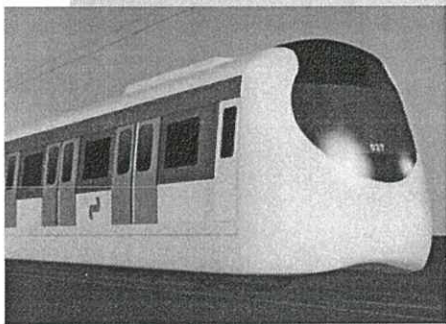
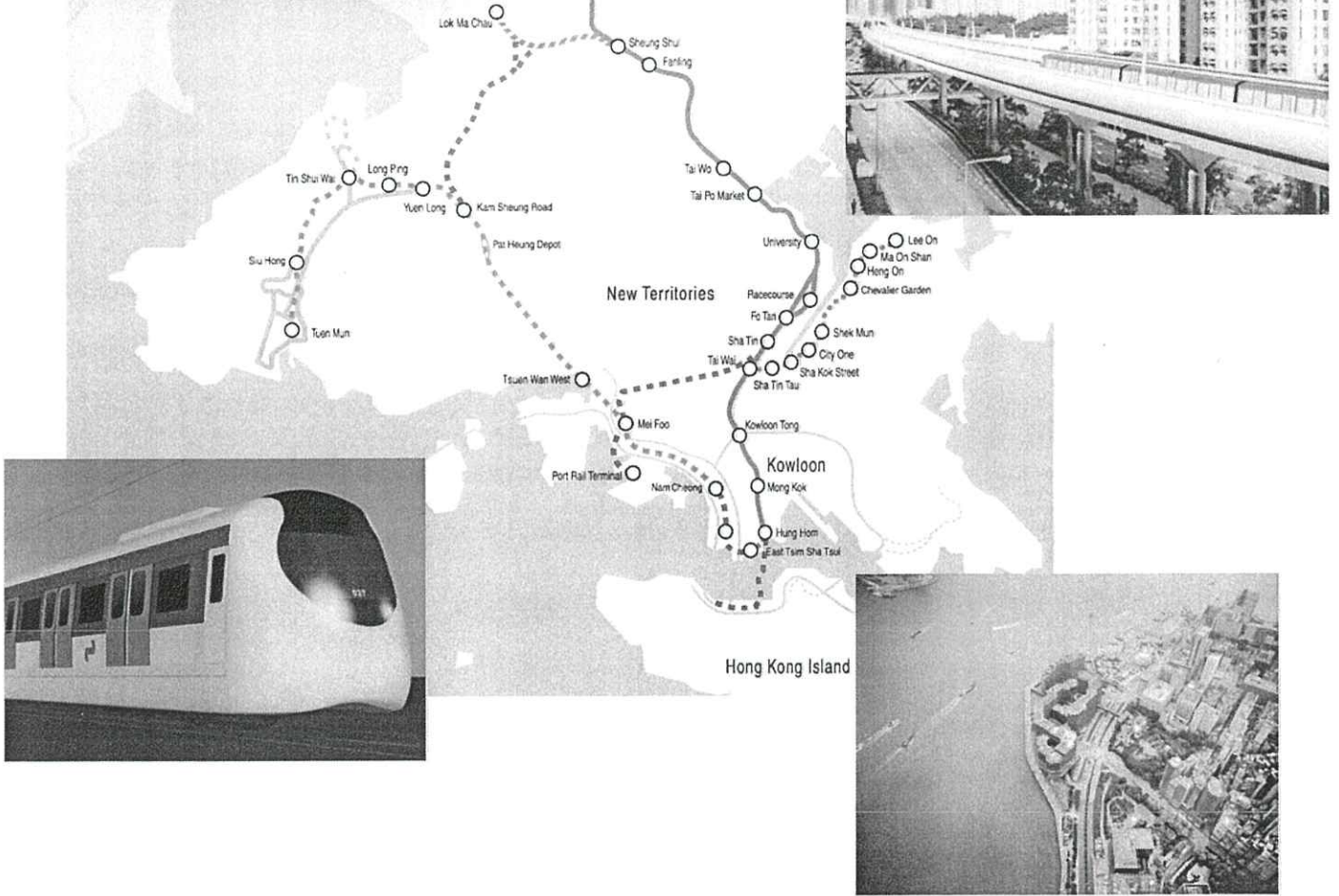


East Rail Extensions LCC-202 West Section Alignment and Associated Works Final EM&A Report August 2007

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Independent Environmental Checker



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East Rail Extensi

**KCRC EAST RAIL EXTENSIONS
SHEUNG SHUI TO LOK MA CHAU SPUR LINE**

**CONTRACT NO. LCC-202
WEST SECTION ALIGNMENT AND ASSOCIATED WORKS**

Final EM&A Summary Report

Quality Index

Date	Reference No.	Originator	Approved by
6 July 2007	01021928/FINAL	Daniel Sum (Environmental Team Leader)	Raymond Fong



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EXECUTIVE SUMMARY

In April 2002, Kowloon Canton Railway Corporation (KCRC) was granted an Environmental Permit (EP) to construct the East Rail Extension Sheung Shui to Lok Ma Chau Spur Line. Maeda Corporation (MAEDA) has been commissioned to undertake the construction of the West Section Alignment and Associated Works (the Project), which is one of the sections of the Spur Line. The construction of the Project commenced in March 2003 and was completed in May 2007. Environmental monitoring and audits (EM&A) were performed in accordance with the EM&A Manual. This final EM&A Summary Report, prepared by the Environmental Team (ET), summarizes the EM&A findings for the Project and concludes that the Project is not having any adverse environmental impact and that the EM&A program can be terminated as recommended in the EM&A Manual.

Summary of Construction Works During the Reporting Period

The construction works include the track viaducts from the abutment at the Chau Tau to the Lok Ma Chau Terminus; ramp up to the viaduct abutment; walkway, central plenum, parapets, cable containments, lighting and OHL masts along the trackway on viaduct and on the ramp sections; an Emergency Access point with facilities for train control and access to track for emergency services in the event of an incident during operation; diversion and modification of utility, drainage and sewerage services affected; landscaping works and other works and measures as specified in the Environmental Permit.

Air Quality

According to the EM&A Manual, TSP monitoring in terms of 1-hr and 24-hr was carried out during the entire construction period and occasional exceedances related to the Project were recorded. MAEDA has carried out remedial works for those justified exceedances. The environmental measurement results during the follow-up measurements were found to be within acceptable levels and the environmental performance of the Project has been improved.

Noise

According to the EM&A Manual, noise measurement (i.e. 0700 to 1900 hr Monday to Saturday exclude public holidays) in terms of $L_{Aeq(30min)}$ was carried out during the entire construction period and all measurement results were below the corresponding Limit Levels. One noise complaint was received during the reporting period which was considered as an Action Level exceedance and the details are shown in Appendix I of the Report. As no construction works were carried out during the restricted hours period, it is therefore no restricted hours noise monitoring was arranged.

Water

According to the EM&A Manual, water quality monitoring in terms of pH, Turbidity, Suspended Solid and Oil & Grease was carried out during the reporting period. Occasional exceedances in measurement were recorded yet they were all not related to the activities of the Project. As some of the sampling locations were occasionally found dry during the monitoring period, water samples could not be collected and analyzed. With the completion of the construction works adjacent to all water quality monitoring stations and the ponds were restored in July 2005, as there would be no further construction impact that would affect the water quality at the Project area, the routine environmental monitoring for assessing the construction impact was suspended.

Waste Management

Wastes including both inert and non-inert C&D wastes, excavated materials and general refuse were produced at the site during the reporting period and they were handled in accordance with the requirements as stipulated in the Waste Management Plan.

Implementation of Environmental Mitigation Measures

Site inspections conducted by the ET were carried out on a weekly basis during the construction phase to ensure compliance with relevant legislation and requirements. The site condition was generally satisfactory and all mitigation measures as recommended in the EM&A Manual were properly implemented.

Environmental Complaints / Prosecutions

Based on the records as maintained by the ET, a total of eight complaints and one prosecution were filed during the reporting period and their details are shown in the Appendix I and M of the Report respectively.

Concluding Remarks

Based on the EM&A findings, it is concluded that the Project is not having any adverse impact on the environment after the implementation of the recommended mitigation measures. In line with the EIA predictions, the Project has caused neither any adverse impact on air quality, noise, water and waste management issues. As such, the EM&A program for the Project shall be terminated as recommended in Section 12 of the project-wide EM&A Manual.

INTRODUCTION

1.1 Scope of the Report

This is the Final EM&A Summary Report for the KCRC East Rail Extensions ? Sheung Shui to Lok Ma Chau Spur Line (Spur Line) LCC-202 West Section Alignment and Associated Works (the Project). This report is prepared by the Environmental Management Division of Hong Kong Productivity Council (HKPC) for submission to Maeda Corporation (MAEDA).

This report summarizes the monitoring works from 25 March 2003 to 4 May 2007.

1.2 Structure of the Report

The structure of the report is as follows:

Section 1:	INTRODUCTION – details the scope and structure of the report.
Section 2:	PROJECT INFORMATION ? summarizes the background and scope of the project, project organization, construction programme and the construction works undertaken during the reporting period.
Section 3:	MONITORING & AUDIT REQUIREMENTS ? summarizes the monitoring programmes, 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 PROTECTION REQUIREMENTS ? summarizes the implementation of environmental protection measures during the reporting period.
Section 5:	ENVIRONMENTAL LICENCE AND PERMITTING REQUIREMENTS ? summarizes the environmental licences and permits obtained or being applied during the reporting period.
Section 6:	SUMMARY OF NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITES ? summarizes the monitoring results obtained in the reporting period.
Section 7:	DISCUSSION ? discuss the audit findings in the reporting period and comparison on the EM&A data with EIA predictions.
Section 8:	WASTE MANAGEMENT ? report on the waste management measures as implemented during the reporting period.
Section 9:	COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS DURING THE REPORTING PERIOD ? summarizes the complaints, notifications of summons and successful prosecutions recorded during the reporting period.
Section 10:	REVIEW ON THE EFFECTIVENESS OF THE MONITORING METHODOLOGIES, EIA PROCESS AND EM&A PROGRAMME
Section 11:	COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

2. PROJECT INFORMATION

2.1 Background

Maeda Corporation (MAEDA) has been commissioned by the Kowloon-Canton Railway Corporation (KCRC) to undertake the construction of the West Section Alignment and Associated Works, which is one of the sections of the East Rail Extension 咀? Sheung Shui to Lok Ma Chau Spur Line (Spur Line)

The date of the commencement of the construction works is 26 March 2003.

2.2 Site Description

The project area is located in rural environment, surrounded by low-density residential low-rises building.

The work site is shown on Appendix J.

2.3 Project Organization

Appendix K presents the organization structure of the Project, identifies key members of the Project Team with environmental responsibilities, and illustrates their lines of communication. The phone and fax numbers of contact persons at the EPD, KCRC, IEC, MAEDA and HKPC are documented in Appendix A.

2.4 Project Work Program

The construction works include the track viaducts from the abutment at the Chau Tau to the Lok Ma Chau Terminus; ramp up to the viaduct abutement; walkway, central plenum, parapets, cable containments, lighting and OHL masts along the track way on viaduct and on the ramp sections; an Emergency Access point with facilitates for train control and access to track for emergency services in the event of an incident during operation; diversion and modification of utility, drainage and sewerage services affected; landscaping works and other works and measures as specified in the Environmental Permit.

The work program for the whole Project is presented in Appendix B. The summary of the implementation of environmental mitigation measures at the site is reported in Section 4 of this Report.

3. ENVIRONMENTAL MONITORING & AUDIT

3.1 Environmental Monitoring & Audit

The monitoring of the environmental impact is carried out by the Contractor's Environmental Team (ET). The monitoring work includes air quality monitoring of 1-hr and 24-hr total suspended particulate (TSP) at one selected dust monitoring location, noise monitoring of $L_{Aeq(30min)}$ noise impact at one selected noise monitoring location and water monitoring of pH, Dissolved Oxygen, Turbidity, Suspended Solids and Oil and Grease at two water monitoring locations.

3.2 Air Quality

Monitoring Locations

According to Appendix J of the Particular Specification of East Rail Extensions Contract No. LCC-202, one Air Sensitive Receiver (ASR) has been identified as possible location for conducting the monitoring program. The location is shown in Appendix L and listed in Table 3.1 below.

**Table 3.1 - Air Sensitive Receiver Identified as Possible Location
for Air Quality Monitoring**

ASR No.	Station I. D.	Description	Measurement Condition
24	AM4	Village House, Ha Wan Tsuen, Lok Ma Chau	TSP sampler was set up at the podium which was about 1 m above ground

Wind data monitoring is carried out at conspicuous location for logging wind speed and wind direction near the dust monitoring location. Weather station has been established at the roof of the site office and the wind data monitoring began on 1 April 2003.

Monitoring Parameters and Frequency

The measurement conditions are in compliance under section 2 of the approved project-wide EM&A Manual.

Monitoring parameters for air quality monitoring includes 1-hr and 24-hr Total Suspended Particulates (TSP) at one monitoring location. On the other hand, wind monitoring (wind speed and wind direction) is carried out at conspicuous location for logging wind speed and wind direction near to the air quality monitor station.

During the baseline monitoring stage, 24-hr TSP monitoring is carried out daily for at least 14 consecutive days prior to the commissioning of the construction works. On the other hand, three sets of 1-hr TSP monitoring is carried out daily while the highest dust impact is expected. There should not be any construction or dust generation activities in the vicinity of the monitoring station.

During the impact monitoring stage, 24-hr TSP monitoring is carried out once every six days where construction works are carried out. On the other hand, three sets of 1-hr TSP monitoring is carried out once every six days where construction works are carried out. Wind data monitoring is monitored continuously.

Monitoring Methodology

24-hr TSP level is to be measured in accordance with the standard high volume sampling method as set out in Title 40 of the Code of Federal Regulations (40CFR), Chapter 1 (Part 50), Appendix B. This method involves the drawing of air at a controlled rate into a high volume sampler (HVS) fitted with a pre-conditioned and pre-weighted filter paper of size 8" x 10". After sampling for 24 hours, the filter paper with retained particles is to be folded in half lengthwise, placed in a labelled plastic bag and returned to the ET laboratory for drying in a desiccator before being weighed on an electronic balance with accuracy to 0.1 mg. Other information including the elapsed-timer meter reading for start and stop of the HVS, identification and weight of the filter paper is recorded on the field data record sheet. The 24-hr TSP levels are then calculated from the ratio of the mass of particles retained on the filter paper to the total volume of air sampled in accordance with the method as set out in Title 40 of the Code of Federal Regulations (40CFR), Chapter 1 (Part 50), Appendix B. All the collected samples are kept in good condition for 6 months before disposal. 24-hr TSP monitoring shall not be normally undertaken in heavy rainy weather.

1-hr TSP level is to be measured with a handheld real-time aerosol monitor. This meter uses optical sensors to analyze the incoming air stream, providing real time readout of particulate concentrations. 1-hr TSP monitoring shall not be normally undertaken in heavy rainy weather.

The wind sensors for wind speed and wind direction monitoring is installed at an elevated level 10 m above ground so that they are clear of obstructions or turbulence caused by the buildings. The wind data is captured by a data logger and to be downloaded for processing at least once per month.

Field information such as general meteorological conditions and any significant adjacent dust producing sources at each monitoring location are to be recorded during monitoring.

Monitoring Equipment

24-hr TSP level is to be measured with high volume samplers conforming to the requirements of 40CFR Part 50. For 1-hr TSP measurement, a handheld real-time aerosol monitor is to be used. Wind data in terms of wind speed and direction is to be measured using wind data monitor set up at conspicuous location which is to be agreed by ER. Details of the monitoring equipment are given in Table 3.2.

Table 3.2 - Air Quality Monitoring Equipment

Parameter	Equipment Model
24-hr TSP Measurement	GRASEBY GMWS-2310-105 High Volume Air Sampling System
1-hr TSP Measurement	DustTrak Aerosol Monitor
Wind data	Davis Weather Monitor II

Equipment Calibration

High volume samplers are to be calibrated with orifice calibrator. Five-point calibration is to be carried out on a bi-monthly basis or after changing of carbon brush. For the handheld real-time aerosol monitor, span check is to be conducted on a monthly basis. The electronic balance used for the weighing of filter paper is to be calibrated regularly with a traceable weight standard. The wind data monitoring equipment is re-calibrated once every six months. The methods of calibration of the said equipment are referred to the instruction manuals provided by the manufacturers respectively.

3.3 Noise

Monitoring Locations

According to Appendix J of the Particular Specification of East Rail Extensions Contract No. LCC-202, one Noise Sensitive Receiver (NSR) had been identified as possible location for conducting noise monitoring for baseline purpose and for the construction phase. The location is listed in Table 3.3 below and is also depicted in Appendix L.

Table 3.3 - Noise Monitoring Locations

Monitoring Location	Monitoring Parameters	Description	Frequency	Measurement Condition
NM15	$L_{Aeq(30 \text{ min})}$ in terms of six consecutive sets of $L_{Aeq(5 \text{ min})}$	Village House, Ha Wan Tsuen, Lok Ma Chau	Once every six days during the monitoring period	Facade measurement facing South West

Monitoring Parameters and Frequency

The measurement conditions were in compliance under section 3 of the approved project-wide EM&A Manual.

Baseline noise levels should be measured prior to the construction of the Porject. $L_{Aeq(30 \text{ min})}$ measurement for hours between 0700 ? 1900 hours, and $L_{Aeq(15 \text{ min})}$ measurement, between 1900 ? 0700 hours shall be taken over seven consecutive calendar days. The survey period should be selected prior to the commencement of construction activites in order to avoid other atypical noise sources.

Impact monitoring shall be carried out at the designated monitoring station during construction phase of the project. The regular monitoring frequency of each station on a basis of once every week when noise generating activities are underway is as follows:

- One set of $L_{Aeq(30 \text{ min})}$ as six consecutive $L_{Aeq(5 \text{ min})}$ between 0700 ? 1900 hours on normal weekdays;

On the other hand, the statistical results such as the L10 and L90 shall be obtained for reference.

Monitoring Methodology

Noise measurement is carried out at the assessment point located at about 1 m from the exterior of the building facade. Field information such as general meteorological conditions and any dominant noise sources at each monitoring location are to be recorded during monitoring. Wind speed measurements are to be taken with a portable wind speed meter during monitoring. Noise measurement is not to be conducted under a steady wind exceeding 5 m/s or gust exceeding 10 m/s. Noise monitoring is not conducted in the presence of fog and rain as well.

Monitoring Equipment

Sound level meters (SLMs) are to comply with specifications of the International Electrical Commission Publication 651:1979 (Type 1) and 804:1995 (Type 1). Wind shield is to be fitted on the monitor during use. Details of the monitoring equipment used for noise monitoring are summarized in Table 3.4:

Table 3.4 - Noise Monitoring Equipment

Equipment Function	Equipment Model Used
Noise Level Measurement	RION Precision Integrating Sound Level Meter NL-14
Calibration of Sound Level Meter	B&K 4231 Sound Level Calibrator

Equipment Calibration

Before and after each measurement, the reading of SLM is to be checked with the acoustic calibrator and the measurements can only be accepted as valid if the calibration levels from before and after the noise measurement agree to within 1.0 dB. Also, calibrations of the SLM and acoustic calibrator are to be carried out annually.

3.4 Water

Monitoring Locations

Two locations are designated to be as possible locations for conducting water monitoring for the construction phase during the reporting period. The locations are listed in Table 3.5 below and are also depicted in Appendix L.

Table 3.5 - Water Monitoring Locations

Location Code	Description	Grid Co-ordinates	
		Easting	Northing
FP1	Selected fishponds to be monitored when works is close to this area. These locations will be modified depending on the works location.	841034	825876
FP2		841376	825784

Monitoring Parameters and Frequency

The measurement conditions are in compliance under section 4 of the approved project-wide EM&A Manual. Baseline monitoring requirements are summarized in Table 3.6 below

Table 3.6 - Monitoring Requirement of Water During Baseline Stage

Monitoring Stations	Parameter, unit	Monitoring Stations	Frequency	No. of Tide
STR1 & USTR	DO/pH/Temperature/Turbidity/SS/Oil & Grease	STR1 & USTR	Three times per week for four weeks	2 Mid-ebb & Mid-flood
FP1, FP2 & FP3		FP1, FP2 & FP3	Once per week for four weeks	Twice per monitoring day

During the course of the construction works, monitoring was undertaken according to the parameters, frequencies, and duration described in Table 3.7. The interval between two sets of monitoring shall not be less than 36 hours except where there are exceedances of AL levels, in which case the monitoring frequency would be increased.

Table 3.7 - Water Quality Monitoring Locations, Parameter, Frequency and Duration for Impact

Parameter	Locations	Impact Monitoring Frequency
DO/pH/Temperature/Turbidity	STR1, USTR, FP1, FP2, FP3	Twice a week in-situ monitoring
SS		Weekly
Oil & Grease		Biweekly

Monitoring Methodology

Monitoring methodology and laboratory analysis for water quality are in compliance with the requirements as stipulated in Section 4 of the project wide EM&A Manual. Water samples for all monitoring parameters are collected, stored, preserved and analysis according to the Standard Methods, APHA 17 ed. and/or methods agreed by the Director of Environmental Protection. In-situ measurements at monitoring locations including DO, turbidity, salinity and water depth shall be collected using equipment with the characteristics and functions listed in the following sections.

