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DSD Contract DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Karn Tin, Nam Sang Wai and Au Tau in Yuen Long Monthly EM&A Report (October 2006)



DRAINAGE SERVICES DEPARTMENT (DSD) CONTRACT NO. DC/2005/02

CONSTRUCTION OF SEWERS, RISING MAINS & SEWAGE PUMPING STATION AT KAM TIN, NAM SANG WAI AND AU TAU IN YUEN LONG

7th Monthly Construction Phase EM&A Report for October 2006

PREPARED FOR

Leader Civil Engineering Corporation Ltd

Quality Index Date Reference No. 27 October 2006 TC\$/00310/06/600/R0111 Prepared by Reviewed by Certified by Verified by Approved by Ben Tam Ken Wong David Yeung TW Tam Dr Anne F Kerr (Project Supervisor) (Deputy Project] (General Manager) (Project ETL) (Project IEC) This report has been prepared by Action-United Environmental Services & Consulting with all reasonable skill, care and diligence within the terms of the Agreement with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

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Executive Summary

- ES.01 Leader Civil Engineering Corporation Ltd (the Contractor) has been awarded the DSD Contract DC/2005/02 Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long (the Project). The Project requires an Environmental Monitoring and Audit (EM&A) program to be implemented by an Environmental Team (ET) throughout the contract period in compliance with the requirements as stated in the project Environmental Permit (EP-220/2005) and the project's Updated EM&A (Designated Elements) Manual.
- ES.02 This is the 7th Monthly Construction Phase EM&A Report (October 2006, Report No. 7) reporting the environmental impact monitoring and audit (EM&A) conducted from 1 to 25 October 2006. The EM&A in October 2006 covered air quality, noise and waste management.

Breach of Action and Limit (AL) Levels

ES.03 There was no breach of Action or Limit level for air and noise monitoring in this reporting period.

Complaint Log

ES.04 No environmental complaint was received in this reporting period.

Notification of Any Summons and Successful Prosecution

ES.05 There was no environmental summon or prosecution in this reporting period.

Reporting Changes

ES.06 There are no changes to be reported in this reporting period.

Future Key Issues

ES.07 Construction activities to be undertaken in November 2006 include site hoarding erection, site clearance and formation work at Kam Tin pumping station, site investigation works at the Nam Sang Wai pumping station, pipe jacking for drainage work at S4, trench excavation and sorting erection for drainage work at S5, S6 and S7. Potential environmental impacts arising from the works include air quality, noise and water quality (particularly site runoff). Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure site environmental performance is acceptable.

1.0 BASIC PROJECT INFORMATION

- 1.01 Leader Civil Engineering Corporation Ltd (the Contractor) has been awarded the DSD Contract DC/2005/02 Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long (the Project). The Project is part of the Yuen Long and Kam Tin Sewerage and Sewage Disposal (YLKTSSD) Scheme. A site layout map showing the site boundary and the work areas is shown in Annex A.
- 1.02 This 7th Monthly Construction Phase EM&A Report (October 2006, Report No. 7) summarizes the impact monitoring results and audit findings in the reporting period from 1 to 25 October 2006.

Project Organization

1.03 The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in **Annex B**.

Construction Program of the Reporting Period

1.04 A construction program showing the construction work undertaken in this reporting period was shown in **Annex C**. Environmental mitigation measures implemented are shown in **Table 2-1**.

Management Structure

1.05 The management structure of the Project is shown in **Annex B**.

Works Undertaken in the Reporting Period

1.06 The construction works undertaken during the reporting period under the Environmental Permit (EP-220/2005) were shown as follows:

Nam Sang Wai Pumping Station (P3)

• Excavation and shoring installation

Nam Sang Wai Road (S4)

• Grouting for ground treatment

Pok Wai South Road (S5)

- Pipe Jacking
- Grouting for ground treatment

2.0 ENVIRONMENTAL STATUS

Work Undertaken in the Reporting Period with Illustrations

2.01 A summary of the work undertaken in this reporting period with illustrations and environmental mitigation measures implemented is shown in **Table 2-1**.

Table 2-1 Work Undertaken in the Reporting Period with Illustrations of Mitigation Measures

Location	Description of Construction Activities	Environmental Mitigation Measures	EM&A Ref.
P3 (Nam	 Excavation 	• Erect 2.4m high noise barrier hoarding around the works area	A1 & F6
Sang Wai Pumping	and shoring	• Remove dust and spray water at the construction access	A2
Station)	installation	• Cover the stockpiles of dusty material properly	A3
,		• Spray water to all dusty materials immediately before loading and unloading	A4
		• Wash the wheels of vehicles before leaving the site	A5
		 Install and use power-operated cover at the dump trucks 	A6
		 Spray water at the pavement breaking locations 	A7
		 Spray the working area of excavation frequently 	A8
		 Maximize the use of quiet PME on site 	B1, B2 & F5
		 Apply and obtain appropriate waste disposal licenses 	D1
		• Handle, store and dispose of chemical wastes as per relevant regulations	D2, D3 & D4
		 Implement trip-ticket system for waste disposal 	D5
		• Restrict open fires and provide fire fighting equipment in the works area	F9
		 Perform weekly inspection with ET and monthly audit with IEC 	H1
		• Conduct noise and dust monitoring as per EM&A manual during construction	I1 & I2
		 Recycle wheel washing water and provide sedimentation tanks for treating site discharge. 	-
S5 (Pok Wai	 Pipe Jacking 	 Remove dust and spray water at the construction access 	A2
South Road)	 Grouting for 	• Cover or provide shelters to the stockpiles / operation of dusty material properly	A3
	ground	• Spray water to all dusty materials immediately before loading and unloading	A4
	treatment	 Wash the wheels of vehicles before leaving the site 	A5
		 Install and use power-operated cover at the dump trucks 	A6
		 Spray the working area of excavation frequently 	A8
		• Maximize the use of quiet PME on site	B1, B2 & F5
		 Apply and obtain appropriate waste disposal licenses 	D1
		• Handle, store and dispose of chemical wastes as per relevant regulations	D2, D3 & D4
		 Implement trip-ticket system for waste disposal 	D5
		• Restrict open fires and provide fire fighting equipment in the works area	F9
		 Perform weekly inspection with ET and monthly audit with IEC 	H1
		• Conduct noise and dust monitoring as per EM&A manual during construction	I1 & I2
		 Recycle wheel washing water and provide sedimentation tanks for treating site discharge. 	-
S4 (Nam Sang Wai	Grouting for	 Remove dust and spray water at the construction access 	A2
Road)	ground treatment	• Cover or provide shelters to the stockpiles / operation of dusty material properly	A3
	treatment	• Spray water to all dusty materials immediately before loading and unloading	A4
		• Wash the wheels of vehicles before leaving the site	A5
		• Spray the working area of excavation frequently	A8
		 Maximize the use of quiet PME on site 	B1, B2 & F5
		 Apply and obtain appropriate waste disposal licenses 	D1
		 Handle, store and dispose of chemical wastes as per relevant regulations 	D2, D3 & D4
			F9
		resulter open mes and provide me righting equipment in me works area	H1
		• Perform weekly inspection with ET and monthly audit with IEC	
		• Conduct noise and dust monitoring as per EM&A manual during construction	I1 & I2
		 Provide sedimentation tanks for treating site discharge. 	-

2.02 Photographic records showing the implemented 2.4m high noise barrier at the pumping station (S3) are shown in **Annex D**.

Project Drawings

- 2.03 Drawings showing the work areas under EP-220/2005 and the locations of the designated monitoring stations are presented in **Annex E**.
- 2.04 There are four designated air quality and four noise monitoring stations under the project EP. In this reporting month, the monitoring was carried out at two designated air (AM1 & AM7) and two noise (NM3 & NM4) monitoring stations.

Station ID	Nature of Premise	Site Work Description	Station Coordinates
AM1	Site Boundary in NSW		835829 N 822910 E
AM7	Site Boundary in NSW	Sheet piling and trench excavation.	836171 N 822586 E
NM3	Village House in NSW		835808 N 822817 E
NM4	Village House in NSW		835282 N 822811 E

2.05 Since due to the land resumption, the two remaining air (AM5 & AM6) and noise (NM6 & NM7) stations baseline monitoring were commenced in this reporting period. Baseline Monitoring of NM6 (construction Noise) and AM6 (air quality) were completed on 10 & 16 October 2006 respectively. The baseline monitoring of NM7 (construction noise) and AM5 (air quality) will be completed on 25 October 2006 and 01 November 2006. The supplementary baseline monitoring report for these stations will prepare once all the monitoring results are available.

3.0 SUMMARY OF EM&A REQUIREMENTS

Monitoring Parameters

- 3.01 Environmental monitoring and audit requirements are set out in the Updated EM&A manual. Air quality and construction noise have been identified to be the key monitoring parameters during the impact phase for the construction of the project.
- 3.02 A summary of the impact EM&A requirements for air quality and construction noise as per the project Updated EM&A Manual are shown in **Table 3-1**.

Environmental Aspect	Monitoring Parameters
Air Quality	24-Hr TSP
Construction Noise	Leq 30min during day time 07:00 to 19:00
	Supplementary L10 and L90 for reference.

Table 3-1 Summary of ENTRA Regultements	Table 3-1	Summary	of EM&A	Requirements
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Environmental Quality Performance Limits

3.03 A summary of the Action/Limit (A/L) Levels for air quality and construction noise is shown in **Tables 3-2** and **3-3**.

Monitoring Location	Action Le	vel ($\mu g / m^3$)	Limit Level (µg/m ³)	
Womtoring Location	1-Hr TSP	24-Hr TSP	1-Hr TSP	24-Hr TSP
AM1	391	184	500	260
AM7	383	204	500	260

Table 3-3Action and Limit Levels for Construction Noise

Parameter			Action Level in dB(A)	Limit Level in dB(A)	
0700-1900	hrs	on	normal	When one or more documented	> 75 dB(A)
weekdays				complaints are received	> 75 dB(A)

Event and Action Plans

3.04 An Event Action Plan for air quality and construction noise has been implemented for this project. Details of the Event Action Plan are presented in **Annex F**.

Environmental Mitigation Measures

3.05 The project EIA report has recommended environmental mitigation measures to minimize potential environmental impacts arising from the construction of the project. A full list of the mitigation measures is detailed in **Annex G**.

Environmental Requirements in Contract Documents

3.06 The environmental requirements in the contract documents generally refer to the compliance of the requirements as stipulated in the project EP and the updated EM&A Manual.

4.0 IMPLEMENTATION STATUS

- 4.01 The implementation status of environmental protection and pollution control/mitigation measures as recommended in the project EIA report is summarized in **Table 2-1** and the implementation schedule as shown in **Annex G**.
- 4.02 A summary status of the permits, licences, and/or notifications on environmental protection for this Project in this reporting period is presented in **Table 4-1**.

Item	Item Description	Permit Status
1	Environmental Permit No.: EP-220/2005	Issued in June 2005
2	Air Pollution Control (Construction Dust)	Notified EPD on 24 Dec 2005
3	Chemical Waste Producer Registration (No. 5213-528-L2544-08)	Registration on 27 Jan 2006
4	Water Pollution Control (Discharge License No. 1U434/1)	Issued on 08 May 2006
5	Account for Disposal of Construction Waste No. 5004959	Registration on 27 Dec 2005
6	Construction Noise Permit (CNP No. PP-RN0017-06)	Valid (2 Jun to 12 Dec 2006)
7	Construction Noise Permit (CNP No. GW-RN0250-06)	Valid (24 May to 23 Nov 2006)

Table 4-1Status of Environmental Licenses and Permits

5.0 MONITORING RESULTS

MONITORING METHODOLOGY OF AIR QUALITY MONITORING

- 5.01 The 24-Hr TSP monitoring was carried out by a High volume sampler (HVS) in compliance with the updated EM&A Manual. The HVS employed complied with the PS specifications including.
 - Power supply of 220v/50 hz for 24-hour continuous operation;
 - $0.6-1.7 \text{ m}^3/\text{min}$ (20-60 SCFM) adjustable flow rate;
 - A 7-day mechanical timer for 24-hour operation;
 - An elapsed time indicator with ± 2 minutes accuracy for 24-Hr operation;
 - Minimum exposed area of 63 in^2 ;
 - Flow control accuracy of $\pm 2.5\%$ deviation over 24-Hr operation;
 - An anodized aluminum shelter to protect the filter and sampler;
 - A motor speed-voltage control to control mass flow rate with accuracy of $\pm 2.5\%$ deviation over 24-hr sampling period;
 - Provision of a flow recorder for continuous monitoring;
 - Provision of a peaked roof inlet;
 - Incorporation with a manometer; and
 - An 8"x10" stainless steel filter holder to hold, seal and easy to change the filter paper.
- 5.02 The filter papers used in 24-Hr TSP monitoring were of size 8"x10" and provided by a local HOKLAS-accredited laboratory, ALS Techichem Pty (HK) Limited (HOKLAS No. 66). The filters papers after measurements were returned to the laboratory for the required treatment and analysis. In house QA/QC procedures for all monitoring practices to ensure the validity of monitoring data. Blank filters samples were collected and delivered to the HOKLAS-accredited laboratory for QA/QC check.
- 5.03 The meteorological information during the reporting period was obtained from Lau Fau Shan Station of the Hong Kong Observatory (HKO).

