IMPACT MONITORING REPORT





Proposed 132kV Submarine Cable Route for Airport "A" to Castle Peak Power Station Cable Circuit

Eighteenth Weekly Impact Monitoring Report - 24th March to 30th March 2008

4th April 2008

Environmental Resources Management

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CLP Power

Proposed 132kV Submarine Cable Route for Airport "A" to Castle Peak Power Station Cable Circuit: Eighteenth Weekly Impact Monitoring Report – 24th March 2008 – 30th March 2008

March 2008

Reference 0072833

For and on behalf of		
ERM-Hong Kong, Limited		
Approved	by: <u>Dr Robin Kennish</u>	
Signed: _	Ldeen Kenneth	
Position: _	Director	
Date:	4 April 2008	

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EXECUTIVE SUMMARY

The construction works for the Proposed 132kV Submarine Cable Route for Airport "A" to Castle Peak Power Station Cable Circuit (Application No. *DIR-143/2006*) commenced on 10 November 2007. This is the 18th weekly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 24 to 30 March 2008 in accordance with the EM&A Manual.

Summary of Construction Works undertaken during the Reporting Period

During the reporting week, cable landing works were conducted at the Tuen Mun landing site on 24 and 26 March 2008, and cable lay barge preparation works were undertaken in-between. Then, cable laying works between the Airport and Tuen Mun landing sites were carried out from 27 to 29 March 2008. Concurrently, backfilling operations and installation of Concrete Slabs were performed inside the restriction zone near the Tuen Mun landing side until 30 March 2008.

Water Quality

Six monitoring events were scheduled between 24 March and 30 March 2008 at the Airport and Tuen Mun landing sites. All monitoring events at all designated monitoring stations were performed on schedule, ie on 25 March, 27 March and 29 March 2008 at Tuen Mun, and on 24 March, 26 March and 28 March 2008 at the Airport.

All measured dissolved oxygen levels complied with the Action and Limit (AL) Levels with exception of 26 and 28 March, and all measured Turbidity and Suspended Solids (SS) levels were below AL Levels with exception of 24, 26 and 27 March 2008.

Environmental Non-conformance

Thirty-two exceedances of Action and Limit Levels were recorded on four monitoring days, ie 24, 26, 27 and 28 March 2008 in the reporting week. The exceedances were examined against the construction works. It was concluded that they were isolated cases and unlikely related to the Project.

No non-compliance event was recorded during the reporting week.

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

Future Key Issues

During the following week (ie 31 March to 6 April 2008), backfilling operations and installation of concrete slabs will be conducted first inside and then outside the restriction zone near the Tuen Mun landing site. In

addition, cable laying works between the Airport and Tuen Mun landing sites will be undertaken.

1 INTRODUCTION

ERM-Hong Kong, Limited (ERM) was appointed by CLP Power (CLP) as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for the Proposed 132kV Submarine Cable Route for Airport "A" to Castle Peak Power Station Cable Circuit (thereinafter called the ('Project')).

1.1 PURPOSE OF THE REPORT

This is the 18th weekly EM&A report, which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 24 to 30 March 2008.

1.2 STRUCTURE OF THE REPORT

The structure of the report is as follows:

Section 1: Introduction

Details the background, purpose and structure of the report.

Section 2: **Project Information**

Summarises background and scope of the project, site description, project organisation and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting period.

Section 3: Environmental Monitoring Requirement

Summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, Event / Action Plans, environmental mitigation measures as recommended in the EIA report and relevant environmental requirements.

Section 4: Implementation Status on Environmental Mitigation Measures Summarises the implementation of environmental protection measures during the reporting period.

Section 5: Monitoring Results

Summarises the monitoring results obtained in the reporting period.

Section 6: Environmental Non-conformance

Summarises any monitoring exceedance, environmental complaints and environmental summons within the reporting period.

Section 7: Future Key Issues

Summarises the monitoring schedule for the next week.

Section 8: Review of EM&A Data and Impact Assessment Predictions

Compares and contrasts the EM&A data in the reporting period with the impact assessment predictions and annotates with

explanations of discrepancies.

Section 9: Conclusions

Presents the key findings of the impact monitoring results.

PROJECT INFORMATION

2.1 BACKGROUND

2

CLP will install a 132 kV submarine cable circuit to connect Castle Peak Power Station and Hong Kong International Airport in order to meet the electricity load growth at the Airport.

The proposed cable route will start from Tuen Mun and extend southward crossing the Urmston Road to the Airport. The cable landing sites will be located to the west of Butterfly Beach, Tuen Mun and at the northern part of the platform of the Airport (see *Figure 2.1*).

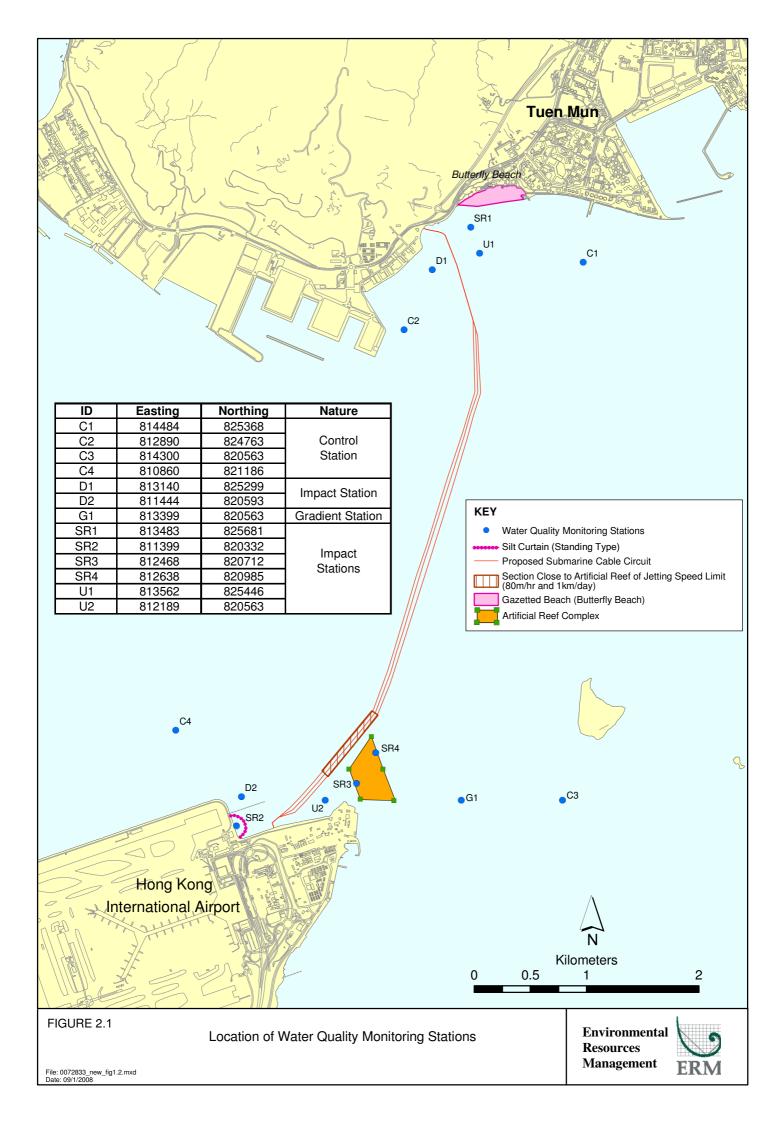
In September 2006, a Project Profile (PP) for the proposed 132kV Cable Route for Airport "A" to Castle Peak CCTS (thereinafter called the 'Project') was prepared and submitted to the Environmental Protection Department (EPD) under the *Environmental Impact Assessment Ordinance (EIAO)* for application for Permission to apply directly for Environmental Permit (EP) (Application No. *DIR-143/2006*).

An Environmental Permit (*EP-267/2007*) for the works was granted on 29 March 2007. Under the requirements of *Condition 2.12* of the EP, an EM&A programme as set out in the *Environmental Monitoring and Audit Manual* (*EM&A Manual*) is required to be implemented. In accordance with the *EM&A Manual*, impact monitoring of water quality is required for the Project.

Baseline Monitoring was conducted at Tuen Mun landing site between 18 October and 28 October 2007. Through communications with EPD, a silt curtain at the water intake of the Airport should already be in place during the baseline monitoring. EPD hence advised the baseline monitoring (thereinafter called *Baseline Environmental Monitoring Part B*) for the Airport East section of works should be postponed until a silt curtain is ready. The baseline monitoring for Tuen Mun section of the Project and sediment quality testing were hence undertaken first (thereinafter called *Baseline Environmental Monitoring Part A*) and the results were presented in *Part A* of the report which was submitted to EPD.

The silt curtains were installed at the Airport seawater intake on 20 December 2007 and *Baseline Environmental Monitoring Part B* was then carried out between 22 December 2007 and 2 January 2008.

Impact Monitoring has been carried out at Tuen Mun landing site since 10 November 2007 and at Airport landing site since 16 January 2008. This report, therefore, presents results of the data from monitoring stations around the Tuen Mun and Airport landing sites (*Figure 2.1*). Results of the impact monitoring data will therefore be compared against the results of the *Baseline Environmental Monitoring Part A* and *Part B*.



2.2 SITE DESCRIPTION

The proposed 132kV cable is located in-between Tuen Mun and the Hong Kong International Airport. The alignment of the cable is illustrated in *Figure* 2.1.

2.3 MARINE CONSTRUCTION WORKS UNDERTAKEN DURING REPORTING WEEK

During the reporting week, cable landing works were conducted at the Tuen Mun landing site on 24 and 26 March 2008, and cable lay barge preparation works were undertaken in-between. Then, cable laying works between the Airport and Tuen Mun landing sites were carried out from 27 to 29 March 2008. Concurrently, backfilling operations and installation of Concrete Slabs were performed inside the restriction zone near the Tuen Mun landing side until 30 March 2008.

The works programme of the period between 23 and 30 March 2008 is presented in *Annex A*.

2.4 PROJECT ORGANISATION

The Project Organisation chart and contact details are shown in *Annex B*.

2.5 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

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

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

Permit / Licence /	Reference	Validity Period	Remarks
Notification / Report			
EM&A Manual	-	Throughout the	submitted on 25
		construction period	January 2007
Environmental Permit	EP-267/2007	Throughout the	granted on 29
		construction period	March 2007
Baseline Environmental	-	Throughout the	approved by EPD
Monitoring Report (Part A)		construction period for	on 8 November
		Tuen Mun Section	2007
Baseline Environmental	=	Throughout the	approved by EPD
Monitoring Report (Part B)		construction period for	on 16 January
		Airport Section	2008

ENVIRONMENTAL MONITORING REQUIREMENT

3.1 MONITORING LOCATIONS

3

In accordance with the *EM&A Manual*, prior to the installation of the cable, water quality sampling was undertaken at stations situated around the cable laying works area at Tuen Mun and the Airport. The locations of the sampling stations are shown in *Figure 2.1*.

- C1 and C2 are Control Stations located over 1 km away from the Tuen Mun landing point and hence are not expected to be influenced by the construction works due to their remoteness;
- U1 and D1 are Gradient Stations situated approximately 300 m either side
 of the cable alignment for monitoring the effect of dredging at the Tuen
 Mun landing point and for identifying the source of impact; and,
- SR1 is a Sensitive Receiver used to monitor the effect of the construction works on Butterfly Beach.
- C3 and C4 are Control Stations near the Airport, which are not expected to be influenced by the construction works due to their remoteness from the construction works.
- U2 and D2 are Impact Stations located approximately 300 m either from the cable alignment for monitoring the effect of dredging at the Airport landing point.
- SR2 is Impact Station (sensitive receiver) used to monitor the effect of the construction works to the Seawater Intake at the Airport.
- SR3 and SR4 are Impact Stations (sensitive receivers) used to verify the
 predictions concerning sediment plume dispersion during dredging at the
 areas close to the Artificial Reef (AR) and at the landing sites.
- G1 is Gradient Station which is situated in between C3 and the AR. It is used to determine the source of pollutants by comparing the monitoring results with those recorded at C3, SR3 and SR4. Since G1 is located between C3 and the construction work alignment, it serves the gradient function with C3 during flood tide, but has no relationship and function with C4 during ebb tide.

The co-ordinates of these monitoring stations are listed in *Table 3.1*.

Table 3.1 Co-ordinates of Water Quality Monitoring Stations (HK Grid)

Station	Nature	Easting	Northing
C1	Control Station	814483	825367
C2	Control Station	812890	824763
C3	Control Station	814300	820563
C4	Control Station	810860	821186
U1	Impact Station	813561	825446
U2	Impact Station	812189	820563
D1	Impact Station	813140	825298
D2	Impact Station	811444	820593
SR1	Impact Station	813483	825681
SR2	Impact Station	811399	820332
SR3	Impact Station	812468	820712
SR4	Impact Station	812638	820985
G1	Gradient Station	813399	820563

3.2 MONITORING PARAMETERS AND FREQUENCY

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

3.2.1 *Monitoring Parameters*

Parameters measured in situ were:

- dissolved oxygen (DO) (% saturation and mg L-1);
- temperature (°C);
- turbidity (NTU); and
- salinity (%).

The only parameter measured in the laboratory was:

• suspended solids (SS) (mgL⁻¹).

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

3.2.2 *Monitoring Frequency*

Impact water quality monitoring was carried out three times a week. The interval between two sets of monitoring was not less than 36 hours. The monitoring was undertaken at 13 locations (eight impact monitoring stations D1, D2, U1, U2, SR1, SR2, SR3 and SR4, one gradient station G1, and four control monitoring stations C1, C2, C3 and C4), as shown on *Figure 2.1*.

Samples were taken during mid-flood and mid-ebb tidal state on each sampling occasion.

3.3 MONITORING EQUIPMENT AND METHODOLOGY

3.3.1 Monitoring Equipment

Dissolved Oxygen, Temperature, Salinity, Turbidity Measuring Equipment

The instrument was a portable, weatherproof multi-parameter measuring instrument (YSI 6820) complete with cables, multi-probe sensor, comprehensive operation manuals, and was operable from a DC power source. It was capable of measuring:

- dissolved oxygen levels in the range of 0 50 mg L-1; and 0-500% saturation;
- temperature of -5 to 50 °C;
- turbidity levels between 0-1000 NTU (response of the sensor was checked with certified standard turbidity solutions before the start of measurement); and,
- salinity in the range of 0-40 ppt (checked with 30 ppt Salinity solutions before the start of the measurement).

Water Depth Gauge

The water depth gauge affixed to the bottom of the water quality monitoring vessel was used.

Current Velocity and Direction

Current velocity and direction was estimated by conducting float tracking.

Positioning Device

A Global Positioning System (GPS) was used (C-Navigator World DGPS, GPS 72A) during monitoring to ensure the accurate recording of the position of the monitoring vessel before taking measurements. The use of DGPS was used for positioning device, which was well calibrated at appropriate checkpoint.

Water Sampling Equipment

Water samples for suspended solids measurement were collected by the use of a multi-bottle water sampling system (General Oceanics Inc., Rosette Sampler ROS02), consisting of PVC bottles of more than two litres, which could be effectively sealed with cups at both ends. The water sampler had a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler was at the selected water depth.

3.3.2 *Monitoring Methodology*

Timing & Frequency

The water quality sampling was undertaken within a 3 hour window of 1.5 hours before and 1.5 hours after mid-flood and mid-ebb tides. Tidal range for flood and ebb tides was not less than 0.5m for capturing representative tides.

Reference was made to the predicted tides at Lok On Pai, which is the tidal station nearest to the Project site, published on the website of Hong Kong Observatory⁽¹⁾. Based on the predicted water levels at Lok On Pai, the impact water quality monitoring was conducted following the schedule presented in *Annex C*.

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

Depths

Each station was sampled and measurements were taken at three depths, 1 m below the sea surface, mid depth and 1m above the sea bed.

Protocols

The multi-parameter measuring instrument (YSI 6820) was checked and calibrated by an HOKLAS accredited laboratory before use. Onsite calibration was also carried out to check the responses of sensors and electrodes using certified standard solutions before each use. Sufficient stocks of spare parts were maintained for replacements when necessary, and backup monitoring equipment was made available.

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

Laboratory Analysis

All laboratory work was carried out by an HOKLAS accredited laboratory. Water samples of about 1,000 mL were collected at the monitoring and control stations for carrying out the laboratory determinations. The determination work started within the next working day after collection of the water samples. The analyses followed the standard methods as described in *APHA Standard Methods for the Examination of Water and Wastewater*, 19th Edition, unless otherwise specified (APHA 2540D for SS).

The QA/QC details were in accordance with requirements of HOKLAS or another internationally accredited scheme (for details refer to *Annex D*).

(1) Hong Kong Observatory (2007) http://www.hko.gov.hk/tide/eLOPtide.htm [Accessed on 13 October 2007]

3.3.3 Action and Limit Levels

Two sets of the Action and Limit levels, which were established based on the results of *Baseline Environmental Monitoring Part A* and *Part B*, are presented in *Tables 3.2* and *3.3* respectively.

Table 3.2 Action and Limit Levels for Water Quality for the Tuen Mun Landing Site

Parameter	Unit	Tide	Depth	Action Level	Limit Level
Suspended	mg L-1	Mid-Ebb	Depth-averaged	12.8	13.3
Solids (SS)		Mid-Flood	Depth-averaged	23.6	28.3
Dissolved	mg L-1	Mid-Ebb	Surface and Middle	5.2	4.0
Oxygen (DO)			Bottom	5.3	2.0
		Mid-Flood	Surface and Middle	5.5	4.0
			Bottom	5.5	2.0
Turbidity	NTU	Mid-Ebb	Depth-averaged	7.0	8.3
		Mid-Flood	Depth-averaged	14.8	18.9

Table 3.2 Action and Limit Levels for Water Quality for the Airport Landing Site

Parameter	Unit	Tide	Depth	Action Level	Limit Level
Suspended	mg L-1	Mid-Ebb	Depth-averaged	21.6	29.8
Solids (SS)					
		Mid-Flood	Depth-averaged	30.8	34.3
-					
Dissolved	mg L ⁻¹	Mid-Ebb	Surface and Middle	6.6	4.0
Oxygen (DO)			Bottom	6.9	2.0
		Mid-Flood	Surface and Middle	6.8	4.0
			Bottom	6.8	2.0
Turbidity	NTU	Mid-Ebb	Depth-averaged	17.4	25.9
		Mid-Flood	Depth-averaged	22.9	27.9

Notes:

3.3.4 Event and Action Plan

The Event and Action Plan for water quality monitoring which was stipulated in the *EM&A Manual* is presented in *Table 3.3*.

⁽¹⁾ The results recorded at the gradient station during the mid-flood period will be used to decide whether any exceedance being recorded during mid-flood are arising from the marine works of this Project.

⁽²⁾ Turbidity and SS levels will make reference to 120% and 130% of value recorded at the upstream control station during the same tidal conditions to assess the compliance of Action and Limit Levels respectively.

Table 3.3 Event and Action Plan for Water Quality

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

4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

4.1 RECOMMENDED MITIGATION MEASURES

Mitigation measures for water quality control have been recommended in the Project Profile and the Environmental Permit. The Contractor is responsible for the design and implementation of the following measures.

During cable laying the following will be undertaken:

- Although the sediment loss during both grab dredging and suction dredging is expected to be quite small, the Contractor will be employing a silt curtain around the dredgers to reduce the dispersion of sediments from the landing points.
- Closed grab dredgers will be used to avoid dispersion of suspended solids into the sea.
- The maximum dredging rate at Tuen Mun shore approach will be limited to 1,500 m³ day⁻¹ for working 10 hours per day, i.e., 150 m³ hr⁻¹.
- The maximum dredging rates of grab dredgers and suction method, whichever to be deployed by the contractor, at the Airport shore approach will be limited to 650 m³ day⁻¹ and 1,600 m³ day⁻¹ for working 16 hours per day, i.e., 41 m³ hr⁻¹ and 100 m³ hr⁻¹.
- All barges used for the transport of dredged materials will be fitted with tight bottom seals in order to prevent leakage of material during loading and transport.
- All barges will be filled to a level, to ensure that material does not spill
 over during loading and transport to the disposal site and that adequate
 freeboard is maintained to ensure that the decks are not washed by
 wave action.
- The forward speed of the jetting machine will be limited to a maximum of 80 m hr⁻¹ and 24 hours operation.

4.2 IMPLEMENTATION STATUS OF MITIGATION MEASURES

In additional to the regulatory requirements as mentioned in *Section 4.1* above, the Contractor has implemented a precautionary measure for the works undertaken at the inshore area. As a precautionary measure, a silt curtain has been installed at the Airport seawater intake and five silt curtains have been installed at the five AR blocks along the direction facing the cable alignment during construction of the Project. In addition, the cable laying

works undertaken in the vicinity of the ARs will be restricted to periods when the tidal current is moving away from the artificial reef towards the works area.

MONITORING RESULTS

5

5.1 IMPACT MONITORING RESULTS

The monitoring data and graphical presentations of the results are included in *Annex E*. These are summarised below.

Six monitoring events were scheduled between 24 March and 30 March 2008 at the Airport and Tuen Mun landing sites. All monitoring events at all designated monitoring stations were performed on schedule, ie on 25 March, 27 March and 29 March 2008 at Tuen Mun, and on 24 March, 26 March and 28 March 2008 at the Airport.

No major activities influencing the water quality were identified between 24 and 30 March 2008.

As shown in *Figures E1 – E4*, dissolved oxygen levels at all the monitoring stations at both Tuen Mun and Airport sides started to decrease since the end of Week 15 (ie 3 to 9 March 2008) and then dropped close to or below the Action Levels in the reporting week. It should be noted that DO levels recorded at all the impact stations were in similar magnitude to DO levels measured at the Control Stations. This implies the declining trends may be due to a low background level of DO.

All measured dissolved oxygen levels complied with the Action and Limit (AL) Levels with exception of 26 and 28 March, and all measured Turbidity and Suspended Solids (SS) levels were below AL Levels with exception of 24, 26 and 27 March 2008.

5.2 DOLPHIN MONITORING

In accordance with the EM&A Manual, dolphin monitoring has been conducted during the cable laying (jetting) operations on 27, 28, and 29 March 2008. During the reporting period, no dolphin sightings were recorded. The dolphin observation recording forms are included in *Annex F*.

5.3 TIDAL FLOW DIRECTION MONITORING

During the reporting week, no cable laying operations were conducted near the AR restricted zone as shown in *Figure 2.1*. Hence, no current flow data were reported.