The testing methodology of the water quality is shown in Table 3.8.

Table 3.8 - Testing Methodology for Water Quality

Description	Method Reference	HOKLAS Accredited	Limit of Reporting
Suspended Solids	APHA 17ed 2540 D	Y	1.0 mg/L
Oil & Grease	APHA 20ed 5520 B	Y	10 mg/L

Monitoring Equipment

Details of the monitoring equipment deployed during impact monitoring are given in Table 3.9.

Table 3.9 - Water Monitoring Equipment

Equipment Function	Equipment
Dissolved Oxygen and Temperature Measurement	YSI 58 or 59 Dissolved Oxygen Meter
Turbidity Measurement	HACH 2100P Turbidity Meter
Water Sampling	Sampling container at the end of a pole
Water Depth Measurement	Eagle Echo Sounder
Salinity Measurement	YSI 30 Salinity Meter

Note:

1. *The monitoring equipment for water quality monitoring are in compliance with the equipment specification as shown in Section 4 of the project wide EM&A Manual.*

Equipment Calibration

Equipment calibration requirements for water quality monitoring are in accordance with Section 4 of the project wide EM&A Manual. All in-situ monitoring instrument shall be checked, calibrated and certified by Environmental Management Laboratory before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes shall be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

3.5 Action and Limit Levels

Action and Limit levels of Air Quality

Baseline measurement of 1-hr. and 24-hr. TSP at one monitoring location were conducted in July 2002. According to Section 2.7 of the project-wide EM&A Manual (prepared by Black & Veatch Hong Kong Limited dated February 2002), the Action/Limit Levels for the monitoring location were established with the baseline results. The Action/Limit Levels of 1-hr. and 24-hr. TSP is shown in Table 3.9.

Table 3.9 - 24-hr. and 1-hr. TSP Action and Limit Levels

Level (ug/m ³)	AM4
24-hr. TSP Action Level	173
24-hr. TSP Limit Level	260
1-hr. TSP Action Level	350
1-hr. TSP Limit Level	500

Note:

1. *The detailed monitoring results are referred to the Baseline Monitoring Report (Final) prepared by Black & Veatch Hong Kong Limited*
2. *Values presented in brackets are the range of the measurement results*

Action and Limit Levels of Noise

The Action/Limit Levels for construction noise as stipulated in the EM&A Manual are given in Table 3.10.

Table 3.10 - Noise Action and Limit Levels

Time Period	Action Level	Limit Level
0700 - 1900 hours on weekdays	When one documented complaint is received	75 dB(A)

Action and Limit Levels of Water

The Action/Limit Levels for water as stipulated in the EM&A Manual are given in Table 3.11.

Table 3.11 - Water Action and Limit Levels

Parameter, Unit		STR1	USTR	FP1	FP2	FP3
DO, mg/l	Action	1.50	1.41	0.75	4.63	3.52
	Limit	1.11	0.88	0.72	4.43	3.28
Turbidity, NTU	Action	121.0	100.3	139.9	76.5	215.7
		And 120% of upstream control station 摺Tby at the same tide of the same day				
	Limit	139.0	121.3	144.1	80.6	231.9
		And 130% of upstream control station 摺Tby at the same tide of the same day				
pH	Action	<7.0 or >8.7	<6.8 or >9.5	<6.2 or >6.9	<7.8 or >9.0	<6.2 or >7.1
	Limit	<6 or >10	<6 or >10	<6 or >10	<6 or >10	<6 or >10
Total Suspended Solids, mg/l	Action	464.5	149.0	233.0	83.1	297.5
		And 120% of control station 摺TSS at the same tide of the same day				
	Limit	556.9	157.8	238.6	93.4	339.5
		And 130% of control station 摺TSS at the same tide of the same day				

Note:

1. *The Action and Limit Levels quoted above are based on the Final Baseline Monitoring Report Rev. 0 issued in August 2002 which is subject to the final approval from EPD.*

3.6 Event/Action Plan

The Event/Action Plan for Air Quality, Noise and Water are shown in Appendix C.

4. IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor implemented various environmental mitigation measures as stipulated in the EIA Report and the environmental requirements as stipulated in the Environmental Permit and Environmental Management Plan. For mosquito control, weekly inspection and follow-up surveillance have been carried out in order to combat the mosquito larvae breeding at construction sites and to ensure the mosquito breeding control measures were carried out properly. Besides, co-ordination group meeting for combating mosquito breeding at the entire construction sites of Spur Line projects was held regularly in order to enhance the communication and to improve the overall performance of the mosquito control measures.

The implementation status during the reporting period is summarized in Appendix D.

In case of identification of non-conformance during the implementation of environmental mitigation measures, remedial measures will be summarized in the Corrective and Preventive Action Request (CPAR) form issued by the QA/QC & Environmental Engineer. The cumulative log of the CPAR is summarized in the CPAR Logbook as shown in Appendix I of the Report.

5. ENVIRONMENTAL LICENCING AND PERMITTING REQUIREMENTS

The status of permit, licence and notification to EPD for all relevant environmental issues in this project is summarized in Table 5.1 as of the project period.

**Table 5.1 ? Summary of the status of permit, licence and notification to EPD
 as of the Project Period**

Description	Submission Date	Issued Date	Expiry Date
Further Environmental Permit (FEP) (FEP No. FEP-04/129/2002)	Dec-02	24-Jan-03	--
Effluent Discharge Licence (Works Area)	19-Feb-03	14-May-03	31-May-08
Effluent Discharge Licence (Office Area)	18-Feb-03	27-May-03	31-May-08
Notification of Construction Work under APCO	10-Jan-03	--	--
Registration as Chemical Waste Producer pursuant to WDO	6-Feb-03	5-Mar-03	--
Supplementary Contamination Assessment Plan (Rev. E)	5-Sep-03	--	--
Waste Management Plan (Rev 4)	10-Jun-03	--	--
Drainage Layout and Management Plan (Rev 1)	30-Jun-03	--	--

6. SUMMARY OF NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

The 1-hr and 24-hr. TSP measurement results of the air monitoring location AM4 are presented graphically in Appendix E. Noise measurement results of $L_{Aeq(30min)}$ for NM15 are presented graphically in Appendix F. Water quality measurement results are presented in Appendix G.

Table 6.1 summarizes the number of air quality and noise measurements and the associated non-compliance.

Table 6.1 - Summary of Exceedances for Air Quality, Noise and Water Monitoring during the Project Period

Parameters	No. of Action Level Exceedance	No. of Limit Level Exceedance
1-hr TSP	9	0
24-hr TSP	6	0
Noise (daytime)	1	0
Dissolved Oxygen	1	4
Turbidity	7	47
pH	130	13
Suspended Solid	2	21

Note:

1. As some of the water sampling locations were occasionally found dry during the monitoring period, water samples could not be collected and analyzed.
2. The Action and Limit Levels of the monitoring parameters for the individual monitoring locations are shown in Table 3.9, 3.10 and 3.11 of the Report.
3. One noise complaint was received during the reporting period and this was considered to be an Action Level exceedance for noise monitoring. The details of the noise complaint is shown in Appendix I of the Report.

7. DISCUSSION

7.1 Air Quality

For both 1-hr. and 24-hr. TSP monitoring, occasional exceedances were recorded during the reporting period. Based on the investigation by the Environmental Team, some of the elevated measurement results were associated the inclement weather and other activities while the rest were related with the Project. In all justified exceedances, the working procedures were reviewed and remedial measures were carried out by MAEDA. It was found that the follow-up measurement results were found to be at acceptable levels and the overall environmental performance has been improved.

7.2 Noise

For Daytime noise measurement (i.e. 0700 to 1900 hr Monday to Saturday exclude public holidays) in terms of LAeq(30min), all measurement results during the reporting period were below the corresponding Limit Levels. On the other hand, one noise complaint was received during the reporting period and this was considered to be an Action Level exceedance for noise monitoring. The details of the noise complaint is shown in Appendix I of the Report.

7.3 Water Quality

For water quality in terms of Dissolved Oxygen, pH, Turbidity and Suspended Solids, occasional exceedances were recorded during the reporting period. Based on the investigation by the Environmental Team by reviewing the working methodologies, implementation of environmental mitigation measures and other potential influencing factors, those elevated measurement results were not related to the Project activities and therefore they were justified.

7.4 Comparison on the EM&A Data with EIA Predictions

By comparing the EM&A data with the EIA predictions, it can be found that the environmental acceptability during the construction operation of the Project could be achieved with the proper implementation of the environmental mitigation measures as stipulated in the EIA Report.

8. WASTE MANAGEMENT

Wastes from this Project include construction and demolition (C&D) waste, excavated materials, chemical waste, asbestos waste, contaminated materials and general refuse. The EIA Study has determined that with appropriate mitigation measures, impact from wastes would not become unacceptable. The waste management issue covers the handling of C&D waste, excavated materials, chemical waste, asbestos waste, contaminated materials and general refuse.

Based on the information provided by MAEDA according to the relevant handling records for the Waste Management Plan of this project, the quantity and handling practices of different categories of waste are summarized in Table 8.1.

Table 8.1 - Summary of Different Categories of Waste during the Reporting Period

Material Type	Quantity Produced in Reporting Period	Handling Practices	Handling Quantities as of Reporting Period	Accumulated handling Quantities as of end of Reporting Period	Storage Locations (if applicable)	Storage Quantity as of Reporting Period
Excavated materials	0 m ³	To be delivered to public filling barging point for the government approved public filling barging point (Kai Tak)	Nil	9670 m ³	n.a.	0 m ³
		To be delivered to the government approved public fill bank (Tuen Mun Area 38)	0 m ³	15276 m ³	W36-38 W51-53 P3	0 m ³
		To be reused at the site for filling	0 m ³	3,950 m ³	W39-42	0 m ³
		To be delivered and reused by DSD 招 contract No. DC/2001/09	0 m ³	19254 m ³	W30-35	0 m ³
		To be delivered and reused by CEDD 招 contract No. YL 53/02	0 m ³	9211 m ³	W39-42	0 m ³
		To be delivered and reused by CEDD 招 contract No. ST 77/01	0 m ³	1,014 m ³	W39-42	0 m ³
		To be delivered and reused by CEDD 招 contract No. YL/57/04	0 m ³	3476 m ³	W39-42	0 m ³
C&D Waste (inert waste)	0 m ³	To be delivered to the government approved public fill bank (Tuen Mun Area 38)	0 m ³	902.9 m ³	n.a.	0 m ³
		To be recycled at site	0 m ³	0 m ³	n.a.	0 m ³
C&D Waste (non inert waste)	0 ton	To be delivered at landfill site (NENT)	Nil	392.13 ton	n.a.	0 ton
		To be recycled at site	0 m ³	0 m ³	n.a.	0 m ³
		Collected by licenced collector for disposal	4 ton	267.00 ton	0 ton	0 ton
Chemical Waste	0 L	To be collected by licenced waste collector for disposal	0 L	4,600 L	n.a.	0 m ³
Asbestos Waste	0 m ³	n.a.	0 m ³	0 m ³	n.a.	0 m ³
Contaminated materials	0 m ³	n.a.	0 m ³	0 m ³	n.a.	0 m ³
General Refuse	5.3 m ³	Collected by licenced collector for disposal	5.3 m ³	3052.42 m ³	Site office, P3 and EAP-7	0 m ³

Note:

1. *No asbestos waste and contaminated materials were identified at the site during the reporting period and therefore no specific handling practices for the said wastes were carried out.*
2. *The transportation of the C&D waste, excavated materials, chemical waste and general waste would be arranged by trucks.*

9. COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS DURING THE REPORTING PERIOD

The Complaint log book, Corrective and Preventive Action Request log book is shown in Appendix I.

The cumulative statistics on the notification of summons and successful prosecutions are shown in Appendix M.

10. REVIEW ON THE EFFECTIVENESS OF THE MONITORING METHODOLOGIES, EIA PROCESS AND EM&A PROGRAMME

Based on the experienced as gained during the implementation of EM&A programme of this Project, the setting up of the EM&A programme during the Project construction phase could help to ensure the environmental performance of the Project complies with the Environmental Permit conditions, EIA study recommendations, relevant environmental protection, and pollution prevention and control legislation. The EM&A programme is useful for assessing the effectiveness of the implementation of the recommended environmental impact mitigation measures and to identify the need for any additional mitigation measures or remedial action. The monitoring methodologies as deployed in this EM&A Programme is systematic and effective for the assessment of performance of the mitigation measures.

11. COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

Based on the EM&A findings, it is concluded that the Project is not having any adverse impact on the environment after the implementation of the recommended mitigation measures. In line with the EIA predictions, the Project has caused neither any adverse impact on air quality, noise, water and waste management issues. As such, the EM&A program for the Project shall be terminated as recommended in Section 12 of the project-wide EM&A Manual.

Appendix A

Contact Details of the Project Organization

Information on Key Contact Persons for LCC-202
Key Project Team Members

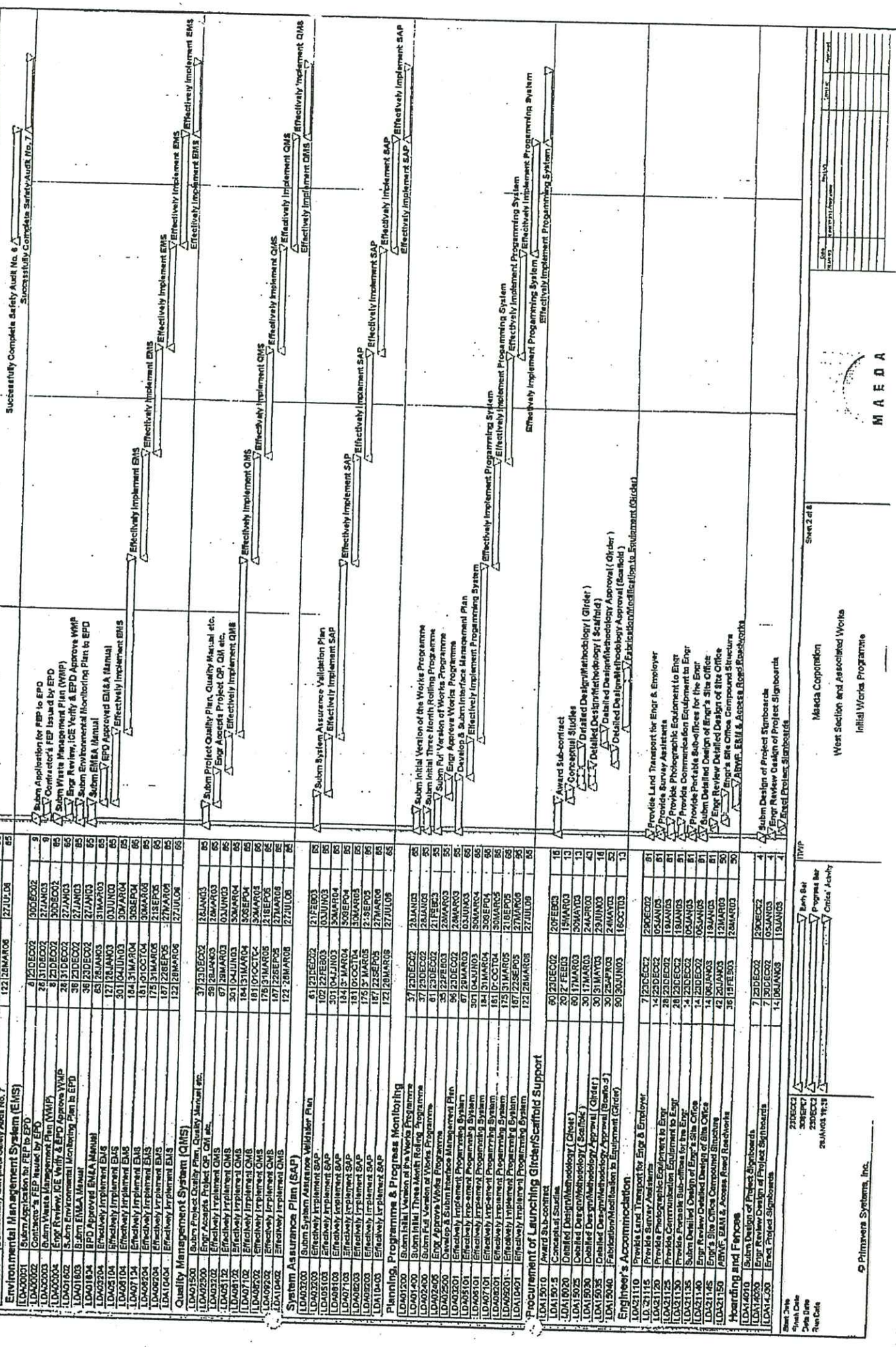
Organization	Role or Scope of Work	Key Staff	Name	Phone Number	Fax Number
Environmental Protection Department	Government Authority	Environmental Protection Officer	Mr. Alex Tang	2835 1114	2591 0558
		Environmental Protection Officer	Mr. John Chung	2411 9608	2413 3358
Kowloon-Canton Railway Corporation	Employer	Environmental Manager	Mr. Richard Kwan	2684 8382	2601 5287
		Senior Environmental Specialist	Mr. Clarence Tze	2684 8410	2601 5287
Black & Veatch Hong Kong Limited	Engineer's Representative	Senior Resident Engineer	Mr. C. Y. Hung	3193 7128	2482 0747
		Resident Engineer	Mr. Bill Douglas	3193 7114	2482 0747
Hyder Consulting Ltd.	Independent Environmental Checker	Associate Director	Dr. Guiyi Li	2911 2731	2827 2891
Maeda Corporation	Main Contractor	Contractor's Representative	Mr. D. Matsuki	2482 7600	2482 7601
		Project Manager	Mr. John Adams	2482 7600	2482 7601
		Project Coordinator	Steve McMillan	2482 7600	2482 7601
Hong Kong Productivity Council	Environmental Services – Consulting, Documents Preparation, Permits/Licenses Application, Environmental Monitoring and Audit	Environmental Team Leader	Mr. Daniel Sum	2788 6240	2788 5608

Appendix B

Work Program

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	2004	2005	2006
Safety Management System								
LD406700	Successful Complete Safety Audit No. 6	187	23SEP05	27MAR06	65			
LD416500	Successful Complete Safety Audit No. 7	122	26MAR06	27JUL06	65			
Environmental Management System (EMS)								
LD400001	Submit Application for FEP to EPD	4	12DEC02	30DEC02	9			
LD400002	Contractor's FEP Issued by EPD	8	13DEC02	21JAN03	9			
LD400003	Submit Waste Management Plan (WMP)	8	23DEC02	30DEC02	9			
LD400004	Eng Review ICE Verify & EPD Approves WMP	28	31DEC02	27JAN03	65			
LD401802	Submit Environmental Monitoring Plan to EPD	38	23DEC02	27JAN03	65			
LD401803	Submit EMEA Manual	36	23DEC02	27JAN03	65			
LD401804	EPD Approved EMEA Manual	63	26JAN03	31MAR03	65			
LD403204	Effectively Implement EMS	127	24JUN03	03JUN04	65			
LD405104	Effectively Implement EMS	301	04JUN03	30MAR04	65			
LD408104	Effectively Implement EMS	184	31MAR04	20SEP04	65			
LD407124	Effectively Implement EMS	181	01OCT04	30MAR05	65			
LD408204	Effectively Implement EMS	176	31MAR05	31SEP05	65			
LD409204	Effectively Implement EMS	187	22SEP05	27MAR06	65			
LD410404	Effectively Implement EMS	122	26MAR06	27JUL06	65			
Quality Management System (QMS)								
LD401500	Submit Project Quality Plan, Quality Manual etc.	37	23DEC02	26JAN03	65			
LD402500	Eng Access Project OP, QR etc.	59	26JAN03	26MAR03	65			
LD403702	Effectively Implement QMS	67	26MAR03	03JUN03	65			
LD405102	Effectively Implement QMS	301	04JUN03	30MAR04	65			
LD407102	Effectively Implement QMS	184	31MAR04	20SEP04	65			
LD408102	Effectively Implement QMS	181	01OCT04	30MAR05	65			
LD409202	Effectively Implement QMS	176	31MAR05	31SEP05	65			
LD410402	Effectively Implement QMS	122	26MAR06	27JUL06	65			
System Assurance Plan (SAP)								
LD400300	Submit System Assurance Validation Plan	61	23DEC02	03JUN03	65			
LD401400	Submit Initial Three Month Rolling Programme	102	22FEB03	23JAN03	65			
LD402400	Submit Full Version of Works Programme	37	23DEC02	26JAN03	65			
LD403400	Eng Approve Works Programme	61	23DEC02	21FEB03	65			
LD404201	Develop & Submit Interface Management Plan	30	23DEC02	26MAR03	65			
LD405101	Effectively Implement Programme System	97	23DEC02	26MAR03	65			
LD406101	Effectively Implement Programme System	301	04JUN03	03JUN03	65			
LD407101	Effectively Implement Programme System	184	31MAR04	20SEP04	65			
LD408201	Effectively Implement Programme System	181	01OCT04	30MAR05	65			
LD409201	Effectively Implement Programme System	176	31MAR05	31SEP05	65			
LD410401	Effectively Implement Programme System	122	26MAR06	27JUL06	65			
Procurement of Launching Girders/Scaffold Support								
LD415010	Award sub-contract	60	23DEC02	20FEB03	16			
LD416020	Conceptual Studies	20	FEB03	19MAR03	13			
LD417020	Detailed Design/Methodology (Girder)	60	17MAR03	30MAY03	13			
LD418020	Detailed Design/Methodology (Scaffold)	30	17MAR03	24APR03	43			
LD419020	Detailed Design/Methodology Approval (Girder)	30	31MAY03	24MAY03	16			
LD420020	Detailed Design/Methodology Approval (Scaffold)	30	25APR03	24MAY03	52			
Engineer's Accommodation								
LD421100	Provide Land Transport for Eng & Employer	7	23DEC02	20FEB03	61			
LD422100	Provide Photographic Equipment to Eng	4	23DEC02	05JAN03	61			
LD423100	Provide Communication Equipment to Eng	28	23DEC02	18JAN03	61			
LD424100	Provide Portable Sub-offices for Eng	20	23DEC02	05JAN03	61			
LD425100	Submit Detailed Design of Eng's Site Office	14	23DEC02	05JAN03	61			
LD426100	Eng Review Detailed Design of Site Office	14	06JAN03	19JAN03	61			
LD427100	Eng's Site Office Commenced Sitework	42	26JAN03	12MAR03	50			
LD428100	Provide EAM & Access Road Sitework	36	19FEB03	26MAR03	30			
Hoarding and Fences								
LD430010	Submit Design of Project Signboards	7	20DEC02	29DEC02	4			
LD431010	Eng Review Design of Project Signboards	7	30DEC02	05JAN03	4			
LD432010	Engest Project Signboards	14	06JAN03	19JAN03	4			