MONITORING METHODOLOGY OF CONSTRUCTION NOISE MONITORING

- 5.04 Noise measurements were taken in terms of the A-weighted equivalent sound pressure level (Leq) measured in decibels (dB). Supplementary statistical results $(L_{10} \text{ and } L_{90})$ were also obtained for reference.
- 5.05 Hand-held sound level meters (B&K Model 2238) and associated acoustical calibrators in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specification were used for taking the baseline noise measurements.
- 5.06 Windshield was fitted in all measurements. All noise measurements were made with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq).
- 5.07 No noise measurement was made in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s.

LABORATORY AND MONITORING EQUIPMENT USED

- 5.08 A local HOKLAS-accredited laboratory, ALS Technichem (HK) Pty Ltd (HOKLAS No. 66), is responsible for the analytical testing of the 24-Hr TSP filter papers.
- 5.09 The monitoring equipment used in the impact EM&A program is presented in **Table 5-1**:

Table 5-1Monitoring Equipment Used in Impact EM&A Program

Parameters	Monitoring Equipment				
Air Quality	24-Hr TSP	Tisch High Volume Sampler 515N			
Noise	Leq30min	B&K Type 2238			
	On-site Calibration	B&K Type 4231			

EQUIPMENT CALIBRATION

- 5.10 Initial calibration of the HVS was performed upon installation and thereafter at a six month intervals in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). The calibration data are properly documented and the records are maintained by ET for future reference.
- 5.11 The sound level meters were calibrated using an acoustic calibrator prior to and after measurements. The meters are regularly calibrated in accordance with the manufacturer's instructions. Prior to and following each noise measurement, the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were considered valid only if the calibration levels before and after the noise measurement agree to within 1.0 dB.
- 5.12 The renew calibration certificates of the monitoring equipment used during the impact monitoring program in this month are attached in **Annex H**.

PARAMETERS MONITORED

5.13 The environmental parameters monitoring in this reporting period were compliance with the monitoring requirements as in **Table 3-1**.

MONITORING LOCATIONS

5.14 There are four designated air quality and four noise monitoring stations under the project EP. For this reporting month, monitoring was carried out at two designated air (AM1 & AM7) and two noise (NM3 & NM4) monitoring stations. Two remaining air (AM5 & AM6) and noise (NM6 & NM7) stations baseline monitoring were commenced in this reporting period. Baseline Monitoring of NM6 (construction Noise) and AM6 (air quality) were completed on 10 & 16 October 2006 respectively. The baseline monitoring of NM7 (construction noise) and AM5 (air quality) will be completed on 25 October 2006 and 01 November 2006. The locations of the designated monitoring stations are shown in **Table 5-2** and geographically in **Annex E**.

Table 5-2Location of Air Quality and Construction Noise Monitoring
Stations

Air Quality (4 Stations)				
AM1	Worksite boundary facing scattered house in Nam Sang Wai			
AM5*	Worksite boundary facing Fung Kat Heung			
AM6*	Worksite boundary facing scattered near Route 3			
AM7	Worksite boundary facing scattered house in Nam Sang Wai			
Construction	Construction Noise (4 Stations)			
NM3	Village House in Nam Sang Wai			
NM4	Village House in Nam Sang Wai			
NM6*	Scattered House near Route 3			
NM7*	Fung Kat Heung			

Remarks: *Baseline Monitoring of AM6 & NM6 and AM5 & NM7 were commence on 03 and 19 October 2006 respectively.

MONITORING FREQUENCY AND PERIOD

- 5.15 The impact 24-Hr TSP monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A manual. A total of 10 monitoring events were carried out in this reporting period.
- 5.16 The impact noise monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A manual. A total of 10 monitoring events were carried out in this reporting period.

MONITORING RESULTS WITH DATE AND TIME

5.17 The air quality monitoring data for this reporting period were summarized in **Table 5-3**.

Date	24-Hr TS	$P(ug/m^3)$
Date	AM1	AM7
2-Oct-06	94	72
7-Oct-06	145	142
13-Oct-06	86	74
19-Oct-06	61	138
25-Oct-06	126	92
Average	103	104
(Range)	(61 - 145)	(72 - 142)

Table 5-3Summary of Air Quality Monitoring Results

All 24-Hr TSP monitoring were preset to start at 00:00 on each monitoring date.

5.19 The impact noise monitoring results are summarized in **Tables 5-4** and **5-5**.

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
03-Oct-06	14:19	51.9	42.8	43.3	53.3	53.5	48.2	50.7	53.7
09-Oct-06	14:21	41.6	42.3	41.3	44	43.8	42.5	42.7	45.7
14-Oct-06	10:59	40.5	39.9	40.3	48.5	48.8	49.8	46.6	49.6
20-Oct-06	11:03	46.3	42.4	48.7	43.9	44.3	43.1	45.4	48.4
Limit L	evel								75

Table 5-4	Summary	of Noise	Monitoring	Results at NM3

* A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines.

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
3-Oct-06	13:33	53.7	58.6	62.7	53.2	55	54.6	57.8	60.8
9-Oct-06	13:35	51.2	51.8	57.3	50.9	51.3	52.2	53.2	56.2
14-Oct-06	10:21	51.1	51.2	51.4	55.0	52.4	52.7	52.5	55.5
20-Oct-06	9:02	54	49.8	49.7	51.9	50.2	48.7	51.1	54.1
Limit L	evel								75

 Table 5-5
 Summary of Noise Monitoring Results at NM4

* A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines.

WEATHER CONDITIONS DURING THE MONITORING PERIOD

5.20 The meteorological data on the monitoring dates are summarized in Annex I.

GRAPHICAL PLOTS OF TRENDS OF MONITORED PARAMETERS

5.21 The graphical plots of air quality and construction noise monitoring data are presented in **Annex J**.

MAJOR ACTIVITY CARRIED OUT DURING THE MONITORING PERIOD

5.22 There were construction activities of sheet piling and trench excavation undertaken during the monitoring period.

WEATHER CONDITIONS THAT AUGUST AFFECT THE MONITORING RESULTS

5.23 The weather conditions at the time of monitoring were considered acceptable for monitoring activities and did not have significant impact on the monitoring results obtained.

OTHER FACTORS INFLUENCING THE MONITORING RESULTS

5.24 There were no other noticeable external factors generally affecting the monitoring results in this reporting period.

QA/QC RESULTS AND DETECTION LIMITS

5.25 Not applicable.

6.0 REPORT ON NON-COMPLIANCE (NC), COMPLAINTS, NOTIFICATIONS OF SUMMONS (NoS) AND SUCCESSFUL PROSECUTIONS

RECORD OF NON-COMPLIANCE OF ACTION AND LIMIT LEVELS

6.01 There was no Action or Limit Level exceedance in this reporting period.

RECORD OF ENVIRONMENTAL COMPLAINTS RECEIVED

6.02 There was no environmental complaint received in this reporting period.

RECORD OF NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTION

6.03 There was no notification of summon or prosecution received in this reporting period.

REVIEW OF REASONS FOR AND IMPLICATIONS OF NC, COMPLAINTS AND NOS

6.04 No NC, complaints or NoS received in this reporting period.

DESCRIPTION OF FOLLOW-UP ACTIONS TAKEN

6.05 No NC, complaints or NoS received in this reporting period.

7.0 OTHERS

FUTURE KEY ISSUES

7.01 Construction activities to be undertaken in November 2006 include site hoarding erection, site clearance and formation work at Kam Tin pumping station, site investigation works at the Nam Sang Wai pumping station, pipe jacking for drainage work at S4, trench excavation and sorting erection for drainage work at S5, S6 and S7. Potential environmental impacts arising from the works include air quality, noise and water quality (particularly site runoff). Environmental mitigation measures will be properly implemented and maintained as per the Mitigation Implementation Schedule to ensure site environmental performance is acceptable.

SOLID AND LIQUID WASTE MANAGEMENT STATUS

7.02 The quantities of waste for disposal or reuse in this reporting period are summarized in **Tables 7-1** and **7-2**.

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (tons) – Disposed	7,050	Tuen Mun 38 Fill Bank
C&D Materials (Inert) (tons) - Reused	5,340	DSD Contract DC/2005/0
C&D Materials (Non-Inert) (tons)	-	NA
Chemical Waste (Litres)	-	NA
General Refuse (tons)	31	Refuse Collector

Table 7-1Summary of Quantities of Waste for Disposal

Type of Waste	Quantity	Disposal Location
Metals for Recycling (kg)	0	NA
Paper for Recycling (kg)	0	NA
Plastics for Recycling (kg)	0	NA

Table 7-2	Summary of Quantities of Waste for Reuse/Recycling

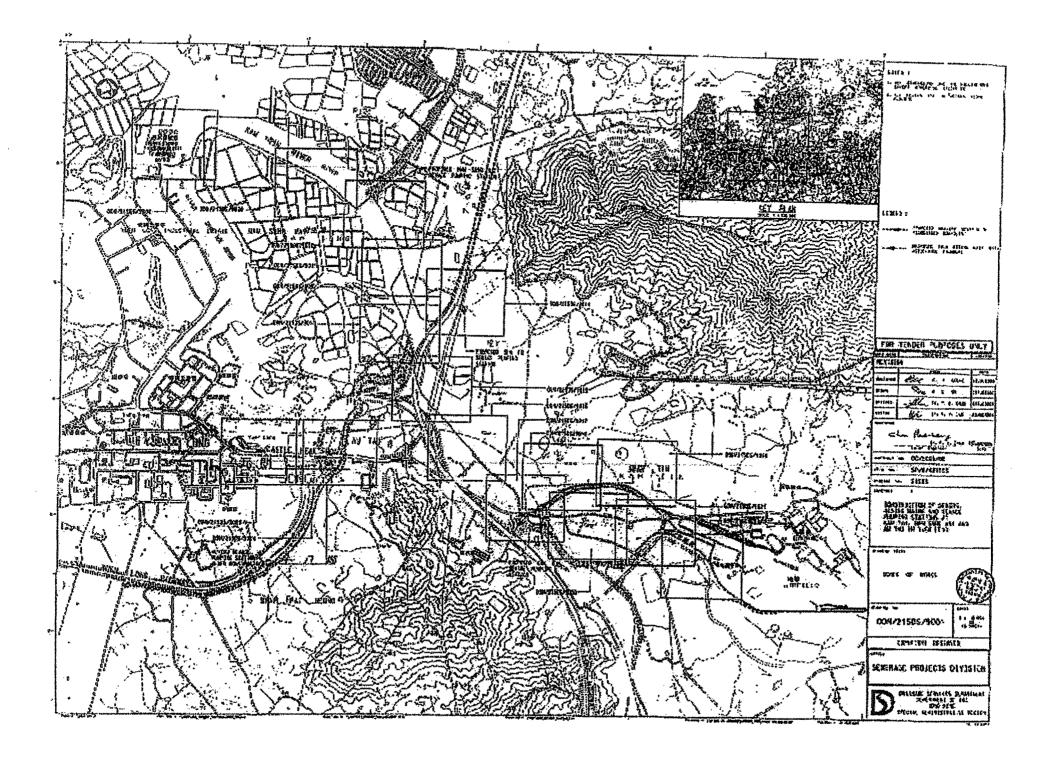
7.03 There was no site effluent discharged but an estimated volume of less than $50m^3$ of surface runoff was discharged in the reporting period.

SUBMISSION OF PROFORMA

- 7.01 Representatives of the Engineer, the Contractor and ET carried out regular weekly joint site inspection on 03, 11 and 17 October 2006 to evaluate the site environmental performance. No non-compliance was noted and six observations were recorded in weekly site inspection. The IEC monthly joint site inspection with RE, Contractor and ET was carried out 24 October 2006.
- 7.02 Proforma of the weekly ET site inspection activities are presented in Annex K.

