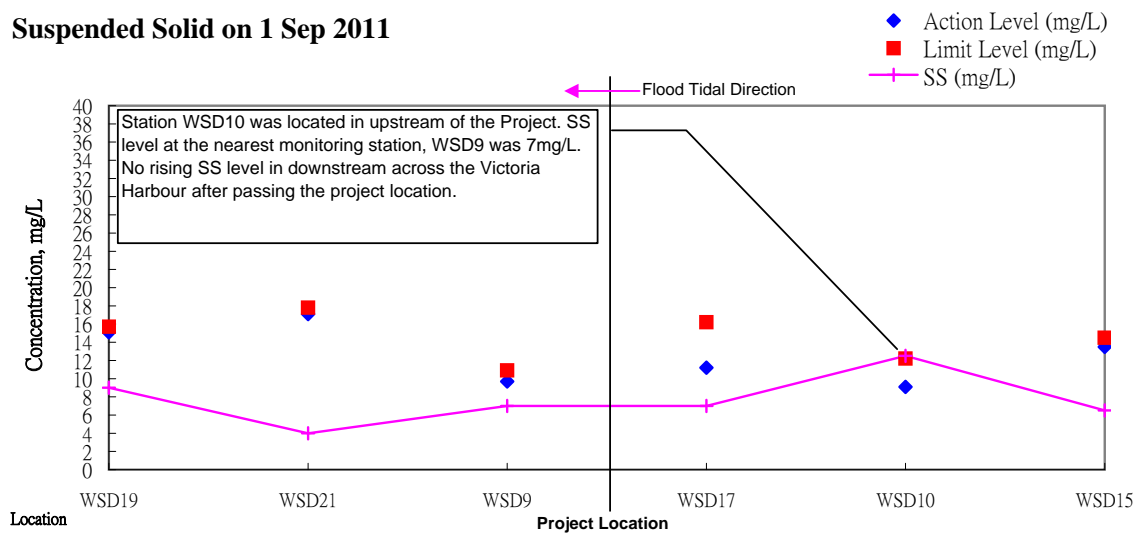
Contract no. KL/2009/01
Site Formation for Kai Tak Cruise Terminal Development
Summary of Recorded Exceedances in Reporting Quarter

Date	Tide	Station	Parameter	Exceedance	Turbidity (NTU) / SS (mg/L) value	Possible Cause of Exceedance	Turbidity (NTU) / SS (mg/L) value in the nearest upstream station
1/9/2011	Mid-flood	WSD10	SS (mg/L)	LL	12.5	Upstream of the Project	N/A
5/9/2011	Mid-flood	WSD10	SS (mg/L)	AL	9.5	Upstream of the Project	N/A
19/9/2011	Mid-flood	WSD17	SS (mg/L)	AL	15.5	Upstream of the Project	N/A
19/9/2011	Mid-ebb	WSD10	SS (mg/L)	AL	9.5	Localized natural variation in the vicinity of the station WSD10. No marine works undertaken in ebb tide	WSD15: 10 and WSD17: 9.5
24/9/2011	Mid-flood	WSD17	SS (mg/L)	AL	13.5	Upstream of the Project	N/A
26/9/2011	Mid-flood	WSD10	SS (mg/L)	AL	9.5	Upstream of the Project	N/A
30/9/2011	Mid-flood	WSD9	Turbidity (NTU)	AL	7.38	Water quality being substantially affected after Typhoon signal no.3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD10: 30.88 and WSD17: 20.98
30/9/2011	Mid-flood	WSD10	Turbidity (NTU)	LL	30.88	Water quality being substantially affected after Typhoon signal no.3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD15: 17.28 and WSD17: 20.98
			SS (mg/L)	LL	43.5		WSD15: 19.5 and WSD17: 24.5
30/9/2011	Mid-flood	WSD15	Turbidity (NTU)	LL	17.28	Water quality being substantially affected after Typhoon signal no.3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD10: 30.88
			SS (mg/L)	LL	19.5		WSD10: 43.5
30/9/2011	Mid-flood	WSD17	Turbidity (NTU)	LL	20.98	Water quality being substantially affected after Typhoon signal no.3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD10: 30.88 and WSD17: 20.98
			SS (mg/L)	LL	24.5		WSD10: 43.5 and WSD17: 24.5
30/9/2011	Mid-ebb	WSD9	Turbidity (NTU)	AL	9.15	Water quality being substantially affected after Typhoon signal no.3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD21: 10.93
			SS (mg/L)	LL	12		WSD21: 8.0
30/9/2011	Mid-ebb	WSD10	Turbidity (NTU)	LL	12.43	Water quality being substantially affected after Typhoon signal no. 3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD9: 9.15 and WSD17: 8.17
			SS (mg/L)	LL	16		WSD9: 12.0 and WSD17: 12
30/9/2011	Mid-ebb	WSD15	Turbidity (NTU)	AL	11.88	Water quality being substantially affected after Typhoon signal no. 3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD10: 12.43 and WSD17: 8.17
			SS (mg/L)	LL	19		WSD10: 16.0 and WSD:12
30/9/2011	Mid-ebb	WSD17	SS (mg/L)	AL	12	Water quality being substantially affected after Typhoon signal no. 3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD:15 19.0
30/9/2011	Mid-ebb	WSD21	Turbidity (NTU)	AL	10.93	Water quality being substantially affected after Typhoon signal no. 3 on 28 & 30 Sep and Typhoon signal no.8 on 29 Sep	WSD19: 8.5
3/10/2011	Mid-ebb	WSD9	SS (mg/L)	AL	7	Water quality being substantially affected after Typhoon signal no.1 on 3 Oct	WSD21: 5.5
3/10/2011	Mid-ebb	WSD10	SS (mg/L)	AL	8	Water quality being substantially affected after Typhoon signal no.1 on 3 Oct	WSD9: 7
6/10/2011	Mid-flood	WSD9	SS (mg/L)	LL	10	Localized natural variation in the vicinity of the station WSD9	WSD10: 11.5 and WSD17: 11.5
6/10/2011	Mid-flood	WSD10	SS (mg/L)	LL	11.5	Upstream of the Project	N/A
6/10/2011	Mid-flood	WSD15	SS (mg/L)	LL	12	Upstream of the Project	N/A
6/10/2011	Mid-flood	WSD17	SS (mg/L)	AL	11.5	Upstream of the Project	N/A
8/10/2011	Mid-flood	WSD17	SS (mg/L)	LL	14	Upstream of the Project	N/A
10/10/2011	Mid-flood	WSD9	SS (mg/L)	LL	10	Localized natural variation in the vicinity of the station WSD9.	WSD10: 7.5 and WSD17: 10.5
10/10/2011	Mid-flood	WSD15	SS (mg/L)	LL	9	Upstream of the Project	N/A
10/10/2011	Mid-flood	WSD17	SS (mg/L)	AL	10.5	Upstream of the Project	N/A

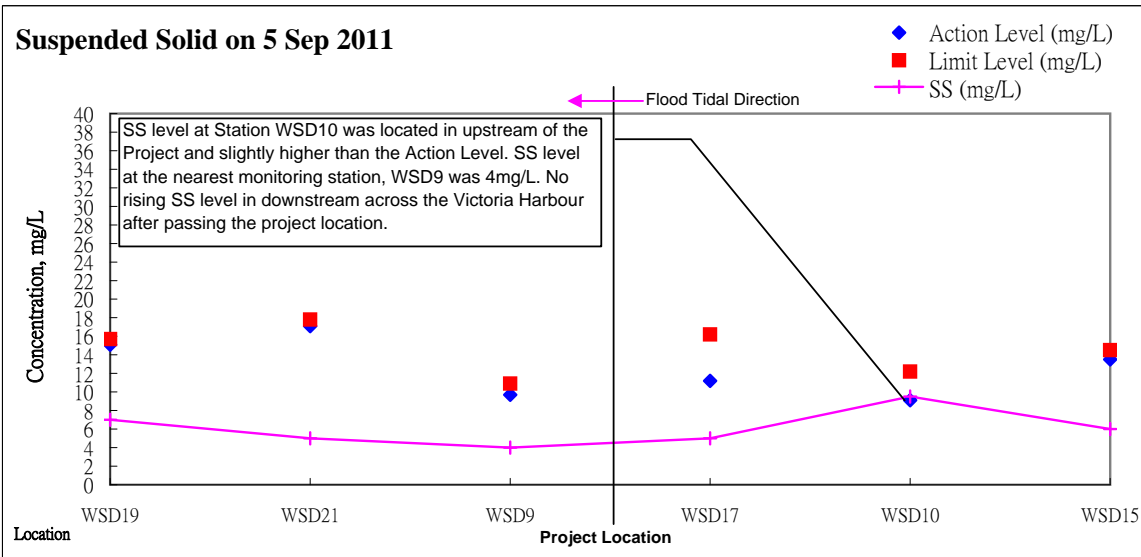
Contract no. KL/2009/01
Site Formation for Kai Tak Cruise Terminal Development
Summary of Recorded Exceedances in Reporting Quarter

Date	Tide	Station	Parameter	Exceedance	Turbidity (NTU) / SS (mg/L) value	Possible Cause of Exceedance	Turbidity (NTU) / SS (mg/L) value in the nearest upstream station
10/10/2011	Mid-ebb	WSD9	SS (mg/L)	AL	7	Upstream of the Project	N/A
10/10/2011	Mid-ebb	WSD10	SS (mg/L)	AL	8.5	Localized natural variation in the vicinity of the station WSD10	WSD9: 7
10/10/2011	Mid-ebb	WSD21	SS (mg/L)	AL	13.5	Upstream of the Project	N/A
14/10/2011	Mid-flood	WSD9	SS (mg/L)	LL	8	Localized natural variation in the vicinity of the station WSD9	WSD10: 10 and WSD17: 15
14/10/2011	Mid-flood	WSD10	SS (mg/L)	AL	10	Upstream of the Project	N/A
14/10/2011	Mid-flood	WSD15	SS (mg/L)	LL	12	Upstream of the Project	N/A
14/10/2011	Mid-flood	WSD17	SS (mg/L)	LL	15	Upstream of the Project	N/A
17/10/2011	Mid-flood	WSD17	SS (mg/L)	LL	14	Upstream of the Project	N/A
24/10/2011	Mid-flood	WSD10	SS (mg/L)	LL	12	Upstream of the Project	N/A
24/10/2011	Mid-flood	WSD15	SS (mg/L)	LL	13	Upstream of the Project	N/A
28/10/2011	Mid-flood	WSD10	SS (mg/L)	AL	11	Upstream of the Project	N/A
28/10/2011	Mid-ebb	WSD15	SS (mg/L)	LL	13	Localized natural variation in the vicinity of the station WSD15	WSD10: 9.0 and WSD17: 5.5
5/11/2011	Mid-flood	WSD15	Turbidity (NTU)	AL	11.2	- Accumulation of algae was found around the intake.	WSD10: 4.96 and WSD17: 4.38
						- Upstream of the Project	
5/11/2011	Mid-flood	WSD15	SS (mg/L)	LL	42.0	- Accumulation of algae was found around the intake.	WSD10: 7 and WSD17: 9
						- Upstream of the Project	
5/11/2011	Mid-flood	WSD19	SS (mg/L)	AL	15.0	Localized natural variation in the vicinity of the station WSD19.	WSD21: 13.5
5/11/2011	Mid-flood	WSD21	SS (mg/L)	AL	13.5	Localized natural variation in the vicinity of the station WSD21.	WSD9: 5.5
7/11/2011	Mid-flood	WSD10	SS (mg/L)	AL	11.0	Upstream of the Project	N/A
23/11/2011	Mid-flood	WSD21	SS (mg/L)	LL	15.0	Localized natural variation in the vicinity of the station WSD21.	WSD9: 6.0