Activity ID: LD406700, LD416500, LD400001, LD400002, LD400003, LD400004, LD401802, LD401803, LD401804, LD403204, LD405104, LD408104, LD407124, LD408204, LD409204, LD410404, LD400300, LD401400, LD402400, LD403400, LD404201, LD405101, LD406101, LD407101, LD408201, LD409201, LD410401, LD415010, LD416020, LD417020, LD418020, LD419020, LD420020, LD421100, LD422100, LD423100, LD424100, LD425100, LD426100, LD427100, LD428100, LD430010, LD431010, LD432010



Successful Complete Safety Audit No. 6
Successful Complete Safety Audit No. 7

Submit Application for FEP to EPD
Contractor's FEP Issued by EPD
Submit Waste Management Plan (WMP)
Eng Review ICE Verify & EPD Approves WMP
Submit Environmental Monitoring Plan to EPD
Submit EMEA Manual
EPD Approved EMEA Manual
Effectively Implement EMS

Submit Project Quality Plan, Quality Manual etc.
Eng Access Project OP, QR etc.
Effectively Implement QMS

Submit System Assurance Validation Plan
Effectively Implement SAP

Submit Initial Version of the Works Programme
Submit Full Version of Works Programme
Eng Approve Works Programme
Develop & Submit Interface Management Plan
Effectively Implement Programme System

Award sub-contract
Conceptual Studies
Detailed Design/Methodology (Girder)
Detailed Design/Methodology (Scaffold)
Detailed Design/Methodology Approval (Girder)
Detailed Design/Methodology Approval (Scaffold)
Fabrication/Modification to Equipment (Girder)

Provide Land Transport for Eng & Employer
Provide Photographic Equipment to Eng
Provide Communication Equipment to Eng
Provide Portable Sub-offices for Eng
Submit Detailed Design of Eng's Site Office
Eng Review Detailed Design of Site Office
Eng's Site Office Commenced Sitework
Provide EAM & Access Road Sitework

Submit Design of Project Signboards
Eng Review Design of Project Signboards
Engest Project Signboards

Activity ID	Activity Description	Orig Dur	Early Start		Early Finish		Total reqd
			Start	Finish	Start	Finish	
Hoarding and Fences							
LDA1404	Finalize Hoarding/Fences Details with Bgr	6	25DEC02	07JAN03	0		
LDA1405	Hoarding/Fences within Areas A1&1a&2&1	4	01JAN03	23JAN03	3		
LDA1406	Hoarding/Fences within Area A2	56	19MAR03	30MAY03	37		
LDA1408	Hoarding within Area P1	14	21MAY03	05JUL03	3		
Payment Milestones							
LDA3401	Milestone A1 Achieved	0		28JAN03	65		
LDA3402	Milestone A2 Achieved	0		28MAR03	65		
LDA3403	Milestone A3 Achieved	0		05JUN03	65		
LDA3404	Milestone A4 Achieved	0		31OCT03	1,450		
LDA3405	Milestone A5 Achieved	0		30MAR04	65		
LDA3406	Milestone A6 Achieved	0		30SEP04	65		
LDA3407	Milestone A7 Achieved	0		30MAY05	65		
LDA3408	Milestone A8 Achieved	0		27MAR06	65		
LDA3409	Milestone A9 Achieved	0		27AUG06	65		
LDA3410	Milestone A10 Achieved	0		30SEP06	65		
LDA3411	Milestone A11 Achieved	0		30SEP06	65		
Instrumentation & Reporting							
LDA11200	Propose Instrumentation Subcontractor	30	23DEC02	21JAN03	1		
LDA11210	Submit MS & Details of Instruments	30	23DEC02	21JAN03	1		
LDA11215	Engg Review/Approve MS & Details of Instruments	26	22JAN03	18FEB03	1		
LDA11220	Final Instrumentation & Subm Reports & Database	130	18FEB03	28JUL03	1		
LDA11225	Continue Monitoring & Subm Reports	1,126	28JUL03	28SEP05	1		
Payment Milestones							
LDA3501-1	B1-1 Control Ground Instrumentation Installn	C		26JUL03	1,522		
LDA3501-2	B1-2 Subm Reports & Database for Instrumentation	C		26JUL03	1,325		
LDA3502	B1-3 Control All Works for Cost Centre B	0		30SEP04	1,325		
Ground Investigation							
LDC21010	Pre-boring for H-piles P47 to P49	26	08JUN03	20JUL03	C		
LDC21015	Pre-boring for H-piles P51 to P49	19	11JUL03	28JUL03	C		
LDC21020	Pre-boring for H-piles P48 to P49	85	28JUL03	07NOV03	C		
LDC21025	Pre-boring for H-piles P44 to P41	78	08NOV03	13FEB04	C		
Piling							
LDC22010	H-piling Pile P57 to P52	42	11JUL03	28AUG03	0		
LDC22016	H-piling Pile P51 to P24	166	28AUG03	19MAR04	0		
LDC22020	H-piling Pile P24 to P1	133	20MAR04	30AUG04	0		
Payment Milestones							
LDA3601	C1-Control 15% of Pre-drilling for Piling in Area P3	0		28JUL03	1,322		
LDA3602	C2-Control 50% of Piling Works	0		18FEB04	1,322		
LDA3603	C3-Control 100% of Piling Works	0		30AUG04	1,126		
LDA3604	C4-Control All Works for Cost Centre C	0		30SEP04	1,126		
Site Clearances							
LDA01240	Site Clearance in Area P3	14	28MAY03	10JUN03	C		
Ramp Structure							
LDA01210	Pile Cap Ground Beam at CH35-202	52	29AUG03	31OCT03	0		
LDA01215	Pile Cap Ground Beam at CH35-202 & CH35-284	148	01NOV03	30APR04	0		
LDA01220	Pile Cap Ground Beam CH35-284 to Pier W24	133	03MAY04	09OCT04	0		
LDA01210	Ramp Walls & Top Slab from CH35-202 to CH35-284	136	14AUG04	30JUN04	0		
LDA01215	Ramp Walls & Top Slab from CH35-202 to CH35-284	118	02AUG04	30MAY04	0		
Pre-Installed Works							
LDA01310	Shimmed OHL Mast CH35-202 to CH35-284	125	02JUL04	22NOV04	3		
LDA01315	Shimmed OHL Mast CH35-284 to Pier W24	30	10SEP04	28DEC04	0		
LDA01320	Cable Support/ Facilities CH35-202 to CH35-284	63	23NOV04	10FEB05	0		
LDA01325	Cable Support/ Facilities CH35-284 to Pier W24	48	12DEC04	22FEB05	0		
LDA01340	Clear, Clean Ramp & Provide Access	18	07FEB05	01MAY05	0		
Post-Installed Works							
LDA01330	Provide Access to Pile Cap Cofferdam	240	02MAY05	27OCT05	0		
LDA01335	Remove Wall & Fencing for the Ramp	90	28OCT05	17FEB06	0		
LDA01320	Complete All Works for the Ramp	37	18FEB06	28APR06	0		
Chainage Works							
LDA01310	Drainage Channel/Pipework along Ramp	140	29DEC04	21JUN05	35		
LDA01315	Metall Fence @ Ramp	75	18FEB06	22MAY06	6		
Payment Milestones							
LDA3501	D1-Control Pilecap & Ground Beam at CH35-202	0		13OCT03	1,452		
LDA3502	D2-Comp-50% of Wall & Top Slab of the Ramp	0		30AUG04	1,126		

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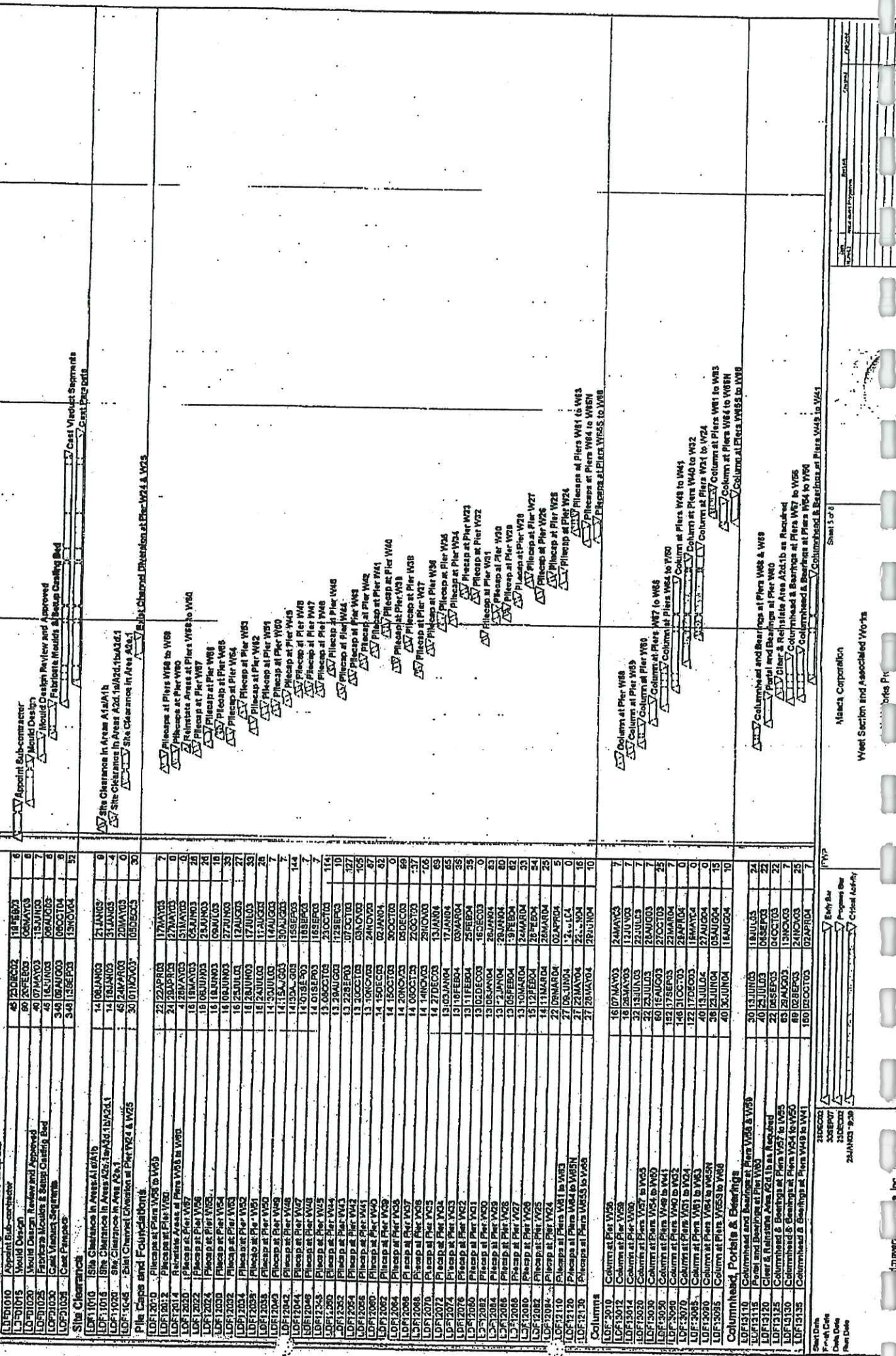
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 Milestones A6 Achieved
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 Milestones A4 Achieved
 Milestones A3 Achieved
 Milestones A2 Achieved
 Milestones A1 Achieved

B1-1 Control Ground Instrumentation Installation
 B1-2 Subm Reports & Database for Instrumentation
 B1-3 Control All Works for Cost Centre B
 B2-Comp All Works for Cost Centre B
 C1-Control 15% of Pre-drilling for Piling in Area P3
 C2-Control 50% of Piling Works
 C3-Control 100% of Piling Works
 C4-Control All Works for Cost Centre C
 D1-Control Pilecap & Ground Beam at CH35-202
 D2-Comp 50% of Wall & Top Slab of the Ramp
 D3-Comp All Works for the Ramp
 D4-Comp All Works for Cost Centre C
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 D97-Comp All Works for the Ramp
 D98-Comp All Works for the Ramp
 D99-Comp All Works for the Ramp
 D100-Comp All Works for the Ramp

Provide Instrumentation Subcontractor
 Submit MS & Details of Instruments
 Engg Review/Approve MS & Details of Instruments
 Final Instrumentation & Subm Reports & Database
 Pre-boring for H-piles P47 to P49
 Pre-boring for H-piles P51 to P49
 Pre-boring for H-piles P48 to P49
 Pre-boring for H-piles P44 to P41
 H-piling Pile P57 to P52
 H-piling Pile P51 to P24
 H-piling Pile P24 to P1
 Pre-drilling for Piling in Area P3
 Control 15% of Piling Works
 Control 50% of Piling Works
 Control 100% of Piling Works
 Control All Works for Cost Centre C
 Site Clearance in Area P3
 Pile Cap Ground Beam at CH35-202
 Pile Cap Ground Beam at CH35-202 & CH35-284
 Pile Cap Ground Beam CH35-284 to Pier W24
 Ramp Walls & Top Slab from CH35-202 to CH35-284
 Ramp Walls & Top Slab from CH35-202 to CH35-284
 Shimmed OHL Mast CH35-202 to CH35-284
 Shimmed OHL Mast CH35-284 to Pier W24
 Cable Support/ Facilities CH35-202 to CH35-284
 Cable Support/ Facilities CH35-284 to Pier W24
 Clear, Clean Ramp & Provide Access
 Provide Access to Pile Cap Cofferdam
 Remove Wall & Fencing for the Ramp
 Complete All Works for the Ramp
 Drainage Channel/Pipework along Ramp
 Metall Fence @ Ramp
 Provide Attendance to Project Contractor
 Complete All Works for the Ramp
 Drainage Channel/Pipework along Ramp
 Metall Fence @ Ramp

Sheet 3 of 4
 Milestones Corporation
 West Section and Associated Works
 Works P
 M A E N A

2003		2004		2005		2006		2007																																				
D	J	F	E	N	A	M	J	J	A	S	O	N	D																															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45



Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
L0101010	Appoint Sub-contractor	48	12/08/02	18/05/03	6
L0101015	Void Design	90	20/06/03	09/04/03	6
L0101020	Void Design Review and Approval	40	07/04/03	13/04/03	7
L0101025	Fabricate Moulds & Start Casting Bed	45	18/04/03	29/08/03	6
L0101030	Cure Viscous Grout	348	02/04/03	08/03/04	6
L0101035	Cure Pinnings	348	13/05/03	13/04/04	51
Site Clearance					
L0111010	Site Clearance in Area A1&A1b	14	08/JAN/03	21/JAN/03	6
L0111015	Site Clearance in Area A2&A2b/A2c1/A2c2	14	18/JAN/03	31/JAN/03	4
L0111020	Site Clearance in Area A2c3	45	24/FEB/03	20/MAR/03	0
L0111025	Site Clearance in Area A2c4	30	01/MAY/03	05/JUN/03	30
Pile Caps and Foundations					
L0121010	Pilecap at Pier W65 to W69	29	22/APR/03	17/MAY/03	7
L0121013	Pilecap at Pier W60	24	26/APR/03	27/MAY/03	0
L0121014	Retaining Area at Pier W68 to W69	4	29/MAY/03	31/MAY/03	0
L0121020	Pilecap at Pier W67	16	19/MAY/03	05/JUN/03	26
L0121024	Pilecap at Pier W66	16	08/JUN/03	23/JUN/03	26
L0121026	Pilecap at Pier W68	16	18/JUN/03	03/JUL/03	18
L0121028	Pilecap at Pier W64	16	08/JUN/03	27/JUN/03	35
L0121032	Pilecap at Pier W63	16	23/JUL/03	12/AUG/03	27
L0121034	Pilecap at Pier W62	16	21/JUN/03	17/JUL/03	33
L0121035	Pilecap at Pier W61	16	20/JUL/03	11/AUG/03	26
L0121040	Pilecap at Pier W68	4	30/JUL/03	14/AUG/03	7
L0121042	Pilecap at Pier W68	4	11/AUG/03	30/AUG/03	7
L0121044	Pilecap at Pier W67	4	13/AUG/03	19/SEP/03	14
L0121046	Pilecap at Pier W68	4	07/SEP/03	18/SEP/03	7
L0121048	Pilecap at Pier W65	13	08/OCT/03	20/OCT/03	114
L0121050	Pilecap at Pier W64	13	29/AUG/03	12/SEP/03	114
L0121052	Pilecap at Pier W63	13	22/SEP/03	07/OCT/03	10
L0121054	Pilecap at Pier W62	13	30/OCT/03	09/NOV/03	37
L0121056	Pilecap at Pier W61	13	10/NOV/03	24/NOV/03	65
L0121060	Pilecap at Pier W60	14	15/OCT/03	92	
L0121062	Pilecap at Pier W59	14	15/OCT/03	30/OCT/03	0
L0121064	Pilecap at Pier W58	14	20/NOV/03	05/DEC/03	66
L0121066	Pilecap at Pier W57	14	09/OCT/03	22/OCT/03	37
L0121068	Pilecap at Pier W56	14	14/NOV/03	29/NOV/03	70
L0121070	Pilecap at Pier W55	14	27/DEC/03	13/JAN/04	65
L0121072	Pilecap at Pier W54	13	03/JAN/04	17/JAN/04	64
L0121074	Pilecap at Pier W53	13	10/FEB/04	03/MAR/04	65
L0121076	Pilecap at Pier W52	13	11/FEB/04	25/FEB/04	35
L0121080	Pilecap at Pier W51	13	03/DEC/03	16/DEC/03	3
L0121082	Pilecap at Pier W50	13	09/JAN/04	28/JAN/04	8
L0121084	Pilecap at Pier W49	13	17/JAN/04	28/FEB/04	40
L0121086	Pilecap at Pier W48	13	02/FEB/04	17/FEB/04	62
L0121088	Pilecap at Pier W47	13	09/MAR/04	24/MAR/04	53
L0121090	Pilecap at Pier W46	13	12/FEB/04	26/FEB/04	54
L0121092	Pilecap at Pier W45	14	11/MAR/04	26/MAR/04	25
L0121100	Pilecap at Pier W44	12	09/MAR/04	02/APR/04	5
L0121104	Pilecap at Pier W43	27	05/JUN/04	22/JUL/04	0
L0121120	Pilecap at Pier W42 to W49	27	23/MAY/04	21/JUN/04	16
L0121130	Pilecap at Pier W45 to W48	27	20/MAY/04	18/JUN/04	10
Columns					
L0131010	Column at Pier W56	16	07/MAY/03	24/MAY/03	7
L0131012	Column at Pier W60	16	28/MAY/03	12/JUN/03	7
L0131014	Column at Pier W60	32	13/JUN/03	22/JUL/03	7
L0131016	Column at Pier W57 to W63	24	22/JUL/03	27/OCT/03	25
L0131018	Column at Pier W49 to W61	192	17/SEP/03	21/MAR/04	7
L0131020	Column at Pier W40 to W52	148	31/OCT/03	24/APR/04	0
L0131022	Column at Pier W61 to W63	172	17/DEC/03	18/MAY/04	0
L0131024	Column at Pier W62 to W69	36	23/JUN/04	03/AUG/04	15
L0131026	Column at Pier W65 to W68	16	30/JUN/04	18/AUG/04	10
Columnhead, Portals & Beams					
L0141100	Columnhead and Beams at Pier W46 & W69	50	13/JUL/03	18/JUL/03	24
L0141116	Portal and Beams at Pier W60	40	23/JUL/03	08/SEP/03	22
L0141120	Clear & Reinforce Area A2c1 to Area A2c4	22	06/SEP/03	04/OCT/03	22
L0141125	Columnhead & Beams at Pier W57 to W65	63	29/AUG/03	13/NOV/03	7
L0141130	Columnhead & Beams at Pier W54 to W56	69	02/SEP/03	24/NOV/03	25
L0141135	Columnhead & Beams at Pier W49 to W61	150	02/OCT/03	02/APR/04	7

