

PROJECT NO.: TCS/00280/05

ISSUE NO.: 1

**DRAINAGE SERVICES DEPARTMENT (DSD)
CONTRACT NO. DC/2004/08**

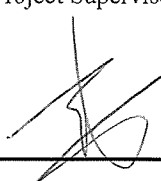
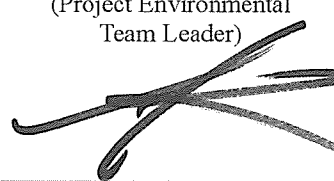
**PENG CHAU SEWAGE TREATMENT WORKS
UPGRADE**

**MONTHLY ENVIRONMENTAL MONITORING AND
AUDIT (EM&A) REPORT – JUNE 2007**

PREPARED FOR

Acciona-ATAL Joint Venture (AAJV)

Quality Index

Date	Reference No.	Prepared by	Certified By
28 June 2007	TCS/00280/05/600/R0245	Ben Tam (Project Supervisor) 	Ken Wong (Project Environmental Team Leader) 

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6 July 2007
Our Ref: 8261/0382

By Post/email

CDM International Inc.,
4307-12 Metroplaza Tower 1,
223 Hing Fong Road, Kwai Fong
Hong Kong

Attention: Mr. Alfred Cheung

Dear Alfred,

**EM&A MONTHLY REPORT – JUNE 2007
CONTRACT NO. DC/2004/08 UPGRADING OF PENG CHAU SEWAGE TREATMENT
WORKS**

With reference to the final version of the captioned EM&A monthly report received on 3rd July 2007 (ET's ref.: TCS/00280/05/600/R0245 Issue 1), we have no critical comments on the mentioned report.

Thank you for your kind attention and should you require any further information, please do not hesitate to contact the undersigned at 2241 9807.

Yours sincerely
BMT Asia Pacific Limited



Antony Wong
Project Independent Environmental Checker
RBR/anw

cc.
AAJV – Mr. William Chan (by email)
AUES – Mr. Ken Wong (by email)

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Executive Summary

Acciona-ATAL Joint Venture (AAJV) has been awarded the DSD Contract DC/2004/08 (Project) for the Peng Chau Sewage Treatment Works Upgrade in May 2005. The Project requires an Environmental Monitoring & 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-203/2004) and the Project EM&A manual.

Action-United Environmental Services and Consulting (AUES) has been commissioned by AAJV to be an independent environmental team (ET) to implement the EM&A program in compliance with the EP and the project EM&A Manual.

This report presents the results of the project EM&A program for the reporting month **June 2007** during the period from 26 May to 25 June 2007.

EM&A Activities in the Reporting Period

A summary of the monitoring activities in this reporting period is listed below:

- 1-Hr TSP Monitoring 15 Events
- 24-Hr TSP Monitoring 5 Events
- Noise Monitoring 5 Events
- Site Inspection Audit 5 Times

Air Quality

No exceedance in 1-Hr TSP and 24-Hr TSP measurements was recorded in this reporting period.

Construction Noise

No exceedance in construction noise measurements was recorded and no noise complaint was received in this reporting period.

Water Quality

Since all the marine based construction activities had been completed on 1 August 2006, post water monitoring was commenced on 2 August 2006 and completed on 1 September 2006 in accordance with Clause 4.32 of the EM&A Manual. All the measurement results at the control/impact stations were within the baseline range. The monitoring results were presented in the previous Monthly EM&A Report (September 2006)

Summary of Monitoring Exceedances

A summary of monitoring exceedances in the reporting period of air, noise and water quality monitoring are presented below:

Env. Quality	Parameters	Compliance %	Investigation & Corrective Actions
Air Quality	1-hour TSP	100	Not Required for 100% Compliance
	24-hour TSP	100	Not Required for 100% Compliance
Noise	Leq (30min) Daytime	100	Not Required for 100% Compliance
Water Quality*	-	-	-

Note: *No impact water quality monitoring was required since all marine based construction activities were completed on 01 August 2006.

Environmental Complaints

No environmental complaint was received in this reporting period.

Environmental Summon

No environmental summon was received in this reporting period.

Future Key Issues

The potential environmental impacts for this project generally include air quality, noise, water quality and construction waste. The contractor is to properly implement the required environmental mitigation measures as per the Implementation Schedule in the EM&A manual to ensure no significant adverse environmental impact arises from the construction works. The contractor was reminded to maintain good house-keeping throughout the construction period.

1.0 INTRODUCTION

- 1.01 Acciona-ATAL Joint Venture (AAJV) has been awarded the DSD Contract DC/2004/08 (Project) for the upgrading of Peng Chau Sewage Treatment Works in May 2005. The Project requires an Environmental Monitoring & 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-203/2004) and the project EM&A manual. The location of the project site is presented in **Appendix A**.
- 1.02 The works to be executed under this project mainly comprise the following:
- Upgrade and reconstruct the existing Peng Chau Sewage Treatment Works (STW);
 - Construct an emergency overflow, storm tanks and submarine outfall;
 - Provide de-odourization facilities and associated sludge treatment facilities, and extend inlet pumping mains and construct an equalization tank;
 - Demolish the existing treatment facilities;
 - Construct sludge drying bed; and
 - Construct remaining works.
- 1.03 Action-United Environmental Services and Consulting (AUES) has been commissioned by AAJV to be the independent environmental team (ET) for implementation of the EM&A program in accordance with the requirements as set out in the EP and the project EM&A manual.
- 1.04 This report presents the results of the project EM&A program for the reporting month **June 2007** during the period from 26 May to 25 June 2007.

Report Structure

- 1.05 The EM&A report is structured into the following sections:
- Section 1** Introduction
 - Section 2** Project Organization and Construction Progress
 - Section 3** Summary of Monitoring Requirements
 - Section 4** Monitoring Methodology
 - Section 5** Monitoring Results
 - Section 6** Waste Management
 - Section 7** Site Inspection
 - Section 8** Environmental Complaint and Non-Compliance
 - Section 9** Implementation Status of Mitigation Measures
 - Section 10** Impact Forecast and Monitoring Schedule
 - Section 11** Conclusions

2.0 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 Project Organization and Management Structure

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

2.2 Construction Progress

A summary of the major construction activities undertaken in this reporting period is shown in **Table 2-1**.

Table 2-1 Major Construction Activities in the Reporting Period

Location	Description of Construction Activities
Portion P	• Pipe fitting installation to the Air Valve Chamber
Portion Q	-
Portion R	<ul style="list-style-type: none"> • Applying concrete protective coating for the NSTC; • Finishing work for NSTC & ESC; • EVA construction; • Manhole and drainage construction; and • E&M equipment installation.
Area A	-
Area B	-
Area C	-

2.3 Summary of Environmental Submissions

A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project in this reporting period is presented in **Table 2-2**.

Table 2-2 Status of Environmental Licenses and Permits

Item	Item Description	Permit Status
1	Environmental Permit No. : EP-203/2004	Issued at 30 Nov 2004
2	Air Pollution Control (Construction Dust)	Notified EPD on 17 Jun 2005
3	Water Pollution Control (Discharge Licence) EP890/W2/XE005	Valid to 30 Sep 2010
4	Chemical Waste Producer Registration WPN:5213-976-N2449-01	Registration on 03 Jun 2005
5	Construction Noise Permit (No. GW-RS0783-06)	From 01 Jan to 30 Jun 2007 (0000 to 2400 on general holidays, 0000 to 0700 and 1900 to 2400 on any days not being a general holiday)
6	Marine Dumping Permit (No. EP/MD/06-021)	Expired
7	Exemption for site concrete batching plant licence	Issued at 21 Oct 2005
8	Exemption Account for Disposal of Construction Waste (Account Number : 5000577)	Valid until 27 Sep 2008

3.0 SUMMARY OF IMPACT MONITORING REQUIREMENTS

- 3.01 Environmental monitoring and audit requirements are set out in the project EM&A manual. Air, marine water and construction noise have been identified to be the key environmental issues during the construction phase of the project.
- 3.02 A summary of the EM&A requirements for air quality, marine water quality and construction noise monitoring are shown in **Table 3-1**. The designated locations of the air quality, noise and marine water monitoring stations are shown in **Appendix C**.

Table 3-1 Summary of EM&A Requirements

Environmental Aspect	Monitoring Parameters	
Air Quality	1-Hr TSP	
	24-Hr TSP	
Construction Noise	Leq _(30min) during normal working hours	
	Supplementary L ₁₀ and L ₉₀ for reference.	
Marine Water Quality	<ul style="list-style-type: none"> • Dissolved Oxygen (DO); • Temperature; • Turbidity; • pH; 	<ul style="list-style-type: none"> • Salinity; • Suspended Solids (SS); • Ammonia Nitrogen; and • Total Inorganic Nitrogen.

- 3.03 Air monitoring is carried out once every six days for 24-Hr TSP and 3 times every six days for 1-Hr TSP at the designated monitoring station.
- 3.04 Noise monitoring is conducted once every six days at the designated monitoring station. Measurements of Leq_(30min) shall be taken between 0700 and 1900 with supplementary L₁₀ and L₉₀ data will be collected.
- 3.05 Marine water monitoring is carried out 3 times every week at 4 designated monitoring stations (2 Control stations and 2 Impact stations) in the course of marine work.
- 3.06 The impact water quality monitoring program shall be conducted during the course of marine based construction activities of the Project.
- 3.07 A summary of the Action/Limit (A/L) Levels for air quality, marine water quality and construction noise is shown in **Tables 3-2, 3-3 and 3-4**.