6.1 SUMMARY OF ENVIRONMENTAL EXCEEDANCE

6.1.1 Exceedance on 24 March 2008

Exceedances of the Action Levels of depth-averaged Turbidity and Suspended Solids (SS) were recorded at Stations SR3 and SR4 during mid-ebb tide and mid-flood tide on 24 March 2008 (*Table 6.1*).

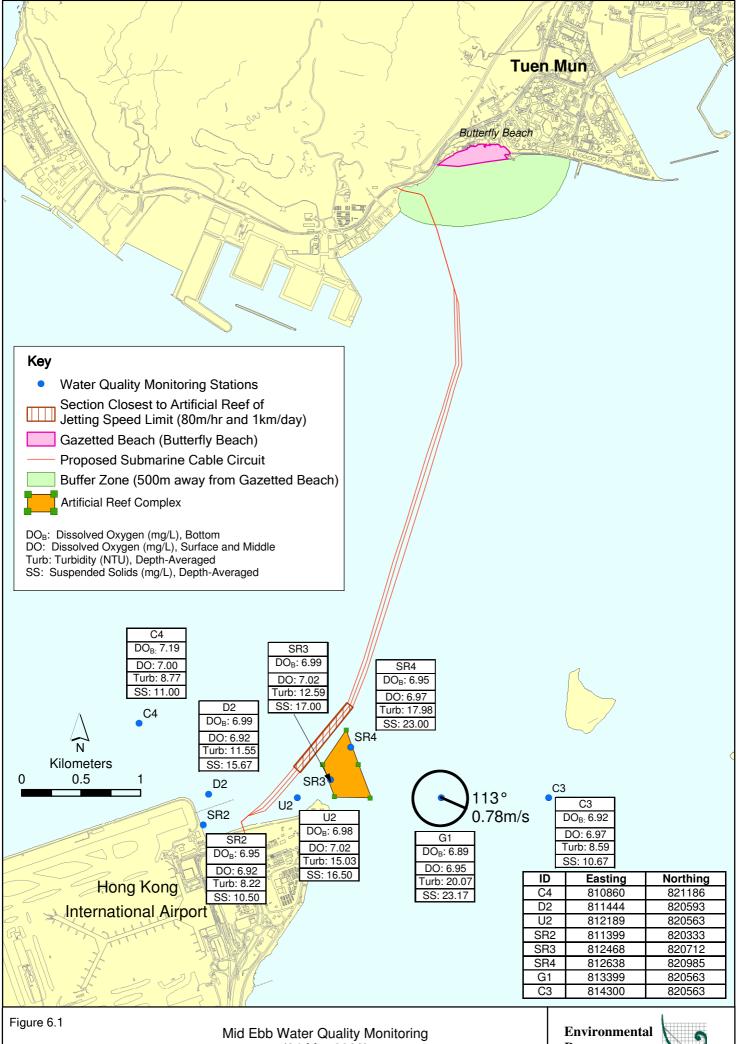
Table 6.1 Exceedances of Action Levels of Depth-averaged Turbidity (NTU) and Suspended Solids (mg/L) during Mid-ebb Tide and Mid-Flood Tide on 24 March 2008

0072833_24 Mar 08_Turb_E_Station SR4			
0072833_24 Mar 08_Turb_F_Station SR3			
0072833_24 Mar 08_5	SS_E_Station SR4		
0072833_24 Mar 08_SS_F_Station SR3			
24 March 2008			
SR3, SR4			
Turbidity (NTU) and SS (mg/L)			
Mid-ebb	Turbidity = 17.4, SS = 21.6		
Mid-flood	Turbidity = 22.9, SS = 30.8		
Mid-ebb	Turbidity = 25.9, SS = 29.8		
Mid-flood	Turbidity = 27.4, SS = 34.3		
Mid-ebb	Turbidity = 12.59		
	SS = 17.0		
Mid-flood	Turbidity = 25.45 (exceeds Action Level)		
	SS = 31.33 (exceeds Action Level)		
Mid-ebb	Turbidity = 17.98 (exceeds Action Level)		
	SS = 23.0 (exceeds Action Level)		
Mid-flood	Turbidity = 8.72		
	SS = 11.17		
	0072833_24 Mar 08_0 0072833_24 Mar 08_0 0072833_24 Mar 08_0 24 March 2008 SR3, SR4 Turbidity (NTU) and Mid-ebb Mid-flood Mid-ebb Mid-flood Mid-ebb		

According to the work programme provided by the Contractor (*Annex A*), the Contractor confirmed the marine works were undertaken near the Tuen Mun landing site whereas the monitoring was undertaken near the Airport landing site which is not in the close proximity of the works area.

During mid-ebb tidal conditions, relatively high turbidity and SS levels were recorded at the Gradient Station G1 (*see Figure 6.1*). This suggests that the exceedances recorded at Station SR4 may be due to high background levels of turbidity and SS. In addition, turbidity and SS levels at Station SR4 did not show non-compliance during the subsequent mid-flood tidal conditions.

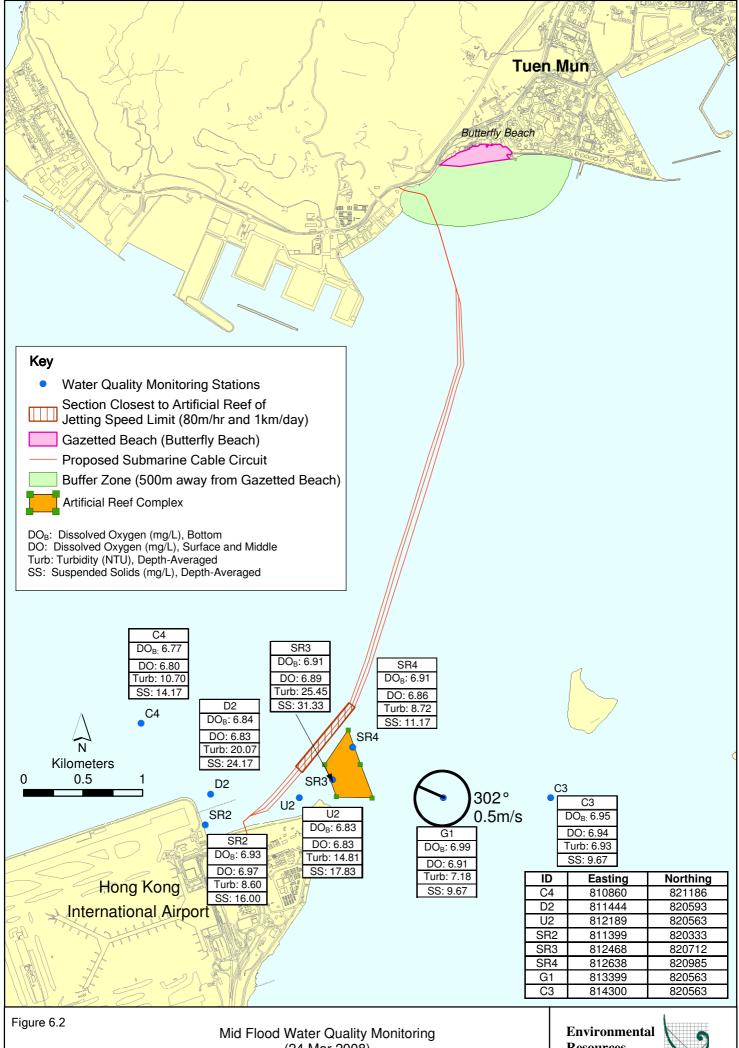
It should be noted that Station SR3 was located upstream of the Project site during mid-flood tidal conditions (*see Figure 6.2*). Besides, turbidity and SS levels at Station SR3 did not show non-compliance during the preceding midebb tidal conditions.



(24 Mar 2008)

Resources Management





(24 Mar 2008)

Resources Management



Based on the above, the exceedance was unlikely to be caused by the Project. No action was therefore required.

The exceedance incident has been notified to EPD and LCSD.

6.1.2 Exceedance on 26 March 2008

Exceedances of the Action Levels of Dissolved Oxygen, Bottom (mg/L), Dissolved Oxygen, Surface and Middle (mg/L), depth-averaged Turbidity and Suspended Solids were recorded at Stations D2, U2, SR2, SR3 and SR4 during mid-ebb tide and mid-flood tide on 26 March 2008 (*Table 6.2*).

Table 6.2 Exceedances of Action Levels of Dissolved Oxygen, Bottom (mg/L), Dissolved Oxygen, Surface and Middle (mg/L), Depth-averaged Turbidity (NTU) and Suspended Solids (mg/L) during Mid-ebb Tide and Mid-Flood Tide on 26 March 2008

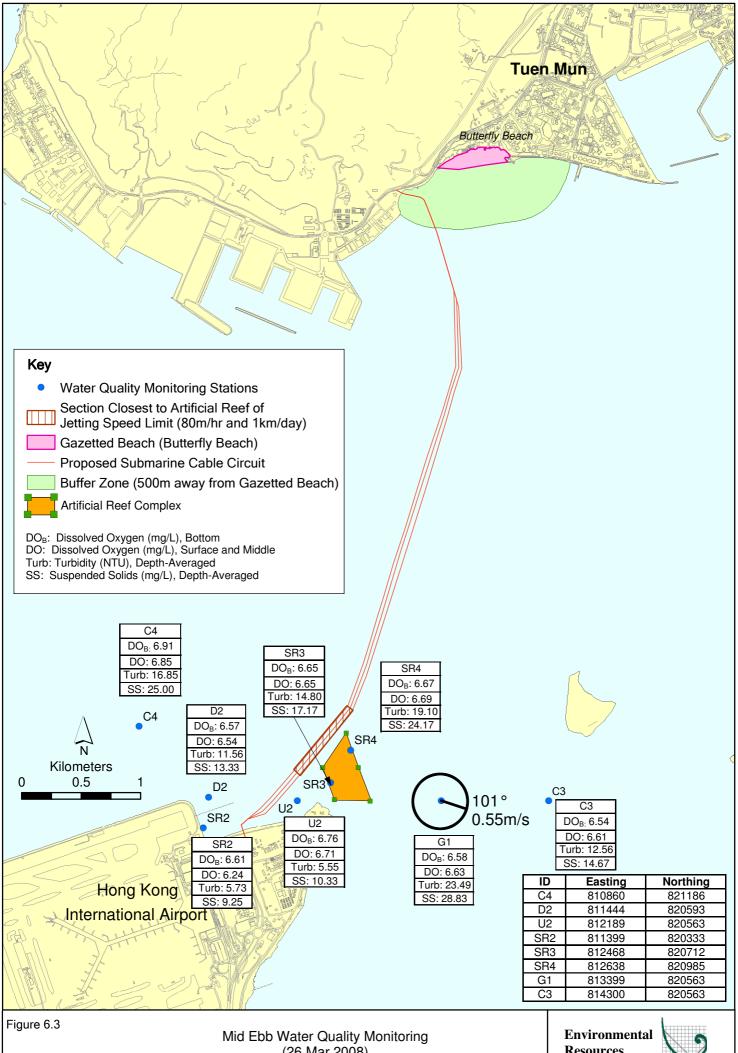
Exceedance Log No.	0072833_26	Mar 08_DOB_E_Station D2			
-	0072833_26 Mar 08_DOB_E_Station U2				
	0072833_26	0072833_26 Mar 08_DOB_E_Station SR2			
	0072833_26	Mar 08_DOB_E_Station SR3			
	0072833_26 Mar 08_DOB_E_Station SR4				
	0072833_26 Mar 08_DO_E_Station D2				
	0072833_26 Mar 08_DO_E_Station SR2				
	0072833_26 Mar 08_Turb_E_Station SR4 0072833_26 Mar 08_SS_E_Station SR4				
	0072833_26	Mar 08_DOB_F_Station SR4			
	0072833_26	Mar 08_DO_F_Station D2			
	0072833_26	Mar 08_DO_F_Station SR3			
	0072833_26	Mar 08_DO_F_Station SR4			
Sampling date	26 March 2	008			
Monitoring station	Stations D2	2, U2, SR2, SR3 and SR4			
Parameter	Dissolved (Oxygen, Bottom (mg/L)			
	Dissolved (Oxygen, Surface and Middle (mg/L)			
	Turbidity (NTU)			
	SS (mg/L)				
Action Levels	Mid-ebb	DO, Bottom = 6.9			
		DO, Surface and Middle = 6.6			
		Turbidity = 17.4			
		SS = 21.6			
	Mid-flood	DO, Bottom = 6.8			
		DO, Surface and Middle = 6.8			
		Turbidity = 22.9			
		SS = 30.8			
Limit Levels	Mid-ebb	DO, Bottom = 2.0			
		DO, Surface and Middle = 4.0			
		Turbidity = 25.9			
		SS = 29.8			
	Mid-flood	DO, Bottom = 2.0			
		DO, Surface and Middle = 4.0			
		Turbidity = 27.4			
		SS = 34.3			
Measured Levels at D2	Mid-ebb	DO, Bottom = 6.57 (exceeds Action Level)			
		DO, Surface and Middle = 6.54 (exceeds Action Level)			
		Turbidity = 11.56			
		SS = 13.33			

	Mid-flood	DO, Bottom = 6.83
		DO, Surface and Middle = 6.75 (exceeds Action Level)
		Turbidity = 4.66
		SS = 8.67
Measured Levels at U2	Mid-ebb	DO, Bottom = 6.76 (exceeds Action Level)
		DO, Surface and Middle = 6.71
		Turbidity = 5.55
		SS = 10.33
	Mid-flood	DO, Bottom = 7.02
		DO, Surface and Middle = 6.90
		Turbidity = 7.75
		SS = 10.33
Measured Levels at SR2	Mid-ebb	DO, Bottom = 6.61 (exceeds Action Level)
		DO, Surface and Middle = 6.24 (exceeds Action Level)
		Turbidity = 5.73
		SS = 9.25
	Mid-flood	DO, Bottom = 6.89
		DO, Surface and Middle = 6.86
		Turbidity = 5.35
		SS = 20.25
Measured Levels at SR3	Mid-ebb	DO, Bottom = 6.65 (exceeds Action Level)
		DO, Surface and Middle = 6.65
		Turbidity = 14.80
		SS = 17.17
	Mid-flood	DO, Bottom = 6.84
		DO, Surface and Middle = 6.74 (exceeds Action Level)
		Turbidity = 7.51
		SS = 5.50
Measured Levels at SR4	Mid-ebb	DO, Bottom = 6.67 (exceeds Action Level)
		DO, Surface and Middle = 6.69
		Turbidity = 19.10 (exceeds Action Level)
		SS = 24.17 (exceeds Action Level)
	Mid-flood	DO, Bottom = 6.75 (exceeds Action Level)
	2.222 22300	DO, Surface and Middle = 6.70 (exceeds Action Level)
		Turbidity = 14.22
		SS = 7.50

The Contractor confirmed that the marine works were undertaken near the Tuen Mun landing site whereas the monitoring was conducted near the Airport landing site, ie not in the close proximity of the project site (over 3 km away from the project site).

During mid-ebb and mid-flood tidal conditions, DO levels at the concerned stations were in similar or higher magnitude to DO level recorded at the Control Station C3 (*see Figures 6.3 and 6.4*). This suggests that the exceedances may be due to a low background level of DO.

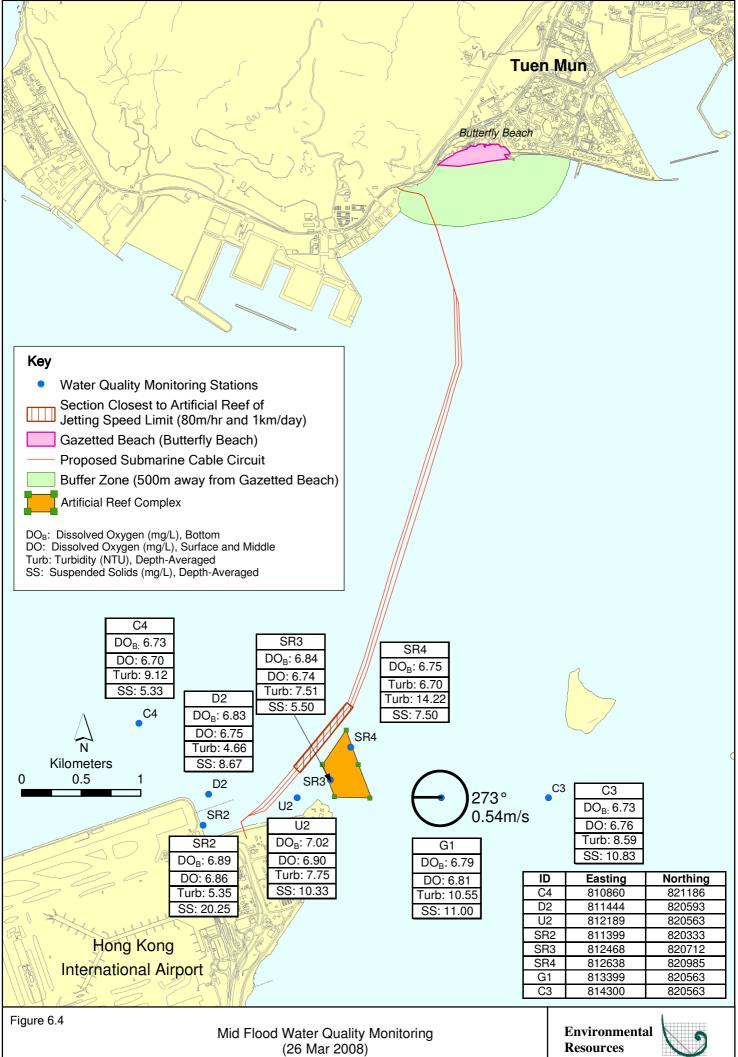
It was observed that turbidity at Gradient Station G1 had a higher level than that at SR4 and relatively high SS level was recorded at upstream Station C4 during mid-ebb tide. Hence, the exceedances of turbidity and SS levels at SR4 may be caused by high background level of turbidity and SS. Moreover, no non-compliance of turbidity and SS levels was recorded during the preceding mid-flood tidal conditions. This suggests that there maybe temporarily tidal influence at the area.



(26 Mar 2008)

Resources Management





Management



The exceedances were therefore considered to be an isolated case and may be caused by natural fluctuation. No action was therefore required.

The exceedance incident has been notified to EPD and LCSD.

6.1.3 Exceedance on 27 March 2008

Exceedances of the Action and Limit Levels of depth-averaged Turbidity (NTU) and SS (mg/L) were recorded at Stations D1 and U1 during mid-ebb tide on 27 March 2008 (*Table 6.3*).

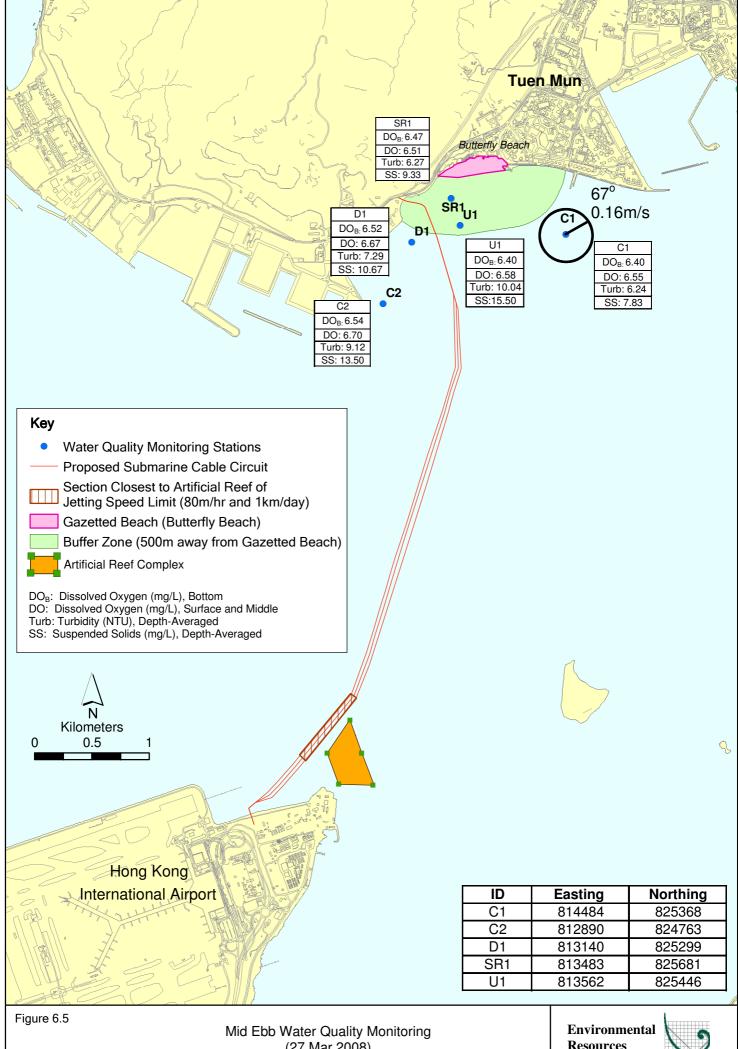
Table 6.3 Exceedances of Action and Limit Levels of Depth-averaged Turbidity (NTU) and Suspended Solids (SS, mg/L) during Mid-ebb Tide on 27 March 2008

Exceedance Log No.	0072833 27 Mar 08	Turb E Station D1	
	0072833_27 Mar 08_Turb_E_station U1		
	0072833_27 Mar 08_SS_E_Station U1		
Sampling date	27 March 2008		
Monitoring station	D1 and U1		
Parameter	Turbidity (NTU) and SS (mg/L)		
Action Levels	Mid-ebb	Turbidity = 7.0 , SS = 12.8	
	Mid-flood	Turbidity = 14.8, SS = 23.6	
Limit Levels	Mid-ebb	Turbidity = 8.3, SS = 13.3	
	Mid-flood	Turbidity = 18.9 , $SS = 28.3$	
Measured Levels at D1	Mid-ebb	Turbidity = 7.29 (exceeds Action Level)	
		SS = 10.67	
	Mid-flood	Turbidity = 4.75	
		SS = 7.67	
Measured Levels at U1	Mid-ebb	Turbidity = 10.04 (exceeds Limit Level)	
		SS = 15.50 (exceeds Limit Level)	
	Mid-flood	Turbidity = 4.21	
		SS =5.33	

The Contractor confirmed cable laying operations were undertaken along the Navigation Channel and trench backfilling works were conducted near the Tuen Mun landing site.

As shown in *Figure 6.5*, relatively high levels of turbidity and SS were measured at the upstream Control station C2, at where it was unlikely to be affected by Project works. This suggests that the exceedances may be due to high background levels of turbidity and SS. In addition, turbidity and SS levels at the upstream Stations C2 and D1 were in similar or higher magnitude to those recorded at the downstream Stations C1, U1 and SR1. This implies there would be influence from the upstream activities.