23/09/03	Early Bar
30/09/03	Program Bar
13/02/04	Progress Bar
24/JUN/03 - 9/30	Critical Safety

Masec Corporation
West Section and Associated Works
M A E D A

Sheet 4 of 4

Activity ID	Description	Orig Dur	Early Start	Early Finish	Total Float	2004	2005	2006
Submissions, Approvals, Consents & Permits								
LPV2800	Subm Drawings/Materials Subm Schedule	7/23/05-02	28JAN05	28JAN05	0	J	A	M
LPV3100	Prepare & Subm Draw CSO/SEN Drawings	12/23/05-02	03JUN05	03JUN05	15	J	A	M
LPV3103	Eng. Contractor Review Draw CSO & SEN Drawings	6/9/04-03/05	14JUN05	14JUN05	15	J	A	M
LPV3104	Eng. Approve all CSO & SEN Drawings	12/14/04-03/05	31OCT05	31OCT05	16	J	A	M
LPV3105	Eng. Approve all CSO & SEN Drawings	9/01/04-03/05	30NOV05	30NOV05	21	J	A	M
LPV3106	Subm all Construction Drawings	12/23/04-03/05	30MAR04	30MAR04	13	J	A	M
Track Alignment								
LOG11010	Call, Dept Work for Viaduct Pier W24 to W25	23/26APR04	31JAN05	31JAN05	0	J	A	M
LOG11015	Call, Dept Work for Viaduct Pier W25 to W27	6/17JAN05	31MAR05	31MAR05	0	J	A	M
LOG12000	Call, Dept Work for Ramp	17/22JUN04	31FEB05	31FEB05	4	J	A	M
LOG20010	Coord, Dept 2 & 3 Works for EAP No. 6	12/23MAY05	28JUL05	28JUL05	1	J	A	M
LOG20020	Coord, Dept Work for EAP No. 6	12/23AUG05	28FEB06	28FEB06	1	J	A	M
Payment Milestones								
LOV50014	G1-G1 (B) Work for Ramp (Viduct Pier W24 to W25)	0	01MAR05	01MAR05	64	J	A	M
LOV50014-2	G1-G1 (B) Work from Pier W25 to LCC200 Interface	0	15APR05	15APR05	50	J	A	M
LOV50022	G2-G2 (3) Work to All Rooms at EAP No. 6	0	30JUL05	30JUL05	52	J	A	M
LOV50033	G3-Permanent Power to All Rooms at EAP No. 6	0	01MAR06	01MAR06	57.5	J	A	M
LOV50034	G4-Compil All Works for Cost Centre G	0	02JUN06	02JUN06	57.5	J	A	M
Site Formation For Access								
LDH11010	Assess Initial Conditions of Ponds in Area A2a.1	14/15MAR05	10APR05	10APR05	2	J	A	M
LDH11015	Eng. Approve Initial Conditions of Ponds	14/16APR05	17APR05	17APR05	4	J	A	M
LDH11020	Drain Water from Pier Ponds	6/22APR05	05JUL05	05JUL05	0	J	A	M
LDH11025	Determine Depth of Soil Materials in Pond Base	24/30APR05	28JUL05	28JUL05	0	J	A	M
LDH11035	Fill Other Fish Ponds within Area A2a.1	11/12MAY05	06AUG05	06AUG05	0	J	A	M
LDH11040	Construct 1 Entry Access Road within Area A2a.1	6/7/20MAY05	30AUG05	30AUG05	0	J	A	M
LDH131010	Ground Investigation for Geotechnical Works	4/6/10JUN05	28JUL05	28JUL05	1	J	A	M
EAP No. 6								
LDH11020	Excavate & Fill Pond for EAP No. 6	21/05MAY05	28MAY05	28MAY05	0	J	A	M
LDH12010	Pre-boring & Piling for Structures to EAP No. 6	5/23MAY04	27MAY04	27MAY04	0	J	A	M
LDH131015	Excavation for Auxiliary Bldg & Sidestair	5/23APR04	30JUN04	30JUN04	26	J	A	M
LDH21020	Excavation for Auxiliary Bldg & Sidestair	6/28MAY04	05JUN04	05JUN04	0	J	A	M
Payment Milestones								
LDH19001	H1-Compil Bldg Formation to EAP No. 6	0	28MAY05	28MAY05	1,268	J	A	M
LDH19002	H2-Thickness Test of Soil Material in Area A2a.1	0	28JUL05	28JUL05	1,252	J	A	M
LDH19023	H3-Compil G1 for Geotech Work (P2-Appendix 2)	0	28JUL05	28JUL05	1,252	J	A	M
LDH19033	H4-Compil Piling Works	0	30JUN06	30JUN06	1,157	J	A	M
LDH19044	H4-Compil All Works for Cost Centre H	0	30SEP06	30SEP06	0	J	A	M
Tree Felling & Transplanting								
LDQ23100	Subm Application for Tree Felling Permit	20/23DEC02	19JAN03	19JAN03	0	J	A	M
LDQ23105	Tree Felling Permit Reviewed & Approved	6/20JAN03	20MAR03	20MAR03	0	J	A	M
LDQ23110	Tree Felling & Transplanting (Area A2a.1)	6/21MAR03	18MAY03	18MAY03	0	J	A	M
EAP No. 6								
LDH11010	Auxiliary Bldg, Sidestair	14/07JUN04	27NOV04	27NOV04	3	J	A	M
LDH13010	Cable Structures & Cable Riser	9/12AUG04	27NOV04	27NOV04	0	J	A	M
LDH13015	Cable Trenches & Draining Works	6/22NOV04	08FEB05	08FEB05	0	J	A	M
LDH13020	Clean, Clear & Provide Access	14/14FEB05	01MAY05	01MAY05	0	J	A	M
LDH13025	Coord, Dept 2 & 3 Works EAP No. 6	12/23MAY05	30JUL05	30JUL05	0	J	A	M
LDH13030	Coord, Dept 4 Works for EAP No. 6	17/30JUN05	31MAR06	31MAR06	0	J	A	M
LDH13035	Preparation & Submission of As-built Drawings	12/23MAY05	27JUL06	27JUL06	54	J	A	M
Maintenance Access Road								
LDH11010	Access Road Paving Works	12/23AUG05	23DEC05	23DEC05	1	J	A	M
LDH13010	Structure to Access Bridges	9/14OCT05	02AUG06	02AUG06	1	J	A	M
LDH25010	Barrel Race Hydrant System	7/9/27DEC05	28MAR06	28MAR06	1	J	A	M
Landscape Works								
LDZ2010	Plant Landscaping Works	6/27DEC05	11MAR06	11MAR06	1	J	A	M
LDZ2015	Soft Landscaping Works	16/11MAY06	28SEP06	28SEP06	1	J	A	M
Utility Diversions								
LDQ3000	Notify Utility Undertaking of Proposed Diversion	2/23DEC02	31JAN03	31JAN03	46	J	A	M
LDQ3010	Notice Permitted to CLP	6/31FEB03	01MAY03	01MAY03	67	J	A	M
LDQ3015	Notice Permitted to HKT	18/01FEB03	30JUL03	30JUL03	46	J	A	M
LDQ3020	Notice Permitted to W&O	30/01FEB03	02MAR03	02MAR03	73	J	A	M
LDQ3110	Obvert Remove CLP Power Lines	6/02MAY03	12JUL03	12JUL03	45	J	A	M
LDQ3115	Obvert HKT Cable-Force Cable (T40)	30/01JUL03	05SEP03	05SEP03	39	J	A	M

28DEC04
 28DEC05
 28DEC06
 28MAY06 19:30

Start Date
 Finish Date
 Date Date
 Sun Date

Early Bar
 Progress Bar
 Critical Activity

Maseida Corporation
 Water Section and Associated Works
 Initial Works Programme

Sheet 7 of 8

SPC Date: 20/03/04
 File's Date: 20/03/04
 Data Date: 20/03/04
 Run Date: 20/03/04 19:39

Activity ID: Utility Diversions
 Description: Remove East Watermain (EWS)

Activity ID	Description	Orig. Dur.	Early Start	Early Finish	Total Float
L033125	Remove East Watermain (EWS)	14	19/AR03	03/APR03	44

Payment Milestones
 L033125-1 H-Comp All Works for EAP No8
 L033125-2 H-Comp All Works for EAP No8
 L033125-3 H-Comp All Works for EAP No8
 L033125-4 H-Comp All Works for EAP No8

Activity ID	Description	Orig. Dur.	Early Start	Early Finish	Total Float
L033125-1	H-Comp All Works for EAP No8	0	01/MAR03	01/MAR03	0
L033125-2	H-Comp All Works for EAP No8	0	01/MAR03	01/MAR03	0
L033125-3	H-Comp All Works for EAP No8	0	01/MAR03	01/MAR03	0
L033125-4	H-Comp All Works for EAP No8	0	01/MAR03	01/MAR03	0

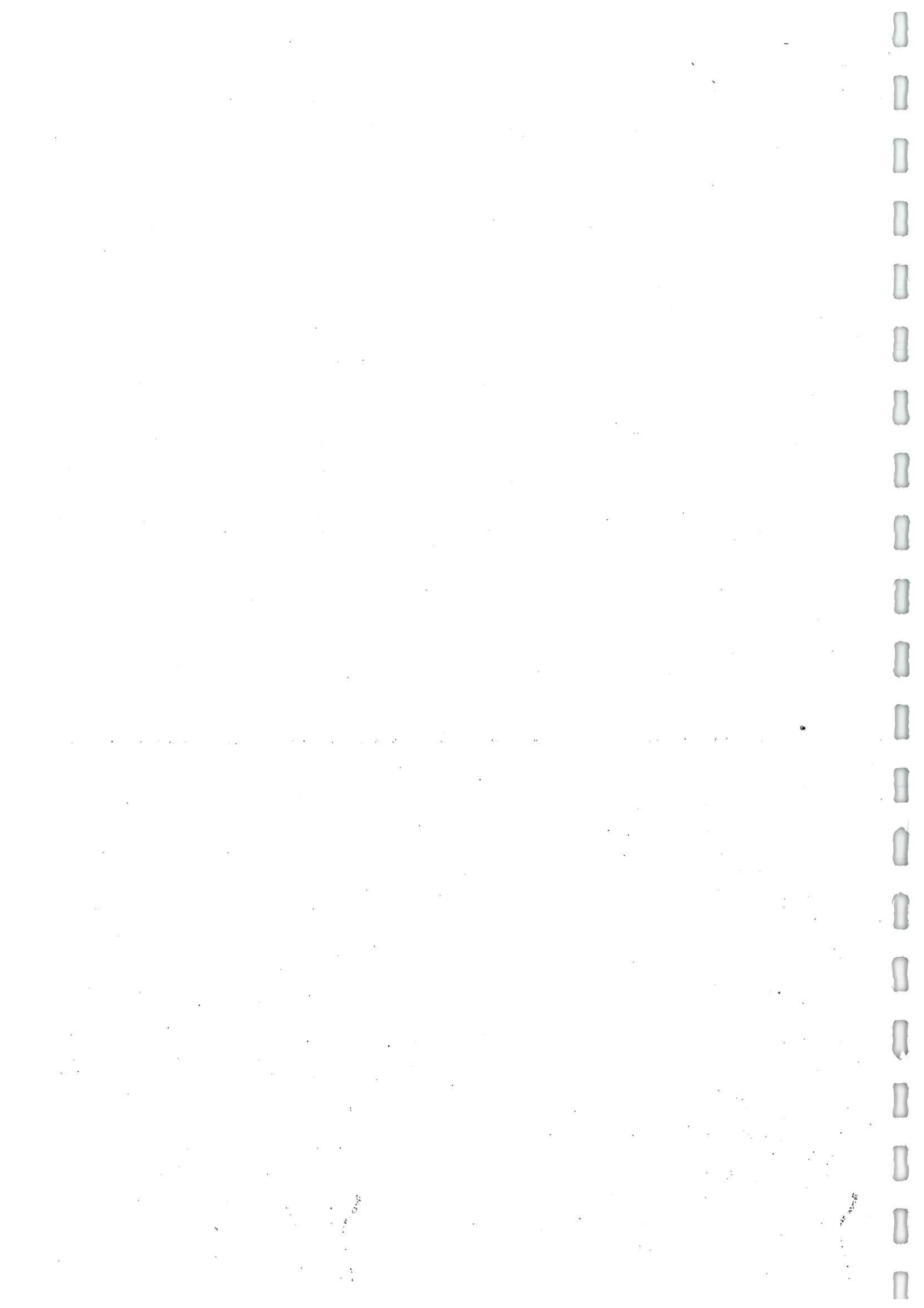
Earthworks
 L033125-1 Excavation/Filling for Rd Diversion at CH181-700
 L033125-2 Earthwork for Flag Pole/Traffic Sign Relocation
 L033125-3 J1-Earthwork for Relocation of Flag Poles & TS
 L033125-4 J2-Comp All Works for Cost Centre J

Activity ID	Description	Orig. Dur.	Early Start	Early Finish	Total Float
L033125-1	Excavation/Filling for Rd Diversion at CH181-700	5	05/FEB03	10/FEB03	0
L033125-2	Earthwork for Flag Pole/Traffic Sign Relocation	3	10/FEB04	10/FEB04	14
L033125-3	J1-Earthwork for Relocation of Flag Poles & TS	0	28/FEB04	28/FEB04	210
L033125-4	J2-Comp All Works for Cost Centre J	0	20/MAR03	20/MAR03	549

Miscellaneous Works
 L033125-1 Relocate Flag Pole/Traffic Sign
 L033125-2 Demolish G/F Slab of Surveillance Office
 L033125-3 Road Paving for Road Diversion at CH181-700
 L033125-4 K1-Relocation of Flag Poles & Traffic Signs
 L033125-5 K2-Comp All Works for Cost Centre K

Activity ID	Description	Orig. Dur.	Early Start	Early Finish	Total Float
L033125-1	Relocate Flag Pole/Traffic Sign	9	19/FEB04	28/FEB04	14
L033125-2	Demolish G/F Slab of Surveillance Office	14	05/FEB03	20/FEB03	5
L033125-3	Road Paving for Road Diversion at CH181-700	14	11/FEB03	28/FEB03	0
L033125-4	K1-Relocation of Flag Poles & Traffic Signs	0	19/FEB04	19/FEB04	1370
L033125-5	K2-Comp All Works for Cost Centre K	0	02/MAY06	02/MAY06	616

Activity ID	Description	Orig. Dur.	Early Start	Early Finish	Total Float	Notes
L033125-1	Relocate Flag Pole/Traffic Sign	9	19/FEB04	28/FEB04	14	J2-Comp All Works for Cost Centre J
L033125-2	Demolish G/F Slab of Surveillance Office	14	05/FEB03	20/FEB03	5	J2-Comp All Works for Cost Centre J
L033125-3	Road Paving for Road Diversion at CH181-700	14	11/FEB03	28/FEB03	0	J2-Comp All Works for Cost Centre J
L033125-4	K1-Relocation of Flag Poles & Traffic Signs	0	19/FEB04	19/FEB04	1370	J2-Comp All Works for Cost Centre J
L033125-5	K2-Comp All Works for Cost Centre K	0	02/MAY06	02/MAY06	616	K2-Comp All Works for Cost Centre K



Appendix C

Event/Action Plan for Air Quality, Noise and Water

Event/Action Plan for Air Quality

EVENT ACTION LEVEL	ACTION			Contractor
	Contractor's ET leader	IEC	ER	
<ol style="list-style-type: none"> Exceedance for one sample Exceedance for two or more consecutive samples 	<ol style="list-style-type: none"> Identify source Inform IEC, ER and Contractor Repeat measurement to confirm findings Increase monitoring frequency to daily <ol style="list-style-type: none"> Identify source Inform IEC, ER and Contractor Repeat measurement to confirm findings Increase monitoring frequency to daily Discuss with IEC, Contractor and ER on remedial actions required If exceedance continue, arrange meeting with IEC, ER and Contractor If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> Check monitoring data submitted by Contractor's ET leader Check Contractor's working method <ol style="list-style-type: none"> Checking monitoring data submitted by Contractor's ET leader. Check Contractor's working method Discuss with Contractor's ET leader and Contractor on possible remedial measures Advise the ER on the effectiveness of the proposed remedial measures Supervise implementation of remedial measures 	<ol style="list-style-type: none"> Notify Contractor <ol style="list-style-type: none"> Confirm receipt of notification of failure in writing Notify Contractor Ensure remedial measures properly implemented 	<ol style="list-style-type: none"> Rectify any unacceptable practice Amend working methods if appropriate <ol style="list-style-type: none"> Submit proposals for remedial actions to IEC and ER within 3 working days of notification Implement the agreed proposals Amend proposal if appropriate
LIMIT LEVEL <ol style="list-style-type: none"> Exceedance for one sample Exceedance for two or more consecutive samples 	<ol style="list-style-type: none"> Identify source Inform IEC, ER, EPD and Contractor Repeat measurement to confirm findings Increase monitoring frequency to daily Assess effectiveness of Contractor's remedial actions and kept IEC, EPD and ER informed of the results <ol style="list-style-type: none"> Notify IEC, ER, Contractor and EPD Identify source Repeat measurement to confirm findings Increase monitoring frequency to daily Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented Arrange meeting with IEC, Contractor and ER to discuss the remedial actions to be taken Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> Check monitoring data submitted by Contractor's ET leader Check Contractor's working method Discuss with Contractor's ET leader and Contractor on possible remedial measures Advise the ER on the effectiveness of the proposed remedial measures Audit implementation of remedial measures <ol style="list-style-type: none"> Discuss amongst ER, Contractor's ET leader and Contractor on the potential remedial actions Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly Audit the implementation of remedial measures 	<ol style="list-style-type: none"> Confirm receipt of notification of failure in writing Notify Contractor Ensure remedial measures properly implemented <ol style="list-style-type: none"> Confirm receipt of notification of failure in writing Notify Contractor In consultation with IEC, agree with the Contractor on the remedial measures to be implemented Ensure remedial measures properly implemented If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> Take immediate action to avoid for the exceedance Submit proposals for remedial actions to IEC and ER within 3 working days of notification Amend proposal if appropriate <ol style="list-style-type: none"> Take immediate action to avoid for the exceedance Submit proposals for remedial actions to IEC and ER within 3 working days of notification Resubmit proposals if problem still not under control Stop the relevant portion of works as determined by the ER until the exceedance is abate.