Annex A

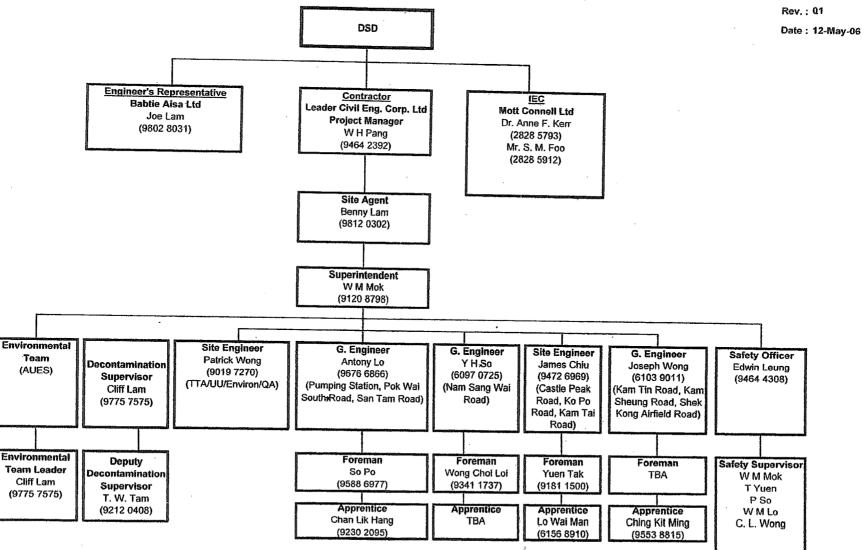
Project Site Layout



Annex B

Project Organization and Management Structure

DSD Contract No. DC/2005/02 Construction of Sewers, Rising Mains and Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long **Project Environmental Organization Chart**



Annex C

Construction Program

Ast ID	Description	Ung Dar	Total Percel Float Comple		Early Ficush	Lase Starr	Late Fictist/	R2. 405 2237 27 14 21 15	S27€ 11 12 25	مرتبا میں
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ion Submissio	201									
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SUN1500	Agence Temp Work - Kina Tin PrStation	6	810	0 DECTUR	140CTOR	2006006	2706005	-		International Approve Temp Wark - Kern Tin P/Station
SUN1600	Design Submit Tecap Wark - Site Po P Station		1794	0 0900706	13100406	1514AY07	13,50807	4		Antheorem and the second se
SUNITED	Approve Temp Work - Sha Pa P/Station		1794	0 14NOV08	ZDNOV56	20.1.007	28.5UND7			COLOR BRANCE
SUN1930	Approve Temp Work - Kam San Wai P/Station			RS OTMARES A	2856708	03MLAFROE A	DELUGOS			Approve Temp Work - Nam San Wai P/Station
	· · · · · · · · · · · · · · · · · · ·					DEAPFEOE A				
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-				•						
SUC1900	Prepare/Sobcalt Tucop Work - Kara Tin P/Station	2	613	80 20MAY08 A	0600005	20HAY06 A	19026006		a the state of the second second state of the second second second second second second second second second s	ennesise Prepare/Submit Temp Work - Keni Tin P/Station
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5001200	Prepare Subali Temp Work - Sha Po P/Station	20	1794	D DOCTOR	13100/08	15MAY07	18.J.N/7			Propare Submitted and a submit
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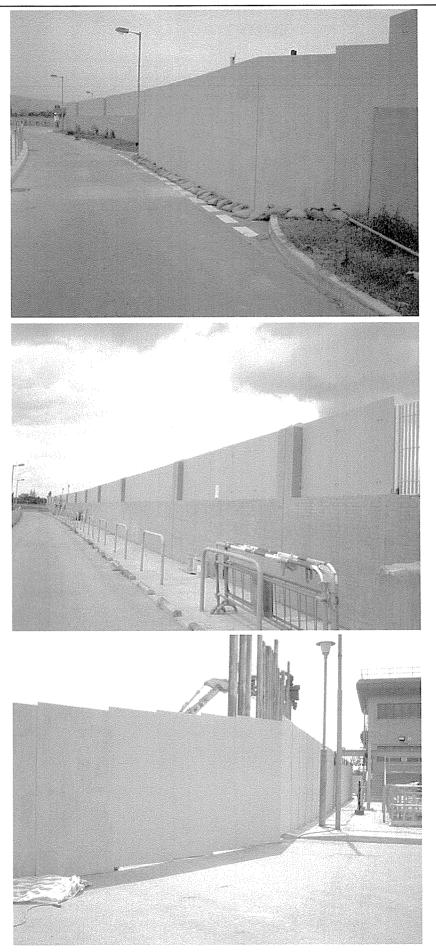
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S9L1100	Approve of CAR & RAP - Portion A/B	, 12	30d	8008016	1405006	DBJANDT	2014202				
SBL1XD	Prepare & Submit Excavation Plan - Pontion AB	15	30d	0 10NDV06	3010/08	1506008	DB.JANO7				0007-200-507-000-004
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Annex D

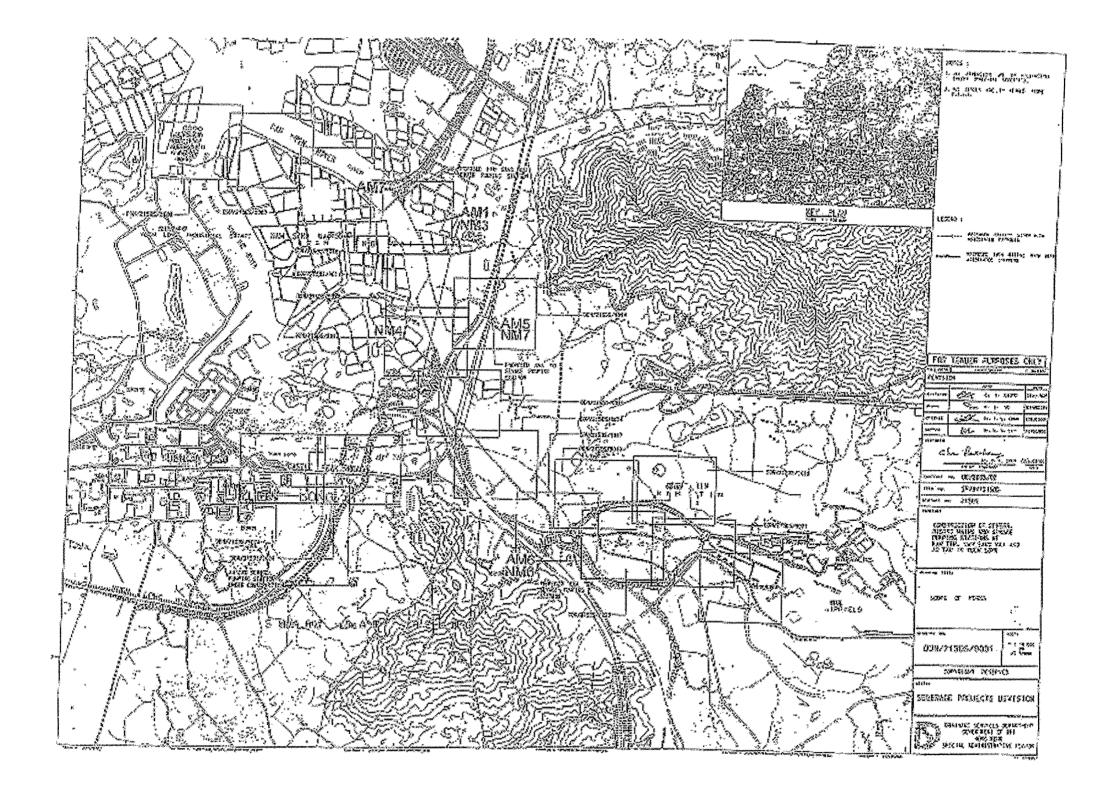
Photographical Records – Noise Barrier On-Site

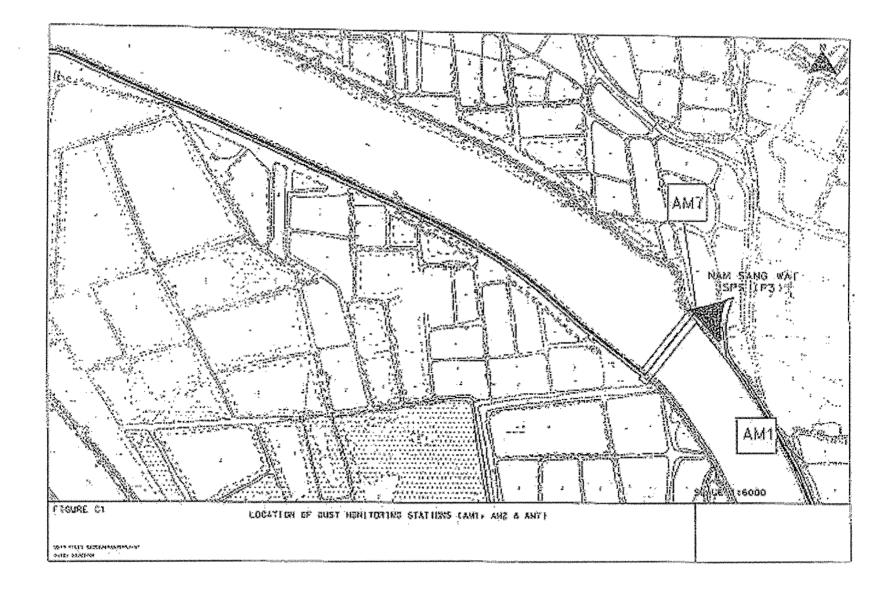
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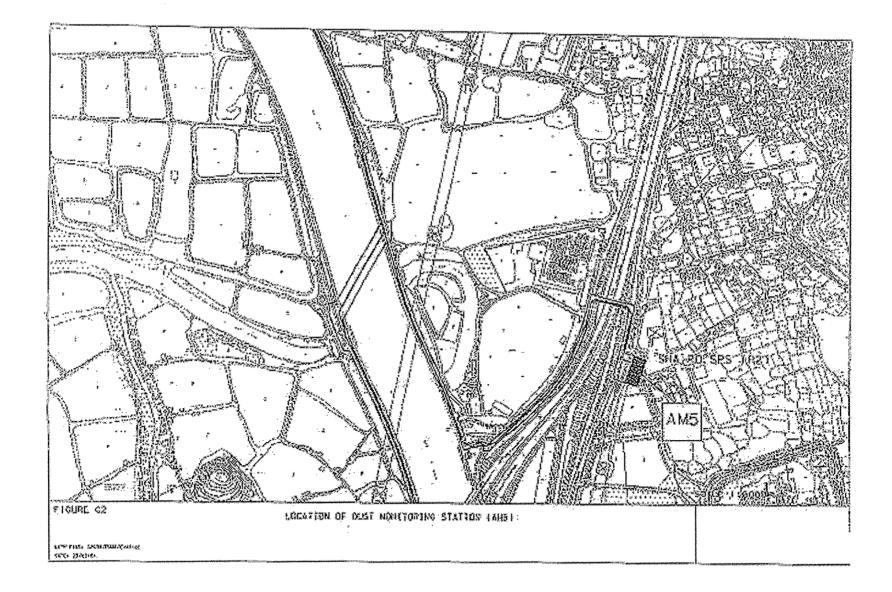