Persist occurrence of exceedance was not observed as turbidity and SS levels of all Impact Stations did not show non-compliance during the preceding midflood tidal conditions. Hence, the exceedances were considered to be an isolated case and may be due to natural fluctuation. No action was therefore required.



(27 Mar 2008)

Resources Management



The exceedance incident has been notified to EPD and LCSD.

6.1.4 Exceedance on 28 March 2008

Exceedances of the Action Levels of Dissolved Oxygen, Bottom (mg/L) and Dissolved Oxygen, Surface and Middle (mg/L) were recorded at Stations D2, U2, SR2, SR3 and SR4 during mid-ebb tide and mid-flood tide on 28 March 2008 (*Table 6.4*).

Table 6.4 Exceedances of Action Levels of Dissolved Oxygen, Bottom (mg/L) and Dissolved Oxygen, Surface and Middle (mg/L) during Mid-ebb Tide and Mid-Flood Tide on 28 March 2008

Exceedance Log No.	0072833 28	Mar 08_DOB_E_Station SR2	
o .		Mar 08_DO_E_Station SR2	
		Mar 08_DOB_F_Station D2	
		Mar 08_DO_F_Station D2	
		Mar 08_DOB_F_Station U2	
		Mar 08_DO_F_Station U2	
		Mar 08_DOB_F_Station SR2	
		Mar 08_DO_F_Station SR2	
	0072833_28	Mar 08_DOB_F_Station SR3	
	0072833_28 Mar 08_DO_F_Station SR3		
	0072833_28	Mar 08_DOB_F_Station SR4	
	0072833_28	Mar 08_DO_F_Station SR4	
Sampling date	28 March 2008		
Monitoring station	Stations D2, U2, SR2, SR3 and SR4		
Parameter	Dissolved Oxygen, Bottom (mg/L)		
	Dissolved (Oxygen, Surface and Middle (mg/L)	
Action Levels	Mid-ebb	DO, Bottom = 6.9	
		DO, Surface and Middle = 6.6	
	Mid-flood	DO, Bottom = 6.8	
		DO, Surface and Middle = 6.8	
Limit Levels	Mid-ebb	DO, Bottom = 2.0	
		DO, Surface and Middle = 4.0	
	Mid-flood	DO, Bottom = 2.0	
		DO, Surface and Middle = 4.0	
Measured Levels at D2	Mid-ebb	DO, Bottom = 7.16	
		DO, Surface and Middle = 7.06	
	Mid-flood	DO, Bottom = 6.63 (exceeds Action Level)	
		DO, Surface and Middle = 6.71 (exceeds Action Level)	
Measured Levels at U2	Mid-ebb	DO, Bottom = 6.92	
		DO, Surface and Middle = 7.06	
	Mid-flood	DO, Bottom = 6.46 (exceeds Action Level)	
		DO, Surface and Middle = 6.49 (exceeds Action Level)	
Measured Levels at SR2	Mid-ebb	DO, Bottom = 6.86 (exceeds Action Level)	
		DO, Surface and Middle = 6.39 (exceeds Action Level)	
	Mid-flood	DO, Bottom = 6.50 (exceeds Action Level)	
		DO, Surface and Middle = 6.14 (exceeds Action Level)	
Measured Levels at SR3	Mid-ebb	DO, Bottom = 6.99	
) (: 1 (! . 1	DO, Surface and Middle = 7.25	
	Mid-flood	DO, Bottom = 6.45 (exceeds Action Level)	
Married II and CD4) (° 1 - 1 1	DO, Surface and Middle = 6.70 (exceeds Action Level)	
Measured Levels at SR4	Mid-ebb	DO, Bottom = 6.99	
		DO, Surface and Middle = 7.46	

M: 1 (L 1	DO D. (1
Mia-flood	DO, Bottom = 6.50 (exceeds Action Level)
	DO, Surface and Middle = 6.73 (exceeds Action Level)

The Contractor confirmed the marine works were undertaken near the Tuen Mun landing site and the Navigation Channel whereas the monitoring was conducted near the Airport landing site, ie not in the close proximity of the project site.

During mid-ebb and mid-flood tidal conditions, DO levels at the concerned stations were in similar or higher magnitude to DO levels recorded at the Control Stations C3 and C4 (see *Figures 6.6 and 6.7*). This implies the background level of DO may be lower than usual leading to exceedances of DO levels. No action was therefore required.

The exceedance incident has been notified to EPD and LCSD.

6.2 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

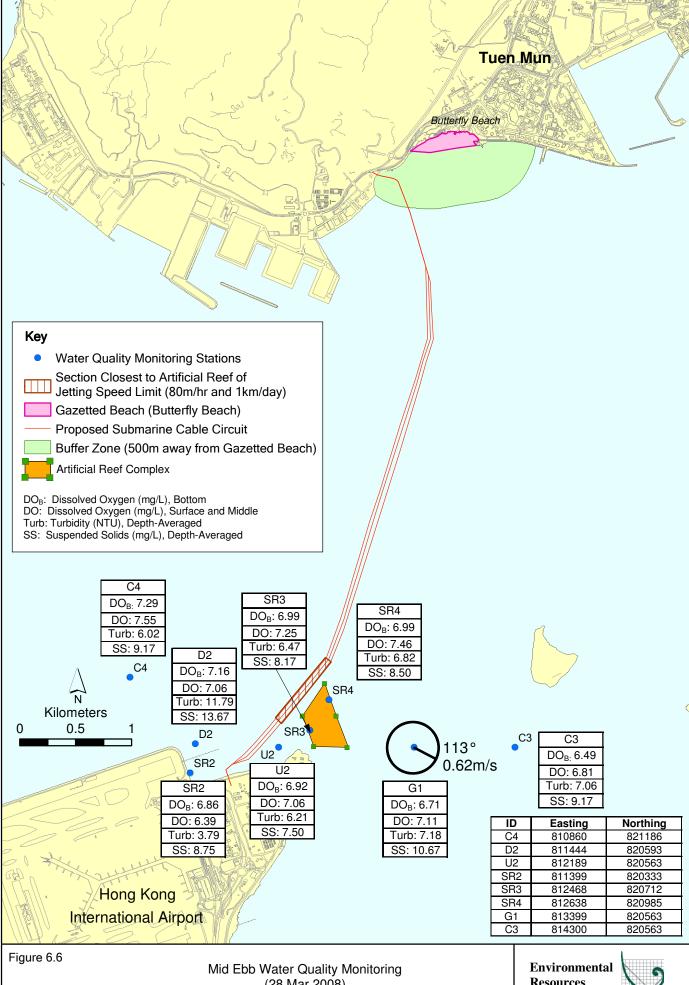
No non-compliance event was recorded during the reporting period.

6.3 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaint was received during the reporting period.

6.4 SUMMARY OF ENVIRONMENTAL SUMMONS AND PROSECUTION

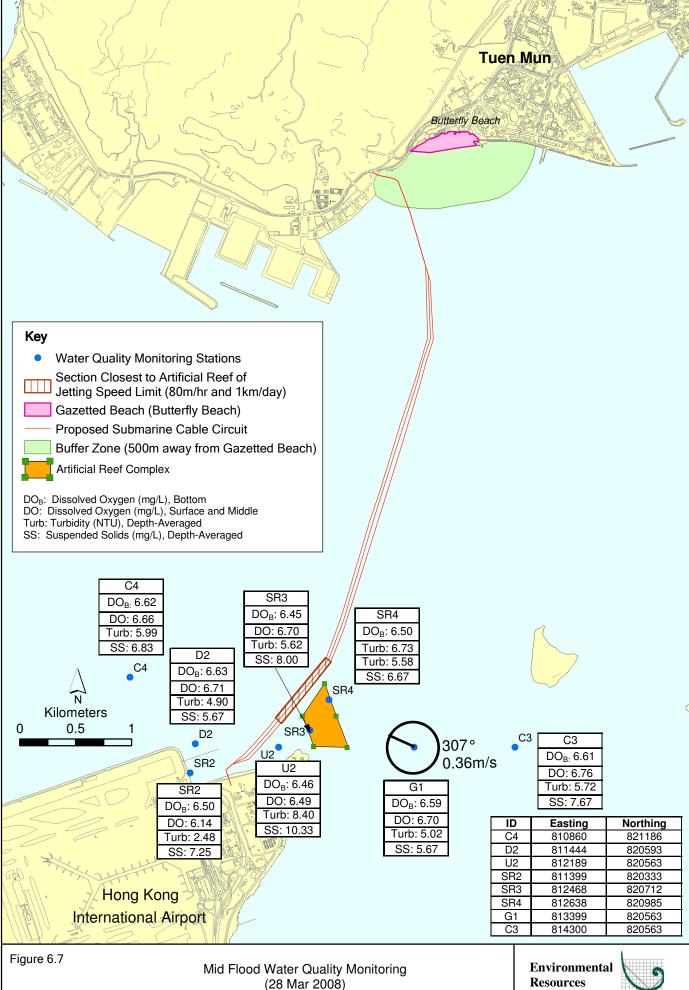
No summons or prosecution on environmental matters was received during the reporting period.



(28 Mar 2008)

Resources Management





(28 Mar 2008)

Management



7 FUTURE KEY ISSUES

7.1 KEY ISSUES FOR THE COMING MONTH

During the following week (ie 31 March to 6 April 2008), backfilling operations and installation of concrete slabs will be conducted first inside and then outside the restriction zone near the Tuen Mun landing site. In addition, cable laying works between the Airport and Tuen Mun landing sites will be undertaken.

The expected construction programme is enclosed in *Annex A*.

7.2 MONITORING SCHEDULE FOR THE COMING MONTHS

The tentative schedule of impact water quality monitoring in March and April 2008 is presented in *Annex C*. The environmental monitoring will be conducted at the same monitoring locations as those for this reporting week.

REVIEW OF THE EM&A AND IMPACT ASSESSEMENT PREDICTIONS

8

Cable laying (jetting) operations and landing works were carried out between the Airport and Tuen Mun land sites during the period of 24 March to 30 March 2008. The monitoring data collected are therefore compared with the impact assessment predictions in the Project Profile.

It should be noted that exceedances of Action and Limit Levels were recorded when there were no cable laying (jetting) operations undertaken or the cable laying operations were not carried out in the close proximity of the monitoring stations. The exceedances were investigated (see *Section 6.1*) and considered unlikely due to the Project. The impact water quality monitoring results are in line with the conclusions made in the water quality impact assessment in the Project Profile.

9 CONCLUSIONS

This Weekly Impact Monitoring Report presents the EM&A work undertaken during the period from 23 March to 30 March 2008 in accordance with the EM&A Manual and the requirements under *EP-267/2007*.

Exceedances of Action and Limit Levels were recorded on 24, 26, 27, and 28 March 2008 in the reporting week. The exceedances were examined against the construction works. It was concluded that they were isolated cases and unlikely related to the Project. However, the decreasing trends in dissolved oxygen levels will be further investigated in the next weekly report.

No non-compliance event was recorded during the reporting week.

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

The ET will keep track of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Annex A

Works Programme of the Period between 24 March and 13 April 2008

Marine Work of 132kV Submarine Cable Installation between Airport to Tuen Mun

				Work	done	for La	st We	ek			Plan f	for Th	is Wee	ek			Antici	pate	Plan fo	or Nex	t Wee	k
	Item Date	24/3	25/3	26/3	27/3	28/3	29/3	30/3	31/3	1/4	2/4	3/4	4/4	5/4	6/4	7/4	8/4	9/4	10/4	11/4	12/4	13/4
1	Mobilization of Plants																					
2	Utilities Detection																					
3	Mobilization of Marine Plant																					
4	Site Setting Out																					
5	Site Clearance																					
6	Installation of Silt Curtain																					
5	Rock Breaking (Land Portion)																					
6	Rock Breaking (Marine Portion)																					
7	Dredging (Tuen Mun)																					
8	Mobilization of Marine Plant																					
9	Dredging (Airport)																					
10	Mobilization of Cable Laying Barges																					
11	Cable Lay Barges Preparation Work																					
	Installation of Silt Curtain (AR)																					
13	Cable Burial Machine Testing																					
14	Cable Laying																					
15	Cable Landing Work (Tuen Mun)																					
16	Cable Landing Work (Airport)																					
17	Backfill and Installation of Concrete Slabs (Tuen Mun) * inside the restriction zone.				I																	
18	Backfill and Installation of Concrete Slabs (Tuen Mun) * outside the restriction zone.																					

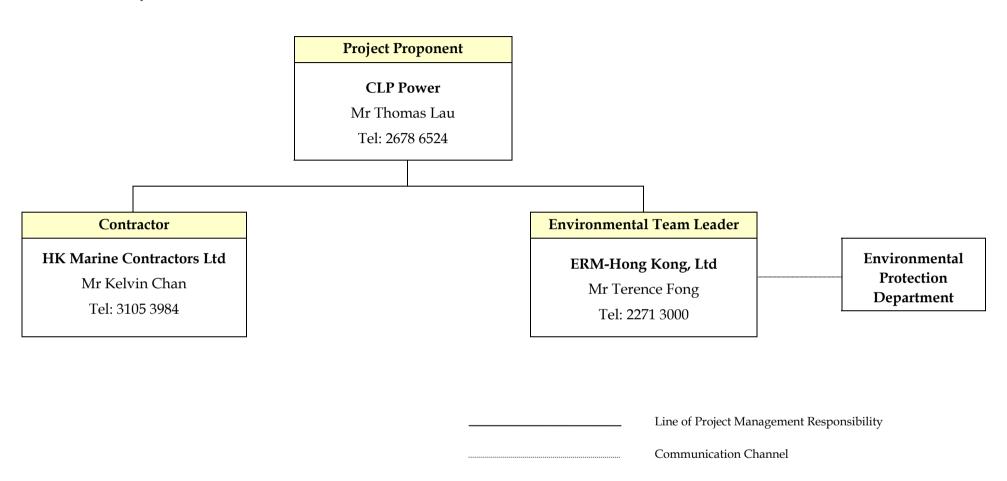
Prepared by: Hong Kong Marine Contractors Ltd. Ref. No. MCERM-132AIRPORTTM-00104-08

Date: 07/04/2008

Annex B

Project Organisation Chart (with Contact Details)

ANNEX B - PROJECT ORGANIZATION (WITH CONTACT DETAILS)



Annex C

Tentative Monitoring Schedule

Proposed 132kV Submarine Cable Route for Airport "A" to Castle Peak Power Station Cable Circuit Tentative Water Quality Monitoring Schedule at Tuen Mun and Airport landing site - March 2008

Reference Tidal Station: Lok On Pai (source: HK Observatory Department)

Sunday	Monday	Tuesday		Wednesday	Thursday	Friday	Sature	day
								1-Mar
								7:48
								20:34
							Impact Mo	
							(Tuen I	
2-Mar			Mar	5-Mar				8-Mar
	Mid-Flood 10:15	Mid-Ebb 11:26	Mid-El		Mid-Ebb 12:32	Mid-Ebb 13:01		3:31
	Mid-Ebb 22:33	Mid-Flood 16:06	Mid-Fl		Mid-Flood 17:55	Mid-Flood 18:41		9:26
	Impact Monitoring	, ,	Im	pact Monitoring	Impact Monitoring	Impact Monitoring	Impact Mo	
	(Airport)	(Tuen Mun)		(Airport)	(Tuen Mun)	(Airport)	(Tuen I	
9-Mar			Mar	12-Mar				15-Mar
	Mid-Flood 8:29	Mid-Flood 8:56	Mid-Fl		Mid-Flood 9:54	Mid-Flood 10:23		
	Mid-Ebb 14:41	Mid-Ebb 15:22	Mid-El		Mid-Ebb 17:06	Mid-Ebb 18:13		
	Impact Monitoring	Impact Monitoring	Im	pact Monitoring	Impact Monitoring	Impact Monitoring		
10 May	(Airport)	(Tuen Mun)	Man	(Airport)	(Tuen Mun)	(Airport)		00 M
Mid-Flood 8:43	Mid-Flood 10:04	Mar 18 Mid-Ebb 11:23	Mar Mid-Et	19-Mar ob 11:56	20-Mar Mid-Ebb 12:27	Mid-Ebb 12:56		22-Mar
	Mid-Flood 10:04 Mid-Ebb 22:28	Mid-Ebb 11.23	Mid-El		Mid-Flood 18:13	Mid-Ebb 12:56 Mid-Flood 18:55		
Impact Monitoring	Impact Monitoring			pact Monitoring	Impact Monitoring	Impact Monitoring		
(Tuen Mun)	(Airport)	(Tuen Mun)	1111	(Airport)	(Tuen Mun)	(Airport)		
23-Mar			Mar	26-Mar				29-Mar
	Mid-Ebb 14:22	Mid-Flood 8:28	Mid-Fl		Mid-Flood 9:08	Mid-Flood 9:20		3:00
	Mid-Flood 20:47	Mid-Ebb 14:54	Mid-El		Mid-Ebb 16:06	Mid-Ebb 16:53		7:54
Impact Monitoring	Impact Monitoring	Impact Monitoring	Im	pact Monitoring	Impact Monitoring	Impact Monitoring	Impact Mo	nitorina
(Tuen Mun)	(Airport)	(Tuen Mun)		(Airport)	(Tuen Mun)	(Airport)	(Tuen I	
30-Mar	31-	Mar		<u>'</u>	,	, , ,	Ì	
	Mid-Flood 8:08							
	Mid-Ebb 19:00							
	Impact Monitoring							
	(Airport)							

The schedule is subject to agreement from the EPD on the monitoring times. The schedule will be revised after reviewing the progress of the construction works or due to adverse (safety, weather etc) conditions.

Proposed 132kV Submarine Cable Route for Airport "A" to Castle Peak Power Station Cable Circuit Tentative Water Quality Monitoring Schedule at Tuen Mun and Airport landing site - April 2008

Reference Tidal Station: Lok On Pai (source: HK Observatory Department)

Sunday	Mo	onday	Tu	esday	Wed	Inesday	Thu	ırsday	F	riday	Sa	turday
				1-Apr		2-Apr		3-Apr		4-Apr		5-Ap
			Mid-Flood	14:29	Mid-Ebb	10:59	Mid-Ebb	11:31	Mid-Ebb	12:00	Mid-Ebb	12:30
			Mid-Ebb	20:00	Mid-Flood	15:54	Mid-Flood	16:53	Mid-Flood	17:45	Mid-Flood	18:34
			Impact	Monitoring								
			(Tue	en Mun)	(A	irport)	(Tue	n Mun)	(A	irport)	(Tue	en Mun)
6-Apr		7-Apr		8-Apr		9-Apr		10-Apr		11-Apr		12-A
	Mid-Ebb	13:42	Mid-Flood	8:00	Mid-Flood	8:18	Mid-Flood	8:50	Mid-Flood	9:22		
	Mid-Flood		Mid-Ebb		Mid-Ebb		Mid-Ebb		Mid-Ebb	16:55		
	Impact	Monitoring										
	(A	irport)	(Tue	en Mun)	(A	irport)		n Mun)		irport)		
13-Apr		14-Apr		15-Apr		16-Apr		17-Apr		18-Apr		19-Ap
/lid-Flood 9:00											Mid-Ebb	12:28
/lid-Ebb 19:25	No n	narine wo	rks to b	e carried	out at b	oth the T	uen Mu	n and Air	port sid	es and	Mid-Flood	18:50
Impact Monitoring									•		,	Monitoring
(Tuen Mun)			ne	nce no im	paci wa		y monit		1		(A	irport)
20-Apr		21-Apr		22-Apr		23-Apr		24-Apr		25-Apr		26-Ap
	Mid-Ebb	13:29	Mid-Ebb		Mid-Flood	8:00	Mid-Flood		Mid-Flood	8:27	Mid-Flood	8:43
	Mid-Flood		Mid-Flood		Mid-Ebb		Mid-Ebb		Mid-Ebb		Mid-Ebb	16:30
	,	Monitoring	,	Monitoring		Monitoring		Monitoring		Monitoring	,	Monitoring
	(A	irport)		en Mun)	(A	irport)	(Tue	n Mun)	(A	irport)	(Tue	en Mun)
27-Apr		28-Apr		29-Apr		30-Apr						
	Mid-Flood	8:00	Mid-Flood	9:00	Mid-Ebb	9:36						
	Mid-Ebb		Mid-Ebb		Mid-Flood	14:10						
	Impact	Monitoring	Impact	Monitoring	Impact	Monitoring	1		ĺ		1	
		irport)	·	en Mun)		irport)						

The schedule is subject to agreement from the EPD on the monitoring times. The schedule will be revised after reviewing the progress of the construction works or due to adverse (safety, weather etc) conditions.

Annex D

QA/QC Results of Laboratory Testing for Suspended Solids

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : ERM HONG KONG Laboratory : ALS Technichem (HK) Pty Ltd Page : 1 of 9

Contact : MS JOANNA KWAN Contact : Alice Wong Work Order : HK0804587
Address : 21/F, LINCOLN HOUSE. Address : 11/F,. Chung Shun Knitting Centre.

979 KING'S ROAD, 1 - 3 Wing Yip Street,

TAIKOO PLACE, ISLAND EAST, QUARRY BAY Kwai Chung, N.T., Hong Kong

HONG KONG

Telephone : 2271 3000 Telephone : +852 2610 1044
Facsimile : 2723 5660 Facsimile : +852 2610 2021

Project : EM&A FOR THE PROPOSED 132kV Quote number : ---- Date received : 25 Mar 2008

SUBMARINE CABLE ROUTE FOR AIRPORT "A"

TO CASTLE PEAK CCTS

Order number : ---- Date of issue : 27 Mar 2008

C-O-C number : ---- No. of samples - Received : 92

Site : --- - Analysed : 92

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0804587 supersedes any previous reports with this reference. The completion date of analysis is 26 Mar 2008. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0804587: Sample(s) were received in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

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This document has been electronically signed by those names that appear on this report and are the authorised signatories.

Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance'

of Hong Kong, Chapter 553, Section 6.