Event/Action Plan for Construction Noise Monitoring

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

Event and Action Plan for Water Quality

Event	ET Leader	IEC	ER	Contractor
<p>Action level being exceeded by one sampling day</p>	<p>Repeat in-situ measurement to confirm findings; Identify Source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Repeat measurement on next day of exceedance</p>	<p>Discuss with ET and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures.</p>	<p>Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented;</p>	<p>Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agreed mitigation measures.</p>
<p>Action level being exceeded by more than one consecutive sampling days</p>	<p>Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance.</p>	<p>Discuss with ET and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures.</p>	<p>Discuss with IEC on the proposed mitigation measures; Made agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.</p>	<p>Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures.</p>
<p>Limit level being exceeded by one sampling day</p>	<p>Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC, contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level.</p>	<p>Discuss with ET and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures.</p>	<p>Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Made agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.</p>	<p>Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures/</p>
<p>Limit level being exceeded by more than one consecutive sampling days</p>	<p>Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC, contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the Monitoring frequency to daily until no exceedance of Limit level for two consecutive days.</p>	<p>Discuss with ET and Contractor on the mitigation measures Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly Assess the effectiveness of the implemented mitigation measures.</p>	<p>Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures; Consider and instruct, if necessary, the Contractor to slow down or to stop all part of the marine work until no exceedance of Limit level.</p>	<p>Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures, As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities.</p>

Appendix D

Implementation Status of Environmental Protection Requirements

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
1	Section 4	Contractor access should be limited to the area required for working along the whole alignment and particularly at Lok Ma Chau and San Tin where work is required in fishponds. Impacted ponds that will not be used for mitigation or structures shall be reinstated after construction is completed.	All	Complied		
2		The designated noise reduction system shall be appropriately incorporated throughout the alignment.	All	Complied		
3	Section 5	Fisheries Reinstatement of temporarily impacted fishponds below the viaduct, after construction is completed.	All	Fish Pond Survey has been conducted		
4	Section 6	The Contractor shall undertake at all times to prevent dust nuisance as a result of this activities. Effective dust suppression measures, as necessary, should be installed to minimize air quality impacts, at the boundary of the site and at any sensitive receivers.	All	Complied		
5		The Contractor shall frequently clean and water the site to minimise fugitive dust emissions.	All	Complied		
6		Effective water sprays shall be used during the delivery and handling of all raw sand, aggregate and other similar materials, when dust is likely to be created, to dampen all stored materials during dry and windy weather.	All	Complied		
7		Watering of exposed surfaces shall be conducted as often as possible depending on the circumstances.	All	Ditto		
8		Areas within the site where there is a regular movement of vehicles shall have an approved hard surface be kept clear of loose surface materials and / or regularly watered.	All	Ditto		
9		Where dusty materials are being discharged to vehicle from a conveying system at fixed transfer point, a three-sided roofed enclosure with a flexible curtain across the entry shall be provided. Exhaust fans shall be provided for this enclosure and vented to a suitable fabric filter system.	All	Complied		
10		The Contractor shall confine haulage and delivery vehicles to designated roadways inside the site. If in the opinion of the Engineer, any motorized vehicle is causing dust nuisance, the Engineer may require that the vehicle be restricted to a maximum speed of 15km per hour while within the site area.	All	Complied		
11		Wheel cleaning facilities shall be installed and used by all vehicles leaving the site. No earth, mud, debris, dust and the like shall be deposited on public roads. Water in the wheel cleaning facility shall be changed at frequent intervals and sediments shall be removed regularly. The Contractor shall submit details of proposals for the wheel cleaning facilities to the Engineer prior to construction of the facility. such wheel cleaning facilities shall be usable prior to any earthwork excavation activity on site. The Contractor shall provide a hard-surfaced road between any cleaning facility and the public road.	All	Complied		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
12		All site vehicular exhausts should be directed vertically upwards or directed away from ground to minimize dust nuisance.	All	Complied		
13		In addition, based on the Air Pollution Control (Construction Dust) Regulation, any works involved regulatory work, such as stockpiling, loading and unloading of dusty materials, shall take precautions to suppress dust nuisance. Examples of dust suppression methods are :-	All	Complied		
14		The working area of any excavation or earthmoving operation shall spray with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet	All	Implemented		
15		Exposed earth shall be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl bitumen or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies; and	All	Implemented		
16		Any stockpile of dusty materials shall be either covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides, and sprayed with water or a dust suppression chemical so as to maintain the entire surface wet.	All	Implemented		
17		Regular watering of haul roads to maintain surface wet. In order to meet this requirement, watering should be carried out at least twice a day and a water refilling system should be installed so that the water refilling time should be less than ten minutes.	All	Please refer to item 5		
18		All stockpile of excavated material shall be either covered entirely by impervious sheeting or sprayed with water so as to maintain it in a damp condition.	All	Please refer to item 16		
19		Any conveyor system used for transfer of dusty materials should be fitted with wind boards on all sides, enclosures at conveyor transfer points and hopper discharge areas, three sided roofed enclosure with flexible curtain across the entry, conveyor belt cleaners and exhaust fans with suitable fabric cleaner.	All	Not applicable since on conveyor site was found at site at the time of reporting		
20		Where a site boundary adjoins a road, street service lane or other area accessible to the public, hoarding of not less than 2.4m above ground level shall be provided along the entire length of that portion of the site boundary except for any site entrances or exits.	All	Complied		
21		Sites used for the storage of cement or dry pulverized fuel ash shall not be overfilled.	All	Not applicable		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
22		Accordingly to the Air Pollution Control (specified processes) Regulations, concrete plants with a site capacity greater than 50 tonnes will be considered as a specified process and require a licence to be operated. Under this regulation, an Air Pollution Control Plan for the batching plant will be prepared in an effort to control the fugitive dust. Thus, operation of plant must comply with the strict dust controls so as to reduce the potential dust impact on the nearby sensitive receivers.	All	Not applicable		
23		Routine environmental monitoring of air quality during construction is considered unnecessary.	All	Complied		
24	Section 7	The Contractor shall comply with the Noise Control Ordinance (Cap. 400) and with any regulations made under the Ordinance, including restrictions placed on noise from construction work and the requirements to seek Construction Noise Permits. Before commencing work which requires Construction Noise Permits, the Contractor should obtain such permits and display these appropriately.	All	Complied		
25		The Contractor shall devise, arrange methods of working and carry out the works in such a manner as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.	All	Complied		
26		In general, the Contractor is required to minimize or avoid potential construction noise impact by imposing a combination of the following mitigation measures :	All	Complied		
27		Noisy equipment and activities should be sited by the Contractor as far from close-proximity sensitive receivers as practical. Prolonged operation of noisy equipment close to dwellings should be avoided.	All	Implemented		
28		The Contractor should minimise construction noise exposure to the schools (especially during examination periods) as much as possible. The Contractor should liaise with the school and the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the contract and to avoid noisy activities during these periods.	All	Not applicable since no schools were next to the site area		
29		Noisy plant or processes should be replaced by quieter alternatives where possible. Silenced diesel and gasoline generators and power units, as well as silenced and super-silenced air compressors, can be readily obtained.	All	Complied		
30		Noisy activities should be scheduled to minimise exposure of nearby sensitive receivers to high levels of construction noise. For example, noisy activities can be scheduled for midday, or at times coinciding with periods of high background noise (such as during peak traffic hours).	All	Complied		
31		Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary.	All	Implemented		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
32		The power units of non-electric stationary plant and earth-moving plant should be quietened by vibration isolation and partial or full acoustic enclosures for individual noise-generating components.	All	Complied		
33		Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided, thus reducing the cumulative impacts between operations. The numbers of operating items of powered mechanical equipment should be minimised. Noise can be reduced by increasing the distance between the operating equipment and the NSRs or by reducing the number of items of equipment and/or construction activity in the area at any one time.	All	Complied		
34		Quiet and/or silenced models PME should be employed as far as practicable.	All	Complied		
35		2.5m gap free noise barrier has to be built according to Environmental Permit.	All	Complied		
36	Section 8	At the start of site establishment perimeter cut-off drains shall be constructed to direct off-site water around the site, and internal drainage works and erosion and sedimentation control facilities shall be implemented. Channels, earth bunds or sand bag barriers shall be provided on site to direct storm water to silt removal facilities. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECCPNI/94. All the surface runoff or extracted ground water contaminated by silt and suspended solids should be collected by the on-site drainage system and diverted through the silt traps prior to discharge.	All	Complied		
37		Submission and implementation of Temporary Drainage Layout Plan according to Environmental Permit.	All	Complied		
38		The overall slope of the site shall be kept to a minimum to reduce the erosive potential of surface water flows, and all trafficked areas and access roads shall be protected by coarse stone ballast.	All	Complied		
39		The Contractor shall ensure that works take place in the dry season as far as practicable or else additional temporary works such as cofferdam or temporary earth bund will be required to minimise runoff and pollution from the works entering the water column. Water collecting behind the cofferdam shall be either pumped onto the land-bank or collected, settled and pH adjusted to 6.0 to 8.5 before being allowed to enter the channels.	All	Complied		
40		Wheel washing facilities and sediment traps shall be provided at each site exit.	All	Complied		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
41		Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on site shall be protected from erosion during rainstorms. Measures shall be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. Hydrosseding should be used where practical.	All	Complied		
42		All vehicles and plant shall be cleaned before leaving the construction site to ensure no earth, mud or debris is deposited by them on roads. A wheel washing bay shall be provided at every site exit. The wheel washing bay shall be designed and sited to accommodate the predicted through put of vehicles and shall have an associated sedimentation facility that is capable of removing the sand and silt from the wash-water. The settled out sand and silt shall be removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road shall be paved with sufficient backfill toward the wheel-wash bay to prevent vehicle tracking soil and silty water to public roads and drains.	All	Complied		
43		The transport of sediment to the environment shall be minimised by the installation of appropriate sediment traps within the drainage system. Sediment traps shall be designed with adequate capacity, and shall be regularly maintained.	All	Please refer to item 11		
44		Wastewater generated from the washing down of mixer trucks and drum mixers and similar equipment should be recycled. The discharge of wastewater should be kept to a minimum.	All	Complied		
45		Wastewater generated from construction activities should be discharged into an excavated sedimentation pit prior to discharge wherever possible. The pit should be unlined to allow for infiltration of water into the ground if ground conditions allow. Settlement of concrete washings in a sedimentation pit should allow for setting of concrete before disposal.	All	Complied		
46		In the case of an unlined pit for all types of wastewater being settled out, water infiltration into the ground requires a license from EPD under the WPCO regulations. Where a license cannot be obtained, or if water re-use is practiced, the pit may need to be lined, which requires more frequent removal of the contents.	All	Wastewater Discharge Licence was issued by EPD		
47		Measures shall be taken to minimise the ingress of site drainage into excavations. If the excavation of trenches in wet periods is necessary, they shall be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All	Complied		
48		Oil interceptors shall be provided in Site compounds and regularly emptied to prevent release of oils and grease into the surface water drainage system	All	Complied		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
49		<p>after accidental spillages. The interceptor shall have a bypass to prevent flushing during periods of heavy rain. Oil and fuel bunkers shall be banded to prevent discharge due to accidental spillages or breaching of tanks.</p> <p>Any waters entering storm drains must have a pH of between 6.0 and 8.5. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 9). Disposal of wastewater into storm drains will require more elaborate treatment. Surface run-off should be segregated from the mortar plant within the launching area and diverted to the storm water drainage system. Surface run-off contaminated by materials in a mortar plant or casting yard, if used, should be adequately treated before disposal into storm water drains.</p>	All	Complied		
50		Runoff should be prevented from entering adjacent ponds through construction of bunds between works areas and ponds.	All	Complied		
51		The Contractor shall take all reasonable measures to minimise adverse impacts resulting from construction activities associated with the removal of sediments. These measures shall include ensuring that all plant and equipment and working methods meet the following criteria.	All	Complied		
52		Utilising appropriate suspended solids containment screen while removing sediment.	All	Complied		
53		Minimise disturbance of the channel base/pond bed while draining water and removing sediment.	All	Complied		
54		Minimise leakage of excavated sediment during lifting.	All	Complied		
55		Prevent the overflowing of any container used to contain removed sediments.	All	Implemented		
56		In small scale works a barrier of sand bags should enclose the areas.	All	Implemented		
57		Sediment removal should be undertaken during the dry season whenever possible.	All	Complied		
58		Sediments should be removed from site immediately or stored away from the water course.	All	Implemented		
59		The Contractor shall be responsible for disposing of all dredged sediments at an appropriate location depending on the volume and composition of the material.	All	Complied		
60		Temporary on-site storage of excavated materials from station and depot construction works shall be covered with tarpaulin or similar fabric during	All	Complied		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
		rainstorms. Any washout of construction or excavated materials should be diverted to the drainage system via sediment traps. Stockpiling of the excavated material can be minimised by scheduling the construction programme in a way that one section of the alignment can be constructed and completed before the excavation works of the next.				
61		Regular maintenance of all drainage systems is necessary.	All	Complied		
62		Chemical wastes should be collected, stored and disposed of in accordance with the Code of Practice on the Packing, Labelling and Storage of Chemical Waste.	All	Registration has been made. No chemical waste was identified at the site		
63		If contaminated material is excavated it shall be treated and/or disposal of to WENT landfill. If excavated material is heavily contaminated it may require disposal to SENT landfill.	All	Contamination Assessment Plan was being prepared		
64		Transfer of material onto barges should be carried out slowly to prevent contamination.	All	Not applicable		
65		Transfer of materials onto the platform should be carried out slowly to avoid sand falling off the conveyor.	All	Not applicable		
66		The assessment of water quality impacts has concluded that routine environmental monitoring of water quality during construction should be carried out as specified in the EIA report, to minimise impacts on downstream water quality. The specified mitigation measures should be written into contract documents.	All	Implemented		
67		Routine audit of the implementation status of specified mitigation measures during the construction and operation phases should be undertaken by the project proponent or his representative. Such audits should be well documented and include action procedures in the case of non-compliance.	All	Implemented		
68	Section 9	Upon appointment, the main contractor of each construction contract should submit a Waste Management Plan which shall describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities and shall take into account the recommended mitigation measures in the EIA report. Such a management plan shall incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials.	All	Implemented		
69		The Contractor is responsible for waste control within the construction site, removal of the waste material produced from the site and	All	Implemented		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
70		<p>implementation of any mitigation measures to minimise waste or redress problems arising from the waste from the site. The waste material may include any sewage, waste water or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the site onto any adjoining land, storm sewer, sanitary sewer, or any waste matter or refuse to be deposited anywhere within the site or onto any adjoining land.</p> <p>Waste should be handled in accordance with the Construction Waste Management Strategy recommendations for handling of waste. The hierarchy of management method is : avoidance, minimisation, recycling/re-use, treatment, disposal.</p>	All	Complied		
71		Wherever possible, material should be re-used. Where fill material is required, material should be sourced from projects that would otherwise dispose of it to public fill.	All	Complied		
72		When handling the waste material, the following measures shall be undertaken by the Contractor.	All	Complied		
73		The Contractor shall be aware of, and comply with, the Waste Disposal Ordinance, the Public Health and Municipal Services Ordinances, the Water Pollution Control Ordinance and the Waste Disposal (Chemical Waste) (General Regulation).	All	Complied		
74		The Contractor's attention is drawn to A Guide to the Chemical Waste Control Scheme; A Guide to the Registration of Chemical Waste Producers; and the Code of Practice on the Packing, Labelling and Storage of Chemical Wastes.	All	Complied		
75		The Contractor shall segregate all inert construction waste material suitable for reclamation or land formation and, if it is not possible to use on-site in other points of the project, shall dispose of such material at public dumping areas or at a location agreed in advance by the FMC and EPD. Kai Tak Filling Area tentatively approved by CED.	All	Complied		
76		All non-inert construction waste material deemed unsuitable for reclamation or land formation and all other waste material shall be dumped at public landfill, after sorting for recycling and re-use.	All	Complied		
77		The Contractor shall comply with and complete the procedures in EPD TC 1-1-92, WBTC 22/92 and where necessary, EPD's ProPECC PN 3/94 regarding marine or land-based disposal of dredged mud, prior to the commencement of Works.	All	Complied		
78		The Air Pollution Control (Open Burning) Regulation came into effect on 26 th February 1995. This regulation prohibits open burning for the disposal of construction waste or the clearance of a site in preparation for construction work. Certain other types of open burning are allowed under	All	Complied		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
		permits issued by the EPD.				
79		Fossil fuel and used lubricants for trucks and machinery are classified as chemical wastes. The Contractor shall register with EPD as a chemical waste producer and observe all the requirements under the storage, labelling, transportation and disposal of chemical waste. Chemical wastes shall be collected by a licensed collector.	All	Complied		
80		The Contractor shall prevent fuel and lubricating oil leakage from plant and storage sites from contaminating the construction site. All compounds in works areas shall be located on areas of hard-standing with provision of drainage channels and settlement lagoons where necessary to allow interception and controlled release of settled water; and provision of bunding for all potentially hazardous materials on Site including fuels. The Contractor shall prepare a spill action plan and keep suitable clean-up materials on site.	All	Complied		
81		Training shall be provided for workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	All	Complied		
82		Care must be taken to prevent spillages.	All	Complied		
83		The storage areas for fuels and lubricants shall be isolated from working areas and kept secure.	All	Complied		
84		Use of fuels and lubricants shall be carried out with care.	All	Complied		
85		Any spillage problem due to any truck and machinery shall not be ignored.	All	Implemented		
86		Emulsifier and absorbent shall be available on Site, so that immediate action can be taken when there is minor spillage.	All	Complied		
87		All containers shall be stored so as to prevent any spillage of the contents and disposal of carefully.	All	Complied		
88		Concepts of 'Site cleanliness' shall be introduced to workers, to gather and store construction waste in an appropriate manner.	All	Please refer to item 69		
89		Temporary waste facilities shall be set up by the Contractor. Municipal waste shall be collected in black refuse bags and delivered to, and disposed of at, an approved landfill.	All	Complied		
90		A core sampling programme should be undertaken to ascertain the nature of the substratum. In the event of contaminated land being encountered, it	All	Complied		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
		will be subject to the criteria specified in ProPECC Payer (PN3/94) Contaminated Land Assessment and Remediation.				
91	Section 10	Where contaminated land has been shown to exist following the testing proposed by the CAP the following measures will be implemented to minimise potential exposure to contaminated materials.	All	Contamination Assessment Plan has been submitted		
92		Use truck earth-removing excavator equipment to minimise the potential interface of contaminated materials with site construction workers.	All	Complied		
93		When interacting directly with contaminated material, site personnel shall wear appropriate clothing, i.e. personal protective equipment such as gloves, in order to minimise their exposure to any contaminated material. Adequate hygiene and washing facilities shall be provided and smoking and eating shall be prohibited during such activities.	All	Complied		
94		Vehicles containing contaminated materials shall be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates sealed to prevent any discharge during transport or during wet conditions.	All	Complied		
95		Only licensed water hauliers shall be used to collect and transport any contaminated sediments to an appropriate disposal site and procedures shall be developed to ensure that illegal disposal of wastes does not occur.	All	Complied		
96		Prior agreement shall be sought with the Facilities Management Group of the EPD regarding the acceptability of disposal of any contaminated sediments to landfill or other suitable disposal locations.	All	Complied		
97		The necessary waste disposal permits shall be obtained, as required from the appropriate authorities.	All	Complied		
98		Records of the quantities of wastes generated and disposed of shall be maintained;	All	Complied		
99		In accordance with good construction practice, silt traps shall be used to reduce the impact to drainage caused by suspended solids (SS) arising from disturbed ground, or any construction materials such as cement and gravel. Groundwater shall be disposed of in accordance with the WPCO.	All	Implemented		
100		A stand alone CAP has been prepared and will subsequently be submitted for the approval of the EPD. Following amendment (if necessary) and approval by EPD, the CAP will be implemented and the findings will be reported in the Contaminated Assessment Report (CAR). If land contamination is confirmed, a Remediation Assessment Plan (RAP) shall be prepared, and both the CAR and the RAP shall be submitted as a combined report to the EPD for approval. If applicable and required in consultation with the EPD, the contaminated site shall be remediated in accordance with the approved CAR/RAP.	All	Please refer to item 91		
101	Section 12	The extent of the agreed works areas should be regularly checked by landscape architect during the construction phase. Any trespass by the	All	Complied		

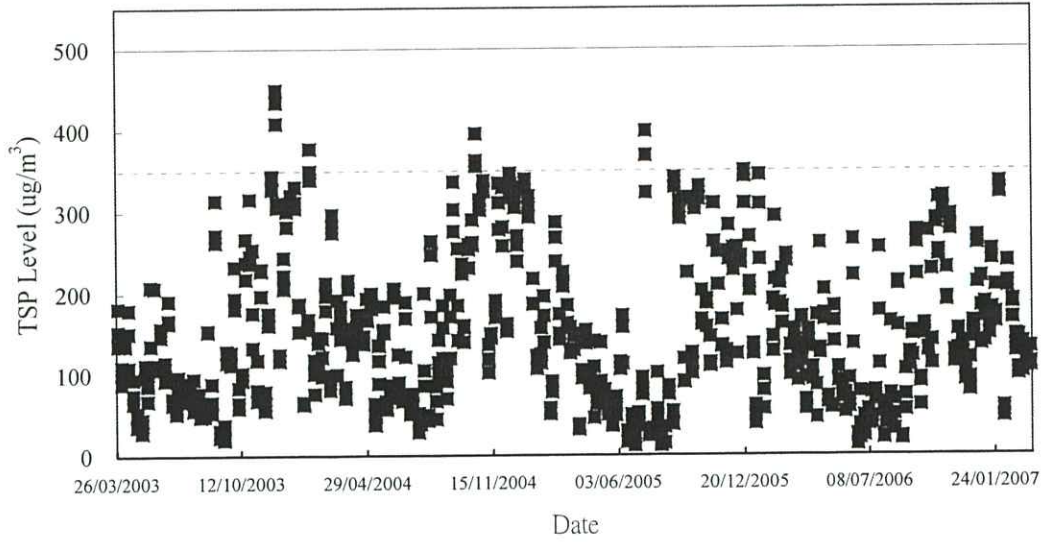
Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
102		Contractor outside limit of the works, including any damage to existing trees and woodland shall be noted, and the damage made good; Existing trees will be retained as far as is possible on site. The felling, retention and transplantation of trees will be in line with Tree Felling Application prepared in accordance with WTC24/94 Tree Preservation, including compensatory planting plans approved by relevant government departments. Trees identified in the Tree Felling Application as being suitable for transplantation or retention and those requiring felling are to be identified on site by the Contractor and the inspected by a qualified Landscape Architect to ensure compliance with the Felling Application.	All	Completed		
103		The methods of protecting existing vegetation proposed by the Contractor should be in accordance with the guidelines laid down in the Tree Survey Report and Tree Felling Application. These measures should be inspected by the Landscape Architect prior to the commencement of site clearance operations and their condition monitored during the Landscape Architects' biweekly inspections to ensure compliance.	All	Completed		
104		Operations for the preparation of trees to be transplanted including root pruning should be inspected by Landscape Architect. The soft works Contractor to submit proposals for crown thinning of transplanted trees prior to thinning operation. The optimum time for the transplantation operations is spring, i.e. March - April, although the preparation of the tree including root pruning should be carried out at an earlier date in accordance with the Tree Felling Application.	All	Completed		
105		A photographic record shall be taken of trees to be retained on site on a monthly basis to monitor condition throughout the construction phase, these should be submitted as part of the construction phase progress report.	All	Completed		
106		The location of the work sites associated with the proposed development shall be carefully selected to minimise the potential landscape and visual impacts of the construction works, the proposals for these sites should be reviewed by a landscape Architect with reference to the findings of the LVIA prior to the commencement of the works.	All	Completed		
107		Regular checks during the biweekly inspection of the site by Landscape Architect to ensure that the work site boundaries are not exceeded and that no damage is being caused to the surrounding areas.	All	Completed		
108		Topsoil disturbed by the works should be tested for quality and if worthy, it should be stockpiled not greater than 2m high and either temporarily hydroseeded or periodically turned to avoid degradation of the organic material. Topsoil should be reused on completion of the engineering works or on other projects.	All	Completed		
109		Control of night time lighting on the temporary works areas to avoid spillage and within the project limit.	All	Completed		