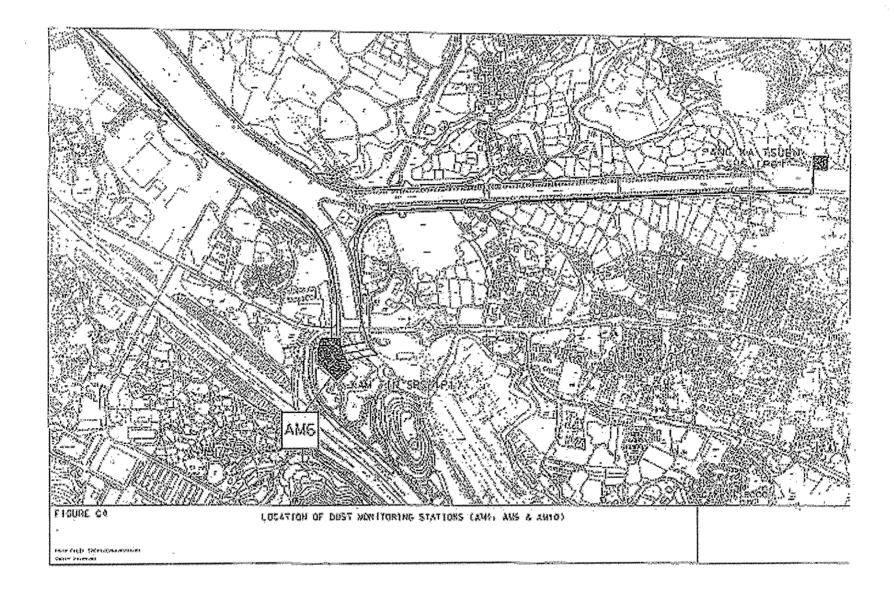
Annex E

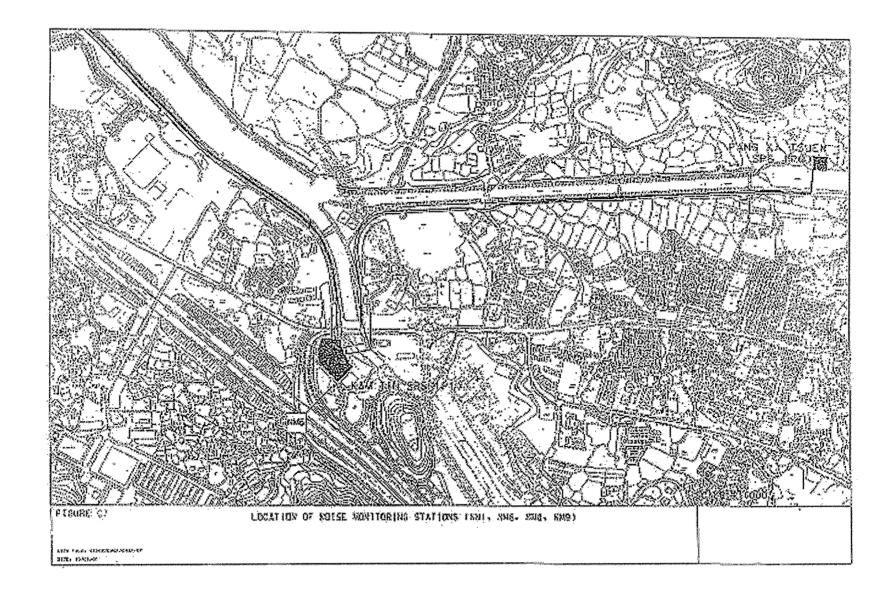
Locations of Monitoring Stations

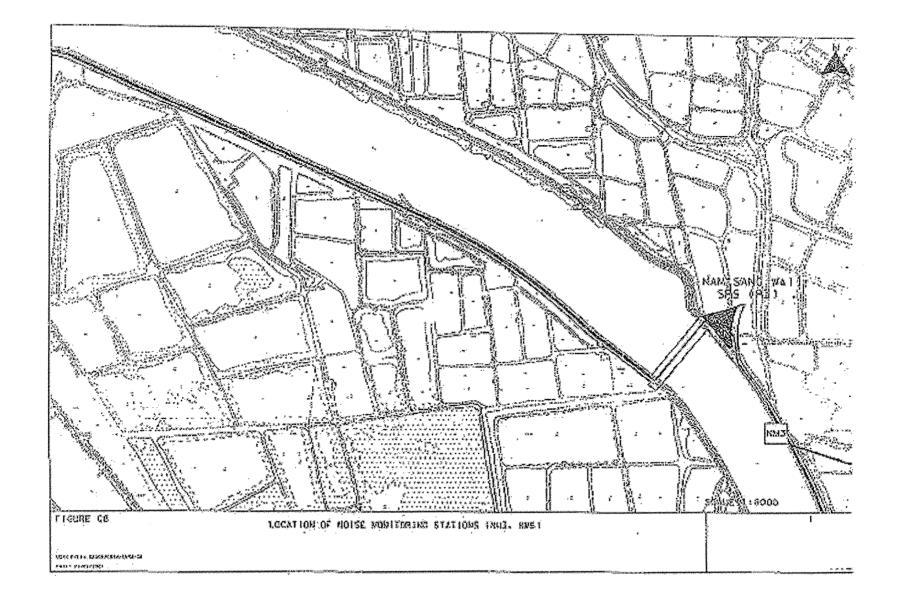


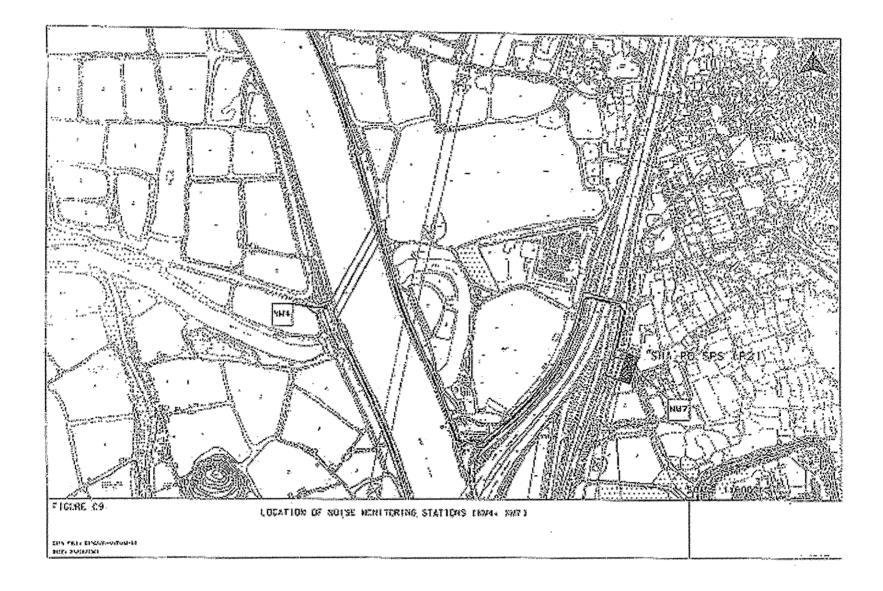












Annex F

Event and Action Plan

Event and Action Plan for Construction Phase Air Quality

EVENT	Construction i have Air Quality	6.0		
	ET Leader	IEC	TION	
Action Level	•		Engineer	Contractor
Exceedance for one sample	 Identify source (s) of exceedance and inform IEC. Contractor and Engineer Repeat dust measurements to confirm findings Increase monitoring frequency to daily Assess efficacy of remedial measures and keep the Contractor, IEC, and Engineer informed 	 Check monitoring data submitted by ET Check monitoring data trends and Contractors working methods Check and confirm Contractors proposed remedial actions and working methods are appropriate 	 Confirm receipt of notification of exceedance in writing Remind the Contractor of his contractual obligations and review the Contractor's working methods Discuss remedial actions with the Contractor and IEC Inform complainant of actions taken, if necessary 	 Rectify any unacceptable practice Liaise with Engineer and IEC to develop appropriate remedial measures to reduce dust impact Amend working methods and remedial proposals if required by the Engineer or IEC Implement the agreed remedial actions upon instruction from the Engineer and IEC
Exceedance for two or more consecutive samples	 Identify source (s) of exceedance and inform IEC, Contractor and Engineer Repeat measurements to confirm findings Increase the monitoring frequency to daily to assess the efficacy of remedial measures and keep the Contractor informed Discuss remedial actions with IEC and Contractor If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions If exceedance stops, inform the Contractor and cease additional monitoring 	 Check monitoring data submitted by ET Check monitoring data trends and Contractors working methods Discuss with Contractor and Engineer on possible remedial measures Check and confirm Contractors proposed remedial measures are appropriate Determine the efficacy of remedial actions and keep the Engineer informed 	 Confirm receipt of notification of exceedance in writing Remind the Contractor of his contractual obligations and review the Contractor's working methods Discuss remedial actions with the Contractor and IEC Ensure remedial measures are properly implemented Inform complainant of actions taken, if necessary. 	 Rectify any unacceptable practice, if possible Submit proposals for remedial actions to Engineer and IEC within three working days of notification Discuss and amend remedial actions, if required, by the Engineer and IEC Implement the remedial action (s) immediately upon instruction from the Engineer Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions
Limit Level				

4

Event and Action Plan for Construction Phase Air Quality

EVENT			TION	
Exceedance for one sample	 ET Leader Identify source (s) of exceedance and inform IEC, Contractor and Engineer Repeat dust measurements to confirm findings Increase monitoring frequency to daily Assess efficacy of remedial measures and keep the Contractor, IEC, Engineer and EPD informed 	IEC 1. Check monitoring data submitted by ET 2. Check monitoring data trends and Contractors working methods 3. Check and confirm Contractors proposed remedial actions and working methods are appropriate 4. Check and confirm Contractors proposed remedial measures are appropriate 5. Determine the efficacy of remedial actions and keep the Engineer informed	 Engineer Confirm receipt of notification of exceedance in writing Remind the Contractor of his contractual obligations and review the Contractor's working methods Discuss remedial actions with the Contractor and IEC, Ensure remedial measures are properly implemented Inform complainant of actions taken, if necessary. 	 Contractor Take immediate action to avoid further exceedance Submit proposals for remedial actions to Engineer and IEC within three working days of notification Discuss and amend remedial actions, if required, by the Engineer and IEC Implement the remedial action (s) immediately upon instruction from the Engineer Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions
Exceedance for two or more consecutive samples	 Identify source (s) of exceedance and inform IEC, Contractor and Engineer Repeat measurements to confirm findings Increase the monitoring frequency to daily to assess the efficacy of remedial measures and keep the Contractor informed Discuss remedial actions with IEC and Contractor If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions If exceedance stops, inform the Contractor and cease additional monitoring. 	 Discuss with Contractor and Engineer on possible remedial measures Check and confirm Contractors proposed remedial measures are appropriate Determine the efficacy of remedial actions and keep the Engineer informed 	 Confirm receipt of notification of exceedance in writing Remind the Contractor of his contractual obligations and review the Contractor's working methods Discuss remedial actions with the Contractor and IEC Ensure remedial measures are properly implemented If exceedance continues, instruct the Contractor to stop the relevant portion of work until the exceedance is abated Inform complainant of actions taken, if necessary. 	 Rectify any unacceptable practice, if possible Submit proposals for remedial actions to Engineer and IEC within three working days of notification Discuss and amend remedial actions, if required, by the Engineer and IEC Implement the remedial action (s) immediately upon instruction from the Engineer Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions

event and Actio	n Plan for Construction Noise								
EVENT			· · · · · · · · · · · · · · · · · · ·						
	ET Leader	ACTION							
Limit Level			Engineer	Contractor					
	 Identify source (s) of exceedance and inform IEC, Contractor and Engineer Repeat dust measurements to confirm findings If repeat measurements confirm exceedance, increase monitoring frequency to daily Assess efficacy of remedial measures and keep the Contractor, IEC, and Engineer informed If exceedance stops, inform Contractor and cease additional noise monitoring 	 Check monitoring data submitted by ET Check monitoring data trends and Contractors working methods Check and confirm Contractors proposed remedial actions and working methods are appropriate 	 Confirm receipt of notification of exceedance in writing Remind the Contractor of his contractual obligations and review the Contractor's working methods Discuss remedial actions with the Contractor and IEC Inform complainant of actions taken, if necessary 	 Rectify any unacceptable practice Liaise with Engineer and IEC to develop appropriate remedial measures to reduce noise impact Amend working methods and remedial proposals if required by the Engineer or IEC Implement the agreed remedial actions upon instruction from the Engineer and IEC 					
ampies	 Identify source (s) of exceedance and inform IEC, Contractor and Engineer Repeat measurements to confirm findings Increase the monitoring frequency to daily Discuss remedial actions with IEC, Engineer and the EPD Assess the efficacy of remedial measures and keep the Contractor informed If exceedance continues, arrange meeting with Engineer, IEC and Contractor to review working practices and identify further remedial actions If exceedance stops, inform the Contractor and cease additional monitoring. 	 ET Check monitoring data trends and Contractors working methods Discuss with Contractor and Engineer on possible remedial measures Check and confirm Contractors proposed remedial measures are appropriate 	 contractual obligations and review the Contractor's working methods 3. Discuss remedial actions with the Contractor and IEC 4. Ensure remedial measures are properly implemented 5. If exceedance continues, instruct the Contractor to stop the relevant portion of work until the exceedance is abated 6. Inform complainant of actions taken, if necessary. 	 Rectify any unacceptable practice, if possible Submit proposals for remedial actions to Engineer and IEC within three working days of notification Discuss and amend remedial actions, if required, by the Engineer and IEC Implement the remedial action (s) immediately upon instruction from the Engineer Discuss with Engineer and IEC, to optimise the effectiveness of the agreed remedial actions Stop the relevant portion of work as determined by the Engineer 					

Annex G

Mitigation Implementation Schedule

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10 10 10 10 10 10 10 10 10 10 10 10 10 1			Objectives of the							
EIA*	EM&A Ref	Environmental Protection Measures 12	Recommended Measures &		Implementation	開始	emer			
1944			Main Concerns	Location on the measure	Implementation Agent 17 1 au	Stag	e *			Relevant Legislation
						Section 6		linderity Texestate	1000	
12 20 Hand Design	17-1111000 in-1720-0004	CONSTRUCTION PHASE				Des	C	2O	Dec	
		AIR QUALITY - Construction Phase								AND SHERE COMPANY AND
		The following measures are enforceable under the Air Pollution Control (Construction Dust) Regulations Site boundary and entrance								
3.5	A1	 where a site boundary adjoins a road, street, service lane or other area accessible to the 	To prevent access to the site and control potential dust impacts from construction works.	Site wide and throughout the full duration of the construction contract.	The Contractor		1			Part III, Clause 13 (c), Air Pollution Control (Construction Dust) Regulations
		Access Road								
3.5	A2	 the portion of any road leading only to a construction site that is within 30 m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials; 	To control potential dust impacts from vehicle movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Part III, Clause 14, (b), Air Pollution Control (Construction Dust) Regulations
		Stockpiling of Dusty Materials								Dudy Regulations
3.5	A3	 any stockpile of dusty materials should be either covered entirely by impervious sheeting 	To control potential dust impacts during excavation and stockpiling activities.	Site wide and throughout the full duration of the construction contract.	The Contractor		~	-		Part IV, Clause 18, (a, b & c), Air Pollution Control (Construction Dust) Regulations
		Loading, unloading or transfer of dusty materials				}				
3.5	A4	 all dusty materials should be sprayed with water or a dust suppression chemical 	To control potential dust impacts during material handling and truck movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Part IV, Clause 19, Air Pollution Control (Construction Dust) Regulations
		Use of vehicles								
3.5	A5	 every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site; 	To control potential dust impacts from vehicle movements.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Part IV, Clause 21, (1), Air Pollution Control (Construction