Signatory Position Authorised results for:-

Fung Lim Chee, Richard General Manager Inorganics

Page Number : 8 of 9

Client : ERM HONG KONG

Work Order HK0804587



Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER						Duplicate (DUP)	Results	
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6207	(95)						
HK0804587-001	2008/03/24/1445/C4/B/E/	EA025: Suspended Solids (SS)		1	mg/L	16	17	6.9
	REPL. 1							
HK0804587-011	2008/03/24/1406/SR3/M/E/	EA025: Suspended Solids (SS)		1	mg/L	8	8	0.0
	REPL. 2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6207	96)						
HK0804587-021	2008/03/24/1436/D2/T/E/	EA025: Suspended Solids (SS)		1	mg/L	10	9	0.0
	REPL. 1							
HK0804587-031	2008/03/24/1339/SR4/B/E/	EA025: Suspended Solids (SS)		1	mg/L	44	43	0.0
	REPL. 1							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6207	97)						
HK0804587-041	2008/03/24/1326/G1/M/E/	EA025: Suspended Solids (SS)		1	mg/L	18	19	0.0
	REPL. 2							
HK0804587-051	2008/03/24/2040/C4/M/F/	EA025: Suspended Solids (SS)		1	mg/L	11	10	0.0
	REPL. 2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6207	(98)						
HK0804587-061	2008/03/24/2013/U2/T/F/	EA025: Suspended Solids (SS)		1	mg/L	11	11	0.0
	REPL. 1							
HK0804587-071	2008/03/24/1924/C3/B/F/	EA025: Suspended Solids (SS)		1	mg/L	13	14	11.3
	REPL. 1							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6207	799)						
HK0804587-081	2008/03/24/1952/SR4/M/F/	EA025: Suspended Solids (SS)		1	mg/L	8	8	0.0
	REPL. 2							
HK0804587-091	2008/03/24/2010/SR2/B/F/	EA025: Suspended Solids (SS)		1	mg/L	15	14	0.0
	REPL. 2							

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Page Number : 9 of 9

Client : **ERM HONG KONG**

Work Order HK0804587



Matrix Type: WATER			Method Blank (ME	3) Results		Single Co.	ntrol Spike (SCS) and D	uplicate Con	trol Spike (DC	S) Results	
					Spike	Spike Red	covery (%)	Recovery	Limits (%)	RPD	s (%)
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Proper	ties (QCLot: 620795)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	101		85	115		
EA/ED: Physical and Aggregate Proper	ties (QCLot: 620796)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		
EA/ED: Physical and Aggregate Proper	ties (QCLot: 620797)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	99.0		85	115		
EA/ED: Physical and Aggregate Proper	ties (QCLot: 620798)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	103		85	115		
EA/ED: Physical and Aggregate Proper	ties (QCLot: 620799)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : ERM HONG KONG Laboratory : ALS Technichem (HK) Pty Ltd Page : 1 of 6

Contact : MS JOANNA KWAN Contact : Alice Wong Work Order : HK0804612
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TAIKOO PLACE, ISLAND EAST, QUARRY BAY Kwai Chung, N.T., Hong Kong

HONG KONG

Telephone : 2271 3000 Telephone : +852 2610 1044
Facsimile : 2723 5660 Facsimile : +852 2610 2021

Project : EM&A FOR THE PROPOSED 132kV Quote number : --- Date received : 25 Mar 2008

SUBMARINE CABLE ROUTE FOR AIRPORT "A"

TO CASTLE PEAK CCTS

Order number : ---- Date of issue : 27 Mar 2008

C-O-C number : ---- No. of samples - Received : 60

Site : --- - Analysed : 60

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0804612 supersedes any previous reports with this reference. The completion date of analysis is 26 Mar 2008. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0804612: Sample(s) were received in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

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of Hong Kong, Chapter 553, Section 6.

Signatory Position Authorised results for:-

Fung Lim Chee, Richard General Manager Inorganics

Page Number : 6 of 6

Client : ERM HONG KONG

Work Order HK0804612



Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER						Duplicate (DUP)	Results	
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6208	01)						
HK0804612-001	2008/03/25/1335/C1/B/E/	EA025: Suspended Solids (SS)		1	mg/L	12	12	0.0
	REPL. 1							
HK0804612-011	2008/03/25/1353/SR1/M/E/	EA025: Suspended Solids (SS)		1	mg/L	11	11	0.0
	REPL. 2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6208	02)						
HK0804612-021	2008/03/25/1409/D1/T/E/	EA025: Suspended Solids (SS)		1	mg/L	9	9	0.0
	REPL. 1							
HK0804612-031	2008/03/25/0703/C1/B/F/	EA025: Suspended Solids (SS)		1	mg/L	6	6	0.0
	REPL. 1							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6208	03)						
HK0804612-041	2008/03/25/0718/SR1/M/F/	EA025: Suspended Solids (SS)		1	mg/L	5	5	0.0
	REPL. 2							
HK0804612-051	2008/03/25/0736/D1/T/F/	EA025: Suspended Solids (SS)		1	mg/L	8	8	0.0
	REPL. 1							

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: WATER			Method Blank (MB	3) Results		Single Co.	ntrol Spike (SCS) and D	uplicate Con	trol Spike (DC	S) Results	
					Spike	Spike Red	covery (%)	Recovery	Limits (%)	RPD	s (%)
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Proper	ties (QCLot: 620801)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	100		85	115		
EA/ED: Physical and Aggregate Proper	ties (QCLot: 620802)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	95.5		85	115		
EA/ED: Physical and Aggregate Proper	ties (QCLot: 620803)							·			
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	98.5		85	115		

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : ERM HONG KONG Laboratory : ALS Technichem (HK) Pty Ltd Page : 1 of 10

Contact : MS AIMEE LAU Contact : Alice Wong Work Order : HK0804758
Address : 21/F, LINCOLN HOUSE. Address : 11/F,, Chung Shun Knitting Centre.

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HONG KONG

Telephone : 2271 3000 Telephone : +852 2610 1044
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Project : EM&A FOR THE PROPOSED 132kV Quote number : ---- Date received : 26 Mar 2008

SUBMARINE CABLE ROUTE FOR AIRPORT "A"

TO CASTLE PEAK CCTS

Order number : ---- Date of issue : 28 Mar 2008

C-O-C number : ---- No. of samples - Received : 116

Site : ---- - Analysed : 116

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0804758 supersedes any previous reports with this reference. The completion date of analysis is 28 Mar 2008. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0804758: Sample(s) were received in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

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Signatory Position Authorised results for:-

Fung Lim Chee, Richard General Manager Inorganics

Page Number : 9 of 10

Client : ERM HONG KONG

Work Order HK0804758



Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER						Duplicate (DUP)	Results	
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6220	661)						
HK0804758-001	2008/03/26/1402/C4/B/E/	EA025: Suspended Solids (SS)		1	mg/L	34	36	6.0
	REPL. 1							
HK0804758-011	2008/03/26/1432/SR3/M/E/	EA025: Suspended Solids (SS)		1	mg/L	13	14	8.3
	REPL. 2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6220	662)						
HK0804758-021	2008/03/26/1417/D2/T/E/	EA025: Suspended Solids (SS)		1	mg/L	7	8	20.1
	REPL. 1							
HK0804758-032	2008/03/26/1442/SR4/M/E/	EA025: Suspended Solids (SS)		1	mg/L	12	12	0.0
	REPL. 1							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6220	663)						
HK0804758-041	2008/03/26/1501/G1/M/E/	EA025: Suspended Solids (SS)		1	mg/L	13	14	0.0
	REPL. 2							
HK0804758-051	2008/03/26/1628/M1/M/E/	EA025: Suspended Solids (SS)		1	mg/L	5	5	0.0
	REPL. 2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6220	664)						
HK0804758-061	2008/03/26/0927/C4/T/F/	EA025: Suspended Solids (SS)		1	mg/L	6	5	0.0
	REPL. 1							
HK0804758-071	2008/03/26/0826/U2/B/F/	EA025: Suspended Solids (SS)		1	mg/L	11	12	0.0
	REPL. 1							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6220	665)						
HK0804758-081	2008/03/26/0855/D2/M/F/	EA025: Suspended Solids (SS)		1	mg/L	8	8	0.0
	REPL. 2	, , ,						
HK0804758-092	2008/03/26/0859/SR4/B/F/	EA025: Suspended Solids (SS)		1	mg/L	33	31	7.8
	REPL. 2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6220	666)						
HK0804758-101	2008/03/26/0807/SR2/B/F/	EA025: Suspended Solids (SS)		1	mg/L	9	9	0.0
	REPL. 1				-			
HK0804758-111	2008/03/26/0801/M2/B/F/	EA025: Suspended Solids (SS)		1	mg/L	21	20	0.0
	REPL. 1	, , ,						

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Page Number : 10 of 10

Client : ERM HONG KONG

Work Order HK0804758



Matrix Type: WATER			Method Blank (MB) Results		Single Co.	ntrol Spike (SCS) and D	uplicate Cont	trol Spike (DC	CS) Results	
					Spike	Spike Red	covery (%)	Recovery	Limits (%)	RPD	Os (%)
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Propertie	es (QCLot: 622661)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	100		85	115		
EA/ED: Physical and Aggregate Propertie	es (QCLot: 622662)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	97.0		85	115		
EA/ED: Physical and Aggregate Propertie	es (QCLot: 622663)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	104		85	115		
EA/ED: Physical and Aggregate Propertie	es (QCLot: 622664)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		
EA/ED: Physical and Aggregate Propertie	es (QCLot: 622665)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	104		85	115		
EA/ED: Physical and Aggregate Propertie	es (QCLot: 622666)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : ERM HONG KONG Laboratory : ALS Technichem (HK) Pty Ltd Page : 1 of 6

Contact : MS JOANNA KWAN Contact : Alice Wong Work Order : HK0804829

Address : 21/F, LINCOLN HOUSE. Address : 11/F, Chung Shun Knitting Centre.

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HONG KONG

Telephone : 2271 3000 Telephone : +852 2610 1044
Facsimile : 2723 5660 Facsimile : +852 2610 2021

Project : EM&A FOR THE PROPOSED 132kV Quote number : --- Date received : 27 Mar 2008

SUBMARINE CABLE ROUTE FOR AIRPORT "A"

TO CASTLE PEAK CCTS

Order number : ---- Date of issue : 31 Mar 2008

C-O-C number : ---- No. of samples - Received : 60

Site : --- - Analysed : 60

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0804829 supersedes any previous reports with this reference. The completion date of analysis is 31 Mar 2008. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

of Hong Kong, Chapter 553, Section 6.

Specific comments for Work Order HK0804829: Sample(s) were received in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

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approval from ALS Technichem (HK) Pty Ltd.

Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance'

Signatory Position Authorised results for:-

Fung Lim Chee, Richard General Manager Inorganics

Page Number : 6 of 6

Client : ERM HONG KONG

Work Order HK0804829



Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER						Duplicate (DUP)	Results	
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and A	aggregate Properties (QC Lot: 6231	39)						
HK0804829-001	2008/03/27/1455/C1/B/E/	EA025: Suspended Solids (SS)		1	mg/L	9	9	0.0
	REPL. 1							
HK0804829-011	2008/03/27/1513/SR1/M/E/	EA025: Suspended Solids (SS)		1	mg/L	9	8	0.0
	REPL. 2							
EA/ED: Physical and A	aggregate Properties (QC Lot: 6231	40)						
HK0804829-021	2008/03/27/1532/D1/T/E/	EA025: Suspended Solids (SS)		1	mg/L	9	10	0.0
	REPL. 1							
HK0804829-031	2008/03/27/0756/C1/B/F/	EA025: Suspended Solids (SS)		1	mg/L	6	7	0.0
	REPL. 1							
EA/ED: Physical and A	aggregate Properties (QC Lot: 6231	41)						
HK0804829-041	2008/03/27/0814/SR1/M/F/	EA025: Suspended Solids (SS)		1	mg/L	4	4	0.0
	REPL. 2							
HK0804829-051	2008/03/27/0834/D1/T/F/	EA025: Suspended Solids (SS)		1	mg/L	8	8	0.0
	REPL. 1							

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: WATER			Method Blank (ME	3) Results		Single Co.	ntrol Spike (SCS) and Di	uplicate Con	trol Spike (DC	S) Results	
					Spike	Spike Red	covery (%)	Recovery	Limits (%)	RPD	Os (%)
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Proper	ties (QCLot: 623139)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		
EA/ED: Physical and Aggregate Proper	ties (QCLot: 623140)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	97.5		85	115		
EA/ED: Physical and Aggregate Proper	ties (QCLot: 623141)	·	·					·			
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	100		85	115		

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client **ERM HONG KONG** : ALS Technichem (HK) Pty Ltd : 1 of 9 Laboratory Page

MS JOANNA KWAN Work Order Contact Contact : Alice Wong HK0804941 Address : 21/F. LINCOLN HOUSE. Address : 11/F., Chung Shun Knitting Centre.

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HONG KONG

Joanna.kwan@erm.com : Alice.Wong@alsenviro.com E-mail E-mail

2271 3000 +852 2610 1044 Telephone Telephone Facsimile 2723 5660 Facsimile +852 2610 2021

Project : EM&A FOR THE PROPOSED 132kV Quote number Date received · 29 Mar 2008

SUBMARINE CABLE ROUTE FOR AIRPORT "A"

TO CASTLE PEAK CCTS

Order number Date of issue : 1 Apr 2008

C-O-C number : ----No. of samples Received 92

92 Site Analysed

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0804941 supersedes any previous reports with this reference. The completion date of analysis is 31 Mar 2008. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0804941: Sample(s) were received in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

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Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Authorised results for:-Signatory Position

Fung Lim Chee, Richard **General Manager** Inorganics Page Number : 8 of 9

Client : ERM HONG KONG

Work Order HK0804941



Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER						Duplicate (DUP)	Results	
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and A	Aggregate Properties (QC Lot: 624	084)						
HK0804941-001	2008/03/28/1656/C4/B/E	EA025: Suspended Solids (SS)		1	mg/L	14	13	0.0
	REPL.1							
HK0804941-011	2008/03/28/1625/SR3/M/E	EA025: Suspended Solids (SS)		1	mg/L	8	8	0.0
	REPL.2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 624	085)						
HK0804941-021	2008/03/28/1646/D2/T/E	EA025: Suspended Solids (SS)		1	mg/L	12	12	0.0
	REPL.1							
HK0804941-032	2008/03/28/1611/SR4/M/E	EA025: Suspended Solids (SS)		1	mg/L	8	8	0.0
	REPL.1							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 624	086)						
HK0804941-041	2008/03/28/1602/G1/M/E	EA025: Suspended Solids (SS)		1	mg/L	10	9	0.0
	REPL.2							
HK0804941-051	2008/03/28/0936/C4/M/F	EA025: Suspended Solids (SS)		1	mg/L	7	8	0.0
	REPL.2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 624	087)						
HK0804941-064	2008/03/28/0913/U2/T/F	EA025: Suspended Solids (SS)		1	mg/L	9	10	0.0
	REPL.2							
HK0804941-071	2008/03/28/0825/C3/B/F	EA025: Suspended Solids (SS)		1	mg/L	12	10	17.7
	REPL.1							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 624	088)						
HK0804941-081	2008/03/28/0852/SR4/M/F	EA025: Suspended Solids (SS)		1	mg/L	6	6	0.0
	REPL.2							
HK0804941-091	2008/03/28/0857/SR2/T/F	EA025: Suspended Solids (SS)		1	mg/L	9	8	17.2
	REPL.2							

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Page Number : 9 of 9

Client : **ERM HONG KONG**

Work Order HK0804941



Matrix Type: WATER			Method Blank (Mi	B) Results		Single Co.	ntrol Spike (SCS) and Du	ıplicate Con	trol Spike (D	CS) Results	
					Spike	Spike Red	covery (%)	Recovery	Limits (%)	RPD	s (%)
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Propert	ties (QCLot: 624084)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		
EA/ED: Physical and Aggregate Propert	ties (QCLot: 624085)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		
EA/ED: Physical and Aggregate Propert	ties (QCLot: 624086)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		
EA/ED: Physical and Aggregate Propert	ties (QCLot: 624087)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	102		85	115		
EA/ED: Physical and Aggregate Propert	ties (QCLot: 624088)			•							
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	93.0		85	115		

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : ERM HONG KONG Laboratory : ALS Technichem (HK) Pty Ltd Page : 1 of 6

Contact : MS JOANNA KWAN Contact : Alice Wong Work Order : HK0804965

Address : 21/F, LINCOLN HOUSE. Address : 11/F,. Chung Shun Knitting Centre.

: 21/F, LINCOLN HOUSE, Address : 11/F., Chung Shun Knitting Centre, 979 KING'S ROAD, 1 - 3 Wing Yip Street,

TAIKOO PLACE, ISLAND EAST, QUARRY BAY Kwai Chung, N.T., Hong Kong

HONG KONG

Facsimile : 2723 5660 Facsimile : +852 2610 2021

Project : EM&A FOR THE PROPOSED 132kV Quote number : ---- Date received : 31 Mar 2008

SUBMARINE CABLE ROUTE FOR AIRPORT "A"

TO CASTLE PEAK CCTS

Order number : ---- Date of issue : 1 Apr 2008

C-O-C number : ---- No. of samples - Received : 60

Site : --- - Analysed : 60

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0804965 supersedes any previous reports with this reference. The completion date of analysis is 1 Apr 2008. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0804965: Sample(s) were received in a chilled condition.

Water sample(s) analysed and reported on an as received basis.

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of Hong Kong. Chapter 553. Section 6.

Signatory Position Authorised results for:-

Fung Lim Chee, Richard General Manager Inorganics

Page Number : 6 of 6

Client : ERM HONG KONG

Work Order HK0804965



Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: WATER					•	Duplicate (DUP)	Results	•
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6247	49)						
HK0804965-001	2008/03/29/1632/C1/B/E	EA025: Suspended Solids (SS)		1	mg/L	6	6	0.0
	REPL.1							
HK0804965-011	2008/03/29/1651/SR1/M/E	EA025: Suspended Solids (SS)		1	mg/L	6	6	0.0
	REPL.2							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6247	550)						
HK0804965-021	2008/03/29/1711/D1/T/E	EA025: Suspended Solids (SS)		1	mg/L	6	6	0.0
	REPL.1							
HK0804965-031	2008/03/29/0643/C1/B/F	EA025: Suspended Solids (SS)		1	mg/L	7	7	0.0
	REPL.1							
EA/ED: Physical and A	Aggregate Properties (QC Lot: 6247	51)		•				
HK0804965-041	2008/03/29/0701/SR1/M/F	EA025: Suspended Solids (SS)		1	mg/L	7	6	0.0
	REPL.2							
HK0804965-052	2008/03/29/0720/D1/B/F	EA025: Suspended Solids (SS)		1	mg/L	9	8	0.0
	REPL.2							

Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: WATER			Method Blank (ME	3) Results		Single Co	ntrol Spike (SCS) and D	uplicate Con	trol Spike (DC	S) Results	
					Spike	Spike Re	covery (%)	Recovery	Limits (%)	RPL)s (%)
Method: Analysis Description	CAS number	LOR	Units	Result	Concentration	scs	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Prope	rties (QCLot: 624749)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	104		85	115		
EA/ED: Physical and Aggregate Prope	rties (QCLot: 624750)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	103		85	115		
EA/ED: Physical and Aggregate Prope	rties (QCLot: 624751)										
EA025: Suspended Solids (SS)		2	mg/L	<2	20 mg/L	93.5		85	115		

Annex E

Impact Water Quality Monitoring Results

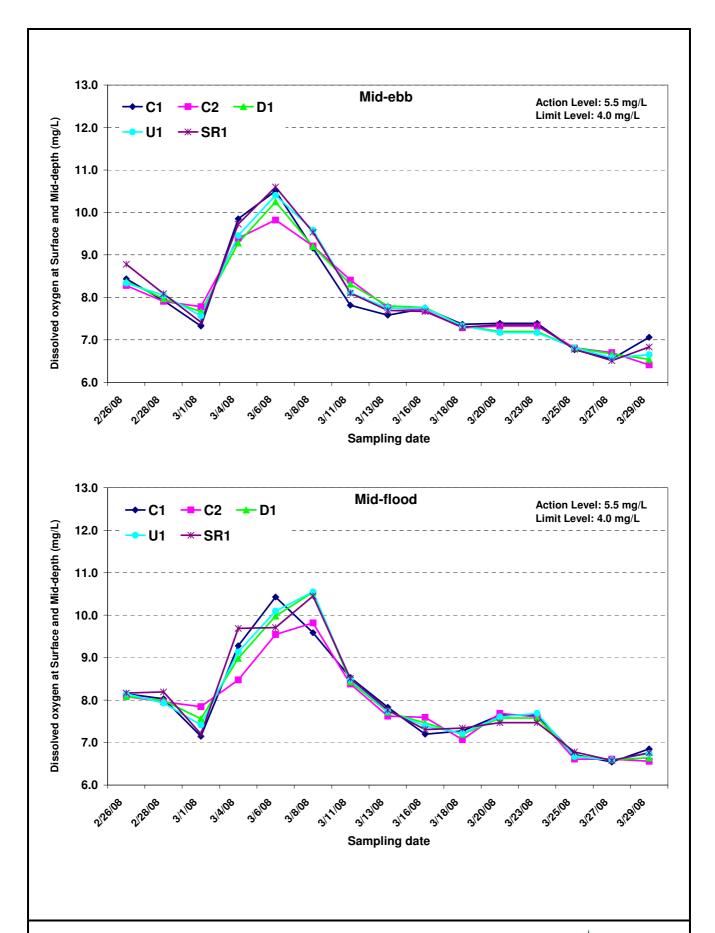


Figure E1 Dissolved oxygen concentration (mean of surface and mid-depth) (mg/L) of water samples from the five sampling locations near Tuen Mun at mid-ebb and mid-flood between 26 February and 29 March 2008



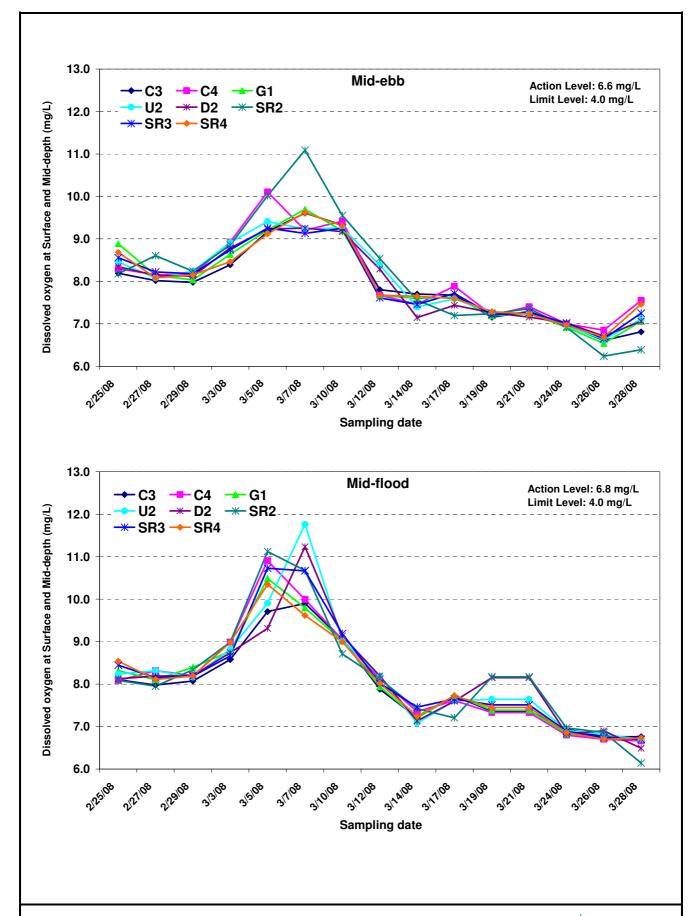


Figure E2 Dissolved oxygen concentration (mean of surface and mid-depth) (mg/L) of water samples from the eight sampling locations near the airport at mid-ebb and mid-flood 25 February 2008 and 28 March 2008