Item	EIA Ref	Environmental Protection Measures	Location / Timing	Implementation Status	Follow up actions recommended	Final environmental outcome
110		Erection of decorative screen hoarding to screen construction activity in the locations identified in the LVIA section of the EIA Report.	All	Completed		
111		Minimising the height of temporary buildings.	All	Completed		
112		Temporary construction sites shall be restored to standards as good as, or better than the original condition. Restoration plans to be designed by a qualified Landscape Architect.	All	Completed		
113		The planting of trees and shrubs are carried out in accordance with good horticultural practice and within the planting season (between March and September with the optimum period being between April and July).	All	Completed		
114		Regular watering, weeding and fertilising of all tree and shrub planting and areas of grass reinstatement.	All	Completed		
115		Regular grass cutting for reinstated areas.	All	Completed		
116		Firming up of tress after periods of strong winds.	All	Completed		
117		Regular checks for and eradication of pests, fungal infection etc.	All	Completed		
118		Pruning of dead or broken branches.	All	Completed		
119		Prompt replacement of dead plants and reseedling of failed areas of grass to ensure the landscape mitigation measures fulfil their design intention.	All	Completed		
120		The management and maintenance authority shall make regular bimonthly inspections of the planted areas during the establishment period to ensure the intended objectives of the landscape and visual mitigation measures are achieved.	All	Completed		
121		Compilation of an Operation and Maintenance Manual to ensure the long term success of the proposed mitigation measures.	All	Completed		

Appendix E

Graphical Presentation of 1-hr. and 24-hr. TSP Monitoring Results

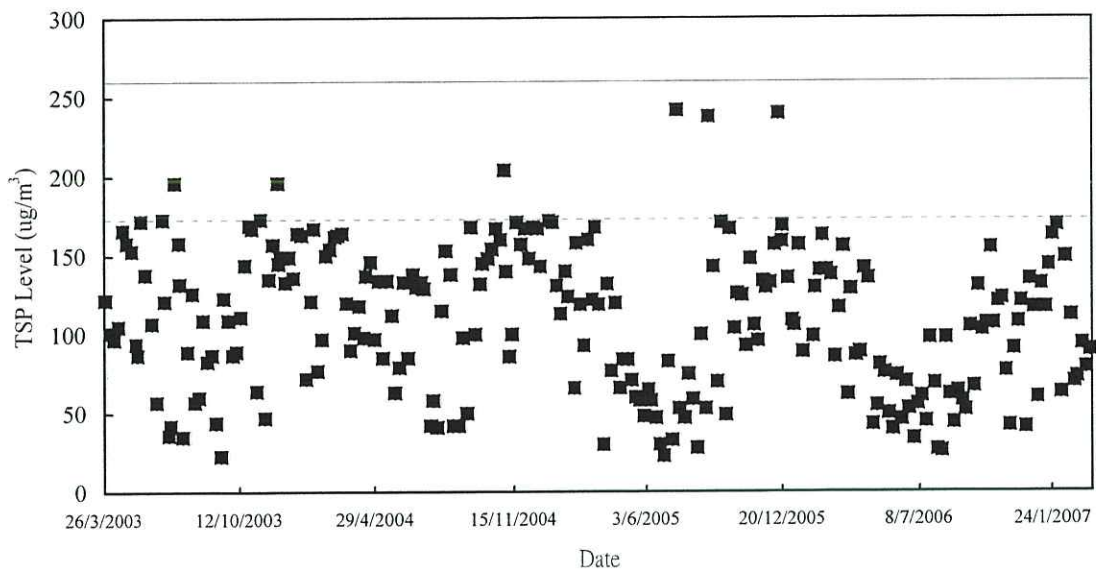
Impact TSP-1 hr Measurement at AM4: Ha Wan Tsuen
(Ground Level Measurement)



Remarks:

- 1 The details of the major site activities, weather conditions as well as the weather are referred to the Appendix G of the Monthly EM&A Reports.
- 2 The baseline measurement results are 183 - 439 $\mu\text{g}/\text{m}^3$

**Impact TSP-24 hr Measurement at AM4: Ha Wan Chuen
(Ground Level Measurement)**

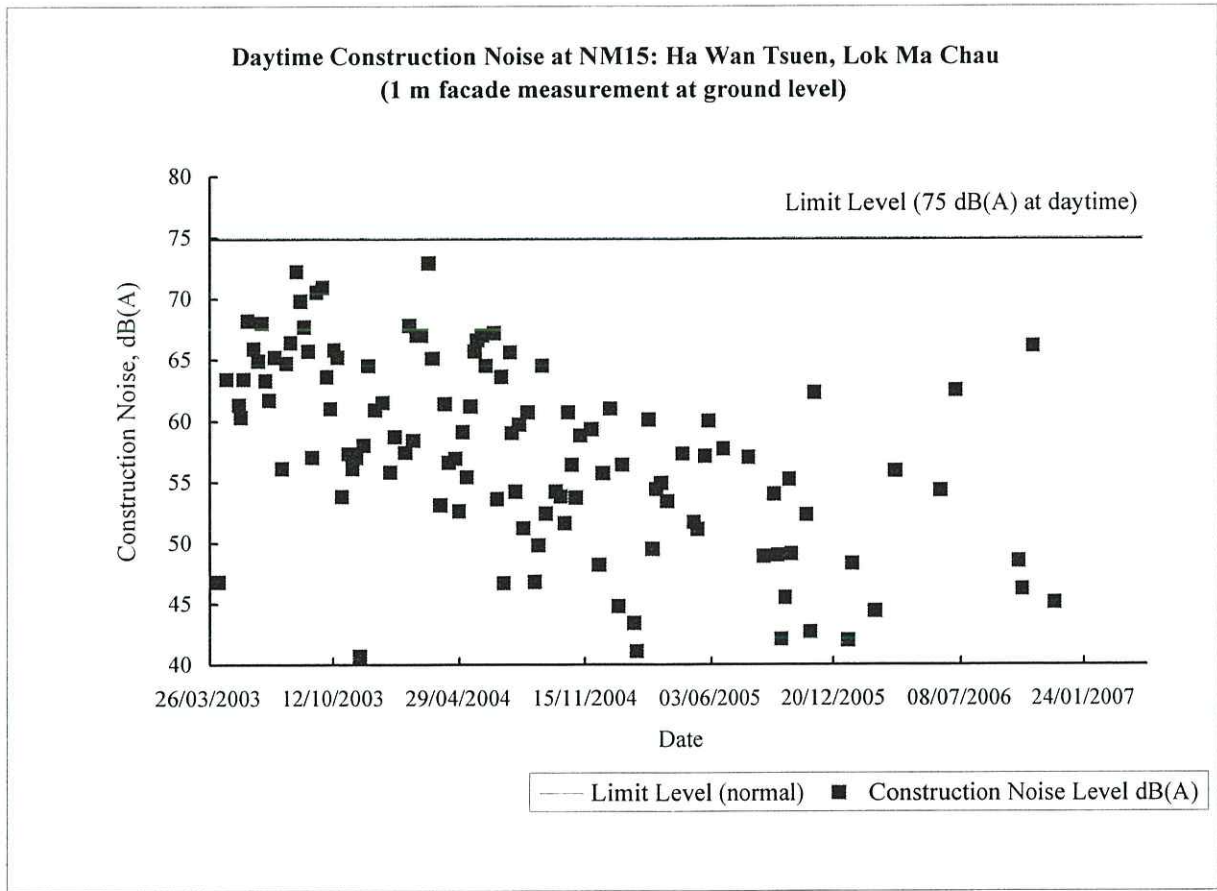


Remarks:

- 1 The details of the major site activities, weather conditions as well as the weather are referred to the Appendix G of the Monthly EM&A Reports.
- 2 The baseline measurement results are 19.1 - 122.5 $\mu\text{g}/\text{m}^3$

Appendix F

Graphical Presentation of Noise Monitoring Results

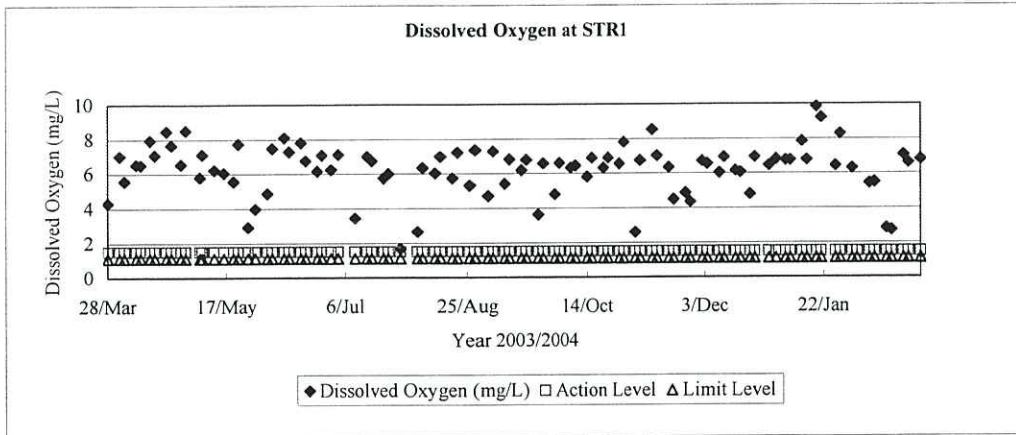


Remarks:

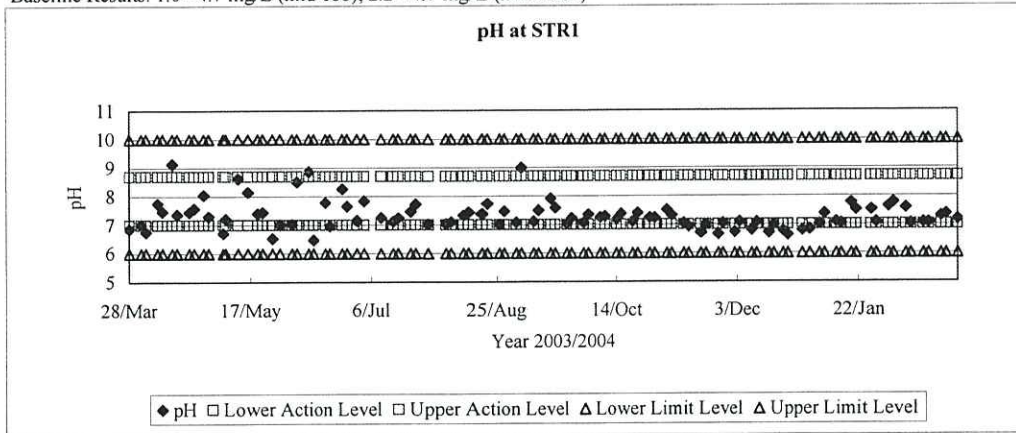
- 1 The details of the major site activities, weather conditions as well as the weather are referred to the Appendix J of the Monthly EM&A Reports.
- 2 The baseline measurement results are 51.5 - 70.5 dB(A)

Appendix G

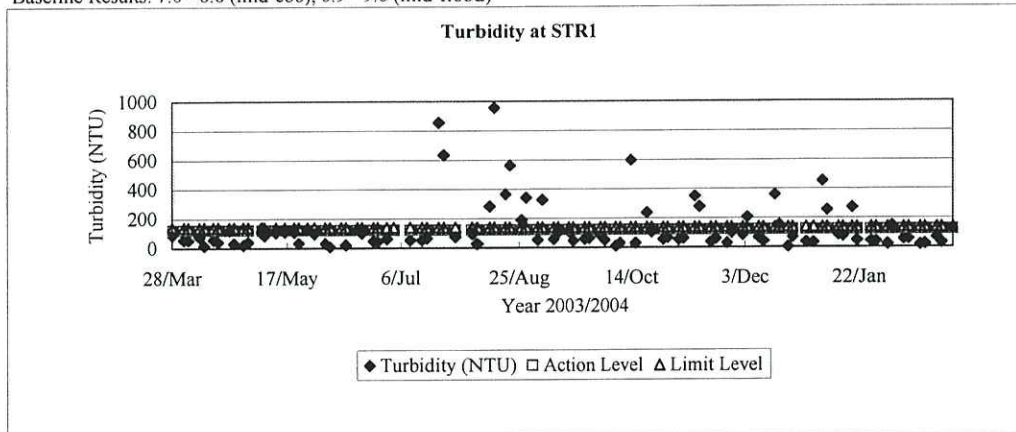
Graphical Presentation of Water Monitoring Results



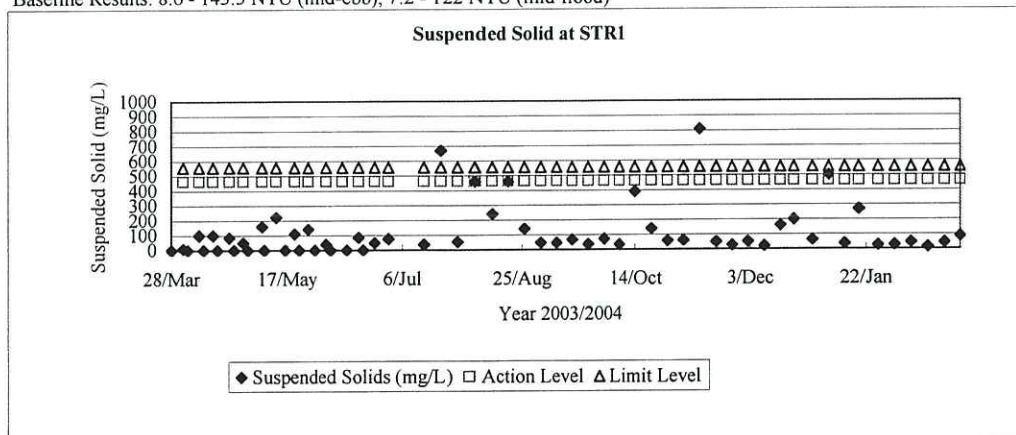
Baseline Results: 1.0 - 4.7 mg/L (mid-ebb); 2.2 - 4.7 mg/L (mid-flood)



Baseline Results: 7.0 - 8.8 (mid-ebb); 6.9 - 9.6 (mid-flood)



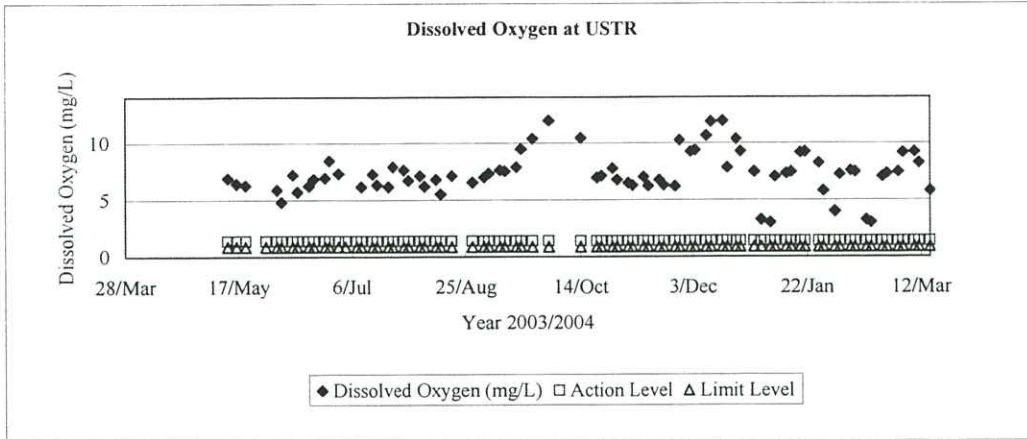
Baseline Results: 8.6 - 143.5 NTU (mid-ebb); 7.2 - 122 NTU (mid-flood)



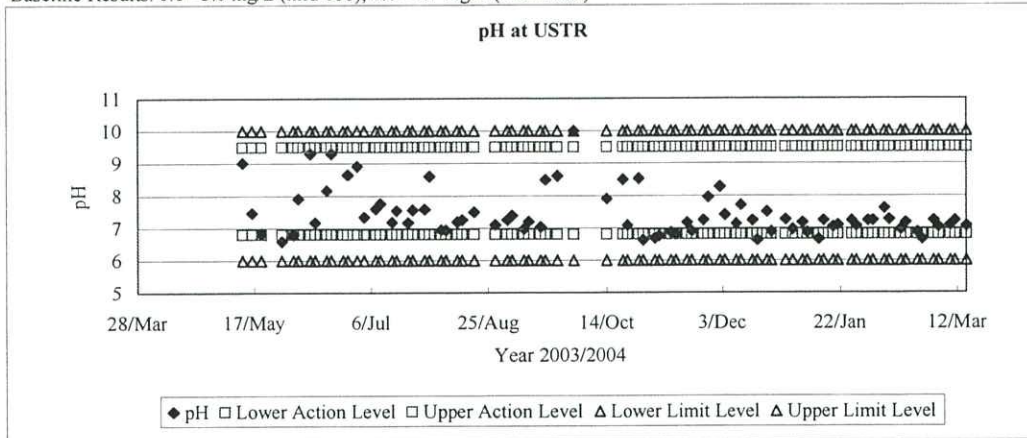
Baseline Results: 30 - 580 mg/L (mid-ebb); 23 - 150 (mid-flood)

Remarks:

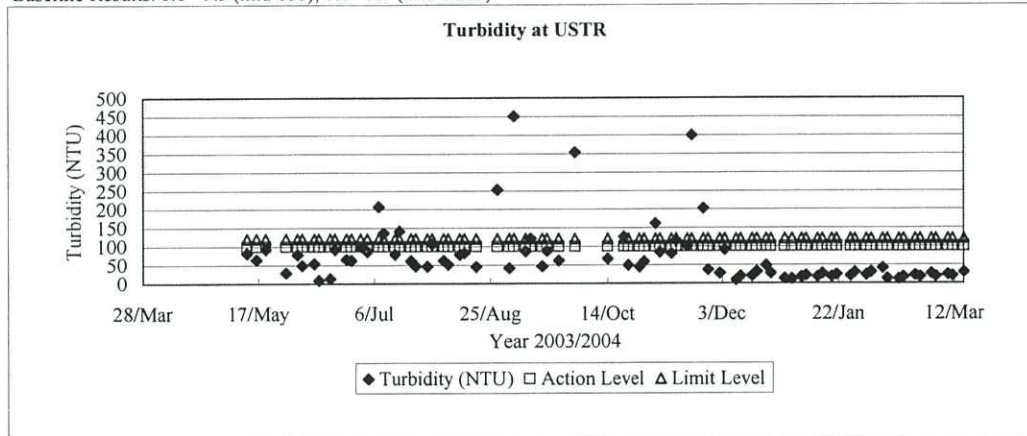
- 1 No water samples were sampled and analysed since 2 Mar 2004
- 2 The details of the major site activities, weather conditions as well as the weather are referred to the Appendix of the Monthly EM&A Reports.