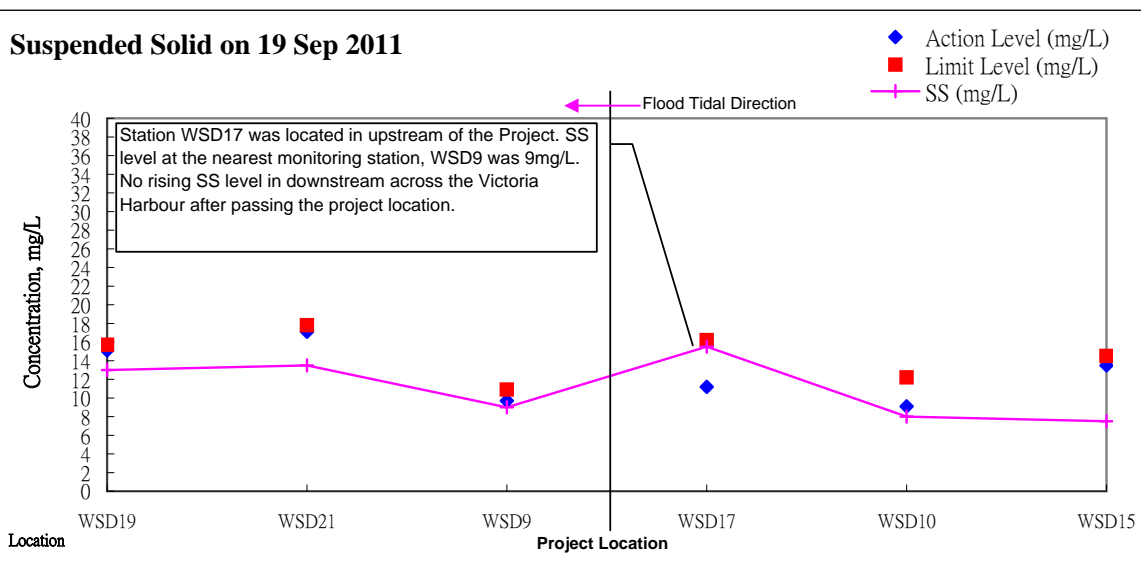
Suspended Solid on 1 Sep 2011



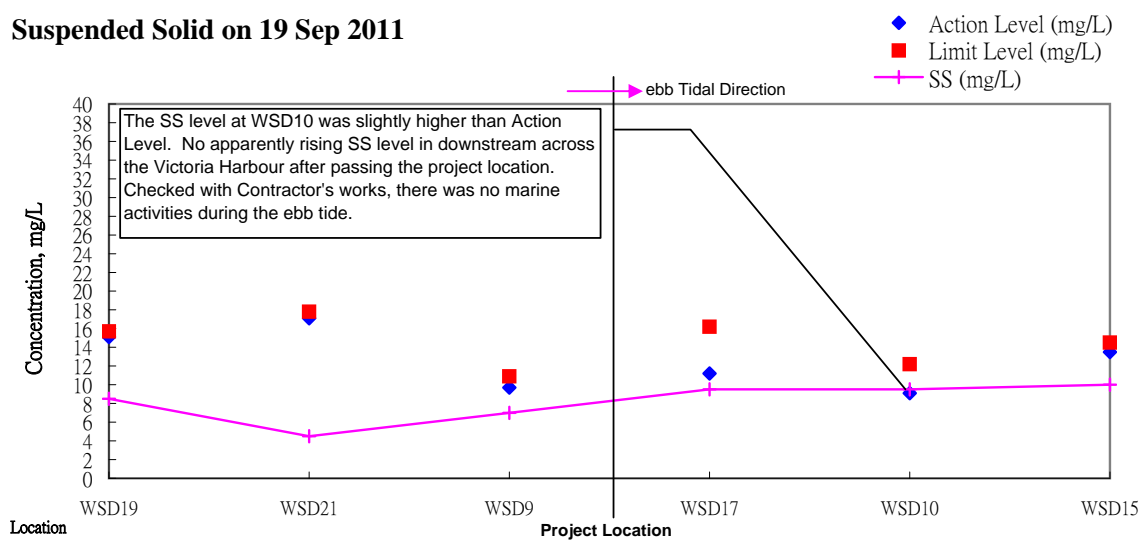
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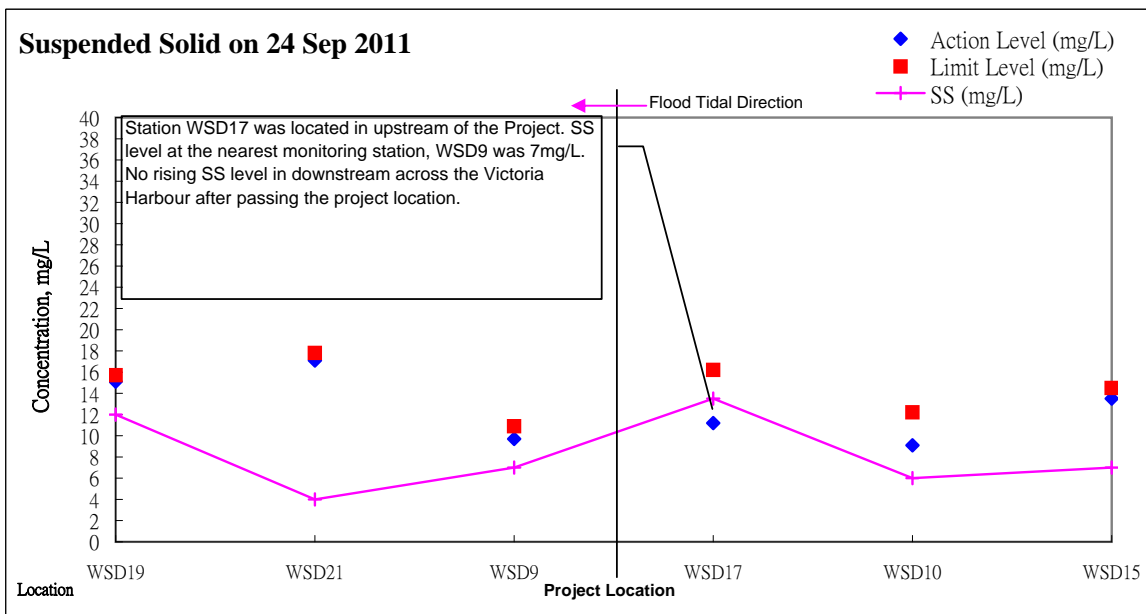
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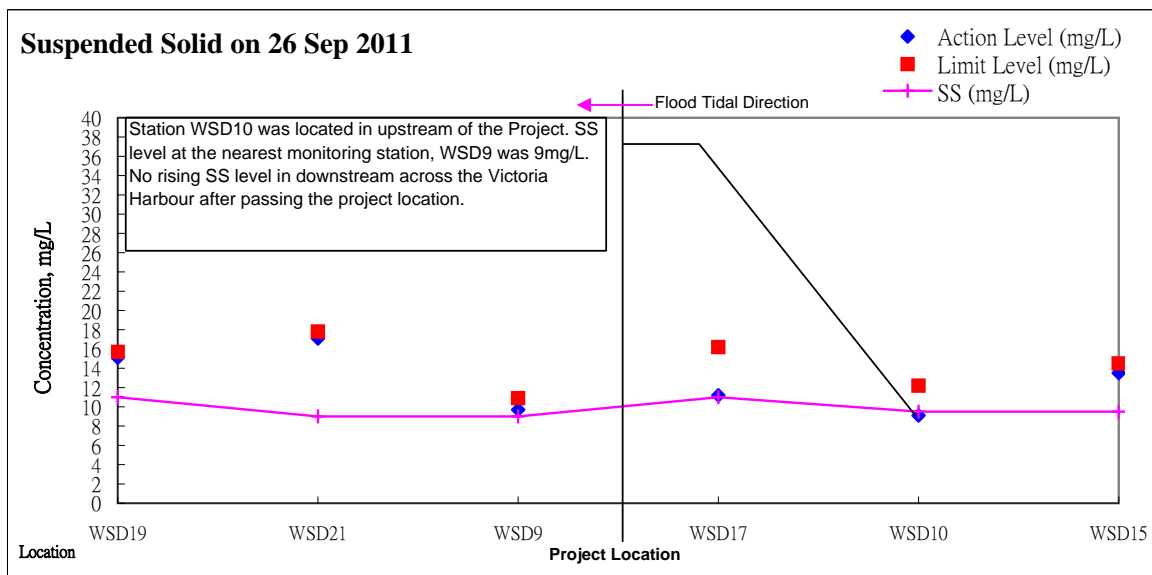
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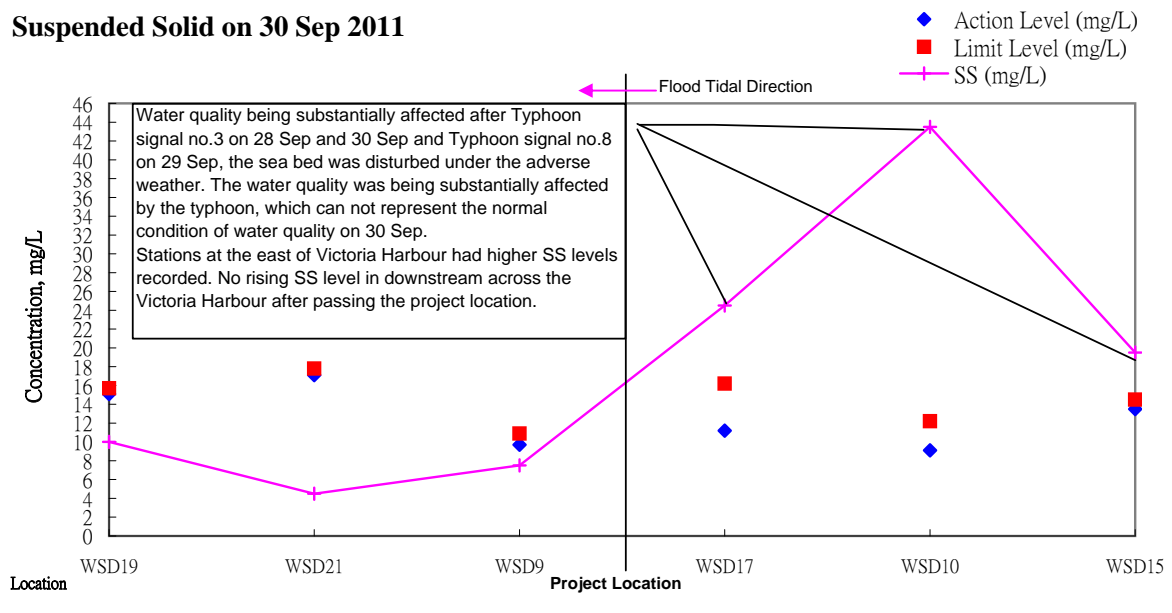
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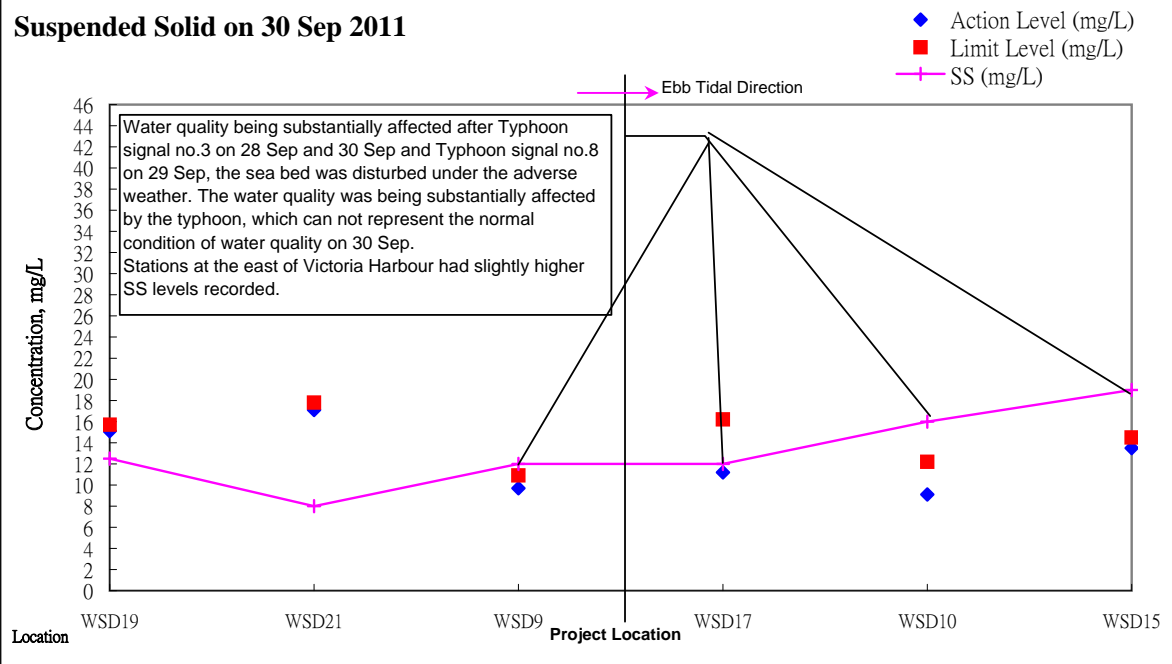
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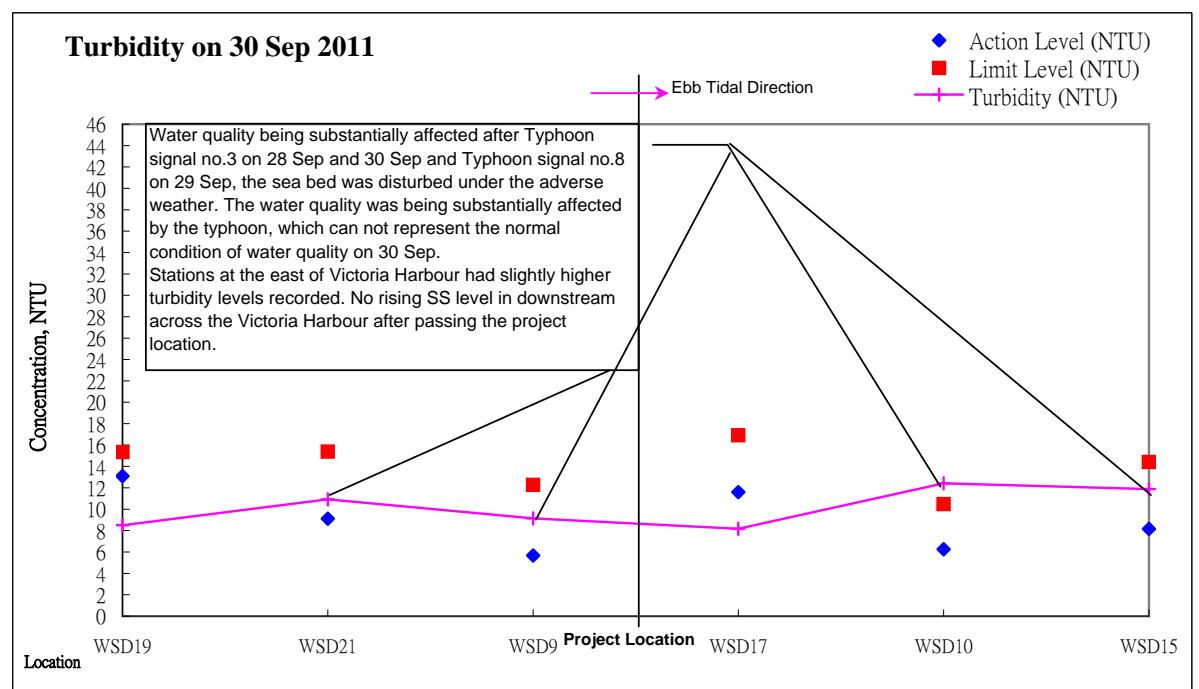
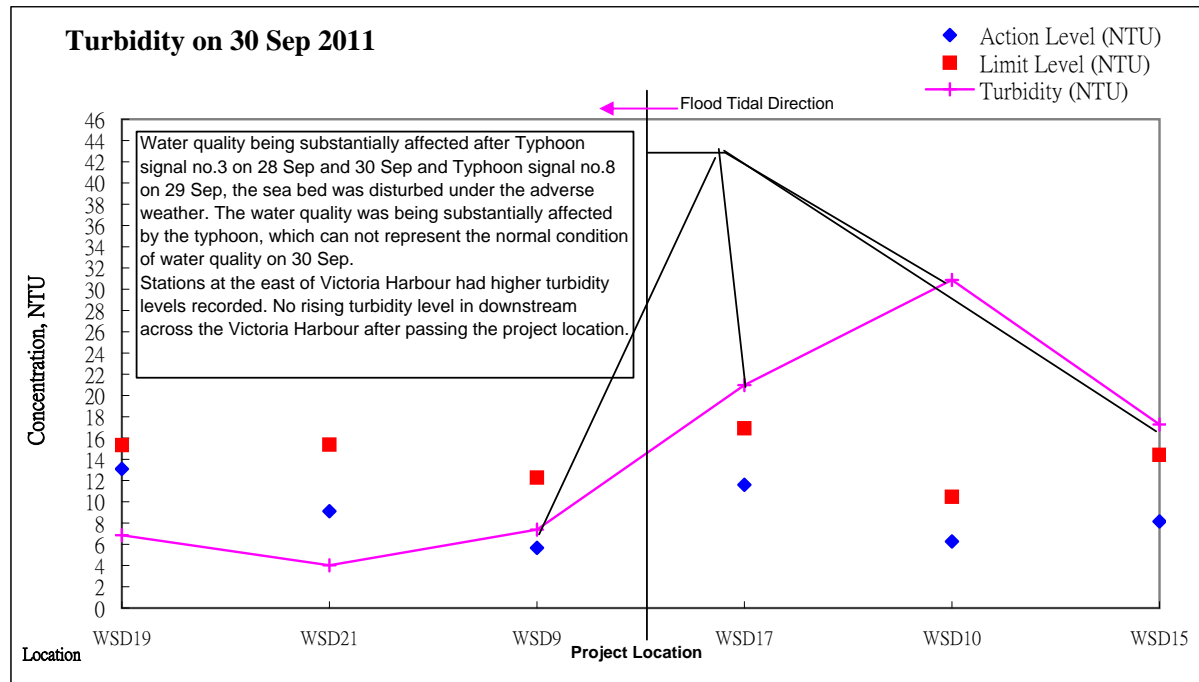