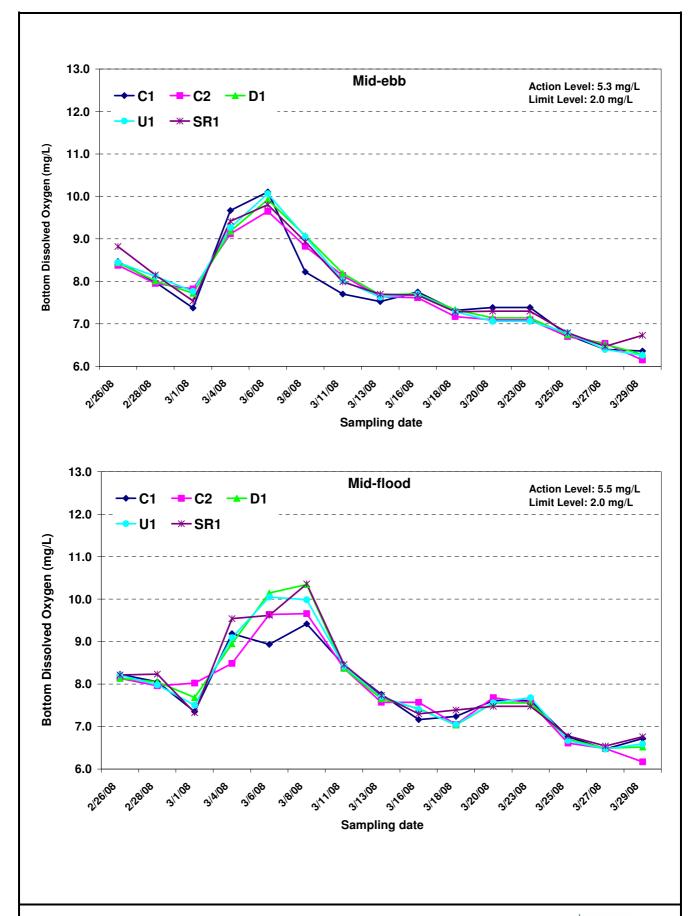


Figure E3 Dissolved oxygen concentration (bottom) (mg/L) of water samples from the five sampling locations near Tuen Mun at mid-ebb and mid-flood between 26 February and 29 March 2008



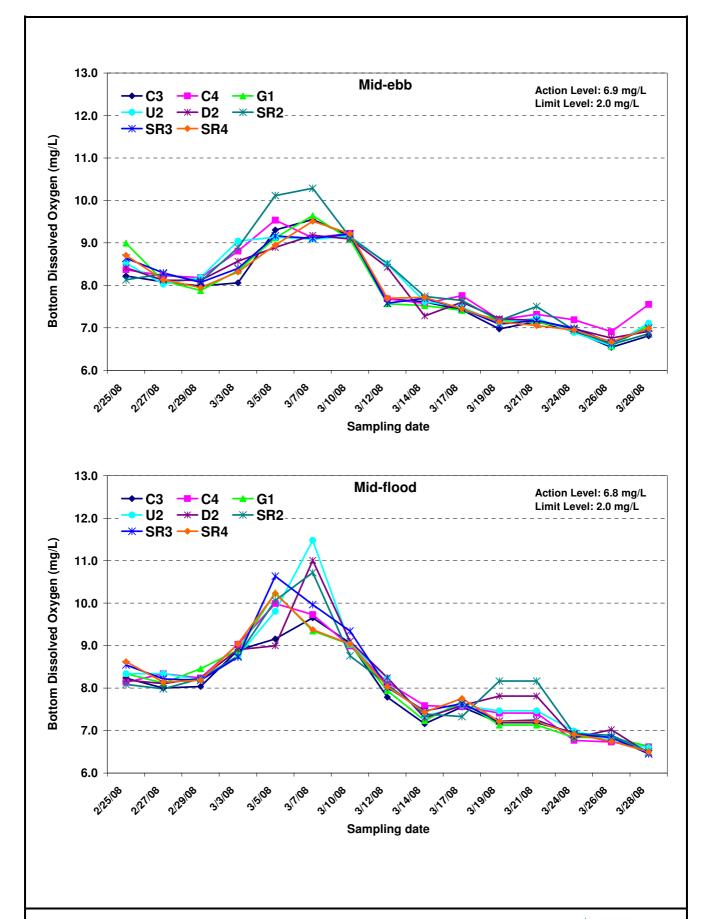


Figure E4 Dissolved oxygen concentration (bottom) (mg/L) of water samples from the eight sampling locations near the airport at mid-ebb and mid-flood 25 February 2008 and 28 March 2008



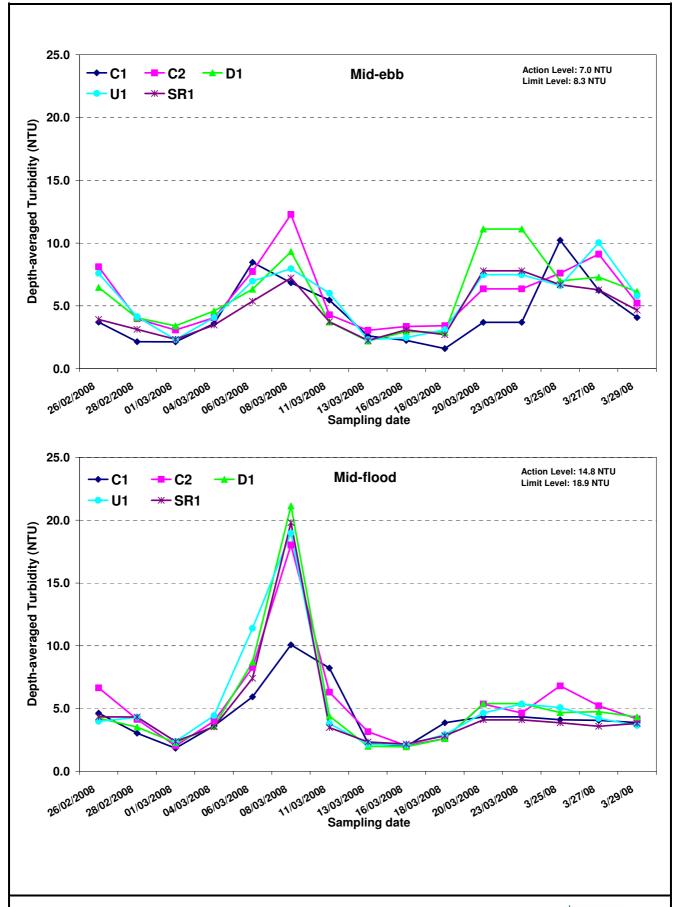


Figure E5 Depth-averaged turbidity (NTU) of water samples from the five sampling locations near Tuen Mun at mid-ebb and mid-flood between 26 February and 29 March 2008



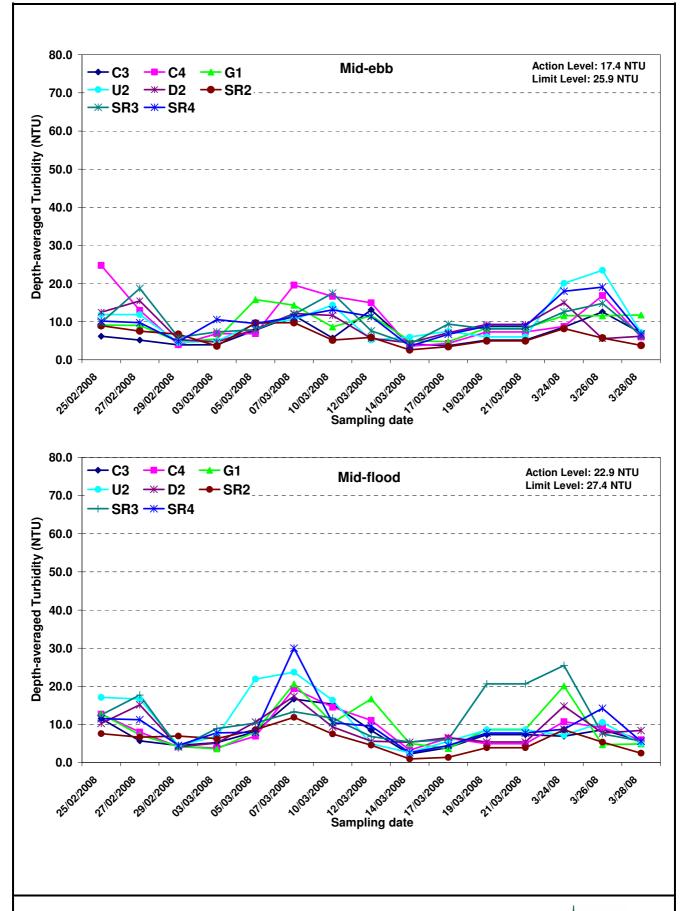


Figure E6 Depth-averaged turbidity (NTU) of water samples from the eight sampling locations near the airport at mid-ebb and mid-flood between 25 February 2008 and 28 March 2008



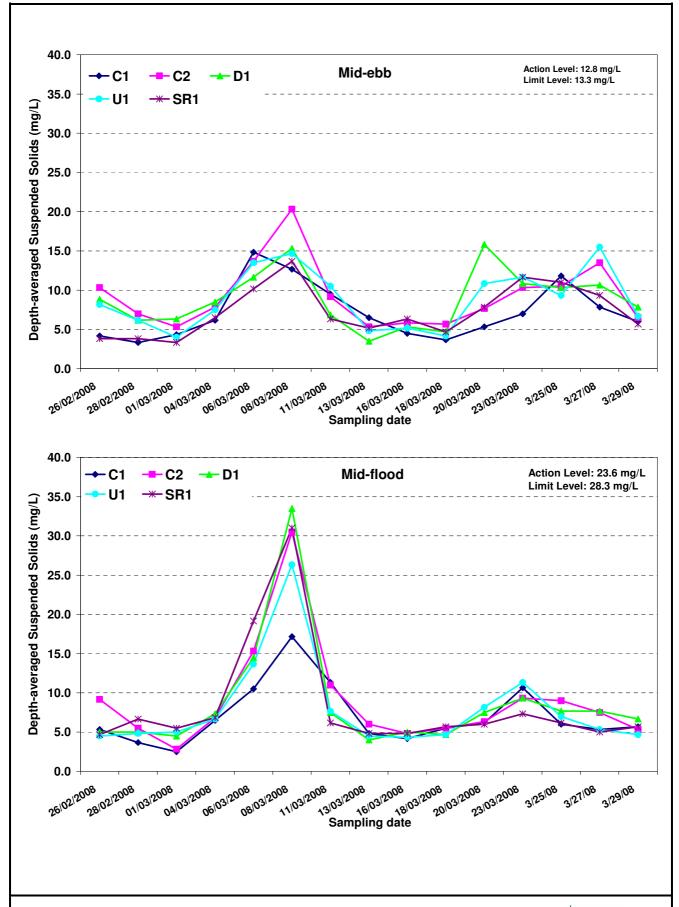


Figure E7 Depth-averaged suspended solids concentration (mg/L) of water samples from the five sampling locations near Tuen Mun at mid-ebb and mid-flood between 26 February and 29 March 2008



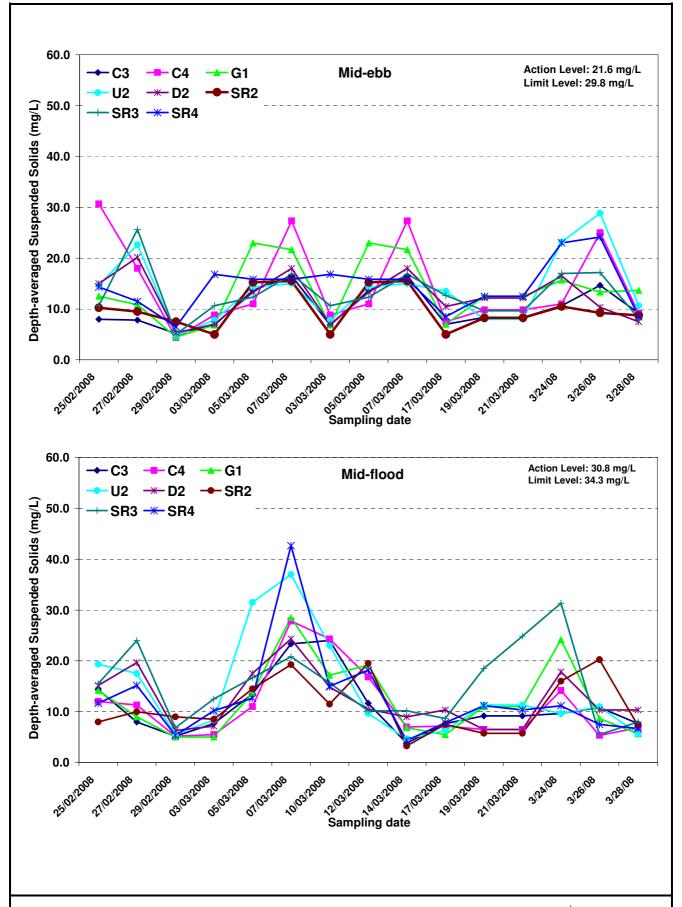


Figure E8 Depth-averaged suspended solids concentration (mg/L) of water samples from the eight sampling locations near the airport at mid-ebb and mid-flood between 25 February 2008 and 28 March 2008



Annex E1 - Water Quality Results at Airport during mid-ebb tide for 24 March 2008

Sampling Date	24/3/2008
Weather & Ambient Temperature	Sunny

Mid-Ebb

Station			C	3						Station			U	J2					
Time (hh:mm)			13:05	-13:11						Time (hh:mm)			14:17	-14:24					
Water Depth (m)			11	.00						Water Depth (m)			8.	00					
Monitoring Depth (m)	1.	10	5.	60	9.	90				Monitoring Depth (m)	1.	00	4.	10	7.	00			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (℃)	20.2	20.2	19.7	19.7	19.5	19.5	19.82	-		Water Temperature (°C)	20.8	20.7	20.5	20.4	19.5	19.5	20.22	-	
Salinity (ppt)	28.5	28.6	29.0	29.0	29.5	29.5	29.00	-		Salinity (ppt)	28.4	28.5	28.5	28.7	30.2	30.3	29.09	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.79			pH	7.8	7.8	7.8	7.8	7.9	7.9	7.85		
D.O. Saturation (%)	91.6	91.7	89.8	89.8	90.0	89.5	90.40	-		D.O. Saturation (%)	93.6	92.8	91.7	91.3	90.8	91.0	91.86	-	
D.O. (mg/L)	7.01	7.02	6.92	6.92	6.93	6.90	6.95	6.92	6.97	D.O. (mg/L)	7.10	7.04	6.99	6.96	6.98	6.98	7.01	6.98	7.02
Turbidity (NTU)	6.00	6.60	10.60	11.30	8.50	8.60	8.59	-		Turbidity (NTU)	4.50	5.10	7.70	8.10	36.10	28.70	15.03	-	
SS (mg/L)	7.0	10.0	10.0	14.0	10.0	13.0	10.67	-		SS (mg/L)	5.0	9.0	11.0	16.0	31.0	27.0	16.50	-	
Remarks					•					Remarks									

Station			(24						Station			S	R2					
Time (hh:mm)			14:45	5-14:52						Time (hh:mm)			13:33	-13:39					
Water Depth (m)			8	.00						Water Depth (m)			4.	00					
Monitoring Depth (m)	1.	10	4	.10	7.	00				Monitoring Depth (m)	1.	30			3.	10			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.4	20.4	20.1	20.0	20.1	20.1	20.16	-		Water Temperature (°C)	20.4	20.4			20.0	19.9	20.18	-	
Salinity (ppt)	28.6	28.6	29.5	29.5	29.8	29.7	29.27	-		Salinity (ppt)	29.1	29.2			29.2	29.3	29.20	-	
pH	7.8	7.8	7.9	7.9	7.9	7.9	7.87			pH	7.8	7.9			7.8	7.9	7.84		T
D.O. Saturation (%)	90.9	91.3	92.4	92.0	94.6	94.1	92.56	-		D.O. Saturation (%)	91.2	90.9			90.4	91.1	90.89	-	T
D.O. (mg/L)	6.94	6.96	7.06	7.03	7.21	7.17	7.06	7.19	7.00	D.O. (mg/L)	6.93	6.91			6.92	6.98	6.94	6.95	6.92
Turbidity (NTU)	5.90	6.10	8.30	8.60	13.10	10.70	8.77	-		Turbidity (NTU)	6.20	6.00			12.60	8.20	8.22	-	T
SS (mg/L)	8.0	6.0	9.0	13.0	16.0	14.0	11.00	-		SS (mg/L)	7.0	7.0			14.0	14.0	10.50	-	T
Remarks										Remarks									T

Station)2						Station			S	R3					
Time (hh:mm)			14:34	-14:38						Time (hh:mm)			13:59	-14:07					
Water Depth (m)			7.	00						Water Depth (m)			12	.00					
Monitoring Depth (m)	1.	.10	3.	70	6.	00				Monitoring Depth (m)	1.	10	6.	10	11	.10			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.4	20.3	19.8	19.8	19.6	19.7	19.93	-		Water Temperature (°C)	20.1	20.5	19.9	19.9	19.6	19.6	19.90	-	
Salinity (ppt)	28.8	28.8	29.6	29.2	30.1	30.0	29.43	-		Salinity (ppt)	28.5	28.4	28.8	29.0	29.7	30.0	29.06	-	
pH	7.8	7.8	7.9	7.9	7.9	7.9	7.86			pH	7.8	7.8	7.8	7.8	7.9	7.9	7.85		
D.O. Saturation (%)	91.4	90.8	90.5	89.3	91.7	90.5	90.71	-		D.O. Saturation (%)	91.2	92.9	91.0	91.3	90.6	91.1	91.36	-	
D.O. (mg/L)	6.95	6.92	6.94	6.86	7.03	6.94	6.94	6.99	6.92	D.O. (mg/L)	7.00	7.08	7.00	7.01	6.97	7.00	7.01	6.99	7.02
Turbidity (NTU)	7.70	8.30	12.50	12.20	14.80	14.00	11.55	-		Turbidity (NTU)	5.60	4.70	5.60	5.30	25.60	28.70	12.59	-	
SS (mg/L)	10.0	11.0	15.0	14.0	24.0	20.0	15.67	-		SS (mg/L)	10.0	8.0	7.0	8.0	34.0	35.0	17.00	-	
Remarks										Remarks									

Station				31			1			Station			SI	R4			1		
Time (hh:mm)			13:20	-13:27						Time (hh:mm)			13:39	-13:49					
Water Depth (m)			12	.00						Water Depth (m)			13	.00					
Monitoring Depth (m)	1.	.00	6.	00	11	.00				Monitoring Depth (m)	1.	10	6.	60	11	.90			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.1	19.8	19.6	19.6	19.5	19.5	19.69	-		Water Temperature (°C)	20.3	20.6	19.6	19.6	19.6	19.6	19.88	-	
Salinity (ppt)	28.5	28.8	29.1	29.1	29.4	29.5	29.07	-		Salinity (ppt)	28.7	28.6	29.1	29.3	29.7	29.6	29.17	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81			pH	7.8	7.8	7.8	7.9	7.9	7.9	7.84		
D.O. Saturation (%)	91.4	90.5	89.7	89.4	89.4	89.4	89.94	-		D.O. Saturation (%)	92.2	93.0	89.2	89.4	90.5	90.2	90.74	-	
D.O. (mg/L)	7.01	6.97	6.92	6.89	6.89	6.89	6.93	6.89	6.95	D.O. (mg/L)	7.03	7.07	6.88	6.89	6.96	6.94	6.96	6.95	6.97
Turbidity (NTU)	6.30	10.20	14.90	16.00	39.20	33.80	20.07	-		Turbidity (NTU)	5.50	4.50	12.80	16.30	42.50	26.30	17.98	-	
SS (mg/L)	12.0	10.0	16.0	18.0	41.0	42.0	23.17	-		SS (mg/L)	10.0	7.0	10.0	18.0	44.0	49.0	23.00	-	
Remarks										Remarks									

Annex E2 - Water Quality Results at Airport during mid-flood tide for 24 March 2008

Sampling Date	24/3/2008
Weather & Ambient Temperature	Fine

Mid-Flood

Station			C	23						Station			ι	J2				
Time (hh:mm)			19:24	-19:29						Time (hh:mm)			20:11	-20:16				
Water Depth (m)			10	.00						Water Depth (m)			8.	00				
Monitoring Depth (m)	1.	.10	4.	90	9.	00				Monitoring Depth (m)	1.	10	3.	80	7.	20		
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
							averaged		Middle								averaged	
Water Temperature (°C)	20.1	20.1	20.1	20.2	19.9	19.9	20.04	-		Water Temperature (°C)	20.3	20.3	20.2	20.2	20.2	20.2	20.22	-
Salinity (ppt)	28.8	28.8	28.9	29.1	29.6	29.4	29.10	-		Salinity (ppt)	28.3	28.3	28.4	28.5	28.5	28.5	28.42	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81			pH	7.8	7.8	7.8	7.8	7.8	7.8	7.83	
D.O. Saturation (%)	90.8	90.8	90.6	90.7	91.3	90.3	90.74	-		D.O. Saturation (%)	89.6	89.0	89.3	89.2	89.3	89.0	89.22	-
D.O. (mg/L)	6.95	6.96	6.93	6.93	6.98	6.91	6.94	6.95	6.94	D.O. (mg/L)	6.85	6.81	6.84	6.83	6.84	6.82	6.83	6.83
Turbidity (NTU)	5.20	5.20	6.10	6.20	10.50	8.30	6.93	-		Turbidity (NTU)	8.90	8.70	14.60	17.90	17.10	21.70	14.81	-
SS (mg/L)	10.0	6.0	9.0	10.0	13.0	10.0	9.67	-		SS (mg/L)	11.0	10.0	16.0	19.0	20.0	31.0	17.83	-
Remarks		•		•						Remarks							•	•