All		OFFICE						
EM&A Ref	Environmental Protection Measurest	Recommended Measures &	Location of the measure	Implementation.	lmplei	ientat	on	Relevant Legislation
		Main Concerns		Agent	Stage			& Guidelines
					Des	C: C	Dec	
A6	 where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; 	To control potential dust impacts during material transportation.	Site wide and throughout the full duration of the construction contract.	The Contractor				Dust) Regulations Part IV, Clause 21, (2), Air Pollution Control (Construction Dust) Regulations
A7	 water should be continuously sprayed on the surface where any mechanical breaking 	To control potential dust impacts during mechanical breaking.	Site wide and throughout the full duration of the construction contract.	The Contractor		-		Part IV, Clause 22, Air Pollution Control (Construction Dust) Regulations
	Excavation and earth moving							
A8	 the working area of excavation should be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet; 	To control potential dust impacts arising from excavation works.	Site wide and throughout the full duration of the construction contract.	The Contractor				Part IV, Clause 24, Air Pollution Control (Construction Dust)
	Construction of the superstructure of a building		· · · ·					Regulations
A9	 where a scaffolding is erected around the perimeter of a building under construction, 	impacts from SPS building	Full duration of SPS construction contract.	The Contractor				Part I, Clause 6, (a), Air Pollution Control (Construction Dust) Regulations
A10	totally enclosed by the impervious sheeting.	impacts during material	Full duration of SPS construction contract.	The Contractor				Part I, Clause 6, (b), Air Pollution Control (Construction Dust) Regulations
	A6 A7 A8 A9	 A6 where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; A7 water should be continuously sprayed on the surface where any mechanical breaking operation that causes dust emission is carried out, unless the process is accompanied by the operation of an effective dusty extraction and filtering device; Excavation and earth moving the working area of excavation should be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet; Maintain the entire surface wet; where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the round floor level of the SPS, or if a canopy is provided a the first floor level, from the first floor level, up to the highest level of the scaffolding; and A10 	A6 • where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; To control potential dust impacts during materials do not leak from the vehicle; A7 Power-driven drilling, and cutting operation that causes dust emission is carried out, unless the process is accompanied by the operation of an effective dusty extraction and filtering device; To control potential dust impacts during mechanical breaking operation of an effective dusty extraction and filtering device; A8 • the working area of excavation should be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet; To control potential dust impacts arising from excavation works. A9 • where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or neiting should be provided to enclose the scaffolding from the round floor level of the SPS, or if a canopy is provided a the first floor level, from the first floor level, up to the highest level of the scaffolding; and To control potential dust	A6 • where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; To control potential dust impacts during material transportation. Site wide and throughout the full duration of the construction contract. A7 • water should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; To control potential dust impacts during material transportation. Site wide and throughout the full duration of the construction contract. A7 • water should be continuously sprayed on the surface where any mechanical breaking operation of an effective dusty extraction and filtering device; To control potential dust impacts during mechanical breaking. Site wide and throughout the full duration of the construction contract. A8 • the working area of excavation should be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet; To control potential dust impacts arising from excavation contract. Site wide and throughout the full duration of SPS construction contract. A9 • the working area of excavation should be round hole the round floor level of the SPS, or if a canopy is provided a the first floor level, from the first floor level, provided to enclose the scaffolding; and To control potential dust impacts during material the first floor level, if the scaffolding; and Full duration of SPS construction contract. A10 • any skip hoist for m	A6 where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; To control potential dust impacts during material ransportation. Site wide and throughout the full duration of the construction contract. The Contractor A7 • water should be covered entirely by clean impervious sheeting to be continuously sprayed on the surface where any mechanical breaking operation that causes dust emission is carried out, unless the process is accompanied by the operation of an effective dusty extraction and filtering device; To control potential dust impacts during mechanical breaking. Site wide and throughout the full duration of the construction contract. The Contractor A8 • the working area of excavation should be sprayed with water immediately before, during and immediately after the operation so as to maintain the entire surface wet; To control potential dust impacts during mechanical breaking. Site wide and throughout the full duration of SPS construction contract. The Contractor A9 • the working area of excavation should be sprayed with water immediately after the operation should be provided to a the first flore level, from the first flore level, up to the highest level of the scatfolding; and met first flore level, up to the highest level of the scatfolding; and To control potential dust impacts during material construction works. Full duration of SPS construction contract. The Contractor	A6 • where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials the outsy sheeting to ensure that the dusty materials do not leak from the vehicle; To control potential dust impacts during material intersportation. Site wide and throughout the full duration of the construction contract. The Contractor Intersport dust impacts during material intersportation. A7 • water should be continuously sprayed on the surface where any mechanical by sprayed on the sprayed with water immediately before, during material and immediately before, during and immediately before, during and immediately before, during material and immediately before, during excitation of the construction contract. Site wide and throughout the full duration of the construction contract. The Contractor Net contractor A9 • the working area of excavation should be primeter of a building from the round floor level of the SPS, or if a cancy is provided at the first floor level, from the first floor level, up to the highest level of the staffolding; and To control potential dust impacts arising from sets building construction contract. The Contractor Net contractor A9 • any skip hoist for material transport should be totally enclosed by the impervious sheeting. To control potential dust impacts during material Full duration of SPS </td <td>Exclusion Exclusion Magential Implementation Implementation</td> <td>Add • where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials indicated and throughout threat and throughout threat and the covered entirely by clean impervious sheeting to ensure that the dusty materials is across and throughout the surface where any mechanical breaking operation of an effective dusty extraction and filtering device; To control potential dust impacts during material transportation. Site wide and throughout the full duration of the construction contract. The Contractor Implementation A7 Power-driven drilling, and cutting operation that causes dust emission is carried out, unless the process is accompanied by the operation of an effective dusty extraction and filtering device; To control potential dust impacts during mechanical breaking on an inmediately after the operation of an effective dusty extraction as as to maintain the entire surface wete: To control potential dust impacts during mechanical breaking on an inmediately before, during and immediately after the operation so as to maintain the entire surface wete; To control potential dust impacts during mechanical breaking construction contract. The Contractor Implementation A9 Construction of the superstructure of a building is eracted around the grade of subtiding under construction, effoctive dust screens, sheeting or netting construction works. To control potential dust impacts during material from serve is an impact of the SPS, or if a cancy is provided to the first floor level, up to the highest level of the scaffolding from the round floor level, up to the highest level of the scaffolding is eracted around the impacts du</td>	Exclusion Exclusion Magential Implementation Implementation	Add • where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials indicated and throughout threat and throughout threat and the covered entirely by clean impervious sheeting to ensure that the dusty materials is across and throughout the surface where any mechanical breaking operation of an effective dusty extraction and filtering device; To control potential dust impacts during material transportation. Site wide and throughout the full duration of the construction contract. The Contractor Implementation A7 Power-driven drilling, and cutting operation that causes dust emission is carried out, unless the process is accompanied by the operation of an effective dusty extraction and filtering device; To control potential dust impacts during mechanical breaking on an inmediately after the operation of an effective dusty extraction as as to maintain the entire surface wete: To control potential dust impacts during mechanical breaking on an inmediately before, during and immediately after the operation so as to maintain the entire surface wete; To control potential dust impacts during mechanical breaking construction contract. The Contractor Implementation A9 Construction of the superstructure of a building is eracted around the grade of subtiding under construction, effoctive dust screens, sheeting or netting construction works. To control potential dust impacts during material from serve is an impact of the SPS, or if a cancy is provided to the first floor level, up to the highest level of the scaffolding from the round floor level, up to the highest level of the scaffolding is eracted around the impacts du

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EIA* Ref.	EM&A Re	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns Automatics	Location of the measure	Implementation Agent:	limpli Stagi Des	E MO			Relevant Legislation & Guidelines
		NOISE - Construction Phase						and the second	12059177454	
4.7.1	B1	 General Site Clearance – Demolition Works Use of quiet PME which meet the SWLs taken from British Standard, Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997 (Examples of these PME are shown in Table F2), 	To control potential noise impacts during site clearance and demolition works	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
4.7.1	B2	 Construction of Sewage Pumping Stations P1, P2 & P3 Use of quiet PME which meet the SWLs taken from British Standard, Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997, 	To minimise potential noise impacts arising during the construction of <i>P1</i> , <i>P2 & P3</i>	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
		 Adoption of temporary noise barrier, in the form of a site hoarding (with a superficial density of at least 20kg/m2, with no substantial gaps), along the site boundary of the pumping station sites. 	To minimise potential noise impacts arising during the construction of <i>P1</i> , <i>P2</i> & <i>P3</i>	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
4.7.1	B3	 Sewers and Rising Mains using Open Trench Method Use of quiet PME which meet the SWLs taken from British Standard, Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997, 	To control potential noise impacts during excavation works.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
4.7.1	B4	 Use of handheld breakers for all initial road opening activities, when breaking tarmac/concrete road surface to a depth of 300mm or when granular material is reached. 	To control potential noise impacts during road opening activities.	Where there are NSRs located within 50m of the line of sight. Throughout the full duration of the road opening activities.	The Contractor		*			
4.7.1	B5	 Use of movable noise barriers or 3 sided enclosures for all initial road opening activities 	To control potential noise impacts during road opening	Where there are NSRs located within 50m of the	The Contractor		~			

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EIA	EM&A Ref		Objectives of the sub-	A DESCRIPTION OF A DESC						
Ref.		Environmental Protection Measures	Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	lmpl Stag	emen ette	tatio		Relevant Legislation
		enclosures for all initial road opening activities (breaking tarmac/concrete road surface to a depth of 300mm or when granular material is reached), where there are NSRs located within 50m of the line of sight from the works area.	activities.	line of sight. Throughout the full duration of the road opening activities.		Des	Cett	¥0	Dec	
4.7.1	B6	Sewers and Rising Mains using Pipe Jacking Method • Use of quiet PME which meet the SWLs taken from British Standard, Noise and Vibration Control on Construction Open Sites, BS 5228: Part 1: 1997, Road Pavement and Finishes	To control potential noise impacts from PME during construction works	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
4.7.1	B7	• Use of quiet PME which meet the SWLs taken from British Standard, <i>Noise and Vibration</i> <i>Control on Construction Open Sites, BS 5228:</i> <i>Part 1: 1997</i> ,	To control potential noise impacts from PME during pavement and finish works	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
		WATER QUALITY - Construction Phase No water quality monitoring is required under this study.								
6.6.2	D1	 WASTE - Construction Phase The Contractor shall obtain the necessary waste disposal permits from the appropriate authorities for the disposal of chemical and C&D waste, Chemical Waste Producer and Chemical Waste Disposal Licence (Waste Disposal (Chemical Waste) (General) Regulations); and Dumping Licence (Land (Miscellaneous Provisions) Ordinance (Cap 28)) 	To monitor the collection, handling and disposal of chemical waste and C&D waste, and in compliance with relevant Hong Kong Standards and Regulations.	Site wide and throughout the full duration of the construction contract.	The Contractor	~	~			Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste)(General) Regulation (Cap 354), the Land (Miscellaneous Provisions) Ordinance (Cap 28))

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Ref.	EM&A Ref	Environmental Protection Measures as a	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation. Agent	Imple	mên	tation	1	Relevant Legislation
						Des				& Guidelines
6.6.2		Chemical Waste Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the regulations and Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows. All chemical waste producers should be registered with the EPD.	To control the handling, storage and disposal of chemical waste, in order to minimise potential spillages/leakages and human health and environmental impacts.	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		~			Part II, (6) Waste Disposal (Chemical Waste) (General) Regulation
6.6.2	D3	 Storage, Packaging and Labelling of Chemical Waste Containers used for storage of chemical wastes should: be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 L unless the specifications have been approved by the EPD; and 	chemical waste in accordance	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		~			Part IV, (9, 10, 11 & 12) Waste Disposal (Chemical Waste) (General) Regulation
6.6.2		 display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. Storage of chemical waste The storage area for chemical wastes should: be clearly labelled and used solely for the storage of chemical waste; 	To ensure the proper storage of chemical waste in accordance with the Regulations.	To be implemented at all worksites throughout the full duration of the construction phase.	The Contractor		· ·			Part IV, (13,14, 15, 16, 17, & 18) Waste Disposal (Chemical Waste) (General) Regulation

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Objectives of the Recommended Measures & Location of the measure EIA* Environmental Protection Measures FM&A Rof Implementation, Implementation, Ref Relevant Legislation Stage** Adenta & Guidelines Des C O Dec adequately separate Disposal of chemical waste The Contractor should ensure that the To control the disposal of To be implemented at all The Contractor 1 Part IV. (20 -25) disposal of chemical waste is via a licensed chemical waste in accordance worksites throughout the Waste Disposal Waste Collector and in accordance with the with the Regulations full duration of the (Chemical Waste) Waste Disposal (Chemical Waste) (General) construction phase. (General) Regulation Regulations. Management of Waste Disposal 6.6.2 D5 A trip-ticket system should be established which To monitor the disposal of To be implemented at all The Engineer/ \checkmark Land (Miscellaneous monitors the disposal of C&DM and solid wastes C&DM and solid wastes at worksites throughout the Contractor Provisions) at public filling facilities and landfills and to control public filling facilities and full duration of the Ordinance (Cap 295) fly-tipping, in accordance with Land landfills and to control construction phase. and Works Bureau (Miscellaneous Provisions) Ordinance (Cap28) fly-tipping. Technical Circular and the Works Bureau Technical Circular No. 5/99. No. 5/99 LAND CONTAMINATION- Construction Phase 7.5.6 E1 A revised CAP should be submitted to the EPD for To determine the presence of To be implemented before To be 1 EIAO TM Annex approval before the commencement of the soil and groundwater the commencement of the Implemented by 19/3.1.1 & 3.1.2 construction works. Following receipt of the EPD's contamination and remedy construction works. DSD or their approval, the CAP shall be implemented and the any potential concerns to sub-consultants findings of the investigations will be reported in the acceptable levels. at the Detailed Contaminated Assessment Report (CAR), before Design Stage, ground disturbance is allowed at the concerned depending upon sites when site access If land contamination is confirmed, a Remediation can be gained. Action Plan (RAP) shall be prepared, and both the CAR and the RAP shall be submitted as a combined report to the EPD for approval before disturbing the ground of the concerned sites. If applicable and required in consultation with the