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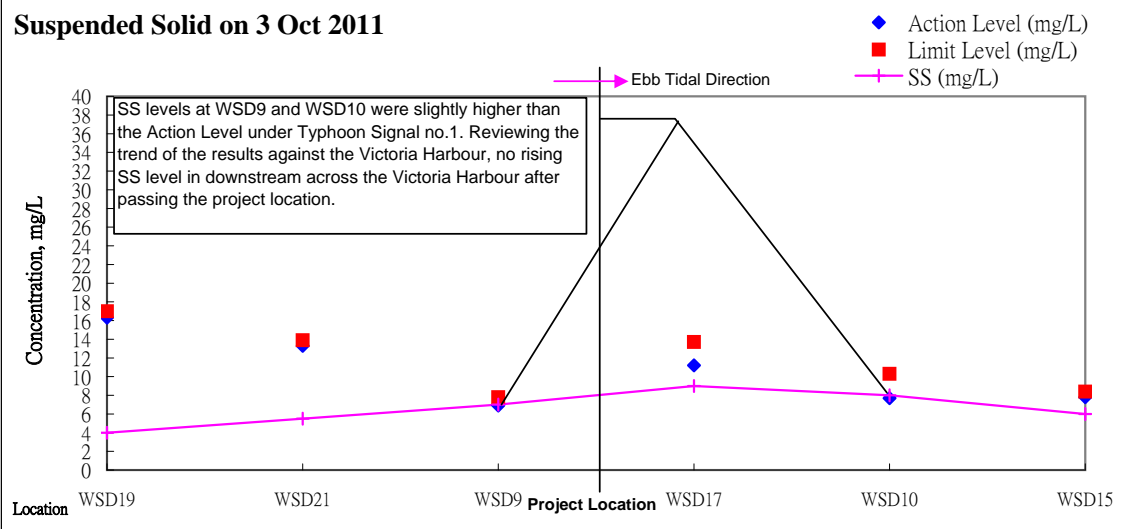


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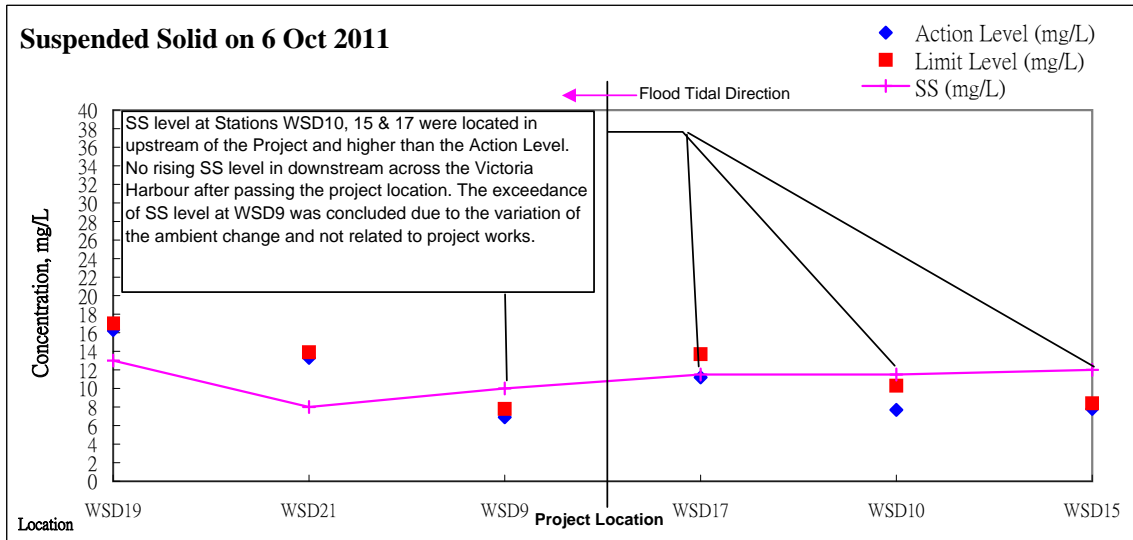




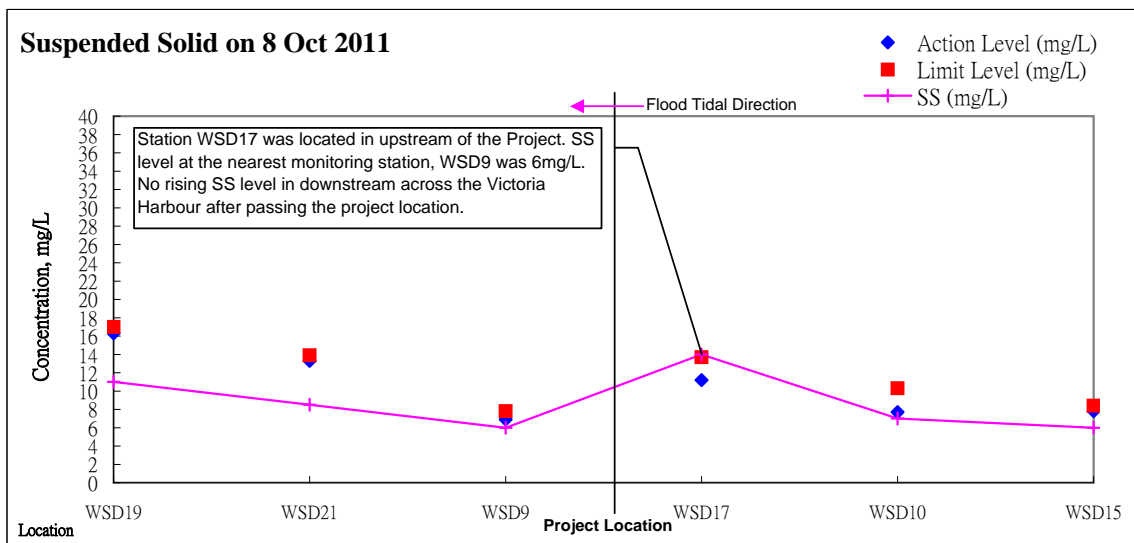
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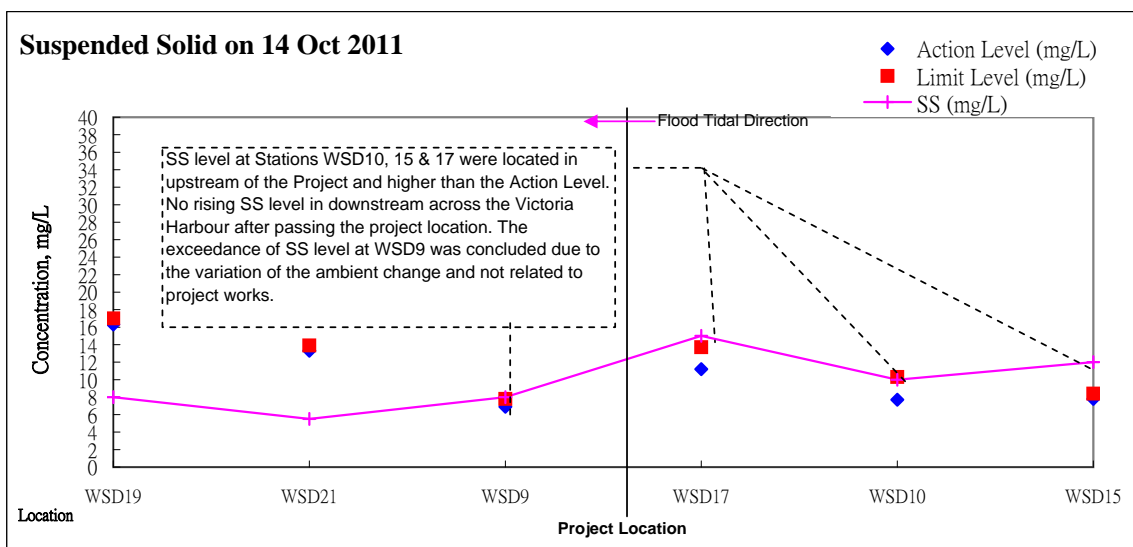
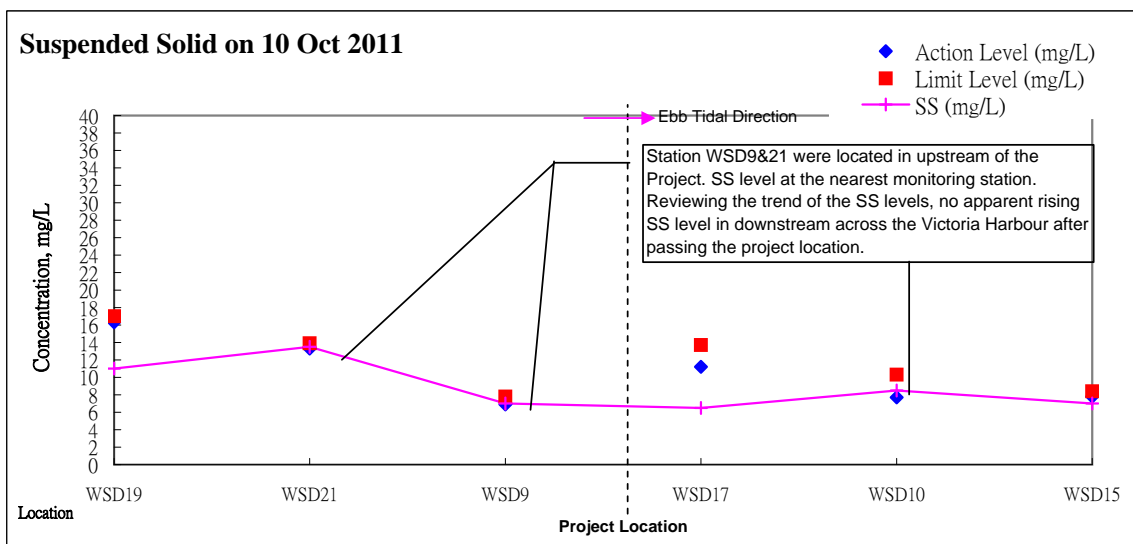
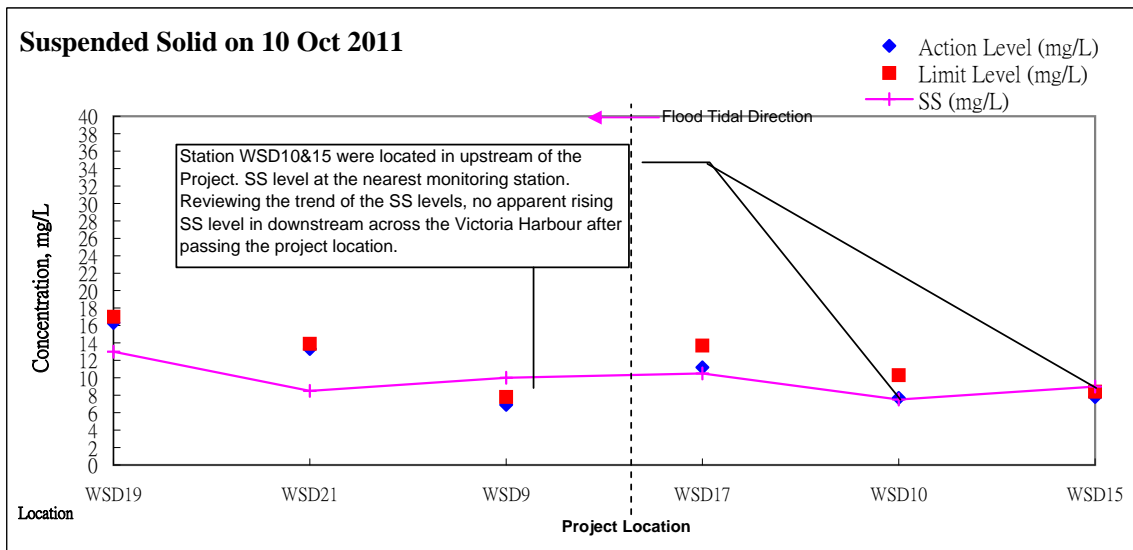


