

**JOB NO.: TCS00310/06** 

REVISION NO.: 1 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

MONTHLY ENVIRONMENTAL MONITORING & AUDIT (EM&A) REPORT FOR JULY 2008 (No. 28) (DESIGNATED ELEMENTS - CONSTRUCTION PHASE)

#### **PREPARED FOR**

# LEADER CIVIL ENGINEERING CORPORATION LIMITED

Quali	ty Index						
	Date Reference No.						
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<b>Prepared By</b> Ben Tam		<b>Reviewe</b> Ken W	•	<b>Certified By</b> David Yeung		<b>Approved By</b> TW Tam	Verified By Dr. Anne F Kerr
K		A		5-0		Jam	Amethen
	ronmental onsultant	Deputy Envir Team Le	En	vironmental Te	eam Leader	General Manager	Independent Environmental Checker
Rev. No.	Date	Prepared By	Reviewed By	Certified By	Approved By	7 <b>F</b>	Remarks
1	07 Aug 08	Ben Tam	Ken Wong	David Yeung	TW Tam	First	Submission
		1					

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#### **EXECUTIVE SUMMARY**

- ES.01 Leader Civil Engineering Corporation Limited (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 Monthly Environmental Monitoring & Audit (EM&A) Report for July 2008 (No. 28) present the environmental impact monitoring and audit (EM&A) program conducted from 01 to 31 July 2008 for the Designated Elements. The EM&A program in July 2008 were covered air quality, construction noise and waste management.

#### **BREACH OF ACTION AND LIMIT (AL) LEVELS**

ES.03 No Action or Limit Level exceedance of air quality and construction noise was recorded in this reporting month. Power failure at AM1 (24-Hour TSP) on 21 July 2008 was recorded. The 24-Hour TSP monitoring at AM1 was resumed on 26 July 2008.

#### COMPLAINT LOG

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

#### NOTIFICATION OF ANY SUMMONS AND SUCCESSFUL PROSECUTION

ES.05 There was no environmental summons or prosecution in this reporting month.

#### **Reporting Changes**

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

#### **FUTURE KEY ISSUES**

ES.07 Construction activities to be undertaken in **August 2008** include backfilling, concreting and extract sheet pile at Kam Tin Pumping Station (P1) and Sha Po Pumping Station (P2); backfilling and concreting at Nam Sang Wai P/S(P3); sheet piling, excavation, pipe laying, backfilling, concreting, pipe jacking and extract sheet pile at both Nam Sang Wai Road (S4) and Pok Wai South Road (S5 &S6). 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.



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#### **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 **28<sup>th</sup> Monthly EM&A Report for July 2008 (No. 28)** (Designated Elements Construction Phase) summarizes the impact monitoring results and audit findings in the reporting month from **01 to 31 July 2008**.

#### **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 MONTH**

1.04 A construction program showing the construction work undertaken in this reporting month 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.

#### CONSTRUCTION ACTIVITIES UNDERTAKEN IN THE REPORTING MONTH

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

Kam Tin Pumping Station (P1) and Sha Po Pumping Station (P2)

- Backfilling
- Concreting
- Extract sheet pile

Nam Sang Wai Pumping Station (P3)

- Backfilling
- Concreting

Nam Sang Wai Road (S4) and Pok Wai South Road (S5 and S6)

- Sheet piling
- Excavation
- Pipe laying
- Backfilling
- Concreting
- Pipe jacking
- Extract sheet pile



#### 2.0 ENVIRONMENTAL STATUS

#### WORK UNDERTAKEN IN THE REPORTING MONTH WITH ILLUSTRATIONS

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

# Table 2-1Work Undertaken in the Reporting Month with Illustrations of<br/>Mitigation Measures

Locations	Description of Construction Activities	Environmental Mitigation Measures	EM&A Ref.
P1 (Kam Tin Pumping Station)	<ul><li>Back filling</li><li>Extract sheet pile</li><li>Concreting</li></ul>	<ul> <li>Erect 2.4m high noise barrier hoarding around the works area at P1, P2 and P3</li> <li>Remove dust and spray water at the construction access</li> <li>Cover the stockpiles of dusty material properly</li> <li>Spray water to all dusty materials immediately before loading and where dust and spray water at a spray water to all dusty materials immediately before loading and where dust and spray water at a s</li></ul>	A1 & F6 A2 A3 A4
P2 (Sha Po Pumping Station) and P3 (Nam Sang Wai Pumping Station	<ul><li>Back filling</li><li>Concreting</li></ul>	<ul> <li>and unloading</li> <li>Wash the wheels of vehicles before leaving the site</li> <li>Install and use power-operated cover at the dump trucks</li> <li>Spray water at the pavement breaking locations</li> <li>Spray the working area of excavation frequently</li> <li>Maximize the use of quiet PME on site</li> </ul>	A5 A6 A7 A8 B1, B2 & F5 D1
S4 (Nam Sang Wai Road) and S5 & S6 (Pok Wai South Road)	<ul> <li>Sheet piling</li> <li>Excavation</li> <li>Pipe laying</li> <li>Backfilling</li> <li>Concreting</li> <li>Pipe jacking</li> <li>Extract sheet pile</li> </ul>	<ul> <li>Apply and obtain appropriate waste disposal licenses</li> <li>Handle, store and dispose of chemical wastes as per relevant regulations</li> <li>Implement trip-ticket system for waste disposal</li> <li>Restrict open fires and provide fire fighting equipment in the works area</li> <li>Perform weekly inspection with ET and monthly audit with IEC</li> <li>Conduct noise and dust monitoring as per EM&amp;A Manual during construction</li> <li>Provide sedimentation tanks for treating site discharge.</li> <li>Recycle wheel washing water and provide sedimentation tanks for treating site discharge.</li> </ul>	D1 D2, D3 & D4 D5 F9 H1 I1 & I2 - -

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 (AM1, AM5, AM6 & AM7) and four noise monitoring stations (NM3, NM4, NM6 & NM7) under the project EP. Locations of the monitoring stations and description are summary in the Table 2-2.

Station ID	Nature of Premise	Site Work Description	Station Coordinates
AM1	Site Boundary in NSW		835829 N 822910 E
AM5	Site Boundary in FKH		835121 N 823515 E
AM6	Site Boundary in KT		833308 N 823987 E
AM7	Site Boundary in NSW	Sheet piling and trench excavation.	836171 N 822586 E
NM3	Village House in NSW	Sheet philig and trench excavation.	835808 N 822817 E
NM4	Village House in NSW		835282 N 822811 E
NM6	Village House in KT		833288 N 823999 E
NM7	Village House in FKH		835121 N 823495 E

Table 2-2Description of the Monitoring Stations

2.05 In this reporting month, the impact monitoring was carried out at four designated air stations and four noise monitoring locations in according to the monitoring schedule.



#### 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.

Table 3-1	Summary of EM&A Requirements
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<b>Environmental Aspect</b>	Monitoring Parameters
Air Quality	24-Hour TSP
Construction Noise	Leq 30min day time 07:00 to 19:00 (Supplementary L10 and L90 for reference.)

#### **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 Locations	Action Le	evel (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	
Womtoring Locations	1-Hour TSP	24-Hour TSP	1-Hour TSP	24-Hour TSP
AM1	> 391	> 184	> 500	> 260
AM5	> 353	> 237	>500	> 260
AM6	> 329	> 183	> 500	> 260
AM7	> 383	> 204	> 500	> 260

#### Table 3-2Action and Limit Levels for Air Quality

#### Table 3-3Action and Limit Levels for Construction Noise

Monitoring Period	Action Level	Limit Level
0700-1900 hours on normal weekdays	When one or more documented 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 (EP-220/2005) 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 are summarized in Table 2-1 and the implementation schedule as shown in Annex G.
- 4.02 The status of permits, licences, and/or notifications related to environmental protection under this Project during the reporting month is presented in Table 4-1.

Items	Item Description	License/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	Piling Permit (PP No.RN0008-08)	Valid (22 May 2008 to 21 Feb 2009)

Table 4-1Status of Environmental Licenses and Permits

#### 5.0 MONITORING RESULTS

#### MONITORING METHODOLOGY OF AIR QUALITY MONITORING

- 5.01 The 24-Hour TSP monitoring was carried out by a High Volume Air Sampler (HVAS) in compliance with the updated EM&A Manual. The HVAS employed complied with the PS specifications including.
  - Power supply of 220v/50 Hz for 24-Hour continuous operation;
  - 0.6-1.7 m<sup>3</sup>/min (20-60 SCFM) adjustable flow rate;
  - A 7-day mechanical timer for 24-Hour operation;
  - An elapsed time indicator with  $\pm 2$  minutes accuracy for 24-Hour operation;
  - Minimum exposed area of  $63 \text{ in}^2$ ;
  - Flow control accuracy of  $\pm 2.5\%$  deviation over 24-Hour 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-Hour 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-Hour 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. The validation of all monitoring practices and data were following the in-house QA/QC procedures. Blank filters samples were collected and delivered to the HOKLAS-accredited laboratory for QA/QC check.
- 5.03 The meteorological information during the reporting month was obtained from Lau Fau Shan Station of the Hong Kong Observatory (HKO).



#### METHODOLOGY FOR 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<sub>10</sub> and L<sub>90</sub>) were also obtained for reference.
- 5.05 Hand-held sound level meters and associated acoustical calibrators in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specifications 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-Hour TSP filter papers.
- 5.09 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

Env. Aspect	Parameters	Monitoring Equipment
Air Quality	24-Hour TSP	Greasby Anderson GMWS2310 High Volume Air Sampler
Noise	Leq(30mins)	B&K Sound Level Meter (Type 2238) and Acoustics Calibrator (Type 4231)

#### **EQUIPMENT CALIBRATION**

- 5.10 Initial calibration of the HVAS 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. For this reporting month, no HVAS required to calibration. The AM1 and AM7 will calibrate in next reporting month. The calibration certificate is shown in **Annex H**.
- 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 No renew calibration certificates of the sound level meters used during the impact monitoring program in this month are provided

#### PARAMETERS MONITORED

5.13 The environmental parameters monitoring in this reporting month 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 four designated air (AM1, AM5, AM6 & AM7) and four noise (NM3, NM4, NM6 & NM7) monitoring stations. 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<br/>Stations/Locations

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
<b>Construction Noise (4 Lo</b>	ocations)
NM3	Village House in Nam Sang Wai
NM4	Village House in Nam Sang Wai
NM6	Scattered House near Route 3
NM7	Fung Kat Heung

#### MONITORING FREQUENCY AND PERIOD

- 5.15 The impact 24-Hour TSP monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A Manual. Power failure at AM1 on 21 July 2008 was recorded. The 24-Hour TSP monitoring at AM1 was resumed on 26 July 2008, only **15** monitoring events of 24-Hour TSP were conducted in this reporting month.
- 5.16 The impact noise monitoring was conducted at the designated stations once every 6 days in compliance with the updated EM&A Manual. Total of **20** monitoring events were carried out in this reporting month.

#### MONITORING RESULTS WITH DATE AND TIME

5.17 Monitoring results in this reporting month for air quality and construction noise were summarized at **Table 5-3** to **5-7**. Power failure at AM1 on 21 July 2008 was recorded. The 24-Hour TSP monitoring at AM1 was resumed on 26 July 2008. No Action and Limit Level of air quality and construction noise were recorded in this reporting month.

Date	24-Hour TSP (μg/m <sup>3</sup> )							
	AM1	AM5	AM6	AM7				
9-Jul-08	27	42	31	31				
15-Jul-08	45	60	12	37				
21-Jul-08	Power Failure	41	34	33				
26-Jul-08	14	98	46	47				
Average (Range)	29 (14 - 45)	60 (41 - 98)	31 (12 - 46)	37 (31 – 47)				
Action / Limit	> 184 / >260	> 237 / >260	> 183 / >260	> 204 / >260				

Table 5-3Summary of Air Quality Monitoring Results

Note: All 24-Hour TSP monitoring were preset to start at 00:00 on each monitoring date. Bold and italic is exceed the Action Level.

Bold and underline is exceed the Limit Level.



Table 5-4	Summary of Noise Monitoring Results at NM3
Iunice	Summury of rouse monitoring results at rouse

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
04-Jul-08	14:13	50.4	51.8	52.5	50.8	53.2	50.5	51.7	54.7
10-Jul-08	11:18	51.0	51.9	50.4	49.9	51.1	52.4	51.2	54.2
16-Jul-08	10:07	45.0	46.0	47.8	46.3	45.5	45.7	46.1	49.1
22-Jul-08	10:54	49.8	50.5	49.1	50.3	49.1	51.0	50.0	53.0
28-Jul-08	09:21	50.1	51.5	48.7	49.1	50.1	49.8	50.0	53.0
Limit Level									75

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

Table 5-5	Summary of Noise Monitoring Results at NM4
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Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
4-Jul-08	11:28	56.7	53.5	60.7	59.9	51.6	55.2	57.4	60.4
10-Jul-08	13:47	58.6	58.4	57.4	56.4	50.4	52.7	56.5	59.5
16-Jul-08	13:00	67.7	67.6	68.0	67.7	67.5	67.9	67.7	70.7
22-Jul-08	17:05	71.1	70.7	70.4	70.7	70.8	70.6	70.7	73.7
28-Jul-08	16:10	53.2	50.5	49.2	51.0	54.6	50.9	52.0	55.0
Limit Le								75	

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

Table 5-6Summary of Noise Monitoring Results at NM6

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
03-Jun-08	11:10	58.1	71.3	64.0	64.9	63.2	60.4	65.8	
10-Jun-08	10:50	70.6	68.2	70.7	71.5	71.2	69.9	70.5	No
16-Jun-08	10:38	73.5	75.9	72.6	71.0	73.8	71.5	73.4	Correction
21-Jun-08	10:28	67.8	69.3	70.0	68.5	72.1	69.0	69.7	Required
27-Jun-08	10:40	75.2	75.1	69.8	64.8	72.5	75.3	73.3	
Limit Le								75	

Note: \* Noise monitoring was undertaken at the façade, correction was not necessary.

#### Table 5-7Summary of Noise Monitoring Results at NM7

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	Leq30	Corrected * Leq30
04-Jul-08	11:20	65.3	65.4	59.0	62.5	58.8	60.7	62.8	
10-Jul-08	13:00	67.7	67.6	65.1	65.1	63.2	68.4	66.6	No
16-Jul-08	13:00	58.1	59.1	58.5	60.0	61.3	58.7	59.4	Correction
22-Jul-08	13:35	55.1	55.3	55.5	56.7	55.9	55.2	55.7	Required
28-Jul-08	11:20	53.6	54.7	56.4	53.1	54.7	56.9	55.1	
Limit Le								75	

Note: \* Noise monitoring was undertaken at the façade, correction was not necessary.



5.18 The tentative monitoring schedule for the coming month (July 2008) is shown in Table 5-8.

Table 5-8	Tentative Schedule of Monitoring for Next Reporting Month

Date		Air Quality	Noise Leq 30min
1-Aug-08	Fri	✓	
2-Aug-08	Sat		✓
3-Aug-08	Sun		
4-Aug-08	Mon		
5-Aug-08	Tue		
6-Aug-08	Wed		
7-Aug-08	Thu	✓	
8-Aug-08	Fri		✓
9-Aug-08	Sat		
10-Aug-08	Sun		
11-Aug-08	Mon		
12-Aug-08	Tue		
13-Aug-08	Wed	✓	
14-Aug-08	Thu		✓
15-Aug-08	Fri		
16-Aug-08	Sat		
17-Aug-08	Sun		
18-Aug-08	Mon		
19-Aug-08	Tue	✓	
20-Aug-08	Wed		✓
21-Aug-08	Thu		
22-Aug-08	Fri		
23-Aug-08	Sat		
24-Aug-08	Sun		
25-Aug-08	Mon	✓	
26-Aug-08	Tue		✓
27-Aug-08	Wed		
28-Aug-08	Thu		
29-Aug-08	Fri		
30-Aug-08	Sat	✓	
31-Aug-08	Sun		

✓ Monitoring Day Sunday or Public Holiday

#### WEATHER CONDITIONS DURING THE MONITORING MONTH

5.19 The meteorological data during the monitoring date are summarized in Annex I.

#### **GRAPHICAL PLOTS OF TRENDS OF MONITORED PARAMETERS**

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

#### WEATHER CONDITIONS THAT AFFECT THE MONITORING RESULTS

5.21 The weather conditions during monitoring were considered acceptable for monitoring activities and did not have significant impact on the monitoring results obtained.

#### **OTHER FACTORS INFLUENCING THE MONITORING RESULTS**

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

#### **QA/QC RESULTS AND DETECTION LIMITS**

5.23 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 No Action or Limit Level exceedance of air quality was recorded in this reporting month.
- 6.02 No construction noise complaint (Action) or monitoring noise level exceed 75dB(A) (Limit) was recorded in this reporting month.

#### **RECORD OF ENVIRONMENTAL COMPLAINTS RECEIVED**

6.03 There was no environmental complaint received in this reporting month.

#### **RECORD OF NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTION**

6.04 There was no notification of summons or prosecution received in this reporting month.

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

6.05 No complaints or NoS was received in this reporting month.

#### DESCRIPTION OF FOLLOW-UP ACTIONS TAKEN

6.06 As mention in Section 6.05, no NC, complaints or NoS was received in this reporting month. Therefore, no follow-up action was needed to undertake. The Contractor was reminded to implement the environmental mitigation measures as present in **Table 2-1** as necessary.

#### 7.0 OTHERS

#### **FUTURE KEY ISSUES**

7.01 Construction activities to be undertaken in **August 2008** include backfilling, concreting and extract sheet pile at Kam Tin Pumping Station (P1) and Sha Po Pumping Station (P2); backfilling and concreting at Nam Sang Wai P/S(P3); sheet piling, excavation, pipe laying, backfilling, concreting, pipe jacking and extract sheet pile at both Nam Sang Wai Road (S4) and Pok Wai South Road (S5 &S6). 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 month are summarized in **Tables 7-1** and **7-2**.