Station			C	4						Station			S	R2				
Time (hh:mm)			20:36	-20:41						Time (hh:mm)			20:05	-20:12				
Water Depth (m)			9.	00						Water Depth (m)			4.	00				
Monitoring Depth (m)	1.	10	4.	50	8.	00				Monitoring Depth (m)	1.	10			3.	10		
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
							averaged		Middle								averaged	
Water Temperature (°C)	20.2	20.2	20.2	20.2	20.1	20.1	20.14	-		Water Temperature (°C)	20.4	20.4			20.4	20.4	20.43	-
Salinity (ppt)	28.2	28.2	28.6	28.7	29.1	29.1	28.64	-		Salinity (ppt)	28.5	28.4			28.5	28.5	28.47	-
pH	7.8	7.8	7.8	7.8	7.9	7.9	7.84			pH	7.8	7.8			7.7	7.8	7.76	
D.O. Saturation (%)	88.8	88.6	88.9	88.5	88.7	88.3	88.63	-		D.O. Saturation (%)	92.7	89.9			91.7	90.2	91.10	-
D.O. (mg/L)	6.82	6.80	6.80	6.77	6.78	6.75	6.79	6.77	6.80	D.O. (mg/L)	7.07	6.86			6.99	6.87	6.95	6.93
Turbidity (NTU)	6.00	5.40	8.70	8.20	20.30	15.60	10.70	-		Turbidity (NTU)	8.70	8.00			8.80	9.00	8.60	-
SS (mg/L)	7.0	12.0	9.0	11.0	28.0	18.0	14.17	-		SS (mg/L)	12.0	16.0			21.0	15.0	16.00	-
Remarks			·	·	·		·			Remarks					·	·	·	

Station				02						Station			S	R3				
Time (hh:mm)			20:21	-20:27						Time (hh:mm)			19:57	-20:03				
Water Depth (m)			7.	.00						Water Depth (m)			11	.00				
Monitoring Depth (m)	1	.10	3.	.50	6.	00				Monitoring Depth (m)	1.	20	5.	.60	9.	.70		
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
							averaged		Middle								averaged	
Water Temperature (°C)	20.2	20.2	20.1	20.2	20.1	20.1	20.14	-		Water Temperature (°C)	20.2	20.2	20.1	20.2	20.1	20.1	20.14	-
Salinity (ppt)	28.5	28.5	28.6	28.5	29.0	28.7	28.64	-		Salinity (ppt)	28.7	28.7	28.7	28.7	28.7	28.7	28.68	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.83			pH	7.8	7.8	7.8	7.8	7.8	7.8	7.84	
D.O. Saturation (%)	89.2	89.0	89.1	88.9	89.5	89.1	89.16	-		D.O. Saturation (%)	90.0	90.0	90.1	89.7	90.3	89.9	90.00	-
D.O. (mg/L)	6.84	6.82	6.83	6.81	6.85	6.83	6.83	6.84	6.83	D.O. (mg/L)	6.89	6.88	6.90	6.87	6.92	6.89	6.89	6.91
Turbidity (NTU)	14.70	15.10	19.90	19.50	28.00	23.20	20.07	-		Turbidity (NTU)	24.20	22.70	23.40	24.60	30.20	27.60	25.45	-
SS (mg/L)	17.0	18.0	26.0	22.0	34.0	28.0	24.17	-		SS (mg/L)	28.0	31.0	28.0	31.0	36.0	34.0	31.33	-
Remarks				•		•	•	-		Remarks							•	

Station			G	ì 1						Station			SI	R4			1	
Time (hh:mm)			19:35	-19:41						Time (hh:mm)	19:46-19:52							
Water Depth (m)			11	.00						Water Depth (m)			12	.00				
Monitoring Depth (m)	1.	.00	5.	50	9.8	30				Monitoring Depth (m)	1.	00	5.	90	10	.90		
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
							averaged		Middle								averaged	
Water Temperature (°C)	20.2	20.2	20.2	20.2	19.9	19.9	20.09	-		Water Temperature (°C)	20.1	20.2	20.2	20.2	19.9	19.9	20.09	-
Salinity (ppt)	28.4	28.5	29.0	28.8	29.5	29.7	28.99	-		Salinity (ppt)	28.2	28.3	28.9	28.9	29.6	29.7	28.91	-
pH	7.8	7.8	7.8	7.8	7.9	7.9	7.85			pH	7.8	7.8	7.8	7.8	7.9	7.9	7.84	
D.O. Saturation (%)	90.1	90.4	90.3	90.1	91.1	91.6	90.61	-		D.O. Saturation (%)	89.4	89.4	89.7	89.5	90.5	90.4	89.80	-
D.O. (mg/L)	6.91	6.93	6.90	6.89	6.97	7.01	6.94	6.99	6.91	D.O. (mg/L)	6.87	6.86	6.85	6.84	6.91	6.91	6.87	6.91
Turbidity (NTU)	5.00	5.10	6.90	6.70	9.60	9.70	7.18	-		Turbidity (NTU)	5.10	5.20	6.90	6.90	13.50	14.60	8.72	-
SS (mg/L)	7.0	6.0	10.0	9.0	15.0	11.0	9.67	-		SS (mg/L)	7.0	6.0	7.0	8.0	19.0	20.0	11.17	-
Remarks				•	•	•				Remarks		•				•	•	

Annex E4 - Water Quality Results at Tuen Mun during mid-flood tide for 25 March 2008

Date			03/25	/2008				
Station			C	1				
Time (hh:mm)			07:03	- 07:07				
Ambient Temperature (°C)			2	1				
Weather			Clo	udy				
Water Depth (m)			7.	30				
Monitoring Depth (m)	1.	00	3.	60	10			
Tide			Mid-l	Flood				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	19.8	19.8	19.7	19.7	19.7	19.7	19.75	-
Salinity (ppt)	29.2	29.2	29.4	29.4	29.6	29.6	29.39	-
pH	7.8	7.8	7.8	7.9	7.8	7.9	7.83	
D.O. Saturation (%)	86.5	86.5	88.5	88.4	88.3	87.8	87.65	-
D.O. (mg/L)	6.64	6.65	6.80	6.79	6.78	6.74	6.73	6.76
Turbidity (NTU)	3.00	3.20	3.80	3.80	4.80	5.90	4.11	-
SS (mg/L)	6.0	5.0	4.0	7.0	6.0	8.0	6.00	-
Remarks						-	•	

Date			03/25	/2008				
Station			C	2				
Time (hh:mm)			07:44	- 07:49				
Ambient Temperature (°C)			2	1				
Weather			Clo	udy				
Water Depth (m)			13					
Monitoring Depth (m)	1.	20	6.	.20				
Tide			Mid-l					
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.69	-
Salinity (ppt)	29.4	29.4	29.6	29.6	29.7	29.6	29.54	-
	7.8	7.8	7.8	7.8	7.8	7.8	7.82	
D.O. Saturation (%)	85.9	85.9	86.2	86.1	86.2	85.9	86.03	-
D.O. (mg/L)	6.60	6.61	6.62	6.61	6.62	6.60	6.61	6.61
Turbidity (NTU)	4.70	4.40	7.20	6.30	9.80	8.40	6.81	-
SS (mg/L)	6.0	8.0	10.0	7.0	11.0	12.0	9.00	-
Remarks						-		

Date			03/25	/2008				
Station)1				
Time (hh:mm)			07:34	- 07:38				
Ambient Temperature (°C)			2	21				
Weather			Clo	udy				
Water Depth (m)			8.	50				
Monitoring Depth (m)	1.	20	4.	00	10			
Tide			Mid-l	Flood				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.72	-
Salinity (ppt)	29.4	29.4	29.5	29.5	29.5	29.5	29.48	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.84	
D.O. Saturation (%)	87.1	86.8	87.3	87.0	87.5	86.9	87.10	-
D.O. (mg/L)	6.69	6.66	6.71	6.68	6.72	6.68	6.69	6.70
Turbidity (NTU)	3.80	3.90	4.80	4.60	5.50	5.40	4.69	-
SS (mg/L)	8.0	8.0	6.0	6.0	9.0	9.0	7.67	-
Remarks						-	•	

Date			03/25/	2008						
Station			U1							
Time (hh:mm)			07:24 -	07:29						
Ambient Temperature (℃)										
Weather										
Water Depth (m)			8.2	0						
Monitoring Depth (m)	1.	.30	4.	10		7.00				
Tide		Mid-Flood								
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom		
							averaged			
Water Temperature (°C)	19.8	19.8	19.7	19.7	19.7	19.7	19.73	-		
Salinity (ppt)	29.3	29.4	29.6	29.6	29.6	29.6	29.52	-		
pH	7.8	7.8	7.9	7.9	7.9	7.9	7.84			
D.O. Saturation (%)	86.5	86.0	87.5	87.1	87.6	86.9	86.93	-		
D.O. (mg/L)	6.64	6.60	6.72	6.69	6.72	6.67	6.67	6.70		
Turbidity (NTU)	3.70	3.50	5.10	5.10	6.20	6.70	5.08	-		
SS (mg/L)	6.0	5.0	6.0	8.0	9.0	8.0	7.00	-		
Remarks					-					

Date			03/25/	2008				
Station			SR	1				
Time (hh:mm)								
Ambient Temperature (°C)			21					
Weather			Clou	dy				
Water Depth (m)			4.2	0				
Monitoring Depth (m)	1.	00	2.	10		3.10		
Tide								
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
W-1 T (20)	19.7	19.7	19.7	19.7	19.7	19.7	averaged 19.72	
Water Temperature (℃)				_				-
Salinity (ppt)	29.4	29.4	29.4	29.5	29.5	29.5	29.44	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.84	
D.O. Saturation (%)	88.4	88.0	88.5	87.9	88.5	88.0	88.20	-
D.O. (mg/L)	6.79	6.76	6.80	6.75	6.80	6.76	6.78	6.78
Turbidity (NTU)	3.40	3.60	3.80	4.20	4.10	3.90	3.86	-
SS (mg/L)	7.0	5.0	4.0	5.0	12.0	4.0	6.17	-
Remarks					-			

Annex E3 - Water Quality Results at Tuen Mun during mid-ebb tide for 25 March 2008

Date			03/25	5/2008				
Station				1				
Time (hh:mm)			13:35	- 13:41				
Ambient Temperature (°C)			2	23				
Weather			Su	nny				
Water Depth (m)			8.	10				
Monitoring Depth (m)	1.	10	4.	20	6.	90		
Tide			Mid	-Ebb				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.72	-
Salinity (ppt)	29.5	29.5	29.7	29.7	29.7	29.8	29.63	-
Н	7.8	7.8	7.8	7.8	7.8	7.8	7.79	
D.O. Saturation (%)	88.6	88.3	88.0	88.0	87.9	87.7	88.08	-
D.O. (mg/L)	6.80	6.78	6.75	6.75	6.74	6.73	6.76	6.74
Turbidity (NTU)	6.20	6.80	9.10	8.50	17.30	13.50	10.23	-
SS (mg/L)	9.0	9.0	10.0	13.0	12.0	18.0	11.83	-
Remarks						-		

Date			03/25	5/2008				
Station			(22				
Time (hh:mm)			14:18	- 14:23				
Ambient Temperature (°C)			2	23				
Veather			Su	nny				
Water Depth (m)			13					
Monitoring Depth (m)	1.	.10	6.	.10				
Tide			Mid					
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.6	19.6	19.69	-
Salinity (ppt)	29.5	29.5	29.7	29.6	30.1	30.1	29.76	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.83	
D.O. Saturation (%)	89.2	88.9	88.3	88.3	87.6	87.2	88.25	=
D.O. (mg/L)	6.85	6.83	6.78	6.78	6.71	6.68	6.77	6.70
Turbidity (NTU)	4.90	5.30	7.00	6.80	10.60	11.00	7.61	-
SS (mg/L)	6.0	8.0	11.0	9.0	13.0	16.0	10.50	-
Remarks						-	•	

Data	1		00/05	/0000		Ì		
Date				/2008				
Station)1				
Time (hh:mm)			14:08	- 14:12				
Ambient Temperature (°C)			2	23				
Weather			Su	nny				
Water Depth (m)			7.	80				
Monitoring Depth (m)	1.	10	4.	10				
Tide			Mid	-Ebb				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.6	19.7	19.70	-
Salinity (ppt)	29.6	29.6	29.6	29.6	30.0	30.0	29.73	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82	
D.O. Saturation (%)	89.0	89.0	88.4	88.5	88.0	87.7	88.45	-
D.O. (mg/L)	6.83	6.83	6.79	6.80	6.75	6.73	6.79	6.74
Turbidity (NTU)	5.50	5.30	6.80	6.10	10.00	8.20	6.99	-
SS (mg/L)	9.0	10.0	11.0	8.0	13.0	11.0	10.33	-
Remarks						-	•	

Date				1				
Station			U1					
Time (hh:mm)								
Ambient Temperature (°C)			23					
Weather			Sun	ny				
Water Depth (m)			8.3	0				
Monitoring Depth (m)	1.	.10	4.	10		7.00		
Tide			Mid-E	bb				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
							averaged	
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.71	-
Salinity (ppt)	29.6	29.6	29.6	29.6	29.7	29.7	29.63	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82	
D.O. Saturation (%)	88.7	89.0	88.6	88.5	88.7	88.2	88.59	-
D.O. (mg/L)	6.81	6.83	6.80	6.79	6.81	6.77	6.80	6.79
Turbidity (NTU)	6.30	5.60	7.00	6.80	6.70	7.00	6.61	-
SS (mg/L)	8.0	10.0	9.0	8.0	9.0	12.0	9.33	-
Remarks					-			

Date			03/25/	2008							
Station			SR	1							
Time (hh:mm)											
Ambient Temperature (°C)											
Weather											
Water Depth (m)			5.2	0							
Monitoring Depth (m)	1.	.10	4.10								
Tide		Mid-Ebb									
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom			
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.72	-			
Salinity (ppt)	29.4	29.5	29.7	29.6	29.5	29.7	29.57	-			
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82				
D.O. Saturation (%)	88.3	88.5	88.3	88.3	88.8	88.1	88.38	=			
D.O. (mg/L)	6.78	6.80	6.77	6.78	6.82	6.76	6.79	6.79			
Turbidity (NTU)	5.30	5.60	8.00	6.60	6.90	7.70	6.69	-			
SS (mg/L)	10.0	10.0	11.0	11.0	14.0	10.0	11.00	-			
Remarks					-						

Annex E5 - Water Quality Results at Airport during mid-ebb tide for 26 March 2008

Sampling Date	3/26/2008
Weather & Ambient Temperature	Cloudy 21C

Mid-Ebb

Station			(23						Station			U	J2			1		
Time (hh:mm)			15:25	-15:34						Time (hh:mm)			14:28	-14:37					
Water Depth (m)			11	.30						Water Depth (m)			8.	50					
Monitoring Depth (m)	1.	.10	5.	.60	10	.20				Monitoring Depth (m)	1.	20	3.	90	6.	.90			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.0	20.0	19.8	19.8	19.7	19.7	19.83	-		Water Temperature (°C)	19.9	19.9	19.8	19.8	19.8	19.8	19.82	-	
Salinity (ppt)	28.2	28.2	29.2	29.2	29.6	29.6	29.01	-		Salinity (ppt)	28.2	28.7	28.9	28.9	29.3	29.8	28.94	-	
pH	7.8	7.8	7.8	7.8	7.9	7.9	7.83			pH	7.8	7.9	7.9	7.9	7.9	7.9	7.87		
D.O. Saturation (%)	87.1	86.4	85.4	84.8	85.8	84.6	85.69	-		D.O. Saturation (%)	87.0	85.9	89.6	86.0	88.4	87.7	87.44	-	
D.O. (mg/L)	6.71	6.66	6.56	6.52	6.58	6.49	6.59	6.54	6.61	D.O. (mg/L)	6.71	6.62	6.90	6.62	6.79	6.72	6.73	6.76	6.71
Turbidity (NTU)	5.40	5.50	8.80	9.60	18.80	27.30	12.56	-		Turbidity (NTU)	3.70	4.90	5.30	5.60	6.40	7.50	5.55	-	
SS (mg/L)	5.0	8.0	10.0	10.0	23.0	32.0	14.67	-		SS (mg/L)	6.0	7.0	10.0	18.0	10.0	11.0	10.33	-	
Remarks										Remarks									

Station			(C4						Station			S	R2			1		
Time (hh:mm)			14:02	2-14:08						Time (hh:mm)			14:11	-14:16					
Water Depth (m)			9	.40						Water Depth (m)			4.	.10					
Monitoring Depth (m)	1.	.10	4	.70	8.	30				Monitoring Depth (m)	1.	00			2.	.80			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	19.9	19.9	19.8	19.7	19.7	19.7	19.76	-		Water Temperature (°C)	19.9	19.9			20.0	20.0	19.98	·	
Salinity (ppt)	28.1	28.2	29.6	30.1	30.7	30.8	29.59	-		Salinity (ppt)	28.2	28.2			28.8	28.8	28.51	-	
pH	7.8	7.8	7.8	7.9	7.9	7.9	7.84			pH	7.7	7.7			7.8	7.8	7.75		
D.O. Saturation (%)	88.2	88.4	90.2	89.5	91.0	90.2	89.59	-		D.O. Saturation (%)	81.5	80.4			86.1	86.3	83.57	-	
D.O. (mg/L)	6.81	6.82	6.92	6.85	6.94	6.88	6.87	6.91	6.85	D.O. (mg/L)	6.28	6.20			6.60	6.62	6.43	6.61	6.24
Turbidity (NTU)	5.10	5.90	16.50	13.30	29.80	30.50	16.85	-		Turbidity (NTU)	3.90	4.00			7.60	7.40	5.73	-	
SS (mg/L)	8.0	12.0	28.0	28.0	34.0	40.0	25.00	-		SS (mg/L)	6.0	7.0			12.0	12.0	9.25	-	
Remarks										Remarks									

Station)2			1			Station			SI	R3			1		
Time (hh:mm)			14:16	-14:21						Time (hh:mm)			14:27	-14:33					
Water Depth (m)			7	90						Water Depth (m)			12	.10					
Monitoring Depth (m)	1.	00	3	90	6.	80				Monitoring Depth (m)	1.	00	5.	90	10	.40			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.0	20.0	19.9	19.9	19.8	19.8	19.90	1		Water Temperature (°C)	19.9	19.9	19.8	19.8	19.8	19.8	19.80	-	
Salinity (ppt)	28.2	28.0	28.7	28.7	29.6	29.0	28.69	-		Salinity (ppt)	28.3	28.3	29.1	29.2	29.6	29.7	29.02	-	
pH	7.8	7.8	7.8	7.8	7.9	7.8	7.80			pH	7.8	7.8	7.8	7.9	7.9	7.9	7.84		
D.O. Saturation (%)	85.0	83.7	85.9	85.6	86.1	85.1	85.22	-		D.O. Saturation (%)	86.2	86.2	86.5	86.5	86.9	86.6	86.49	-	
D.O. (mg/L)	6.54	6.45	6.60	6.58	6.60	6.54	6.55	6.57	6.54	D.O. (mg/L)	6.65	6.65	6.65	6.65	6.66	6.64	6.65	6.65	6.65
Turbidity (NTU)	7.90	7.90	9.50	9.50	18.30	16.40	11.56	-		Turbidity (NTU)	6.80	7.40	10.70	11.50	28.60	23.80	14.80	-	
SS (mg/L)	7.0	11.0	12.0	10.0	19.0	21.0	13.33			SS (mg/L)	8.0	9.0	12.0	13.0	31.0	30.0	17.17	-	
Remarks										Remarks									T I

Station			(31			1			Station			SI	R4			1		
Time (hh:mm)			14:55	-15:02						Time (hh:mm)			14:41	-14:47					
Water Depth (m)			12	.80						Water Depth (m)			11.	.90					
Monitoring Depth (m)	0.	90	6.	10	11	.00				Monitoring Depth (m)	1.	00	6.	30	12	.40			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	19.9	19.9	19.8	19.8	19.7	19.7	19.80	-		Water Temperature (°C)	20.0	20.0	19.8	19.8	19.7	19.7	19.83	-	
Salinity (ppt)	28.5	28.4	29.2	29.3	29.7	29.7	29.15	-		Salinity (ppt)	28.2	28.2	29.1	29.2	29.9	29.9	29.08	-	
pH	7.8	7.8	7.8	7.9	7.9	7.9	7.84			pH	7.8	7.8	7.8	7.9	7.9	7.9	7.85		
D.O. Saturation (%)	86.2	86.1	86.4	85.9	86.3	85.3	86.03	-		D.O. Saturation (%)	87.9	88.3	85.7	85.7	87.4	86.8	86.95	-	
D.O. (mg/L)	6.64	6.63	6.64	6.59	6.62	6.54	6.61	6.58	6.63	D.O. (mg/L)	6.77	6.80	6.59	6.58	6.69	6.64	6.68	6.67	6.69
Turbidity (NTU)	6.40	6.20	12.00	12.50	51.50	52.30	23.49	-		Turbidity (NTU)	5.00	5.30	10.50	11.00	47.00	35.80	19.10	-	
SS (mg/L)	6.0	7.0	12.0	13.0	64.0	71.0	28.83	-		SS (mg/L)	7.0	6.0	12.0	14.0	61.0	45.0	24.17	-	
Remarks										Remarks									

Annex E6 - Water Quality Results at Airport during mid-flood tide for 26 March 2008