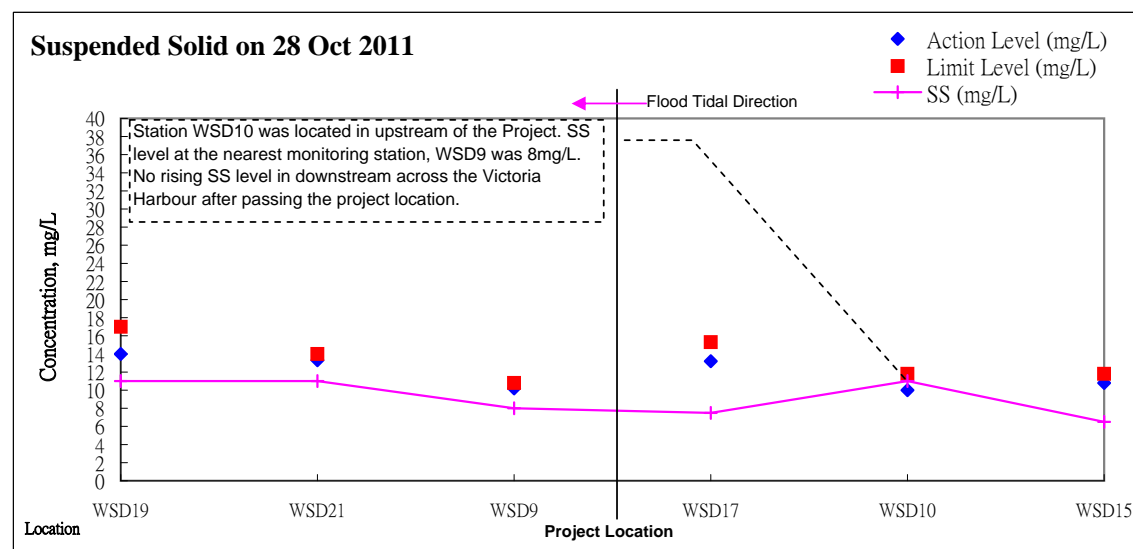
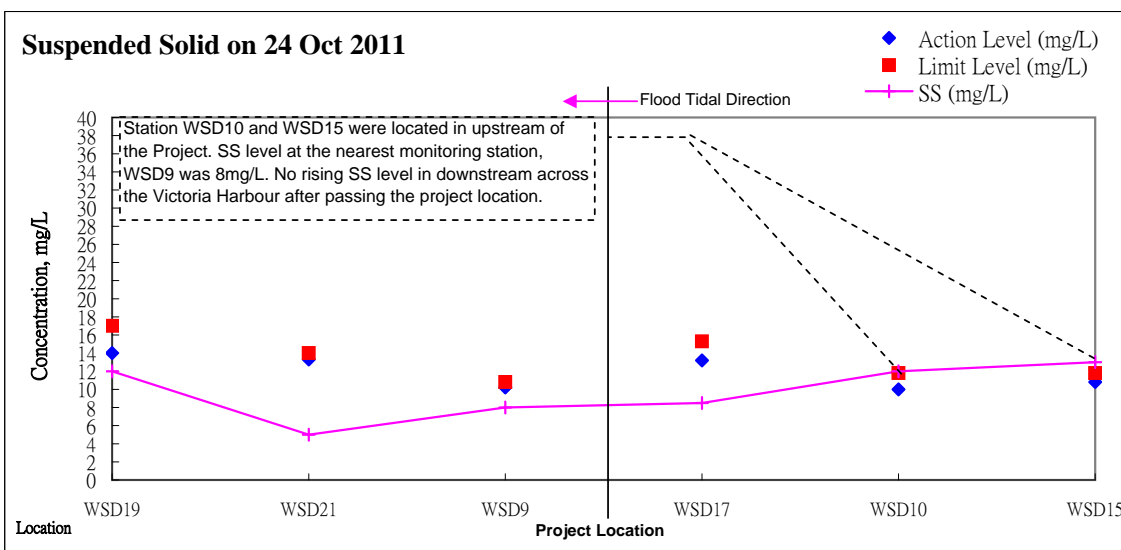
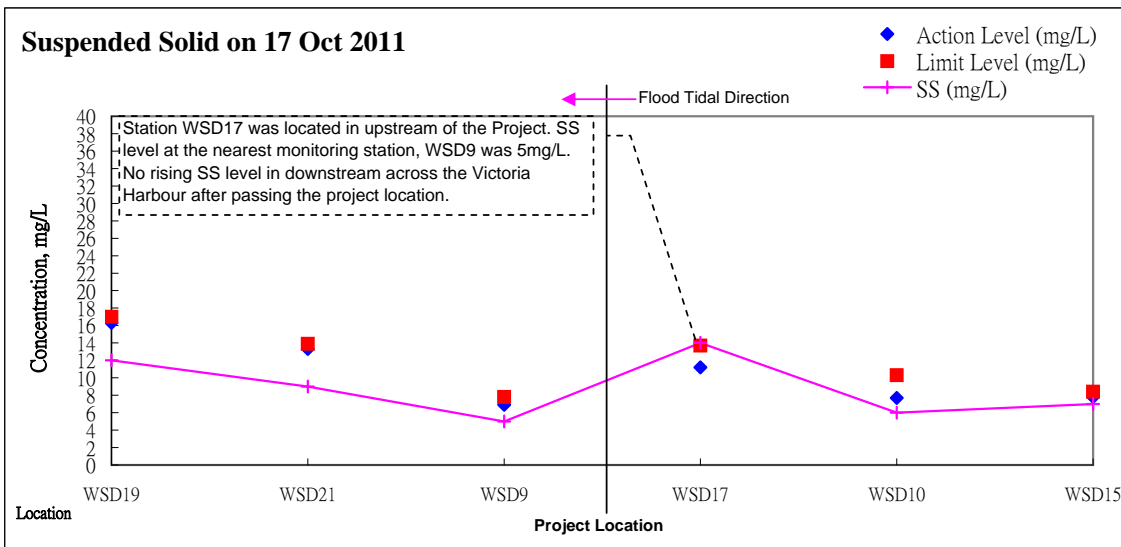
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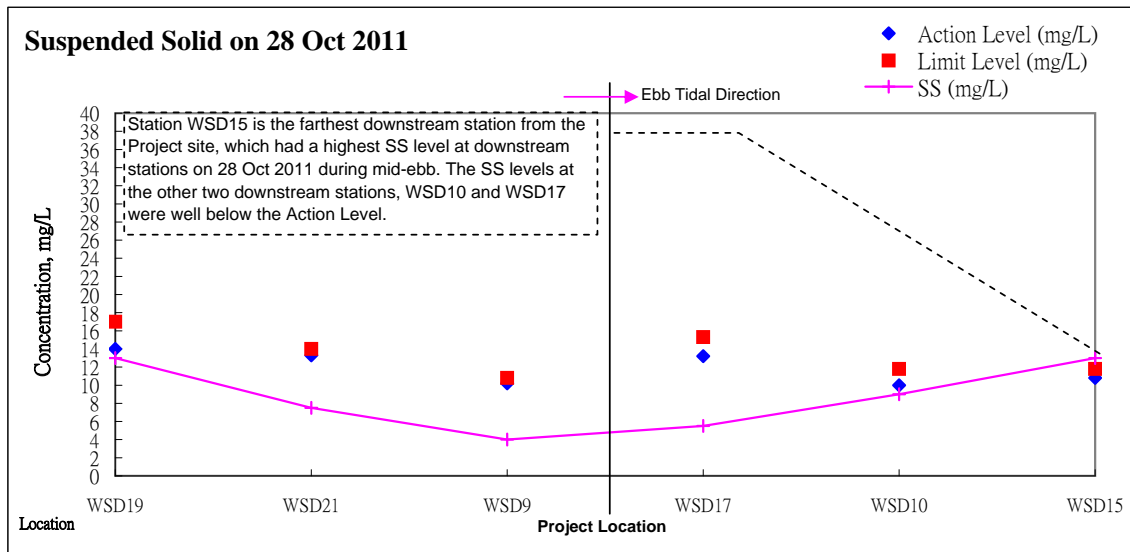


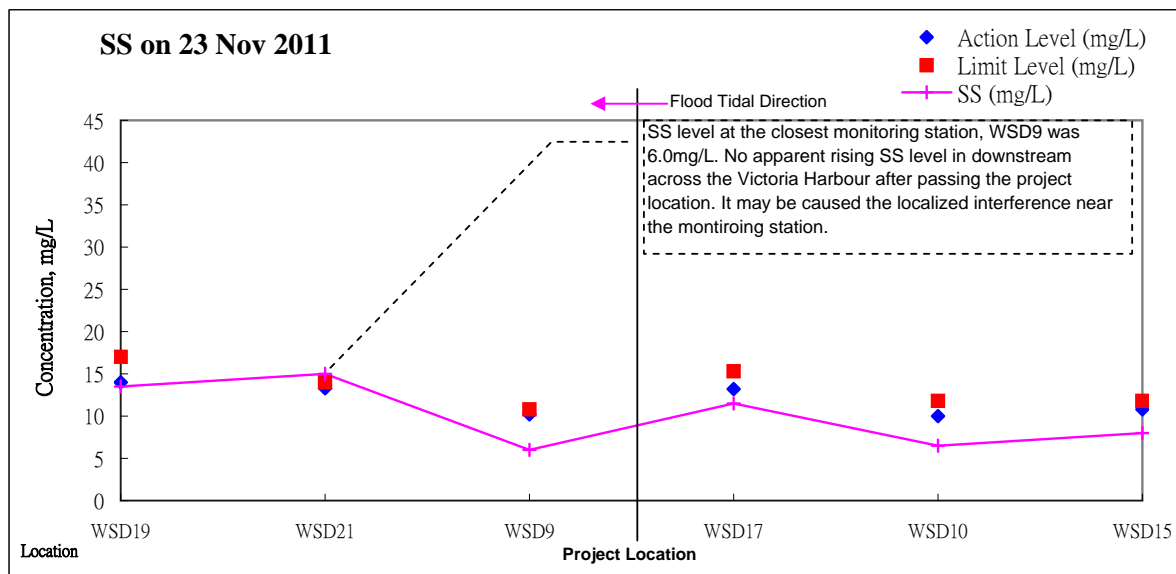
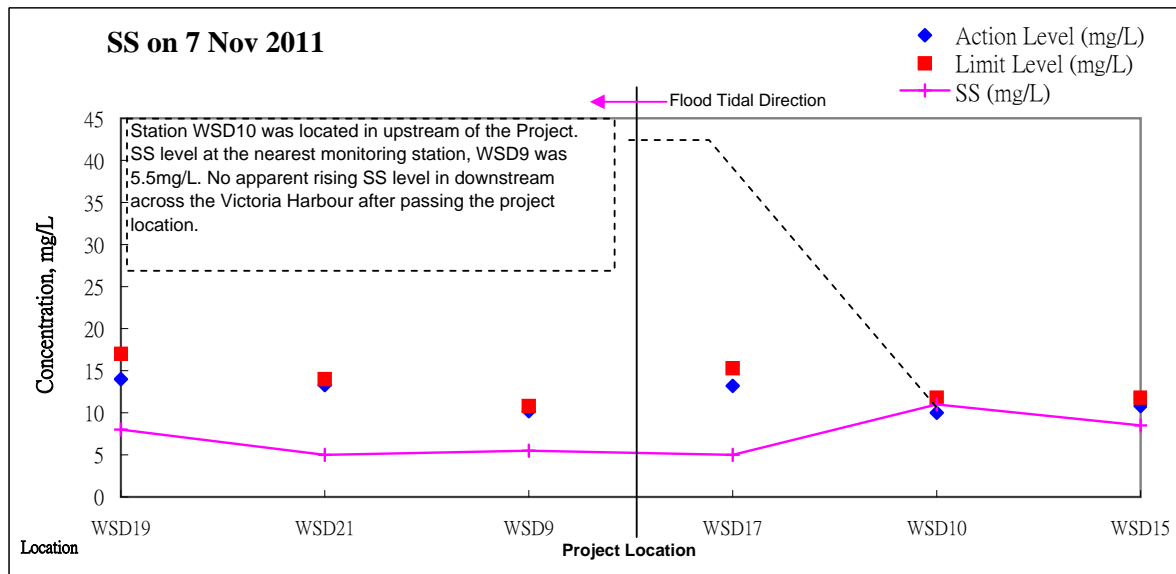
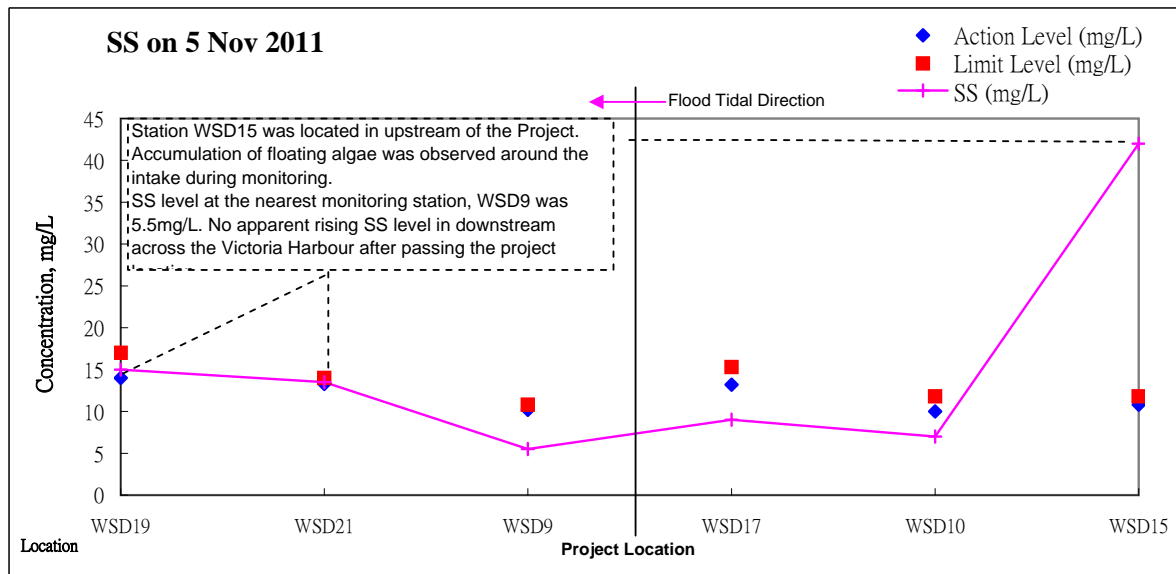
Suspended Solid on 8 Oct 2011