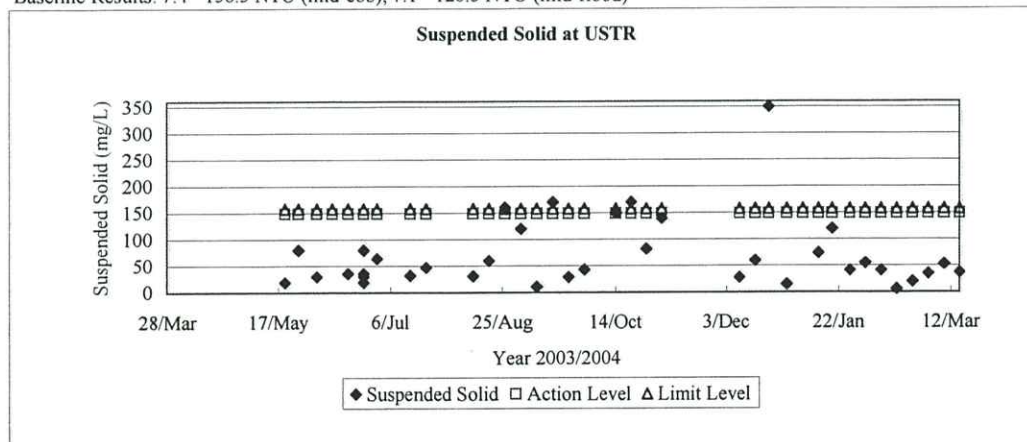
Baseline Results: 0.8 - 5.6 mg/L (mid-ebb); 0.8 - 5.1 mg/L (mid-flood)



Baseline Results: 6.6 - 9.5 (mid-ebb); 6.8 - 9.7 (mid-flood)



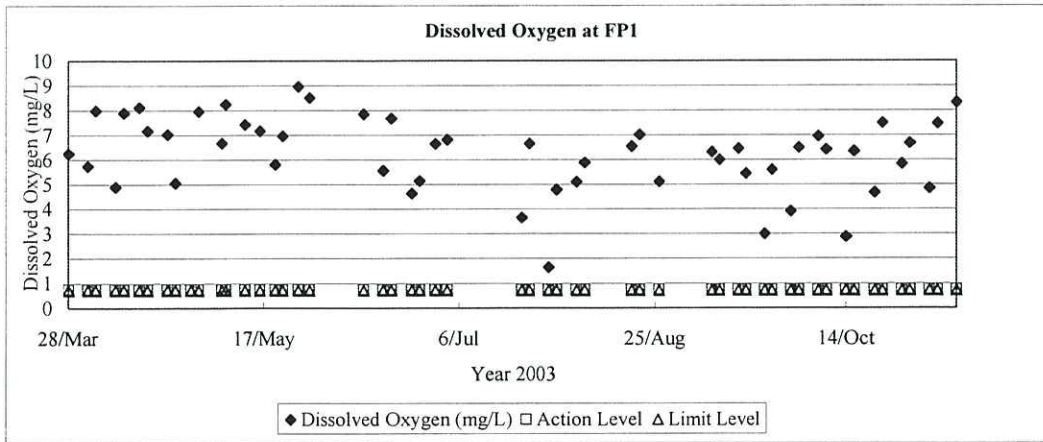
Baseline Results: 7.4 - 156.5 NTU (mid-ebb); 7.1 - 126.5 NTU (mid-flood)



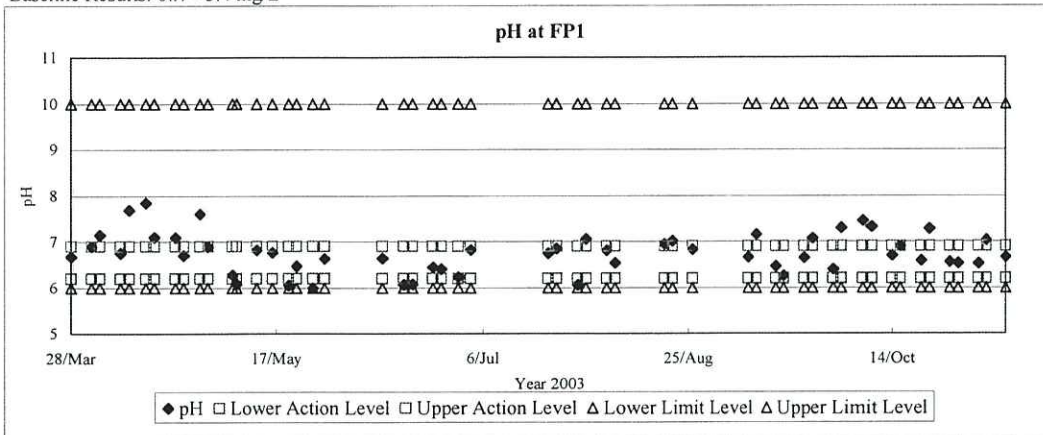
Baseline Results: 18 - 340 mg/L (mid-ebb); 13 - 160 mg/L (mid-flood)

Remarks:

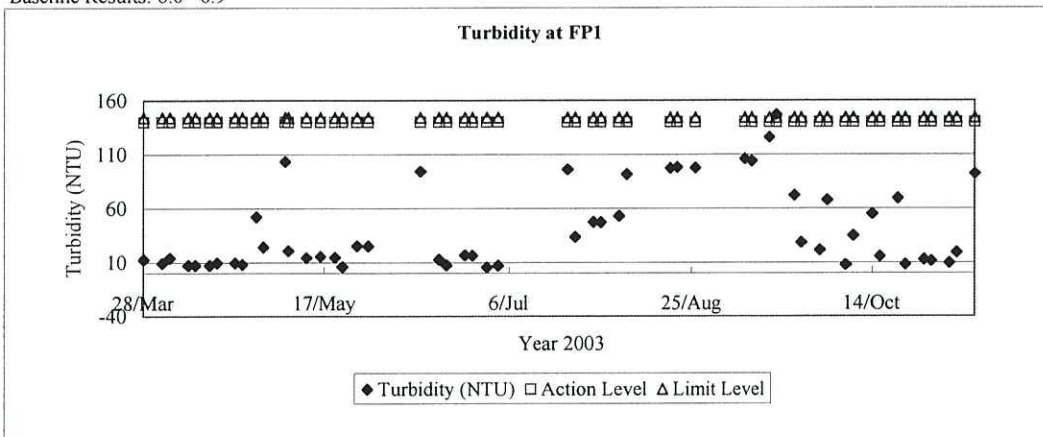
- 1 No water samples were sampled and analysed since 16 Mar 2004
- 2 The details of the major site activities, weather conditions as well as the weather are referred to the Appendix of the Monthly EM&A Reports.



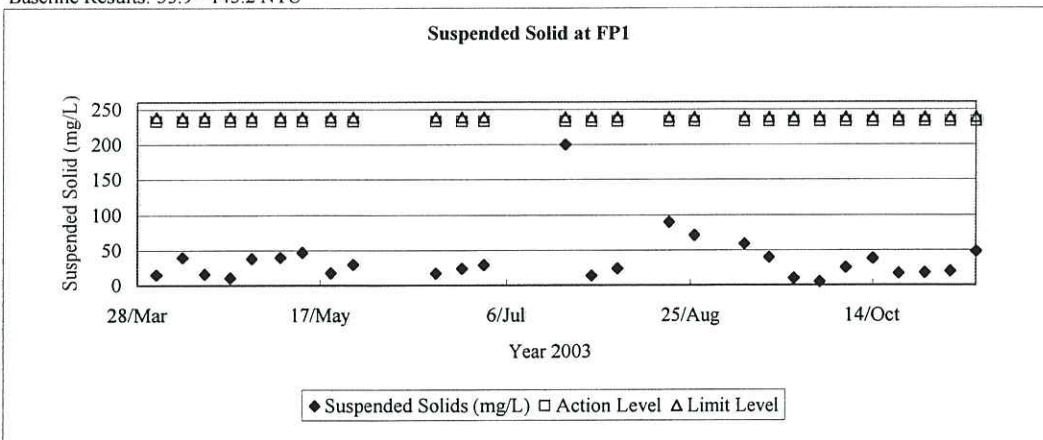
Baseline Results: 0.7 - 3.4 mg/L



Baseline Results: 6.0 - 6.9



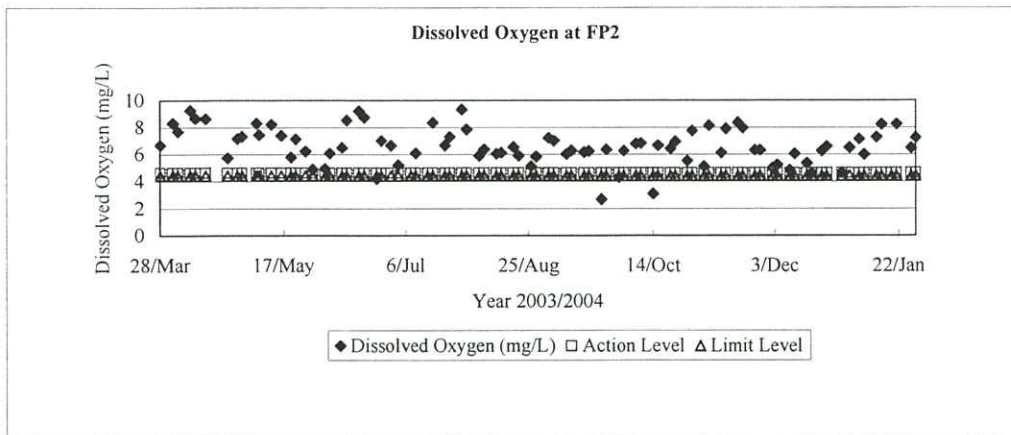
Baseline Results: 53.9 - 145.2 NTU



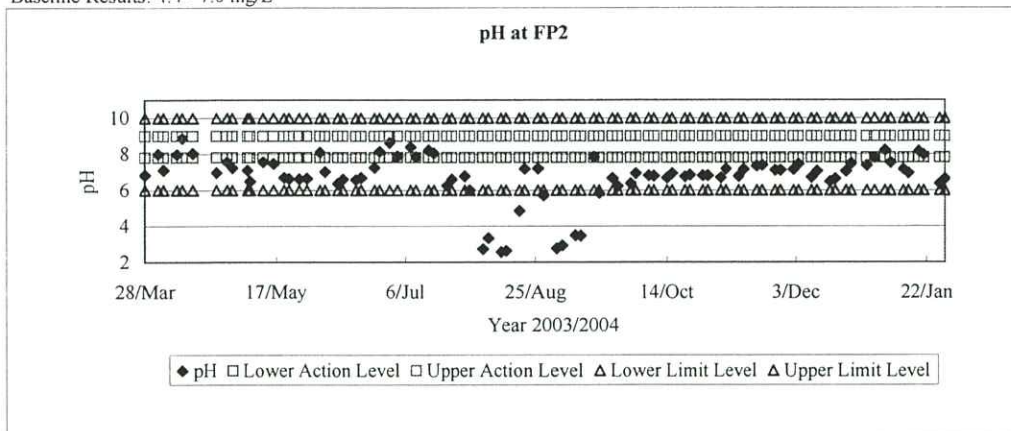
Baseline Results: 40 - 240 mg/L

Remarks:

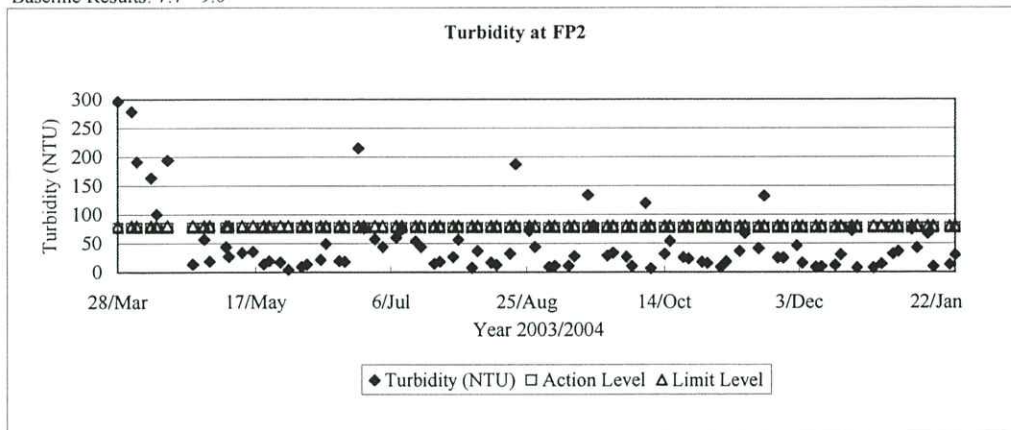
- 1 No water samples were sampled and analysed since 11 Nov 2003
- 2 The details of the major site activities, weather conditions as well as the weather are referred to the Appendix of the Monthly EM&A Reports.



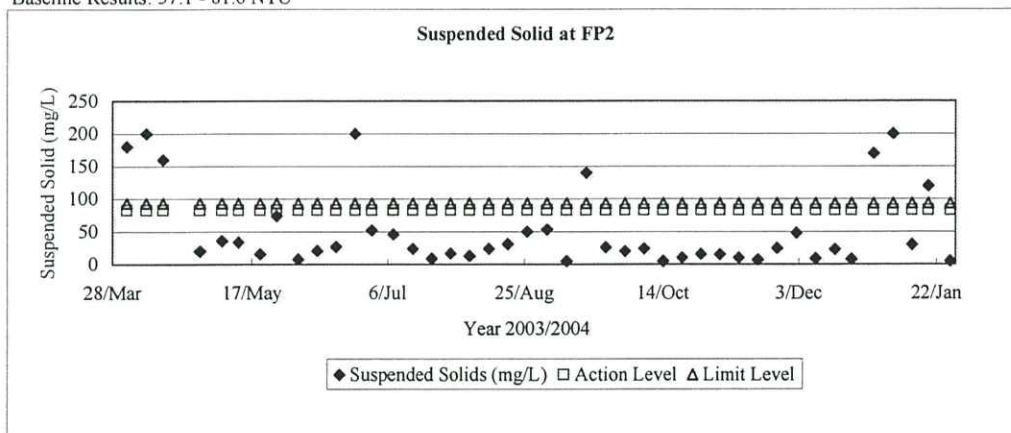
Baseline Results: 4.4 - 7.0 mg/L



Baseline Results: 7.7 - 9.0



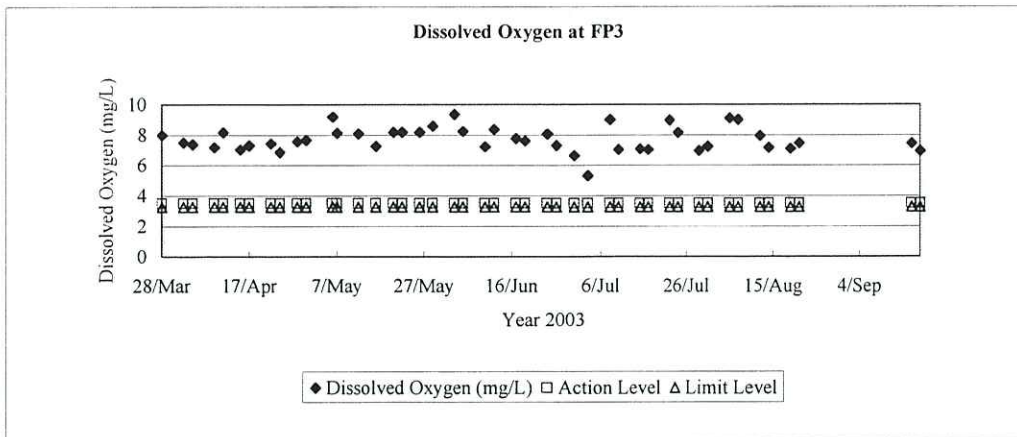
Baseline Results: 57.1 - 81.6 NTU



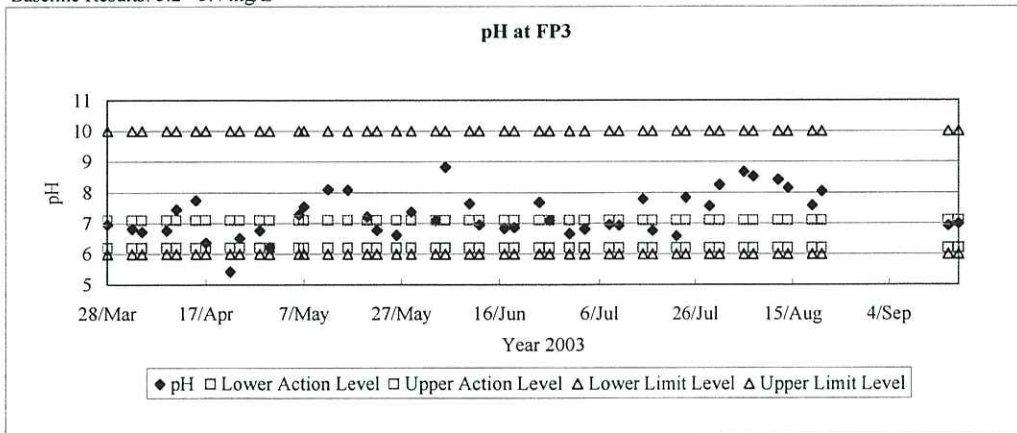
Baseline Results: 23 - 96 mg/L

Remarks:

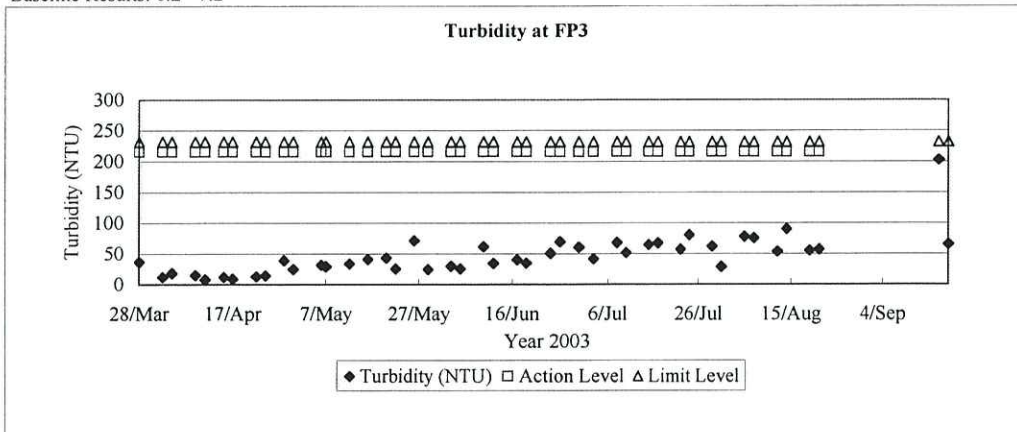
- 1 No water samples were sampled and analysed since 29 Jan 2004
- 2 The details of the major site activities, weather conditions as well as the weather are referred to the Appendix of the Monthly EM&A Reports.



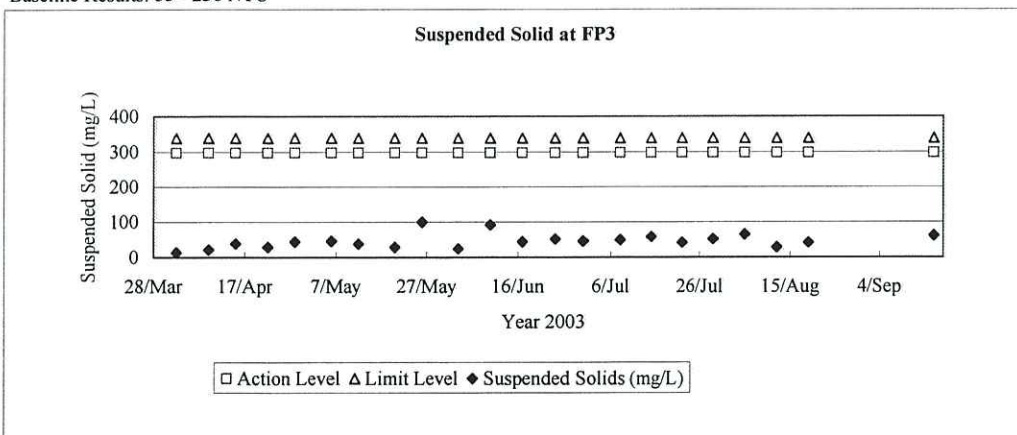
Baseline Results: 3.2 - 5.4 mg/L



Baseline Results: 6.2 - 7.2



Baseline Results: 35 - 236 NTU



Baseline Results: 72 - 350 mg/L

Remarks:

No water samples were sampled and analysed since 18 Sep 2003

- 1 The details of the major site activities, weather conditions as well as the weather are referred to the Appendix of the Monthly EM&A Reports.
- 2

Appendix H

Complaints Handling Procedures and Corrective and Preventive Actions

COMPLAINT HANDLING PROCEDURES

Environmental complaints shall be referred to MAEDA and passed on to the ET Leader for carrying out complaint investigation procedures. The following procedures shall be undertaken by the ET Leader upon receipt of the complaints:

- (a) Log complaint and date of receipt onto the complaint database and inform the IEC and ER immediately. The complaint database shall include the following information:
 - Log Reference
 - Date/Location
 - Complaint/Date of Contact
 - Details of Complaint
 - Investigation/Mitigation Action
 - File Closed Date
- (b) Investigate the complaint to determine its validity, and to assess whether the source of the problem is due to works activities;
- (c) If a complaint is valid and due to works, identify mitigation measures in consultation with the IEC and ER;
- (d) If mitigation measures are required, advise MAEDA accordingly;
- (e) Review MAEDA's response on the identified mitigation measures, and the updated situation;
- (f) If the complaint is transferred from EPD, submit interim report after endorsement of IEC to EPD on status of the complaint investigation and follow-up action within the time frame assigned by EPD;
- (g) Undertake additional monitoring and audit to verify the situation if necessary, and review that any valid reason for complaint does not recur;
- (h) Report the investigation results and the subsequent actions after endorsed by IEC to the source of complaint for responding to complainant (If the source of complaint is EPD, the results should be reported after endorsement of IEC within the time frame assigned by EPD); and
- (i) Record the complaint, investigation, the subsequent actions and the results in the monthly EM&A reports.