Sampling Date	3/26/2008
Weather & Ambient Temperature	Rainy, 20C

Mid-Flood

Station				23						Station			ι	J2					
Time (hh:mm)			08:31	-08:36						Time (hh:mm)			08:26	-08:33					
Water Depth (m)			11	.50						Water Depth (m)			9.	20			1		
Monitoring Depth (m)	1.	.20	5.	60	9.	90				Monitoring Depth (m)	1.	20	4.	80	8.	.10			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom	Surface& Middle	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom	Surface&M ddle
Water Temperature (°C)	19.9	19.9	19.9	19.9	19.7	19.7	19.81	-		Water Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.71	-	
Salinity (ppt)	28.3	28.3	29.2	29.2	29.7	29.8	29.08	-		Salinity (ppt)	27.7	27.8	28.1	27.9	28.4	27.9	27.98	-	T
pH	7.8	7.8	7.8	7.8	7.8	7.9	7.83			pH	7.8	7.8	7.8	7.8	7.8	7.8	7.80		
D.O. Saturation (%)	87.3	87.3	88.7	88.4	88.0	87.5	87.87	-		D.O. Saturation (%)	89.1	88.5	89.4	88.7	91.9	89.4	89.49	-	T
D.O. (mg/L)	6.73	6.73	6.81	6.78	6.75	6.71	6.75	6.73	6.76	D.O. (mg/L)	6.92	6.87	6.92	6.87	7.10	6.93	6.94	7.02	6.90
Turbidity (NTU)	4.60	4.50	5.60	5.00	11.60	20.10	8.59	-		Turbidity (NTU)	4.30	6.10	6.80	7.90	7.00	14.50	7.75	-	T
SS (mg/L)	9.0	7.0	10.0	14.0	11.0	14.0	10.83	-		SS (mg/L)	6.0	8.0	8.0	7.0	15.0	18.0	10.33	-	T
Remarks										Remarks						•			
	•								,	•	•								•
Station		C4]			Station				R2]			
Times /hh.mans)	1	00:24 00:20					1			T: //- /- / /	1		00.07	00.10			1		

Station			(24						Station			S	R2					
Time (hh:mm)			09:24	-09:30						Time (hh:mm)			08:07	-08:10					
Water Depth (m)			9	.70						Water Depth (m)			4.	10					
Monitoring Depth (m)	1.	.20	4	.60	8.	30				Monitoring Depth (m)	1.	00			3.	.00			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	19.8	19.9	19.8	19.8	19.9	19.9	19.85	-		Water Temperature (°C)	19.8	19.8			19.8	19.8	19.75	-	
Salinity (ppt)	28.1	28.0	28.3	28.5	28.9	28.9	28.44	-		Salinity (ppt)	27.3	27.2			27.4	27.3	27.28	ı	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.80			pH	7.7	7.7			7.7	7.7	7.72		
D.O. Saturation (%)	86.7	86.5	87.0	86.8	87.9	87.2	87.02	-		D.O. Saturation (%)	88.3	87.9			89.3	88.0	88.37	-	
D.O. (mg/L)	6.70	6.68	6.72	6.69	6.76	6.70	6.71	6.73	6.70	D.O. (mg/L)	6.87	6.84			6.94	6.84	6.87	6.89	6.86
Turbidity (NTU)	5.20	5.20	6.10	7.30	15.60	15.20	9.12	-		Turbidity (NTU)	5.30	4.30			6.50	5.40	5.35	-	
SS (mg/L)	5.0	6.0	4.0	5.0	7.0	5.0	5.33	-		SS (mg/L)	14.0	33.0			25.0	9.0	20.25	-	
Remarks		6.0 4.0 5.0 7.0 5.0					•		Remarks		•	•	•						

Station)2						Station			S	R3					
Time (hh:mm)			08:41	-08:56						Time (hh:mm)			09:09	-09:15					
Water Depth (m)			8.	30						Water Depth (m)			12	.60					
Monitoring Depth (m)	1.	.20	4.	00	6.	70				Monitoring Depth (m)	0.	90	6.	00	10	.90			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	19.8	19.8	19.8	19.7	19.7	19.7	19.76	-		Water Temperature (°C)	19.8	19.8	19.7	19.8	19.7	19.7	19.76	1	
Salinity (ppt)	27.4	27.4	27.4	27.6	28.8	28.4	27.84	-		Salinity (ppt)	28.1	28.1	28.5	28.4	28.7	28.8	28.42	-	
pH	7.8	7.8	7.7	7.8	7.8	7.8	7.79			pH	7.8	7.8	7.8	7.8	7.8	7.8	7.79		
D.O. Saturation (%)	86.3	85.6	89.3	86.5	89.1	87.7	87.42	-		D.O. Saturation (%)	86.5	87.3	87.8	87.6	88.7	88.3	87.70	-	
D.O. (mg/L)	6.70	6.65	6.93	6.72	6.87	6.78	6.78	6.83	6.75	D.O. (mg/L)	6.68	6.75	6.78	6.76	6.85	6.82	6.77	6.84	6.74
Turbidity (NTU)	3.60	3.30	3.50	3.30	8.80	5.40	4.66	-		Turbidity (NTU)	5.40	5.70	7.20	7.30	9.50	9.90	7.51	-	
SS (mg/L)	5.0	7.0	10.0	7.0	10.0	13.0	8.67	-		SS (mg/L)	4.0	6.0	7.0	4.0	5.0	7.0	5.50	-	
Remarks										Remarks									

Station			(11]			Station			SI	R4			1		
Time (hh:mm)			08:44	-08:49						Time (hh:mm)			08:56-	-09:01					
Water Depth (m)			12	.40						Water Depth (m)			13.	.20					
Monitoring Depth (m)	1.	10	5.	90	10	.90				Monitoring Depth (m)	1.	20	6.3	30	12	.20			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	19.7	19.8	19.9	19.9	19.9	19.9	19.82	-		Water Temperature (°C)	19.9	19.9	19.9	19.9	19.9	19.9	19.86	-	
Salinity (ppt)	27.8	27.8	29.3	29.3	29.3	29.3	28.78	-		Salinity (ppt)	27.7	27.6	29.1	29.0	29.2	29.3	28.65	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82			pH	7.8	7.8	7.8	7.8	7.8	7.8	7.80		
D.O. Saturation (%)	88.5	87.7	88.6	88.5	88.9	88.2	88.40	-		D.O. Saturation (%)	85.9	85.7	87.8	87.8	88.2	87.8	87.20	-	
D.O. (mg/L)	6.87	6.80	6.79	6.79	6.82	6.76	6.81	6.79	6.81	D.O. (mg/L)	6.65	6.64	6.74	6.75	6.77	6.73	6.71	6.75	6.70
Turbidity (NTU)	3.90	4.70	10.00	9.50	17.40	17.80	10.55	-		Turbidity (NTU)	5.20	4.70	13.00	12.10	26.50	23.80	14.22	-	
SS (mg/L)	7.0	5.0	5.0	8.0	19.0	22.0	11.00	-		SS (mg/L)	8.0	5.0	8.0	8.0	9.0	7.0	7.50	-	
Remarks										Remarks									

Annex E7 - Water Quality Results at Tuen Mun during mid-ebb tide for 27 March 2008

Date			03/27	/2008				
Station			C	1				
Time (hh:mm)			14:55	- 15:01				
Ambient Temperature (°C)			2	1				
Weather			Su	nny				
Water Depth (m)			8.	10				
Monitoring Depth (m)	1.	20	3.	90	6.	90		
Tide			Mid-	Ebb				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	20.2	20.3	19.9	19.9	19.9	19.8	20.00	-
Salinity (ppt)	29.3	29.1	29.8	29.8	29.9	29.9	29.63	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81	
D.O. Saturation (%)	86.8	88.0	84.1	84.5	83.5	83.8	85.11	-
D.O. (mg/L)	6.62	6.70	6.43	6.46	6.39	6.41	6.50	6.40
Turbidity (NTU)	4.30	3.90	7.10	6.90	7.10	8.00	6.24	-
SS (mg/L)	7.0	4.0	8.0	9.0	9.0	10.0	7.83	-
Remarks						-		

Date			03/27	7/2008				
Station			C	2				
Time (hh:mm)			15:42	- 15:48				
Ambient Temperature (°C)			2	21				
Weather			Su	nny				
Water Depth (m)			13	.40				
Monitoring Depth (m)	1.	.10	6.	40	12	.10		
Tide			Mid-	-Ebb				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	20.0	20.0	19.8	19.7	19.6	19.6	19.79	-
Salinity (ppt)	29.6	29.6	30.1	30.2	30.4	30.4	30.04	-
pH	7.8	7.8	7.8	7.8	7.9	7.8	7.83	
D.O. Saturation (%)	88.8	89.1	86.5	86.2	85.6	85.2	86.91	-
D.O. (mg/L)	6.78	6.80	6.62	6.60	6.55	6.52	6.65	6.54
Turbidity (NTU)	4.90	5.10	8.20	9.30	10.00	17.30	9.12	-
SS (mg/L)	5.0	12.0	12.0	11.0	11.0	30.0	13.50	-
Remarks						-		

Date			03/27	//2008				
Station)1				
Time (hh:mm)			15:30	- 15:35				
Ambient Temperature (°C)			2	1				
Weather			Su	nny				
Water Depth (m)			7.	80				
Monitoring Depth (m)	1.	20	3.	90	7.	00		
Tide			Mid-	-Ebb				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	20.1	20.1	19.8	19.9	19.7	19.7	19.89	-
Salinity (ppt)	29.5	29.5	29.8	29.6	30.3	30.2	29.81	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82	
D.O. Saturation (%)	87.9	88.3	86.3	86.7	85.3	85.1	86.60	-
D.O. (mg/L)	6.70	6.73	6.60	6.63	6.53	6.51	6.62	6.52
Turbidity (NTU)	6.60	7.00	6.70	5.70	9.40	8.30	7.29	-
SS (mg/L)	9.0	9.0	10.0	8.0	12.0	16.0	10.67	-
Remarks						-		

Date			03/27/	2008								
Station			U1									
Time (hh:mm)			15:19 -	15:24								
Ambient Temperature (℃)			21									
Weather			Sun	ny								
Water Depth (m)												
Monitoring Depth (m)	1.	1.10 4.50 8.00										
Tide												
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom				
							averaged					
Water Temperature (°C)	19.9	20.2	19.7	19.8	19.7	19.7	19.83	-				
Salinity (ppt)	29.9	29.5	30.2	29.9	30.2	30.2	29.98	-				
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.84					
D.O. Saturation (%)	85.8	89.1	84.1	85.5	83.3	84.1	85.32	-				
D.O. (mg/L)	6.56	6.78	6.43	6.54	6.37	6.43	6.52	6.40				
Turbidity (NTU)	7.40	3.80	13.50	8.20	13.80	13.60	10.04	-				
SS (mg/L)	11.0	10.0	20.0	17.0	16.0	19.0	15.50	-				
Remarks												

Date			03/27/	2008									
Station			SR	1									
Time (hh:mm)			15:09 -	15:14									
Ambient Temperature (℃)		21											
Weather		Sunny											
Water Depth (m)		5.40											
Monitoring Depth (m)	1.												
Tide													
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom					
Water Temperature (°C)	20.1	20.1	19.8	19.8	19.8	19.8	19.88	-					
Salinity (ppt)	29.4	29.5	29.7	29.6	29.7	29.7	29.58	-					
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81						
D.O. Saturation (%)	85.7	85.8	84.5	84.5	84.5	84.4	84.89	-					
D.O. (mg/L)	6.54	6.55	6.47	6.48	6.48	6.46	6.50	6.47					
Turbidity (NTU)	6.40	6.30	6.10	6.20	5.90	6.50	6.27	-					
SS (mg/L)	10.0	13.0	6.0	9.0	10.0	8.0	9.33	-					
Remarks					-								

Flow Tracking Data

Position	Easting	Northing	Depth	Time	Speed	Direction	Date
C1	814487.92	825367.5	0	160035	0	0	20080327
C1	814537.6	825391.43	0	160536	0.1832	64.3	20080327
C1	814581.83	825410.92	0	161128	0.1373	66.2	20080327
C1	814627.43	825427.57	0	161702	0.1453	69.9	20080327

Annex E8 - Water Quality Results at Tuen Mun during mid-flood tide for 27 March 2008

Date			03/27	7/2008				
Station				71				
Time (hh:mm)			07:56	- 08:01				
Ambient Temperature (℃)			2	20				
Veather			Su	nny				
Water Depth (m)			7.					
Monitoring Depth (m)	1.	00	3.					
Гide			Mid-					
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Vater Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.67	-
Salinity (ppt)	29.3	29.3	29.4	29.3	29.5	29.5	29.38	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81	
D.O. Saturation (%)	84.9	85.2	84.5	85.1	84.3	84.0	84.65	-
D.O. (mg/L)	6.53	6.56	6.50	6.55	6.48	6.45	6.51	6.47
Turbidity (NTU)	3.70	3.70	4.00	3.70	4.50	4.60	4.06	-
SS (mg/L)	7.0	4.0	5.0	5.0	6.0	5.0	5.33	-
Remarks								

Date			03/27	/2008				
Station			C	2				
Time (hh:mm)			08:43	- 08:49				
Ambient Temperature (°C)			2	20				
Weather			Su	nny				
Water Depth (m)			13	.20				
Monitoring Depth (m)	1.	20	6.	70				
Tide			Mid-l	Flood				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.69	-
Salinity (ppt)	29.5	29.4	29.5	29.7	29.9	29.9	29.66	-
	7.8	7.8	7.8	7.8	7.8	7.8	7.81	
D.O. Saturation (%)	86.6	86.7	85.8	85.0	84.8	84.3	85.52	-
D.O. (mg/L)	6.65	6.66	6.59	6.53	6.50	6.46	6.57	6.48
Turbidity (NTU)	3.60	3.90	4.50 4.90		7.00	7.20	5.21	-
SS (mg/L)	6.0	8.0	8.0	5.0	7.0	11.0	7.50	-
Remarks						-		

Date			03/27	/2008				
Station)1				
Time (hh:mm)			08:32	- 08:37				
Ambient Temperature (℃)			2	20				
Weather			Su	nny				
Water Depth (m)			8.					
Monitoring Depth (m)	1.	20	3.					
Tide			Mid-l					
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (℃)	19.7	19.7	19.7	19.7	19.7	19.7	19.68	-
Salinity (ppt)	29.2	29.3	29.6	29.5	29.6	29.6	29.48	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81	
D.O. Saturation (%)	86.5	86.5	85.2	85.1	84.5	84.5	85.38	-
D.O. (mg/L)	6.66	6.65	6.55	6.54	6.49	6.49	6.56	6.49
Turbidity (NTU)	3.40	3.40	4.20	4.50	7.10	5.70	4.75	-
SS (mg/L)	8.0	6.0	5.0	10.0	7.67	-		
Remarks						-		

Date			03/27/	2008								
Station			U1									
Time (hh:mm)			08:19 -	08:25								
Ambient Temperature (℃)			20)								
Weather												
Water Depth (m)												
Monitoring Depth (m)	1.	1.00 4.20 6.90										
Tide												
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom				
Water Temperature (°C)	19.7	19.7	19.7	19.7	19.7	19.7	19.68	-				
Salinity (ppt)	29.3	29.4	29.4	29.4	29.6	29.7	29.47	-				
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82					
D.O. Saturation (%)	86.2	85.9	85.1	85.1	84.4	84.0	85.11	-				
D.O. (mg/L)	6.64	6.61	6.55	6.54	6.48	6.45	6.55	6.47				
Turbidity (NTU)	3.30	3.70	4.20	4.00	5.00	4.90	4.21	-				
SS (mg/L)	4.0	4.0	4.0	6.0	8.0	6.0	5.33	-				
Remarks												

Date			03/27/	2008								
Station			SR	1								
Time (hh:mm)			08:10 -	08:14								
Ambient Temperature (°C)												
Weather												
Water Depth (m)												
Monitoring Depth (m)	1.	1.10 2.40 4.00										
Tide		Mid-Flood										
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom				
Water Temperature (℃)	19.6	19.6	19.6	19.6	19.6	19.6	19.63	-				
Salinity (ppt)	29.3	29.3	29.3	29.3	29.4	29.4	29.34	-				
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82					
D.O. Saturation (%)	85.5	85.5	85.3	85.4	85.5	84.3	85.24	-				
D.O. (mg/L)	6.58	6.58	6.57	6.58	6.58	6.49	6.56	6.54				
Turbidity (NTU)	3.40	3.40	3.50	3.40	3.90	3.80	3.59	-				
SS (mg/L)	5.0	4.0	4.0	4.0	7.0	6.0	5.00	-				
Remarks												

Flow Tracking Data

Position	Easting	Northing	Depth	Time	Speed	Direction	Date
C1	814479.08	825370.87	0	85829	0	0	20080327
C1	814320.28	825376.43	0	90441	0.4271	272	20080327
C1	814173.94	825391.43	0	90948	0.4792	275.9	20080327
C1	814036.07	825391.42	0	91504	0.4363	270	20080327

Annex E9 - Water Quality Results at Airport during mid-ebb tide for 28 March 2008

Sampling Date	3/28/2008
Weather & Ambient Temperature	Cloudy, 22C

Mid-Ebb

Station				23						Station			U	J2					
Time (hh:mm)			15:41	-15:48						Time (hh:mm)			16:31	-16:38			1		
Water Depth (m)			11	.10			Ī			Water Depth (m)			7.	90			Ī		
Monitoring Depth (m)	0.	90	5	.50	9.	90				Monitoring Depth (m)	1.	10	4.	4.00		7.00			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.3	20.4	20.0	20.1	19.9	19.9	20.09	-		Water Temperature (°C)	20.4	20.4	20.2	20.3	20.2	20.2	20.30	-	
Salinity (ppt)	29.4	29.4	29.6	29.5	29.9	29.9	29.62	-		Salinity (ppt)	29.5	29.4	29.7	29.6	29.7	29.7	29.60	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.78			pH	7.9	7.9	7.9	7.8	7.9	7.9	7.85		
D.O. Saturation (%)	90.4	92.4	86.2	88.6	84.7	85.0	87.89	-		D.O. Saturation (%)	95.6	93.6	91.5	91.2	90.9	91.1	92.33	-	
D.O. (mg/L)	6.87	7.01	6.59	6.75	6.47	6.50	6.70	6.49	6.81	D.O. (mg/L)	7.25	7.10	6.95	6.93	6.91	6.92	7.01	6.92	7.06
Turbidity (NTU)	4.10	3.90	6.20	5.20	11.00	11.90	7.06	-		Turbidity (NTU)	4.30	4.70	7.00	6.20	7.30	7.60	6.21	-	
SS (mg/L)	6.0	5.0	6.0	8.0	16.0	14.0	9.17	-		SS (mg/L)	6.0	4.0	7.0	9.0	11.0	8.0	7.50	-	
Remarks				•						Remarks									

Station			(C4						Station			S	R2			1		
Time (hh:mm)			16:56	6-17:02						Time (hh:mm)			16:27	'-16:37					
Water Depth (m)			8	.60						Water Depth (m)			4.	.20					
Monitoring Depth (m)	1.	.00	4	.60	8.	00				Monitoring Depth (m)	1.	20			3.	.20			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.7	20.7	20.6	20.7	20.4	20.4	20.58	-		Water Temperature (°C)	20.6	20.6			20.2	20.1	20.38	·	
Salinity (ppt)	28.2	28.2	28.3	28.2	29.3	29.3	28.58	-		Salinity (ppt)	29.3	29.4			30.0	30.0	29.67	ı	
pH	7.8	7.8	7.8	7.8	7.9	7.9	7.85			pH	7.7	7.7			7.7	7.8	7.73		
D.O. Saturation (%)	99.5	99.9	98.4	99.4	95.8	96.2	98.20	-		D.O. Saturation (%)	85.0	84.0			90.7	89.9	87.39	-	T
D.O. (mg/L)	7.57	7.59	7.48	7.55	7.27	7.30	7.46	7.29	7.55	D.O. (mg/L)	6.43	6.35			6.89	6.83	6.63	6.86	6.39
Turbidity (NTU)	4.00	4.20	4.20	4.10	9.40	10.20	6.02	-		Turbidity (NTU)	2.10	2.30			5.70	5.10	3.79	-	
SS (mg/L)	4.0	6.0	9.0	8.0	14.0	14.0	9.17	-		SS (mg/L)	6.0	6.0			12.0	11.0	8.75	-	
Remarks										Remarks									

Station)2						Station			S	R3					
Time (hh:mm)			16:43	-16:50			Ī			Time (hh:mm)			16:21	-16:26					
Water Depth (m)			7.	20						Water Depth (m)			12	.40					
Monitoring Depth (m)	1.	.00	3.	60	6.	00				Monitoring Depth (m)	1.	00	6.	10	11	.00			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.4	20.4	20.4	20.3	20.3	20.3	20.37	-		Water Temperature (°C)	20.5	20.5	20.2	20.3	20.2	20.2	20.34	ı	
Salinity (ppt)	29.7	29.7	29.8	29.8	29.8	29.9	29.79	-		Salinity (ppt)	29.2	29.3	29.7	29.7	29.9	29.9	29.60	-	
pH	7.9	7.9	7.9	7.9	7.9	7.9	7.88			pH	7.9	7.9	7.9	7.9	7.9	7.9	7.86		
D.O. Saturation (%)	92.8	92.4	93.9	93.6	94.4	94.4	93.59	-		D.O. Saturation (%)	97.8	97.8	92.7	94.1	91.9	92.0	94.37	-	
D.O. (mg/L)	7.03	7.00	7.11	7.10	7.15	7.16	7.09	7.16	7.06	D.O. (mg/L)	7.41	7.41	7.04	7.13	6.98	6.99	7.16	6.99	7.25
Turbidity (NTU)	9.90	10.40	12.20	12.20	12.90	13.30	11.79	-		Turbidity (NTU)	3.30	3.40	6.10	5.70	10.90	9.40	6.47	-	
SS (mg/L)	12.0	10.0	13.0	15.0	15.0	17.0	13.67	-		SS (mg/L)	3.0	3.0	9.0	8.0	12.0	14.0	8.17	-	
Remarks										Remarks									

Station			(31			1			Station			SI	R4			1		
Time (hh:mm)			15:56	-16:03						Time (hh:mm)			16:10	-16:16					
Water Depth (m)			12	.40						Water Depth (m)			13	.50					
Monitoring Depth (m)	1.	.00	6.	00	10	.70				Monitoring Depth (m)	1.	10	6.	60	11	.90			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.5	20.5	20.2	20.3	20.1	20.1	20.26	-		Water Temperature (°C)	20.6	20.7	20.4	20.4	20.2	20.2	20.42	-	
Salinity (ppt)	29.1	29.1	29.6	29.4	29.9	29.9	29.49	-		Salinity (ppt)	29.1	29.0	29.6	29.6	29.9	29.9	29.49	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82			pH	7.9	7.9	7.9	7.9	7.9	7.9	7.86		
D.O. Saturation (%)	95.3	96.8	89.5	92.3	87.9	88.4	91.69	-		D.O. Saturation (%)	100.3	101.1	96.1	96.7	91.3	92.7	96.35	-	
D.O. (mg/L)	7.23	7.35	6.82	7.02	6.69	6.73	6.97	6.71	7.11	D.O. (mg/L)	7.59	7.65	7.28	7.33	6.94	7.03	7.30	6.99	7.46
Turbidity (NTU)	3.70	3.60	5.90	5.20	13.60	11.00	7.18	-		Turbidity (NTU)	3.70	3.40	6.10	6.80	10.80	10.10	6.82	-	
SS (mg/L)	4.0	6.0	15.0	10.0	14.0	15.0	10.67	-		SS (mg/L)	4.0	6.0	8.0	7.0	12.0	14.0	8.50	-	
Remarks										Remarks									

Annex E10 - Water Quality Results at Airport during mid-flood tide for 28 March 2008

Sampling Date	3/28/2008
Weather & Ambient Temperature	Rainy, 20C

6.75

3.90

4.0

6.75

3.80

4.0

6.58

5.80

8.0

6.57

6.40

7.0

D.O. (mg/L) Turbidity (NTU)

SS (mg/L) Remarks

Mid-Flood

Sampling Date		3/28/2008							Mid-Flood										
Weather & Ambient Tempe	erature		Rainy, 20C	;]														
Ctation	1			C3			7			Station	1			J2			٦		
Station				5-08:30			-							-09:13			4		
Time (hh:mm)							4			Time (hh:mm)							4		
Water Depth (m)		00		1.30	1		_			Water Depth (m)		00		70		00	-		
Monitoring Depth (m)		.90		.80).10				Monitoring Depth (m)		.20		50		90			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom	Surface& Middle	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom	Surface&Mi ddle
Water Temperature (°C)	20.3	20.2	20.0	20.0	20.0	20.0	20.07	-		Water Temperature (°C)	20.1	20.2	20.1	20.1	20.0	20.0	20.09	-	
Salinity (ppt)	28.6	28.6	29.5	29.4	29.7	29.8	29.27	-		Salinity (ppt)	29.3	28.8	29.5	29.4	29.5	29.5	29.34	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.79			pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81		
D.O. Saturation (%)	89.9	89.6	87.4	87.2	86.9	86.2	87.86	-		D.O. Saturation (%)	85.2	85.5	84.6	84.7	84.6	84.5	84.86	-	
D.O. (mg/L)	6.87	6.85	6.67	6.66	6.63	6.58	6.71	6.61	6.76	D.O. (mg/L)	6.51	6.53	6.46	6.47	6.46	6.45	6.48	6.46	6.49
Turbidity (NTU)	4.60	4.70	5.10	4.90	7.40	7.40	5.72	-		Turbidity (NTU)	8.80	6.00	9.10	9.90	8.30	8.50	8.40	-	
SS (mg/L)	4.0	6.0	6.0	5.0	12.0	13.0	7.67	-		SS (mg/L)	9.0	9.0	12.0	14.0	9.0	9.0	10.33	-	
Remarks										Remarks									
Station			(C4						Station			S	R2			1		
Time (hh:mm)			09:32	2-09:38						Time (hh:mm)			08:54	-09:00			1		
Water Depth (m)			8	.90						Water Depth (m)			4.	20]		
Monitoring Depth (m)	1	.20	4	.70	7	.70				Monitoring Depth (m)	1	.20			3.	10	1		
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom	Surface& Middle	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom	Surface&Mi ddle
Water Temperature (°C)	20.3	20.3	20.2	20.1	20.2	20.2	20.21	-		Water Temperature (°C)	20.5	20.5			20.4	20.4	20.44	-	
Salinity (ppt)	28.4	28.4	29.4	29.3	29.6	29.6	29.13	-		Salinity (ppt)	28.7	28.7			29.0	28.9	28.81	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81			pH	7.6	7.7			7.6	7.7	7.63		
D.O. Saturation (%)	88.3	88.3	86.3	86.1	87.2	86.9	87.15	-		D.O. Saturation (%)	82.8	78.5			86.5	84.2	83.00	-	
	1	1	1	1	1	1	1	1		- , ,	1	1	1	1	1				

							_										_		
Station)2						Station			SI	3					
Time (hh:mm)			09:19	-09:24						Time (hh:mm)			08:58-	-09:04					
Water Depth (m)			6.	90						Water Depth (m)			12.	.60					
Monitoring Depth (m)	1.	20	3.	30	6.	.10				Monitoring Depth (m)	1.	20	6.3	30	10	.70			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.3	20.6	20.3	20.6	20.2	20.2	20.38	-		Water Temperature (°C)	20.3	20.3	20.0	20.0	20.0	20.0	20.08	-	
Salinity (ppt)	28.5	28.5	28.5	28.5	29.1	29.4	28.75	-		Salinity (ppt)	28.5	28.6	29.4	29.4	29.7	29.7	29.19	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.79			pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81		
D.O. Saturation (%)	88.4	88.4	87.4	88.1	87.4	86.7	87.72	-		D.O. Saturation (%)	89.8	89.5	85.5	85.6	84.6	84.3	86.54	-	
D.O. (mg/L)	6.75	6.71	6.68	6.70	6.66	6.60	6.68	6.63	6.71	D.O. (mg/L)	6.86	6.84	6.54	6.54	6.46	6.44	6.61	6.45	6.70
Turbidity (NTU)	3.80	4.20	4.70	4.50	5.10	6.90	4.90	-		Turbidity (NTU)	4.60	4.70	4.70	4.90	7.10	7.60	5.62	-	
SS (mg/L)	6.0	4.0	3.0	6.0	7.0	8.0	5.67			SS (mg/L)	7.0	8.0	5.0	5.0	11.0	12.0	8.00	-	
Remarks										Remarks									

D.O. (mg/L) Turbidity (NTU)

SS (mg/L)

Remarks

6.66

6.30

1.80

4.0

5.97

2.00

5.0

6.32

2.48

7.25

6.50

6.14

6.41

3.00

9.0

6.58

3.00

11.0

6.65

5.99

6.83

6.62

6.63

7.70

8.0

6.61

8.30

10.0

Station			(11			1			Station			SI	R4			1		
Time (hh:mm)			08:37	-08:41						Time (hh:mm)			08:47	-08:53					
Water Depth (m)			12	.50						Water Depth (m)			13	.40					
Monitoring Depth (m)	1.	00	6.	00	10	.70				Monitoring Depth (m)	1.	30	6.	70	11	.70			
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&	Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom	Surface&Mi
							averaged		Middle								averaged		ddle
Water Temperature (°C)	20.2	20.2	20.0	20.0	20.0	20.0	20.07	-		Water Temperature (°C)	20.3	20.3	20.0	20.0	19.9	19.9	20.06	-	
Salinity (ppt)	28.7	28.7	29.3	29.3	29.7	29.7	29.24	-		Salinity (ppt)	28.5	28.5	29.4	29.4	29.8	29.8	29.22	-	
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.80			pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81		
D.O. Saturation (%)	89.0	88.7	86.6	86.1	86.3	86.3	87.17	-		D.O. Saturation (%)	90.2	90.3	86.0	85.7	85.1	84.7	87.01	-	
D.O. (mg/L)	6.80	6.78	6.62	6.59	6.59	6.59	6.66	6.59	6.70	D.O. (mg/L)	6.90	6.90	6.57	6.55	6.51	6.48	6.65	6.50	6.73
Turbidity (NTU)	4.10	4.30	4.60	4.90	6.00	6.00	5.02	-		Turbidity (NTU)	4.10	4.10	4.60	4.40	7.90	8.40	5.58	-	
SS (mg/L)	6.0	4.0	4.0	6.0	9.0	5.0	5.67	-		SS (mg/L)	4.0	5.0	6.0	6.0	8.0	11.0	6.67	-	
Remarks										Remarks									

Annex E11 - Water Quality Results at Tuen Mun during mid-ebb tide for 29 March 2008

Date			03/29	/2008				
Station			C	1				
Time (hh:mm)			16:32	- 16:40				
Ambient Temperature (℃)			2	<u>!</u> 4				
Weather			Su	nny				
Water Depth (m)			8.	10				
Monitoring Depth (m)	1.	10	3.	90				
Tide			Mid-	-Ebb				
Trial	Mid-Ebb Trial 1 Trial 2 Trial 1 Trial 2 Trial 1 Trial 2					Depth-averaged	Bottom	
Water Temperature (°C)	21.3	21.1	20.7	20.6	20.1	20.0	20.64	-
Salinity (ppt)	29.0	29.1	29.4	29.5	30.0	30.2	29.53	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.79	
D.O. Saturation (%)	97.6	96.2	91.0	90.6	83.4	83.6	90.39	-
D.O. (mg/L)	7.30	7.22	6.86	6.84	6.35	6.36	6.82	6.36
Turbidity (NTU)	3.20	3.30	3.50	3.70	5.00	5.60	4.07	-
SS (mg/L)	5.0	6.0	7.0	5.0	6.0	7.0	6.00	-
Remarks						-		

Date			03/29	/2008				
Station			C	2				
Time (hh:mm)			17:20	- 17:27				
Ambient Temperature (°C)			2	24				
Weather			Su	nny				
Water Depth (m)			13					
Monitoring Depth (m)	1.	.00	6.					
Tide			Mid-					
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	20.5	20.6	20.0	20.1	19.9	19.9	20.15	-
Salinity (ppt)	29.8	29.7	30.4	30.3	30.8	30.9	30.33	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.83	
D.O. Saturation (%)	86.9	87.2	81.6	82.8	80.6	81.1	83.38	-
D.O. (mg/L)	6.56	6.58	6.20	6.29	6.12	6.17	6.32	6.15
Turbidity (NTU)	4.20	4.00	5.20	5.00	5.70	7.00	5.21	-
SS (mg/L)	7.0	6.0	5.0	6.0	8.0	7.0	6.50	-
Remarks						-	•	

Date			03/29	/2008				
Station)1				
Time (hh:mm)			17:09	- 17:15				
Ambient Temperature (°C)			2	:4				
Weather			Su	nny				
Water Depth (m)			8.	40				
Monitoring Depth (m)	1.	.00	3.					
Tide			Mid-					
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (℃)	21.1	20.9	20.1	20.1	20.0	19.9	20.35	-
Salinity (ppt)	29.3	29.4	30.3	30.2	30.5	30.6	30.05	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.82	
D.O. Saturation (%)	90.2	89.1	83.5	83.6	83.0	82.1	85.25	-
D.O. (mg/L)	6.77	6.69	6.34	6.34	6.30	6.25	6.45	6.28
Turbidity (NTU)	4.90	5.20	7.30	6.10	6.90	6.20	6.14	-
SS (mg/L)	6.0	7.0	9.0	7.0	10.0	8.0	7.83	-
Remarks						-	•	

Date			03/29/	2008				
Station			U1					
Time (hh:mm)			16:57 -	17:03				
Ambient Temperature (℃)			24					
Weather			Sun	ny				
Water Depth (m)			9.6	0				
Monitoring Depth (m)	1.							
Tide								
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
							averaged	
Water Temperature (°C)	21.1	21.1	20.2	20.2	19.9	19.9	20.40	-
Salinity (ppt)	29.3	29.4	30.0	30.0	30.5	30.5	29.95	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.81	
D.O. Saturation (%)	91.9	91.8	84.6	84.2	82.2	82.4	86.18	-
D.O. (mg/L)	6.89	6.87	6.42	6.40	6.25	6.27	6.52	6.26
Turbidity (NTU)	3.40	3.60	5.70	7.80	6.70	7.60	5.80	-
SS (mg/L)	6.0	5.0	6.0	7.0	9.0	7.0	6.67	-
Remarks		•	•	•	-			

Date			03/29/	2008				
Station			SR	1				
Time (hh:mm)			16:47 -	16:52				
Ambient Temperature (℃)			24					
Weather			Sun	ny				
Water Depth (m)								
Monitoring Depth (m)	1.	00	3.90					
Tide								
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
							averaged	
Water Temperature (°C)	20.9	21.4	20.9	20.9	20.8	20.7	20.93	-
Salinity (ppt)	29.4	29.3	29.4	29.4	29.4	29.5	29.38	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.79	
D.O. Saturation (%)	90.3	93.6	90.0	90.3	88.9	89.4	90.44	-
D.O. (mg/L)	6.79	6.98	6.77	6.79	6.70	6.75	6.80	6.73
Turbidity (NTU)	4.60	3.60	5.10	4.70	4.90	4.90	4.66	-
SS (mg/L)	5.0	4.0	6.0	6.0	5.0	8.0	5.67	-
Remarks					-		•	

Annex E12 - Water Quality Results at Tuen Mun during mid-flood tide for 29 March 2008

Date			03/29	/2008				
Station			C	1				
Time (hh:mm)			06:43	- 06:49				
Ambient Temperature (°C)			2	2				
Weather			Su	nny				
Water Depth (m)			7.	40				
Monitoring Depth (m)	1.	00	3.	40	00			
Tide			Mid-l	Flood				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	20.4	20.4	20.4	20.4	20.4	20.4	20.40	
Salinity (ppt)	29.0	29.0	29.1	29.0	29.2	29.2	29.09	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.76	
D.O. Saturation (%)	90.1	90.0	90.2	89.9	88.0	88.7	89.49	-
D.O. (mg/L)	6.85	6.84	6.86	6.83	6.69	6.74	6.80	6.72
Turbidity (NTU)	3.10	3.00	2.80	3.00	5.80	5.50	3.89	-
SS (mg/L)	5.0	7.0	4.0	3.0	7.0	8.0	5.67	-
Remarks			-	-	-	-		

Date			03/29	/2008				
Station			C	2				
Time (hh:mm)			07:29	- 07:35				
Ambient Temperature (°C)			2	2				
Weather			Su	nny				
Water Depth (m)			13	.10				
Monitoring Depth (m)	0.	90	6.	50	12	.00		
Tide		Mid-Flood						
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	20.4	20.4	20.3	20.3	19.9	20.0	20.20	-
Salinity (ppt)	29.1	29.1	29.3	29.3	30.2	30.1	29.50	-
	7.8	7.8	7.8	7.8	7.8	7.8	7.81	
D.O. Saturation (%)	87.5	87.5	84.9	84.9	80.7	81.1	84.42	-
D.O. (mg/L)	6.65	6.65	6.46	6.46	6.15	6.18	6.43	6.17
Turbidity (NTU)	3.40	3.40	4.30	4.20	5.10	4.50	4.18	-
SS (mg/L)	4.0	5.0	6.0	6.0	5.0	6.0	5.33	-
Remarks						-	•	

Date			03/29	/2008				
Station)1				
Time (hh:mm)			07:17	- 07:22				
Ambient Temperature (℃)			2	2				
Weather			Su	nny				
Water Depth (m)			8.					
Monitoring Depth (m)	1.	.10	3.	90	7.	10		
Tide		Mid-Flood						
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-averaged	Bottom
Water Temperature (°C)	20.4	20.4	20.4	20.3	20.3	20.2	20.33	-
Salinity (ppt)	29.1	29.1	29.2	29.2	29.3	29.4	29.22	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.80	
D.O. Saturation (%)	87.7	87.5	87.5	86.6	86.4	84.8	86.75	-
D.O. (mg/L)	6.67	6.66	6.65	6.59	6.57	6.46	6.60	6.52
Turbidity (NTU)	3.80	3.70	3.90	4.30	4.90	5.20	4.33	-
SS (mg/L)	6.0	7.0	5.0	5.0	8.0	9.0	6.67	-
Remarks						-		

Date			03/29/	2008				
Station			U1					
Time (hh:mm)			07:06 -	07:12				
Ambient Temperature (℃)			22					
Weather			Sun	ny				
Water Depth (m)		9.20						
Monitoring Depth (m)	1.	00	4.	50	1	8.00		
Tide								
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth- averaged	Bottom
Water Temperature (°C)	20.4	20.4	20.3	20.4	20.3	20.3	20.34	-
Salinity (ppt)	29.1	29.1	29.3	29.2	29.4	29.3	29.22	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.80	
D.O. Saturation (%)	88.9	88.6	88.1	88.8	86.7	86.4	87.91	-
D.O. (mg/L)	6.76	6.73	6.70	6.75	6.60	6.58	6.69	6.59
Turbidity (NTU)	3.50	3.60	3.30	3.10	4.30	4.00	3.66	-
SS (mg/L)	6.0	4.0	4.0	5.0	5.0	4.0	4.67	-
Remarks					-			

Date			03/29/	2008				
Station			SR	1				
Time (hh:mm)			06:56 -	07:02				
Ambient Temperature (°C)			22					
Weather			Sun	ny				
Water Depth (m)			5.3	0				
Monitoring Depth (m)	1.	.00	2.	50		3.90		
Tide			Mid-F	ood				
Trial	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Depth-	Bottom
							averaged	
Water Temperature (°C)	20.4	20.4	20.4	20.4	20.4	20.4	20.39	-
Salinity (ppt)	29.1	29.1	29.1	29.1	29.1	29.2	29.12	-
pH	7.8	7.8	7.8	7.8	7.8	7.8	7.79	
D.O. Saturation (%)	89.1	88.6	89.1	88.8	89.0	88.6	88.86	-
D.O. (mg/L)	6.77	6.74	6.77	6.75	6.77	6.74	6.76	6.76
Turbidity (NTU)	3.50	4.20	3.40	3.80	3.60	4.20	3.81	-
SS (mg/L)	6.0	4.0	6.0	7.0	5.0	6.0	5.67	-
Remarks					-			

Annex F

Dolphin Observation Recording Forms

HONG KONG MARINE CONTRACTORS LIMITED DOLPHIN OBSERVATION RECORDING FORM

Date: (dd/mm/yyy):	27/03/2008	Vessel Name:	CHE	Weather:	Fair
Observer's name:_	Kevin	Chas			
Start Time:	14:30 - 17880	End Time:	15:00	Total: Time:	03:30.
Observer's Height	Above Sea Level (m) 17 m	Field of View 180 degree FV	VD / 90 degree L / 90 degree R	

Time	Easting	Northing	Speed	Sea State	Swell Height	Visibility	Boat Activity	Sighting Ref
14:30	813392	825207	0.0 kmil	Z	LiG	6-10 km	CLB	Nil
14:45	813392	825207	0.0 knot	Z	LIG	6-10ks	CLB	NX
15.00	8(3352	825207	0-0 kmt	2	LIG	6-10tm	CLB	N.X
			-					-
			-					-
								3 3000
	ļ							
			-					1

DATA DEFINITIONS:

Time: 24hrs clock. Location: Record Easting & Northing (HK80 GRID) Speed: Record is hords. Sea State: 0 = mirror calm; 1 = slight ripples, no foam crest; 2 = small wavelets, glassy crasts, but no whitecaps; 3 = large wavelets, bright or locations and the state of large from some spray, 6 = large wavelets, whitecaps; 4 = longer waves, many whitecaps; 5 = moderate waves of longer form, some spray, 6 = large wavelets, whitecaps wereywhere, frequent spray; 7 = sea heaps up, white foam lows in streaks; 8 = long, high waves edges breaking, foam blows in streaks; 9 = high waves, sea begin to roil, dense foam steaks. Swell Height: Light = 0-thm: Moderate = 1-2m; Heavy = > 2m. Visibility; < 1km; 1-5km; 6-10km; > 10km. Boat Activity; TB = Tupboat; CLB = Cable Ley Barge Sighting Reference: Refer to number(s) on Sighting Record

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$\stackrel{\textstyle \sim}{C}$ hong kong marine contractors limited

DOLPHIN OBSERVATION RECORDING FORM

Date: (dd/mm/yyy):_	28/03/2008	Vessel Name:	CH8	Weather.	Rain + Cloudy
Observer's name:_	Kevin	Chan			
Start Time:	10:00	End Time:	10:30	Total: Time:	0:80
Observer's Height #	bove Sea Level (m) 17m	Field of View 180 degree EW	D./ 90 degree L. / 90 degree R	

Time	Easting	Northing	Speed	Sea State	Swell Height	Visibility	Boat Activity	Sighting Ref.
10-00	113464	824842	0-0 (cm	2	LIG	6 - 10 tm	CCE	NI
10=15	813464	124812	0.0 kml	2	LIG	6-10 km	CUS	Nil
10:30	813 464	824892	0.0 Ent	z	CIG	6-10km	CLB	Ni
								-
		_						
	-	-						

DATA DEFINITIONS:

Time: 24ths clock. Location: Record Easting & Northing (HK80 GRID) Speed: Record in knots. Sea State: 0 = mirror calm; 1 = slight ripples, no foam crest; 2 = small wavelets, glassy crests, but no whitecaps; 3 = large wavelets, crest begin to break, few whitecaps, 4 = longer waves, many whitecaps; 5 = moderate waves of longer form, some spray, 6 = large wavelets, whitecaps everywhere, frequent spray; 7 = sea heaps up, white foam lows in streaks; 8 = long, high waves edges breaking, foam blows in streaks; 9 = high waves, sea begin to roil, dense foam steaks. Swell Height: Light = 0-tm: Moderate = 1-2m; Heavy = > 2m. Visibility; < 1 km; 1-6 km; 6-10 km; > 10 km. Boat Activity; TB = Tugboat; CLB = Cable Lay Barge Sighting Reference: Refer to number(s) on Sighting Record Form

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\tilde{C} Hong kong marine contractors limited dolphin observation recording form

Date: (dd/mm/yyy)	: 29/03/2007	Vessel Name:	CH3	Weather:	Fair
Observer's name:	Kenin C	han	0.89955		
Start Time:	10:30	End Time:	11:00	Total: Time:	0:30
Observer's Height	Above Sea Level (m)	17m Fie	ld of View 180 degree F	WD / 90 degree L / 90 degree R	

Time	Easting	Northing	Speed	Sea State	Swell Height	Visibility	Boat Activity	Sighting Ref.
10:30	813496	824(36	0-6 lend	2	L14	6-10 km	Cre	Net
10-45	313496	824136	0.0 (cast	2	44	6-10 km	CLB	Nil
11200	313496	824136	0.0 kmt	2	LIG	6-10 km	CLB	Nai
							V. U.S.S. SCOOLOGO 9400	
	1000							
	200000000000000000000000000000000000000	1			0 2001 000-01009	V.3:4		

DATA DEFINITIONS:

Time: 24ths clock. Location: Record Easting & Northing (HK80 GRID) Speed: Record in knots. Sea State: 0 = mirror calm; 1 = slight ripples, no foam crest; 2 = small wavelets, glassy crests, but no whitecaps; 3 = targe wavelets, crest begin to break, few whitecaps; 4 = longer waves, many whitecaps; 5 = moderate waves of longer form, some spray, 6 = large waves, whitecaps everywhere, frequent spray; 7 = sea heaps up, white foam lows in streaks; 8 = long, high waves edges breaking, foam blows in streaks; 9 = high waves, sea begin to roll, dense foam streaks. Swell Height: Light = 0-fm. Moderate = 1-2m; Heavy = > 2m. Visibility; < 1km; 1-5km; 6-10km; >10km. Boat Activity; TB = Tugboat; CLB = Cable Lay Barge Sighting Reference: Refer to number(s) on Sighting Record Form

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