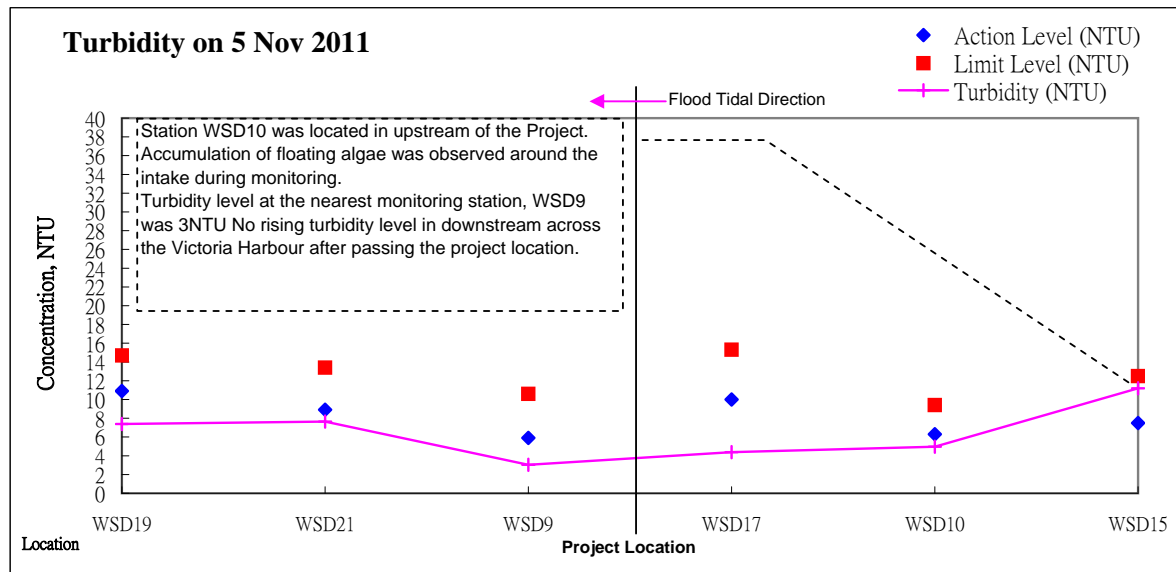












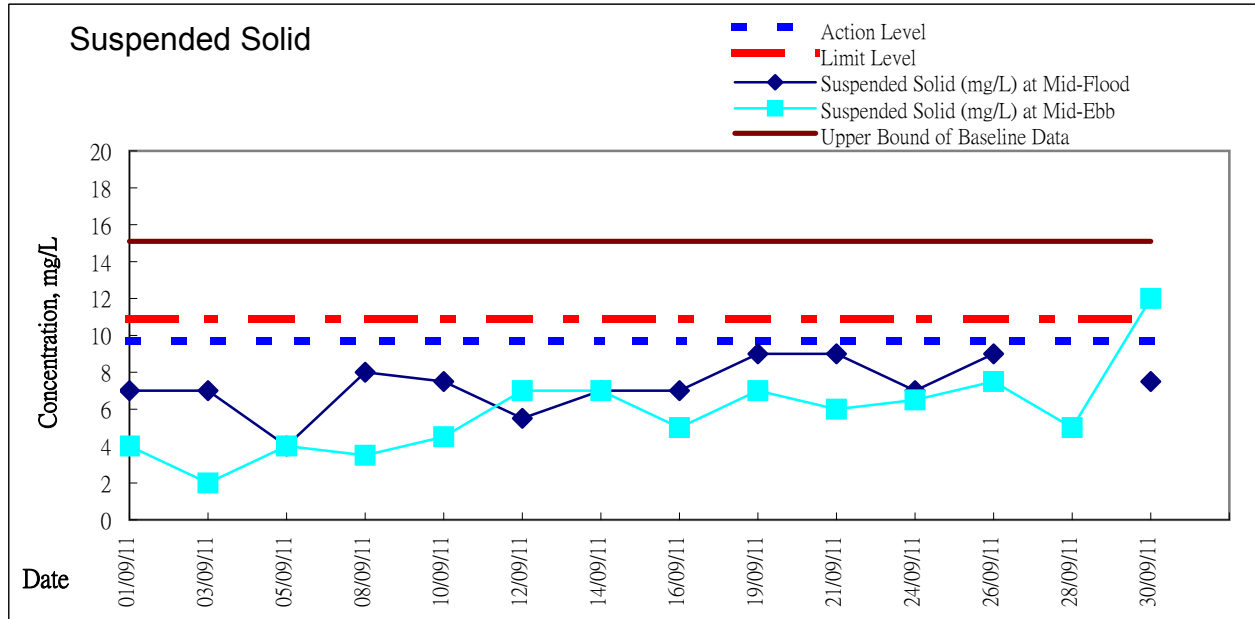


Appendix 5.3

Graphic Presentation of Water Quality Result with respect to Local Variation



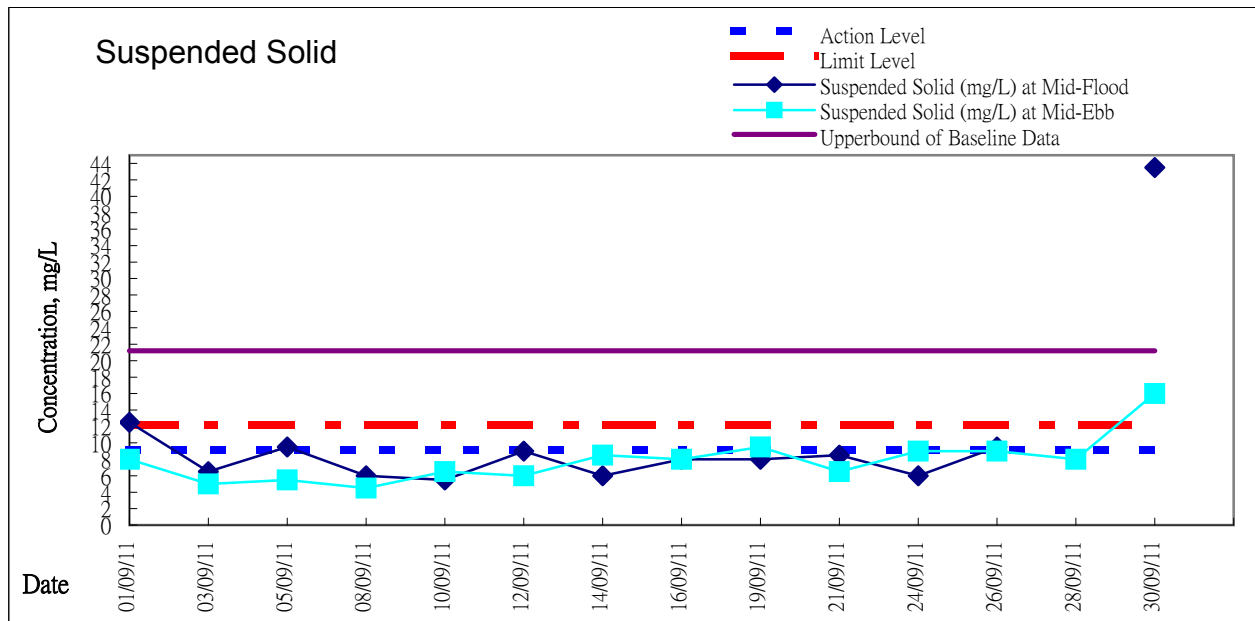
Graphic Presentation of Water Quality Result of WSD9 - Tai Wan with respect to Local Variation



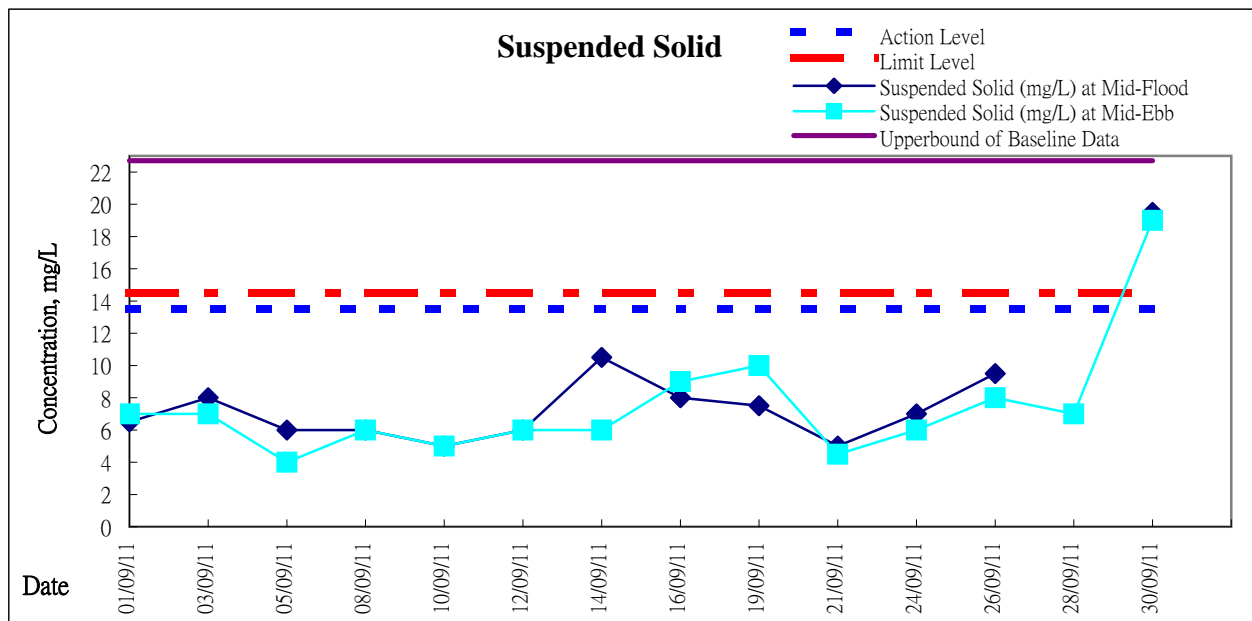
Remarks: WSD9 is located at upstream during the ebb tides while at downstream during flood tides.



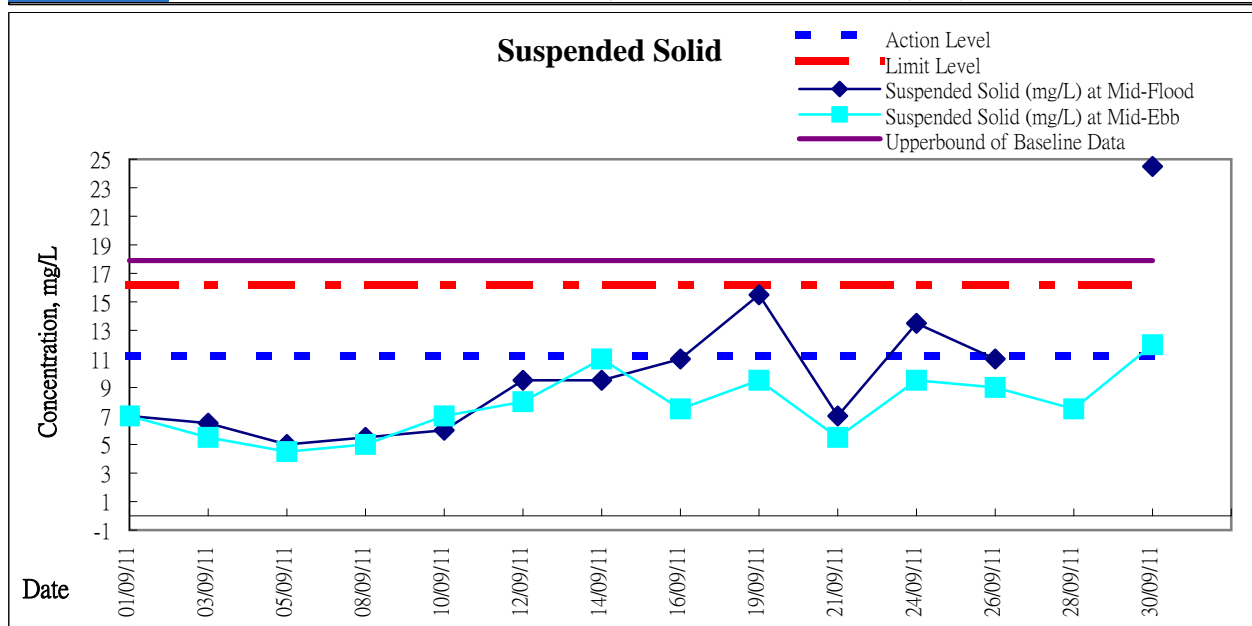
Graphic Presentation of Water Quality Result of WSD10 - Cha Kwo Ling with respect to Local Variation



Remarks: WSD10 is located at upstream during the flood tides while at downstream during ebb tides.



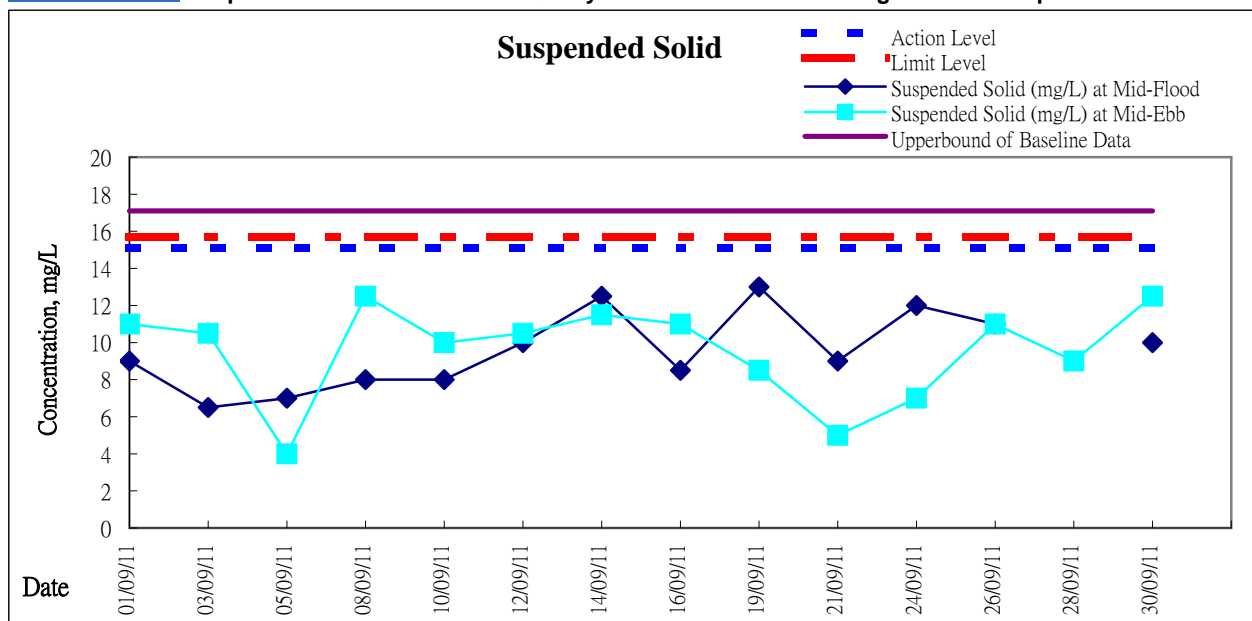
Remarks: WSD15 is located at upstream during the flood tides while at downstream during ebb tides.



Remarks: WSD17 is located at upstream during the flood tides while at downstream during ebb tides.