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EIA			Objectives of the second	6 STREET OF PROSTAN CLOSED OF MALE AND ADDRESS						
Ref.	EM&A Ref	Environmental Protection Measures	Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	limpi Stag	emen s*x5	tatio	n	Relevant Legislation
						Des	US AND		Dec	& Guidelines
		EPD, the contaminated site(s) shall be remediated in accordance with the approved CAR/RAP.	Construction of Construction Construction Construction			Sin Contraction		- ARCHER	Dec	
8.7.1	F1	ECOLOGY - Construction Phase Mitigation Measures Adopted - Avoidance Construction activities shall be prohibited during the winter season (November to March) along the section of the proposed sewerage alignment, which fall within the Deep Bay Wetland Conservation Area and the Deep Bay Wetland Buffer Area (WCA and WBA) and close to the locations of ecologically sensitive species (including Intermediate Egret, Black-faced Spoonbill, Buzzard, Imperial Eagle and Avocet). (See Figure 8.7a attached). Regular site inspections (at least twice a month) should be conducted by the Environmental Team during the winter season (November to March) to ensure	To schedule construction works in order to minimise potential impacts to winter visiting birds. To be confirmed by regular site inspections.	At identified location (<i>Figure 8,7a</i>) for the full duration of the construction contract.	The Contractor		*		~	
8.7.2	F2	proper implementation of this restriction <i>Mitigation Measures Adopted - Minimisation</i> Pipe jacking method should be used instead of dredging where sewers and rising mains cross over existing MDC within the WCA and WBA.	To minimise potential construction noise impacts to ecological sensitive receivers within the WCA/WBA.	For the full duration of the construction contract.	The Contractor		~			
8.7.2		Regular inspections (at least twice a month) should be conducted by the ET during the winter season (November to March) for the remaining sections of the proposed sewerage alignment (including parts of S4, S5 and S6) within the WCA and WBA, where construction activities cannot be rescheduled.	To schedule noisy construction activities to minimise potential impacts to winter visiting birds.	Work fronts other than identified sections within WBA & WCA (see <i>Figure</i> <i>8.7a</i> attached) throughout the full duration of the construction contract.	The Contractor		*			
		The site inspections shall check and report the number of workfronts and implementation of								

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EIA* Objectives of the Recommended Measures & Main Goncerns (1992) EM&A Re Environmental Protection Measures Ref Execution of the measure Implementation Implementation & Relevant Legislation & Stage* & Guidelines Des G O Dec mitigation measures (i.e. erection of movable noise barriers with a suitable footing along the sites) in the monthly EM&A reports. Mitigation Measures Adopted 873 F5 Quietened construction plant and equipment (as Quiet construction plant shall At described locations shown in Table F2) should be used for the The Contractor minimise potential noise \checkmark and throughout the full construction of pumping stations (P3 and P2) and impacts to the wildlife. duration of the sewerage alignment (S4, S5 and S6) located particularly rare birds construction contract. within the WCA and WBA including Black-faced Spoonbill, Buzzard, Hobby, Imperial Eagle, Intermediate Egret, Avocet and Black-eared Kite 8.7.4 F6 . Erection of fences along the boundary of pumping To erect fences to prevent At P1 to P3 for full station construction sites (P1 to P3) before the The Contractor encroachment of construction 1 duration of the commencement of construction works to prevent activities onto adjacent areas. construction contract. tipping, vehicle movements, and encroachment of personnel into adjacent areas, and P2 to avoid disturbance to the remaining pond areas (0.7 ha); 8.7.4 F7 No filling and dumping to the remaining To avoid disturbance to At P2 for full duration of The Contractor abandoned fishpond at P2. \checkmark abandoned fishponds from the construction contract construction activities and illegal dumping. 8.7.4 F8 Installation and operation of silt removal facilities at To install silt removal facilities At P1 to P3 for full The Contractor construction sites of P1 to P3. The silt removal \checkmark in potentially impact streams duration of the facilities should be designed in accordance with and ponds to prevent construction contract. Appendix A1 of ProPECC Note PN1/94 Construction sedimentation. Site Drainage. The minimal total combined volume of the silt removal facilities at Nam Sang Wai SPS (P3) should be 15m³. F9 8.7.4 No open fires within the site boundary during To prohibit open fires, thereby Site wide and throughout The Contractor Air Pollution Control

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Action-United Environmental Services & Consulting

EIA*															
Ref.	EM&A Ref	Environmental Protection Measures n	Objectives of the Recommended Measures & Main Concerns	Location of the measure	limplementation Agent	Stag	le**			Relevant Legislation & Guidelines					
8.7.4	F7	construction and provide temporary fire fighting equipment in the work areas. No filling and dumping to the remaining abandoned fishpond at P2.	minimising potential damage to trees and shrubs. To avoid disturbance to abandoned fishponds from construction activities and illegal dumping.	the full duration of the construction contract. At P2 for full duration of the construction contract	The Contractor	Des	C ✓	O	Dec	(Open Burning) Regulation					
8.7.4	F8	Installation and operation of silt removal facilities at construction sites of P1 to P3. The silt removal facilities should be designed in accordance with Appendix A1 of ProPECC Note PN1/94 Construction Site Drainage.	To install silt removal facilities in potentially impact streams and ponds to prevent sedimentation.	At P1 to P3 for full duration of the construction contract,	The Contractor		~								
8.7.4	F9	No open fires within the site boundary during construction and provide temporary fire fighting equipment in the work areas.	To prohibit open fires, thereby minimising potential damage to trees and shrubs.	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Air Pollution Control (Open Burning) Regulation					
		FISHERIES - Construction Phase No specific mitigation measures are required for inclusion in the EP.													
		CULTURAL HERITAGE – Not Applicable for Package 1A-1T (DC/2005/02)													
		LANDSCAPE AND VISUAL - Construction Phase													
·		The site inspections shall check and report the implementation of mitigation measures (i.e. top-soil are reused and new compensatory planting works are carried out immediately after the construction of the civil structure) in the monthly EM&A reports.	To minimise potential landscape and visual impacts.	To be implemented during the construction phases of the project.	The Contractor		· ·								
		The first monthly EM&A Report should also report the appearance of the temporary hoarding barriers.													
		Prior to application for an Environmental Permit, a set of landscape plans and building elevations of the proposed pumping stations should be	To minimise potential landscape and visual impacts.	To be implemented during the design and construction phases of the	DSD and The Contractor	¥	~								

		Len						AUES
ELZ	EM&A Re	ff - Environmental Protection Measures	Collectives of the Recommended Measures & Main Concerns	Location of the measu	inglementation Agent	implem Staget	entation	Relevant Legislation
		 submitted for approval by the EPD. The landscape plans and pumping station elevations should demonstrate that the following elements are considered: existing landscape elements (such as mature trees), transplantation of valuable trees, new compensatory planting incorporate information on materials, details and textures so as to be as visually recessive as possible and in a style that fits with the surrounding village buildings. colour should be of low chromatic intensity to reduce the potential contrast between the structures and their background. The external finishing of the Pumping Stations shall be designed in conjunction with the landscape scheme. a minimum screen planting of 3m width and use of trees with a dense canopy of up to 5 m in height subject to constraints such as engineering and land availability. felling of mature trees are kept to a minimum. 		project.				
3.7	1 1	 EM&A REQUIEMENTS - Construction Phase Air Quality Subject to the Environmental Protection Departments (EPDs) agreement, construction phase dust monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA. Worksite boundary facing Scattered house in Nam Sang Wai (AM1); Worksite boundary facing Fung Kat Heung (AM5); Worksite boundary facing Scattered House near Route 3 (AM6); 	Installations of the dust monitoring stations to ensure the action and limit levels are not exceeded.	At specified dust monitoring locations for the duration of the construction works.	To be undertaken by the Environmental Team (ET) and reviewed and audited by the Engineer /DSD	~		Air Pollution Control (Construction Dust) Regulations

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IA* Ref. EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures &	Location of the measure	Implementation	Imple	emen	tation	Relevant Legislati
		Main Concerns		Agent,	Stag	e**		& Guidelines
	 at any additional locations, where considered necessary, in agreement with EPD. Construction Noise Subject to the Environmental Protection Departments (EPDs) agreement, construction phase noise monitoring shall be undertaken at the following locations in accordance with the recommendations of the EIA. (NM3) Scattered House in Nam San Wai (D12); (NM4) Scattered House in Nam San Wai (D11); (NM6) Scattered House near Route 3 (D17); (NM7) Fung Kat Heung (D19); and at any additional locations, where considered necessary, in agreement with EPD 	monitoring stations to ensure the action and limit levels are not exceeded.		To be	Des	₩	<u>O</u>	Noise Control Ordinance

Annex H

Equipment Calibration Certificates

Equipment Calibration List for Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long Project

Item	Aspect	Description of Equipment	Serial No.	Date of Calibration	Date of Next Calibration
1	Air	Greasby Anderson GMWS2310 High Volume Sampler	AM1	21 Aug 06	21 Nov 06
2		Greasby Anderson GMWS2310 High Volume Sampler	AM7	21 Aug 06	21 Nov 06
3	Noise	Bruel & Kjaer 4231 Acoustical Calibrator	2292167	13 Apr 06	13 Apr 07
4		Bruel & Kjaer 2238 Integrating Sound Level Meter	2285721	24 Apr 06	24 Apr 07

Note: Calibration certificates will only be provided if monitoring equipment is re-calibrated or new. ** Calibration done in this reporting month, see calibration certificate attached.*

Annex I

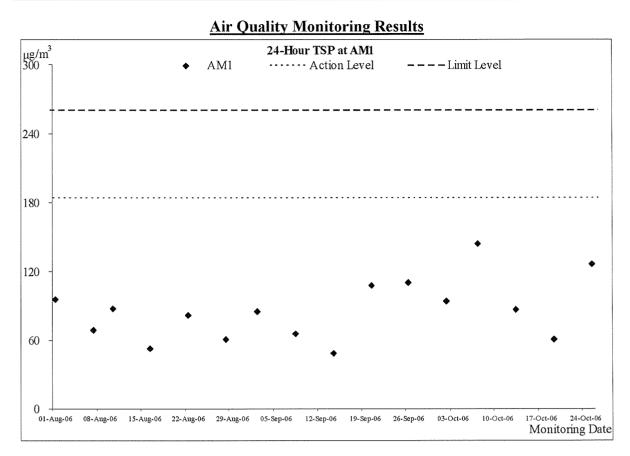
Meteorological Data in the Reporting Month

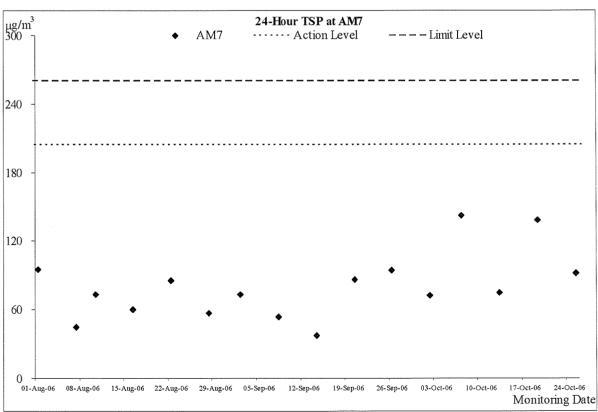
Meteorological Data Extracted From the HK Observatory at Lau Fau Shan Weather Station

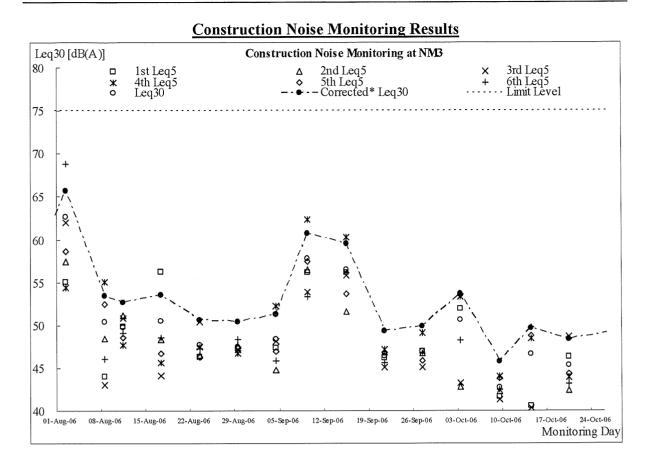
		Data Extracted From the HIX Obs	Lau Fau Shan Station						
Date		Weather	Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction		
1-Oct-06	Sun	sunny/ rain	Trace	26.4		Holiday			
2-Oct-06	Mon	sunny/ rain	Trace	26.5	12	70	E/SE		
3-Oct-06	Tue	cloudy/ haze/ sunny/ moderate	5.1	27	9	85	SW/W		
4-Oct-06	Wed	fine/ haze/ moderate	Trace	26.9	15	55	SE/S		
5-Oct-06	Thu	fine/ dry/ haze/ moderate	-	27.3	12	50	SE		
6-Oct-06	Fri	fine/ haze/ dry/ rain/ moderate	Trace	25.9	6	90	E/SE		
7-Oct-06	Sat	fine/ haze/ rain	-	25.5		Holiday			
8-Oct-06	Sun	sunny/ rain	-	26	9	70	SE		
9-Oct-06	Mon	cloudy/ haze/ rain/ moderate	0.6	24.6	6	80	Е		
10-Oct-06	Tue	fine/ haze/ moderate	-	25.9	6 70		E/SE		
11-Oct-06	Wed	fine/ haze/ moderate - 26.3		6	70	E/SE			
12-Oct-06	Thu	fine/ haze/ moderate	-	27.2	9	70	E/SE		
13-Oct-06	Fri	fine/ cloudy/ moderate	-	26	12	85	SE/S		
14-Oct-06	Sat	cloudy/ sunny/ haze/ rain	5.3	26.1	6	85	SE/S		
15-Oct-06	Sun	cloudy/ rain	10.7	26.5	15	80	SE		
16-Oct-06	Mon	cloudy/ showers/ moderate	7.1	27.2	15	80	E/SE		
17-Oct-06	Tue	cloudy/ haze/ sunny/ moderate	-	27	12	85	SE		
18-Oct-06	Wed	cloudy/ haze/ sunny/ showers/ moderate	-	27.2	12	85	E/SE		
19-Oct-06	Thu	sunny/ cloudy/ moderate	-	27.1	6	70	E/SE		
20-Oct-06	Fri	sunny/ cloudy/ haze	-	26.6	6	75	E/SE		
21-Oct-06	Sat	sunny/ cloudy/ moderate	-	26.8	6	85	E/SE		
22-Oct-06	Sun	haze/ sunny	-	27	9	75	SE/S		
23-Oct-06	Mon	sunny/ haze/ showers/ moderate	Trace	27	18	80	E/SE		
24-Oct-06	Tue	cloudy/ sunny/ moderate	1.9	27.4	16				
25-Oct-06	Wed	haze/ sunny/ moderate	Trace	26.4	10	80	Е		