Table 3-2 Action and Limit Levels for Air Quality

Monitoring Location	Action Level (µg/m ³)		Limit Level (µg/m ³)	
	1-Hr TSP	24-Hr TSP	1-Hr TSP	24-Hr TSP
AN1	> or = 346	> or = 163	> or = 500	> or = 260

Table 3-3 Action and Limit Levels for Construction Noise

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

Table 3-4 Action and Limit Levels for Marine Water Quality

Parameter		Action	Limit
DO mg/L	Surface & Mid-depth	4.1	3.9
	Bottom	3.3	2.0
Turbidity, NTU		6.2 or 120% of upstream control station's SS at the same tide of the same day.	7.5 or 130% of upstream control station's SS at the same tide of the same day.
SS, mg/L		17.6 or 120% of upstream control station's SS at the same tide of the same day.	20.2 or 130% of upstream control station's SS at the same tide of the same day.
NH3-N, mg/L		0.16	0.22
TIN, mg/L		0.91	0.94
E.Coli, cfu/100mL		374	610

3.08 The Event Action Plan of air, noise and water quality has been implemented for this project. Details of the Event Action Plan were presented in the First Impact EM&A report.

4.0 IMPACT MONITORING METHDOLOGY

MONITORING LOCATIONS

4.01 There is one designated air and noise monitoring location and four (4) designated water quality monitoring stations. Their locations are shown in **Tables 4-1** and **4-2** and geographically in **Appendix C**.

4.02 Owing to the residents' refusal of providing access to the designated air and noise locations, an alternative air and noise monitoring station was proposed and was approved by EPD (Ref: (2) EP2/N9/F/93 IV) on 14 July 2005. The approved alternative air and noise station is located at the abutment (Portion P) within the site boundary next to the sensitive receiver Sea Crest Villa.

Table 4-1 Location of Air Quality and Noise Monitoring Station

Station ID	Description
AN1	Abutment at Portion P next to Sea Crest Villa

Table 4-2 Locations of Water Quality Monitoring Stations

Station	Description	Easting	Northing
W1	Predicted Dredging Non-Impact Zone	821279.0	816452.1
W2	Live Coral Area	821573.2	816769.7
C1	Control Station	821919.0	817155.0
C2	Control Station	821443.2	816257.4

4.03 The installation of a wind monitoring station at the sensitive receivers or site offices was confirmed impractical. Use of meteorological data provided by the Peng Chau Station of the Hong Kong Observatory (HKO) has been adopted in this project since September 2005.

MONITORING FREQUENCY AND PERIOD

1-Hr TSP Monitoring

- 4.04 All 1-Hr TSP monitoring was conducted at the EPD-approved alternative station three times every 6 days. A total of 15 monitoring events were carried out in this reporting period.

24-Hr TSP Monitoring

- 4.05 All 24-Hr TSP monitoring was conducted at the EPD-approved alternative station once every six days. Total 5 monitoring events were carried out in this reporting period.

Noise Monitoring

- 4.06 Impact noise monitoring was undertaken at the EPD-approved alternative station weekly. A total of 5 monitoring events were carried out in this reporting period.

Marine Water Quality Monitoring

- 4.07 Since the submarine work was completed on 01 August 2006, therefore no impact water quality monitoring had been undertaken in this reporting period. According to the EM&A Clause 4.32, post water quality monitoring had been conducted from 02 August 2006 to 01 September 2006. All the measurement results at the control/impact stations were within the baseline range. The monitoring results were presented in the pervious Monthly EM&A Report (September 2006).

MONITORING EQUIPMENT

- 4.08 The monitoring equipment used by the ET in the EM&A program is presented in the following table:

Table 4-3 Monitoring Equipment Used in EM&A Program

Parameters	Monitoring Equipment	
Marine Quality	Dissolved Oxygen	YSI 85
	Temperature	YSI 85
	Turbidity	HACH 2100P
Air Quality	1-Hr TSP	Sibata LD-3
	24-Hr TSP	Tisch High Volume Sampler 515N
Noise	Leq30	B&K Type 2238
	On-site Calibration	B&K Type 4231

24-Hr TSP Monitoring

- 4.09 24-Hr TSP monitoring was carried out by a High Volume Sampler (HVS) in compliance with the project EM&A Manual. The HVS employed complied with the PS specifications including.
- Power supply of 220v/50 Hz for 24-hour continuous operation;
 - 0.6-1.7 m³/min (20-60 SCFM) adjustable flow rate;
 - A 7-day mechanical timer for 24-hour operation;
 - An elapsed time indicator with ± 2 minutes accuracy for 24-Hr operation;
 - Minimum exposed area of 63 in²;
 - Flow control accuracy of $\pm 2.5\%$ deviation over 24-Hr operation;
 - An anodized aluminum shelter to protect the filter and sampler;
 - A motor speed-voltage control to control mass flow rate with accuracy of $\pm 2.5\%$ deviation over 24-hr sampling period;
 - Provision of a flow recorder for continuous monitoring;
 - Provision of a peaked roof inlet;
 - Incorporation with a manometer; and
 - An 8"x10" stainless steel filter holder to hold, seal and easy to change the filter paper.
- 4.10 The filter papers used in 24-Hr TSP monitoring were of size 8"x10" and provided by a local HOKLAS-accredited laboratory, ALS Techichem Pty (HK) Limited (HOKLAS No. 66). The filters papers after measurements were returned to the laboratory for the required treatment and analysis.

1-Hr TSP Monitoring

- 4.11 Measurements of 1-Hr TSP monitoring were taken by a Sibata LD-3 Laser Dust Meter that is a portable and battery-operated laser photometer capable of performing real time 1-Hr TSP measurements. A comparison test with HVS was carried out prior to baseline monitoring in compliance with the EM&A requirements and a conversion factor for direct reading of the dust meter has been established.

WIND DATA MONITORING

- 4.12 The installation of a wind monitoring station at the sensitive receivers or site offices was confirmed impractical. The meteorological data for this project has been provided by the Hong Kong Observatory (HKO) Peng Chau Station upon IEC & EPD approval.

Noise Monitoring

- 4.13 Noise measurements were taken in terms of the A-weighted equivalent sound pressure level (Leq) measured in decibels (dB). Supplementary statistical results such as L₁₀ and L₉₀ were also obtained for reference.

- 4.14 Hand-held sound level meters (B&K Model 2238) and associated acoustical calibrators in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specification were used for taking the impact noise measurements.
- 4.15 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).
- 4.16 No noise measurement was carried out in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s.

Marine Water Quality Monitoring

- 4.17 The marine water quality monitoring was carried out in compliance with the project EM&A requirements. Monitored parameters include Dissolved Oxygen (DO), Temperature, Turbidity, Salinity, pH, Suspended Solids (SS) and Total Inorganic Nitrogen (TIN).
- 4.18 DO, temperature, turbidity, pH and salinity were measured in-situ whereas SS and TIN were determined in a HOKLAS accredited laboratory.
- 4.19 Marine water quality monitoring was conducted during mid-ebb and mid-flood at specified depths in compliance with the project EM&A Manual. Duplicate in-situ measurements were taken and duplicate samples were collected in accordance with HOKLAS requirements for QA/QC purposes.

LABORATORY MEASUREMENT/ANALYSIS

- 4.20 Analyses of SS, TIN and ammonia nitrogen were carried out by a local HOKLAS-accredited laboratory, ALS Techichem Pty (HK) Limited (HOKLAS No. 066). The specified testing services provided by ALS as shown in **Table 4-4** are accredited under the HOKLAS Scheme.

Table 4-4 Analytical Methods Applied to Marine Water Quality Samples

Determinant	Standard Method	Detection Limit
Suspended Solids (mg/L)	ALS Method EA-025	2.0 mg/L
Total Inorganic Nitrogen (mg/L)	ALS Method EK-055A	0.01 mg/L
Ammonia Nitrogen (mg/L)	ALS Method EK-055A	0.01 mg/L

EQUIPMENT CALIBRATION

- 4.21 Initial calibration of the HVS was performed upon installation and thereafter at bi-monthly intervals in accordance with the manufacturer's instruction using the NIST-certified standard calibrator. The calibration data are properly documented and the records are maintained by ET for future reference.

- 4.22 The 1-Hr TSP meter was calibrated by the supplier prior to purchase. Zero response of the equipment is checked before and after each monitoring event. A comparison test was carried out with a HVS. A conversion factor (K) of 4.0 was generated in accordance with the equipment manufacturer's instruction. The meter counts in minutes multiplied by the conversion factor will generate the equivalent dust concentration by HVS.
- 4.23 The sound level meters are 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 are considered valid only if the calibration levels before and after the noise measurement agree to within 1.0 dB.
- 4.24 All in-situ water monitoring instruments are checked, calibrated and certified by a HOKLAS accredited laboratory before use and subsequently re-calibrated at 3-monthly intervals. Responses of sensors and electrodes are checked with standard solutions before each use.
- 4.25 The calibration certificates of the monitoring equipment used during the impact monitoring program are attached in **Appendix D**.

DATA MANAGEMENT AND DATA QA/QC CONTROL

- 4.26 The impact monitoring data are handled by the ET's systematic data recording and management, which complies with in-house certified (ISO 9001:2000) Quality Management System. Standard Field Data Sheets (FDS) are used in the impact monitoring program.
- 4.27 The monitoring data recorded in the equipment e.g. 1-Hr TSP meters and noise meters are downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data.
- 4.28 For monitoring activities require laboratory analysis, the local laboratory follows the QA/QC requirements as set out under the HOKLAS scheme for all laboratory testing.

5.0 IMPACT MONITORING RESULTS

5.01 The impact EM&A program was carried out by the ET in compliance with the project EM&A Manual in this reporting period. The impact monitoring schedules are presented in **Appendix E** and the monitoring results are detailed in the following sub-sections.

AIR QUALITY

5.02 The impact air quality monitoring data is summarized in **Tables 5-1**. Graphical plots of the 24-Hr TSP and 1-Hr TSP results are shown in **Appendix F** respectively.

Table 5-1 Summary of 24-Hr and 1-Hr TSP Monitoring Results

Monitoring Date	24-Hr TSP ($\mu\text{g}/\text{m}^3$)	1-Hr TSP Monitoring Results ($\mu\text{g}/\text{m}^3$)				
		Monitoring Date	Start Time	1 st Result	2 nd Result	3 rd Result
28-May-07	35	28-May-07	13:58	53	50	54
2-Jun-07	16	2-Jun-07	9:03	65	59	52
8-Jun-07	31	8-Jun-07	9:08	86	97	110
14-Jun-07	28	14-Jun-07	9:10	27	32	39
20-Jun-07	25	20-Jun-07	13:01	49	62	56
Action Level	163	-		346		
Limit Level	260	-		500		

Note: * Exceedances are in bold.

5.03 No exceedance in 1-Hr TSP and 24-Hr TSP measurements was recorded in this reporting period.

5.04 The meteorological data during the monitoring period are summarized in **Appendix G**.

NOISE

5.05 The impact noise monitoring results are summarized in **Table 5-2**. Graphical plots of the monitoring data are presented in **Appendix F**.

Table 5-2 Summary of Noise Monitoring Results

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6 th Leq5	Leq30	Corrected* Leq30
28-May-07	13:58	61.7	54.9	58.7	59.7	61.3	63.5	60.7	64
2-Jun-07	9:22	62.1	65.5	60.9	57.2	59.7	60.7	61.8	65
8-Jun-07	9:12	62.4	64.6	58.4	61.8	61.2	57.4	61.6	65
14-Jun-07	9:28	57.1	56.4	59.1	64.2	61.7	59.6	60.5	64
20-Jun-07	13:01	56.4	56.7	63.8	62.3	68.2	61.9	63.4	66
Limit Level		-						-	> 75 dB(A)

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

MARINE WATER QUALITY

- 5.06 No impact water quality monitoring was required in this reporting period since all marine based construction works had been completed on 01 August 2006.
- 5.07 Based on the Project EM&A Manual Clause 4.32 requirement, the post water quality monitoring had been conducted from 02 August 2006 to 01 September 2006. All the measurement results at the control/impact stations were within the baseline range. The monitoring results were presented in the pervious Monthly EM&A Report (September 2006).

6.0 WASTE MANAGEMENT

- 6.01 The waste management carried by ET was performed on 26 June 2007 in this reporting month of June 2007, no observation was recorded.

RECORDS OF WASTE QUANTITIES

- 6.02 All types of waste arising from the construction work are classified into the following:
- Excavated material;
 - Construction & demolition (C&D) material;
 - Chemical waste; and
 - General refuse.
- 6.03 The quantities of waste for disposal in this reporting period are summarized in **Tables 6-1** and **6-2**. Whenever possible, materials were reused on-site as far as practicable.

Table 6-1 Summary of Quantities of Waste for Disposal

Type of Waste	Quantity	Disposal Location
Excavated Material (Spent lube oil) (Liters)	-	N/A
Empty Site Vehicle Batteries (Nos.)	-	N/A
Excavated material (Uncontaminated) (m ³)	161.02m ³	Peng Chau Transfer Facility
Broken Rock (m ³)	60.73m ³	Peng Chau Transfer Facility
Construction & Demolition Material (Inert) (tons)	22.65tons	Peng Chau Transfer Facility
Construction & Demolition Material (Non-Inert) (tons)	-	N/A
Asbestos C&D Materials (m ³)	-	N/A
Chemical Waste (Liters)	-	N/A
Wastewater Collected for Off-site Treatment (m ³)	-	N/A
General Refuse (tons)	-	Peng Chau Transfer Facility
Dredged Materials (m ³)	-	N/A

Table 6-2 Summary of Quantities of Recycling Materials

Type of Waste	Quantity	Disposal Location
Recycled Metal (kg)	-	NA
Recycled Paper (kg)	-	NA
Recycled Plastic (kg)	-	NA

7.0 SITE INSPECTION

7.01 Representatives of the Engineer and the Contractor carried out joint site inspection every week to evaluate the site environmental performance. The monthly IEC site audit was carried out on 26 June 2007. No non-compliance was noted and some observations were made on general site housekeeping.

7.02 Details of the observations and recommendations were recorded during the joint site inspection as follows:

- The Contractor was reminded to properly label all the chemical containers;
- The Contractor was reminded to cover dusty stockpiles/materials including cement and sand after used; and
- Drip trays were provided for the chemical containers to prevent soil contamination.

8.0 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

ENVIRONMENTAL COMPLAINT AND PROSECUTION

8.01 No environmental complaint was received in this reporting period. The statistical summary table of environmental complaint is presented in **Table 8-1**.

8.02 No environmental prosecution and summon was received in this reporting period.

Table 8-1 Statistical Summary of Environmental Complaints

Reporting Month	Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
August – December 2005	0	0	NA
January – December 2006	0	0	NA
January 2007	0	0	NA
February 2007	0	0	NA
March 2007	0	0	NA
April 2007	0	0	NA
May 2007	0	0	NA
June 2007	0	0	NA

9.0 IMPLEMENTATION STATUS OF MITIGATION MEASURES

9.01 AAJV has been implementing the required environmental mitigation measures according to the project Mitigation Implementation Schedule. The implementation schedule with mitigation measures is presented in the First Impact EM&A report.

9.02 A summary of environmental mitigation measures generally implemented by AAJV in this reporting period is presented as follows;

Water Quality

- Wastewater were appropriately treated by treatment facilities;
- Drainage channels were provided to convey run-off into the treatment facilities;
- Drainage systems were regularly and adequately maintained.

Landscaping

- Tree protection measures were provided to existing trees;
- No tree was unnecessarily lopped or felled.

Air Quality

- Vehicles were cleaned of mud and debris before leaving the site;
- Site vehicles were limited to within 15 km/hr;
- Public roads around the site entrance/exit had been kept clean and free from dust;
- Dust suppression measures were properly provided to reduce dust emission from stockpile.

Noise

- Works and equipment were located to minimise noise nuisance from the nearest sensitive receiver;
- Idle equipments were either turned off or throttled down;
- Some of the Powered Mechanical Equipments were covered or shielded by appropriate acoustic materials if practicable.

Waste and Chemical Management

- Wastes were properly segregated into inert and non-inert in appropriate containers/areas;
- Excavated materials were reused where practicable.
- A chemical waste storage area had been provided on site;

General

- The site was generally kept tidy and clean.

10.0 IMPACT FORECAST

Key Issues for the Coming Month

10.01 Key issues to be considered in the coming month include:

- Implementation of dust suppression measures at all times;
- Potential marine water quality impact due to construction works near the seafront;
- Potential fugitive dust quality impact due to dry/windy season (November to March) from the dry/loose/exposure soil surface/dusty material;
- Disposal of empty engine oil containers within site area;
- Ensure dust suppression measures are implemented properly;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures.

10.02 The tentative 3-month rolling program is presented in **Appendix H**.

11.0 CONCLUSION

11.01 The EM&A program in June 2007 was undertaken in compliance with the EM&A manual for the Peng Chau Sewage Treatment Works Upgrade. A summary of environmental compliance of air, noise and water quality in this reporting period are presented as follows:

Summary of the Exceedances for Impact Monitoring

Env. Quality	Parameters	Compliance %	Investigation & Corrective Actions
Air Quality	1-hour TSP	100	Not Required for 100% Compliance
	24-hour TSP	100	Not Required for 100% Compliance
Noise	Leq (30min) Daytime	100	Not Required for 100% Compliance
Water Quality*	-	-	-

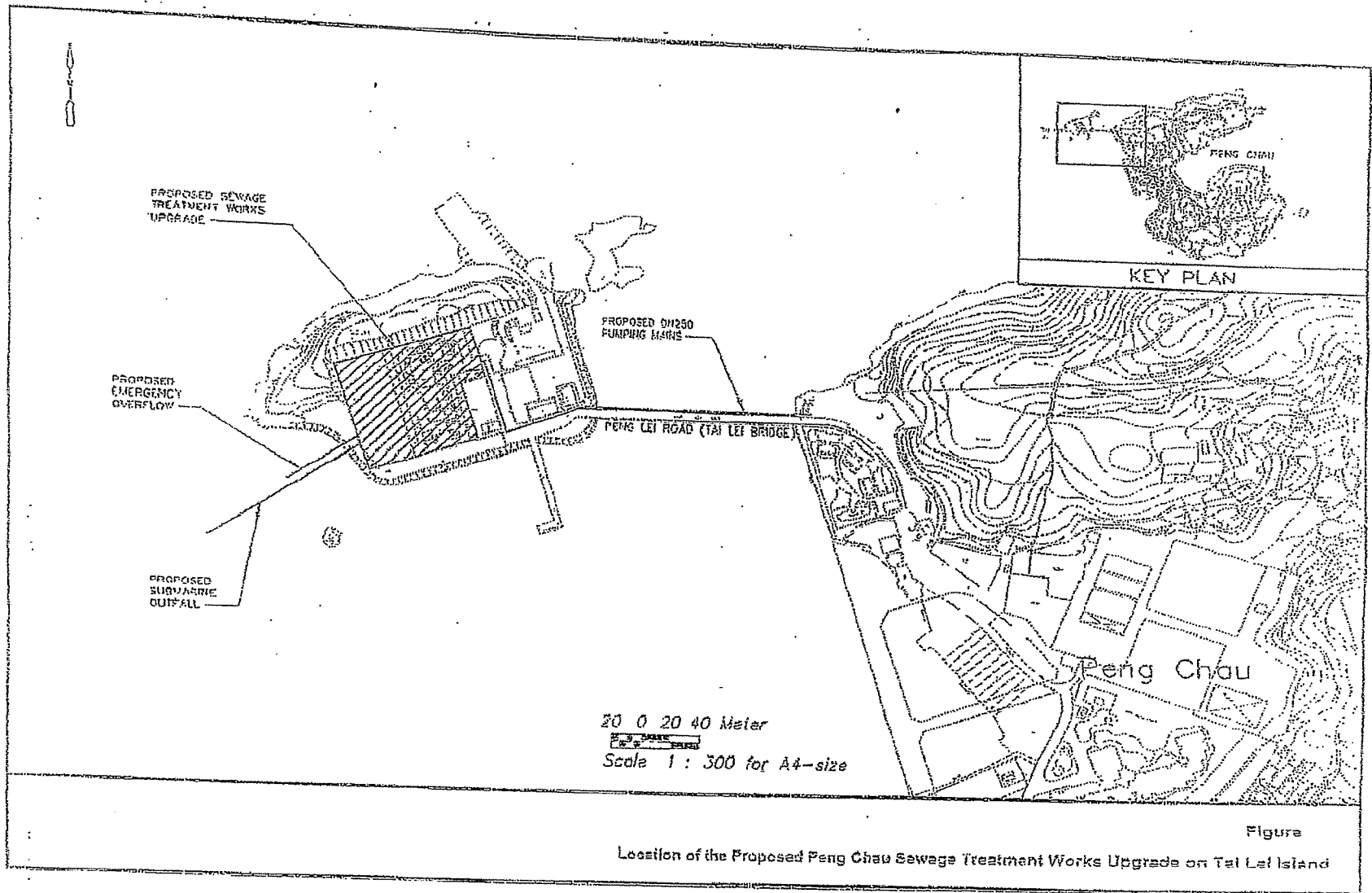
Note: *No impact water quality monitoring was required since all marine based construction activities were completed on 01 August 2006.

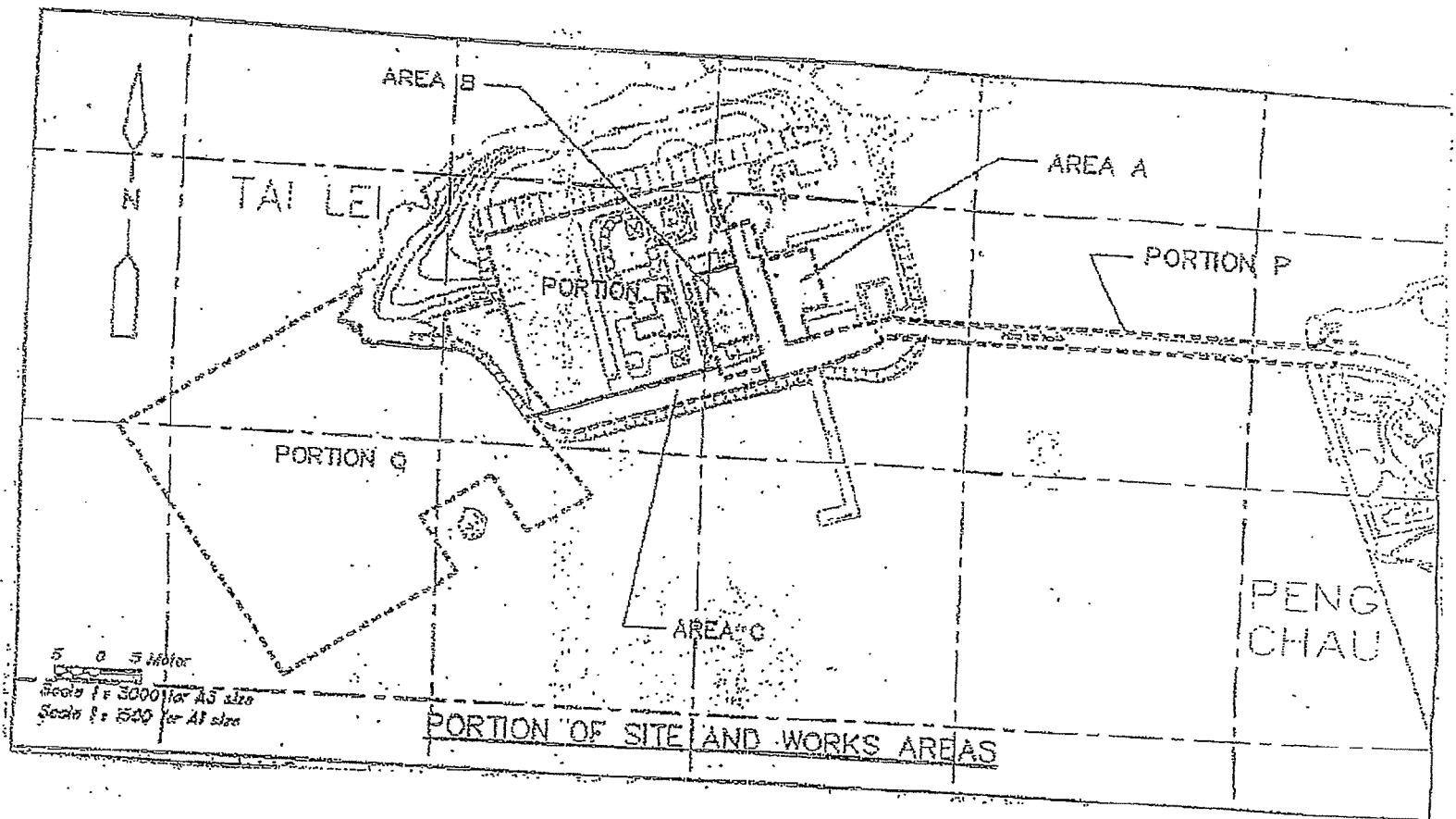
- 11.02 No exceedance in 1-Hr TSP and 24-Hr TSP measurements was recorded in this reporting period.
- 11.03 All noise levels measured at AN1 were below the Limit level and no complaint was received in this reporting period.
- 11.04 No impact water quality monitoring was required in this reporting period during the course of marine works completed on 01 August 2006.
- 11.05 Based on the EM&A Manual Clause 4.32, the post water quality monitoring was carried out from 02 August 2006 to 01 September 2006. All the monitoring results in the control/impact stations were within the baseline range. The monitoring results and graphical plot were present in pervious Monthly EM&A Report (September 2006).
- 11.06 No environmental complaint or summon was received in this reporting period.

RECOMMENDATIONS

- 11.07 Based on the IEC site inspection records on 26 June 2007, the following key recommendations are pertinent:
- The Contractor was reminded to properly label all the chemical containers;
 - The Contractor was reminded to cover dusty stockpiles/materials including cement and sand after used; and
 - Drip trays were provided for the chemical containers to prevent soil contamination.
- 11.08 The ET will continue to implement the EM&A program and audit the implementation of the environmental mitigation measures.

Appendix A
Project Site Layout





Appendix B

Environmental Organization Structure

Contact Details of Key Personnel

Organization	Project Role	Designation	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Permit Holder	Ir. David Leung	2594-7281	2827-8526
CDM	Engineer's Representative	Project Engineer	Mr. Stephen Ng	2428-2332	2424-9114
		Resident Engineer	Mr. Alfred Cheung	2983-9303	2983-9843
		ARE	Mr. Alex Yeung	2983-9303	2983-9843
BMT Asia	Independent Environmental Checker	IEC	Mr. Antony Wong	2815-2221	2815-3377
		IEC'S Representative	Mr. Benny Ng	2815-2221	2815-3377
Acciona-ATAL	Main Contractor	Project Manager	Mr. William Chan	2983-0092	2983-0381
		Site Agent	To be Advised	2983-0092	2983-0381
AUES	Contractor's Environmental Team	Environmental Team Leader (ETL)	Mr. Ken Wong	2959-6059	2959-6079
		Project Supervisor	Mr. Benjamin Tam	2959-6059	2959-6079

Appendix C

Locations of Designated Monitoring Stations

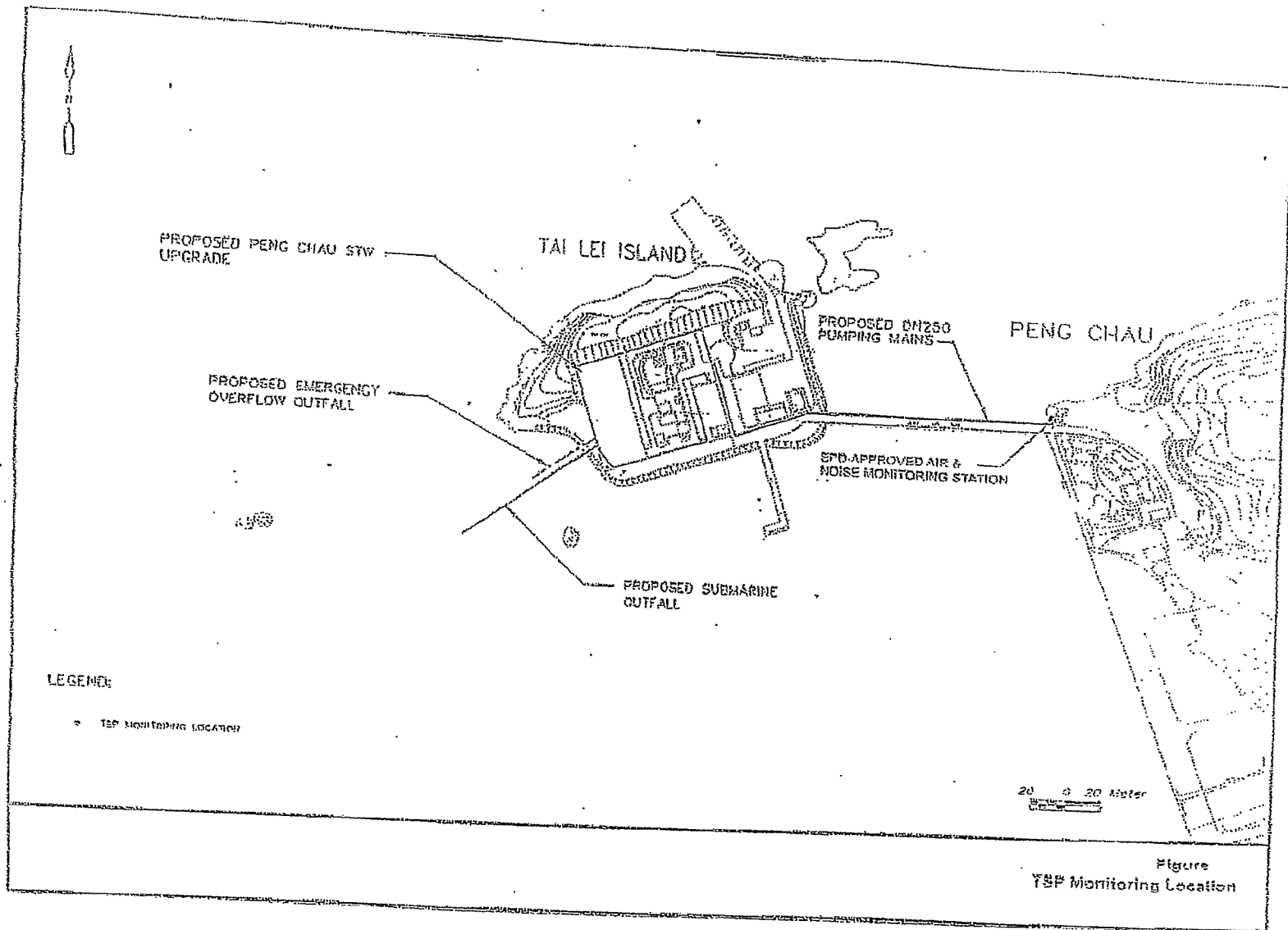


Figure
TSP Monitoring Location

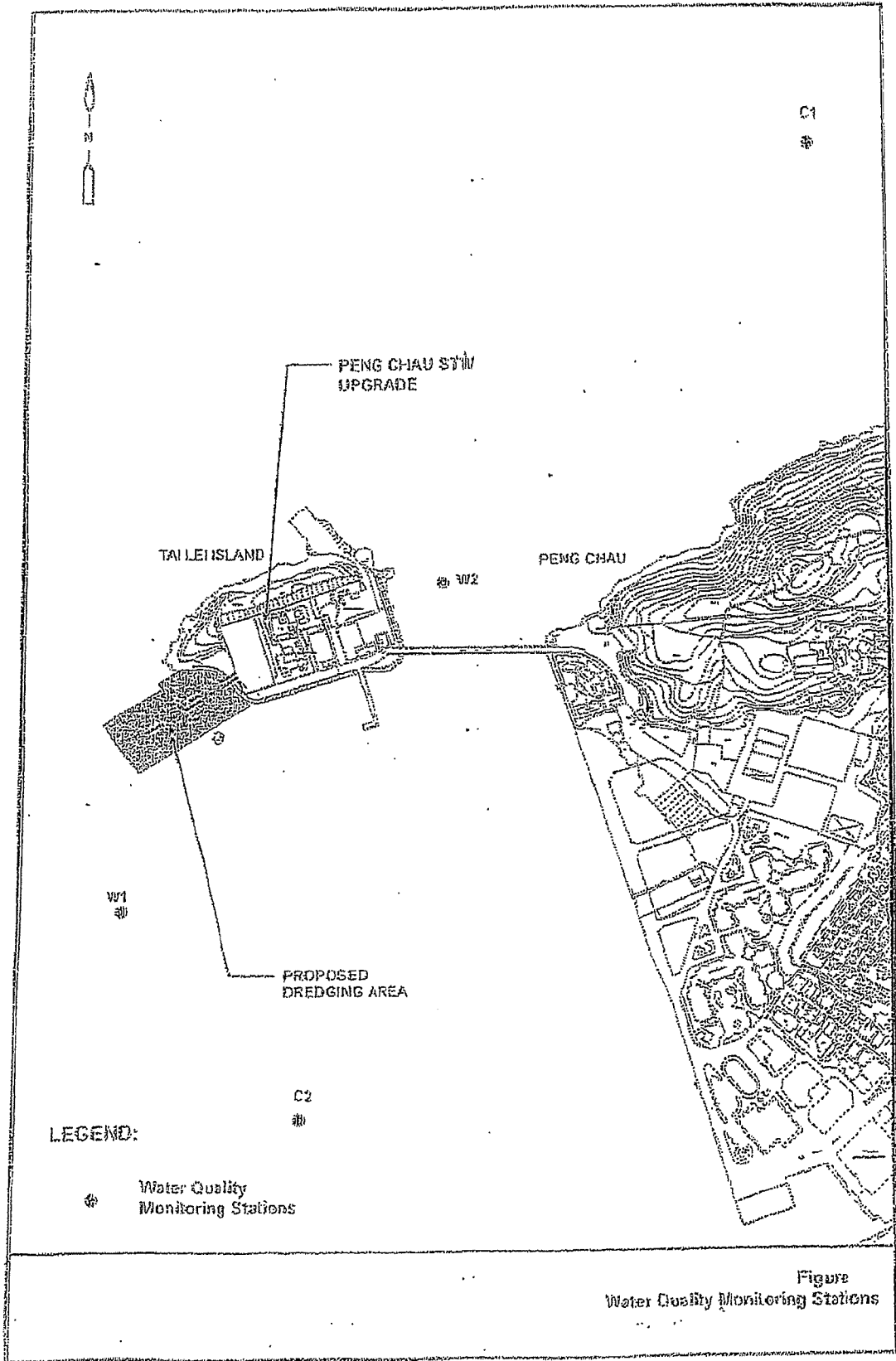


Figure
Water Quality Monitoring Stations

Appendix D

Equipment Calibration Certificates

Equipment Calibration List for Peng Chau Sewage Treatment Works Upgrade Project

Item	Aspect	Description of Equipment	Serial No.	Date of Calibration	Date of Next Calibration
1	Air	Greasby Anderson GMWS2310 High Volume Sampler	AN1	05 May 07	05 Aug 07
2		Sibata LD-3	362337	22 Jun 06	22 Jun 07
3	Noise	Bruel & Kjaer 4231 Acoustical Calibrator	2292168	16 Apr 07	16 Apr 08
4		Bruel & Kjaer 2238 Integrating Sound Level Meter	2285721	16 Apr 07	16 Apr 08

Note: *Calibration certificates will only be provided if monitoring equipment is re-calibrated or new.

No Water Quality Monitoring was required in this reporting period, since all marine based construction activities were completed on 01 August 2006. Post Water Quality was carried out from 02 August to 01 September 2006. Therefore, no water quality monitoring equipments calibration certificate was enclosed in this Monthly EM&A Report.

Appendix E

Impact Monitoring Schedules

Impact Monitoring Schedules in the Reporting Period

Date		Dust Monitoring		Noise Monitoring
		1-Hr TSP	24-Hr TSP	
26-May-07	Sat			
27-May-07	Sun			
28-May-07	Mon			
29-May-07	Tue			
30-May-07	Wed			
31-May-07	Thu			
1-Jun-07	Fri			
2-Jun-07	Sat			
3-Jun-07	Sun			
4-Jun-07	Mon			
5-Jun-07	Tue			
6-Jun-07	Wed			
7-Jun-07	Thu			
8-Jun-07	Fri			
9-Jun-07	Sat			
10-Jun-07	Sun			
11-Jun-07	Mon			
12-Jun-07	Tue			
13-Jun-07	Wed			
14-Jun-07	Thu			
15-Jun-07	Fri			
16-Jun-07	Sat			
17-Jun-07	Sun			
18-Jun-07	Mon			
19-Jun-07	Tue			
20-Jun-07	Wed			
21-Jun-07	Thu			
22-Jun-07	Fri			
23-Jun-07	Sat			
24-Jun-07	Sun			
25-Jun-07	Mon			

No Water Quality Monitoring was required in this reporting period, since all marine based construction activities were completed on 01 August 2006. Post Water Quality was carried out from 02 August to 01 September 2006, monitoring results were presented in the pervious Monthly EM&A Report (September 2006)