During the complaint investigation work, MAEDA and ER shall cooperate with the ET Leader in providing all the necessary information and assistance for completion of the investigation. If mitigation measures are identified in the investigation, MAEDA shall promptly carry out the mitigation. The ER shall ensure that the measures have been carried out by MAEDA. The ET will aid MAEDA in the complaint investigation and the implementation of any mitigation measures.

A sample of the Complaint Logbook is attached.

CORRECTIVE AND PREVENTIVE ACTIONS

Non-compliance or deficiency in the implementation of mitigation and management measures may be identified by -

- Site Supervisors in weekly site inspections,
- any site staff during daily work activities.

In the event that a non-compliance or deficiency is identified, corrective and preventive action procedures as detailed below shall be followed:

- (a) The person who has identified the non-compliance or deficiency shall inform the QA/QC & Environmental Engineer. The person shall fill in Part A of the Corrective and Preventive Action Request (CPAR), and submit this Request to the QA/QC & Environmental Engineer.
- (b) The QA/QC & Environmental Engineer shall forward the CPAR to the Project Manager, for incidents related to the non-compliance or deficiency in the implementation of mitigation and management measures. Within 3 working days upon receipt of the CPAR, the QA/QC & Environmental Engineer shall -
 - investigate the cause of the non-compliance or deficiency;
 - recommend appropriate corrective actions and where necessary preventive actions;
 - estimate the time required for implementing the corrective/preventive actions; and
 - fill in Part B of the CPAR and submit this to the Project Manager.
- (c) The Project Manager shall check to ensure that the actions are implemented within the specified time frame and are effective. The Project Manager shall then fill in Part C of the CPAR and file the completed CPAR.
- (d) If the Project Manager concludes that the recommended actions have not been implemented, he shall instruct the QA/QC & Environmental Engineer to immediately commence implementation. If the Project Manager concludes that the recommended actions are ineffective, he shall instruct the QA/QC & Environmental Engineer to re-submit alternative corrective/preventive actions within two working days.
- (e) The Project Manager shall maintain a CPAR Logbook to record and track every corrective/preventive actions taken.

Appendix I

**Complaint Log Book and
Corrective and Preventive Action Request Log Book**

CORRECTIVE AND PREVENTIVE ACTION REQUEST LOGBOOK (Page 1 of 1)

CPAR No.	Inspection Report No. (if any)	Action to be taken	Date of Request	Target Completion Date	Actual Completion Date	Remarks
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--

COMPLAINT LOGBOOK (Page 1 of 3)

Complaint Record No.	Date of Complaint Received	Description	Proposed Actions	Target Completion Date	Actual Completion Date	Remarks
C-001	22-May-03	The complaint was brought up by Simeon Cheng of KCRC regarding the soiling along the Border Road (public area) next to Sham Chun River caused by the travelling of site vehicles from various parties including MAEDA	MAEDA has assigned staff to carry out regular cleaning works and the site performance was found satisfactory during inspection on 29-May-03. MAEDA indicated they would arrange regular discussion with the relevant contractors on the cleaning arrangement along the public area during the upcoming interface meetings so that cleanliness of the public roads during future operation could be maintained	22-May-03	22-May-03	Maintenance of the road will be continually implemented
C-002	22-May-03	Repeated direct discharge of sediment-loaded wastewater from EAP No. 6 (next to W37) into the adjacent wetland site in which considerable accumulation of silt was left along the storm drain	The discharge was stopped immediately. On the other hand, the accumulated silt along the storm drain was cleaned up and the site performance was found satisfactory during the site inspection on 23-May-03	23-May-03	23-May-03	Nil
C-003	25-May-03	EPD Local Control Office inspection and issue pink copy of the Record of Inspection regarding the operation of an excavator without valid CNP	MAEDA has formally reminded all their site staff and sub-contractors (MAEDA's letter dated 2 nd June 2003) so that construction works during restricted hours without the maintenance of valid construction noise permit was prohibited. Based on the information provided by MAEDA, the Construction Noise Permit covering the said activities was issued on 26 th May 2003.	2-Jun-03	2-Jun-03	Nil

COMPLAINT LOGBOOK (Page 2 of 3)

Complaint Record No.	Date of Complaint Received	Description	Proposed Actions	Target Completion Date	Actual Completion Date	Remarks
C-004	10-Jul-03	Complaint forwarded by Local Control Office of EPD regarding the dust nuisance at Ha Wan Tsuen on 8-Jul-03	MAEDA agreed to operate an additional set of water browser which would be available by 17 th July 2003. In the meantime, the water browsing at the unpaved area of the site would be carried out by manual hose so that the emission of fugitive dust could be reduced.	17-Jul-03	17-Jul-03	Nil
C-005	15-Jul-03	EPD Local Control Office inspection and issuance of pink copy of Record of Inspection regarding the fugitive dust emission at Ha Wan Tsuen	MAEDA has intensify the implementation of mitigation measures via additional water spraying at the unpaved road	17-Jul-03	17-Jul-03	Nil
C-006	19-Aug-03	Internal complaint forwarded by LCC300 regarding the record of the elevated noise measurement results at Ha Wan Area on 19-Aug-03	Based on the information by MAEDA, the elevated noise measurement data obtained by LCC300 might due to the sheet-piling works. For this, MAEDA was recommended on the environmental mitigation measures and the follow-up noise monitoring data indicated that the construction noise was maintained at acceptable level	28-Aug-03	28-Aug-03	--

COMPLAINT LOGBOOK (Page 3 of 3)

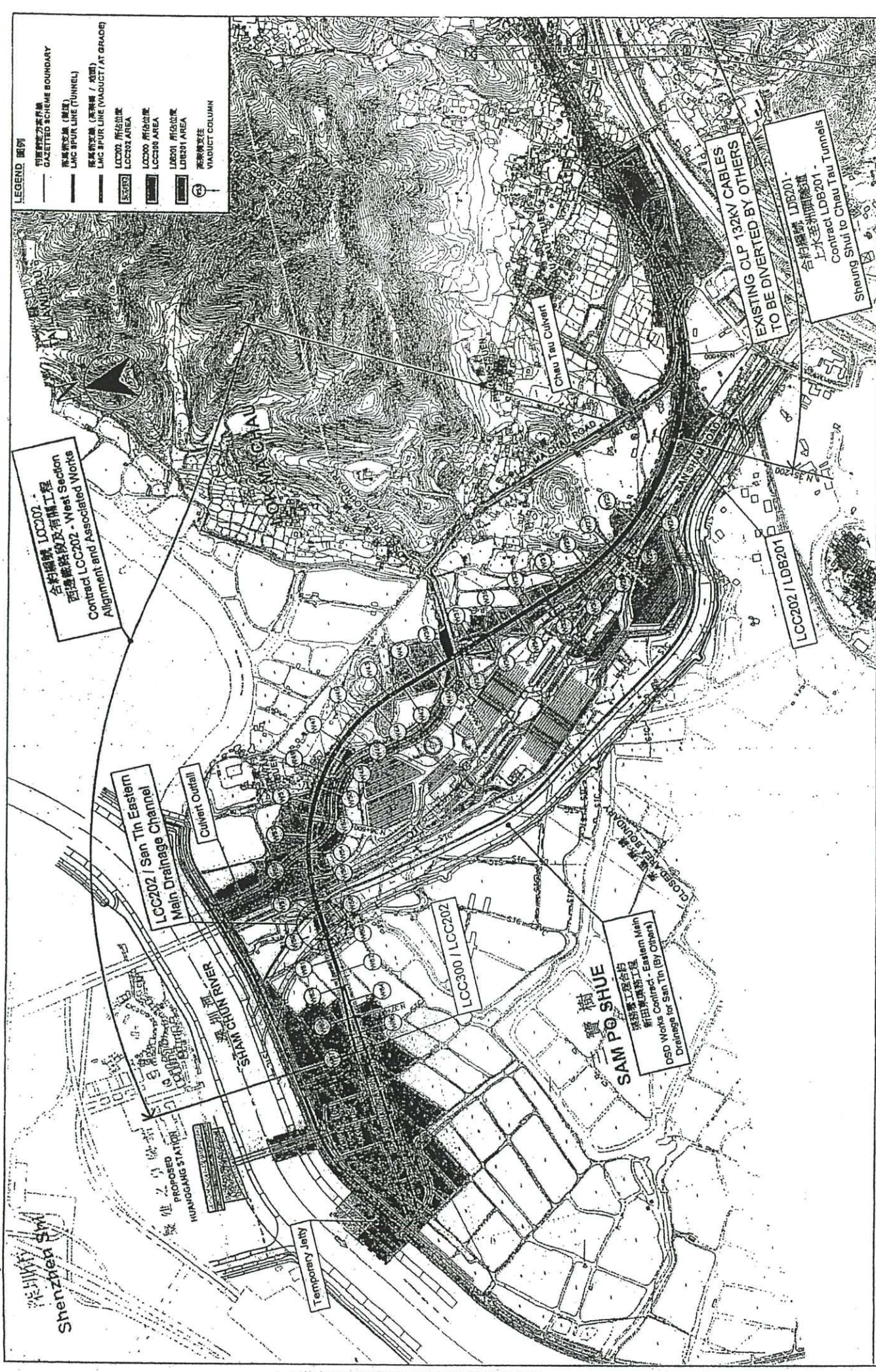
Complaint Record No.	Date of Complaint Received	Description	Proposed Actions	Target Completion Date	Actual Completion Date	Remarks
C-007	25-Nov-03	Yellow copy of the Record of Inspection issued by EPD regarding the unsatisfactory discharge at the final discharge point at P3 site during inspection (EPD ref. EP912/W5/IS46)	The deteriorated discharge quality was due to the deposition of silt along the concrete trench and sump pits. For this, MAEDA has arranged the desludging of the entire alignment of the concrete trench as well as the sump pits. MAEDA also diverted the treated wastewater from the treatment system to the final discharge point so that the loadings of the sump pits system along the concrete trench could be optimized.	4-Dec-03	4-Dec-03	--
C-008	27-Nov-03	Complaint forwarded by EPD on the dust nuisance at Ha Wan Tsuen on 26-Nov-03 (EPD Ref. 9) in EP3/N6/TW/19590-03)	Dust nuisance may be due to travelling of site vehicles from another project. MAEDA issued a letter to their representatives to remind them to strictly observe the wheel-washing requirements	28-Nov-03	28-Nov-03	--

03/02

Appendix J

Work Site (Not to Scale)





LEGEND 圖例

—	工程界方界線
—	GAZETTED SCHEME BOUNDARY
—	埋地管線 (隧道)
—	LMG SPUR LINE (TUNNELL)
—	埋地管線 (管溝/ 管溝)
—	LMG SPUR LINE (VAULT/ AT GRADE)
■	LCC202 所佔地區
■	LCC202 AREA
■	LCC300 所佔地區
■	LCC300 AREA
■	LDB201 所佔地區
■	LDB201 AREA
○	管線位置
○	VAULT/COLUMN

合約編號 LCC202
 合約名稱 LCC202 - West Section
 西邊鐵路及有關工程
 Contract LCC202 - West Section
 Alignment and Associated Works

LCC202 | Sen Tin Eastern
 Main Drainage Channel
 Culvert Outfall

HUNGKANG STATION
 香港站

LCC300 | LCC202

SAM PO SHUE
 新田東路工程
 PSD Works Contract - Eastern Main
 Drainage for San Tin (B) (Others)

LCC202 | LDB201

EXISTING CLP 132KV CABLES
 TO BE DIVERTED BY OTHERS
 合約編號 LDB201
 上水至洲頭鐵路
 Contract LDB201 -
 Sheung Shui to Chau Tau Tunnels

Chau Tau Culvert

CONTRACT LCC202 - WEST SECTION ALIGNMENT AND ASSOCIATED WORKS

KCR 九廣鐵路
 East Rail Extensions

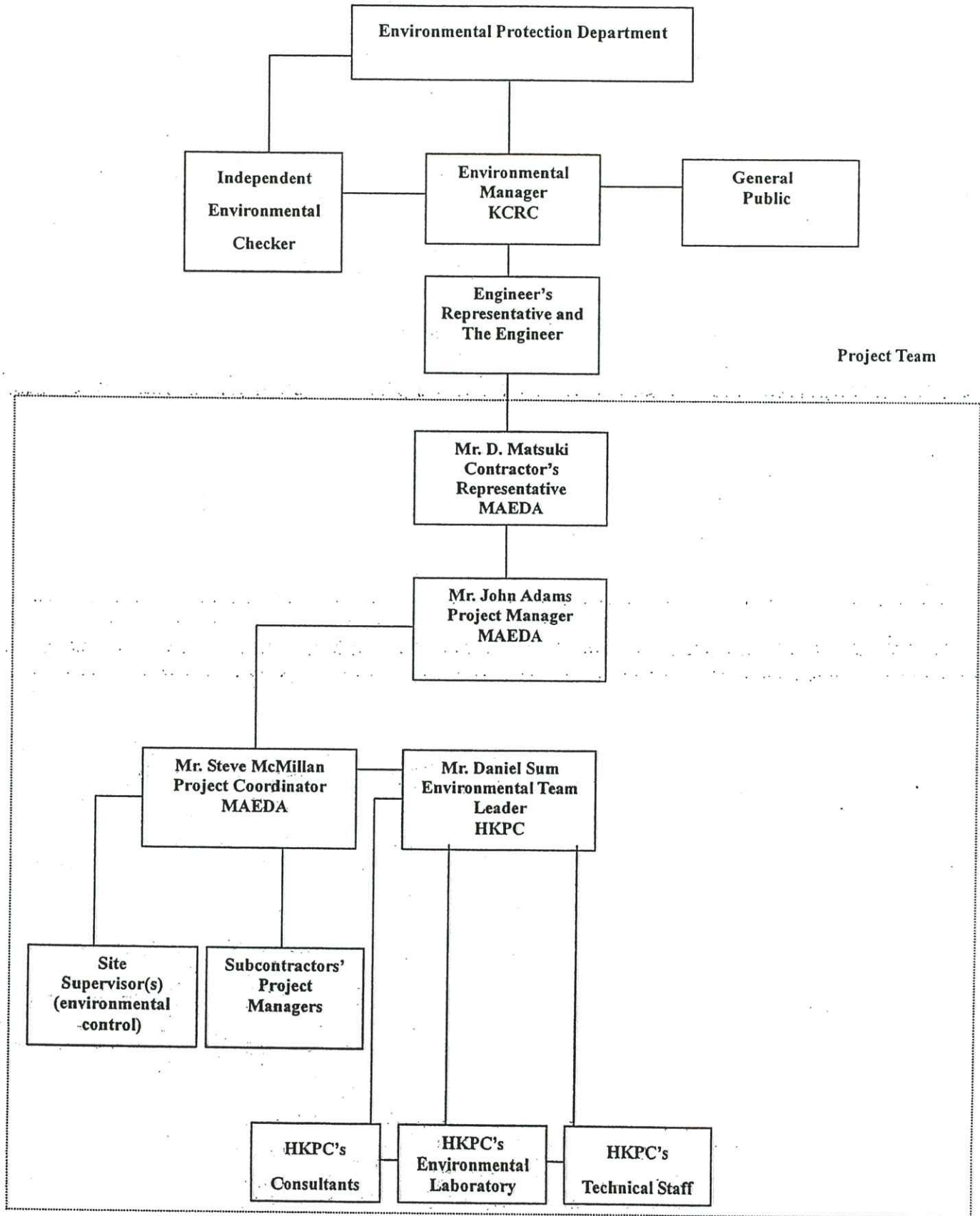
PROJECT NO : 021-011
 DRAWING NO : BE/CP/11
 DATE : 05/03/11
 CONTRACT NO : 021/02/03
 CONTRACT NAME : BE/CP/CP/11
 PROJECT NO : 021-011

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Appendix K

**Organization Structure and Lines of Communications of the Project Team for
Environmental Management**

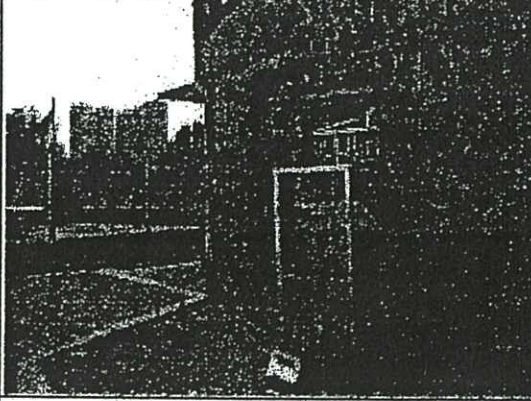
Organization Structure and Lines of Communications of the Project Team for Environmental Management



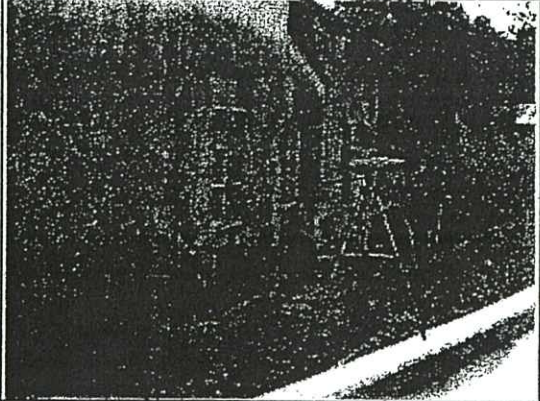
Appendix L

Air Quality, Noise and Water Monitoring Locations

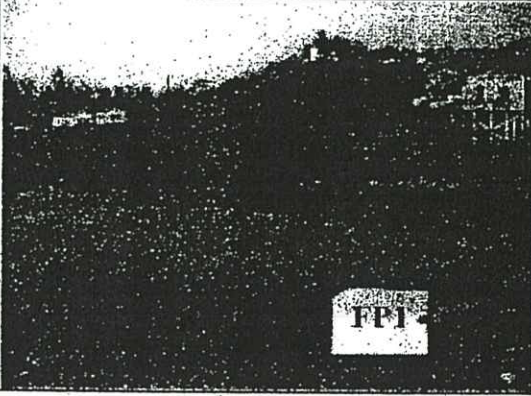
Air Quality Monitoring Station AM4



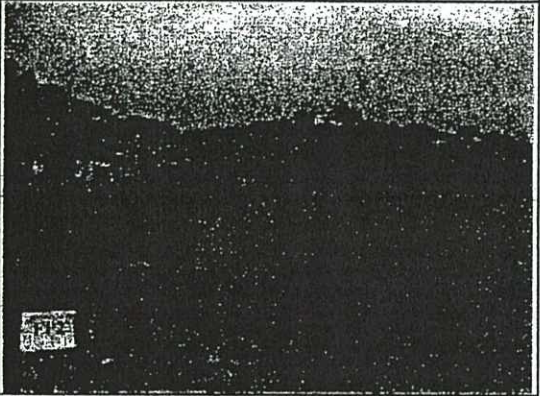
Noise Monitoring Station NM15



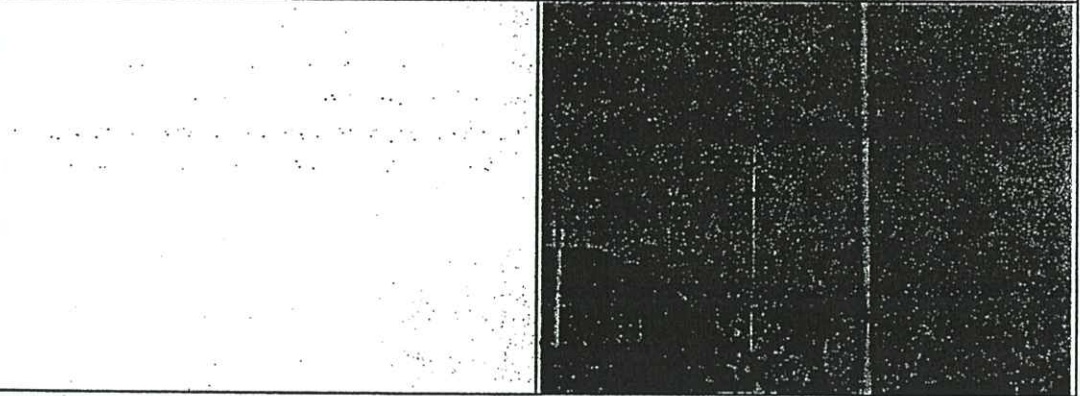
Water Monitoring Station FP1



Water Monitoring Station FP2



Weather Station



Appendix M

**Cumulative Statistics on Notification of Summons and
Successful Prosecutions**

**Cumulative Statistics on Notification of Summons and
Successful Prosecutions**

Date	Description	Site Inspection Report	Summon / conviction received	Remarks
13 th Nov 2003	Operation of powered mechanical equipment at the site without the maintenance of a valid construction noise permit	W5/N0350 dated 25 th May 2003	Summon received (Case No. FLS11739/2003), convicted on 16 th December 2003 at Fanling Magistrates' Courts	Penalty