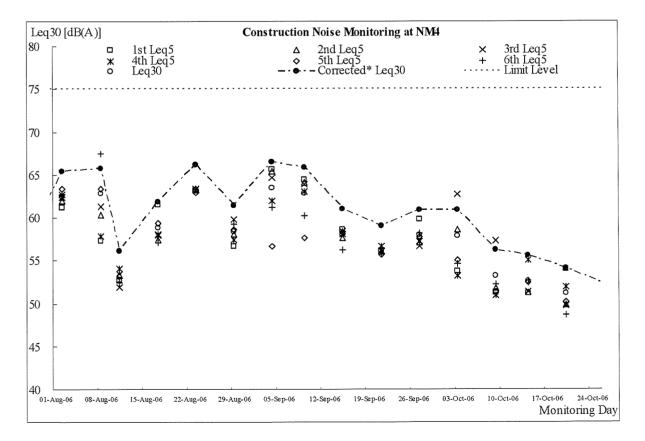
Annex J

Graphical Plots of Air Quality & Noise Monitoring Results









Annex K

Proforma of Site Inspection and IEC Audit in the Reporting Period

Project		uction of Sewers, Ris Itation at Kam Tin, Na	ing Mains & am Sang Wai and Au	Contrac	tor:		Leader Civil	Engineerin	ig Corp. Ltd		
	Tad in Fach Long			Enginee	er:		Babtie Asia	Ltd			
Inspected by:	ET Auditor:	Ben Tam		IEC:			Mott Connel	Ltd			
	Contractor Rep:	Benny Lam / Edw	vin	Environ	mental T	eam:	Action-Unite	d Env. Ser	vices & Consu	Iting	
	IEC's Rep:	Nil		-	on Date &		3 October 2006 at 10:00				
	RE's Rep:	Mr. S L Hui		Checklis	st Refere	nce No.:	DSD-AT 031	006			
General Meteoro	ological Information										
Weather	✓ Sunny	Fine	Cloudy	0	/ercast		Drizzle		Rain	Hazy	
Temp:	27 °C										
Humidity:	High (RH > 9	0%)	Moderate (90)% > RH > 5	i0%)		Low (RH	< 50%)			
Wind:	Calm	└ Light	Breeze	St	rong						
Air Quality					Yes	No	NA	NC	Follow-up	Remarks	
Is hoarding of not	t less than 2.4m provid	ded?			\checkmark						
Are site vehicles t	traveling within contro	lled speed limit?			\checkmark						
Are site vehicles	movement confined to	o designated haul roa	ids?		\checkmark						
Are public roads of	outside site exits kept	clean and free from	dust?		\checkmark						
Are haul roads an	nd unpaved surfaces v	watered regularly to a	woid dust generation?		\checkmark						
Are there wheel w	vashing facilities provi	ided at site exits?			\checkmark						
Is water spraying	used during the main	dust-generating activ	vities?		\checkmark						
Are the excavated	d or stockpile of dusty	materials kept wet?			\checkmark						
is exposed area c	of ground covered or v	watered frequently?			\checkmark					. <u></u>	
Are load on vehic	les covered by clean	impervious sheeting?	?				\checkmark				
Are vehicles and	equipment switched c	off while not in use?			\checkmark						
Is smoky emission	ns from plants/equipn	nent avoided?			\checkmark						
Is open burning a	voided?				\checkmark						
Observable dust	sources	Wind erosion			Veh	icle/equip	ment moven	nents			
		Loading/unloading	of materials		✓ Others Nil						
Construction No	bise										
Are the constructi	ion works scheduled t	to minimize noise nui	sance?		\checkmark						
Are the works or e	equipment sited to mi	nimize noise nuisanc	e?		\checkmark						
Are all plant and e	equipment well mainta	ained and in good op	erating condition?		\checkmark						
Is idle equipment	turned off or throttled	down?			\checkmark						
Is powered mecha	anical equipment cov	ered or shielded by a	ppropriate acoustic mat	terials?	\checkmark						
Is silenced equipr	ment used where app	ropriate?			\checkmark						
Are noise enclosu	Are noise enclosures or noise barriers used where necessary?				\checkmark						
Does specified ec	quipment has valid no	ise label?			\checkmark						
Are Construction	Noise Permits (CNPs	s) available for inspec	tion?				\checkmark				
Major Noise Sour	rce	Traffic			✓ Cor	struction	activities insi	de of site			
	[Construction activiti	es outside of site		Oth	ers					

Site Inspection Checklist (SF-17)

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge	icense obtained for the Project?	\checkmark					
Is site effluent discharged i	n accordance with the discharge license?	\checkmark					
Is the discharge of silty wat	er avoided?	\checkmark					
Is drainage adequate?		\checkmark					
Is drainage system well ma	intained?	\checkmark					Remarks 2
Are there temporary ditche	s for runoff discharge into appropriate watercourse?	\checkmark					
Are there sedimentation ta	nks for settling runoff prior to discharge?	\checkmark					
Are the sedimentation tank	s: Constructed of pre-formed individual cells?	\checkmark					
	With adequate capacity?	\checkmark					
	Free from silt and sediment?	\checkmark					Remarks 1
Are there neutralization tar	ks for concrete batching/mixing discharge?			\checkmark			
Are there oil interceptors in	drainage system?			\checkmark			
Is wheel wash facility provi	ded at every site exit?	\checkmark					
Are vehicles and plant clea	ned of earth, mud & debris before leaving the site?	\checkmark					
Are wheel washing facilitie	s regularly inspected and maintained?			\checkmark			
Are toilets provided on site	? If so, are they properly maintained?	\checkmark					
Are manholes covered and	sealed?	\checkmark					
Is oil leakage or spillage av	oided?	\checkmark		'			
Waste Management and	Potential Land Contamination						
General Refuse:	Are receptacles (rubbish bins) available?	\checkmark					
	Is there regular and proper disposal?		\checkmark				Remarks 3
	Is proper sorting and recycling implemented?	\checkmark					
Construction Waste:	Is generation of construction waste minimized?	\checkmark					
	Is waste sorting implemented on site?	\checkmark					
	Is construction waste reused where practicable?	\checkmark					·
	Is construction waste properly disposed of?	\checkmark					
	Are disposal records available for inspection?	\checkmark					
Chemical waste/waste oil	Is there designated storage area?			\checkmark			
	Is chemical waste stored properly?			\checkmark			
	Is there proper disposal?			\checkmark			. <u></u>
	Is chemical waste license available for inspection?			\checkmark			
Excavated Materials	Do excavated materials appear uncontaminated?	\checkmark					
	Are appropriate procedures followed if contaminated materials exist?	\checkmark					
	Are disposal records available for inspection?	\checkmark					
Chemical/Fuel	Is chemical/fuel stored in bunded area?	\checkmark					
	Is bund capacity adequate (>110% of the largest tank)?	\checkmark					
	Are storage areas lockable?	\checkmark					
Is foam, oil, grease or othe	r objectionable matters in water or nearby drains of sewer	\checkmark					

Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?



Remarks:

Previous Audit Follow-up:

- 1. Sediment in the sedimentation tank at Portion F was cleared.
- 2. Sediment in the u-channel at Kam Tai Road was cleared.

Observations Recorded in this Site Inspection:

3. Waste skip was observed full at Nam San Wai pumping Station, Contractor is reminded to clean regularly.

Signatures:			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Resident Site Staff
to			
Name :Ben Tam	Name:	Name:	Name:

Project		nstruction of Sewers, Ri ng Station at Kam Tin, N		Contractor	r: Leader Civil Engineering Corp. Ltd						
	Tau in Yuen Lo	ng		Engineer:		Babtie Asia	Babtie Asia Ltd				
Inspected by:	ET Auditor:	Ben Tam		IEC:		Mott Conne	ell Ltd				
	Contractor Rep	p: Benny Lam / Ed	win	Environme	ental Team:	Action-Unit	ed Env. Ser	vices & Consu	Iting		
	IEC's Rep:	Nil		Inspection	Date & Time	e: 11 October	2006 at 10	:00			
	RE's Rep:	Mr. S L Hui		Checklist I	Checklist Reference No.: DSD-AT 111006						
General Meteoro	ological Informat	tion									
Weather	Sunny	Fine	Cloudy	Over	cast	Drizzle		Rain	Hazy		
Temp:	29 °C										
Humidity:	High (RF	l > 90%)	Moderate (9	0% > RH > 50%	6)	Low (Rł	l < 50%)				
Wind:	Calm	Light	Breeze	Stron	g						
Air Quality				Ye	s No	NA	NC	Follow-up	Remarks		
Is hoarding of not	less than 2.4m p	provided?									
Are site vehicles t	traveling within co	ontrolled speed limit?									
Are site vehicles r	movement confin	ed to designated haul ro	ads?								
Are public roads of	outside site exits	kept clean and free from	n dust?								
Are haul roads an	d unpaved surfac	ces watered regularly to	avoid dust generation?						Remarks 4		
Are there wheel w	vashing facilities	provided at site exits?									
Is water spraying	used during the r	main dust-generating act	tivities?								
Are the excavated	d or stockpile of d	lusty materials kept wet?	?								
Is exposed area o	of ground covered	d or watered frequently?									
Are load on vehic	les covered by cl	ean impervious sheeting]?								
Are vehicles and	equipment switch	ned off while not in use?		Ū							
Is smoky emissio	ns from plants/eq	uipment avoided?									
Is open burning a	voided?										
Observable dust	sources	Wind erosion			Vehicle/ec	uipment move	ments				
		Loading/unloading	of materials		Others	Nil					
Construction No	ise										
Are the constructi	on works schedu	iled to minimize noise nu	uisance?	Ŀ							
Are the works or e	equipment sited t	o minimize noise nuisan	ice?								
Are all plant and e	equipment well m	naintained and in good o	perating condition?								
Is idle equipment	turned off or thro	ttled down?									
Is powered mecha	anical equipment	covered or shielded by	appropriate acoustic ma	aterials?							
Is silenced equipr	ment used where	appropriate?									
Are noise enclosu	ures or noise barr	iers used where necess	ary?								
Does specified ec	quipment has vali	id noise label?									
Are Construction	Noise Permits (C	NPs) available for inspe	ection?								
Major Noise Sour	ce	Traffic			Construct	ion activities in	side of site				
		Construction activi	ities outside of site		Others						

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge	icense obtained for the Project?	\checkmark					
Is site effluent discharged i	n accordance with the discharge license?	\checkmark					
Is the discharge of silty wat	er avoided?	\checkmark					
Is drainage adequate?		\checkmark					
Is drainage system well ma	intained?	\checkmark					
Are there temporary ditches	s for runoff discharge into appropriate watercourse?	\checkmark					
Are there sedimentation tar	nks for settling runoff prior to discharge?	\checkmark					
Are the sedimentation tank	s: Constructed of pre-formed individual cells?	\checkmark					
	With adequate capacity?	\checkmark					
	Free from silt and sediment?	\checkmark					
Are there neutralization tan	ks for concrete batching/mixing discharge?			\checkmark			
Are there oil interceptors in	drainage system?			\checkmark			
Is wheel wash facility provid	led at every site exit?	\checkmark					
Are vehicles and plant clea	ned of earth, mud & debris before leaving the site?		\checkmark				Remarks 3
Are wheel washing facilities	regularly inspected and maintained?			\checkmark			
Are toilets provided on site	? If so, are they properly maintained?	\checkmark					
Are manholes covered and	sealed?	\checkmark					
Is oil leakage or spillage avoided?							
Waste Management and F	Potential Land Contamination						
General Refuse:	Are receptacles (rubbish bins) available?		\checkmark				Remarks 2
	Is there regular and proper disposal?	\checkmark					Remarks 1
	Is proper sorting and recycling implemented?	\checkmark					
Construction Waste:	Is generation of construction waste minimized?	\checkmark					
	Is waste sorting implemented on site?	\checkmark					
	Is construction waste reused where practicable?	\checkmark					
	Is construction waste properly disposed of?	\checkmark					
	Are disposal records available for inspection?	\checkmark					
Chemical waste/waste oil	Is there designated storage area?			\checkmark			
	Is chemical waste stored properly?			\checkmark			
	Is there proper disposal?			\checkmark			<u></u>
	Is chemical waste license available for inspection?			\checkmark			
Excavated Materials	Do excavated materials appear uncontaminated?	\checkmark					
	Are appropriate procedures followed if contaminated materials exist?	\checkmark					
	Are disposal records available for inspection?	\checkmark					
Chemical/Fuel	Is chemical/fuel stored in bunded area?	\checkmark					<u></u>
	Is bund capacity adequate (>110% of the largest tank)?	\checkmark					
	Are storage areas lockable?	\checkmark					
Is foam, oil, grease or other avoided?	objectionable matters in water or nearby drains of sewer	\checkmark					



Remarks:

Previous Audit Follow-up:

1. Waste skip at Nam San Wai pumping station was observed cleared.

Observations Recorded in this Site Inspection:

- 2. General waste was observed in the site area at portion F, rubbish bin should be provided by contractor.
- 3. Sand and mud tails was observed in the site exit at portion E, contractor was reminded that all vehicle should be clean before leaving the site.
- 4. Water spraying was needed at portion E to minimize the dust generation.