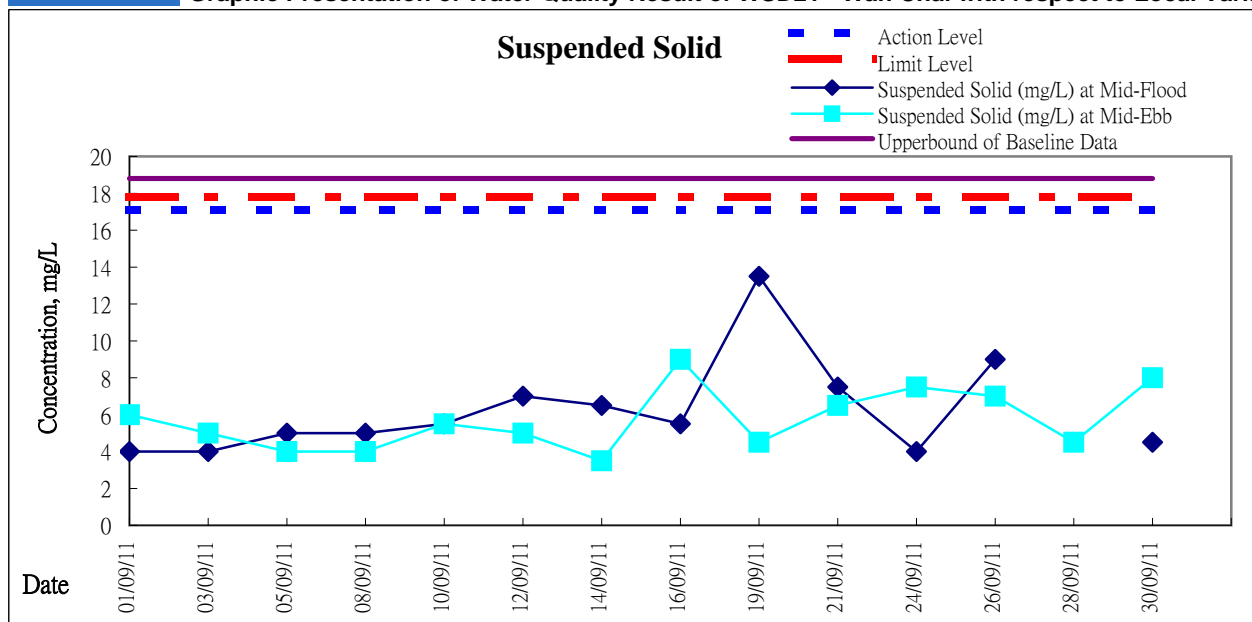
Graphic Presentation of Water Quality Result of WSD19 - Sheung Wan with respect to Local Variation



Remarks: WSD19 is located at upstream during the ebb tides while at downstream during flood tides.



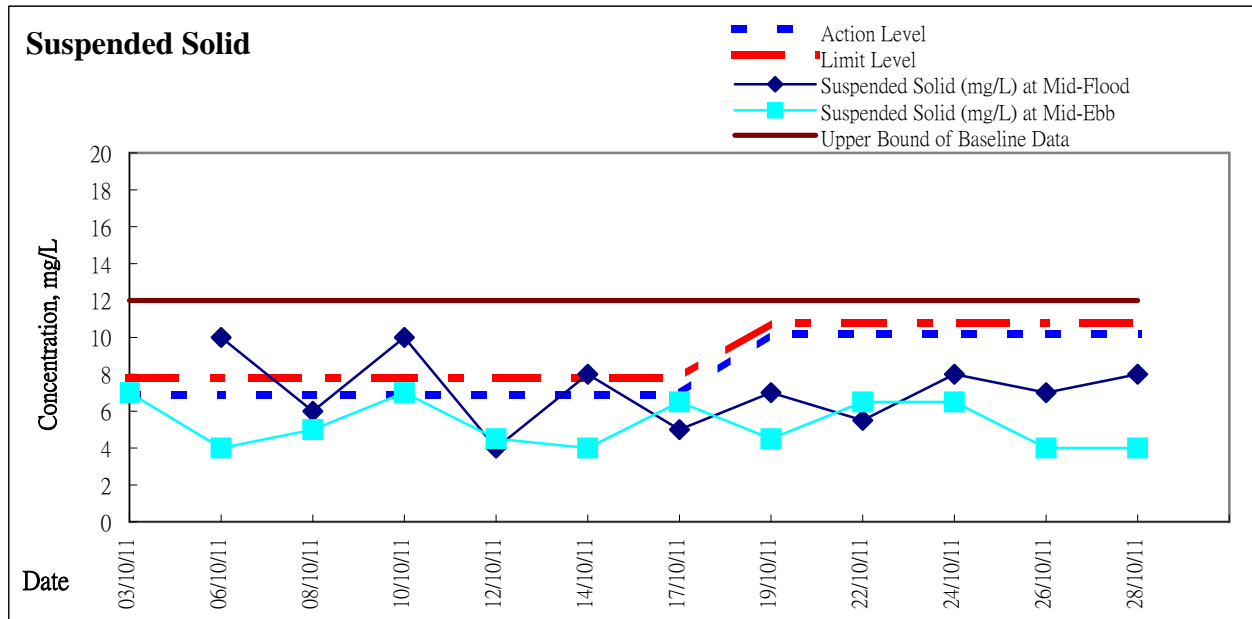
Graphic Presentation of Water Quality Result of WSD21 - Wan Chai with respect to Local Variation



Remarks: WSD21 is located at upstream during the ebb tides while at downstream during flood tides.



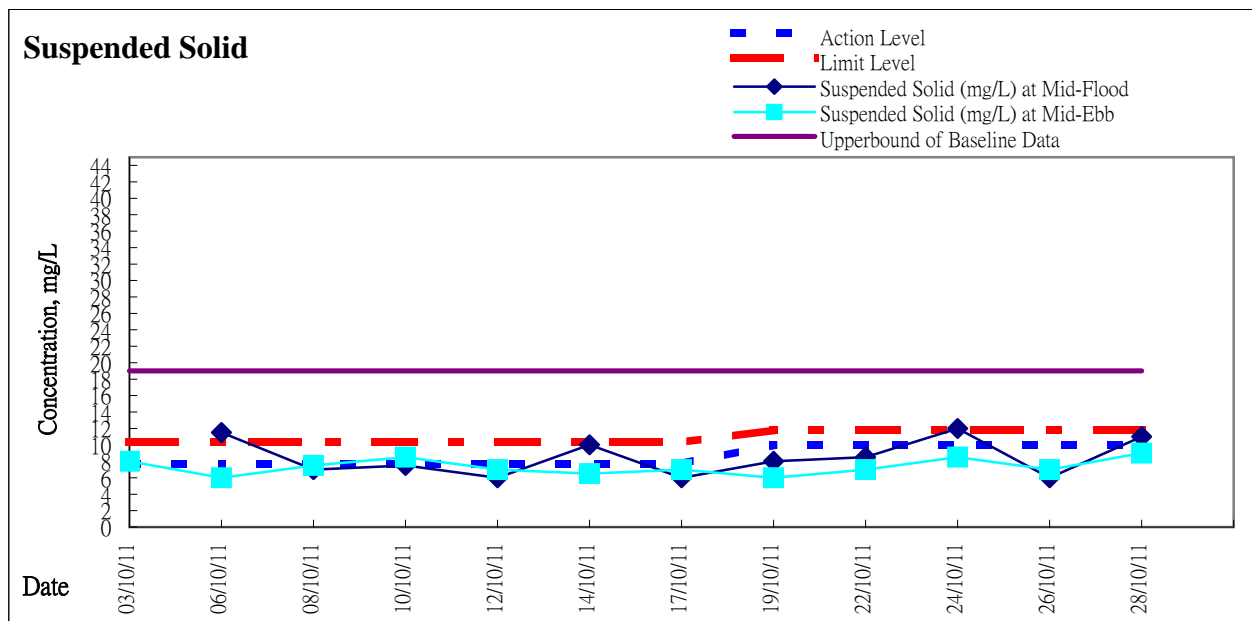
Graphic Presentation of Water Quality Result of WSD9 - Tai Wan with respect to Local Variation



Remarks: WSD9 is located at upstream during the ebb tides while at downstream during flood tides.



Graphic Presentation of Water Quality Result of WSD10 - Cha Kwo Ling with respect to Local Variation

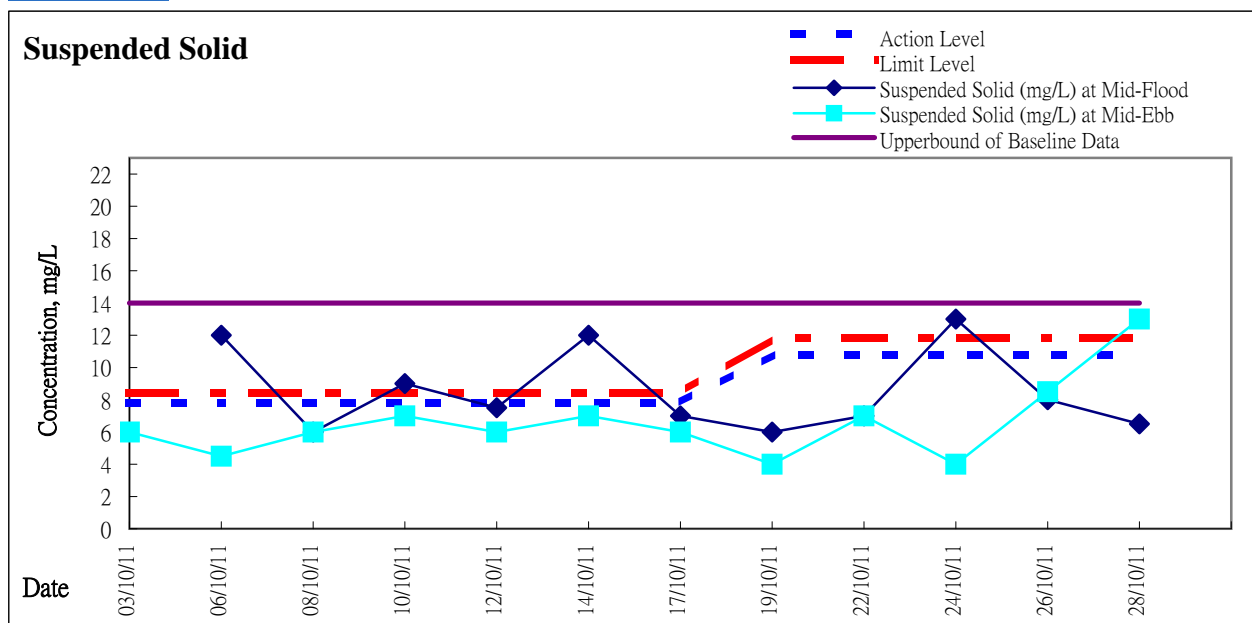


Remarks: WSD10 is located at upstream during the flood tides while at downstream during ebb tides.

Note: With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was applied to used from 19 Oct 2011.



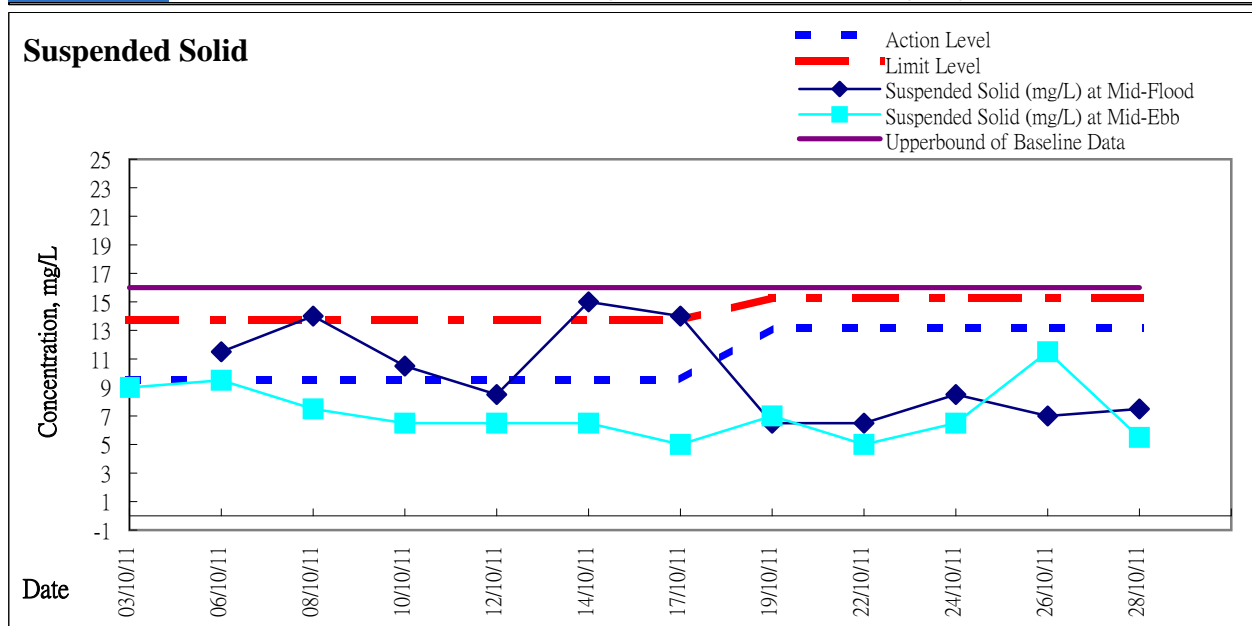
Graphic Presentation of Water Quality Result of WSD15 - Sai Wan Ho with respect to Local Variation



Remarks: WSD15 is located at upstream during the flood tides while at downstream during ebb tides.



Graphic Presentation of Water Quality Result of WSD17 - Quarry Bay with respect to Local Variation

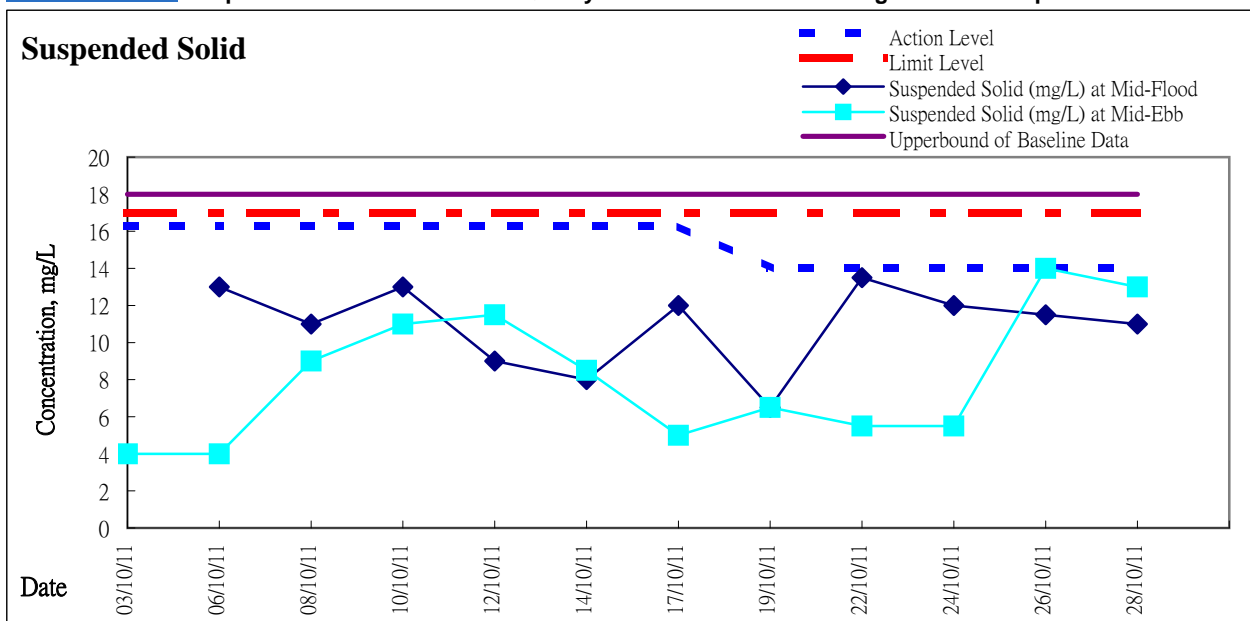


Remarks: WSD17 is located at upstream during the flood tides while at downstream during ebb tides.

Note: With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was applied to used from 19 Oct 2011.



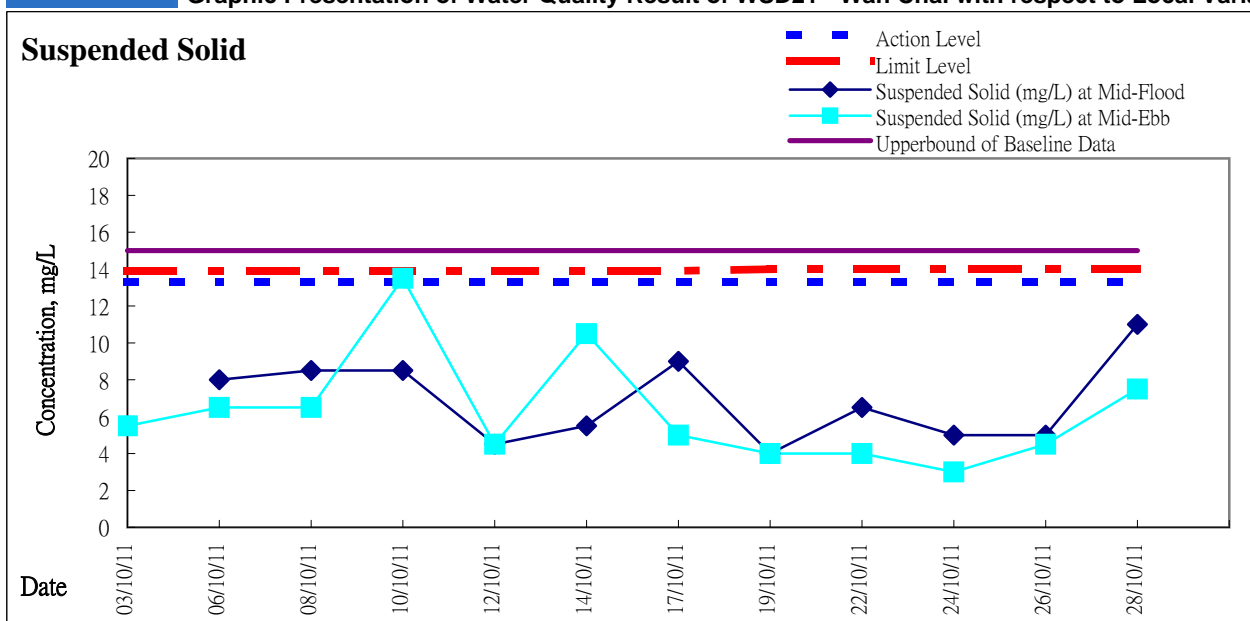
Graphic Presentation of Water Quality Result of WSD19 - Sheung Wan with respect to Local Variation



Remarks: WSD19 is located at upstream during the ebb tides while at downstream during flood tides.



Graphic Presentation of Water Quality Result of WSD21 - Wan Chai with respect to Local Variation

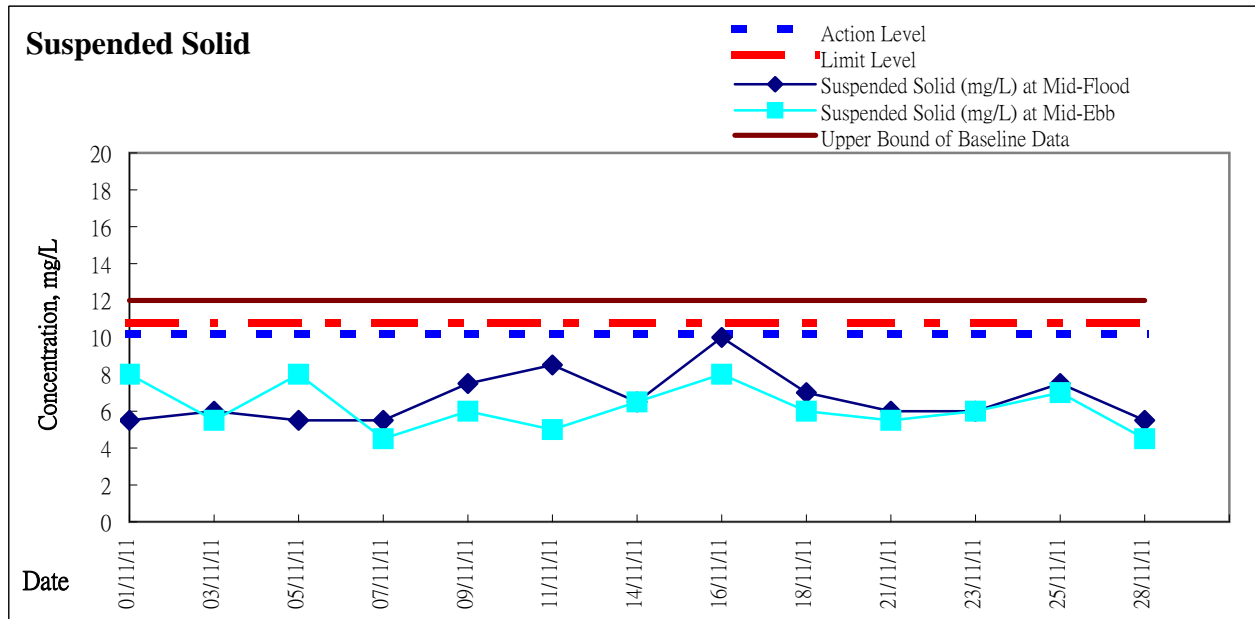


Remarks: WSD21 is located at upstream during the ebb tides while at downstream during flood tides.

Note: With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was applied to used from 19 Oct 2011.



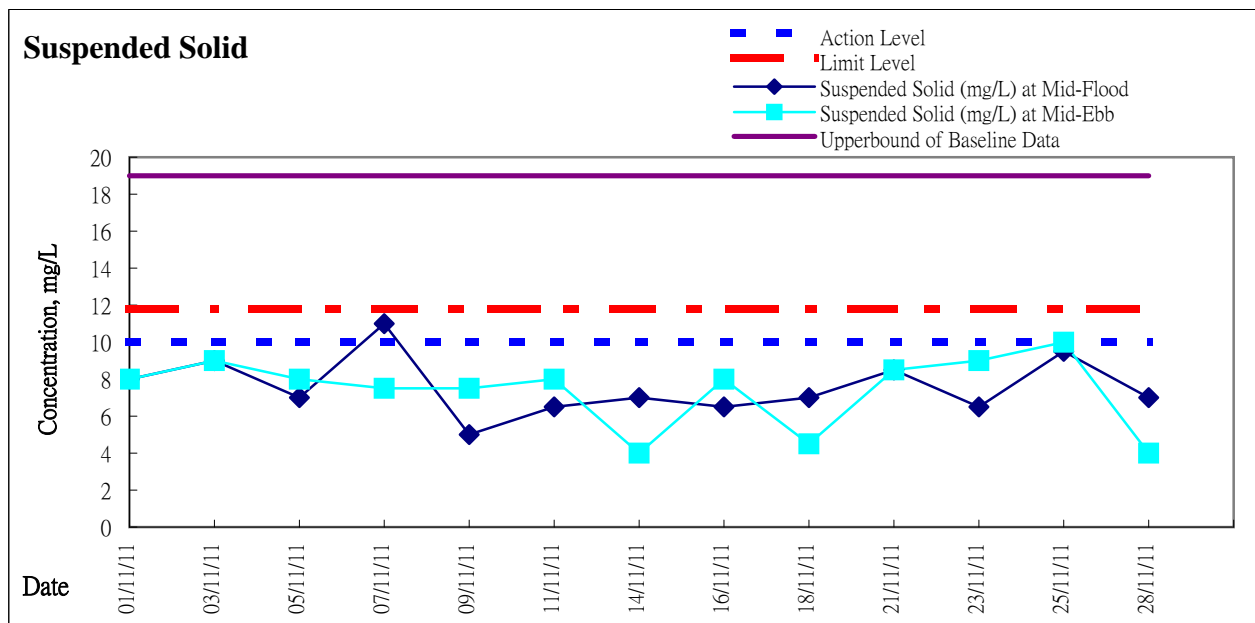
Graphic Presentation of Water Quality Result of WSD9 - Tai Wan with respect to Local Variation



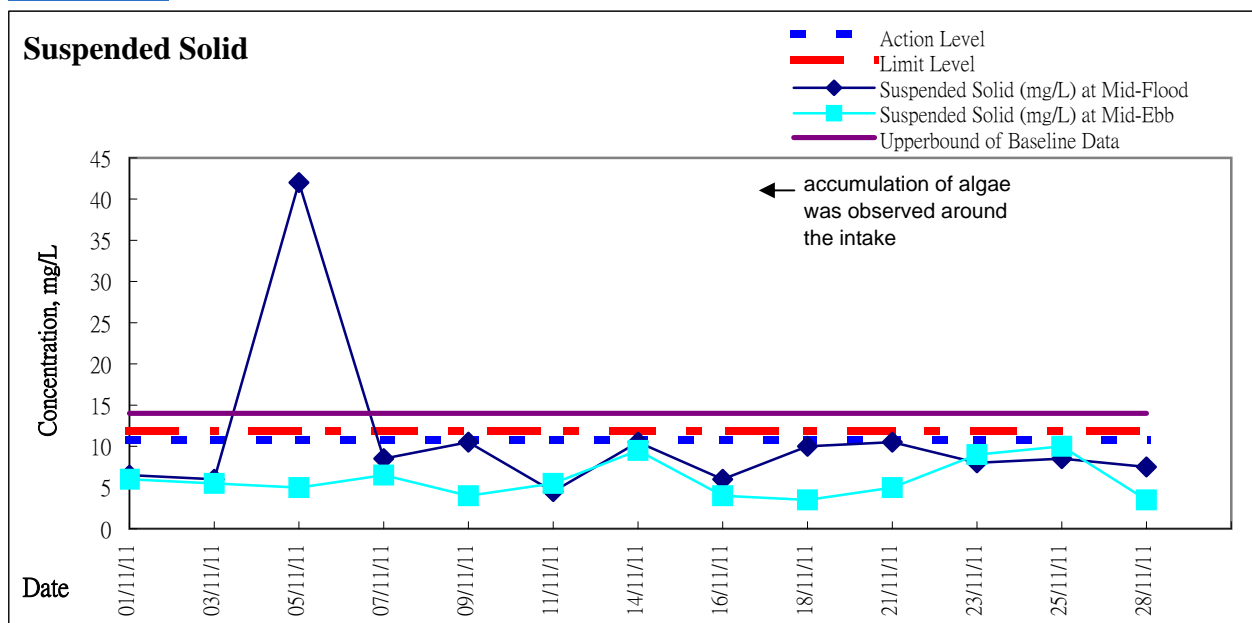
Remarks: WSD9 is located at upstream during the ebb tides while at downstream during flood tides.



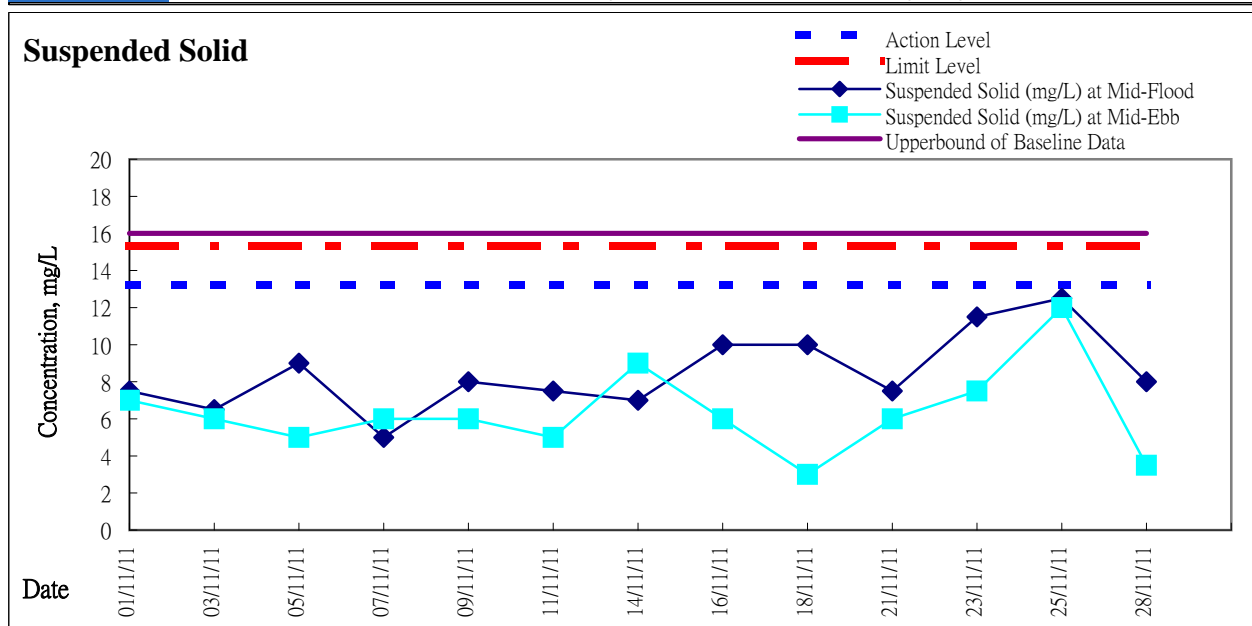
Graphic Presentation of Water Quality Result of WSD10 - Cha Kwo Ling with respect to Local Variation



Remarks: WSD10 is located at upstream during the flood tides while at downstream during ebb tides.



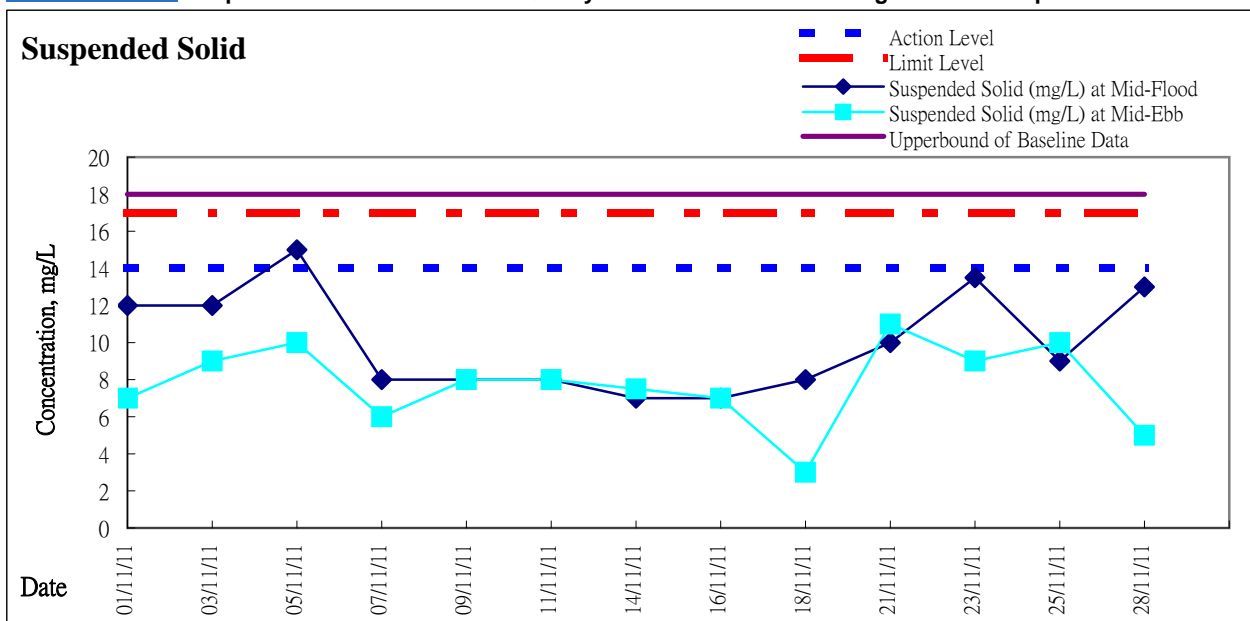
Remarks: WSD15 is located at upstream during the flood tides while at downstream during ebb tides.



Remarks: WSD17 is located at upstream during the flood tides while at downstream during ebb tides.



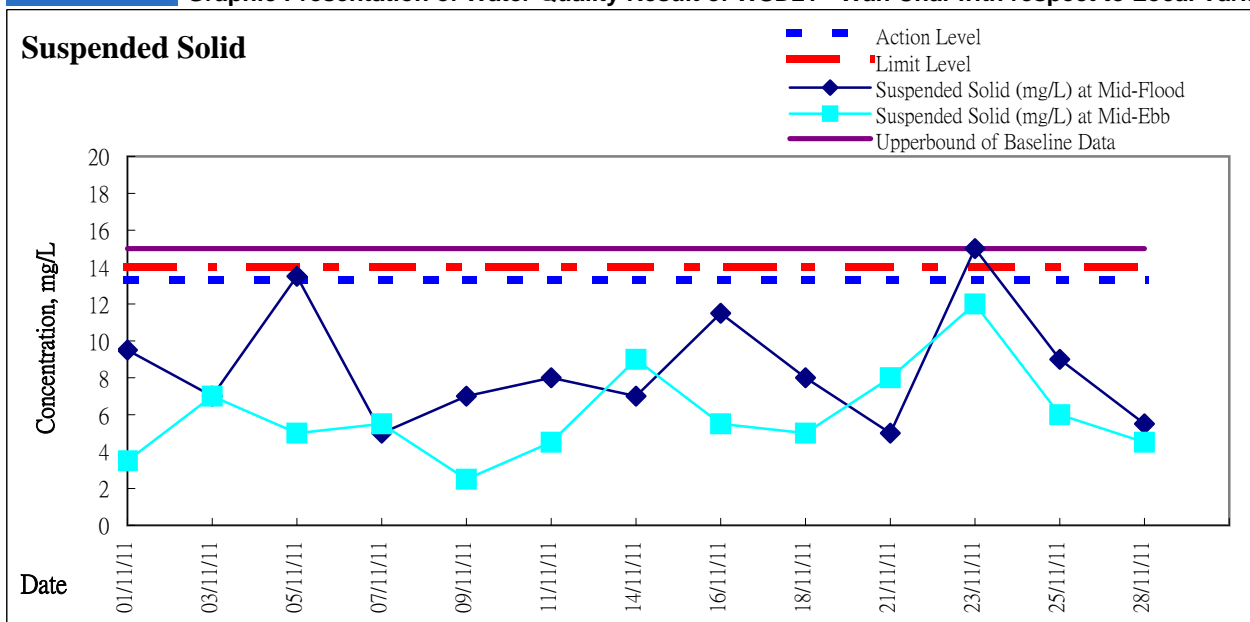
Graphic Presentation of Water Quality Result of WSD19 - Sheung Wan with respect to Local Variation



Remarks: WSD19 is located at upstream during the ebb tides while at downstream during flood tides.



Graphic Presentation of Water Quality Result of WSD21 - Wan Chai with respect to Local Variation



Remarks: WSD21 is located at upstream during the ebb tides while at downstream during flood tides.



Appendix 7.1

Construction Programme for Reporting Quarter

Activity ID	Activity Description	Orig Dur	Early Start	Late Start	Early Finish	Late Finish	Total Float	Free Float	2011																											
									AUG		SEP		OCT			NOV			DEC																	
									15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5											
Site Formation KT Cruise Terminal Development																																				
Contract Period																																				
PD1100	Contract Period	1,486	30/11/09*	30/11/09*	24/12/13	24/12/13	0	0																												
Preliminaries & General Requirements																																				
Initial Submissions																																				
SU1310	Material Submission of Bituminous & Road Marking	60	11/09/11	04/03/12	09/11/11	02/05/12	175	65																												
Temporary Accommodation																																				
TA1060	Servicing of Temp Accommodation for the Engineer	1,406	28/01/10	18/02/10	03/12/13	24/12/13	21	21																												
TA1070	Maintenance of Traffic Flow	1,344	28/02/10	21/04/10	02/11/13	24/12/13	52	52																												
Environmental and Site Safety Monitoring																																				
ES1050	Monthly Update of SSP & EMP	1,422	07/12/09	02/02/10	28/10/13	24/12/13	57	57																												
ES1110	Impact Monitoring for Water Quality	1,380	05/02/10	16/03/10	15/11/13	24/12/13	39	39																												
ES1125	Maintenance of Silt Screen at WSD Intakes	1,380	31/01/10	16/03/10	10/11/13	24/12/13	44	44																												
Mobilization & Site Clearance																																				
MP1020	Routine Site Cleanliness and Tidiness	1,484	30/11/09	02/12/09	22/12/13	24/12/13	2	2																												
MP1060	Disposal of Surplus C&D Material	695	10/03/10	30/01/12	02/02/12	24/12/13	691	691																												
MP1070	Primary Sorting of C&D Material	1,200	26/03/10	12/09/10	07/07/13	24/12/13	170	0																												
MP1080	Surplus Rock Disposal in Area 1 & 2	700	15/02/11	25/01/12	14/01/13	24/12/13	344	344																												
Sorting of C&D Material																																				
SM1050	Bay E - Sorting and Mixing C&D Material	100	29/05/11	05/08/11	05/09/11	12/11/11	68	19	Bay E - Sorting and Mixing C&D Material																											
SM1060	Bay F - Sorting and Mixing C&D Material	100	02/08/11	13/09/11	09/11/11	21/12/11	42	0	Bay F - Sorting and Mixing C&D Material																											
SM1070	Bay G - Sorting and Mixing C&D Material	100	26/08/11	19/10/11	03/12/11	26/01/12	54	33	Bay G - Sorting and Mixing C&D Material																											
SM1150	Portion DZA - Sorting and Mixing C&D Material	400	12/03/11	30/08/11	14/04/12	02/10/12	171	171																												
Preparatory Works																																				
Procurement of Material																																				
Procurement of Material for Temporary Work																																				
PW.1.1050	Bay J - Sheet piles and Steel Section	0	29/08/11	26/10/11			58	14	Bay J - Sheet piles and Steel Section																											
PW.1.1055	Bay K - Sheet piles and Steel Section	0	26/09/11	30/03/12			186	14	Bay K - Sheet piles and Steel Section																											
Production of Precast Units																																				
Precast Front Panel (PFP) along Pipe/Pile Wall																																				
PW.2.1090	Bay I - Infront of Portion Delivery	0	15/08/11	29/09/11			45	35	Bay I - Infront of Portion Delivery																											
PW.2.1095	Bay J - Infront of Portion Delivery	0	12/09/11	23/11/11			72	28	Bay J - Infront of Portion Delivery																											
Section 1 - Portion MQ1																																				
Portion MQ1 (Bays A - B)																																				
New Seawall Construction																																				
SW.1.4090	Bay B - Scour Protection Layer (3250m3)	70	04/07/11	23/02/12	11/09/11	02/05/12	234	234	Bay B - Scour Protection Layer (3250m3)																											
RC Deck Construction																																				
SW.1.5010	Bay A - Rebar Fixing	30	02/08/11	02/08/11	31/08/11	31/08/11	0	0	Bay A - Rebar Fixing																											
SW.1.5015	Bay A - Corrosion Monitoring System	7	01/09/11	01/09/11	07/09/11	07/09/11	0	0	Bay A - Corrosion Monitoring System																											
SW.1.5020	Bay A - Deck Beam Concreting	35	08/09/11	08/09/11	12/10/11	12/10/11	0	0	Bay A - Deck Beam Concreting																											
SW.1.5050	Bay B - Formwork	30	01/08/11	01/08/11	30/08/11	30/08/11	0	0	Bay B - Formwork																											
SW.1.5055	Bay B - Rebar Fixing	30	24/08/11	24/08/11	22/09/11	22/09/11	0	0	Bay B - Rebar Fixing																											
SW.1.5060	Bay B - Corrosion Monitoring System	7	23/09/11	23/09/11	29/09/11	29/09/11	0	0	Bay B - Corrosion Monitoring System																											
SW.1.5065	Bay B - Deck Beam Concreting	35	27/09/11	27/09/11	31/10/11	31/10/11	0	0	Bay B - Deck Beam Concreting																											
Section 2 - Portions MQ2, LS1, LS2, SDA & DZA																																				
Portion MQ2 (Bays C - G), LS1 & LS2																																				
Temp. Piling Bracing																																				
SW.2.2545	Bay G - Install Pile Bracing	21	05/08/11	26/08/11	25/08/11	15/09/11	21	0	Bay G - Install Pile Bracing																											
Dredging Work & Removal of Existing Seawall																																				
SW.2.3060	Bay F - Existing Seawall Armour (4500m3)	21	02/08/11	13/09/11	22/08/11	03/10/11	42	0	Bay F - Existing Seawall Armour (4500m3)																											
SW.2.3065	Bay F - Existing Seawall Rockfill (16500m3)	35	16/08/11	29/09/11	19/09/11	02/11/11	44	0	Bay F - Existing Seawall Rockfill (16500m3)																											
SW.2.3070	Bay F - Excavation Within MQ2 (22000m3)	35	06/09/11	20/10/11	10/10/11	23/11/11	44	0	Bay F - Excavation Within MQ2 (22000m3)																											
SW.2.3080	Bay G - Existing Seawall Armour (4500m3)	21	26/08/11	16/09/11	15/09/11	06/10/11	21	0	Bay G - Existing Seawall Armour (4500m3)																											
SW.2.3085	Bay G - Existing Seawall Rockfill (16500m3)	35	09/09/11	30/09/11	13/10/11	03/11/11	21	0	Bay G - Existing Seawall Rockfill (16500m3)																											
SW.2.3090	Bay G - Excavation Within MQ2 (22000m3)	35	30/09/11	21/10/11	03/11/11	24/11/11	21	0	Bay G - Excavation Within MQ2 (22000m3)																											
New Seawall Construction																																				
SW.2.4035	Bay D - Primary Armour 2.3T (1500m3)	21	25/07/11	13/09/11	14/08/11	03/10/11	50	0	Bay D - Primary Armour 2.3T (1500m3)																											
SW.2.4040	Bay E - Filter 1 (2000m3)	11	07/08/11	25/09/11	17/08/11	05/10/11	49	0	Bay E - Filter 1 (2000m3)																											
SW.2.4045	Bay E - Filter 2 (2000m3)	10	18/08/11	06/10/11	27/08/11	15/10/11	49	0	Bay E - Filter 2 (2000m3)																											
SW.2.4050	Bay E - Secondary Armour 0.16T ~ 0.25T (2500m3)	21	21/08/11	09/10/11	10/09/11	29/10/11	49	0	Bay E - Secondary Armour 0.16T ~ 0.25T (2500m3)																											
<div><div></div><div></div><div></div></div> <div>Early Bar Progress Bar Critical Activity</div>									<div>KTWP</div> <div>Penta-Ocean Construction Co., Ltd.</div> <div>CEDD Contract No. KL/2009/01</div> <div>Site Formation for Kai Tak Cruise Terminal Development</div> <div>Three Months Rolling Programme (Sept 2011 - Nov 2011)</div>																Start Date		30/11/09		Date		Revision		Checked		Approved	
																													02/12/10		K		TM		WT	
?Primavera Systems, Inc.																									Finish Date		24/12/13									
																									Data Date		30/11/09									
																									Run Date		20/08/11 10:55									