Type of Waste	Quantity	<b>Disposal Location</b>
C&D Materials (Inert) (tons) - Disposed	1.436	Tuen Mun 38 Fill Bank
C&D Materials (Inert) (tons) - Reused	0.14	DSD Contract DC/2005/02
C&D Materials (Non-Inert) (tons)	0	NA
Chemical Waste (Litres)	0	NA
General Refuse (tons)	0.035	Refuse Collector

Table 7-1Summary of Waste Quantities for Disposal



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

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

7.03 There was no site effluent discharged but an estimated volume of less than 50m<sup>3</sup> of surface runoff was discharged in the reporting month. The sampling of effluent had been carried out by the Contractor in compliance with the Discharge License (No.1U434/1) requirement in the reporting month.

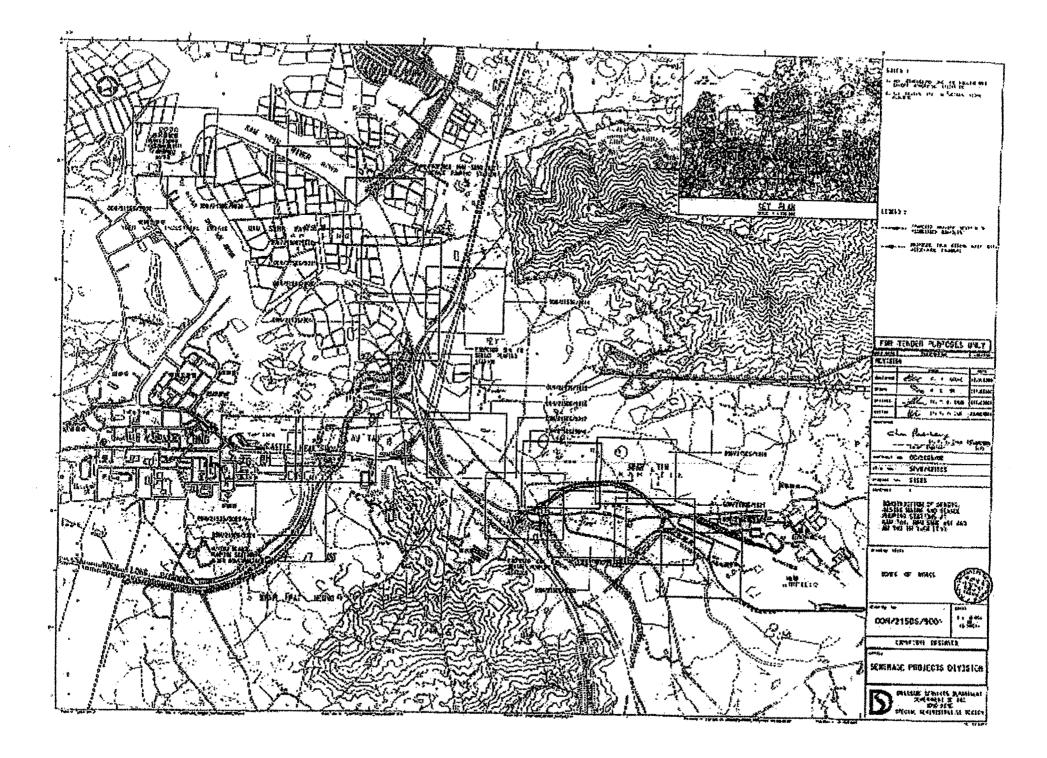
#### SUBMISSION OF PROFORMA

- 7.04 Representatives of the Engineer, the Contractor and ET carried out regular weekly site inspection on 08, 15, 22 and 29 July 2008 to evaluate the site environmental performance. No non-compliance was found in this reporting month. Total six observations were noted during the weekly site inspections. The monthly site audit for **July 2008** was undertaken on 22 July 2008 and six observations were indicated by IEC.
- 7.05 Proforma of the weekly ET site inspection activities and monthly joint IEC site audit are presented in Annex K.



Annex A

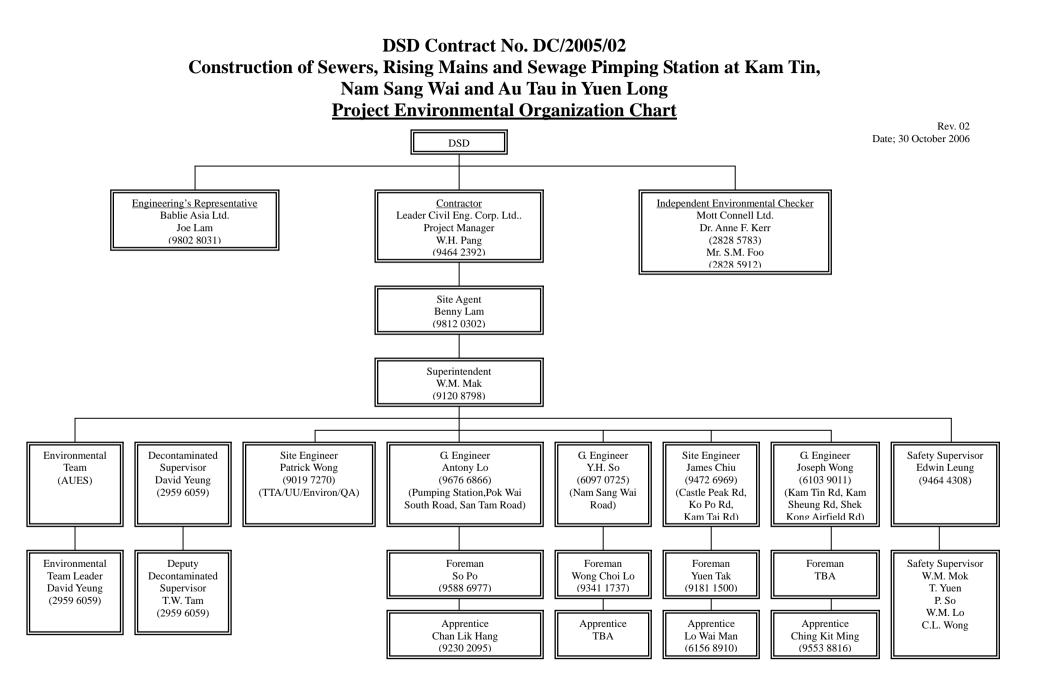
**Project Site Layout** 





Annex B

## **Project Organization and Management Structure**





Annex C

## **Construction Program**

Act	Description	Orig	Total P		Early	Late	Late	JUN		JUL				A	JG	2008		SEP			00	т	
ID Section Completion		Dur	Float Co	omplete Start	Finish	Start	Finish	30	07	14	21	28	04	11	18	25 01	08	15	22	29 06	13	20	27
Section Completion																							
CD5000	Section 5		0 -20d	0	30SEP08		10SEP08 *												l.	<ul> <li>Section</li> </ul>	5		
CD7000	Section 7		0 -231d	0	08OCT08		20FEB08 *														Section	7	
Preliminaries								1						-		1							
_																							
PR2900	Deliver Ductile Iron Pipe	80	0 133d	88 29APR06 /	A 22NOV08	29APR06 A	06MAY09	-					_	_									_
PR3100	Deliver Precast Concrete Pipe	80	0 149d	90 24APR06 /	A 04NOV08	24APR06 A	06MAY09						_	-	-		-						<u> </u>
PR3300	Deliver Vitrified Clay Pipe	80	0 119d	86 10APR06 /	A 09DEC08	10APR06 A	06MAY09		_				_	-		1							
PR3400	Structural Monitoring by ISE	83	5 112d	86 06APR06 /	A 17DEC08	06APR06 A	06MAY09							_	-							_	_
PR3500	Environmental monitoring by ET	81	4 151d	90 06APR06	A 01NOV08	06APR06 A	06MAY09							-			_						_
Section 1 - Kam Tin	Sewage Pumping Station															1							
Portion A																							
Ground Investiga	ation							i i															
S1AB1500	Install Settlement Markers for Pumping Station	:	2 -101d	0 06AUG08	07AUG08	05APR08	07APR08							Install Settle	ement Marke	rs for Pump	ing Station						
Drainage and D																							
Trench Method																							
S1AEA1000	DN1050 Pipe & Manhole (D1 - P/S)	1:	2 -101d	0 29JUL08	11AUG08	27MAR08	10APR08							DN10	50 Pipe & M	anhole (D1	- P/S)						
S1AEA1100	DN600 Pipe & Manhole (A2 - D1)	1:	2 -101d	80 27FEB08 A	13AUG08	27FEB08 A	12APR08							DN	1600 Pipe & I	Manhole (A2	2 - D1)						
S1AEA1200		1:	2 -93d	0 12AUG08	25AUG08	21APR08	05MAY08									DN1050 F	ipe & Man	hole (P/S - Ou	utfall)				
S1AEA1300		1:		0 21AUG08	03SEP08	21APR08	05MAY08	-									Constru	ct Flow Meter	Chamber				
S1AEA1400		3		0 060CT08	10NOV08	05JUN08	11JUL08																
S1AEA1800			1	100 27MAR08		_			- +		Install G	eotextile	Filter up t	o Ground Sl	ab F/L								
	CCTV Inspection of Pipeline		1 17d	0 26AUG08	26AUG08	16SEP08	16SEP08	-1								CCTV In	spection of	Pipeline					
Pipework - Risin								1				-				1							
Trench Method																							
014544000	T : D:			0 4 4 4 4 0 000	00411000	4440000	1010000							_	Turio	Dising Main	DNZ00						
S1AFA1000	-		6 -101d	0 14AUG08	20AUG08	14APR08	19APR08	-						1		Rising Main		Structure					
	Twin Rising Main DN700 in Structure		6 -101d	0 14AUG08	20AUG08	14APR08	19APR08	-1						_	- I WIII	Rising Main			Disalisa				
	CCTV Inspection of Pipeline		1 -3d	0 04SEP08	04SEP08	01SEP08	01SEP08					_						Inspection of	Fipeline				
Earthworks																							
S1AG2500	Backfill to Formation of Ground Slab	1-	4	100 27MAR08	A 19JUL08 A	27MAR08 A	A 19JUL08 A	1			Backfill	to Format	ion of Gro	und Slab									
S1AG2600	Extract Sheetpile	1	0 -101d	70 03APR08	A 31JUL08	03APR08 A	29MAR08						Extract Sh	neetpile									
Formwork									-							1			1				-
S1AJ1600	Erect Formwork to Ground Slab		8 -101d	80 07JUN08 A	A 01AUG08	07JUN08 A	31MAR08						Erect Fo	rmwork to C	Ground Slab				1				
S1AJ1700	Erect Formwork to +11.10mPD	1:	2 -101d	10 21JUL08 A	28AUG08	21JUL08 A	28APR08				_			_		Erect	Formwork	to +11.10mPl	D				
S1AJ1800	Erect Formwork to +14.00mPD & Roof Slab	1:	2 -101d	0 10SEP08	24SEP08	13MAY08	26MAY08												Ere	ct Formwork t	o +14.00mP	D & Roof S	3lab
Steel Reinforcer	nent															1	1		1		1		
																			1				
S1AK1500	Fix Re-bar to Ground Slab		8 -101d	70 21JUN08 A	A 04AUG08	21JUN08 A	02APR08						Fix I	Re-bar to G	round Slab								
S1AK1500 S1AK1600	Fix Re-bar to Ground Slab		B -101d	5 19JUL08 A		19JUL08 A		-							Fix Re-bar to	+11.10mP	D -		1				
	PEC05		-1010	5 19JUL08 A		1930L08 A	ISAPKUS	li			i.	i.		1						<u> </u>			
Finish date 19M	IAY10				1		naincaria	a C	ماده											Early bar Progress b	ar		
Data date 29J Page number 1A	UL08						Engineerir act No. D			•										Critical bar		*	EADER
- ago nambor in				3-1			ramme - 3			ulv 20	08									- Summary I		1	-
c Primavera Syste	ems, Inc.			51				u		, 20									•	Start miles Finish mile			
																						1	

Act ID	Description	Orig Dur		Percent Early Complete Start	Early Finish	Late Start	Late Finish		2008 AUG SEP 8 04 11 18 25 01 08 15 2	OCT 22 29 06 13 20 27
	Fix Re-bar to +14.00mPD	8		0 01SEP08	09SEP08	02MAY08	10MAY08	30 07 14 21 2	Fix Re-bar to +14	
S1AK1800	Fix Re-bar to Roof Slab	8	-101d	0 25SEP08	04OCT08	27MAY08	04JUN08			Fix Re-bar to Roof Slab
In-Situ Concrete										
S1AL1600	Cast Ground Slab	2	-101d	50 17JUL08 A	05AUG08	17JUL08 A	03APR08		Cast Ground Slab	
S1AL1700	Cast Wall Stem to +11.10mPD	2		0 29AUG08	30AUG08	29APR08	30APR08	-	Cast Wall Stem to +11.10mPD	
	Cast Wall Stem to +14.00mPD & Roof Slab	2		0 06OCT08	08OCT08	05JUN08	06JUN08	-		Cast Wall Stem to +14.00mPI
S1AL1900	Apply Anticorrosion Concrete Coating System	32	-95d	0 27AUG08	04OCT08	05MAY08	12JUN08			Apply Anticorrosion Concrete Coati
S1AL2100	Construct Boundary Wall	45	-101d	0 04SEP08	29OCT08	06MAY08	28JUN08	-		
Geotechnical work										
S1AP1000	Monitoring of Instruments	483	18d	95 16NOV06 A	26411G08	16NOV06 A	16SEP08		Monitoring of Instruments	
Testing		100	100		20/10/000	10110 10071	1002100			
						1				
	Pressure Testing to Twin Rising Main DN700	12		0 05SEP08	19SEP08	02SEP08	16SEP08		Pre	essure Testing to Twin Rising Main DN700
S1AS1100	Watertightness of Structure - Compartments	72		0 16SEP08	10DEC08	24MAY08	18AUG08			
	Watertightness for Roof	4	-45d	0 25OCT08	29OCT08	30AUG08	03SEP08			
Miscellaneous										
S1AT1000	Install Doors, Louvres & Folding doors	30	-101d	0 25OCT08	28NOV08	25JUN08	30JUL08			
S1AT1300	Plumbing Work	24	-63d	0 06OCT08	03NOV08	22JUL08	18AUG08			
S1AT1500	Install FRP Water Storage Tanks	12	-51d	0 06OCT08	20OCT08	05AUG08	18AUG08			Install FRP V
S1AT1600	Install FRP Cat Ladders & Handrails	24	-51d	0 21OCT08	17NOV08	19AUG08	16SEP08			
	wage Pumping Station									
Portion B Ground Investigation	on									
									■ Install Colling of Markens for Duration Confi	
	Install Settlement Markers for Pumping Station	1	-70d	0 21AUG08	21AUG08	29MAY08	29MAY08		Install Settlement Markers for Pumping Station	30
Drainage and Duct	15									
S2BEA1200	Construct U-channel & Catchpits	16	-90d	0 27SEP08	17OCT08	12JUN08	30JUN08			Construct U-cha
S2BEA1300	Lay Ducts & Construct Drawpit	6	-90d	0 18OCT08	24OCT08	02JUL08	08JUL08			Lay Du
Pipework - Rising	Main									
Trench Method										
S2BFA1000	Twin Rising Main DN500	4		100 08JUL08 A	08JUL08 A	08JUL08 A	08JUL08 A	Twin Rising Main DN500		
S2BFA1100	CCTV Inspection of Pipeline	1	18d	0 29JUL08	29JUL08	19AUG08	19AUG08		CCTV Inspection of Pipeline	
Earthworks										
S2BG2040	Remove 1st Layer of Waling and Strut	2		100 23JUN08 A	03JUL08 A	23JUN08 A	03JUL08 A	Remove 1st Layer of Waling and S	trut	
S2BG2040	Backfill to Formation of Ground Slab	12		50 23JUN08 A	04AUG08	23JUN08 A	19MAR08		Backfill to Formation of Ground Slab	
S2BG2100	Extract Sheetpile	8		55 04JUL08 A	01AUG08	04JUL08 A	09JUN07		Extract Sheetpile	
	Trim & Compact Formation of Paved Areas	6		0 25OCT08	310CT08	04JUL08 A	15JUL08			
Formwork	Thin a compact officiation of Faveu Areas	0	-900	02000108	13100100	0330100	1330200			
TORRWORK										
S2BJ1500	Erect Formwork to Ground Slab	8	-110d	25 09JUL08 A	18AUG08	09JUL08 A	07APR08		Erect Formwork to Ground Slab	
Start date 19DE0 Finish date 19MA										Early bar
Data date 29JUL								ng Corp. Ltd.		Progress bar Critical bar
Page number 2A					D	SD Contra	act No. D	C/2005/02		Summary bar
				3-M	onth Roll	ing Progr	ramme - 3	3M01 at 29 July 2008		Start milestone point
c Primavera System	is, Inc.									<ul> <li>Finish milestone point</li> </ul>

Act	Description	Orig Total Percent	Early Early Start Finish	Late	Late	JUN JUL	2008 AUG SEP OCT
ID		Dur Float Complete		Start	Finish	30 07 14 21	28 04 11 18 25 01 08 15 22 29 06 13 20 27 Erect Formwork to +10.30mPD
S2BJ1600	Erect Formwork to +10.30mPD		01SEP08 13SEP08		23JUN08		
S2BJ1700	Erect Formwork to +13.00mPD & Roof Slab	12 -70d 0	27SEP08 13OCT08	07JUL08 1	I9JUL08		Erect Formwork to +1
Steel Reinforcem	ent						
S2BK1400	Fix Re-bar to Ground Slab	8 -110d 25	19JUL08 A 11AUG08	19JUL08 A 2	29MAR08		Fix Re-bar to Ground Slab
S2BK1500	Fix Re-bar to +10.30mPD	8 -70d 0	22AUG08 30AUG08	30MAY08 0	7JUN08		Fix Re-bar to +10.30mPD
S2BK1600	Fix Re-bar to +13.00mPD	8 -70d 0	18SEP08 26SEP08	26JUN08 0	05JUL08		Fix Re-bar to +13.00mPD
S2BK1700	Fix Re-bar to Roof Slab	8 -70d 0	14OCT08 22OCT08	21JUL08 2	29JUL08		Fix Re-b
In-Situ Concrete							
S2BL1500	Cast Ground Slab	2 -110d 0	19AUG08 20AUG08	08APR08	09APR08		Cast Ground Slab
S2BL1600	Cast Wall Stem to +10.30mPD		16SEP08 17SEP08		25JUN08	-	Cast Wall Stem to +10.30mPD
S2BL1700	Cast Wall Stem to +13.00mPD & Roof Slab		230CT08 240CT08		31JUL08		Cast 1
S2BL1800			16SEP08 15OCT08		03JUN08		Apply Anticorrosio
	Apply Anticorrosion Concrete Coating System						
S2BL2000	Construct Boundary Wall	47 -90d 0	02AUG08 26SEP08	15APR08 1	11JUN08		Construct Boundary Wall
Geotechnical wor							
S2BP1000	Monitoring of Instruments	525 -74d 80	26FEB07 A 01DEC08	26FEB07 A 0	2SEP08		
Testing							
S2BS1000	Pressure Testing to Twin Rising Main DN500	12 18d 0	30JUL08 12AUG08	20AUG08 0	2SEP08		Pressure Testing to Twin Rising Main DN500
S2BS1100	Watertightness of Structure - Compartments		23SEP08 10DEC08		07AUG08		
Miscellaneous			2002100 1002000	211101100			
S2BT1000	Install Doors, Louvres & Folding doors	30 -110d 0	16OCT08 19NOV08	04JUN08 1	IOJUL08		
S2BT1300	Plumbing Work	24 -105d 0	16OCT08 12NOV08	11JUN08 0	9JUL08		
S2BT1500	Install FRP Water Storage Tanks	12 -105d 0	16OCT08 29OCT08	11JUN08 2	24JUN08		
Additonal Works /	Disruption						
Revised B/Wa	Il Details at SPPS (Claim No. 030)						
S2BV2000	Drive Sheetpiles	10 -340d 0	02AUG08 13AUG08	11JUN07 2	22JUN07		Drive Sheetpiles
S2BV2010	Excavate to 1st Layer of Waling & Strut	6 -340d 0	14AUG08 20AUG08	23JUN07 2	29JUN07		Excavate to 1st Layer of Waling & Strut
S2BV2020	Install 1st Layer of Waling & Strut		21AUG08 27AUG08		07JUL07		Install 1st Layer of Waling & Strut
S2BV2030	Excavate to 2nd Layer of Waling & Strut		28AUG08 03SEP08		I4JUL07		Excavate to 2nd Layer of Waling & Strut
S2BV2040	Install 2nd Layer of Waling & Strut		04SEP08 10SEP08		21JUL07		Install 2nd Layer of Waling & Strut
S2BV2040	Excavate to 3rd Layer of Waling & Strut		11SEP08 18SEP08		28JUL07		Excavate to 3rd Layer of Waling & Strut
S2BV2050	Install 3rd Layer of Waling & Strut		19SEP08 25SEP08		04AUG07		Install 3rd Layer of Waling & Strut
							Excavate to Formation & Pour Blind
S2BV2070	Excavate to Formation & Pour Blinding		26SEP08 03OCT08		11AUG07		
S2BV2080	Construct Base Slab for Bay 1 & 3		040CT08 140CT08		21AUG07		
S2BV2090	Construct Base Slab for Bay 2 & 4		15OCT08 21OCT08		28AUG07	· · · · · · · · · · · · · · · · · · ·	
S2BV2100	Backfill & Remove 3rd Layer of Waling & Strut	6 -340d 0	22OCT08 28OCT08	29AUG07 0	04SEP07		
Section 3 - Nam San	g Wai Sewage Pumping Station						
Drainage and Due	cts						
Trench Method							
00027440			00 111 00	00.00			DN1200 Ding & Maphala (H4, D/S)
	DN1200 Pipe & Manhole (H1 - P/S)		29JUL08 29JUL08		29JUL08		DN1200 Pipe & Manhole (H1 - P/S)
S3CEA1100	DN600 Pipe & Manhole (H9 - H1) (DELETED)	30 100	25JUL08 A 25JUL08 A	A 25JUL08 A 2	25JUL08 A		DN600 Pipe & Manhole (H9 - H1) (DELETED)
Start date 19DE							Early bar
Finish date 19MA Data date 29JU			Lea	der Civil Eng	gineering	g Corp. Ltd.	Progress bar
Page number 3A				OSD Contrac			Critical bar
			3-Month Ro	lling Progra	mme - 3N	M01 at 29 July 2008	♦ Start milestone point
c Primavera System	ns, Inc.						Finish milestone point

Act ID	Description	Orig Dur		Percent Complete	Early Start	Early Finish	Late Start	Late Finish	2008 N JUL AUG SEP OCT 30 07 14 21 28 04 11 18 25 01 08 15 22 29 06 13 20 27
S3CEA120	DN500 DI Pipe (GCVC2 - H9) Stage 2 (DELETED)	48			25JUL08 A	25JUL08 A	25JUL08 A		50 07 14 24 26 00 17 16 22 00 13 20 27 10 16 15 22 29 06 13 20 27 10 16 15 22 29 06 13 20 27 10 16 15 20 27 10 16 10 16 15 20 20 20 10 16 15 20 20 20 10 16 15 20 20 20 10 16 15 20 20 20 10 16 15 20 20 20 10 16 15 20 20 20 10 16 15 20 20 20 10 16 15 20 10 10 16 15 20 20 10 10 16 15 20 10 10 10 10 10 10 10 10 10 10 10 10 10
S3CEA130	D DN500 DI Pipe (GCVC2 - H9) Stage 1 (DELETED)	6		100	25JUL08 A	25JUL08 A	25JUL08 A	25JUL08 A	■ DN500 DI Pipe (GCVC2 - H9) Stage 1 (DELETED)
S3CEA140	DN1200 Pipe & Manhole (P/S - Outfall)	12	-155d	0	22OCT08	04NOV08	16APR08	29APR08	
S3CEA195	Install Geotextile Filter up to +0.00mPD	1	-213d	0	21AUG08	21AUG08	30NOV07	30NOV07	■ Install Geotextile Filter up to +0.00mPD
S3CEA200	Install Geotextile Filter up to Ground Slab F/L	1	-213d	0	30SEP08	30SEP08	11JAN08	11JAN08	■ Install Geotextile Filter up to Ground Slab
Pipework - Risir									
Trench Metho	d								
S3CFA100	Twin Rising Main DN900	6	-213d	0	29JUL08	04AUG08	07NOV07	13NOV07	Twin Rising Main DN900
S3CFA120	O CCTV Inspection of Pipeline	1	-4d	0	05AUG08	05AUG08	31JUL08	31JUL08	CCTV Inspection of Pipeline
Earthworks									
S3CG2700	Backfill to -2.50mPD	6		100	04JUN08 A	28JUL08 A	04JUN08 A	28JUL08 A	Backfill to -2.50mPD
S3CG2720		4			11JUL08 A	06AUG08	11JUL08 A	15NOV07	Remove 3rd Layer of Waling & Strut
S3CG2750		6			22AUG08	28AUG08	01DEC07	07DEC07	Backfill to +0.00mPD
S3CG2770		4			29AUG08	02SEP08	08DEC07	12DEC07	Remove 1st & 2nd Layer of Waling & Strut
S3CG2800			-213d		02OCT08	110CT08	12JAN08	21JAN08	Backfill to Formation of G
S3CG2900		11			09OCT08	210CT08	02APR08	15APR08	
Formwork				-					
020 14500		10	0404	20	16JUL08 A	4841008	40 11 11 00 4	2710/07	Erect Formwork to +0.00mPD
S3CJ1500 S3CJ1550	Erect Formwork to +0.00mPD Erect Formwork to +5.0mPD	12			12SEP08	18AUG08 26SEP08	16JUL08 A 22DEC07	27NOV07 08JAN08	Erect Formwork to +5.0mPD
		8							Erect Form
S3CJ1600 Steel Reinforce	Erect Formwork to Ground Slab	8	-213d	0	13OCT08	21OCT08	22JAN08	30JAN08	
Steer Keiniorce									
			1 1						
S3CK1400	Fix Re-bar to +0.00mPD	8			29MAY08 A	08AUG08	29MAY08 A		Fix Re-bar to +0.00mPD
S3CK1450	Fix Re-bar to +5.00mPD	8			03SEP08	11SEP08	13DEC07	21DEC07	Fix Re-bar to +5.00mPD
S3CK1500	Fix Re-bar to Ground Slab	8	-213d	0	22OCT08	30OCT08	31JAN08	12FEB08	
In-Situ Concrete									
S3CL1500	Cast Wall Stem to +0.00mPD	2	-213d		19AUG08	20AUG08	28NOV07	29NOV07	Cast Wall Stem to +0.00mPD
S3CL1550	Cast Wall Stem to +5.00mPD	2	-213d	0	27SEP08	29SEP08	09JAN08	10JAN08	Cast Wall Stem to +5.00mPD
Geotechnical w	orks								
S3CP1000	Monitoring of Instruments	787	-88d	87	06APR06 A	28NOV08	06APR06 A	14AUG08	
Testing				le l		<u>'</u>			
S3CS1000	Pressure Testing to Twin Rising Main DN900	12	-4d	0	06AUG08	19AUG08	01AUG08	14AUG08	Pressure Testing to Twin Rising Main DN900
Section 4 - Sewers	& RM in Portion D, F, G, H, I								
Portion D									
Drainage and D									
	<u>.</u>								
S4DEA100	DN1200 Pipe & Manhole (G1-Treatment Plant)	60	114d	40	31MAR08 A	28NOV08	31MAR08 A	18APR09	
Pipework - Risir	g Main								
Trench Metho	d								
S4DFA110	Twin Rising Main DN900 (ChA1850- WOIC1)	101	63d	0	18OCT08	19FEB09	03JAN09	06MAY09	
	I		·				1		
	DEC05 //AY10								Early bar
Data date 29.	UL08							ingineering	
Page number 4A					2 M			act No. DC	2005/02 — Summary bar
c Primavera Syst	ems Inc				3-141	onun KOI	ing rog	annie - 31	IUT at 29 JUIY 2008
o r nindvera Syst	2013, 10.								

	Act ID	Description	Orig Dur	Total I		Early Finish	Late Start	Late	JUL	2008 SEP OCT 28 04 11 18 25 01 08 15 22 29 06 13 20 2
S4		Twin Rising Main DN900 (ChA2095 - ChA2215)	148	Float C 63d	omplete Start 55 20DEC07 A	170CT08	20DEC07 A	Finish 02JAN09	30 07 14 21	28 04 11 18 25 01 08 15 22 29 06 13 20 2 Twin Rising N
		Construct AVIC12 (VO 100)	60		10 17JUL08 A	30SEP08	17JUL08 A	30MAR09		Construct AVIC12 (VO 100)
	chless Meth									
		Construct WOIC1	30		0 29JUL08	01SEP08	26NOV08	02JAN09		Construct WOIC1
			3	173d	0 02SEP08	04SEP08	02APR09	06APR09		CCTV Inspection of Pipeline
Geotec	chnical work	(S								
S4	DP1000	Monitoring of Instruments	602	130d	85 02NOV06 A	11NOV08	02NOV06 A	20APR09		
Portion F										
Ground	d Investigati	on								
			1			1	-	-		
	FB1500	Install Settlement Markers	698	188d	96 27APR06 A	01SEP08	27APR06 A	20APR09		Install Settlement Markers
	ge and Duc ch Method	ts								
Tienc										
S4	FEA1000	DN900 Pipe & Manhole (H8 - H7) 1st Stage	53	12d	0 29SEP08	01DEC08	15OCT08	15DEC08		
Trend	chless Meth	od								
54	EEB1020	Jacking DN1200 (H2 - H1)	45	-130d	0 29JUL08	19SEP08	19FEB08	15APR08		Jacking DN1200 (H2 - H1)
	FEB1040	Construct Manhole H2 & H1	43	141d	0 20SEP08	230CT08	13MAR09	14APR09		
		CCTV Inspection of Pipeline	5		0 240CT08	290CT08	15APR09	20APR09		
	ork - Rising I	1	5	1410	0 2400100	2000100	10/11/000	20/4 1005		
	ch Method									
	FFA1300	Twin Rising Main DN700 (WOIC5 - ChC2000)	80		30 05JUN08 A	17OCT08	05JUN08 A			Twin Rising N
	FFA1400	Twin Rising Main DN700 (ChC2000 - ChC2050)	45		80 05APR08 A	09AUG08	05APR08 A			Twin Rising Main DN700 (ChC2000 - ChC2050)
	FFA1500	Twin Rising Main DN700 (ChC2050 - ChC2100)	45	97d	95 12FEB08 A	30JUL08	12FEB08 A	24NOV08	_	Twin Rising Main DN700 (ChC2050 - ChC2100)
	FFA2200	Twin Rising Main DN700 (ChC2400 - WOIC4)	93	15d	0 29JUL08	17NOV08	15AUG08	04DEC08		
		Twin Rising Main DN700 (ChC2639 - H7)	52	12d	0 29JUL08	27SEP08	12AUG08	14OCT08		Twin Rising Main DN700 (ChC2639 - H7)
Trend	chless Meth	od								
S4	FFB1200	Construct WOIC4	30	82d	15 10JUN08 A	27AUG08	10JUN08 A	04DEC08		Construct WOIC4
S4	FFB1300	Construct WOIC5	30	174d	20 28JUN08 A	25AUG08	28JUN08 A	26MAR09		Construct WOIC5
S4	FFB1400	CCTV Inspection of Pipeline	5	201d	0 29JUL08	02AUG08	31MAR09	06APR09		CCTV Inspection of Pipeline
Geotec	chnical work	is								
S4	FP1000	Monitoring of Instruments	772	85d	83 05JUN06 A	06JAN09	05JUN06 A	20APR09		
Portion G		-								
Ground	d Investigati	on								
S4	GB1500	Install Settlement Markers	748	173d	94 21APR06 A	19SEP08	21APR06 A	20APR09		Install Settlement Markers
Pipewo	ork - Rising I	Main								
	ch Method									
S4	GFA1000	Twin Rising Main DN500 (AVIC4 - ChB250)	98	158d	60 26JUN08 A	11SEP08	26JUN08 A	25MAR09		Twin Rising Main DN500 (AVIC4 - ChB250)
		Twin Rising Main DN500 (ChB450 - ChB250)	84	125d	50 26JON08 A	16SEP08	16JAN08 A	18FEB09		Twin Rising Main DN500 (ChB450 - ChB550)
		Construct WOIC3	30		0 17SEP08	230CT08	19FEB09	25MAR09		
		CCTV Inspection of Pipeline	9		0 24OCT08	03NOV08	26MAR09	06APR09		
	chless Meth		9	.200		00.10100	20.00	00.1.1100		
Start date	19DE									Early bar
Finish date Data date	19MA 29JUL					Lead	ler Civil E	ngineerir	ng Corp. Ltd.	Progress bar
Page numb	ber 5A					D	SD Contra	act No. D	C/2005/02	Critical bar ——Summary bar
					3-M	onth Rol	ling Progr	ramme - 3	3M01 at 29 July 2008	Start milestone point
c Primav	vera System	s, Inc.								Finish milestone point

Act ID	Description	Orig Dur		Percent Early Complete Start	Early Finish	Late Start	Late Finish	2008 IUN JUL AUG SEP OCT 30 07 14 21 28 04 11 18 25 01 08 15 22 29 06 13 20 27
S4GFB1100 Co	onstruct AVIC4	30	170d	10 09JUL08	A 28AUG08	09JUL08 A	25MAR09	Construct AVIC4
S4GFB1200 CC	CTV Inspection of Pipeline	2	177d	0 29AUG0	30AUG08	03APR09	06APR09	CCTV Inspection of Pipeline
Geotechnical works								
S4GP1000 Md	onitoring of Instruments	720	171d	03 22APP0	A 22SEP08	224 PP06 4	20APR09	Monitoring of Instruments
Portion H		720	1710	95 22AF1(0	A 223EF00	22AF 100 A	20AP 103	
Ground Investigation								
CALIDADOD IN	stell Cattle react Markers	707	4024	07 00144	A 00AU000	26MAY06 A	00 A D D 00	Install Settlement Markers
S4HB1300 Ins	stall Settlement Markers	727	193d	97 20WATO	A 26AUG08	20101A 100 A	ZUAPRUS	
Trench Method								
				I			T	
	N500 Pipe & Manhole (A3 - A6)	90		0 20SEP08		11JUL08	27OCT08	
S4HEA1100 DN	N500 Pipe & Manhole (A6 - A9)	100	-60d			250CT07 A		DN500 Pipe & Manhole (A6 - A9)
	N300 Pipe & Manhole (B4 - B6)	67	-59d	0 19SEP08		11JUL08	27SEP08	
S4HEA2000 DN	N300 Plpe & Manhole (B6 - B8)	44	-59d	0 29JUL08	* 18SEP08	19MAY08	10JUL08	DN300 Plpe & Manhole (B6 - B8)
Trenchless Method								
S4HEB1000 Co	onstruct Jack/Receive Pits (A2 - A3)	30	-60d	0 20SEP08	27OCT08	11JUL08	14AUG08	- cc
	acking DN600 (A2 - A3)	57				15AUG08	23OCT08	
Pipework - Rising Mair								
Trench Method								
0.00	·	50	00.1	70 050 070	4005000	0500707.4	40.000	Twin Rising Main DN700 (ChC170 - ChC290)
	vin Rising Main DN700 (ChC170 - ChC290)	50				250CT07 A		
	vin Rising Main DN700 (ChC850 - ChC950)	125	5d			08OCT08	09MAR09	Twin Rising Main DN700 (ChC950 - ChC1
	vin Rising Main DN700 (ChC950 - ChC1000)	44	5d			14AUG08	06OCT08	Twin Rising Main DN700 (ChC1150 - ChC1250)
	vin Rising Main DN700 (ChC1150 - ChC1250)	91	5d			14JAN08 A		Twin Kising Wall Divrob Cite 130 - Cite (200)
	vin Rising Main DN700 (ChC1250 - AVIC8)	104	26d	0 30SEP08		01NOV08	09MAR09	Twin Rising Main DN700 (ChC1400 - ChC1450)
	vin Rising Main DN700 (ChC1400 - ChC1450)	45	440.1	100 27MAR0		27MAR08 A		I WIT KISING WAIT DIVIDU (CIC 1400 - CIC 1430)
	vin Rising Main DN700 (ChC1450 - ChC1550)	124		0 01SEP08		18APR08	13SEP08	Twin Rising Main DN700 (ChC1600 - ChC1618)
	vin Rising Main DN700 (ChC1600 - ChC1618)	44		90 10JUN08		10JUN08 A		Twin Rising Main DN700 (WOIC6 - ChC1664)
	vin Rising Main DN700 (WOIC6 - ChC1664)	47		30 12JUN08		12JUN08 A		
	vin Rising Main DN700 (ChC1715 - ChC1750)	47	-30d	0 17SEP08		12AUG08	080CT08	
	onstruct AVIC9	20		0 30SEP08		14FEB09	09MAR09	
	onstruct WOIC8 onstruct AVIC7	20	110d -112d	0 30SEP08 0 08AUG0		14FEB09 25MAR08	09MAR09 17APR08	Construct AVIC7
	onstruct WOIC6	20	-112u			19JUL08	11AUG08	
		30						
S4HFA3500 Co Trenchless Method		30	1000	0 29JUL08	01SEP08	03FEB09	09MAR09	
S4HFB1000 Co	onstruct Jack/Receive Pits (ChC42 - ChC63)	57	-21d	0 28OCT0	05JAN09	02OCT08	08DEC08	
S4HFB1100 Co	onstruct Jack/Receive Pits (AVIC8 - WOIC7)	57	-56d	0 01AUG0	09OCT08	26MAY08	01AUG08	Construct Jack/Receive Pits
S4HFB1120 Ja	acking Twin DN700 (AVIC8 - WOIC7)	69	-56d	0 10OCT0	31DEC08	02AUG08	24OCT08	
Geotechnical works								
S4HP1000 Mc	onitoring of Instruments	947	-83d	68 26MAY0	A 29JUL09	26MAY06 A	20APR09	
Additonal Works / Disr								
	ChC1620 - ChC1661 (Claim No. 026) stall Twin DN700 DI Pipes & Grouting	26	-112d	75 15JUL08	A 07AUG08	15JUL08 A	20MAR08	Install Twin DN700 DI Pipes & Grouting
	· -	50	1120	, J 1536E08		1000L00 A	2010/01/00	
Start date 19DEC05 Finish date 19MAY10 Data date 29JUL08 Page number 6A c Primavera Systems, Ir				3	D	SD Contra	act No. D	ng Corp. Ltd. C/2005/02 3M01 at 29 July 2008

Act	Description	Orig		Percent	Early	Early	Late	Late	IUN	JUL	AUG 28 04 11 18	2008	SEP OCT
ID Re-alignment	btn ChC420 & ChC607 (Claim No. 118)	Dur	Float	Complete	e Start	Finish	Start	Finish	30 07	14 21 2	28 04 11 18	25 01 08	SEP OCT 15 22 29 06 13 20 27
S4HV1310	Twin Rising Main DN700 (ChC610 - ChC580)	40	-23d	2	23JUL08 A	20MAR09	23JUL08 A	21FEB09					
S4HV1360	Twin Rising Main DN700 (ChC460 - ChC436)	20			26AUG08	18SEP08	30JUL08	21AUG08					Twin Rising Main DN700 (ChC460 - ChC436)
S4HV1370	Construct AVIC10	24			26MAR08 A	30JUL08	26MAR08 A	03JAN09			Construct AVIC10		
S4HV1390	DN500 Pipe & Manhole (A12 - A13)	30			12APR08 A	25AUG08	12APR08 A	29JUL08	i i	i i i	1 1 1	DN500 Pipe & Manhole (A	12 - 413)
S4HV1400	DN500 Pipe & Manhole (A13 - A14)	40	-23d	0	19SEP08	06NOV08	22AUG08	10OCT08					
Portion I Ground Investigat	ion												
erodita inteologia													
S4IB1040	Boreholes & Instrumentation (ChD0 to ChD55)	8	71d		29JUL08	06AUG08	23OCT08	31OCT08	1		Boreholes & Instrumenta	1 I I I	1 I I I I I I I I I I I I I I I I
S4IB1300	Install Settlement Markers	736	185d	96	26JUN06 A	04SEP08	26JUN06 A	20APR09				Install Settle	ment Markers
Drainage and Duo	cts								1				I I I I I I I I I I I I I I I I
Trench Method													
S4IEA1020	DN500 Pipe & Manhole (C4 - C6)	76	-28d	0	26AUG08	25NOV08	24JUL08	23OCT08					
S4IEA1100	DN500 Pipe & Manhole (C6 - C8)	48	-28d	50	07MAY08 A	25AUG08	07MAY08 A	23JUL08				DN500 Pipe & Manhole (C	6 - C8)
S4IEA1200	DN400 Pipe & Manhole (C7a - C7)	36			26AUG08	09OCT08	24MAR09	06MAY09					DN400 Pipe & Manhole (C7
S4IEA1900	DN500 Pipe & Manhole (C21 - C22)	50			01FEB08 A	02AUG08	01FEB08 A	04JUN08			DN500 Plpe & Manhole (C21	- C22)	
S4IEA2320	DN500 Pipe & Manhole (C31 - C32)	53			04AUG08	060CT08	05JUN08	07AUG08	-				DN500 Plpe & Manhole (C31 - C
S4IEA2400	DN500 Pipe & Manhole (C32 - C34)	70			080CT08	30DEC08	08AUG08	31OCT08					·
Trenchless Met		1 10	·430	0	0000100	0000000	30/10/000	0100100					
S4IEB1000	Construct Jack/Receive Pits (C1 - C2)	30	81d	0	29JUL08	01SEP08	04NOV08	08DEC08				Construct Jack/F	Receive Pits (C1 - C2)
S4IEB1020	Jacking DN500 (C1 - C2)	78	81d	0	02SEP08	04DEC08	09DEC08	16MAR09	1				
Geotechnical wor	ks								1				
S4IP1000	Monitoring of Instruments	827	10d	75	28JUN06 A	0840800		204000	1				
Section 5 - Sewers &	Monitoring of Instruments	027	100	75	20JUN00 A	UGAFRUS	28JUN06 A	ZUAFRU9					
Portion E													
Drainage and Due	cts												
Trenchless Met	hod												
S5EEB1020	Jacking DN600 (H11 - H1)	90		100	07MAY08 A	17JUL08 A	07MAY08 A	17JUL08 A		Jacking DN60	0 (H11 - H1)		
S5EEB1040		27			29JUL08	28AUG08	09AUG08	09SEP08	-1		i i i	Construct Manholes H	11
	CCTV Inspection of Pipeline	1	10d		29AUG08	29AUG08	10SEP08	10SEP08	-			CCTV Inspection of F	
Pipework - Rising			100	0	23/10/000	23/10000	10021 00	TOOLI OO					
Trench Method													
			1					T					
S5EFA1000	Twin Rising Main DN900 (ChA208 - ChA250)	33	-16d	45	23MAY08 A	22AUG08	23MAY08 A	04AUG08				win Rising Main DN900 (ChA	208 - ChA250)
S5EFA1100	Twin Rising Main DN900 (ChA250 - ChA300)	26	-16d	85	08SEP07 A	01AUG08	08SEP07 A	14JUL08			Twin Rising Main DN900 (ChA2	250 - ChA300)	
S5EFA3400	Twin Rising Main DN900 (ChA1400 - ChA1450)	26		100	11APR08 A	14JUL08 A	11APR08 A	14JUL08 A		Twin Rising Main I	N900 (ChA1400 - ChA1450)		
S5EFA4100	Construct AVIC11	20	18d	0	29JUL08	20AUG08	19AUG08	10SEP08			Con	struct AVIC11	
S5EFA4300	CCTV Inspection of Pipeline	20	-16d	0	23AUG08	16SEP08	05AUG08	27AUG08					CCTV Inspection of Pipeline
Trenchless Met	hod												
PEED4400	CCTV/Inspection of Binaling					264110.00	25411000	27411000				CCTV Inspection of Pipel	ine
	CCTV Inspection of Pipeline	3	1d	0	23AUG08	26AUG08	25AUG08	27AUG08					
Geotechnical wor	KS												
S5EP1000	Monitoring of Instruments	627	2d	94	01AUG06 A	08SEP08	01AUG06 A	10SEP08				Monito	ring of Instruments
Testing													
	Lany bar												
	ate 29JUL08 Leader Civil Engineering Corp. Ltd.												
Page number 7A	United TA DSD Contract No. DC/2005/02												
	3-Month Rolling Programme - 3M01 at 29 July 2008												
c Primavera System	ns, Inc.												<ul> <li>Finish milestone point</li> </ul>

Act ID	Description	Orig Total Per Dur Float Con	rcent Early nplete Start	Early Finish	Late Start	Late Finish	IUN JUL 30 07 14 21 2	2008 AUG SEP OCT 98 04 11 18 25 01 08 15 22 29 06 13 20 27
S5ES1000	Pressure Testing to Twin Rising Main DN900	12 -16d	0 17SEP08	30SEP08	28AUG08	10SEP08		Pressure Testing to Twin Rising Main DN
Section 6 - Sewers i	n Portion J							
Portion J Ground Investiga	ation							
Ground investiga								
S6JB1500	Install Settlement Marker 1st Stage	765 -106d	89 20APR06 A	08NOV08		04JUL08	<mark>i i i i i</mark>	
S6JB2100	Install Settlement Markers 2nd Stage	600 230d	100 07JUL06 A	29JUL08	07JUL06 A	06MAY09		Install Settlement Markers 2nd Stage
Drainage and Drain								
S6JEA1010		78 78d	0 10OCT08	12JAN09	13JAN09	17APR09		DN1050 Pipe & Manhole (D5 - D6)
S6JEA1210		78 134d	95 09APR08 A	01AUG08	09APR08 A	12JAN09	-	
S6JEA1700		46 -288d 61 -288d	0 11OCT08	03DEC08	22OCT07 08AUG07	13DEC07	-	TTA JA7-1 DN400 Pipe &
S6JEA1720 S6JEA1900		102 -14d	0 29JUL08 0 20OCT08	10OCT08 21FEB09	020CT08	200CT07 05FEB09	-	
S6JEA1900		68 -14d	0 2000108	180CT08		30SEP08		TTA JB2-1 DN
S6JEA2400		80 -312d	0 29JUL08	01NOV08	11JUL07	130CT07		
S6JEA3200		65 -106d	50 09JAN08 A	03SEP08		28APR08		DN300 Pipe & Manhole (D40 - D42)
S6JEA3300		72 -106d	0 04SEP08	29NOV08		25JUL08		
S6JEA3410		23 13d	60 19MAY08 A	07MAR09	19MAY08 A	23MAR09		
S6JEA4200		35 -116d	0 14OCT08	22NOV08	26MAY08	07JUL08		
S6JEA4220		63 -116d	0 29JUL08	13OCT08	06MAR08	24MAY08		TTA JD4-2 DN750 Pip
S6JEA4600	TTA JD8-2 DN750 Pipe & Manhole (E12 - E13)	40 -169d	0 30SEP08	17NOV08	06MAR08	25APR08		
S6JEA4620	TTA JD8-1 DN750 Pipe & Manhole (E13 - E14)	39 -169d	0 14AUG08	29SEP08	17JAN08	05MAR08		TTA JD8-1 DN750 Pipe & Manhole (E13 -
S6JEA4700	TTA JD-9 DN750 Pipe & Manhole (E14 - E15)	69 -169d	80 13NOV07 A	13AUG08	13NOV07 A	16JAN08		TTA JD-9 DN750 Pipe & Manhole (E14 - E15)
Trenchless Me	thod							
S6JEB1000	Construct Jack/Receive Pits (D1 - D2)	28 -56d	0 01AUG08	02SEP08	26MAY08	27JUN08	_	Construct Jack/Receive Pits (D1 - D2)
S6JEB1000	. ,	29 -56d	0 03SEP08	023EF08		01AUG08	_	Jacking DN1050 (D1 - D2)
S6JEB1020	, , , , , , , , , , , , , , , , , , ,	25 51d	0 10OCT08	07NOV08	09DEC08	09JAN09		
S6JEB1220		34 -56d	10 19JUL08 A	02SEP08	19JUL08 A	27JUN08		Jacking DN1050 (D7 - D8)
S6JEB1240		25 173d	0 03SEP08	03OCT08		04MAY09	-	Construct Manholes D7 & D8
Geotechnical wo								
S6JP1000	Monitoring of Instruments	1152 -254d	58 21APR06 A	10MAR10	21APR06 A	06MAY09		
Section 7 - Sewers i		1102 2010	00 2 // 11 / 100 / 1	Tons acro	21/11/100/11	001111100		
Portion K								
Drainage and Dr								
S7KEA1105	DN600 Pipe & Manhole (M2 - M3) Stage 2	35 -182d	0 14AUG08	24SEP08	02JAN08	14FEB08		DN600 Pipe & Manhole (M2 - M3) Stage 2
S7KEA1610	DN900 Pipe & Manhole (M11 - M12) Stage 2	54 -187d	0 29JUL08	30SEP08	07DEC07	14FEB08		DN900 Pipe & Manhole (M11 - M12) Sta
S7KEA1900		93	100 29JAN08 A	05JUL08 A	29JAN08 A	05JUL08 A	DN900 Pipe & Manhole (M15 -	
	CCTV Inspection of Pipeline	5 -187d	0 02OCT08	08OCT08	15FEB08	20FEB08		CCTV Inspection of Pipeline
Trenchless Me	thod							
S7KEB1040	Construct Manholes M4 & M19	27 -182d	50 05JUL08 A	13AUG08	05JUL08 A	31DEC07		Construct Manholes M4 & M19
	Jacking DN900 (M13 - M14)	48	100 02DEC06 A	07JUL08 A	02DEC06 A	07JUL08 A	Jacking DN900 (M13 - M14)	
S7KEB1240	Construct Manholes M13 & M14	27 -154d	10 22JUL08 A	25AUG08	22JUL08 A	18FEB08		Construct Manholes M13 & M14
		· · · ·		•	· .			
	NEC05							Early bar Progress bar
	UL08				er Civil En SD Contrac		ng Corp. Ltd. C/2005/02	Critical bar
			3-M	onth Roll	ing Progra	mme - 3	3M01 at 29 July 2008	Summary bar     Start milestone point
c Primavera Syste	ms, Inc.							Start milestone point     Finish milestone point
· · · · · · · · · · · · · · · · · · ·	1							

Act		Orig	Total	Percent	Early	Early	Late	Late								2008								
ID	Description	Dur		Complete	Start	Finish	Start	Finish	JUN 30	07	JUL 14	21	28 04	11	AUG 18	25	01		SEP 15 22	29	06	OCT 13	20	27
S7KEB1280	Lay DN700 DI Pipe (M4 -M5)	18		100	10JUL08 A	26JUL08 A	10JUL08 A	26JUL08 A					ay DN7001			20			10 22					~
S7KEB1300	CCTV Inspection of Pipeline	2	-154d	0	26AUG08	27AUG08	19FEB08	20FEB08	4:								V Inspect	tion of Pipe	line					
		-	1040	0	20/10/000	21710000	101 EB00	201 2000	1	-	-	1		-						1				1
Roads and Paving	IS															1								
S7KH1000	Concrete Footpath from M14 to M16a	18	-146d		29JUL08	18AUG08	28JAN08	20FEB08						1	1	Concrete Footpa	th from M	14 to M16a						
		10	-1400	0	2930108	1840608	ZOJANUO	20FEB06	1		1	1						+						
Geotechnical work	<s< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></s<>								1															
S7KP1000	Monitoring of Instruments	668	-148d	07	24MAY06 A	20AUG08	24MAY06 A	2055500								Monitoring of	Instrumen	te						
	-	608	-1480	97	241VIA 106 A	ZUAUGU8	24IVIA 106 A	20FEB08								- Worntoning of	Instrumen	13					_	
	on and Protection of Trees																							
All Portions	orks and Establishment Works																							
Landscape Softwo	orks and Establishment works																							
S8QR1100	Preservation & Protection of Preserved Trees	744	82d	80	29JUL06 A	24JAN09	29JUL06 A	06MAY09																
									1															
Decontamination Wor Portion B	KS								1							1								
Decontamination																								
Docontainination																l.								
S9BU1000	Decontamination Works	48	-17d	0	29JUL08	23SEP08	09JUL08	02SEP08												Decontami	nation Work	S		-
		1					1										1							

Start date	19DEC05									
Finish date	19MAY10									
Data date	29JUL08									
Page number	9A									
c Primavera Systems, Inc.										

Leader Civil Engineering Corp. Ltd. DSD Contract No. DC/2005/02 3-Month Rolling Programme - 3M01 at 29 July 2008





Annex D

## **Photographical Records – Noise Barrier On-Site**

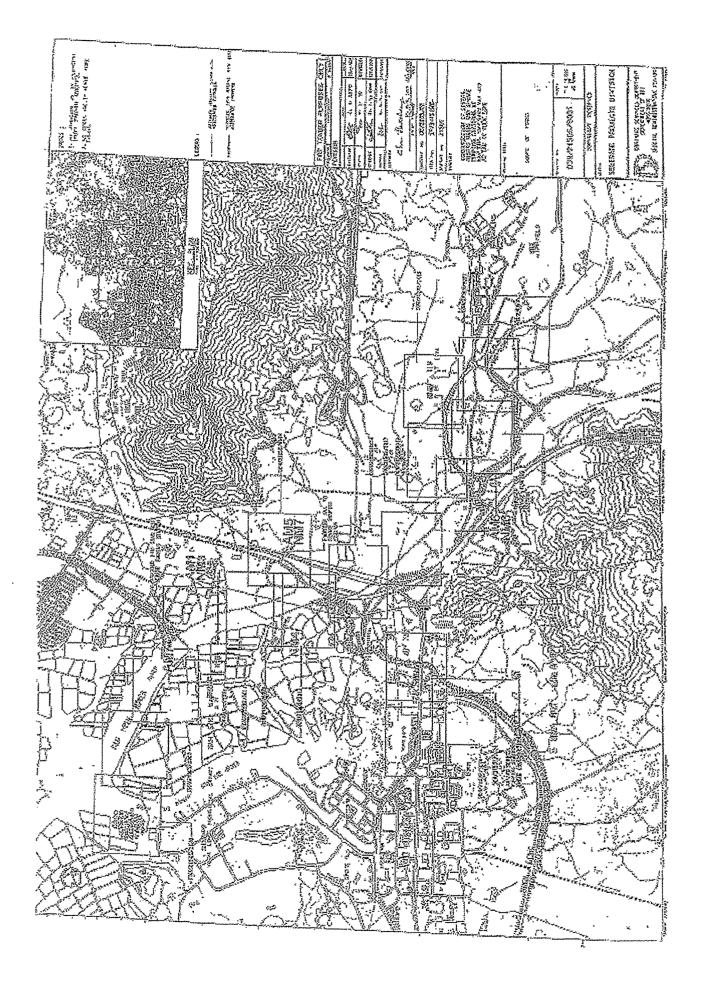


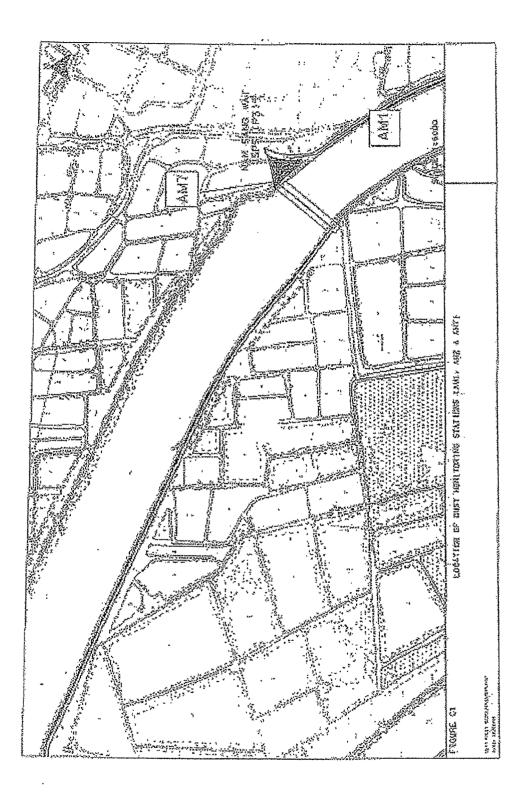


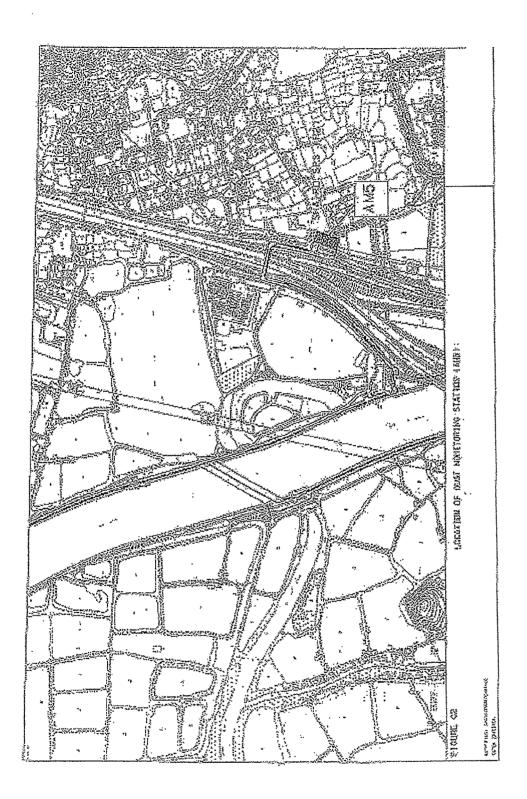


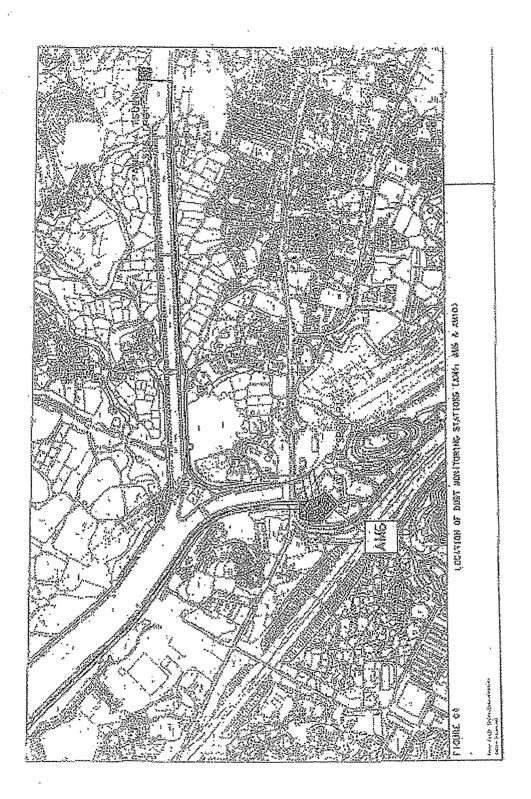
Annex E

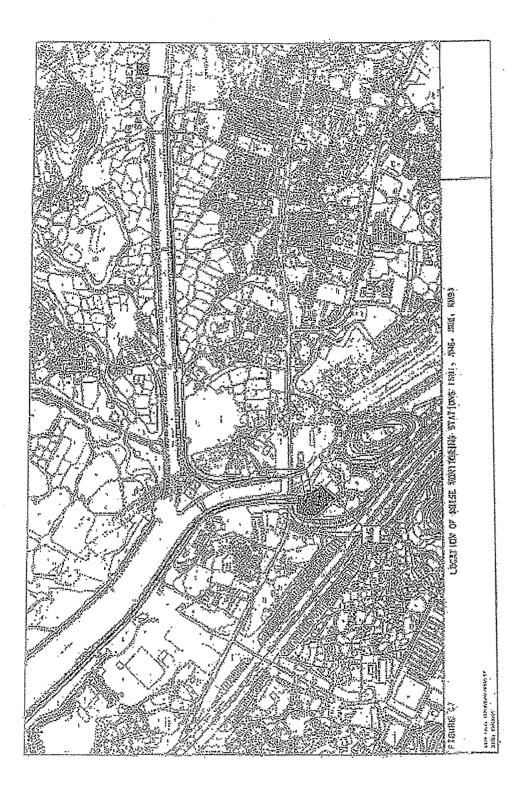
**Locations of Monitoring Stations** 

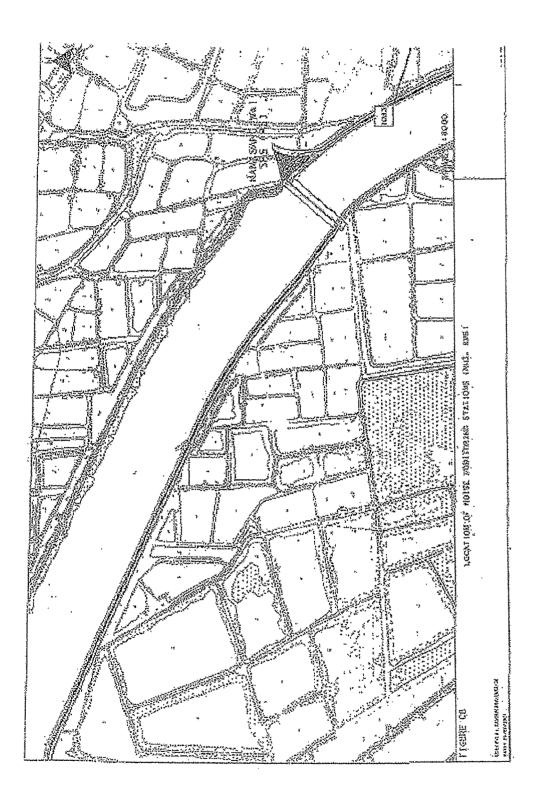


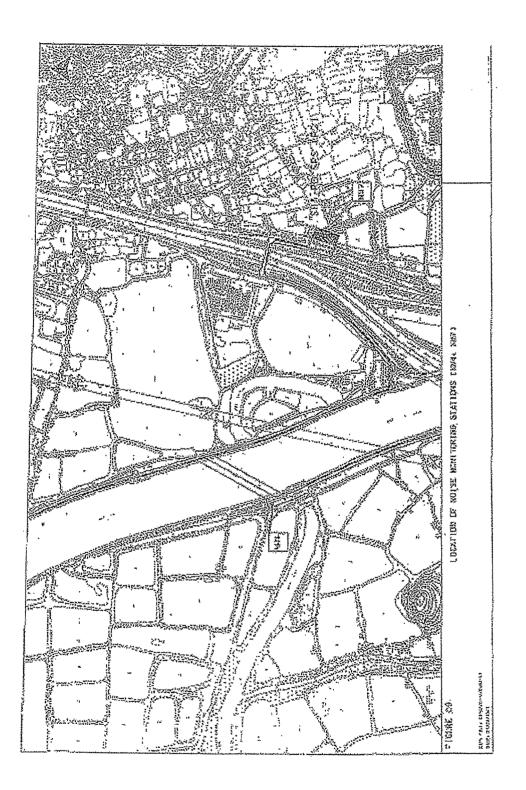














Annex F

### **Event and Action Plan**

#### Monthly EM&A Report for July 2008 (No. 28) (Designated Elements – Construction Phase)

#### EVENT ACTION ET Leader IEC Engineer Contractor Action Level Identify source (s) of exceedance Check monitoring data submitted Confirm receipt of notification of Rectify any unacceptable practice Exceedance for 1. 1. 1. 1. one sample and inform IEC, Contractor and bv ET exceedance in writing 2. Liaise with Engineer and IEC to Engineer 2. Check monitoring data trends and 2. Remind the Contractor of his develop appropriate remedial 2. Repeat dust measurements to Contractors working methods contractual obligations and review measures to reduce dust impact 3. confirm findings Check and confirm Contractors the Contractor's working methods 3. Amend working methods and 3. Increase monitoring frequency to proposed remedial actions and 3. Discuss remedial actions with the remedial proposals if required by the Engineer or IEC dailv working methods are appropriate Contractor and IEC 4. 4. Assess efficacy of remedial Inform complainant of actions 4. Implement the agreed remedial measures and keep the Contractor. actions upon instruction from the taken, if necessarv IEC, and Engineer informed Engineer and IEC Exceedance for 1. Identify source (s) of exceedance Check monitoring data submitted 1. Confirm receipt of notification of 1. Rectify any unacceptable practice. 1. and inform IEC, Contractor and by ET exceedance in writing if possible two or more 2. Submit proposals for remedial 2. consecutive Engineer 2. Check monitoring data trends and Remind the Contractor of his 2. Repeat measurements to confirm Contractors working methods actions to Engineer and IEC within samples contractual obligations and review the Contractor's working methods findinas 3. Discuss with Contractor and three working days of notification Increase the monitoring frequency Engineer on possible remedial 3. Discuss remedial actions with the Discuss and amend remedial 3. to daily to assess the efficacy of Contractor and IEC actions, if required, by the Engineer measures 4. remedial measures and keep the 4. Check and confirm Contractors Ensure remedial measures are and IEC Implement the remedial action (s) Contractor informed proposed remedial measures are properly implemented 4. Discuss remedial actions with IEC 5. Inform complainant of actions immediately upon instruction from 4. appropriate and Contractor 5. Determine the efficacy of remedial taken, if necessarv. the Engineer Discuss with 5. If exceedance continues, arrange actions and keep the Engineer Engineer and IEC, to optimise the meeting with Engineer, IEC and informed effectiveness of the agreed Contractor to review working remedial actions practices and identify further remedial actions If exceedance stops, inform the 6. Contractor and cease additional monitoring

#### Event and Action Plan for Construction Phase Air Quality



#### Monthly EM&A Report for July 2008 (No. 28) (Designated Elements – Construction Phase)

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

Monthly EM&A Report for July 2008 (No. 28) (Designated Elements – Construction Phase)

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





Annex G

## **Mitigation Implementation Schedule**

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage		tatio	n	Relevant Legislation & Guidelines
						Des	С	0	Dec	
		CONSTRUCTION PHASE								
3.5	A1	<ul> <li>AIR QUALITY - Construction Phase</li> <li>The following measures are enforceable under the Air Pollution Control (Construction Dust) Regulations</li> <li>Site boundary and entrance <ul> <li>where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the boundaries of the seven pumping stations sites and the works area where the Engineer's site office and the Contractor's site office erected;</li> </ul> </li> </ul>	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		~			Part III, Clause 13 (c), Air Pollution Control (Construction Dust) Regulations
3.5	A2	<ul> <li>Access Road</li> <li>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;</li> </ul>	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
3.5	A3	<ul> <li>Stockpiling of Dusty Materials</li> <li>any stockpile of dusty materials should be either covered entirely by impervious sheeting and placed in an area sheltered on the top and the 3 sides or sprayed with water so as to maintain the entire surface wet;</li> </ul>	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
3.5	A4	<ul> <li>Loading, unloading or transfer of dusty materials</li> <li>all dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading and unloading so as to maintain the dusty materials wet;</li> </ul>	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
3.5	A5	<ul> <li>Use of vehicles</li> <li>every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving a construction site;</li> </ul>	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

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	cation of the measure Implementation Agent Stage**		tatio	n	Relevant Legislation & Guidelines
						Des	С	0	Dec	
3.5	A6	<ul> <li>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;</li> </ul>	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
3.5	A7	<ul> <li>Power-driven drilling, and cutting</li> <li>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;</li> </ul>	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
3.5	A8	<ul> <li>Excavation and earth moving</li> <li>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;</li> </ul>	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) Regulations
3.5	A9	<ul> <li>Construction of the superstructure of a building</li> <li>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</li> </ul>	To control potential dust impacts from SPS building construction works.	Full duration of SPS construction contract.	The Contractor		~			Part I, Clause 6, (a), Air Pollution Control (Construction Dust) Regulations
3.5	A10	<ul> <li>any skip hoist for material transport should be totally enclosed by the impervious sheeting.</li> </ul>	To control potential dust impacts during material transportation.	Full duration of SPS construction contract.	The Contractor		~			Part I, Clause 6, (b), Air Pollution Control (Construction Dust) Regulations

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage		tatio	n	Relevant Legislation & Guidelines
						Des	С	0	Dec	
4.7.1	B1	<ul> <li>NOISE - Construction Phase</li> <li>General Site Clearance –</li> <li>Demolition Works</li> <li>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),</li> </ul>	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	<ul> <li>Construction of Sewage Pumping Stations P1, P2 &amp; P3</li> <li>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,</li> </ul>	To minimise potential noise impacts arising during the construction of <i>P1, P2</i> & <i>P3</i>	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
		<ul> <li>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.</li> </ul>	To minimise potential noise impacts arising during the construction of <i>P1, P2 &amp; P3</i>	Site wide and throughout the full duration of the construction contract.	The Contractor		~			Annex 5 of EIAO-TM
		Sewers and Rising Mains using Open Trench								
4.7.1	В3	<ul> <li>Method</li> <li>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,</li> </ul>	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	<ul> <li>Use of movable noise barriers or 3 sided enclosures for all initial road opening activities</li> </ul>	To control potential noise impacts during road opening	Where there are NSRs located within 50m of the	The Contractor		✓			

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage		tatio	n	Relevant Legislation & Guidelines
						Des	с	ο	Dec	
		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.						
		Sewers and Rising Mains using Pipe Jacking Method								
4.7.1		<ul> <li>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,</li> <li>Road Pavement and Finishes</li> </ul>	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		<ul> <li>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,</li> </ul>	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.								
		WASTE - Construction Phase								
6.6.2		<ul> <li>The Contractor shall obtain the necessary waste disposal permits from the appropriate authorities for the disposal of chemical and C&amp;D waste,</li> <li>Chemical Waste Producer and Chemical Waste Disposal Licence (Waste Disposal (Chemical Waste) (General) Regulations); and</li> <li>Dumping Licence (Land (Miscellaneous Provisions) Ordinance (Cap 28))</li> </ul>	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))

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent					Relevant Legislation & Guidelines
						Des	С	0	Dec	
6.6.2	D2	<b>Chemical Waste</b> Chemical waste that is produced, as defined by Schedule 1 of the <i>Waste Disposal (Chemical</i> <i>Waste) (General) Regulation,</i> 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	<ul> <li>Storage, Packaging and Labelling of Chemical Waste</li> <li>Containers used for storage of chemical wastes should:</li> <li>be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;</li> <li>have a capacity of less than 450 L unless the specifications have been approved by the EPD; and</li> <li>display a label in English and Chinese in accordance with instructions prescribed in</li> </ul>	To ensure the proper storage, packaging and labelling 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, (9, 10, 11 & 12) Waste Disposal (Chemical Waste) (General) Regulation
6.6.2	D4	<ul> <li>Schedule 2 of the Regulations.</li> <li>Storage of chemical waste</li> <li>The storage area for chemical wastes should:</li> <li>be clearly labelled and used solely for the storage of chemical waste;</li> <li>be enclosed on at least 3 sides;</li> <li>have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;</li> <li>have adequate ventilation;</li> <li>be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and</li> <li>be arranged so that incompatible materials are</li> </ul>	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		V			Part IV, (13,14, 15, 16, 17, & 18) Waste Disposal (Chemical Waste) (General) Regulation

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage		tatio	n	Relevant Legislation & Guidelines
						Des	С	0	Dec	
		adequately separate								
		<ul> <li>Disposal of chemical waste</li> <li>The Contractor should ensure that the disposal of chemical waste is via a licensed Waste Collector and in accordance with the Waste Disposal (Chemical Waste) (General) Regulations.</li> </ul>	To control the disposal 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, (20 -25) Waste Disposal (Chemical Waste) (General) Regulation
6.6.2	D5	Management of Waste Disposal A trip-ticket system should be established which monitors the disposal of C&DM and solid wastes at public filling facilities and landfills and to control fly-tipping, in accordance with Land (Miscellaneous Provisions) Ordinance (Cap28) and the Works Bureau Technical Circular No. 5/99.	To monitor the disposal of C&DM and solid wastes at public filling facilities and landfills and to control fly-tipping.	To be implemented at all worksites throughout the full duration of the construction phase.	The Engineer/ Contractor		~			Land (Miscellaneous Provisions) Ordinance (Cap 295) and Works Bureau Technical Circular No. 5/99.
7.5.6	E1	A revised CAP should be submitted to the EPD for approval before the commencement of the construction works. Following receipt of the EPD's approval, the CAP shall be implemented and the findings of the investigations will be reported in the Contaminated Assessment Report (CAR), before ground disturbance is allowed at the concerned sites. If land contamination is confirmed, a Remediation 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	To determine the presence of soil and groundwater contamination and remedy any potential concerns to acceptable levels.		To be Implemented by DSD or their sub-consultants at the Detailed Design Stage, depending upon when site access can be gained.	*				EIAO TM Annex 19/3.1.1 & 3.1.2

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage		tatio	n	Relevant Legislation & Guidelines
						Des	С	0	Dec	
		EPD, the contaminated site(s) shall be remediated in accordance with the approved CAR/RAP.								
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 proper implementation of this restriction	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	<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	F4	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. The site inspections shall check and report the number of workfronts and implementation of	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		✓			

EIA* Ref.	EM&A Ref	M&A Ref Environmental Protection Measures Discretion Measures Main Concerns		Location of the measure	Implementation Agent	Implementation Stage**			n	Relevant Legislation & Guidelines
						Des	С	ο	Dec	
		mitigation measures (i.e. erection of movable noise barriers with a suitable footing along the sites) in the monthly EM&A reports. <i>Mitigation Measures Adopted</i>					,			
8.7.3	F5	Quietened construction plant and equipment (as shown in <i>Table F2</i> ) should be used for the construction of pumping stations (P3 and P2) and sewerage alignment (S4, S5 and S6) located within the WCA and WBA.	Quiet construction plant shall minimise potential noise impacts to the wildlife, particularly rare birds including Black-faced Spoonbill, Buzzard, Hobby, Imperial Eagle, Intermediate Egret, Avocet and Black-eared Kite	At described locations and throughout the full duration of the construction contract.	The Contractor		~			
8.7.4	F6	Erection of fences along the boundary of pumping station construction sites (P1 to P3) before the commencement of construction works to prevent tipping, vehicle movements, and encroachment of personnel into adjacent areas, and P2 to avoid disturbance to the remaining pond areas (0.7 ha);	To erect fences to prevent encroachment of construction activities onto adjacent areas.	At P1 to P3 for full duration of the construction contract.	The Contractor		~			
8.7.4	F7	No filling and dumping to the remaining abandoned fishpond at P2.	To avoid disturbance to abandoned fishponds from construction activities and illegal dumping.	At P2 for full duration of the construction contract	The Contractor		~			
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. The minimal total combined volume of the silt removal facilities at Nam Sang Wai SPS (P3) should be 15m <sup>3</sup> .	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	To prohibit open fires, thereby	Site wide and throughout	The Contractor		✓			Air Pollution Control

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	Imple Stage		tatio	n	Relevant Legislation & Guidelines
						Des	С	ο	Dec	
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		~			(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								
	H1	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.								
	H2	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	~	~			

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure	Implementation Agent	on Implementation Stage**				Relevant Legislation & Guidelines
						Des	С	0	Dec	
		submitted for approval by the EPD.		project.						
		<ul> <li>The landscape plans and pumping station elevations should demonstrate that the following elements are considered:</li> <li>existing landscape elements (such as mature trees), transplantation of valuable trees, new compensatory planting</li> </ul>								
		<ul> <li>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.</li> <li>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.</li> <li>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.</li> <li>felling of mature trees are kept to a minimum.</li> </ul>								
		EM&A REQUIEMENTS - Construction Phase								
3.7	11	<ul> <li>Air Quality</li> <li>Subject to the Environmental Protection</li> <li>Departments (EPDs) agreement, construction</li> <li>phase dust monitoring shall be undertaken at the</li> <li>following locations in accordance with the</li> <li>recommendations of the EIA.</li> <li>Worksite boundary facing Scattered house in</li> <li>Nam Sang Wai (AM1);</li> </ul>	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
		<ul> <li>Worksite boundary facing Fung Kat Heung (AM5);</li> <li>Worksite boundary facing Scattered House near Route 3 (AM6);</li> </ul>								

EIA* Ref.	EM&A Ref	Environmental Protection Measures	Objectives of the Recommended Measures & Main Concerns	Location of the measure		Imple Stage		tatio		Relevant Legislation & Guidelines
						Des	С	ο	Dec	
4.9.1		<ul> <li>at any additional locations, where considered necessary, in agreement with EPD.</li> <li><i>Construction Noise</i> 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.</li> <li>(NM3) Scattered House in Nam San Wai (D12);</li> <li>(NM4) Scattered House in Nam San Wai (D11);</li> <li>(NM6) Scattered House near Route 3 (D17);</li> <li>(NM7) Fung Kat Heung (D19);</li> <li>and at any additional locations, where considered necessary, in agreement with EPD</li> </ul>	Installations of the noise monitoring stations to ensure the action and limit levels are not exceeded.	throughout the duration of the construction works.	To be undertaken by the Environmental Team (ET) and reviewed and audited by the Engineer		✓			Noise Control Ordinance
Des = I	Design, C = (	Construction, O = Operation, Dec = Decommissioning	1							



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

Items	Aspect	Description of Equipment	Serial No.	Date of Calibration	Date of Next Calibration
1**	Air	Greasby Anderson GMWS2310 High Volume Sampler	0329 (AM1)	17 May 08	17 Aug 08
2*		Greasby Anderson GMWS2310 High Volume Sampler	0355 (AM5)	02 Jul 08	02 Oct 08
3*		Greasby Anderson GMWS2310 High Volume Sampler	10394 (AM6)	02 Jul 08	02 Oct 08
4**		Greasby Anderson GMWS2310 High Volume Sampler	1283 (AM7)	17 May 08	17 Aug 08
5	Noise	Bruel & Kjaer 4231 Acoustical Calibrator	2326408	25 Apr 07	25 Apr 08
6		Bruel & Kjaer 2238 Integrating Sound Level Meter	2285762	25 Apr 07	25 Apr 08
7		Bruel & Kjaer 4231 Acoustical Calibrator	2292167	22 Apr 08	22 Apr 09
8		Bruel & Kjaer 2238 Integrating Sound Level Meter	2285721	22 Apr 08	22 Apr 09

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.

Calibration will be done in next reporting month.

### TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Location ID		Pumping S AM5	tation			Next Calibr	Calibration: 2-Jul- ation Date: 2-Oct Fechnician: Mr. B	-08			
					CONDIT	IONS					
		Sea Level Tem	Pressure perature		1010.6 28.5			Pressure (mn perature (K)	n Hg)	757.95 302	
				C	ALIBRATIO	N ORIFICE					
				Make-> Model-> Serial # ->	515N		Qstd Qstd Inte	Slope -> ercept ->		54431 01988	
CALIBRATION											
Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC		LINEAR			
No. 18	(in) 4.8	(in) 4.8	(in) 9.6	(m3/min) 2.005	(chart) 51	corrected 50.34	ŀ	REGRESSIO Slope = 3'	N 1.3642		
13	4.3	4.8	9.0 8.6	2.003	43	42.44	Int	siope = -14 ercept = -14			
10	3.1	3.1	6.2	1.614	37	36.52		•	0.9899		
7	2.2	2.2	4.4	1.361	27	26.65					
5	1.2	1.2	2.4	1.009	18	17.77					
Qstd = 1/m IC = I[Sqrt( Qstd = star IC = correc I = actual c m = calibra	Calculations : Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b] IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)] Qstd = standard flow rate IC = corrected chart respones I = actual chart response m = calibrator Qstd slope						FLOW RATE	CHART = 31.364x - 14.	73		
	I temperat	ture during		on(deg K) n(mm Hg)	30.00 Jart resp						
<i>For subse</i> 1/m(( I )[Sc	<b>quent ca</b> prt(298/Ta	culation o	of sample		Actinal chart response (IC) Actinal chart response (IC)			·			
m = sample											
b = sample I = chart re		ot			0.00						
Tav = daily Pav = daily	average		re			0.000 0	.500 1.000 Standard Flow F	1.500 Rate (m3/min)	2.000	2.500	

### TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Location ID		Car Shop AM 6	(Scattere	d House nea		Next Calibr	Calibration: 2-Jul-08 ation Date: 2-Oct-08 Fechnician: Mr. Ben Tarr	1
					CONDIT	IONS		
		Sea Level Tem	Pressure perature		1010.6 28.5		Corrected Pressur Temperatur	
				С	ALIBRATIO	N ORIFICE		
				Make-> Model-> Serial # ->	515N		Qstd Slope - Qstd Intercept -	
					CALIBR	ATION		
Plate No.	H20 (L) (in)	H2O (R)	H20 (in)	Qstd (m3/min)	l (chart)	IC corrected		EAR ESSION
18 13 10 7 5	4.7 3.3 2.4 1.8 1.1	(in) 4.7 3.3 2.4 1.8 1.1	9.4 6.6 4.8 3.6 2.2	1.984 1.665 1.421 1.233 0.966	53 44 35 26 19	52.31 43.43 34.55 25.66 18.75	Slope	= 34.1839 = -14.7548
Pstd = actu <i>For subse</i> 1/m(( I )[So	[Sqrt(H2C Pa/Pstd)( ndard flow ted chart thart respondent tor Qstd st tor Qstd ir I temperational pressu <b>quent ca</b> (298/Ta	Tstd/Ta)] rate respones onse slope tercept ture during re during re during	g calibration calibration	-b] on (deg K) o (mm Hg)	60.00 50.00 50.00 60.00 50.000		FLOW RATE CHAR	
m = sample b = sample I = chart re Tav = daily Pav = daily	er intercer sponse average	temperatu	re		0.00 C		.500 1.000 1.50 Standard Flow Rate (m3	



Annex I

### Meteorological Data in the Reporting Month



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

				Lau Fa	u Shan '	Weather Sta	ation
Date		Weather	Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Jul-08	Tue				Hol	iday	
2-Jul-08	Wed	fine/hot/moderate	Trace	29.4	12	74	S/SE
3-Jul-08	Thu	fine/hot/moderate	0	29	18	77	S/SE
4-Jul-08	Fri	sunny/hot/fine/moderate	0	28.9	15	74.2	S/SE
5-Jul-08	Sat	fine/hot/showers/moderate	11.6	28.9	14.2	77	E/SE
6-Jul-08	Sun	cloudy/rain/squally thunderstorm/moderate/fresh	54.4	27.6	13.5	92.5	Е
7-Jul-08	Mon	cloudy/rain/squally thunderstorm/moderate/fresh	39.4	25.3	11	95.5	E/NE
8-Jul-08	Tue	cloudy/rain/squally thunderstorm/moderate/fresh	51.3	27.3	12	88.5	SW
9-Jul-08	Wed	cloudy/rain/squally thunderstorm/moderate	43.3	26	18.5	87.5	SE
10-Jul-08	Thu	cloudy/rain/squally thunderstorm/moderate	59.9	26	13	90.5	SE
11-Jul-08	Fri	cloudy/a few showers/moderate	12.8	26.5	11.5	88.5	S/SE
12-Jul-08	Sat	cloudy/rain/squally thunderstorm/light winds	114.3	25.6	10	86.5	S/SE
13-Jul-08	Sun	sunny intervals/showers/light winds	11.7	26.3	17.5	91	SE
14-Jul-08	Mon	sunny periods/isolated shower/light wind	30.7	27.9	9	86	E/SE
15-Jul-08	Tue	sunny periods, a few showers/thunderstorm/light winds	33.8	28.4	18.5	84	E/NE
16-Jul-08	Wed	sunny periods/a few showers/light winds	Trace	28.5	13	79.5	E/SE
17-Jul-08	Thu	fine/not/isolated showers/moderate	0	28.8	11	83.5	S/SW
18-Jul-08	Fri	hot/sunny periods/cloudy/isolated showers/moderate	Trace	29.4	14.5	79	W/SW
19-Jul-08	Sat	hot/sunny intervals/moderate/fresh	3.9	30	22	77.5	SW
20-Jul-08	Sun	fine/hot/isolated showers/moderate	0	29.9	16	73	S/SE
21-Jul-08	Mon	fine/hot/isolated showers/moderate	Trace	29.3	14.5	82.5	W/SW
22-Jul-08	Tue	fine/very hot/moderate	Trace	29.8	16	70.5	S/SW
23-Jul-08	Wed	fine/hot/moderate	0	29.5	19	72	S/SE
24-Jul-08	Thu	fine/very hot/moderate	0	29.4	13.5	75.5	S
25-Jul-08	Fri	fine/very hot/moderate	0	30.9	13.5	71.5	W/SW
26-Jul-08	Sat	fine/very hot/isolated showers/thunderstorm/moderate	0	29.8	12	74	W/SW
27-Jul-08	Sun	fine/hazy/very hot/a few showers/squally thunderstorm/moderate	Trace	28.4	37	76	W/SW
28-Jul-08	Mon	fine/hazy/very hot/a few showers/squally thunderstorm/moderate	Trace	30.7	10	80	W/SW
29-Jul-08	Tue	cloudy/a dew showers/moderate/fresh	Trace	31.2	15	66.2	W/SW
30-Jul-08	Wed	cloudy/a few showers/fresh/strong	Trace	29.1	23.5	76	SW
31-Jul-08	Thu	cloudy/a few showers/squally thunderstorm/moderate	Trace	29.2	13.5	76.7	S/SE



### Annex J

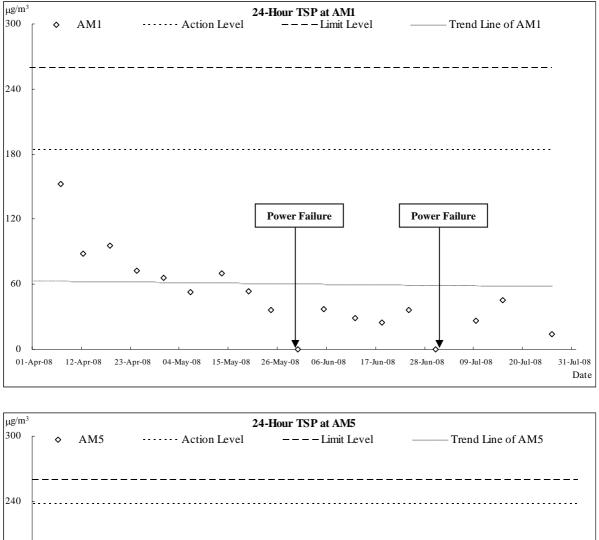
### Graphical Plots of Air Quality and Construction Noise Monitoring Results

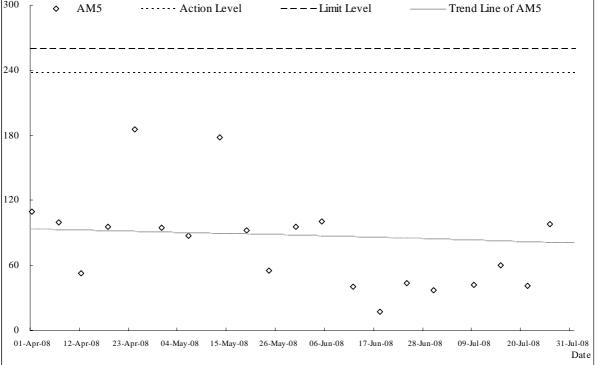


Air Quality



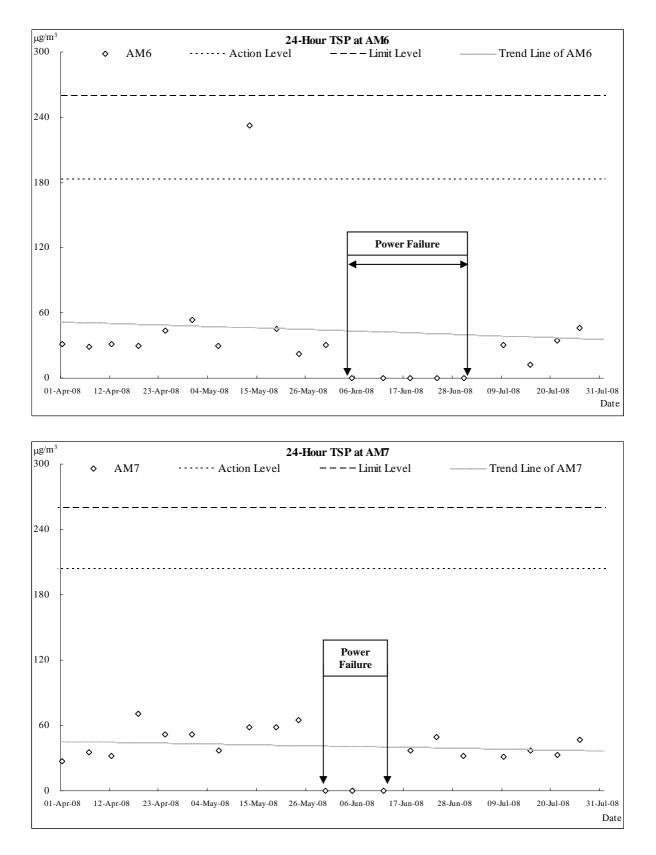
### **<u>Air Quality Monitoring Results</u>**







### **Air Quality Monitoring Results**

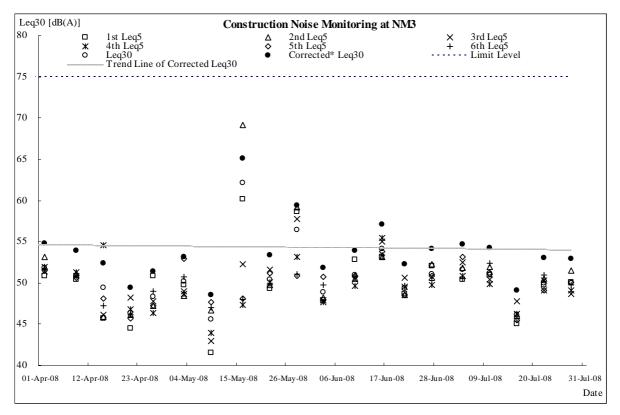


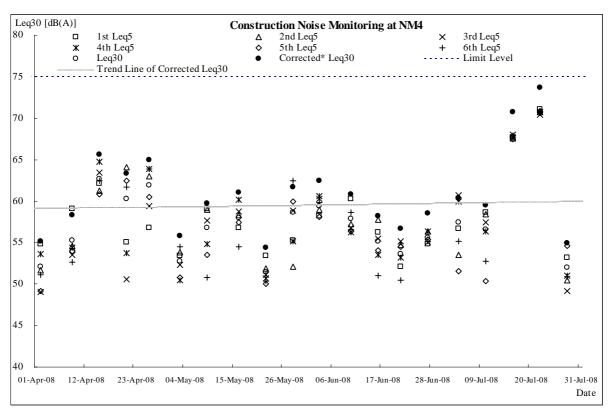


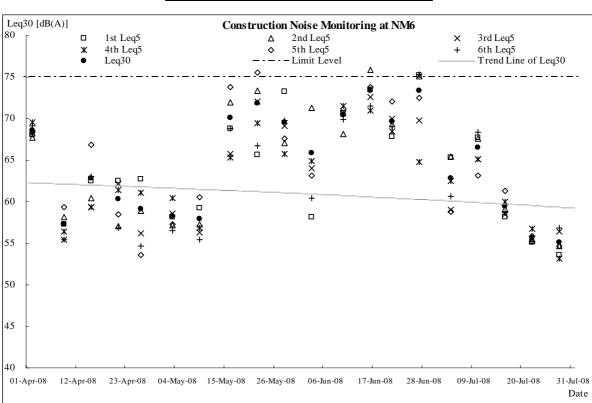
**Construction Noise** 

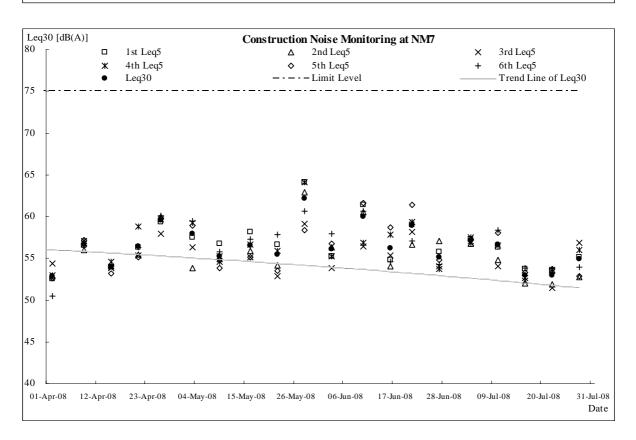


### **Construction Noise Monitoring Results**









### **Construction Noise Monitoring Results**

AUES



Annex K

### **Proforma of Site Inspection & IEC Audit in the Reporting Month**

## **AUES**

### Site Inspection Checklist (SF-17)

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long				actor:		Leader Civil Engineering Corp. Ltd				
Inspected by:	Sang war and /		ong	Engir	neer:		Babtie Asia Ltd         Mott Connell Ltd         Action-United Environmental Services & Consulting				
Inspected by:	ET Auditor:	Ben Tam		IEC:							
	Contractor Rep:	Edwin Leung	I	Envir	onmental 1	Team:					
	IEC's Rep:	-		Inspe	ction Date	& Time:	08 July 20		)		
	RE's Rep:	Mr Tsang		Chec No.:	klist Refere	list Reference DSD-AT080708					
General Meteor	ological Informatio	n									
Weather	Sunny	Fine	Cloudy	$\checkmark$	Overcast		Drizzle		Rain	Hazy	
Temp:	27 °C										
Humidity:	✓ High (RH >	90%)	Moderate (9	0% > RH	> 50%)		Low (RH	< 50%)			
Wind:	Calm	✓ Light	Breeze		Strong						
Air Quality					Yes	NO	NA	NC	Follow- up	Remarks	
Is hoarding of no	ot less than 2.4m pro	vided?			$\checkmark$						
Are site vehicles	traveling within cont	trolled speed limit?			$\checkmark$						
Are site vehicles	movement confined	l to designated haul i	oads?		$\checkmark$						
Are public roads	outside site exits ke	pt clean and free fro	m dust?		$\checkmark$						
Are haul roads a	nd unpaved surfaces	s watered regularly to	o avoid dust generation?	?			$\checkmark$				
Are there wheel	washing facilities pro			$\checkmark$							
Is water spraying used during the main dust-generating activities?							$\checkmark$				
Are the excav impermeable/tar		of dusty material	s kept wet or cove	red by	Ý						
Is exposed area	of ground covered o	or watered frequently	?				$\checkmark$				
Are load on vehi	cles covered by clea	n impervious sheetir	ıg?		$\checkmark$						
Are vehicles and	l equipment switched	d off while not in use	?		$\checkmark$						
Are smoky emiss	sions from plants/equ	uipment avoided?			$\checkmark$						
Is open burning a	avoided?				$\checkmark$						
Observable dust	sources	Wind erosion			Vel	hicle/equi	pment mover	nents			
		Loading/unloading	g of materials		<b>√</b> Oth	ners <u>N</u>	lil				
Construction No	oise										
Are the construc	tion works scheduled	d to minimize noise r	nuisance?		$\checkmark$				□ _		
Are the works or	equipment sited to r	minimize noise nuisa	nce?		$\checkmark$				$\Box$ _		
Are all plant and	equipment well mair	ntained and in good	operating condition?		$\checkmark$				$\square$ _		
Is idle equipment	t turned off or throttle	ed down?			$\checkmark$				$\square$ _		
Is powered mech materials?	nanical equipment co	/ appropriate acoustic				×					
Is silenced equip	oment used where ap					$\checkmark$					
Are noise enclos	sures or noise barrier	sary?				$\checkmark$					
Does specified e	equipment has valid r	noise label?					$\checkmark$				
Are Construction	Noise Permits (CNF	Ps) available for insp	ection?				$\checkmark$		$\Box$ _		
Major Noise Sou	irce	Traffic			Construction activities inside the site						
		Construction activ	ities outside of site		Oth	ners <u>N</u>	lil				

# **AUES**

Water Qual	ity & Drainage	Yes	NO	NA	NC	Follow- up	Remarks
Is a wastewater discharge li	icense obtained for the Project?	$\checkmark$					
Is site effluent discharged ir	accordance with the discharge license?	$\checkmark$					
Is the discharge of silty wate	er avoided?	$\checkmark$					
Is drainage adequate?		$\checkmark$					
Is drainage system well mai	intained?	$\checkmark$					
Are there temporary ditches	ofor 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?	$\checkmark$					
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 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?	$\checkmark$						
Are manholes covered and sealed?				$\checkmark$			
Is oil leakage or spillage avoided?							
Waste Management and P	otential 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?	$\checkmark$				$\Box$ _	
	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	$\checkmark$					

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



#### Remarks:

#### Previous Audit Follow-up:

1.Stagnant water was cumulated at Nam San Wai pumping station after the rain fall, contractor was reminded to clean to prevent mosquito breeding. (On-going)

2. No free standing oil drums was observed at Nam San Wai pumping station.

#### Observations Recorded in this Site Inspection:

3.Stagnant water was cumulated inside the waste skip was observed at Nam San Wai pumping station, the contractor was reminded to clean or apply larvicidal oil.

Signatures: Env, Audilor

Contractor's Representative

IC(6) Auditor

Resident Site Staff

Namo:

Name:

Name

## **AUES**

### Site Inspection Checklist (SF-17)

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long				ractor:		Leader Civil Engineering Corp. Ltd				
Inspected by:	Sang war and I		ong	Engir	neer:		Babtie Asia Ltd         Mott Connell Ltd         Action-United Environmental Services & Consulting				
Inspected by:	ET Auditor:	Ben Tam		IEC:							
	Contractor Rep:	Edwin Leung		Envir	onmental	Team:					
	IEC's Rep:	-		Inspe	ction Date	& Time:	15 July 20		)		
	RE's Rep:	Mr Tsang		Chec No.:	klist Refere	st Reference DSD-AT150708					
General Meteor	ological Informatio	n									
Weather	✓ Sunny	Fine	Cloudy		Overcast		Drizzle		Rain	Hazy	
Temp:	27 °C										
Humidity:	✓ High (RH >	90%)	Moderate (9	0% > RH	> 50%)		Low (RH	< 50%)			
Wind:	Calm	✓ Light	Breeze		Strong						
Air Quality					Yes	NO	NA	NC	Follow- up	Remarks	
Is hoarding of no	ot less than 2.4m pro	vided?			$\checkmark$						
Are site vehicles	traveling within cont	trolled speed limit?			$\checkmark$						
Are site vehicles	movement confined	l to designated haul i	oads?		$\checkmark$						
Are public roads	outside site exits ke	pt clean and free fro	m dust?		$\checkmark$						
Are haul roads a	nd unpaved surfaces	s watered regularly to	o avoid dust generation?	?			$\checkmark$		$\Box$ _		
Are there wheel	washing facilities pro		$\checkmark$								
Is water spraying used during the main dust-generating activities?							$\checkmark$				
Are the excav impermeable/tar		of dusty material	s kept wet or cove	red by	✓						
Is exposed area	of ground covered o	or watered frequently	?				$\checkmark$				
Are load on vehi	cles covered by clea	n impervious sheetir	ıg?		$\checkmark$				$\Box$ _		
Are vehicles and	l equipment switched	d off while not in use	?		$\checkmark$						
Are smoky emiss	sions from plants/equ	uipment avoided?			$\checkmark$				$\Box$ _		
Is open burning a	avoided?				$\checkmark$				□ _		
Observable dust	sources	Wind erosion			Vel	hicle/equi	pment mover	nents			
		Loading/unloading	g of materials		<b>√</b> Oth	ners <u>N</u>	lil				
Construction N	oise										
Are the construct	tion works scheduled	d to minimize noise r	nuisance?		$\checkmark$				$\Box$ _		
Are the works or	equipment sited to r	minimize noise nuisa	nce?		$\checkmark$				$\Box$ _		
Are all plant and	equipment well main	ntained and in good	operating condition?		$\checkmark$				$\Box$ _		
Is idle equipment	t turned off or throttle	ed down?			$\checkmark$				$\square$ _		
Is powered mech materials?	nanical equipment co	/ appropriate acoustic				$\checkmark$					
Is silenced equip	oment used where ap					$\checkmark$					
Are noise enclos	sures or noise barrier	sary?				$\checkmark$					
Does specified e	equipment has valid r	noise label?					$\checkmark$				
Are Construction	Noise Permits (CN	Ps) available for insp	ection?				$\checkmark$		$\Box$		
Major Noise Sou	irce	Traffic			Construction activities inside the site						
		Construction activ	ities outside of site		Oth	ners <u>N</u>	lil				

# **AUES**

Water Qual	ity & Drainage	Yes	NO	NA	NC	Follow- up	Remarks
Is a wastewater discharge li	icense obtained for the Project?	$\checkmark$					
Is site effluent discharged ir	accordance with the discharge license?	$\checkmark$					
Is the discharge of silty wate	er avoided?	$\checkmark$					
Is drainage adequate?		$\checkmark$					
Is drainage system well mai	intained?	$\checkmark$					
Are there temporary ditches	ofor 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?	$\checkmark$					
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 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?	$\checkmark$						
Are manholes covered and sealed?				$\checkmark$			
Is oil leakage or spillage avoided?							
Waste Management and P	otential 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?	$\checkmark$				$\Box$ _	
	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	$\checkmark$					

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



Remarks:

#### Previous Audit Follow-up:

1. Stagnant water at Nam San Wai Pumping Station was cleared.

#### Observations Recorded in this Site Inspection:

No environmental issue was observed during the site inspection.

Signatures: Env, Auditor

Name :Ben Tom

Contractor's Representative

IC(2) Auditor

Resident Gite Staff

Name:

Namo:

C. W Can Nume: Dominic Lam

### Site Inspection Checklist (SF-17)

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long ET Auditor: Ben Tam Contractor Rep: Edwin Leung			Contractor:			Leader Civil Engineering Corp. Ltd Babtie Asia Ltd Mott Connell Ltd Action-United Environmental Services & Consulting				
				Engineer:							
Inspected by:				IEC: Environmental Team:							
	IEC's Rep:	Joseph Chan		Inspe	ction Date	& Time:	22 July 20	08 (10:00)	)		
	RE's Rep:	Mr Tsang		Check No.:	Checklist Reference No.:			DSD-AT220708			
General Meteor	ological Information	I									
Weather	✓ Sunny	Fine	Cloudy		Overcast		Drizzle		Rain	Hazy	
Temp:	32 °C										
Humidity:	✓ High (RH > 9	90%)	Moderate (9	0% > RH :	> 50%)		Low (RH	< 50%)			
Wind:	Calm	Light	Breeze		Strong						
Air Quality					Yes	NO	NA	NC	Follow- up	Remarks	
Is hoarding of no	t less than 2.4m prov	ided?			$\checkmark$						
Are site vehicles	traveling within control	olled speed limit?			$\checkmark$						
Are site vehicles	movement confined t	to designated haul re	bads?		$\checkmark$						
Are public roads	outside site exits kep	t clean and free from	n dust?		$\checkmark$						
Are haul roads a	nd unpaved surfaces	watered regularly to	avoid dust generation?	<b>)</b>			$\checkmark$				
Are there wheel	washing facilities prov	vided at site exits?			$\checkmark$						
Is water spraying	used during the main	n dust-generating ac	ctivities?				$\checkmark$				
Are the excave impermeable/targ		of dusty materials	s kept wet or cove	red by	$\checkmark$						
Is exposed area	of ground covered or	watered frequently?					$\checkmark$		$\Box$ _		
Are load on vehic	cles covered by clean	impervious sheeting	g?		$\checkmark$				$\Box$ _		
Are vehicles and	equipment switched	off while not in use?			$\checkmark$						
Are smoky emiss	sions from plants/equi	ipment avoided?			$\checkmark$				$\Box$ _		
Is open burning a	avoided?				$\checkmark$						
Observable dust	sources	Wind erosion			Veh	icle/equi	oment moven	nents			
		Loading/unloading	of materials		✓ Oth	ers <u>N</u>	lil				
Construction No	oise										
Are the construct	tion works scheduled	to minimize noise n	uisance?		$\checkmark$						
Are the works or	equipment sited to m	iinimize noise nuisar	nce?		$\checkmark$						
Are all plant and equipment well maintained and in good operating condition?					$\checkmark$				$\Box$ _		
Is idle equipment turned off or throttled down?					$\checkmark$						
Is powered mech materials?	nanical equipment cov	vered or shielded by	appropriate acoustic				$\checkmark$				
Is silenced equipment used where appropriate?							$\checkmark$				
Are noise enclos	ures or noise barriers	s used where necess	sary?				$\checkmark$				
Does specified e	quipment has valid no	oise label?					$\checkmark$				
Are Construction	Noise Permits (CNP	s) available for inspe	ection?				$\checkmark$				
Major Noise Sou	rce	Traffic			✓ Cor	struction	activities insi	de the site			
Construction activities outside of site					Oth	ers N	lil				

Water Qual	ity & 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?							
Is the discharge of silty wate	er avoided?	$\checkmark$					
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?	$\checkmark$					
Are there neutralization tank	<pre>s for concrete batching/mixing discharge?</pre>			$\checkmark$			
Are there oil interceptors in	drainage system?			$\checkmark$			
Is wheel wash facility provid	led 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 avoided?							
Waste Management and P	otential 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?	$\checkmark$				$\square$ _	
	Is chemical waste stored properly?	$\checkmark$					
	Is there proper disposal?	$\checkmark$					
	Is chemical waste license available for inspection?	$\checkmark$				$\square$ _	
Excavated Materials	Do excavated materials appear uncontaminated?	$\checkmark$				$\square$ _	
	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 avoided?	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:

Nil

#### Observations Recorded in this Site Inspection:



1. Stagnant water was cumulated in the unused sedimentation tank, the contractor was reminded to remove the stagnant to prevent mosquito breeding.



2. Exposed stock-pile at Nam San Wai Road should be covered to prevent dust generation.





3. Free standing oil drums was observed at Kan Tin pumping station, the contractor was reminded to provide drip tray for all free standing oil drums.

Signatures:

Env. Auditor

Namo iBen Tam

Contractor's Representative

Namo: Sanny Low

IC(E) Auditor

Namo:

Resident Site Staff

Nome

### Agreement No. CE37/2005 (EP) Environmental Monitoring and Audit for Kam Tin Trunk Sewerage Phase 1 and Au Tau Trunk sewers

### MONTHLY SITE INSPECTION CHECKLIST

Inspection Site Locati	Alfan Road	// X Inspected By	Leader:Bennylam,tantanseng ET: Deu Tam DSD: WE Toug IEC: Jacquachan
Weather			
Condition	Sunny Fine Overcast Dr	izzle Rain	Storm Hazy
Temperature	e Humidity Hi	gh 🚺 Moderate	Low
Wind	Calm Light Mreeze St	rong Direction	ŝn
EIA ref:	Construction Phase	Close-out N/A Yes on last or comments not Y/N obs	No Photo/Remarks
	Air Quality - Construction Phase		
3.5	<ul> <li>Are hoardings of not less than 2.4m high provided along the site boundary?</li> </ul>	V	
3.5	<ul> <li>Is the portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit kept clear of dusty materials?</li> </ul>		
3.5	<ul> <li>Are stockpiled dusty materials covered by impervious sheeting and placed in an area sheltered on top and 3 sides or sprayed with water?</li> </ul>		caundurd wind nuprotiens
3.5	<ul> <li>Are dusty material loads on vehicles sprayed with water prior to loading and unloading?</li> </ul>		
3.5	<ul> <li>Are all vehicles washed to remove dusty materials from its body and wheels before leaving site?</li> </ul>	$\checkmark$	
3.5	<ul> <li>Are vehicles which are carrying dusty materials covered entirely by impervious sheeting when leaving site?</li> </ul>	V	
3.5	<ul> <li>Are surfaces where any mechanical breaking operation takes place sprayed?</li> </ul>	$\checkmark$	
3.5	<ul> <li>Are working area of any excavation sprayed with water, immediately before, during and immediately after the operation?</li> </ul>		
3.5	<ul> <li>Where a scaffolding is erected around the perimeter of a building under construction, are effective dust screens, sheeting or netting provided to enclose the scaffolding from the ground floor level of the SPS, or a canopy from the first floor level up to the highest level of the scaffolding?</li> </ul>		
3.5	Are skip hoists for material transport totally enclosed?		

3.7	<ul> <li>Have dust monitors been provided at the following locations:         <ul> <li>Boundary facing scattered house in NSW (AM1)</li> <li>Boundary facing Fung Kat Heung (AM5)</li> <li>Boundary facing scattered house near route 3 (AM6)</li> </ul> </li> <li>Construction Noise</li> </ul>
4.7.1	Demolition works     Are quiet PME which meet the SWLs from BS 5228:Part 1:     1997 used?
4.7.1	Sewage Pumping Stations P1, P2 & P3 <ul> <li>Are quiet PME which meet the SWLs from BS 5228:Part 1: 1997 used?</li> </ul>
4.7.1	Are temporary noise barrier, in the form of a site hoarding (with superficial density of at least 20kg/m2, with no substantial gaps), along the site boundaries of the pumping station sites adopted?
4.7.1	Sewers and Rising Mains using Open Trench <ul> <li>Are quiet PME which meet the SWLs from BS 5228:Part 1: 1997 used?</li> </ul>
4.7.1	<ul> <li>Are handheld breakers used for all initial road opening activities, when breaking tarmac/concrete road surface to a depth of 300mm or when granular material is reached?</li> </ul>
4.7.1	Are movable noise barriers or 3 sided enclosures installed for all initial road opening activities (breaking tarmac/concrete road surface to a depth of 300mm or when granular material is reached) where there NSRs within 50m of the line of sight?
4.7.1	Sewers and Rising Mains using Pipe Jacking <ul> <li>Are quiet PME which meet the SWLs from BS 5228:Part 1: 1997 used?</li> </ul>
4.7.1	Road Pavement and Finishes         • Are quiet PME which meet the SWLs from BS 5228:Part 1:         1997 used?
4.9.1	<ul> <li>Have noise monitors been provided at the following locations:</li> <li>(NM3) Scattered house in NSW</li> <li>(NM4) Scattered house in NSW</li> <li>(NM6) Scattered house near Route 3</li> <li>(NM7) Fung Kat Heung</li> </ul>
	Construction Runoff and Site Drainage
	<ul> <li>Are perimeter cut-off drains to direct off-site water around the site constructed with internal drainage works and erosion and sedimentation control facilities implemented. Are channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers provided on site to direct stormwater to silt removal facilities?</li> </ul>
	Are dikes or embankments for flood protection implemented around the boundaries of earthwork areas. Are sediment/silt traps incorporated in the permanent drainage channels to enhance deposition rates?
	Are silt removal facilities provided with retention time for silt/sand traps of 5 minutes under maximum flow conditions?
	Are construction works programmed to minimize surface excavation works during the rainy seasons (April to September)?
	Are slopes minimised and erosion potential reduced?
	Is deposited silt and grit removed regularly and disposed of by spreading evenly over stable, vegetated areas?

- Are measures taken to minimise the ingress of site drainage into excavations? Is water pumped out from trenches or foundation excavations discharged into storm drains via silt removal facilities?
- Are open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m3 covered with tarpaulin or similar fabric during rainstorms?
- Are manholes (including newly constructed ones) adequately covered and temporarily sealed?
- · Are precautions taken before rainstorms?
- · Are all vehicles and plant cleaned before leaving site?
- Is solid waste, debris and rubbish on site appropriately collected, handled and disposed of properly to avoid water quality impacts?
- Are all fuel tanks and storage areas provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby?

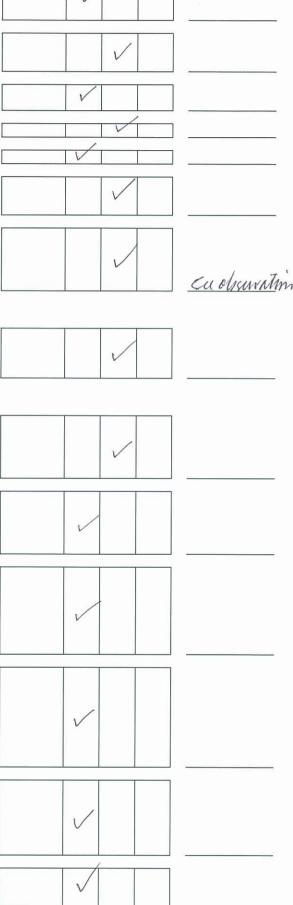
#### Sewage Effluent - Construction Phase

1) Are portable chemical toilets and sewage holding tanks provided? Is handling the construction sewage generated for collection and disposal of this waste? Is a licensed contractor employed?

#### Waste Management - Construction Phase

- 6.6.2

   Are the necessary waste disposal permits from the appropriate authorities in placed for chemical and C&D wastes, in accordance with the Waste Disposal (Chemical Waste) (General) Regulations and the Land (Miscellaneous Provisions) Ordinance (Cap 28)?
- 6.6.2 Is chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, being handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes?
- 6.6.2
   Are containers used for the storage of chemical wastes 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 liters unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation?
- 6.6.2
   Is the storage area for chemical wastes clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated?
- Is disposal of chemical waste via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD?
- 6.6.2 Are trip tickets for disposal available to monitor disposal of C&DM and solid wastes at public filling and landfills, and to control fly tipping?



	Lai	nd Contamination - Construction Phase	
7.5.6	•	Is a revised CAP submitted to the EPD before commencement of construction works? Is the CAP implemented and findings of the investigations reported in the CAR, before ground disturbance is allowed?	
7.5.6		If land contamination is confirmed, has a RAP been prepared and submitted to EPD?	_
7.5.6	•	Are contaminated sites remediated in accordance with the approved CAR/RAP?	
	Eco	ology - Construction Phase	
8.7.1	•	Are construction activities prohibited during November to March for the sections of works within the WCA and WBA, and close to locations of ecologically sensitive species.	
8.7.1	•	During November to March periods, are regular site inspections (at least twice a month) undertaken by ET to ensure proper implementation of this restriction?	
8.7.2	•	Is pipe jacking method used for sewers and rising mains crossing over MDC within the WCA and WBA?	_
8.7.2	۰	During November to March, are regular site inspections (at least twice a month) undertaken by ET for the remaining sewerage sections (including parts of S4, S5 and S6) within the WCA and WBA where construction activities cannot be rescheduled?	
8.7.2	•	The site inspections shall check and report the number of workfronts and implementation of mitigation measures in the monthly EM&A Report.	
8.7.3	•	Are quietened construction plant and equipment used for PS (P2 and P3) and sewers (S4, S5, S6) within the WCA and WBA?	
8.7.4	•	For P1-P3, have fences along the boundary of the pumping stations construction sites been erected?	
8.7.4	•	There shall be no filling and dumping to the remaining abandoned fishpond at P2.	_
8.7.4	٠	Are silt removal facilities, designed to the ProPECC Note PN1/94, installed and operated at the P1 to P3 sites? The minimal total combined volume of the silt removal facilities at P3 (NSW SPS) should be 15m3.	_
8.7.4	•	There shall be no open fires within the site boundary.	
8.7.4	•	Have temporary fire fighting equipment provided in the works areas.	
	Lan	dscape and Visual - Construction Phase	
	•	Have the implementation of mitigation measures (i.e., top soil reused, new compensatory planting) been reported in the monthly EM&A?	- 24
	•	The first monthly EM&A Report should report on the appearance of the temporary hoarding barriers.	
	•	Are screen planting (3m wide) and trees with dense canopy (up to 5m) provided?	
	•	Is felling of mature trees kept to a minimum?	_

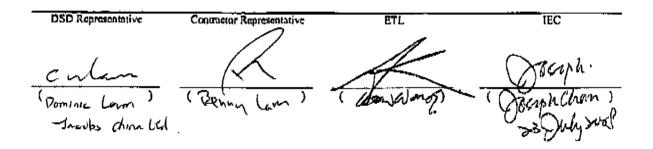
#### **OTHER OBSERVATIONS**

This aunthe alpenvation (277)

- O AF chrugh cliquing of sudi muitation tanks was considered and since fast visit, endiment was noticed deposition most of sutimuitation Truck we New words its the continuity was remodel to regularly dram all continuestation Truck encosts.
- Delled endimentation tank boded with water was found along New wood city. The Contractor was recommended to remain a Transauer the Toute to prevent diregente breading.
- (5) Friel drums were strud in side dry Tray ( Kam In Puriping reasn). However, rainate was accumulated inside the onin Tray. The contractor was removeded to dean-up the ram water acgularly.
- Drawne were strad messde an undersit ed drop Tiay (Kam Tin Buns my ream) witch a consi of chemical drawns were liften also ground nichty The Contract, was becommended to previde eurost drip Traye to state chemicale.
- () A motorial evane was beind dripping subvicents ( tam Tin Filmixing team). "The Contractor rate immediately regenerical the sort-contractor to among e mantemance and chan-up.
- ( In Tolled addimentation to tank with van water were found epposite pet le Hospita At the came Time, value and consider to cane till be found inside a Trapezoidal channel. Came absorvations were made in Nonjoral. Follow-up actions are recommended.

Follow-up previous ab constins

- D Chemical / fine draws were in general stiened inorde drip Trays ( tami Tin Ampiny Room). Finder imprenervent is nervenended ( all abor 1).
- ( Regular codementation Tank chan-up is recommended (see als ()



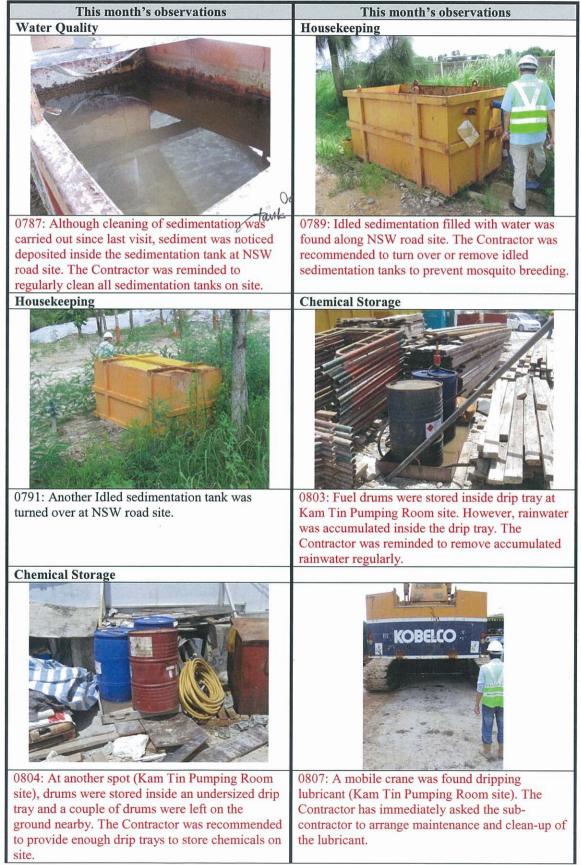
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#### Agreement No. CE37/2005 (EP) Environmental Monitoring and Audit for Kam Tin Trunk Sewerage Phase 1 and Au Tau Trunk Sewers

#### MONTHLY SITE INSPECTION PHOTOS 22 July 2008 Environmental Observations

#### This month's observations



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#### Agreement No. CE37/2005 (EP) Environmental Monitoring and Audit for Kam Tin Trunk Sewerage Phase 1 and Au Tau Trunk Sewers

#### MONTHLY SITE INSPECTION PHOTOS 22 July 2008 Environmental Observations



### Site Inspection Checklist (SF-17)

Project	DC/2005/02 Construction of Sewers, Rising Mains & Sewage Pumping Station at Kam Tin, Nam Sang Wai and Au Tau in Yuen Long			Contra	Contractor:		Leader Civil Engineering Corp. Ltd			
				Engineer:		Babtie Asia Ltd				
Inspected by:	ET Auditor:	Ken Wong		IEC: Environmental Team:			Mott Connell Ltd Action-United Environmental Services & Consulting			
	Contractor Rep:	Benny Lam/E	dwin Leung							
	IEC's Rep:	-		Inspe	ction Date	& Time:	29 July 20	08 (10:00	)	
	RE's Rep:	Mr. Tsang		Check No.:	dist Refere	ence	DSD-AT29	0708		
General Meteoro	ological Information	ı								
Weather	Sunny	✓ Fine	Cloudy		Overcast		Drizzle		Rain	Hazy
Temp:	31 °C									
Humidity:	High (RH > 9	90%)	✓ Moderate (9	0% > RH :	> 50%)		Low (RH	< 50%)		
Wind:	Calm	✓ Light	Breeze		Strong					
Air Quality					Yes	NO	NA	NC	Follow- up	Remarks
Is hoarding of not	t less than 2.4m prov	vided?			$\checkmark$					
Are site vehicles	traveling within contr	olled speed limit?			$\checkmark$					
Are site vehicles	movement confined	to designated haul r	oads?		$\checkmark$					
Are public roads	outside site exits kep	ot clean and free fror	n dust?		$\checkmark$					
Are haul roads ar	nd unpaved surfaces	watered regularly to	avoid dust generation?	?			$\checkmark$			
Are there wheel w	washing facilities prov	vided at site exits?			$\checkmark$					
Is water spraying	used during the mai	n dust-generating a	ctivities?				$\checkmark$		$\Box$ _	
Are the excava impermeable/tarp		of dusty materials	s kept wet or cove	red by		<ul> <li>✓</li> </ul>				
Is exposed area of	of ground covered or	watered frequently?	<b>)</b>			$\checkmark$			$\Box$ _	
Are load on vehic	cles covered by clear	n impervious sheetin	g?		$\checkmark$				$\Box$ _	
Are vehicles and	equipment switched	off while not in use?	<b>)</b>		$\checkmark$				$\Box$ _	
Are smoky emiss	ions from plants/equ	ipment avoided?			$\checkmark$				$\Box$ _	
Is open burning a	avoided?				$\checkmark$				$\Box$ _	
Observable dust	sources	Wind erosion			Veł	icle/equi	pment moven	nents		
		Loading/unloading	of materials		✓ Oth	ers <u>N</u>	lil			
Construction No	bise									
Are the construct	ion works scheduled	l to minimize noise n	uisance?		$\checkmark$					
Are the works or	equipment sited to m	ninimize noise nuisa	nce?		$\checkmark$				$\Box$ _	
Are all plant and	equipment well main	tained and in good o	operating condition?		$\checkmark$				$\Box$ _	
Is idle equipment turned off or throttled down?					$\checkmark$				$\Box$ _	
Is powered mechanical equipment covered or shielded by appropriate acoustic materials?							$\checkmark$			
Is silenced equipment used where appropriate?							$\checkmark$		$\Box$ _	
Are noise enclosures or noise barriers used where necessary?							$\checkmark$		$\Box$ _	
Does specified ed	quipment has valid n	oise label?					$\checkmark$		$\Box$ _	
Are Construction	Noise Permits (CNP	s) available for insp	ection?				$\checkmark$		$\Box$ _	
Major Noise Sour	rce	Traffic			✓ Cor	struction	activities insi	de the site	9	
Construction activities outside of siteOthersNil										

Water Qual	ity & Drainage	Yes	NO	NA	NC	Follow- up	Remarks
Is a wastewater discharge li	icense obtained for the Project?	$\checkmark$					
Is site effluent discharged in accordance with the discharge license?							
Is the discharge of silty wate	er avoided?	$\checkmark$					
Is drainage adequate?		$\checkmark$					
Is drainage system well mai	intained?	$\checkmark$					
Are there temporary ditches	ofor 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?	$\checkmark$					
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 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?	P If so, are they properly maintained?	$\checkmark$					
Are manholes covered and sealed?				$\checkmark$			
Is oil leakage or spillage avoided?							
Waste Management and P	otential 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?	$\checkmark$				$\Box$ _	
	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	$\checkmark$					

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

#### Remarks:

#### Previous Audit Follow-up of: DSD-AT220708

The stagnant water in the unused sedimentation tank had been clear up.

No free standing oil drum without drip tray was found at the Kam Tin Pumping station construction site.

#### Observations Recorded in this Site Inspection:



1. Excavated soil without cover by the tarpaulin sheet entirely was observed at the Nam San Wai Road. To prevent ay soil runoff and fugitive dust emission, the Contractor was reminded to cover the dust materials with tarpaulin sheet entirely.





3. Fugitive dust emission from the haul road was observed at the Kam Tin South River Road. The Contractor was reminded to implement the dust suppression or provide water spraying as necessary.

Signatures:			
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