	Monitoring Day
	Sunday or Public Holiday

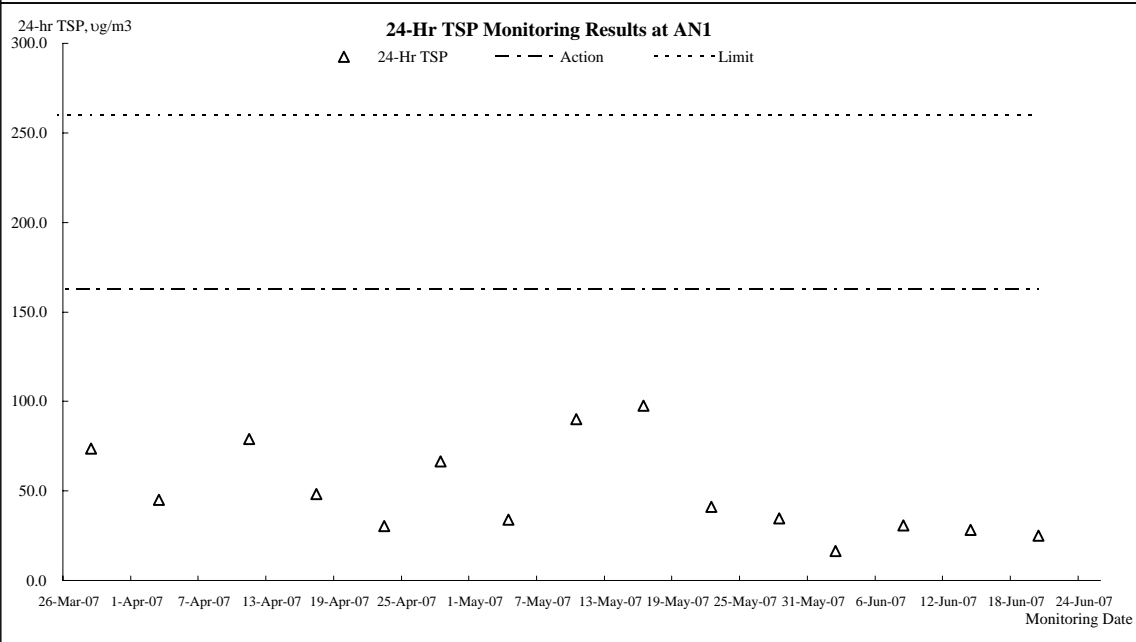
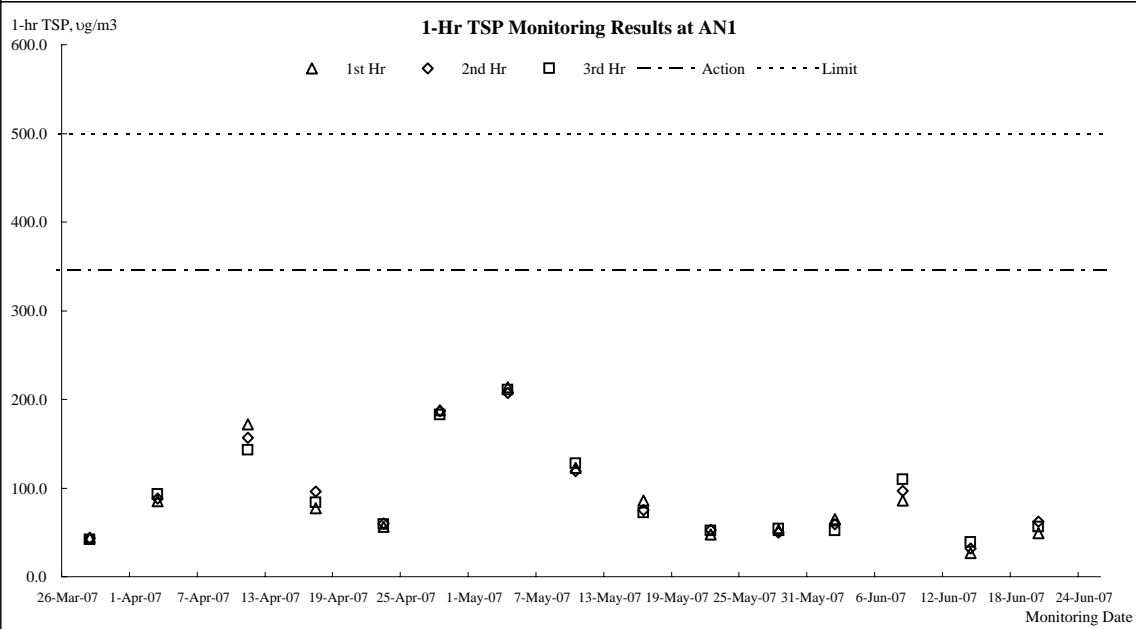
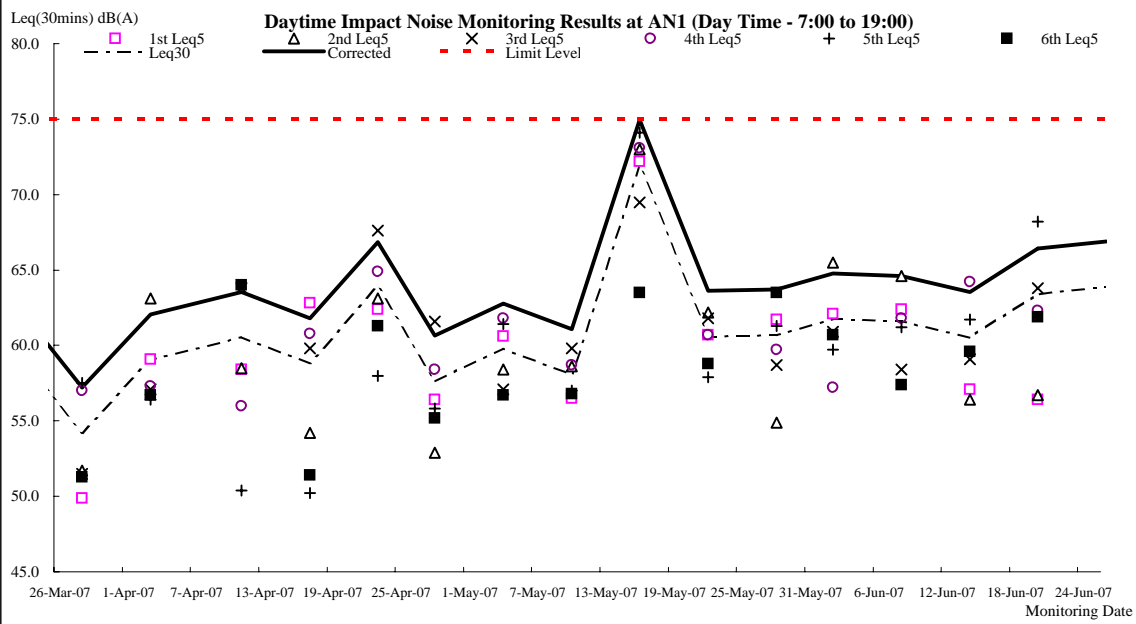
Impact Monitoring Schedules in the Next Reporting Period

Date		Dust Monitoring		Noise Monitoring
		1-Hr TSP	24-Hr TSP	
26-Jun-07	Tue			
27-Jun-07	Wed			
28-Jun-07	Thu			
29-Jun-07	Fri			
30-Jun-07	Sat			
1-July-07	Sun			
2-July-07	Mon			
3-July-07	Tue			
4-July-07	Wed			
5-July-07	Thu			
6-July-07	Fri			
7-July-07	Sat			
8-July-07	Sun			
9-July-07	Mon			
10-July-07	Tue			
11-July-07	Wed			
12-July-07	Thu			
13-July-07	Fri			
14-July-07	Sat			
15-July-07	Sun			
16-July-07	Mon			
17-July-07	Tue			
18-July-07	Wed			
19-July-07	Thu			
20-July-07	Fri			
21-July-07	Sat			
22-July-07	Sun			
23-July-07	Mon			
24-July-07	Tue			
25-July-07	Wed			

	Monitoring Day
	Sunday or Public Holiday

Appendix F

Graphical Plots of Air and Noise Monitoring Results



Appendix G

Meteorological Data in the Reporting Period

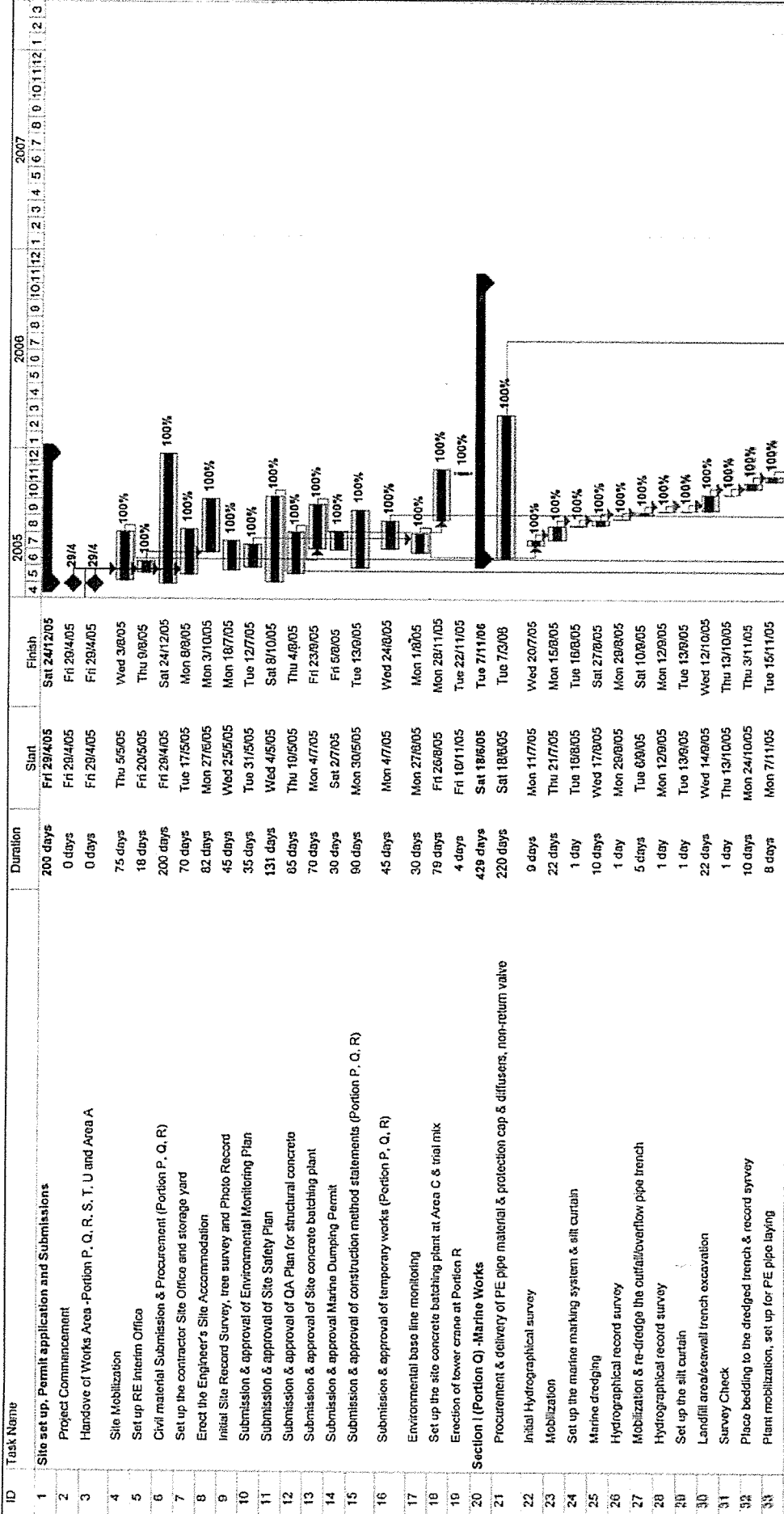
Meteorological Data Extracted from HKO in the Reporting Period

Date		Weather	Peng Chau Weather Station				
			Total Rainfall (mm)	Mean Air Temperature (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
26-May-07	Sat	fine/hot/moderate/isolated showers	0	29.1	11.5	83	S
27-May-07	Sun	fine/hot	53	27.3	14.5	89	E/SE
28-May-07	Mon	fine/hot/moderate/isolated showers	10.9	26.8	14.5	89.5	E/SE
29-May-07	Tue	fine/hot/moderate	0	28.5	7.5	89	S/SE
30-May-07	Wed	fine/showers/very hot/moderate	0	28.6	7.5	83.5	S/SE
31-May-07	Thu	isolated showers/sunny/intervals/moderate/hot	4.9	28	9	82	SE
1-Jun-07	Fri	fine/very hot/moderate/thunderstorm/isolated showers	4	29.5	10	86	S/SW
2-Jun-07	Sat	very hot/moderate/sunny periods/isolated showers/thunderstorm	9.2	28.6	9	84	S/SW
3-Jun-07	Sun	very hot/moderate/sunny periods/isolated showers/thunderstorm	0.1	30.3	8	84.5	S/SW
4-Jun-07	Mon	fine/hot/moderate/island showers/thunderstorms	0.1	29.9	9	84	S/SW
5-Jun-07	Tue	fine/sunny periods/hot/fresh/moderate/island showers/thunderstorm	Trace	30.2	9.5	81	S/SW
6-Jun-07	Wed	moderate/hot/fresh/scattered showers	1.3	29.8	9	82	SW
7-Jun-07	Thu	cloudy/scattered showers/squally thunderstorms/moderate/fresh	41.3	27.6	9.5	85.5	S/SW
8-Jun-07	Fri	cloudy/overcast/showers/moderate/fresh/squally thunderstorm	14.1	27.1	14.5	94	SW
9-Jun-07	Sat	cloudy/showers/moderate/a few showers/squally thunderstorm	5.4	28.8	12	90.5	S/SW
10-Jun-07	Sun	rain/moderate/fresh	95.5	25.6	10	87.5	SW
11-Jun-07	Mon	hot/moderate/fresh	Trace	28.1	6.5	88.5	S/SW
12-Jun-07	Tue	cloudy/rain/squally thunderstorms/moderate/fresh	6.8	27.4	8.5	90.5	NW
13-Jun-07	Wed	cloudy/rain/squally thunderstorms/moderate/fresh	35.3	27.6	10	93.5	S/SW
14-Jun-07	Thu	cloudy/fresh/strong/moderate/scattered showers/squally thunderstorms	29.6	25.3	17.5	94	S/SW
15-Jun-07	Fri	cloudy/light winds/sunny intervals/a few showers	13.1	26.1	23.5	93.5	NW
16-Jun-07	Sat	sunny/periods/a few showers/hot/light winds	Trace	27.9	5.5	89	S
17-Jun-07	Sun	fine/moderate/hot/isolated showers	0.5	26.9	6	92	E/SE
18-Jun-07	Mon	fine/moderate/hot/isolated showers	0	27.3	8	85.3	E/SE
19-Jun-07	Tue			Holiday			
20-Jun-07	Wed	fine/hot/moderate/isolated showers	0	29.2	7	80	S/SE
21-Jun-07	Thu	fine/light winds/thunderstorms/isolated showers	5.6	29.2	8.5	83	S/SE
22-Jun-07	Fri	fine/hot/isolated showers/light winds	0	29.5	8	82	S/SE
23-Jun-07	Sat	sunny/very hot/isolated showers/fine/moderate	0	30.1	7	81	S
24-Jun-07	Sun	sunny/very hot/moderate/thunderstorms	0	31.3	11.5	79.5	S/SW
25-Jun-07	Mon	sunny periods/a few showers/moderate/thunderstorms	3.2	28.6	8	82.5	S/SW

Appendix H

Three-Month Rolling Program

Drainage Services Department
Contract No. DC/2004/08
Upgrading of Peng Chau Sewage Treatment Works
3-Months Rolling Programme (Dec 2006 to Mar 2007)

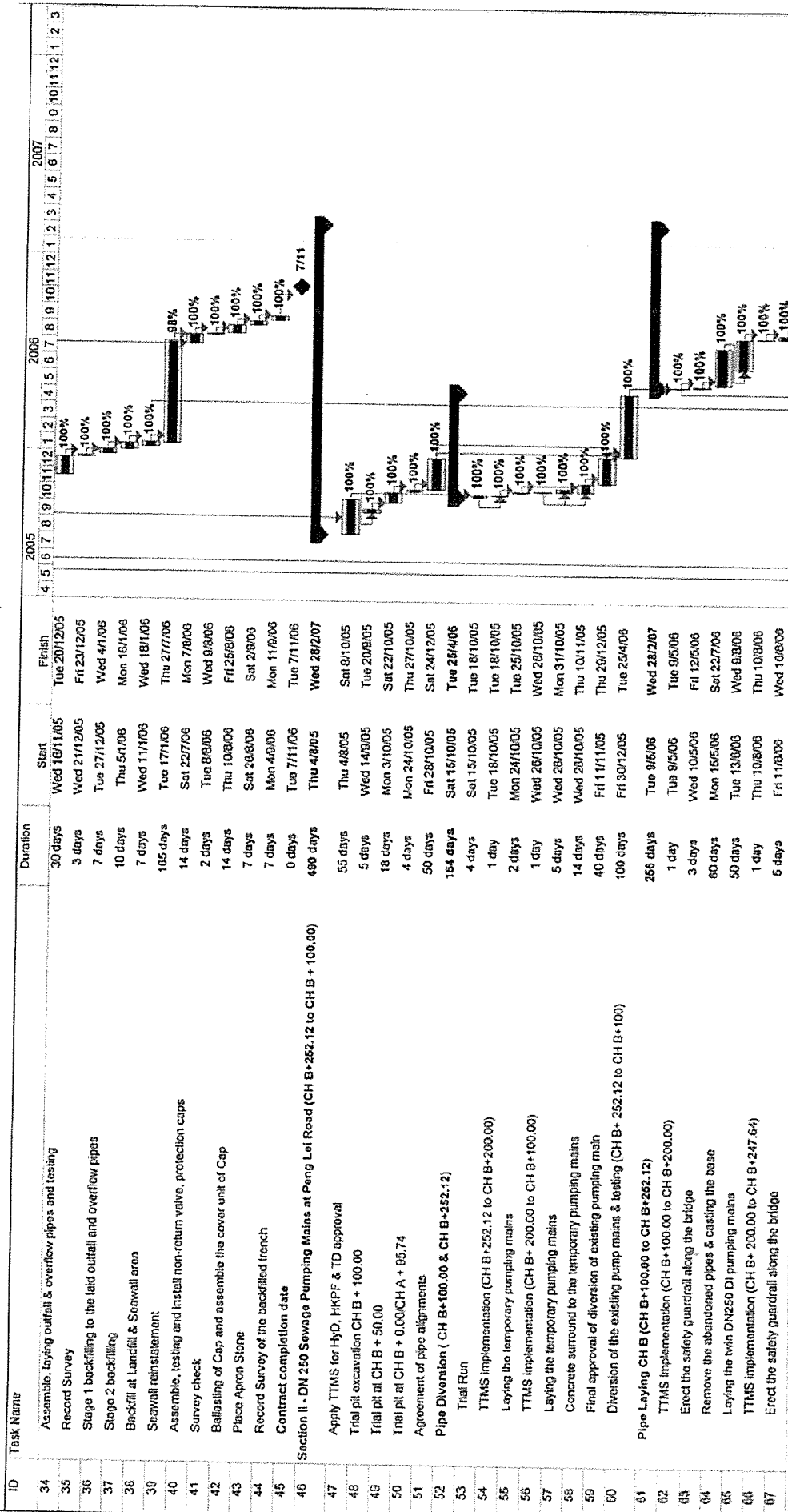


Project: Peng Chau-3months
 Date: Sat 27/1/07

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Page 1

Drainage Services Department
Contract No. DC/2004/08
Upgrading of Peng Chau Sewage Treatment Works
3-Months Rolling Programme (Dec 2006 to Mar 2007)



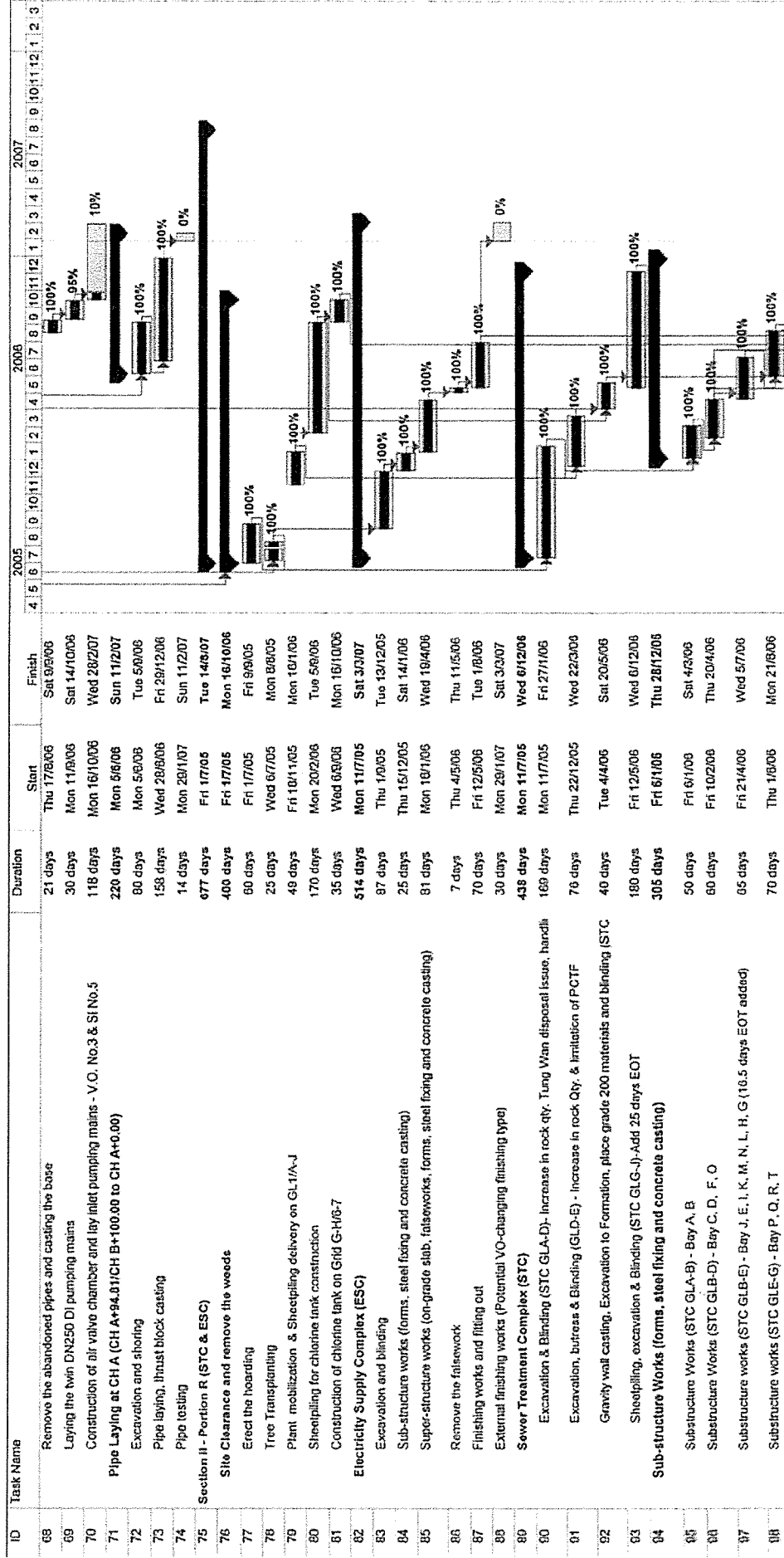
Project: Peng Chau-3months
 Date: Sat 27/1/07

Legend:

- Task
- Critical Task
- Progress
- Milestone
- Summary
- Rolled Up Task
- Rolled Up Critical Task
- Rolled Up Milestone
- Summary
- Rolled Up Progress
- Split
- External Tasks
- Project Summary

Group By Summary

Drainage Services Department
Contract No. DC/2004/08
Upgrading of Peng Chau Sewage Treatment Works
3-Months Rolling Programme (Dec 2006 to Mar 2007)



Project: Peng Chau-3months
 Date: Sat 27/1/07

ACCIONA-ATAL JV

Page 3

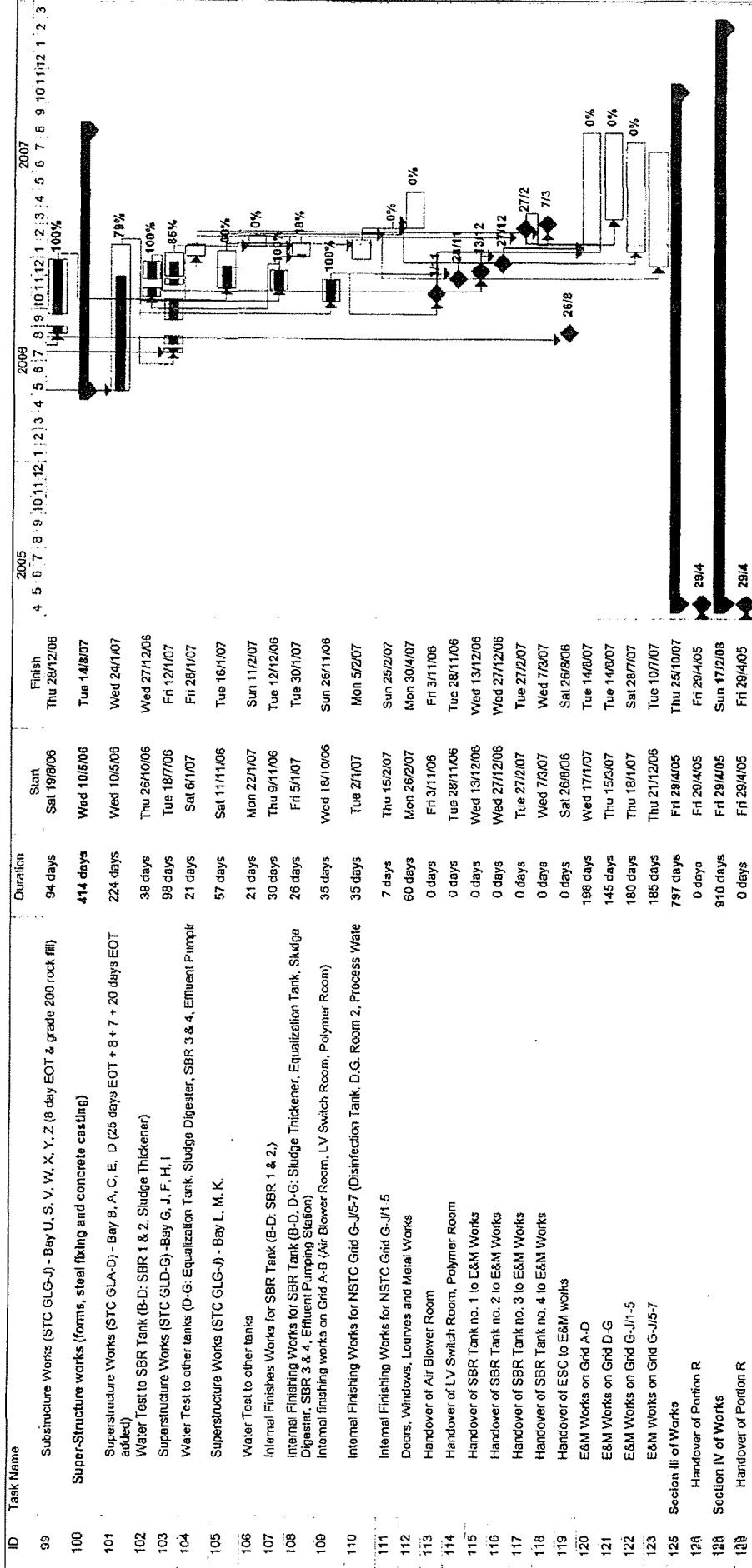
Legend:

- Task
- Critical Task
- Progress
- Milestone
- Summary
- Rollled Up Task
- Rollled Up Critical Task
- Rollled Up Milestone
- Rollled Up Progress
- Spill
- External Tasks
- Project Summary
- Group By Summary

Drainage Services Department

Contract No. DC/2004/08

**Upgrading of Peng Chau Sewage Treatment Works
3-Months Rolling Programme (Dec 2005 to Mar 2007)**



Task: Summary Rolled Up Progress Group By Summary

Task: Critical Task Rolled Up Task Split

Task: Progress Rolled Up Critical Task External Tasks

Task: Milestone Rolled Up Milestone Project Summary

Project: Peng Chau-3months
Date: Sat 27/1/07