Signatures:			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Resident Site Staff
A.			
Name :Ben Tam	Name:	Name:	Name:

Project	DC/2005/02 Cor Sewage Pumpir	Construction of Sewers, Rising Mains & pping Station at Kam Tin, Nam Sang Wai and Au		Contractor:		Leader Civi	Leader Civil Engineering Corp. Ltd				
	Tau in Yuen Lor	ng		Engineer:		Babtie Asia	Babtie Asia Ltd				
Inspected by:	ET Auditor:	Ken Wong		IEC:		Mott Conne	ell Ltd				
	Contractor Rep	: Benny Lam / Edw	vin	Environmen	tal Team:	Action-Unit	Action-United Env. Services & Consulting 17 October 2006 at 10:00				
	IEC's Rep:	Nil		Inspection D	ate & Time	17 October					
	RE's Rep:	Mr. S L Hui		Checklist Re	eference No	.: DSD-AT17	1006				
General Meteoro	ological Informati	ion									
Weather	Sunny	Fine	Cloudy	Overca	st	Drizzle		Rain	Hazy		
Temp:	29 °C										
Humidity:	High (RH	> 90%)	Moderate (90)% > RH > 50%)		Low (RH	l < 50%)				
Wind:	Calm	✓ Light	Breeze	Strong							
Air Quality				Yes	No	NA	NC	Follow-up	Remarks		
Is hoarding of not	less than 2.4m p	rovided?		\checkmark]						
Are site vehicles t	traveling within co	introlled speed limit?		\checkmark							
Are site vehicles i	movement confine	ed to designated haul roa	ads?	\checkmark]						
Are public roads of	outside site exits l	kept clean and free from	dust?	\checkmark]						
Are haul roads an	nd unpaved surfac	es watered regularly to a	void dust generation?	\checkmark							
Are there wheel w	vashing facilities p	provided at site exits?		\checkmark							
Is water spraying	vities?	\checkmark]								
Are the excavated	d or stockpile of d	usty materials kept wet?		\checkmark							
Is exposed area of	of ground covered	or watered frequently?		\checkmark]						
Are load on vehic	les covered by cle	ean impervious sheeting?	?]	\checkmark					
Are vehicles and	equipment switch	ed off while not in use?		\checkmark							
Is smoky emission	ns from plants/eq	uipment avoided?		\checkmark]						
Is open burning a	voided?			\checkmark							
Observable dust	sources [Wind erosion]Vehicle/equ	uipment move	ments				
	[Loading/unloading of	of materials	\checkmark]Others	Nil					
Construction No	bise										
Are the constructi	ion works schedul	led to minimize noise nui	sance?	\checkmark]						
Are the works or a	equipment sited to	o minimize noise nuisanc	e?	\checkmark							
Are all plant and e	equipment well m	aintained and in good op	erating condition?	\checkmark							
Is idle equipment	turned off or throt	ttled down?		\checkmark					•••••		
Is powered mech	anical equipment	covered or shielded by a	ppropriate acoustic ma	terials?							
Is silenced equipr	ment used where	appropriate?		\checkmark							
Are noise enclosu	ures or noise barri	iers used where necessa	ry?	\checkmark							
Does specified ec	quipment has valio	d noise label?		\checkmark							
Are Construction	Noise Permits (C	NPs) available for inspec	ction?			\checkmark					
Major Noise Sour	ce	Traffic		\checkmark	Constructio	on activities in	side of site				
		Construction activiti	ies outside of site		Others						

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge li	cense obtained for the Project?	\checkmark					
Is site effluent discharged in	accordance with the discharge license?	\checkmark					
Is the discharge of silty wate	er avoided?		\checkmark				OBS 1
Is drainage adequate?		\checkmark					
Is drainage system well mai	ntained?	\checkmark					
Are there temporary ditches	for runoff discharge into appropriate watercourse?	\checkmark					
Are there sedimentation tan	ks for settling runoff prior to discharge?	\checkmark					
Are the sedimentation tanks	: Constructed of pre-formed individual cells?	\checkmark					
	With adequate capacity?	\checkmark					
	Free from silt and sediment?		\checkmark				OBS 1
Are there neutralization tank	ks for concrete batching/mixing discharge?			\checkmark			
Are there oil interceptors in			\checkmark				
Is wheel wash facility provid	ed at every site exit?	\checkmark					
Are vehicles and plant clear	ned of earth, mud & debris before leaving the site?	\checkmark					
Are wheel washing facilities	regularly inspected and maintained?			\checkmark			
Are toilets provided on site?	If so, are they properly maintained?	\checkmark					
Are manholes covered and	sealed?	\checkmark					
Is oil leakage or spillage ave	bided?		\checkmark				OBS 2
Waste Management and P	Potential Land Contamination						
General Refuse:	Are receptacles (rubbish bins) available?	\checkmark					
	Is there regular and proper disposal?	\checkmark					
	Is proper sorting and recycling implemented?	\checkmark					
Construction Waste:	Is generation of construction waste minimized?	\checkmark					
	Is waste sorting implemented on site?	\checkmark					
	Is construction waste reused where practicable?	\checkmark					
	Is construction waste properly disposed of?	\checkmark					
	Are disposal records available for inspection?	\checkmark					
Chemical waste/waste oil	Is there designated storage area?			\checkmark			
	Is chemical waste stored properly?			\checkmark			
	Is there proper disposal?			\checkmark			
	Is chemical waste license available for inspection?			\checkmark			
Excavated Materials	Do excavated materials appear uncontaminated?	\checkmark					
	Are appropriate procedures followed if contaminated materials exist?	\checkmark					
	Are disposal records available for inspection?	\checkmark					
Chemical/Fuel	Is chemical/fuel stored in bunded area?	\checkmark					. <u></u>
	Is bund capacity adequate (>110% of the largest tank)?	\checkmark					
	Are storage areas lockable?	\checkmark					
Is foam, oil, grease or other avoided?	objectionable matters in water or nearby drains of sewer	\checkmark					<u>. </u>

Remarks:

Previous Audit Follow-up:

- 1. Rubbish bins were provided at the portion F.
- 2. No mud trails was observed at the portion E site exit and vehicle will under wheel washing before leaving the site.
- 3. Dust suppression by water spraying was implemented at Portion E.

Observations Recorded in this Site Inspection:

- 1. Silty water discharge from the sedimentation tank was observed at the Nam Sum Wai pumping station, the contractor was reminded to regular clean up the sedimentation tank and maintain the desilting facilities in proper efficiency.
- 2. Oil stain on ground next to the generator was found at Castle Peak Road construction site, the contactor was reminded to clean up and instructed the site staff handling with care during duel refilling.

Signatures:			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Resident Site Staff
Name :Ken Wong	Name:	Name:	Name:

Project	DC/2005/02 Co Sewage Pumpi	02 Construction of Sewers, Rising Mains & umping Station at Kam Tin, Nam Sang Wai and Au			r:	Leader Civ	Leader Civil Engineering Corp. Ltd					
	Tau in Yuen Lo	ong		Engineer:		Babtie Asia	a Ltd					
Inspected by:	ET Auditor:	Ben Tam		IEC:		Mott Conne	ell Ltd					
	Contractor Re	p: Benny Lam / Ed	win	Environm	ental Team:	Action-Unit	Action-United Env. Services & Consulting					
	IEC's Rep:	Nil		Inspection	n Date & Tim	31 October 2006 at 10:00						
	RE's Rep:	Mr. S L Hui		Checklist	Reference N	o.: DSD-AT31	.: DSD-AT311006					
General Meteoro	logical Informa	tion										
Weather	Sunny	Fine	Cloudy	Ove	rcast [Drizzle		Rain	Hazy			
Temp:	26 °C											
Humidity:	High (RF	H > 90%)	Moderate (90	0% > RH > 50°	%) [✓ Low (Rł	l < 50%)					
Wind:	Calm	✓ Light	Breeze	Stro	ng							
Air Quality	<u> </u>			Y	es No	NA	NC	Follow-up	Remarks			
Is hoarding of not	less than 2.4m p	provided?										
Are site vehicles t	traveling within c	ontrolled speed limit?			I							
Are site vehicles	movement confin	ned to designated haul ro	ads?									
Are public roads of	outside site exits	kept clean and free from	udust?						OBS 3			
Are haul roads an	nd unpaved surfa	ces watered regularly to	avoid dust generation?	L								
Are there wheel w	vashing facilities	provided at site exits?										
Is water spraying	used during the I	main dust-generating ac	tivities?									
Are the excavated	d or stockpile of c	dusty materials kept wet	2									
Is exposed area c	of ground covered	d or watered frequently?										
Are load on vehic	les covered by cl	lean impervious sheeting	1?									
Are vehicles and	equipment switch	hed off while not in use?										
Is smoky emission	ns from plants/ec	quipment avoided?										
Is open burning a	voided?											
Observable dust	sources	Wind erosion			Vehicle/ec	uipment move	ments					
		Loading/unloading	of materials		✓ Others	Nil						
Construction No	ise											
Are the constructi	on works schedu	uled to minimize noise nu	iisance?									
Are the works or e	equipment sited t	to minimize noise nuisan	ce?									
Are all plant and e	equipment well m	naintained and in good o	perating condition?									
Is idle equipment	turned off or thro	ottled down?		Ľ								
Is powered mecha	anical equipment	t covered or shielded by	appropriate acoustic mat	terials?								
Is silenced equipr	ment used where	appropriate?										
Are noise enclosu	ires or noise barr	riers used where necess	ary?	Γ								
Does specified ec	uipment has vali	id noise label?										
Are Construction	Noise Permits (C	CNPs) available for inspe	ction?	Ľ								
Major Noise Sour	се	Traffic		Ľ	Construction activities inside of site							
		Construction activi	ties outside of site		Others							

Water Quality & Drainage		Yes	No	NA	NC	Follow-up	Remarks
Is a wastewater discharge license obtained for the Project?		\checkmark					
Is site effluent discharged in accordance with the discharge license?		\checkmark					
Is the discharge of silty water avoided?		\checkmark					OBS 1
Is drainage adequate?		\checkmark					
Is drainage system well maintained?		\checkmark					
Are there temporary ditches for runoff discharge into appropriate watercourse?		\checkmark					
Are there sedimentation tar	iks for settling runoff prior to discharge?	\checkmark					
Are the sedimentation tanks	s: Constructed of pre-formed individual cells?	\checkmark					
	With adequate capacity?	\checkmark					
	Free from silt and sediment?	\checkmark					OBS 1
Are there neutralization tan	ks for concrete batching/mixing discharge?			\checkmark			
Are there oil interceptors in drainage system?				\checkmark			
Is wheel wash facility provided at every site exit?		\checkmark					
Are vehicles and plant cleaned of earth, mud & debris before leaving the site?		\checkmark					<u></u>
Are wheel washing facilities regularly inspected and maintained?				\checkmark			<u></u>
Are toilets provided on site? If so, are they properly maintained?		\checkmark					<u></u>
Are manholes covered and sealed?		\checkmark					
Is oil leakage or spillage avoided?		\checkmark					OBS 2
Waste Management and F	Potential Land Contamination						
General Refuse:	Are receptacles (rubbish bins) available?	\checkmark					
	Is there regular and proper disposal?	\checkmark					
	Is proper sorting and recycling implemented?	\checkmark					
Construction Waste:	Is generation of construction waste minimized?	\checkmark					
	Is waste sorting implemented on site?	\checkmark					
	Is construction waste reused where practicable?	\checkmark					
	Is construction waste properly disposed of?	\checkmark					
	Are disposal records available for inspection?	\checkmark					
Chemical waste/waste oil	Is there designated storage area?			\checkmark			
	Is chemical waste stored properly?			\checkmark			
	Is there proper disposal?			\checkmark			
	Is chemical waste license available for inspection?			\checkmark			
Excavated Materials	Do excavated materials appear uncontaminated?	\checkmark					
	Are appropriate procedures followed if contaminated materials exist?	\checkmark					
	Are disposal records available for inspection?	\checkmark					
Chemical/Fuel	Is chemical/fuel stored in bunded area?	\checkmark					
	Is bund capacity adequate (>110% of the largest tank)?	\checkmark					
	Are storage areas lockable?	\checkmark					
Is foam, oil, grease or other objectionable matters in water or nearby drains of sewer avoided?							



Remarks:

Previous Audit Follow-up:

- 1. No silty water was observed discharged from the Nam San Wai Pumping Station.
- 2. Oil stain on ground next to the generator at Castle Peak Road was cleaned.

Observations Recorded in this Site Inspection:

3. Sand and mud tails were observed in the site exit at portion E. Contractor was reminded that all vehicle should be clean before leaving the site.

Signatures:			
Env. Auditor	Contractor's Representative	IC(E) Auditor	Resident Site Staff
Name :Ben Tam	Name:	Name:	Name: