東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

Kaden Construction Limited

CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS
QUARTERLY EM&A SUMMARY REPORT NO.7
(DECEMBER 2009 TO FEBRUARY 2010)

Prepared by: _____
LAW, Sau Yee
Senior Environmental Officer

Checked by: _____
LAU, Chi Leung
Environmental Team Leader

Issue Date: 15 March 2010 *Report No.: ENA00213*

Scott Wilson CDM Joint Venture

Chief Engineer/Harbour Area Treatment Scheme
Drainage Services Department
5/F Western Magistracy
2A Pok Fu Lam Road
Hong Kong

Attention: Mr. C K Au

Your reference:

Our reference: 05117/6/10/335132

Date: 17 March 2010

BY FAX ONLY

Dear Sir

Agreement No. CE20/2005 (DS)
Outlying Islands Sewerage Stage 1 Phase 1 Part 2 and Phase 2
Yung Shue Wan and Sok Kwu Wan Sewerage, Sewage Treatment and Disposal – Design and Construction
Quarterly EM&A Summary Report No. 7 (December 2009 to February 2010)

I refer to the Environmental Permit (EP-281/2007) and the email from the environmental team, ETS-Testconsult Limited with the revised report, dated 17 March 2010. I do not have further comment and have verified the captioned report.

Yours faithfully
SCOTT WILSON CDM JOINT VENTURE

Rodney Ip

ICWR/LKFE

cc Kaden Construction Ltd (Attn: Mr Stephen Leung)
ETS-Testconsult (Attn: Ms Linda Law)
ER/LAMMA (Attn: Mr Ian Jones)
CDM (Attn: Mr Mark Sin)

TABLE OF CONTENTS

APPENDIX

Figures

Tables

EXECUTIVE SUMMARY

This is the seventh Quarterly Environmental Monitoring and Audit (EM&A) Summary Report prepared by ETS-Testconsult Ltd (ET) for the"Contract No. DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" (the Project) under the requirements and specifications of "the Environmental Permit (Application No. AEP-281/2007)" (the EP) and "the Final EM&A Manual – Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" (the EM&A Manual).

This report documents the findings of EM&A Works conducted during the construction phase of the Project from December 2009 to February 2010.

Construction Progress

The major construction works in this quarter were as below:

December 2009	• *Sewer drainage pipe & manhole construction (include open cut & trenchless method); and* • *Road reinstatement work.*
January 2010	• *Sewer laying & manhole construction.*
February 2010	• *Sewer construction.*

Environmental Monitoring Progress

The summary of the monitoring activities in this quarter is listed below:

- *Noise Monitoring (Day-time): 12 Occasions at 4 designated locations;*
- *24-hour TSP Monitoring: 15 Occasions at 3 designated locations;*
- *1-hour TSP Monitoring: 45 Occasions at 3 designated locations.*

Impact Air Quality Monitoring

No exceedances of Action and Limit levels were recorded for 24-hr and 1-hr TSP monitoring in the quarter.

Impact Noise Monitoring

No exceedance of Action and Limit Level were recorded in this quarter.

Environmental Complaints, Notifications of Summons and Successful Prosecutions

No environmental complaints, notifications of summons and successful prosecutions were received in this quarter.

Internet Website

This Quarterly EM&A Summary Report can be accessed on the web at http://www.skwsewer.com..

1.0 INTRODUCTION

The Customer, Kaden Construction Limited (Kaden), appointed Environmental Team of ETS-Testconsult Limited to undertake the environmental impact monitoring for "Contract No. DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works" (the Project) under the requirements and specifications of "the Environmental Permit (Application No. AEP-281/2007)" (the EP) and "the Final EM&A Manual – Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" (the EM&A Manual).

This Quarterly EM&A Summary Report documented the findings of EM&A Works conducted during the construction phase of the Project in December 2009, January and February 2010.

2.0 PROJECT INFORMATION

2.1 Background

Under this Project, Kaden is required to construct village sewerage in Yung Shue Wan and Sok Kwu Wan, Lamma Island.

Village sewage works will undertake in this Project. These will comprise laying approximately 1.4km of sewerage pipes from 220mm to 350mm diameter in Sok Kwu Wan Village.

As the main Contractor of the captioned project contracted by, Kaden will follow the environmental monitoring recommendation stated in the EM&A Manual that was prepared with reference to the EIA Report (Register No.: AEIAR-075/2003).

According to the EP and the EM&A Manual, the environmental programme is mainly focused on the construction activities of this Project in Sok Kwu Wan. At the same time, all air quality and noise monitoring stations proposed in the EM&A Manual are located in Sok Kwu Wan. The baseline report is prepared in accordance with EP (No. EP-281/2007) for the Designated Project "Outlying Islands Sewerage Stage 1 Phase 2 – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities" and the EM&A Manual.

2.2 Site Description

The general layout plan of the project in Sok Kwu Wan is shown in Drawing No. 2005/C1/2004, 2005/C1/2005 and 2005/C1/2006.

Surrounding the construction site, there are air and noise sensitive receivers at Chung Mei Village, Sok Kwu Wan and Ta Shui Wan.

2.3 Construction Programme

The construction programme is shown in Appendix F.

2.4 Project Organization and Management Structure

The organization chart with respect to the on-site environmental management and monitoring program are shown in Appendix A.

2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	*Project Role*	*Key Staff*	*Tel. No.*	*Fax No.*
Scott Wilson CDM JV	*Engineer Representative*	*Ir Ian J Jones*	*2982 0240*	*2982 4129*
Scott Wilson CDM JV	*Independent Environmental Checker*	*Mr. Rodney Ip*	*2410 3750*	*2428 9922*
Kaden Construction Ltd	*Contractor*	*Ir Stephen Leung*	*2454 9102*	*2465 1207*
ETS-Testconsult Ltd	*Environmental Team*	*Mr. C L Lau*	*2946 7791*	*2695 3944*

3.0 SUMMARY OF EM&A REQUIREMENTS

3.1 EM&A Programme

In accordance with Section 5 of the EP, EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of air quality and noise are required for the Project. The EM&A requirement for each parameter are described in details in subsequent sections, including:

- *All monitoring parameters;*
- *Action and Limit levels for all environmental parameters;*
- *Event-Action Plans;*
- *Environmental mitigation measures, as recommended in the project EIA study report;*
- *Environmental requirements in contract documents.*

The implementation status of environmental mitigation measures is summarized in Section 5.2 of the Report.

3.2 Monitoring Stations and Parameters

The EM&A Manual designates several locations to monitor environmental impacts in terms of air quality and noise due to the Project. The description and detailed locations of monitoring stations for air quality and noise are shown in Figures 2005/C1/2004, 2005/C1/2005 and 2005/C1/2006 and relevant sections of this Report.

3.3 Monitoring Methodology and Calibration Details

All monitoring works were conducted and monitoring equipment was calibrated in accordance with the EM&A Manual.

3.4 Environmental Quality Performance Limits (Action/Limit Levels)

The environmental quality performance limits, i.e. Action/Limit Levels (AL Levels) were derived from the baseline monitoring results. If the measured environmental quality parameters exceed the AL Levels, the respective action plan will be implemented. The AL Levels for each monitoring parameter are given in Appendix D. The event action plan is given in Appendix E.

3.5 Environmental Mitigation Measures

Relevant mitigation measures were recommended in the EM&A Manual for the Contractor to implement. A list of mitigation measures is given in Appendix G.

4.0 MONITORING RESULTS

4.1 Air Quality

In accordance with the EM&A Manual, 1-hr and 24-hr TSP air quality monitoring are to be conducted three times and one time per six days correspondingly. In the reporting quarter, all the 1-hr and 24-hr TSP monitoring results complied with the AL Levels. The monitoring trends of air quality during the reporting quarter are given in Appendix B2.

Major dust sources in the Project were excavation works and vehicle used for moving sand, aggregates and construction waste.

Table 4.1 presents the number of exceedances recorded in each month of the reporting quarter.

Table 4.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Monitoring

Monitoring Parameter	*Level of Exceedance*	*December 2009*	*January 2010*	*February 2010*
24-hr TSP	*No of monitoring events*	*5*	*5*	*5*
	Action Level	*0*	*0*	*0*
	Limit Level	*0*	*0*	*0*
	Total	*0*	*0*	*0*
1-hr TSP	*No of monitoring events*	*15*	*15*	*15*
	Action Level	*0*	*0*	*0*
	Limit Level	*0*	*0*	*0*
	Total	*0*	*0*	*0*

4.2 Noise

Noise monitoring is required to be conducted at least once per week. Only daytime noise was monitored in the reporting quarter. All recorded noise levels complied with the AL Levels. The registered noise levels in the past three months are plotted in Appendix C2.

Table 4.2 presents the number of exceedances recorded in each month of the reporting quarter.

Table 4.2 Summary of Impact Monitoring results of Noise Daytime Monitoring

Level of Exceedance	*December 2009*	*January 2010*	*February 2010*
No of monitoring events	*4*	*4*	*4*
Action Level	*0*	*0*	*0*
Limit Level	*0*	*0*	*0*
Total	*0*	*0*	*0*

The major noise sources in the reporting quarter were excavation works and vehicle used for moving sand, aggregates and construction waste near the site egress.

In this quarter, no exceedances of Action Level were recorded in this quarter. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring.

5.0 INSPECTION RESULTS

5.1 Summary of site inspection findings and Action(s) taken by Kaden and ET in this quarter

ET conducted weekly site inspections to monitor the Contractor's implementation of environmental mitigation measures. After each site inspection, the Contractor was notified of ET's observations and recommendations and then the Contractor will arrange related remedial works.

Summary of the site inspection findings in this quarter is shown in Table 5.1.

Table 5.1 Summary of Site Inspection Findings and Action(s) taken by Kaden and ET

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
December 2009				
1	Water	Follow up action to the outstanding finding in the previous month, the condition of sedimentation tank at S147 was still unchanged during the weekly site inspections on 10/12/09 and 16/10/09. However, the sedimentation was found removed during the weekly site inspection on 22/12/09.	Since the finding was completed, no further action is required to be taken by the Contractor.	Since the finding was completed during the weekly site inspection on 22/12/09, no further verification is required to be taken by ET.
2	Water	Stagnant water was inside a not-in-use sedimentation tank at S64 during the weekly site inspections on 10/12/09 and 16/12/09.	The Contractor replied to cover the sedimentation tank properly to avoid accumulation of rain water.	During the next weekly site inspection on 22/12/09, the sedimentation tank was covered properly.
3	Water	Stagnant water was noted inside a open manhole at S6 during the weekly site inspection on 16/12/09.	The Contractor replied to pump the accumulated water out to avoid mosquito breeding.	During the subsequent weekly site inspection on 22/12/09, no stagnant water was noted inside manhole S6.
4	Water	The set-up of a sedimentation tank at S64 was found unsuitable for treatment of site runoff during the weekly site inspection on 29/12/09.	The Contractor replied to resign the set-up of the sedimentation tank to enhance the efficiency of wastewater treatment.	Since the finding was observed in the last weekly site inspection, it will be verified in the coming month.
5	Chemical	Follow up action to the outstanding finding in the previous month, oil stain noted on the ground and under generator at S73-75 was cleaned up during the weekly site inspection on 10/12/09.	Since the finding was improved, no further action is required to be taken by the Contractor.	Since the finding was improved during the weekly site inspection on 10/12/09, no further verification is required to be taken by ET.
6	Chemical	A chemical tank at S64 was found without drip tray and label during weekly site inspection on 16/12/09.	The Contractor replied that the chemical tank contained no chemical and they will cover it properly.	During the subsequent weekly site inspection on 22/12/09, the chemical tank was covered properly.
7	Site Practice	Follow up action to the outstanding finding in the previous month, C&D wastes such as cement bags were still observed discarded at S64 without cover during the weekly site inspections on 10/12/09 and 16/12/09.	The Contractor replied to store the C&D wastes properly such as providing covers.	During the subsequent weekly site inspection on 22/12/09, C&D wastes were covered by tarpaulin sheets properly.
8	Site Practice	Follow up action to the outstanding finding in the previous month, site area S73-75 was still found untidy such as accumulation of C&D waste during the weekly site inspections in this reporting month.	The Contractor replied to arrange more manpower to keep the site area tidy.	Since the finding was still observed in the last weekly site inspection, it will be verified in the coming month.

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
December 2009				
9	Site Practice	C&D wastes at storage area were found without cover during the weekly site inspection on 16/12/09.	The Contractor replied to store the C&D wastes properly such as providing covers.	During the subsequent weekly site inspection on 22/12/09, C&D wastes were covered by tarpaulin sheets properly.
January 2010				
1	Air	Stockpiles of fill materials at S160 were found without cover during the weekly site inspection on 14/01/10.	The Contractor replied that the stockpiles were not	During the subsequent weekly site inspection on 20/01/10, the stockpiles at S160 have been confirmed to be owned by another user and hence no further action was required to be taken by the Contractor.
2	Air	A village vehicle was found transporting dusty materials without cover during the monthly site inspection on 20/01/10.	The Contractor replied to cover all construction materials in the village vehicle during transportation.	During the next weekly site inspection on 26/01/10, no dust was observed during transporting of construction materials by village vehicle.
3	Water	Follow up action to the outstanding finding in the previous month, the set-up of sedimentation tank at S64 was found improved by adding two separating plate to enhance the desilting efficiency during weekly site inspection on 04/01/10. However, the performance of the revised set-up of sedimentation tank was still found not enough to treat the site runoff properly during the monthly site inspection on 20/01/10.	The Contractor replied to resign the set-up of the sedimentation tank to enhance the efficiency of wastewater treatment.	Since the finding was still observed in the last weekly site inspection on 26/01/10, it will be verified in the coming month.
4	Water	The set-up of a sedimentation tank at S73 was found unsuitable for treatment of site runoff during the monthly site inspection on 20/01/10.	The Contractor replied to resign the set-up of the sedimentation tank to enhance the efficiency of wastewater treatment.	During the subsequent weekly site inspection on 26/01/10, the sedimentation tanks at S73 was found not-in-use and covered properly.
5	Site Practice	Follow up action to the outstanding finding in the previous month, site area S73-75 was still found tidy and stockpiles of C&D materials were covered properly during the weekly site inspection on 04/01/10.	Since the finding was completed, no further action is required to be taken by the Contractor.	Since the finding was completed during the weekly site inspection on 04/01/10, no further verification is required to be taken by ET.

Item	Aspect	Finding	Action(s) to be taken by the Contractor	ET Verification
February 2010				
1	Water	Follow up action to the outstanding finding in the previous month, the set-up of sedimentation tank at S64 was found improved but the tank was found dirty and full of settled materials during weekly site inspection on 23/02/10.	The Contractor replied to clean the sedimentation tank and maintain it properly to enhance the efficiency of wastewater treatment.	Since the finding was still observed in the last weekly site inspection on 23/02/10, it will be verified in the coming month.
2	Water	Sedimentation tank at S165 was found inadequate and hence the effluent was found dirty and smelly during the weekly site inspection on 23/02/10.	The Contactor replied to provide a membrane filter to pre-treat the sit runoff in order to increase its efficiency.	Since ET noted that the quality of effluent was found improved after the Contractor provided a membrane filter to pre-treat the site runoff at the same inspection day (23/02/10), no further action was required to be taken by the Contractor.
3	Chemical	A chemical tank at S70 was found without drip tray during the weekly site inspection on 23/02/10.	The Contractor replied to provide drip tray for all chemical containers.	Since the finding was observed in the last weekly site inspection on 23/02/10, it will be verified in the coming month.

5.2 Implementation Status of Environmental Mitigation Measures

According to the summary of the weekly site inspections carried out in this quarter, it indicated that site practices of the Kaden were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory.

Excavation works and vehicle used for moving sand, aggregates and construction waste were the major dust sources in the Project. Generally, the Contractor implemented adequate dust mitigation measures in this quarter, such as dampening of unpaved areas and fill material prior to handling or delivery and well maintenance of plant and equipment to avoid black smoke emission.

Vehicle traffic and construction activities near the site egress were the major noise sources. The powered mechanical equipment were generally operated and maintained properly.

5.3 Status of Environmental Licensing and Permitting

The status of licences and permits is summarized in Table 5.2.

Table 5.2 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Environmental Permit	EP-281/2007	29/06/07	End of Project	Valid
Water Discharge Licence	EP890/W2/XD 026	23/05/08	31/03/12	Valid Discharge of Industrial Trade Effluent arising from Construction Site to communal storm water drain
Notification under APCO	Application had been submitted to EPD on 15 April 2008			

5.4 Advice on Solids and Liquid Waste Management Status

The Contractor usually disposed of non-inert wastes such as general refuses and materials segregated to Sok Kwu Wan Re-fill Transfer Station (SKWRTS).

Table 5.3 summarizes data on offsite waste disposal in this quarter.

Table 5.3 Offsite Waste Disposal in this Quarter

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (in '000m^3)	0.0671		1.3285
	Broken Concrete (in '000m^3)	0.0087	SKWRTS	0.0808
	Reused in the Contract (in '000m^3)	0.0053	For Stockpile / Reuse	0.5271
	Reused in other Projects (in '000m^3)	0	N/A	0.208
	Disposal as Public Fill (in '000m^3)	0.0619	SKWRTS	0.5224
C&D Waste	Metals (in '000kg)	0	N/A	0
	Paper/Cardboard Packaging (in '000kg)	0	N/A	0
	Plastics (in '000kg)	0	N/A	0
	Chemical Waste (in '000kg)	0	N/A	0
	Other, e.g. General Refuse (tonne)	2.18	SKWRTS	11.08

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system and desilting facilities. Moreover, the Contractor should apply approved pesticides in the stagnant water ponds.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste. All the trip tickets for chemical waste disposal were properly kept in the site office. No chemical waste disposal was undertaken in this quarter.

All the runoff should be pumped to the desilting facilities to remove suspended solids prior to discharge.

6.0 ECOLOGY

A comprehensive tree survey was carried out by Kaden in mid 2008. The two uncommon tree species (Celtis timorensis and Celtis biondii) could not be identified on site as per the Figure 4 of the EP.

A joint visit amongst EPD. AFCD, Kaden, DSD and RE was subsequently held on 24 March 2009 and some immature Celtic timorensis plants were identified at certain locations at Chung Mei. It was agreed that a full vegetation survey (in addition to the previous tree survey) should be conducted to identify the immature uncommon species.

Kaden then employed a landscape subcontractor "Bluet" and carried out a vegetation survey on 17 April 2009. Some immature uncommon trees species of Celtis timorensis were identified at twelve locations near the Works Area.

Subsequently, the Environmental Permit of this Project was amended as EP-281/2007/A and issued on 23 September 2009. Condition 1.7 and 3.7 in Part C and Figure 4 of the amended EP have been changed. Refer to the change, the amended EP present that the uncommon tree species, Celtis Timorensis, as shown in Figure 4 of the amended EP shall be labelled, fenced and protected in order to avoid any disturbance during the construction of the Project. The letter of Variation Environmental Permit (VEP-299/2009) is shown in Appendix J.

In the previous weekly site inspections in September and October 2009, some uncommon plants were suspected to be missing. This was reported in the last Monthly Report. Letters were also received from AFCD and EPD (see Appendix K and L) regarding this issue and the mis-identification of some uncommon plants. Another vegetation survey was subsequently carried out by the landscaping subcontractor "Bluet" on 18 November 2009 for verification (see attached updated survey report in Appendix G). It was reported that all uncommon plants (CT 1 to 12) are still existing and all the mislabeling has been rectified.

All uncommon plants have been labelled and fenced off with safety net and notices have been posted for warning the site personnel of the presence of the uncommon tree species in this quarter. Photos attached in Appendix I present the fencing and protection provided for those uncommon species in this quarter.

7.0 ARCHAEOLOGY AND CULTURAL HERITAGE

Refer to the Section 9 of EM&A Manual, watching brief works were conducted in Chung Mei, Sok Kwu Wan by Archaeological Assessments Limited on 01 September 2008 and 12 June 2009.

The watching brief works took place along approximately 50m long alignment in two segments, MHS52 to MHS54 on 1st September 2008 and MHS50 to MHS52 on 12th June 2009. In overview, the steep lower hill slope area traversed by the MHS50 and MHS54 has seen little or no human activity prior to the 20th century and in contrast to the valley to the west, can be considered to have no archaeological potential. Details of the watching brief works present in Appendix H.

8.0 NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

8.1 Summary of Non-compliance

No exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting period.

No exceedance of Action Level of noise monitoring was recorded in this quarter since no complaint on noise issue was received. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring..

No evening-time, night-time and holiday noise monitoring were required since no construction works were processed during these periods.

8.2 Review of the Reasons for and the Implications of Non-compliance

Since there were no exceedances on air quality and noise monitoring parameters recorded in this monitoring quarter, the review of the reasons for the non-compliance was not required.

8.3 Summary of Actions Taken

Since no exceedances were recorded, no further actions were required.

8.4 Summary of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No environmental complaints, notifications of summons and successful prosecutions were received in this quarter.

A summary of environmental complaints and prosecutions was given in Table 8.1.

Table 8.1 Summary of Environmental Complaints and Prosecutions

Period	*Complaints logged*	*Summon served*	*Successful Prosecution*
December 2009	*0*	*0*	*0*
January 2010	*0*	*0*	*0*
February 2010	*0*	*0*	*0*
Cumulative	*1*	*0*	*0*

9.0 COMMENTS, CONCLUSIONS AND RECOMMENDATION

In this quarter, major site activities were excavation and pipe-laying works. Noise and air quality were the major environmental issues in the Project. Generally, the Contractor implemented most of the mitigation measures to minimize the dust impact.

No exceedances of Action and Limit Level of air quality and noise monitoring were recorded in this quarter.

No environmental complaints, notification of summons and prosecutions with respect to environmental issues were received in this quarter.

According to the ET weekly site inspections carried out in this quarter, it was indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was up to standard. The Contractor generally implemented sufficient dust mitigation measures.

According to the environmental site inspections performed in this quarter, the following recommendations were provided:

Air Quality
- Ensure the frequency of water spraying on unpaved/unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Undertake water spraying on stockpiling area;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit; and
- Implement the dust mitigation measures for the construction activities.

Noise
- Conduct noisy activities at a farther location from the NSRs.

Water Quality
- Provide proper treatment for the wastewater discharged; and
- Remove the stagnant water or provide pesticide for the stagnant water in the permanent desilting chambers, if any.

Chemical and Waste Management
- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain good housekeeping; and
- Avoid oil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

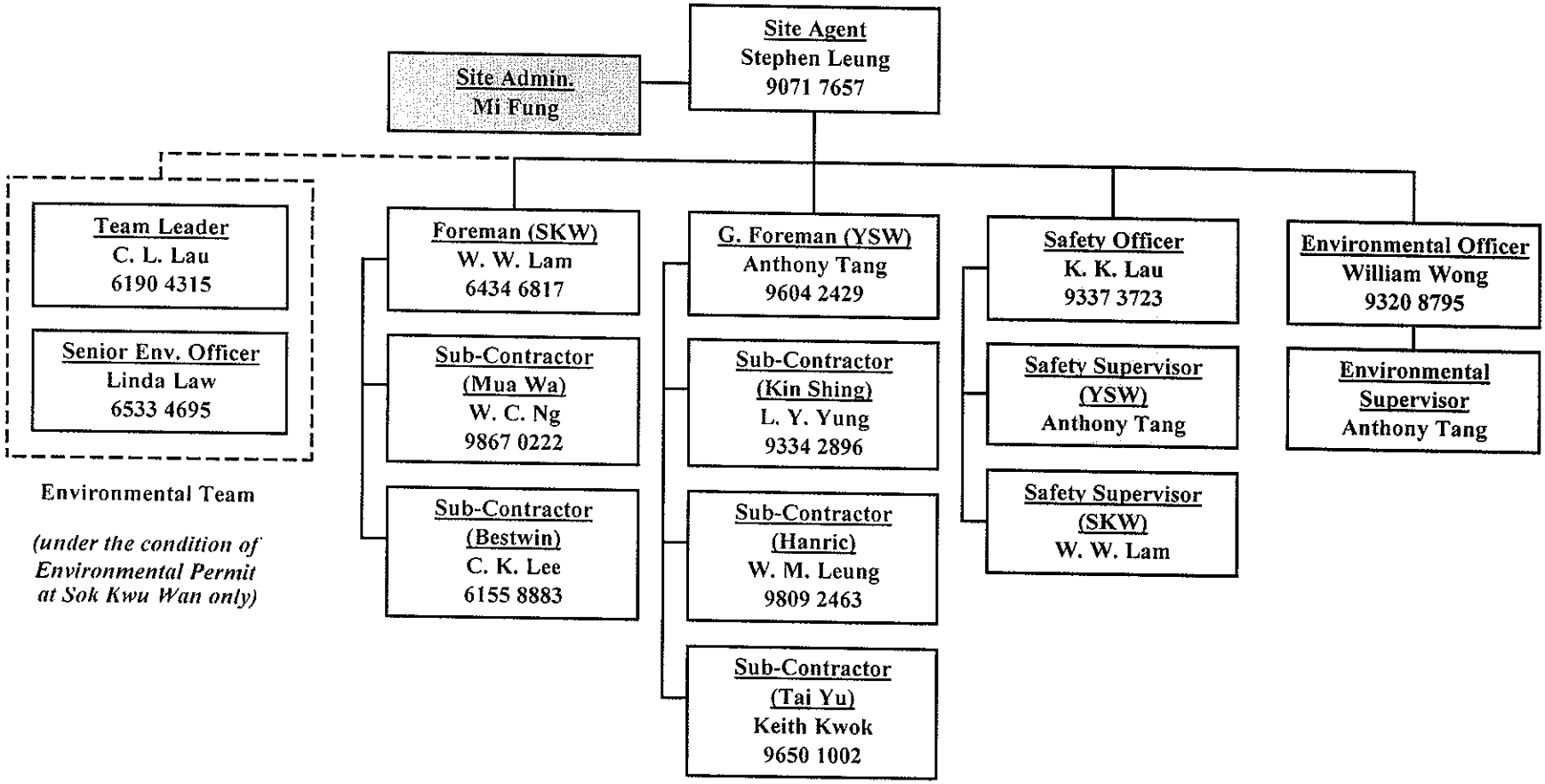
Appendix A

Organization Chart and Lines of Communication

Kaden Construction Limited

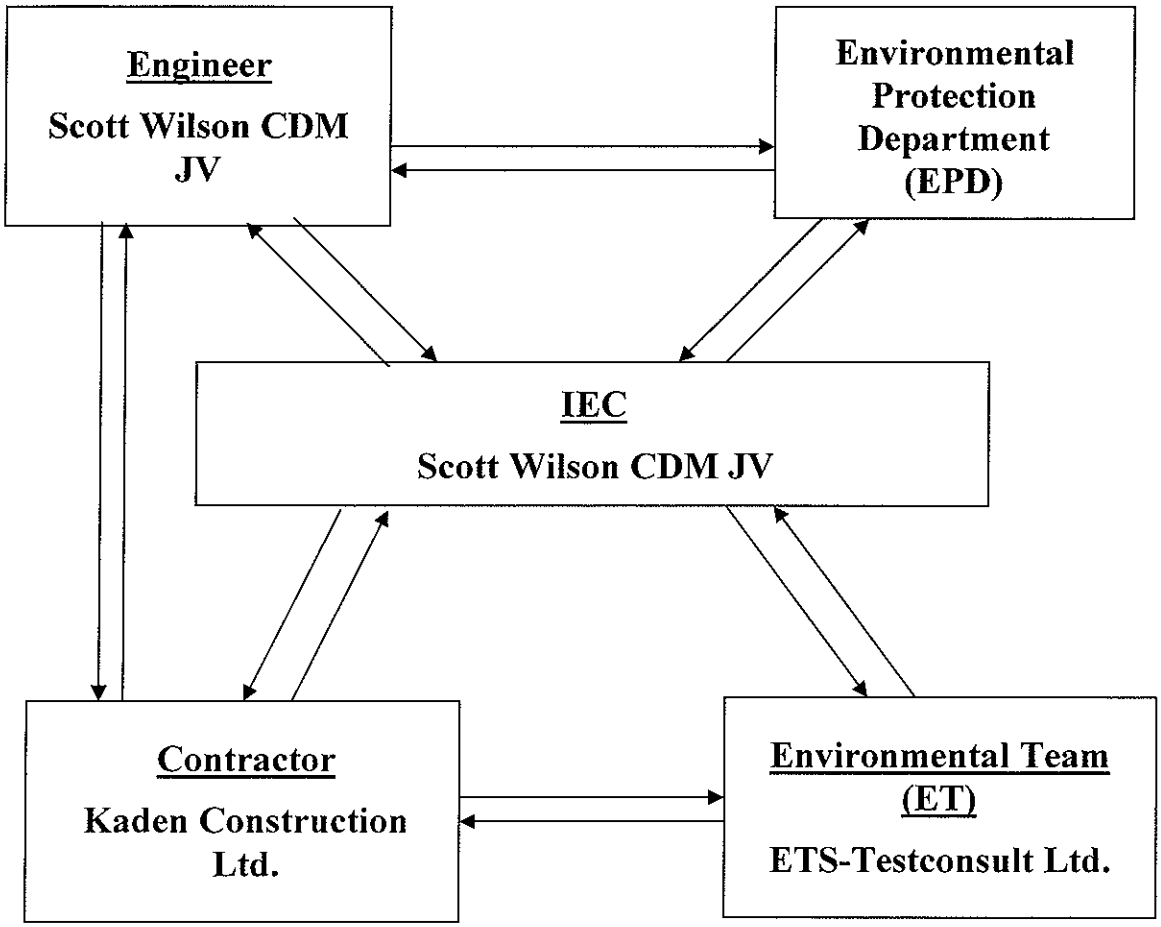
DSD Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works

Organization Structure for Environmental Management (EMP Rev. 23.00)



Updated on 07/12/2009
Printed on 06/02/2010

Lines of Communication



Appendix B1

Impact Air Quality Monitoring Results in this Quarter

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
04/12/09	13:00	05/12/09	13:00	15023.35	15047.35	24.00	1.0939	1.0939	1.0939	2.8246	2.9703	92	Fine
10/12/09	11:50	11/12/09	11:50	15047.35	15071.35	24.00	1.0674	1.0674	1.0674	2.8306	2.9229	60	Sunny
16/12/09	14:10	17/12/09	14:10	15071.35	15095.35	24.00	1.0990	1.0990	1.0990	2.8176	2.8915	47	Cloudy
22/12/09	13:50	23/12/09	13:50	15095.35	15119.35	24.00	1.0990	1.0990	1.0990	2.8576	2.9835	80	Fine
28/12/09	13:00	29/12/09	13:00	15119.35	15143.35	24.00	1.1253	1.1253	1.1253	2.8208	2.9273	66	Cloudy
04/01/10	11:34	05/01/10	11:34	15143.35	15167.35	24.00	1.0728	1.0728	1.0728	2.8464	2.9848	90	Fine
08/01/10	10:20	09/01/10	10:20	15167.35	15191.35	24.00	1.1515	1.1515	1.1515	2.8543	2.9444	54	Cloudy
14/01/10	13:00	15/01/10	13:00	15191.35	15215.35	24.00	1.1515	1.1515	1.1515	2.8336	3.0079	105	Fine
20/01/10	13:00	21/01/10	13:00	15215.35	15239.35	24.00	1.1253	1.1253	1.1253	2.8152	2.9072	57	Cloudy
26/01/10	12:34	27/01/10	12;34	15239.35	15363.35	24.00	1.1253	1.1253	1.1253	2.7856	2.9663	112	Cloudy
01/02/10	16:00	02/02/10	16:00	15263.35	15287.35	24.00	1.0990	1.0990	1.0990	2.8467	2.9446	62	Sunny
05/02/10	13:00	06/02/10	13:00	15287.35	15311.35	24.00	1.1515	1.1515	1.1515	2.8104	2.9124	62	Cloudy
11/02/10	13:00	12/02/10	13:00	15311.35	15335.35	24.00	1.1515	1.1515	1.1515	2.8142	2.9191	63	Cloudy
17/02/10	13:00	18/02/10	13:00	15335.35	15359.35	24.00	1.1824	1.1824	1.1824	2.8616	2.9305	40	Cloudy
23/02/10	13:00	24/02/10	13:00	15359.35	15383.35	24.00	1.0195	1.0195	1.0195	2.8307	2.8929	42	Fine

Monitoring Station : AM2

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
04/12/09	13:00	05/12/09	13:00	19059.30	19083.30	24.00	1.1080	1.1080	1.1080	2.8023	2.9746	108	Fine
10/12/09	11:45	11/12/09	11:45	19083.30	19107.30	24.00	1.1080	1.1080	1.1080	2.8563	2.9609	66	Sunny
16/12/09	14:05	17/12/09	14:05	19107.30	19131.30	24.00	1.0806	1.0806	1.0806	2.8333	2.9152	53	Cloudy
22/12/09	13:56	23/12/09	13:56	19131.30	19155.30	24.00	1.1130	1.1130	1.1130	2.8264	2.9628	85	Fine
28/12/09	13:00	29/12/09	13:00	19155.30	19179.30	24.00	1.0806	1.0806	1.0806	2.8147	2.9361	78	Cloudy
04/01/10	11:26	05/01/10	11:26	19179.30	19203.30	24.00	1.1130	1.1130	1.1130	2.8485	2.9970	93	Fine
08/01/10	10:15	09/01/10	10:15	19203.30	19227.30	24.00	1.1130	1.1130	1.1130	2.8592	2.9628	65	Cloudy
14/01/10	13:00	15/01/10	13:00	19227.30	19251.30	24.00	1.1453	1.1453	1.1453	2.8132	3.0015	114	Fine
20/01/10	13:00	21/01/10	13:00	19251.30	19275.30	24.00	1.0806	1.0806	1.0806	2.8350	2.9381	66	Cloudy
26/01/10	13:00	27/01/10	13:00	19275.30	19299.30	24.00	1.1130	1.1130	1.1130	2.8343	3.0432	130	Cloudy
01/02/10	16:08	02/02/10	16:08	19299.30	19323.30	24.00	1.0806	1.0806	1.0806	2.8460	2.9394	60	Sunny
05/02/10	13:00	06/02/10	13:00	19323.30	19347.30	24.00	1.1130	1.1130	1.1130	2.8204	2.9017	51	Cloudy
11/02/10	13:00	12/02/10	13:00	19347.30	19371.30	24.00	1.1130	1.1130	1.1130	2.8076	2.9048	61	Cloudy
17/02/10	13:00	18/02/10	13:00	19371.30	19395.30	24.0	1.1638	1.1638	1.1638	2.8644	2.9346	42	Cloudy
23/02/10	13:00	24/02/10	13:00	19395.30	19419.30	24.00	1.1638	1.1638	1.1638	2.8007	2.8989	59	Fine

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM3

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
04/12/09	13:00	05/12/09	13:00	3119.53	3143.53	24.00	1.2382	1.2382	1.2382	2.8268	3.0278	113	Fine
10/12/09	09:11	11/12/09	09:11	3143.53	3167.53	24.00	1.2055	1.2055	1.2055	2.8484	2.9785	75	Sunny
16/12/09	15:19	17/12/09	15:19	3167.53	3191.53	24.00	1.2703	1.2703	1.2703	2.8338	2.9420	59	Cloudy
22/12/09	09:30	23/12/09	09:30	3191.53	6215.53	24.00	1.2068	1.2068	1.2068	2.8256	2.9835	91	Fine
28/12/09	13:00	29/12/09	13:00	3215.53	3239.53	24.00	1.1750	1.1750	1.1750	2.8506	2.9585	64	Cloudy
04/01/10	09:37	05/01/10	09:37	3239.53	3263.53	24.00	1.1114	1.1114	1.1114	2.8416	3.0019	100	Fine
08/01/10	10:33	09/01/10	10:33	3263.53	3287.53	24.00	1.1432	1.1432	1.1432	2.8549	2.9598	64	Cloudy
14/01/10	08:40	15/01/10	08:40	3287.53	3311.53	24.00	1.1750	1.1750	1.1750	2.7850	2.9738	112	Fine
20/01/10	13:00	21/01/10	13:00	3311.53	3335.53	24.00	1.1114	1.1114	1.1114	2.8512	3.0129	101	Cloudy
26/01/10	12:50	27/01/10	12:50	3335.53	3359.53.	24.00	1.1750	1.1750	1.1750	2.8276	3.0195	113	Cloudy
01/02/10	13:00	02/02/10	13:00	3359.53	3383.53	24.00	1.1432	1.1432	1.1432	2.8621	2.9946	80	Sunny
05/02/10	13:00	06/02/10	13:00	3383.53	3407.53	24.00	1.1432	1.1432	1.1432	2.8258	2.8958	43	Cloudy
11/02/10	13:00	12/02/10	13:00	3407.53	3431.53	24.00	1.1432	1.1432	1.1432	2.8129	2.9132	61	Cloudy
17/02/10	13:00	18/02/10	13:00	3431.53	3455.53	24.00	1.3549	1.3549	1.3549	2.8701	2.9520	42	Cloudy
23/02/10	13:00	24/02/10	13:00	3455.53	3479.53	24.00	1.2136	1.2136	1.2136	2.8212	2.9071	49	Fine

Summary of 1-hr TSP Monitoring Results

Monitoring Station: AM1

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
04/12/09	09:21	10:21	72	507	117	Fine
04/12/09	10:21	11:21	85	489	134	Fine
04/12/09	11:21	12:21	77	382	101	Fine
10/12/09	13:00	14:00	65	498	154	Fine
10/12/09	14:00	15:00	77	547	187	Fine
10/12/09	15:00	16:00	68	426	139	Fine
16/12/09	13:00	14:00	78	547	184	Cloudy
16/12/09	14:00	15:00	96	568	218	Cloudy
16/12/09	15:00	16:00	87	523	172	Cloudy
22/12/09	13:00	14:00	49	522	133	Fine
22/12/09	14:00	15:00	58	581	168	Fine
22/12/09	15:00	16:00	50	464	140	Fine
28/12/09	09:15	10:15	72	382	185	Cloudy
28/12/09	10:15	11:15	85	477	212	Cloudy
28/12/09	11:15	12:15	69	306	162	Cloudy
04/01/10	13:00	14:00	56	262	159	Fine
04/01/10	14:00	15:00	65	347	218	Fine
04/01/10	15:00	16:00	46	207	154	Fine
08/01/10	09:09	10:09	54	372	144	Cloudy
08/01/10	10:09	11:09	62	465	189	Cloudy
08/01/10	11:09	12:09	70	351	132	Cloudy
14/01/10	08:35	09:35	46	201	144	Fine
14/01/10	09:35	10:35	57	272	169	Fine
14/01/10	10:35	11:35	52	216	151	Fine
20/01/10	13:00	14:00	51	273	125	Cloudy
20/01/10	14:00	15:00	62	401	154	Cloudy
20/01/10	15:00	16:00	70	314	116	Cloudy
26/01/10	09:08	10:08	86	313	220	Cloudy
26/01/10	10:08	11:08	88	300	206	Cloudy
26/01/10	11:08	12:08	89	335	233	Cloudy
01/02/10	13:00	14:00	72	300	137	Sunny
01/02/10	14:00	15:00	86	351	173	Sunny
01/02/10	15:00	16:00	65	261	151	Sunny
05/02/10	08:37	09:37	82	251	167	Cloudy
05/02/10	09:37	10:37	75	272	197	Cloudy
05/02/10	10:37	11:37	80	249	157	Cloudy
11/02/10	08:35	09:35	75	217	172	Cloudy
11/02/10	09:35	10:35	81	204	161	Cloudy
11/02/10	10:35	11:35	80	201	127	Cloudy
17/02/10	08:35	09:35	77	204	135	Cloudy
17/02/10	09:35	10:35	82	218	144	Cloudy
17/02/10	10:35	11:38	78	195	139	Cloudy
23/02/10	08:50	09:50	84	299	183	Fine
23/02/10	09:50	10:50	90	251	157	Fine
23/02/10	10:50	11:50	87	224	140	Fine

Summary of 1-hr TSP Monitoring Results

Monitoring Station: AM2

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
04/12/09	09:17	10:17	81	562	121	Fine
04/12/09	10:17	11:17	90	457	140	Fine
04/12/09	11:17	12:17	76	400	103	Fine
10/12/09	13:04	14:04	72	506	146	Fine
10/12/09	14:04	15:04	89	577	178	Fine
10/12/09	15:05	16:04	76	413	130	Fine
16/12/09	13:05	14:05	80	516	178	Cloudy
16/12/09	14:05	15:05	92	538	202	Cloudy
16/12/09	15:05	16:05	86	485	171	Cloudy
22/12/09	13:05	14:05	50	412	153	Fine
22/12/09	14:05	15:05	48	467	186	Fine
22/12/09	15:05	16:05	50	350	158	Fine
28/12/09	09:20	10:20	71	497	193	Cloudy
28/12/09	10:20	11:20	89	568	237	Cloudy
28/12/09	11:20	12:20	64	433	163	Cloudy
04/01/10	13:06	14:06	61	516	141	Fine
04/01/10	14:06	15:06	70	584	218	Fine
04/01/10	15:06	16:06	54	453	133	Fine
08/01/10	09:14	10:14	56	302	146	Cloudy
08/01/10	10:14	11:14	68	355	170	Cloudy
08/01/10	11:14	12:14	59	285	163	Cloudy
14/01/10	08:40	09:40	43	211	146	Fine
14/01/10	09:40	10:40	58	283	176	Fine
14/01/10	10:40	11:40	51	221	161	Fine
20/01/10	13:04	14:04	41	200	139	Cloudy
20/01/10	14:04	15:04	49	219	177	Cloudy
20/01/10	15:04	16:04	56	178	155	Cloudy
26/01/10	09:13	10:13	95	329	219	Cloudy
26/01/10	10:13	11:13	90	295	192	Cloudy
26/01/10	11:13	12:13	86	342	245	Cloudy
01/02/10	13:04	14:04	59	232	142	Sunny
01/02/10	14:04	15:04	67	271	174	Sunny
01/02/10	15:04	16:04	54	214	137	Sunny
05/02/10	08:42	09:42	71	260	165	Cloudy
05/02/10	09:42	10:42	69	284	205	Cloudy
05/02/10	10:42	11:42	80	271	166	Cloudy
11/02/10	08:40	09:40	86	229	177	Cloudy
11/02/10	09:40	10:40	85	212	169	Cloudy
11/02/10	10:40	11:40	78	189	132	Cloudy
17/02/10	08:40	09:40	75	181	139	Cloudy
17/02/10	09:40	10:40	83	204	153	Cloudy
17/02/10	10:40	11:40	81	180	145	Cloudy
23/02/10	08:45	09:45	86	312	198	Fine
23/02/10	09:45	10:45	92	276	166	Fine
23/02/10	10:45	11:45	88	228	151	Fine

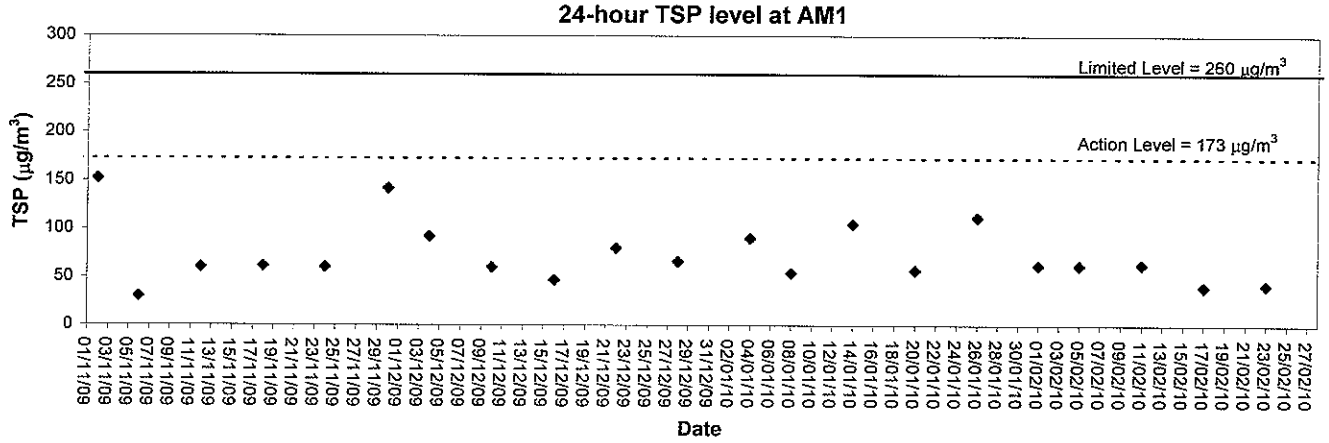
Summary of 1-hr TSP Monitoring Results Monitoring Station: AM3

Date	Monitoring Period		1-hr TSP (μg/m³)			Weather
	Start	Finish	Minimum	Maximum	Average	
04/12/09	13:00	14:00	82	412	116	Fine
04/12/09	14:00	15:00	75	477	137	Fine
04/12/09	15:00	16:00	79	435	129	Fine
10/12/09	09:11	10:11	70	550	157	Fine
10/12/09	10:11	11:11	85	587	182	Fine
10/12/09	11:11	12:11	73	465	145	Fine
16/12/09	09:10	10:10	73	427	200	Drizzle
16/12/09	10:10	11:10	85	526	229	Drizzle
16/12/09	11:10	12:10	69	418	182	Drizzle
22/12/09	09:10	10:10	60	429	127	Fine
22/12/09	10:10	11:10	59	543	150	Fine
22/12/09	11:10	12:10	52	326	132	Fine
28/12/09	13:00	14:00	62	347	200	Cloudy
28/12/09	14:00	15:00	81	501	233	Cloudy
28/12/09	15:00	16:00	74	425	170	Cloudy
04/01/10	09:15	10:15	62	210	169	Cloudy
04/01/10	10:15	11:15	58	362	204	Cloudy
04/01/10	11:15	12:15	56	233	159	Cloudy
08/01/10	13:00	14:00	77	400	133	Cloudy
08/01/10	14:00	15:00	59	435	171	Cloudy
08/01/10	15:00	16:00	64	371	141	Cloudy
14/01/10	13:00	14:00	45	200	141	Fine
14/01/10	14:00	15:00	53	271	157	Fine
14/01/10	15:00	16:00	40	175	135	Fine
20/01/10	08:30	09:30	50	164	135	Cloudy
20/01/10	09:30	10:30	47	198	145	Cloudy
20/01/10	10:30	11:30	54	137	131	Cloudy
26/01/10	13:05	14:05	112	430	269	Cloudy
26/01/10	14:05	15:05	108	455	275	Cloudy
26/01/10	15:05	16:05	115	443	280	Cloudy
01/02/10	08:38	09:38	64	169	130	Sunny
01/02/10	09:38	10:38	70	211	142	Sunny
01/02/10	10:38	11:38	58	185	129	Sunny
05/02/10	13:00	14:00	75	255	148	Cloudy
05/02/10	14:00	15:00	81	288	180	Cloudy
05/02/10	15:00	16:00	84	247	164	Cloudy
11/02/10	13:00	14:00	92	237	191	Cloudy
11/02/10	14:00	15:00	74	219	137	Cloudy
11/02/10	15:00	16:00	78	226	128	Cloudy
17/02/10	13:00	14:00	72	177	128	Cloudy
17/02/10	14:00	15:00	76	194	137	Cloudy
17/02/10	15:00	16:00	77	181	140	Cloudy
23/02/10	13:00	14:00	91	209	160	Fine
23/02/10	14:00	15:00	95	231	174	Fine
23/02/10	15:00	16:00	85	192	143	Fine

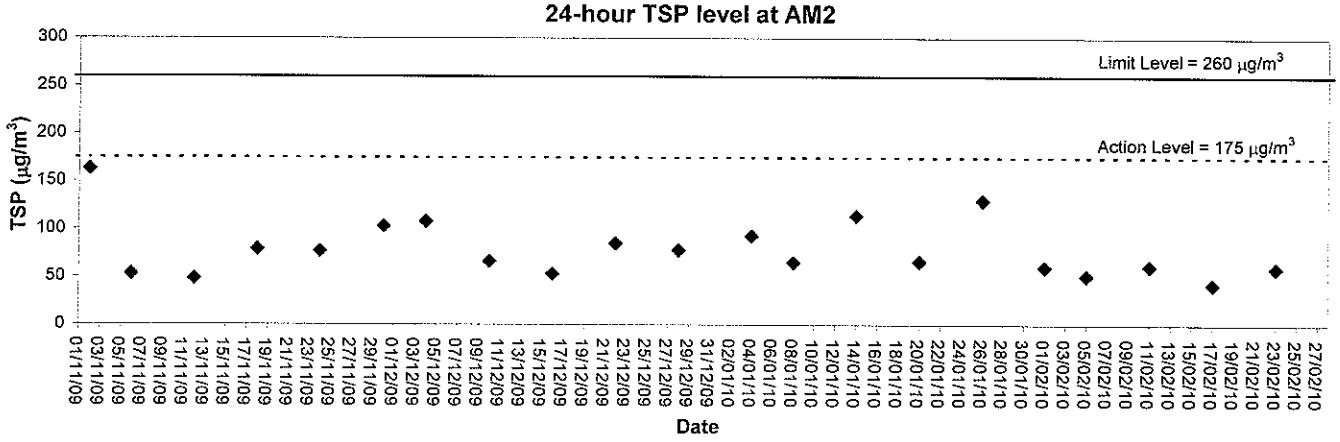
Appendix B2

Graphical Plots of Impact Air Quality Monitoring Data in this Quarter

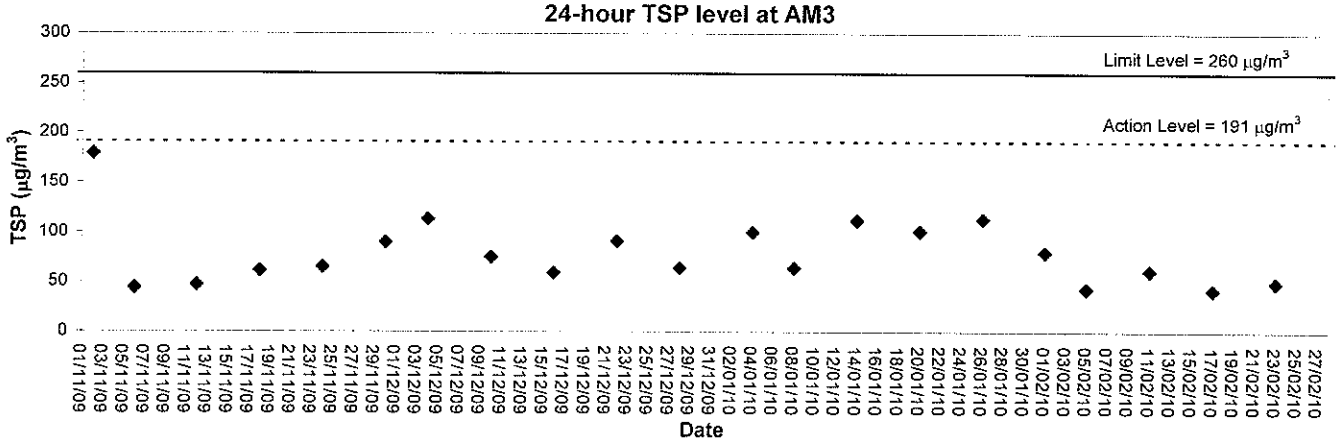
24-hour TSP level at AM1



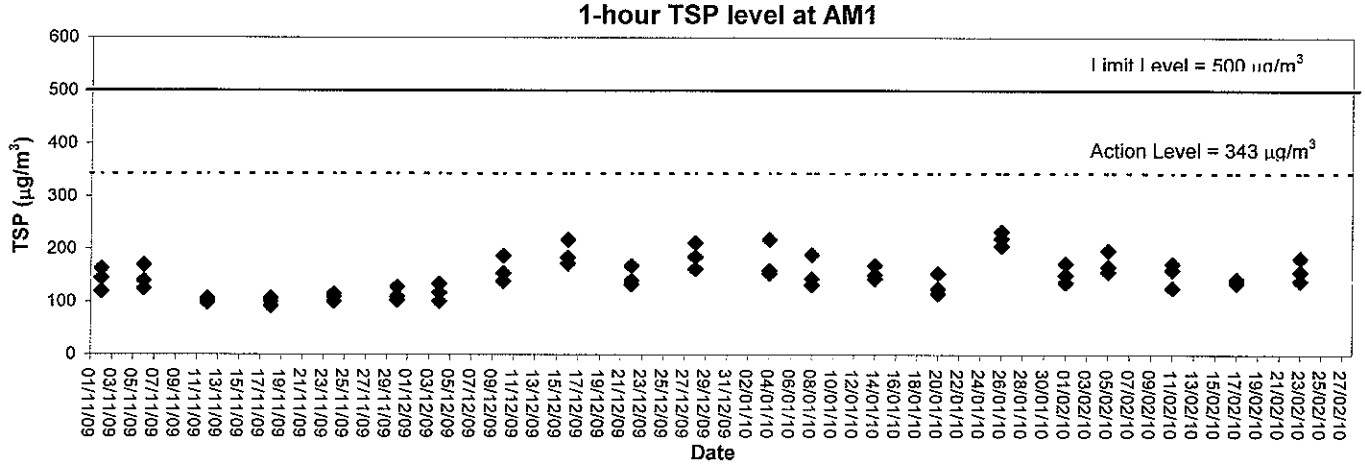
24-hour TSP level at AM2



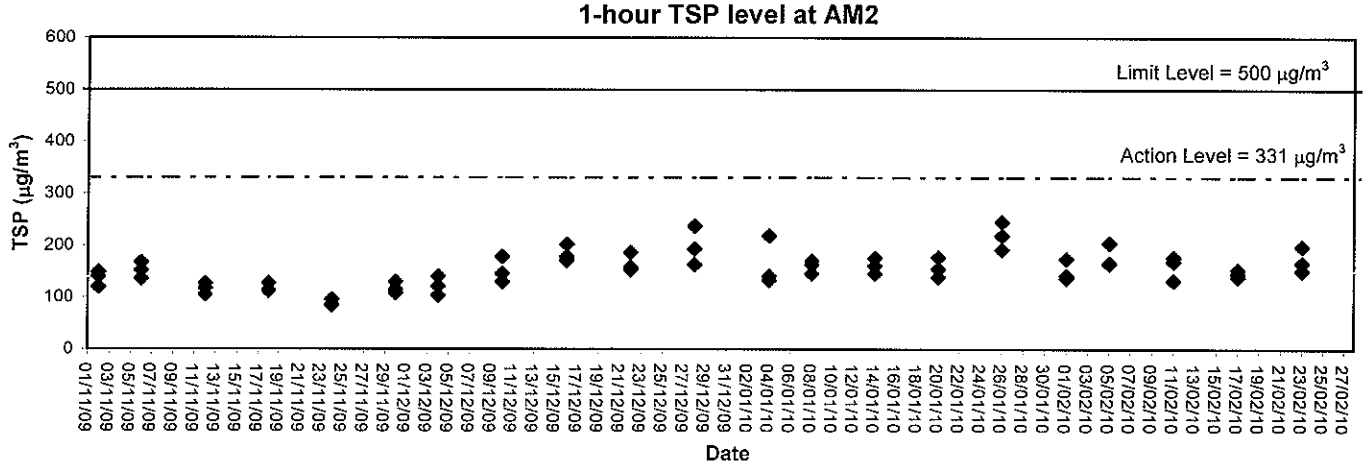
24-hour TSP level at AM3



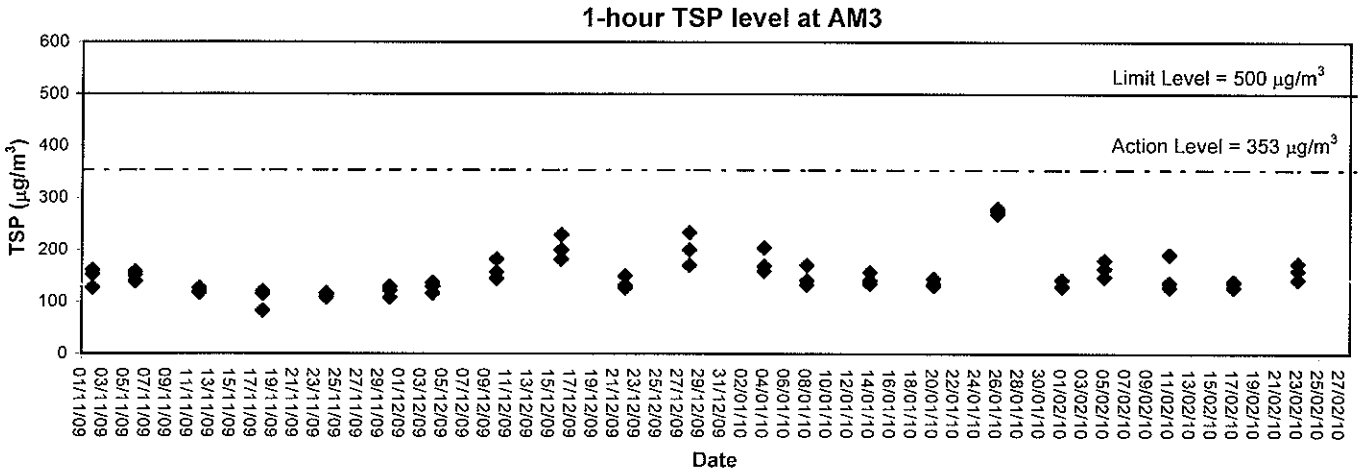
1-hour TSP level at AM1



1-hour TSP level at AM2



1-hour TSP level at AM3



Appendix C1

Impact Noise Monitoring Results in this Quarter

Day-time Noise Monitoring

Monitoring Station: NM1

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
10/12/09	Fine	11:14	11:44	70.9	72.1	62.2	<0.1
16/12/09	Cloudy	13:55	14:25	65.5	66.5	63.1	0.5
22/12/09	Fine	11:26	11:56	63.0	65.8	43.7	0.5
28/12/09	Cloudy	09:39	10:09	61.9	64.3	52.2	0.2
04/01/10	Sunny	10:51	11:21	65.4	67.2	58.6	0.8
14/01/10	Fine	10:49	11:19	61.2	62.0	55.3	0.8
20/01/10	Cloudy	13:15	13:45	63.1	64.5	59.0	0.3
26/01/10	Cloudy	09:20	09:50	65.6	71.4	58.8	1.0
01/02/10	Sunny	14:03	14:33	65.5	68.2	57.7	0.2
11/02/10	Cloudy	11:20	11:50	65.6	70.1	45.5	0.4
17/02/10	Cloudy	09:07	09:37	59.0	61.2	52.4	0.3
23/02/10	Sunny	13:17	13:47	71.5	71.9	70.1	0.5

Monitoring Station: NM2

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
10/12/09	Fine	10:34	11:04	64.2	64.9	56.7	<0.1
16/12/09	Cloudy	14:30	15:00	64.2	65.1	57.9	0.5
22/12/09	Fine	10:52	11:22	65.5	67.2	55.1	0.5
28/12/09	Cloudy	10:13	10:43	68.3	70.6	55.8	0.2
04/01/10	Fine	10:16	10:46	66.7	68.4	57.5	0.2
14/01/10	Fine	10:02	10:32	75.0	75.7	62.1	0.5
20/01/10	Cloudy	14:05	14:35	72.1	73.5	65.4	0.5
26/01/10	Cloudy	10:20	10:50	69.5	73.5	64.6	1.2
01/02/10	Sunny	11:18	11:48	72.8	77.1	58.6	0.2
11/02/10	Cloudy	10:40	11:10	69.1	70.9	59.0	<0.1
17/02/10	Cloudy	09:46	10:16	60.3	62.4	54.3	0.5
23/02/10	Fine	13:54	14:24	61.7	63.3	58.6	<0.1

Monitoring Station: RNM3

Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
10/12/09	Fine	10:00	10:30	67.9	71.3	56.9	<0.1
16/12/09	Cloudy	15:08	15:38	61.9	62.5	56.1	0.5
22/12/09	Fine	10:19	10:49	64.4	65.1	57.2	0.5
28/12/09	Cloudy	11:21	11:51	65.3	67.9	56.9	0.5
04/01/10	Fine	11:30	12:00	65.1	66.4	57.2	0.3
14/01/10	Fine	09:26	09:56	59.1	60.3	56.3	1.0
20/01/10	Cloudy	10:48	11:18	68.6	73.9	58.1	1.2
26/01/10	Cloudy	11:02	11:32	64.2	66.0	59.5	1.2
01/02/10	Sunny	10:45	11:15	63.0	63.7	58.6	0.3
11/02/10	Cloudy	10:06	10:36	68.7	69.9	49.5	0.2
17/02/10	Cloudy	10:30	11:00	68.7	74.6	59.2	0.2
23/02/10	Fine	11:25	11:55	71.3	73.3	58.4	0.2

Monitoring Station: NM4

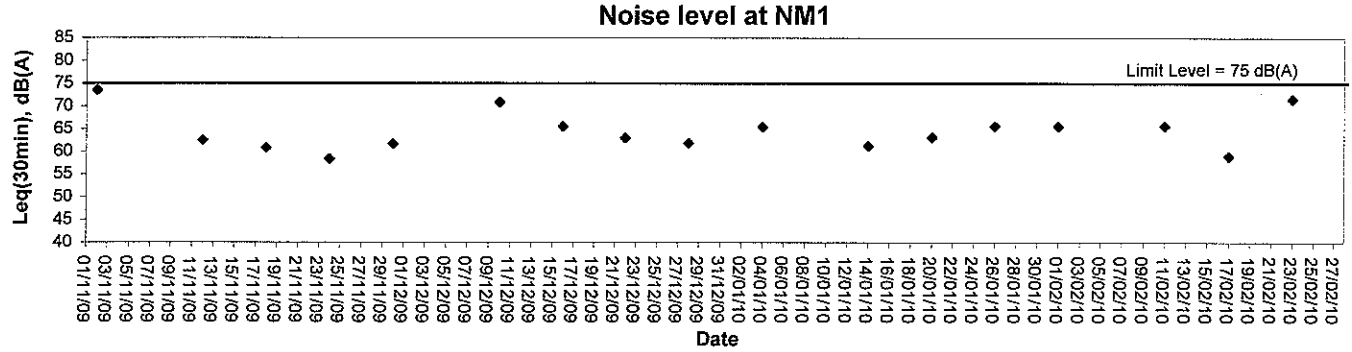
Date	Weather Condition	Start Time (hh:mm)	End Time (hh:mm)	Noise Level at the monitoring point, dB (A)			Wind Speed (m/s)
				Leq (30min)	L10	L90	
10/12/09	Fine	09:27	09:57	51.4	53.7	41.9	<0.1
16/12/09	Cloudy	11:24	11:54	60.7	62.1	52.6	0.5
22/12/09	Fine	09:21	09:51	52.9	53.7	40.2	0.5
28/12/09	Cloudy	10:48	11:18	54.9	57.2	43.8	1.1
04/01/10	Fine	09:41	10:11	68.0	68.9	61.6	1.0
14/01/10	Fine	08:52	09:22	62.7	64.1	49.5	1.2
20/01/10	Cloudy	08:42	09:12	50.1	50.7	40.7	0.2
26/01/10	Cloudy	14:30	15:00	51.2	53.4	45.1	1.8
01/02/10	Sunny	10:04	10:34	59.1	60.7	47.0	0.2
11/02/10	Cloudy	09:20	09:50	47.9	49.8	41.5	<0.1
17/02/10	Cloudy	11:27	11:57	48.6	51.6	40.2	0.3
23/02/10	Fine	10:50	11:20	59.8	64.0	41.2	.2

Appendix C2

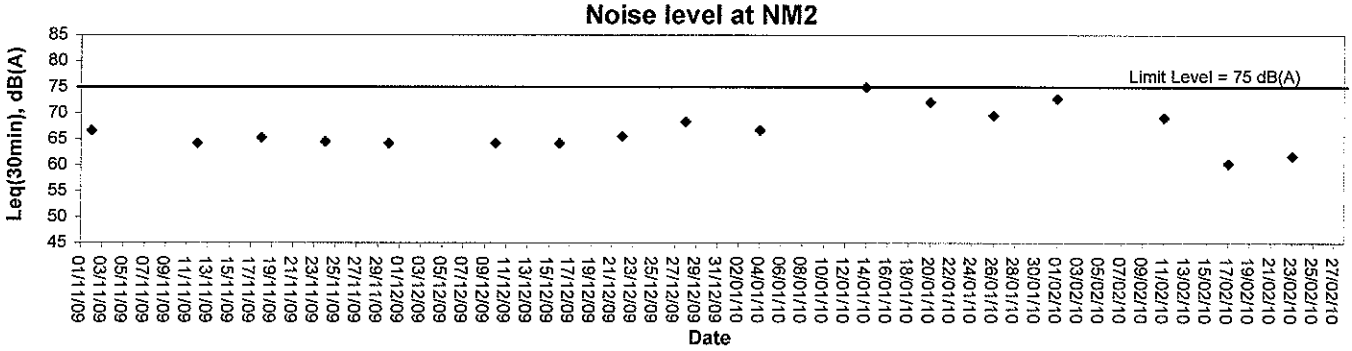
Graphical Plots of Impact Noise Monitoring Data in this Quarter

Noise Monitoring (Day-time)

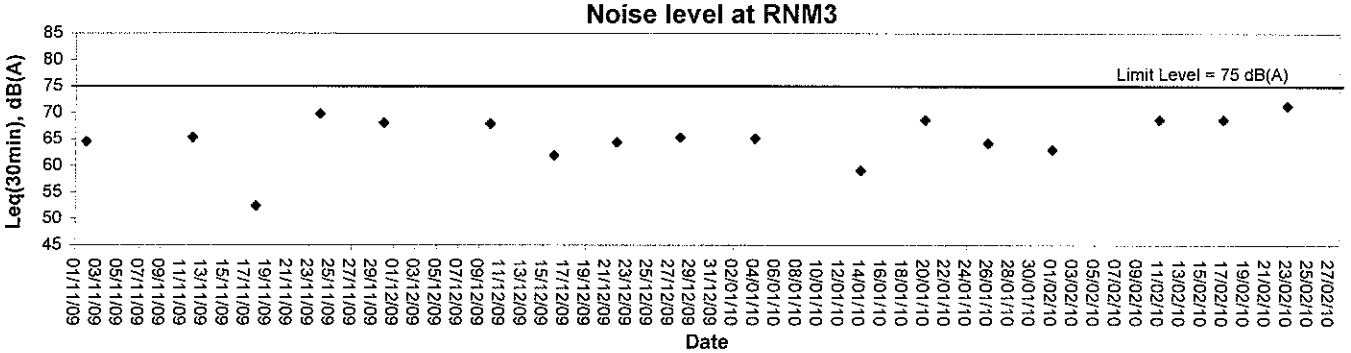
Noise level at NM1



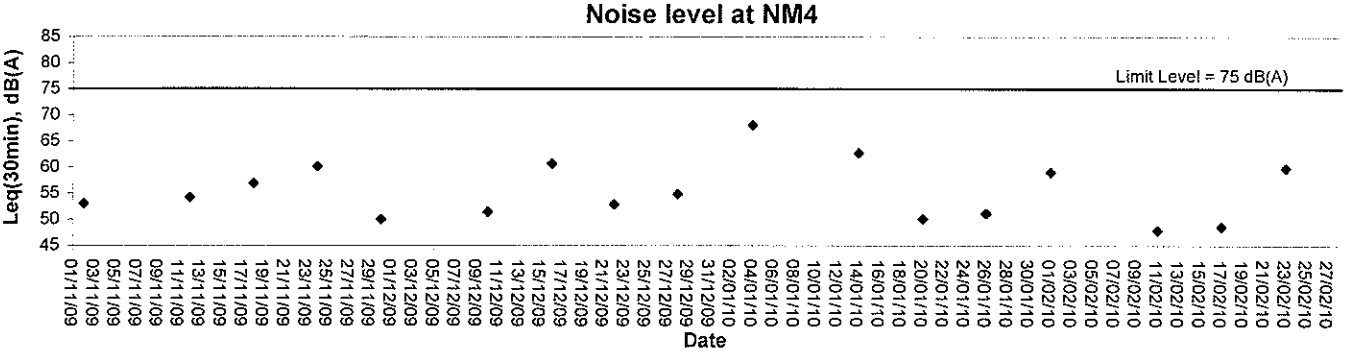
Noise level at NM2



Noise level at RNM3



Noise level at NM4



Appendix D

Environmental Quality Performance (Action / Limit Levels)

Action and Limit levels for 24-hr TSP and 1-hr TSP

Monitoring Station	*24-hr TSP ($\mu g/m^3$)*		*1-hr TSP ($\mu g/m^3$)*	
	Action Level	*Limit Level*	*Action Level*	*Limit Level*
AM1	*173*	*260*	*343*	*500*
AM2	*175*	*260*	*331*	*500*
AM3	*191*	*260*	*353*	*500*

Action and Limit Levels for Noise Monitoring

Time Period	*Action*	*Limit*
0700 –1900 hrs normal weekdays	*When one documented complaint is received*	*75 dB(A)*

Appendix E

Event-Action Plans

Event / Action Plan for Air Quality

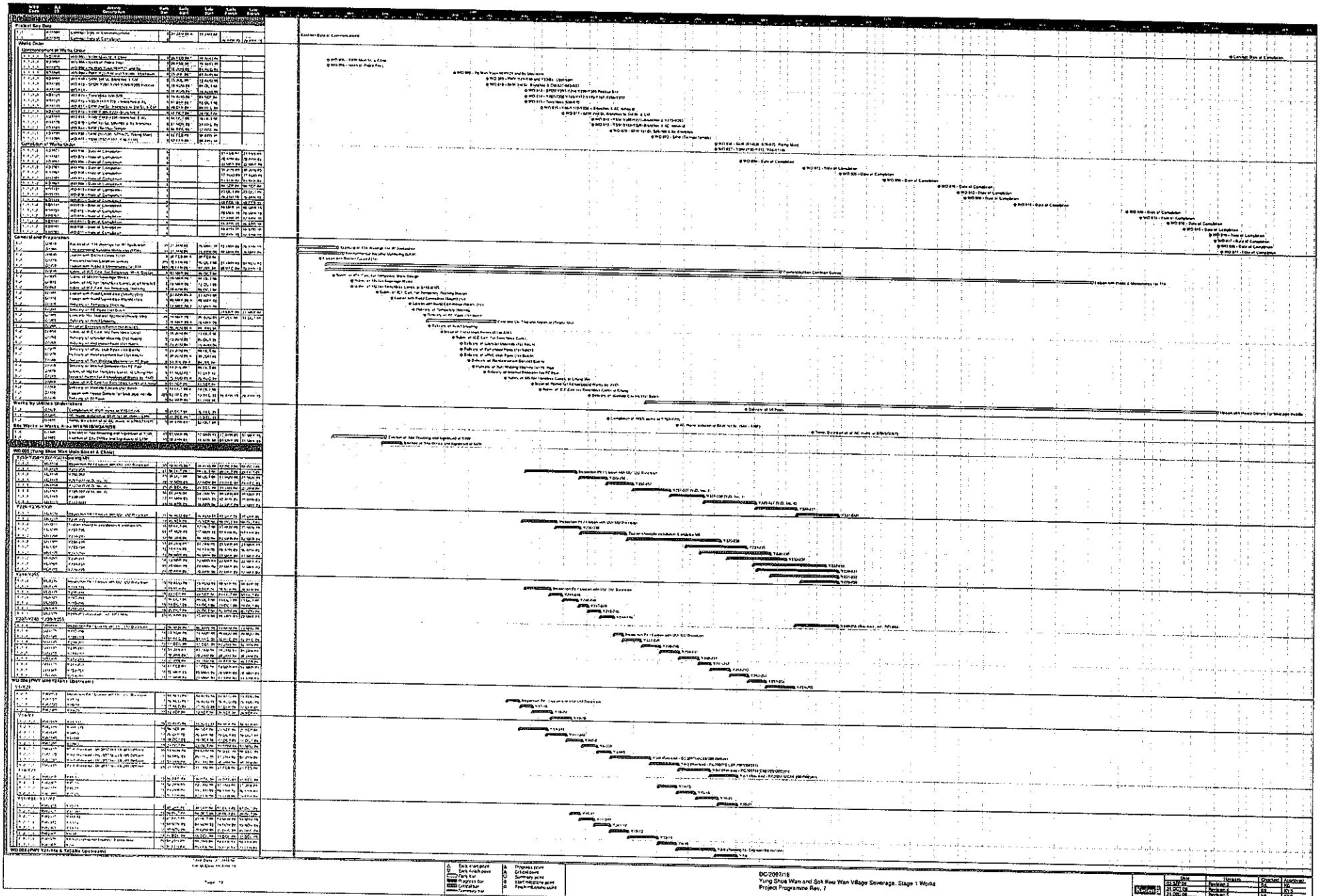
EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action Level				
Action Level being exceeded for one sample	1. Identify source, investigate the causes of Exceedance and propose remedial measures; 2. Inform IC(E) and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action Level being exceeded for two or more consecutive samples	1. Same as the above; 2. Advise the ER on the effectiveness of te proposed remedial measures; 3. Discuss with IC(E) and Contractor on remedial actions required; 4. If exceedance continues, arrange meeting with IC(E) and ER; 5. If exceedance stops, cease additional monitoring.	1. Same as the above; 2. Discuss with ET and Contractor on possible remedial measures; 3. Advise the ET on the effectiveness of the proposed remedial measures; 4. Supervise implementation of remedial measures.	1. Same as the above; 2. Confirm receipt of notification of failure in writing; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
Limit Level				
Limit Level being exceeded for one sample	1. Identify source; 2. Inform ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results.	1. Checking monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on the possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial actions properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit Level being exceeded for two or more consecutive samples	1. Same as the above; 2. Carry our analysis of Contractor's working procedures to determine possible mitigation to be implemented; 3. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken; 4. If exceedance stops, cease additional monitoring.	1. Discuss with ER, ET and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assume their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Same as the above; 2. In consolidation with the IC(E), agree with the Contractor on the remedial measures to be implemented; 3. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Same as the above; 2. Resubmit proposals if problem still not under control; 3. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event / Action Plan for Construction Noise

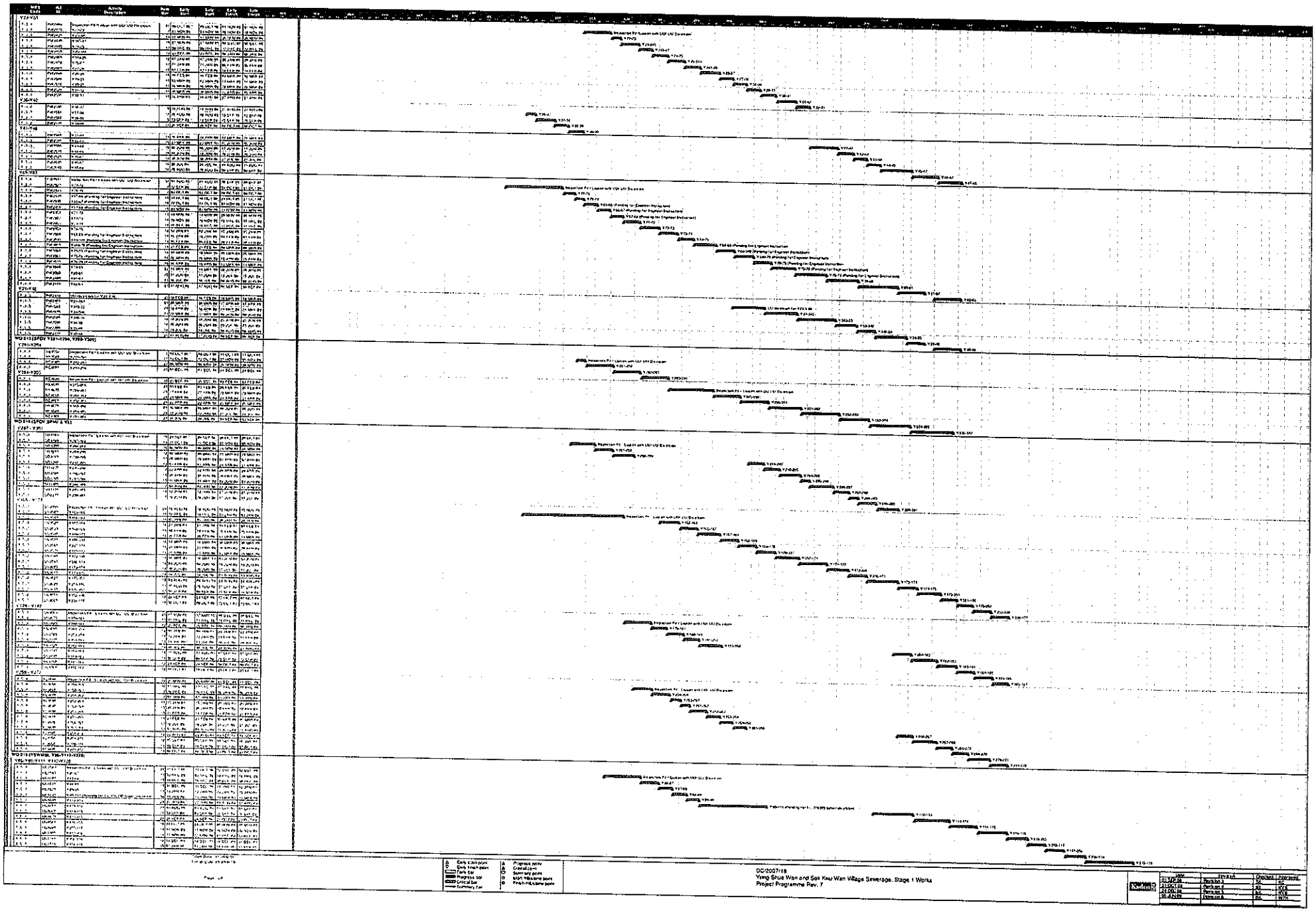
EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action level	1. Notify IC(E) and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IC(E), ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures ; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review and investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure proper implementation of remedial measures.	1. Submit noise mitigation proposal to IC(E); 2. Implement noise mitigation proposals.
Limit level	1. Identify source; 2. Inform IC(E), ER, EPD and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IC(E), ER and EPD the causes and actions taken for the exceedances; 7. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions to ensure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Same as above; 2. If exceedances continue, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IC(E); 3. Implement the agreed proposals; 4. Resubmit proposals if problem still out of control; 5. Stop the relevant portion of works as determined by ER, until the exceedance is abated.

Appendix F

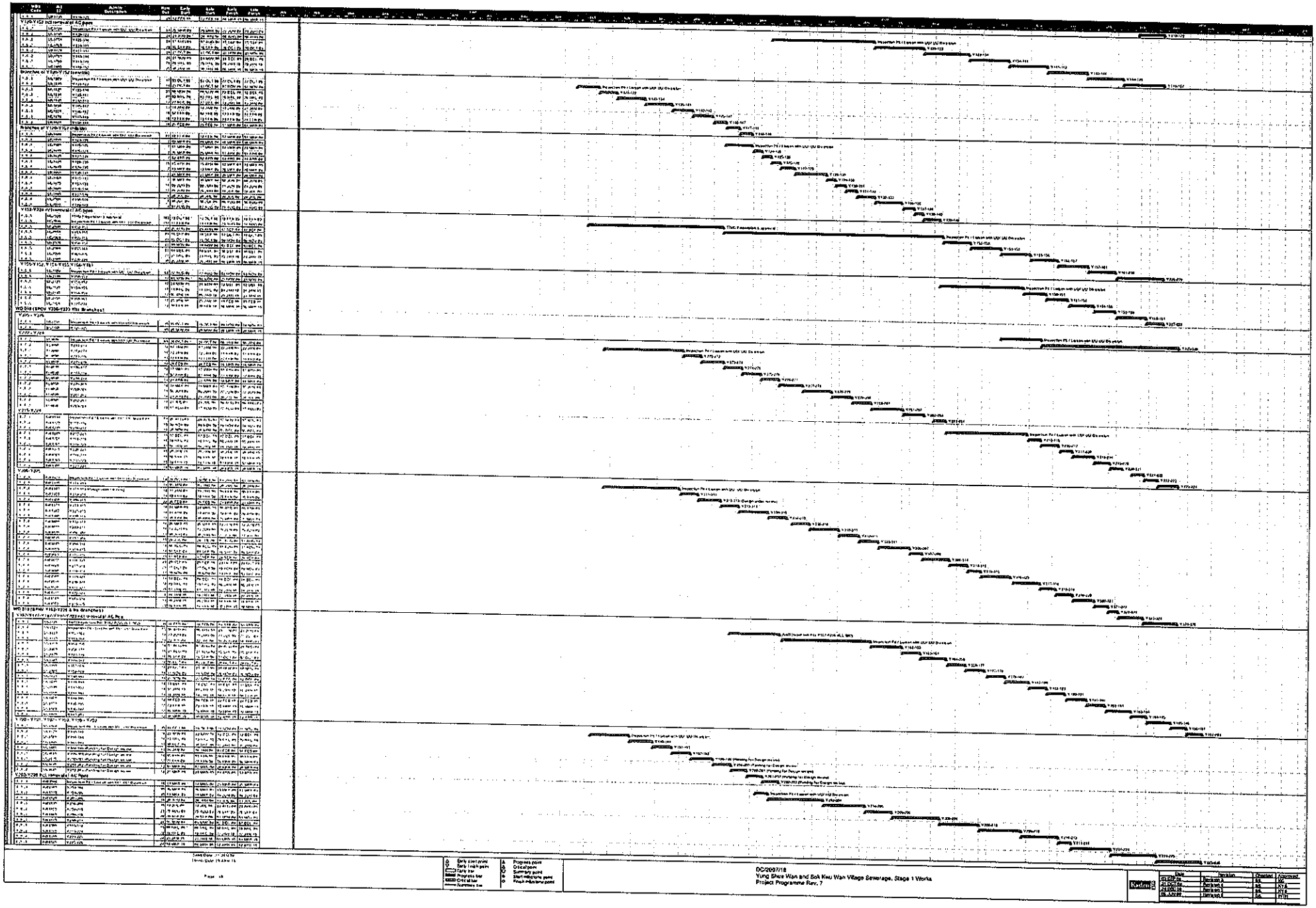
Construction Programme



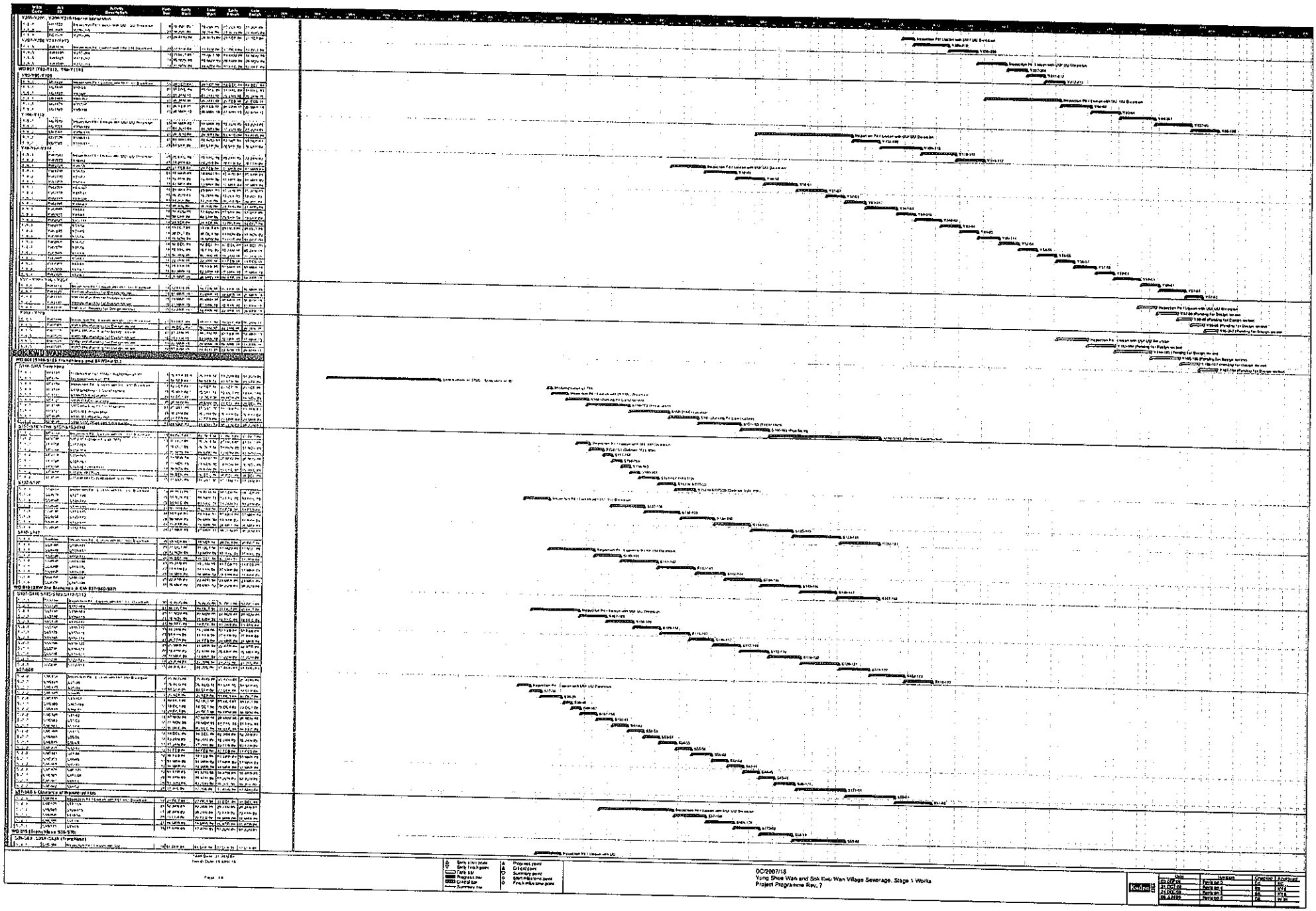
DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 7



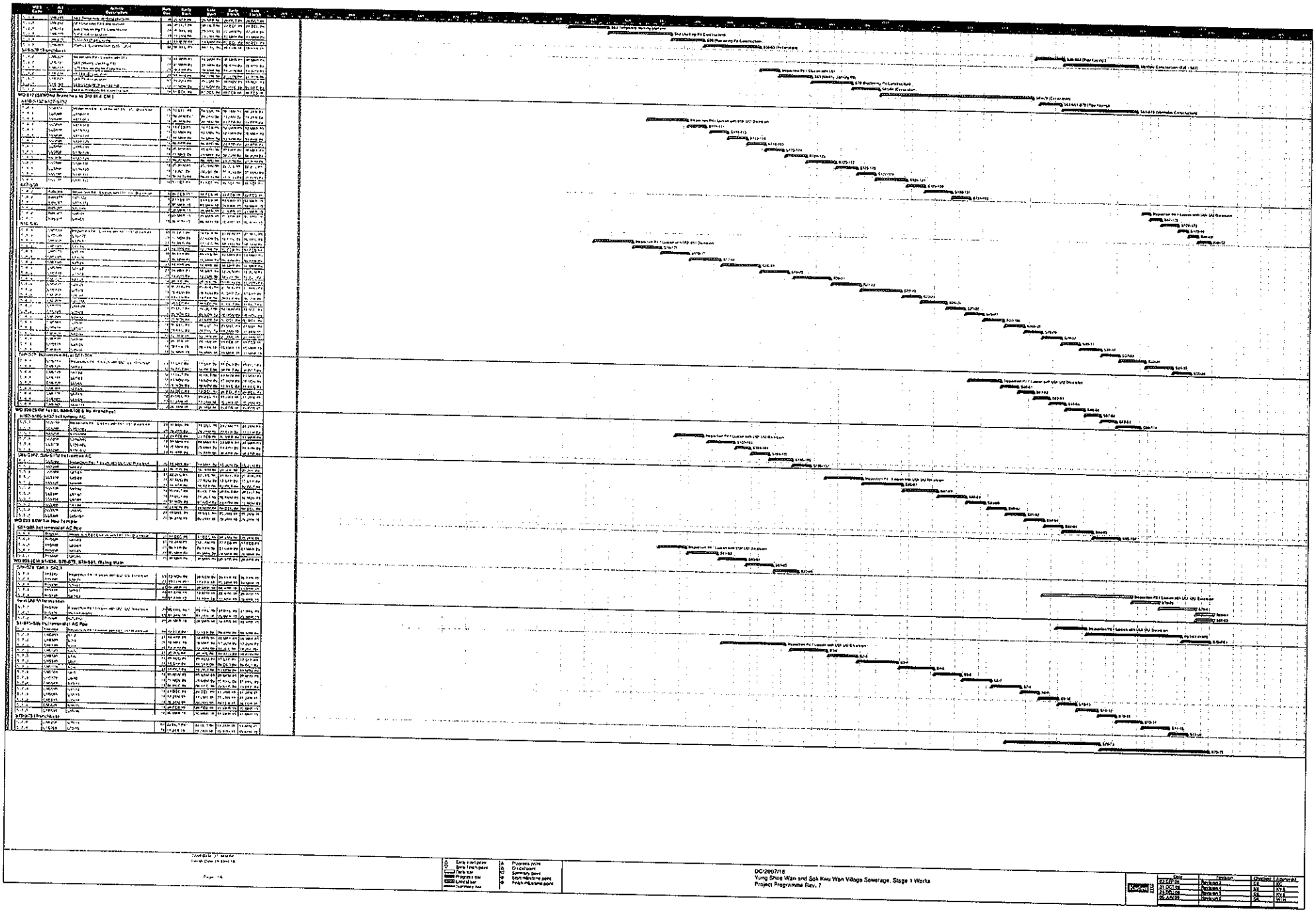
DC/2007/18
Ying Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 7



DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 7



0C/2007/18
Ying Shee Wan and Sik Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 7



DC/2007/16
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Project Programme Rev. 7

Appendix G

Summary of Implementation Status of Mitigation Measures during Site Inspection

Environmental Mitigation Implementation Schedule

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
▪ Stockpiles of imported material kept on site should be contained within hoarding, dampened and / or covered during dry and windy weather.	All areas		√		
▪ Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses.	All areas	√			
▪ Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like.	All areas	√			
▪ Any vehicle used for moving sands, aggregates and construction waste should have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin.	All areas	√			
▪ Unpaved areas should be watered regularly to avoid dust generation.	Site Egress	√			
▪ The enclosures should be around the main dust-generating activities.	All areas	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	All areas	√			
▪ Open burning should be prohibited.	All areas	√			
Noise Impact					
▪ Quite powered mechanical equipment (PME) or method should be used.	All areas	√			
▪ The number plant should be restricted (1 item for each type of plant).	All areas	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	All areas	√			
▪ Mobile plant, if any, should be sited as far away from NSRs as possible.	All areas	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	All areas	√			
▪ Plant known to emit noise strongly should be orientated so that the noise is directed away from nearby NSRs.	All areas	√			
▪ The constructions works should be scheduled to minimize noise nuisance.	All areas	√			
▪ Air compressors and hand held breakers should have noise labels.	All areas	√			
▪ Compressors and generators should operate with door closed.	All areas	√			
Water Quality					
General Construction Works					
▪ Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal water and stormwater drains.	All areas	√			
▪ All fuel tanks and storage areas should be provided with locks and be sited on sealed area, within bunds of a capacity equal to 110% of the storage capacity of the largest tank.	All areas	√			
▪ Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Waste Management					
General Site Wastes					
• Appropriate measures, such as transporting wastes in enclosed containers, should be taken to minimize windblown litter and dust to nearby environment.	All areas	√			
• Sufficient waste disposal points and regular waste collection for disposal should be provided.	All areas	√			
• A collection area for construction site waste should be provided where waste can be stored prior to removal form site.	All areas	√			
• Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	All areas		√		
• Records of the quantities of waste generated, recycled and disposed should be kept and maintained.	All areas	√			
• Different types of waste should be segregated and stored in different container, skips or stockpiles to enhance reuse or recycling of material and their proper disposal.	All areas	√			
Chemical Wastes					
• After use, chemical waste should be handled according to the Code of Practice on the Package, Labelling and Storage of Chemical Wastes.	All areas	√			
• Any unused chemicals or those with remaining functional capacity should be recycled.	All areas	√			
• Waste should be properly stored on site within suitably designed containers and should be collected by an approved licensed waste collectors for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordnance.	All areas	√			
• Any service shop and minor maintenance facilities should be located on hard standing within a bunded area, and sumps and oil interceptors should be provided.	All areas	√			
• Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should be undertaken within the designated areas equipped control these discharges.	All areas	√			
Construction and Demolition (C&D) Wastes					
• C&D waste should be separated on site before disposal.	All areas	√			
• Inert material, such as concrete and rubble, should be re-used on site.	All areas	√			
• Steel and other metals should be separated for re-use and / or recycling prior to disposal of C&D material.	All areas	√			
Ecological Impact					
• Labelling and fencing of the uncommon tree species.	All areas	√			
• Avoidance of use of woodland habitats as Works Area, in particular where trees located.	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Landscape and Visual Impact					
• Existing trees should be retained.	All areas	√			
• Damage to vegetation should be minimized by close coordination and on site alignment adjusted of rising main and gravity sewer pipelines.	All areas	√			
• Short excavation and immediate backfilling section upon completion of works should be performed to reduce active site area.	All areas	√			
Site Practice					
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	All areas	√			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	All areas		√		
• All generators are within bundle areas.	All areas		√		
• Oil leakage from machinery, vehicle and plant should be prevented.	All areas	√			
• All fuel tanks and storage areas should be provided with locks and be sited on sealed area, within bunds of a capacity equal to 110% of the storage capacity of the largest tank.	All areas		√		
• The Environmental Permit should be displaced conspicuously on site.	All areas	√			

Appendix H

Revised Final Report of

Archaeological Watching Brief at Chung Mei, Sok Kwu Wan

DSD Contract No. DC/2007/18
Yung Shue Wan & Sok Kwu Wan
Village Sewerage,
Stage 1 Works

Archaeological Watching Brief
at Chung Mei, Sok Kwu Wan

Revised Final Report

Prepared for Kaden Construction Ltd.
By Archaeological Assessments Ltd.

September 2009

List of Contents

List of Figures

List of Plates

1. Non-Technical Summary

As part of DSD Contract No. DC/2007/18, Yung Shue Wan & Sok Kwu Wan Village Sewerage, Stage 1 Works, archaeological watching briefs were conducted in Chung Mei, Sok Kwu Wan on 1st September 2008 and 12th June 2009 (Figure 1). The monitoring works were required as a result of previous findings of kiln-oven debris and Tang Dynasty pottery in the small valley to the west (AAL 2003).

The alignment in question ran across the west facing slope of a steep, wooded hillside – the southern half following an existing concrete-surfaced footpath, while the northern half crossed the natural slope. The contractor's groundworks consisted of a c.0.6m wide by c.1.2m deep machine-excavated pipe trench, which was monitored over a total length of approximately 50m.

No cultural layers were found and there was just one surface find of undiagnostic pottery.

為配合渠務署的榕樹灣及索罟灣第一階段鄉村污水處理及排放工程 (合約編號 DC/2007/18)，索罟灣涌尾的考古監察已分別在2008年9月1日及2009年6月12日完成。鑑於過往曾在工程範圍以西之谷地發現窯具及唐代陶片 (AAL 2003)，故此在上述污水管鋪設工程施工時必須進行考古監察。

是次涉及之污水管鋪設路線主要沿著一處向西、樹木茂盛之陡坡而建：南半部的污水管路線乃沿著現有之石屎小徑鋪設;而北半部的污水管路線則穿越一處自然山坡。是次考古監察範圍包括一條闊約0.6米、深約1.2米及長約50米，由承建商用機器挖掘之溝坑。

是次考古監察並未發現文化層，只有在其中一處地面採集到一片未能斷定年份之陶片。

2. Introduction

As part of the Drainage Services Department's Contract No. DC/2007/18 – Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works – it was required that an archaeological watching brief be undertaken in the village of Chung Mei, which lies approximately 0.5km south of Sok Kwu Wan on the eastern side of Lamma Island (Figure 1). The archaeological monitoring works were required following findings of kiln-oven debris and Tang Dynasty pottery in an adjoining area during an earlier archaeological survey (AAL 2003). The watching brief works on the approximately 50m long alignment were conducted in two segments, the first on 1st September 2008 and the second on 12th June 2009 (Figure 2).

3. Project Aims

The aim of this project was to ensure that any archaeological remains encountered during construction works within the study area alignment were properly identified, recorded and recovered whilst, at the same time, minimising delays to the engineering schedule.

The objectives of the study were as follows:

- To implement a monitoring strategy designed to fulfil the above aim;
- To process and analyse the results in light of previous findings;
- To report on the results of the fieldwork; and
- If required, to recommend mitigation measures.

4. Topographical, Geological, Historical and Archaeological background

4.1 Topography

The Chung Mei area comprises a small flat valley surrounded by steep wooded hillsides to the west, south and east, the latter reaching up to the peak of Ling Kok Shan at 250m PD. To the north, the ground falls gradually away to the sandy shallows of Picnic Bay (Sok Kwu Wan). The sewer alignment in question traversed the lower west facing hill slope overlooking the small valley mentioned above. The c.50m long alignment ran downhill from manhole (MH) S50 (surface level 10.06mPD) at its southern end to manhole S54 (surface level 5.75mPD) at its northern end.

4.2 Geology

In the following short discussion, the codes in brackets are those used for the various rocks/sediments depicted on the geological map (Figure 3). The solid geology at Chung Mei consists of fine to medium grained granite (gfm) with east-west running feldsparphyric rhyolite (rf) dykes. In terms of drift geology, the small valley of Chung Mei, to the west of and below the study alignment, is filled with alluvium (Qa), while debris flow deposits (Qd) are recorded in a narrow valley to the northeast of the study area (Hong Kong Government 1987). The monitored alignment was located as shown on Figure 3, crossing the western edge of the granite bedrock close to where sank beneath the alluvial fill of the valley bottom.

4.3 History

According to Hase (2002, 7), although the sheltered anchorage at Sok Kwu Wan was used by generations of boat-people, there were just seven residents on land in 1911 and it was not until the 1950s and 1960s that the settlement expanded to the landward side. The few houses dotted across the hillside at Chung Mei appear to be later 20th century in date.

4.4 Archaeology

The one previous campaign of archaeological fieldwork in the Chung Mei area was centred on the aforementioned small alluvium-filled valley just below the present study area. Eight 2x2m test pits were excavated and two of their number (TP1 and TP2)

revealed evidence for historical kiln-oven debris and Tang Dynasty pottery, whilst a lower layer produced a single sherd of Bronze Age hard geometric pottery (AAL 2003).

5. Methodology

The watching brief was in general conducted following the specification as set out in Section 11.1, but further details of the field implementation are provided below. As previously mentioned, the watching brief on the c.50m long alignment was conducted in two segments to fit in with the contractor's work programme – the lower segment first spanning MH S54 and S52, followed by the uphill segment from MH S52 and up to and including MH S50 (see Figure 2). Between MH S54 and S52 the trench was machine excavated forming a c.0.60m wide square-sectioned slot down to between 1-1.2m below the modern surface when measured at the downhill side of the trench and 2m+ on the uphill side. A sketch profile in the environs of MH S53, where the trench was locally stepped to avoid a lighting cable, is shown in Figure 4. At the southern end of the downhill half of the alignment on the site of MH S52, a locally deeper area was excavated to approximately 2.4m below surface, which further confirmed the depth of the completely decomposed granite (CDG) beneath the alignment. Between MH S52 and S50 the trench followed the existing concrete raft-surfaced footpath, the construction of which had necessitated the terracing of the hillside. Here, the trench was machine excavated to form a c.0.60 wide slot with sides c.1.2m deep (when measured from the modern footpath surface). Given that the alignment between MH S54 and S52 was off the main footpath, it was possible to excavate that length as one continuous open cut. In contrast, the length between MH S52 and S50 effectively closed the footpath in that area for the duration of the works, and the client therefore requested that the trench be dug, monitored and recorded, and then backfilled. During the monitoring works a full written, video and photographic record was taken, which will form the core of the project archive.

6. Results

6.1 Introduction

The results of the watching brief are presented in two sub-sections: one for the length of trench excavated in September 2008 (MH S54 to S52), and the other for the length excavated in June 2009 (MH S52 to S50). For each length of alignment, the sequence of deposits is introduced and then the various layers are interpreted with reference to any finds recovered.

In the text below, the following conventions should have been used: the alphanumeric codes used in deposit descriptions are taken from the Munsell system of soil colour charts (Gretagmacbeth 2000) and deposit depths are maximum values. During the discussion below reference should be made to the following illustrations: Figures 2 and 4, which respectively show the overall alignment and sketch section; Figures 5 & 6 showing the surveyors' plans of the watching brief alignment; Plates 1 and 2 respectively offering pre-excavation overviews of the alignment between MH S54 and MH S52 and between MH S51A to MH S50; and Plate 3 showing a post-excavation overview of the MH S54 to S52

alignment. NB: no post-excavation overview of the MH S51A to S50 alignment is available as the trench was excavated, recorded and immediately backfilled (but see photographs recording this process below).

6.2 Alignment between MH S54 and S52

The excavation of the down-slope half of the sewer trench revealed a simple sequence of three naturally-formed deposits (see Plates 4-6), the lowest of which was a 0.20-0.30m thick band reddish yellow (7.5YR 6/8) clayey gravel (**103**), which extended beyond the 1.2m below surface general limit of excavation (l.o.e.) and, in the 2.4m deep sondage excavated at MH S52, was shown to be at least 1.5m thick and continuing beyond the sondage l.o.e. Over 103 there was a 0.70-0.80m thick layer of strong brown (7.5YR 5/6) gravelly clay (**102**), which was sealed by an approximately 0.1m thick greyish brown (10YR 5/2) slightly sandy, clayey silt (**101**).

A modern electricity cable trench was noted running along the eastern side of the sewer trench, and had clearly been cut from the modern surface through layers 101 and 102, which were already in place. Given that the cable slot was a localised modern intrusion it was not allocated a context number.

The lower two deposits were completely sterile and can be interpreted as *in situ* decaying granite (103), overlain by an associated clay-rich layer (102), which had all the appearances of mass-transported decayed granite (slope deposits). Sealing the above granite-derived layers was a naturally-accumulating forest soil (101). No cultural horizons/deposits were identified, but one undiagnostic sherd of village ware pottery was recovered from the surface of 101 (see Plate 7).

6.3 Alignment between MH S52 and S50

The excavation of the up-slope half of the sewer trench alignment also revealed a sequence of naturally-formed deposits, which exhibited some variation moving downhill from south to north.

Broadly between MHs S50 and S51, the sequence was as follows: a lower layer of c.0.40m thick (at l.o.e.) strong brown (7.5YR 5/6) slightly gravelly clay (**204**), overlain by a c.0.80m thick layer of reddish yellow (7.5YR 6/8) very gravelly clay (**203**), which was then sealed by a thin raft of concrete forming the temporary path surface (**201**) – see Plates 8-10.

Between MH S51 and S52 – in the environs of MH S51A, the sequence was as follows: c.0.60m thick (at l.o.e.) strong brown (7.5YR 5/6) slightly gravelly clay (**204**); overlain by a c.0.50m thick layer of reddish yellow (7.5YR 6/8) very gravelly clay (**203**); which was covered by an approximately 0.1m thick greyish brown (10YR 5/2) slightly sandy, clayey silt (**202**), which was in turn sealed by the concrete raft surfacing of the footpath (**201**) – see Plates 11 and 12.

A modern water pipe was noted running along the eastern side of the sewer trench and an electricity cable along the west – the narrow slots within which each service was located had clearly been cut from the modern surface with layers 202 and 203 already in place. Given that these narrow service trenches were localised modern intrusion, they were not allocated context numbers.

The lower two deposits (204 & 203) were completely sterile and can be interpreted as mass-transported decayed granite, with clay-rich layer 204 perhaps reflecting water-borne finer material and layer 203 a more gravelly debris flow-type component. Layer 202 can be interpreted as a thin forest soil equivalent to 101 above. On the upper portion of the alignment, between MH S50 and S51, Layer 202 had apparently been removed during levelling works for the path. No finds were recovered and no cultural horizons/deposits were therefore identified.

7. Conclusions

In summary, it can be concluded that the steep lower hill slope area traversed by the MH S50 to MH S54 sewer trench at Chung Mei has seen little or no human activity prior to the 20th century and, in contrast to the valley to the west, can be considered to have no archaeological potential.

8. References

AAL 2003 *Agreement No. CE 20/96 Outlying Islands Sewerage Stage 1 Phase II Package J – Sok Kwu Wan Sewage Collection, Treatment & Disposal Facilities, Archaeological Investigation*. Unpublished excavation report.

Gretagmacbeth 2000 *Munsell Soil Colour Charts*. Gretagmacbeth: New Windsor, NY.

Hase, P 2002 'Some notes on the history of Lamma Island, especially Yung Shue Wan', unpublished paper

Hong Kong Government (1987) *Hong Kong South & Lamma Island, Sheet 15, Solid and Superficial Geology*, Geotechnical Control Office: Hong Kong.

9. Supporting Illustrations

9.1 Figures

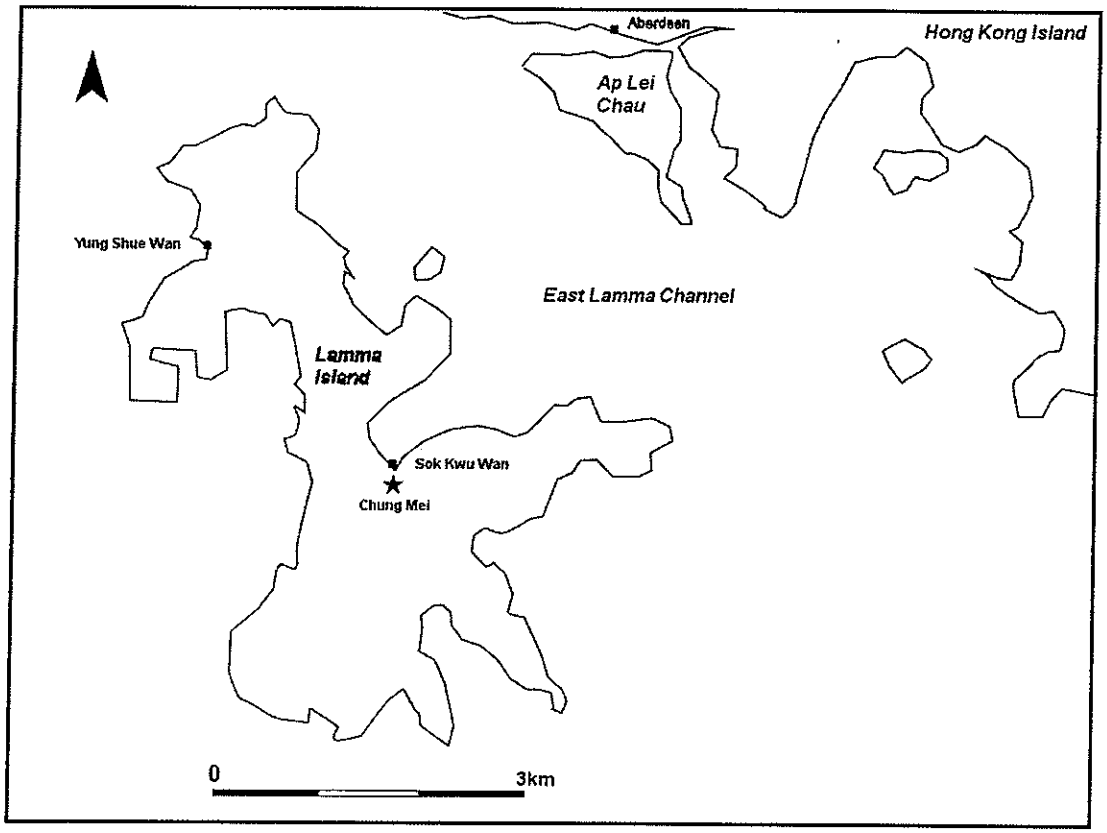


Figure 1: Study Area location – Chung Mei site marked with star

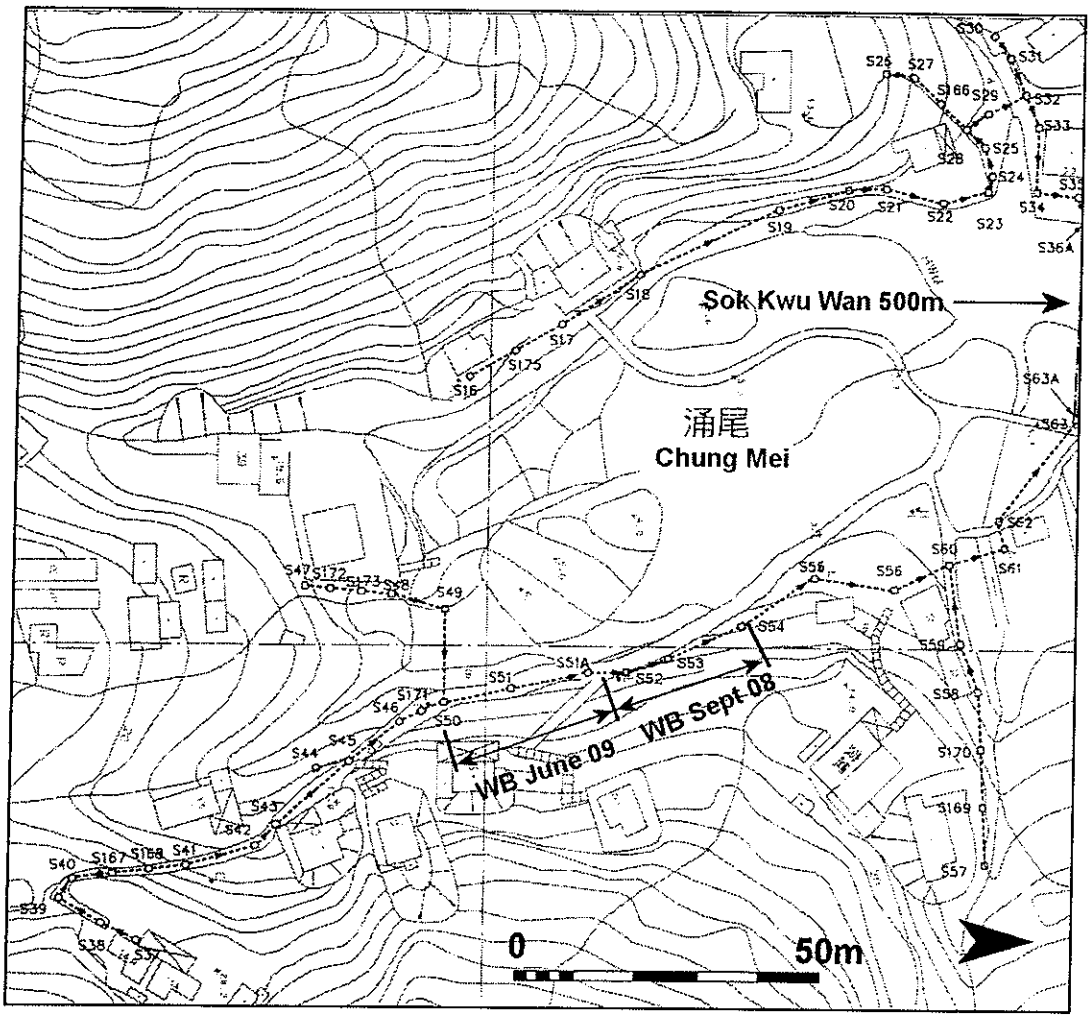


Figure 2: Plan showing location of sewer trench alignment at Chung Mei, with September 2008 and June 2009 watching brief areas highlighted. The corner coordinates for the above map are as follows: SW corner 831400E, 806825N; NW corner 831400E, 806990N; NE corner 831555E, 806990N; SE corner 831555E, 806825N.

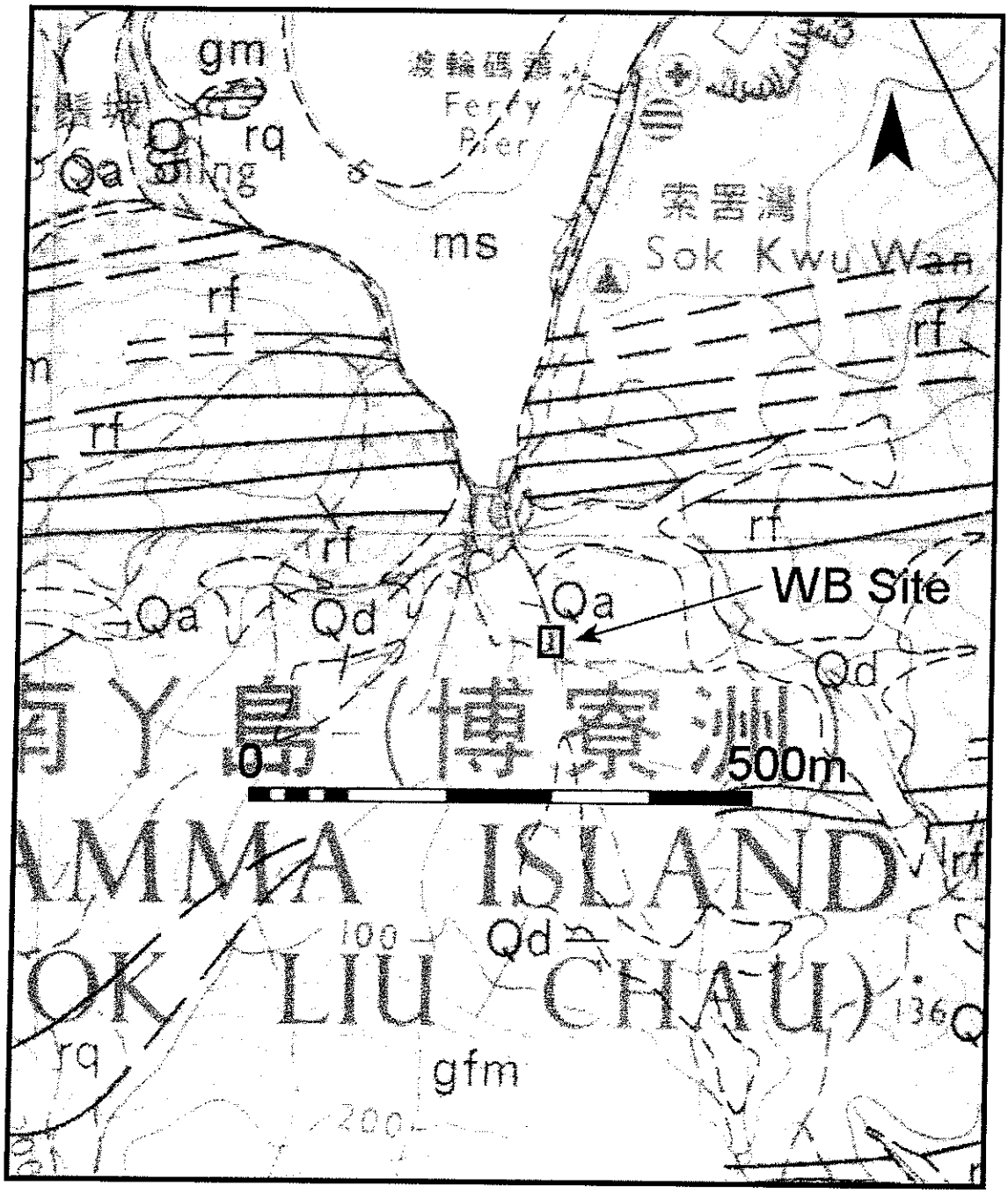


Figure 3: Geology of Study Area – alignment followed western edge of granite bedrock

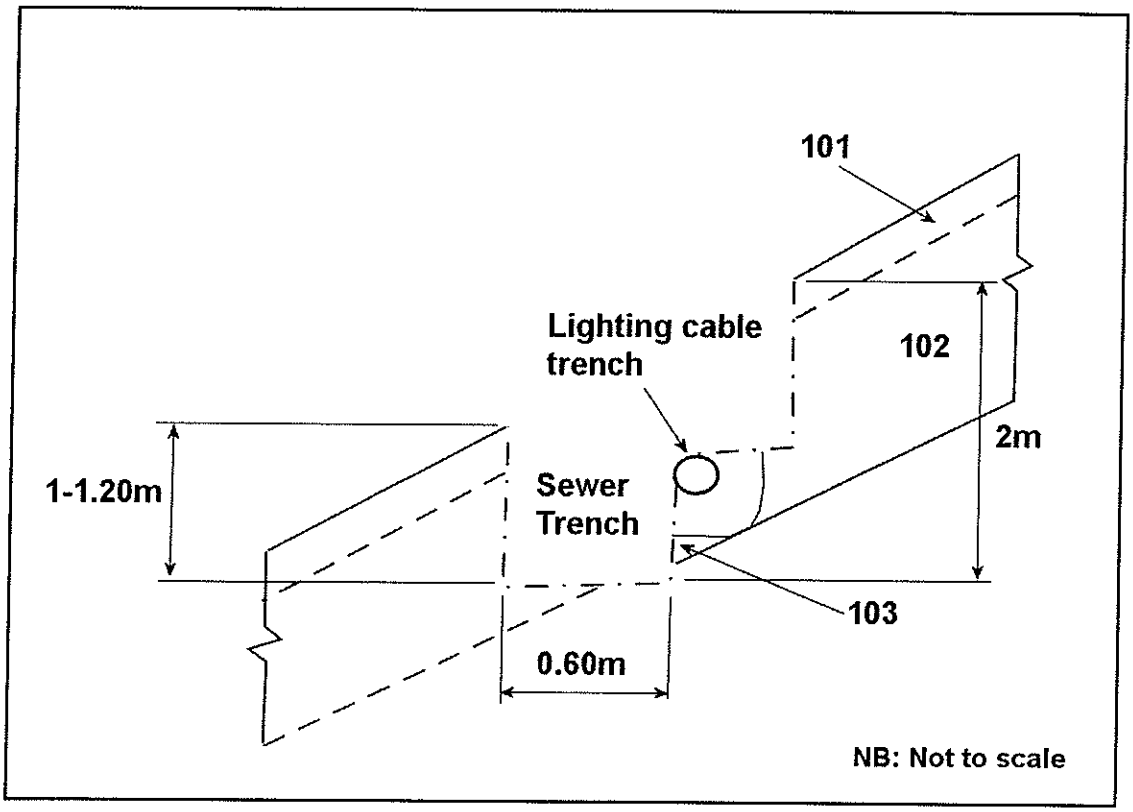


Figure 4: Transverse sketch section of sewer trench in environs of MH S53 – looking north

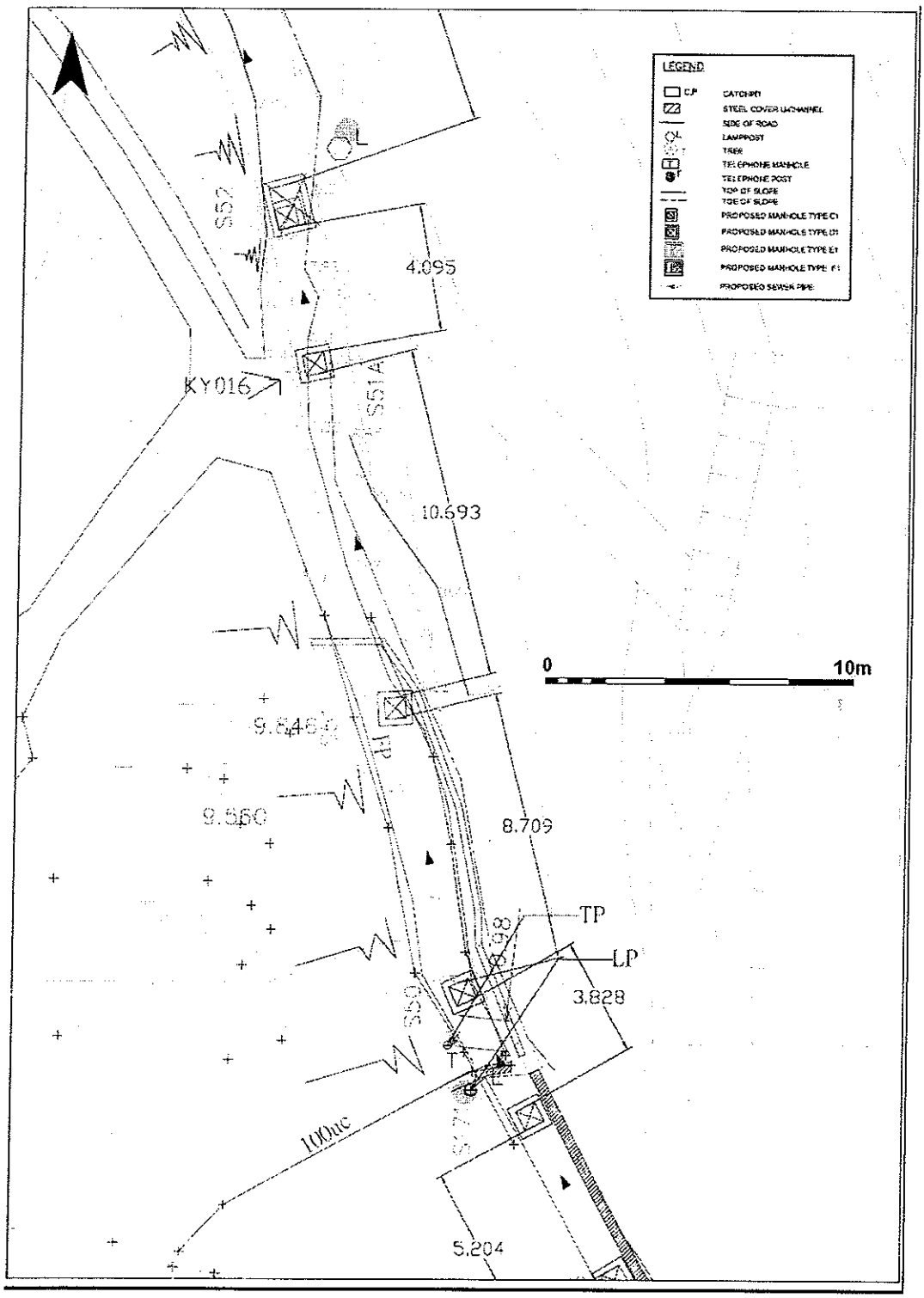


Figure 5: Surveyors' plan of the MH S50 to S52 alignment (kindly supplied by Kaden Engineering Ltd)

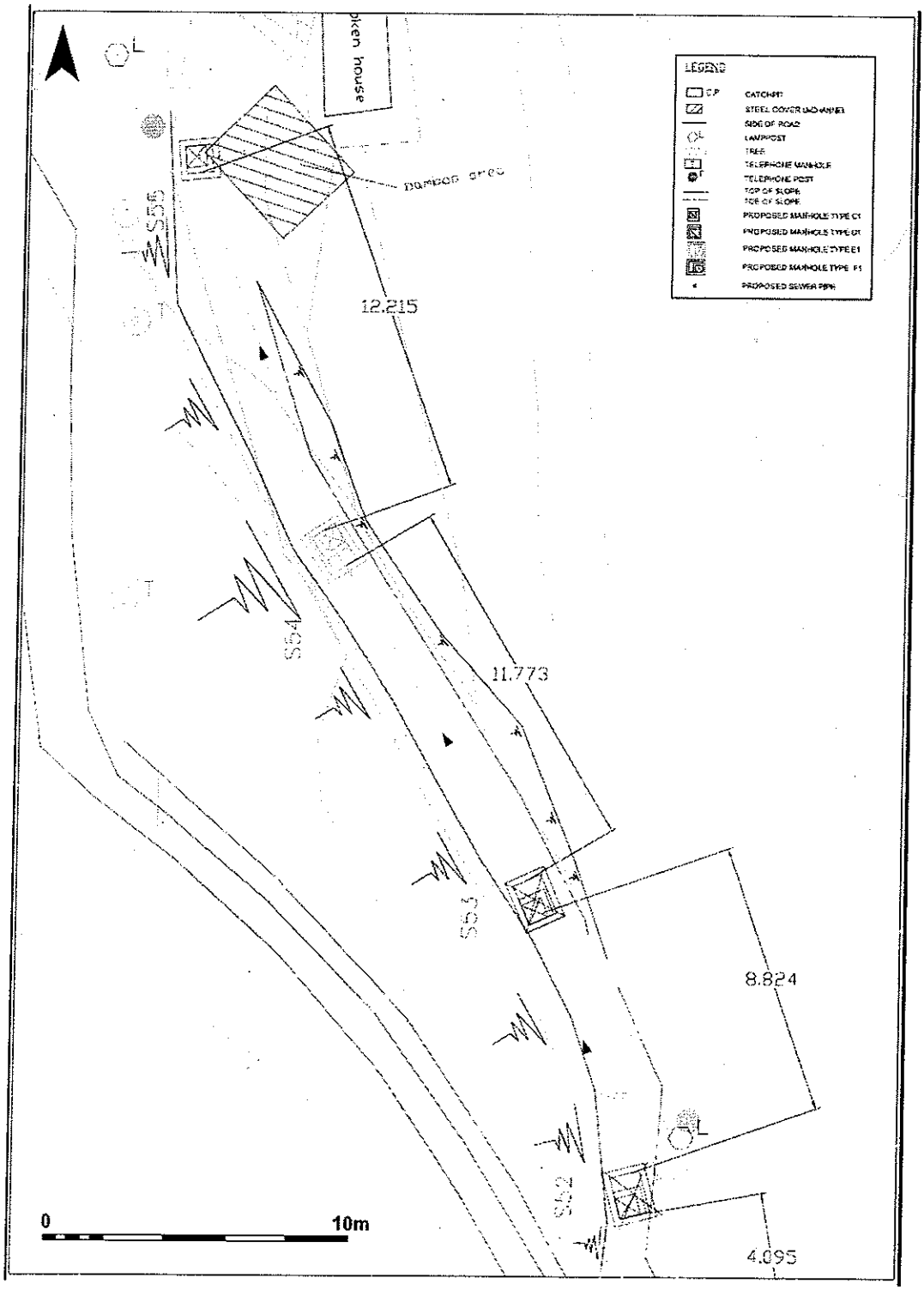


Figure 6: Surveyors' plan of the MH S52 to S54 alignment (kindly supplied by Kaden Engineering Ltd)

9.2 Plates

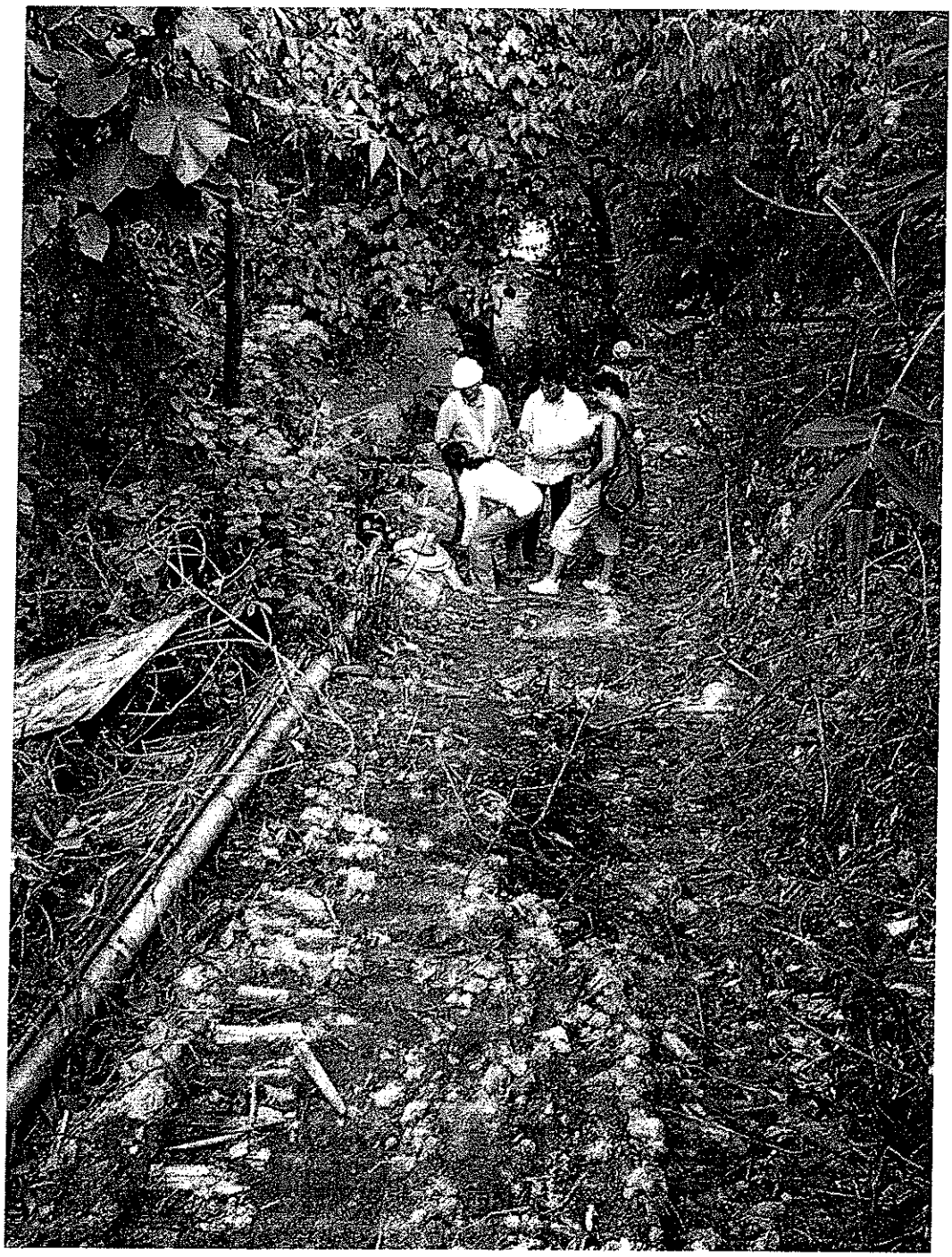


Plate 1: Pre-excavation view of the alignment between MHs S52 and S54 – looking north

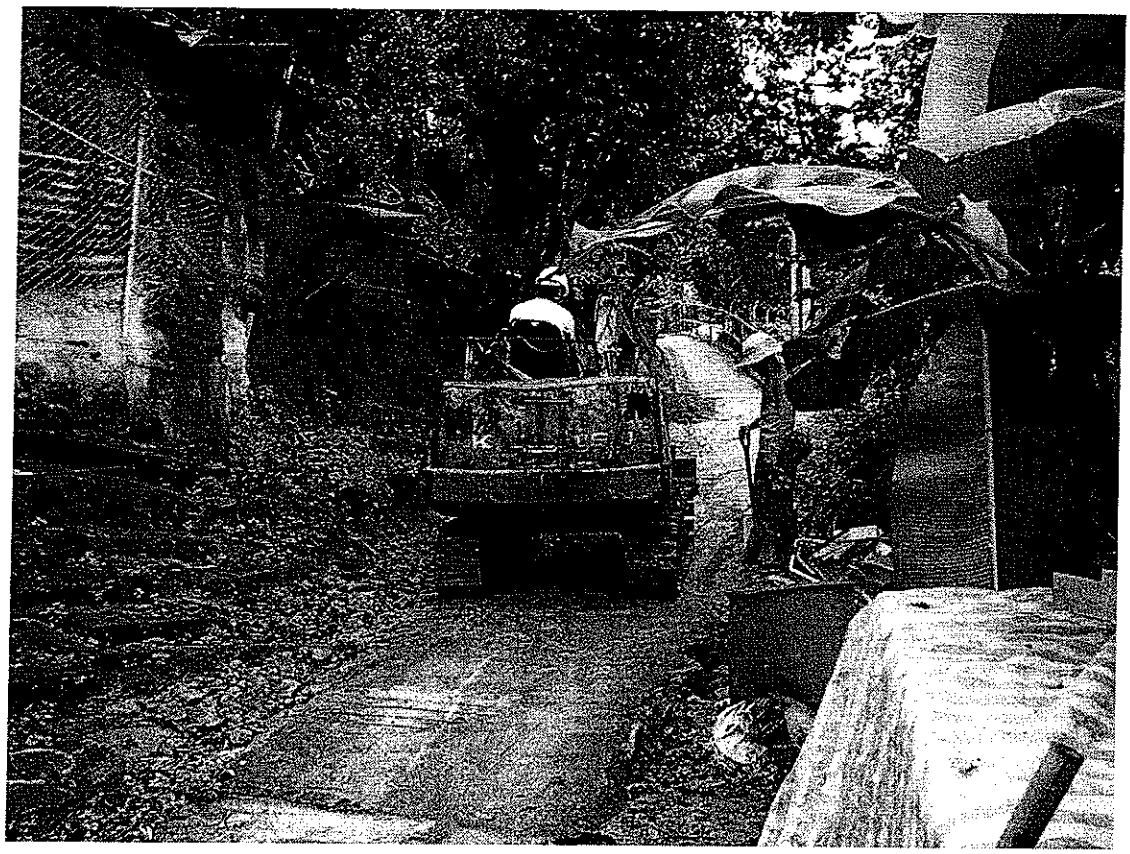


Plate 2: Pre-excavation view of alignment between MHs S51A and S50 – looking south

Plate 3: Post-excavation view of the alignment between MHs S54 and S52 – looking south

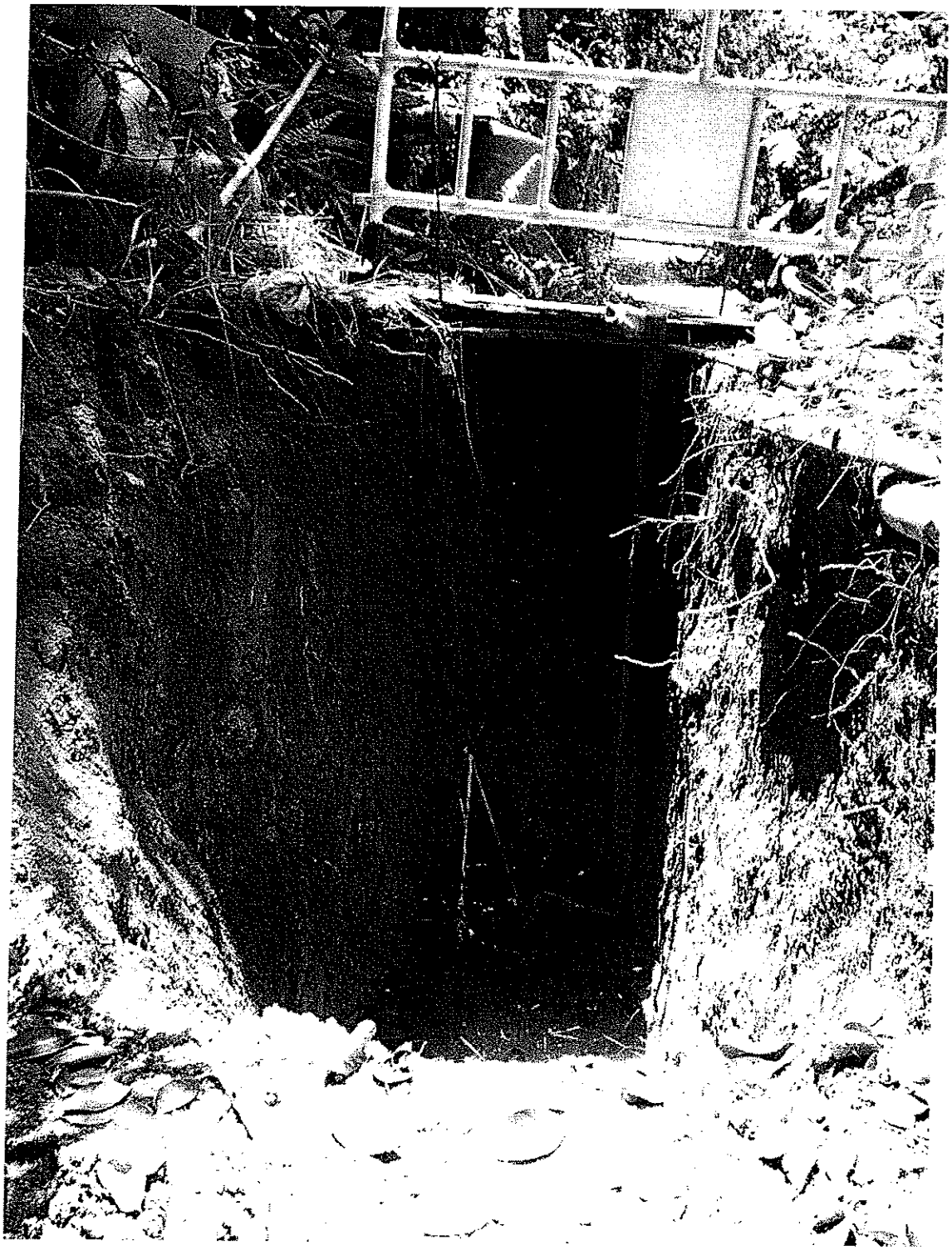


Plate 4: Deeper sondage excavated at MH S52 – looking south

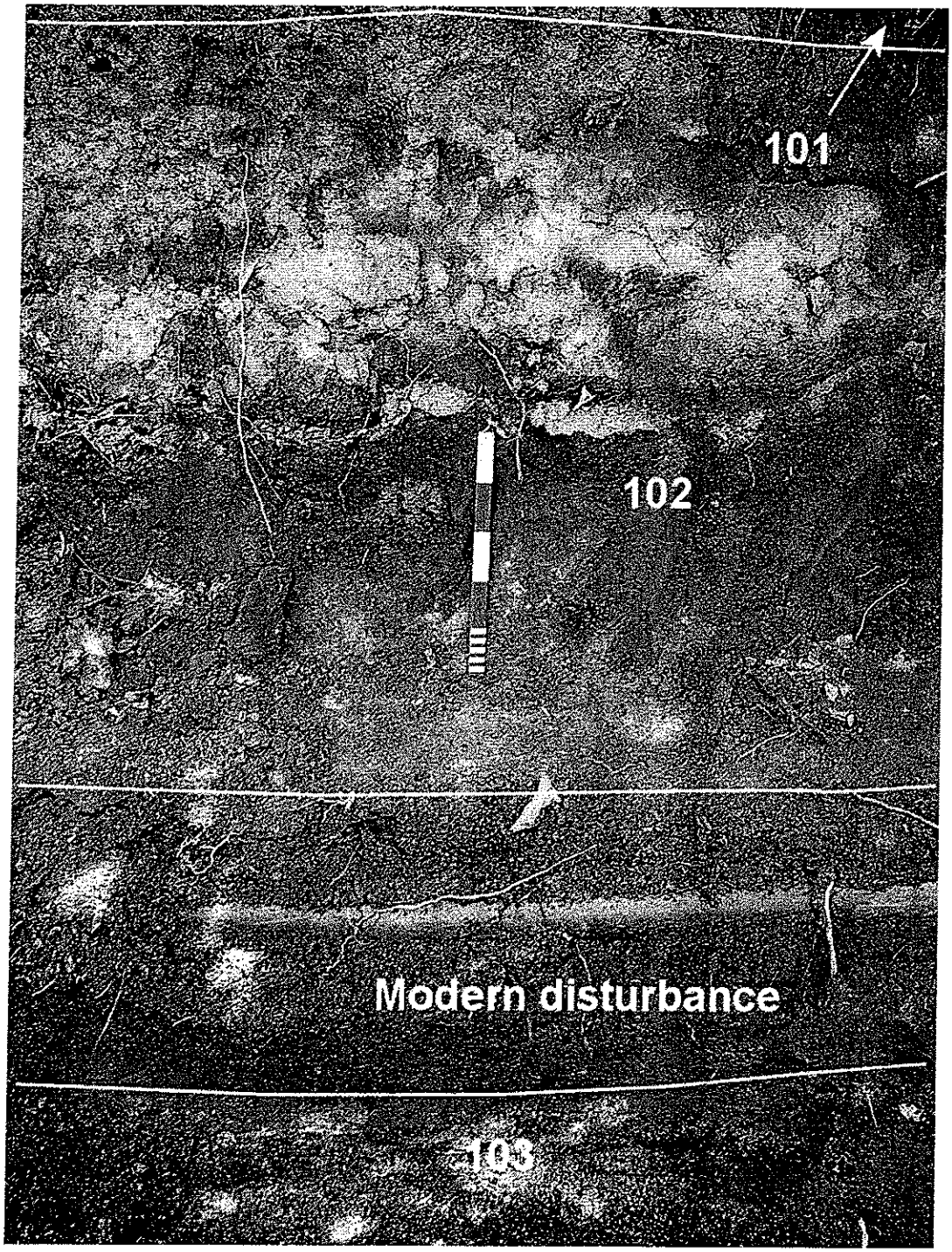


Plate 5: West facing section at MH S53 – trench stepped at base of 0.5m scale

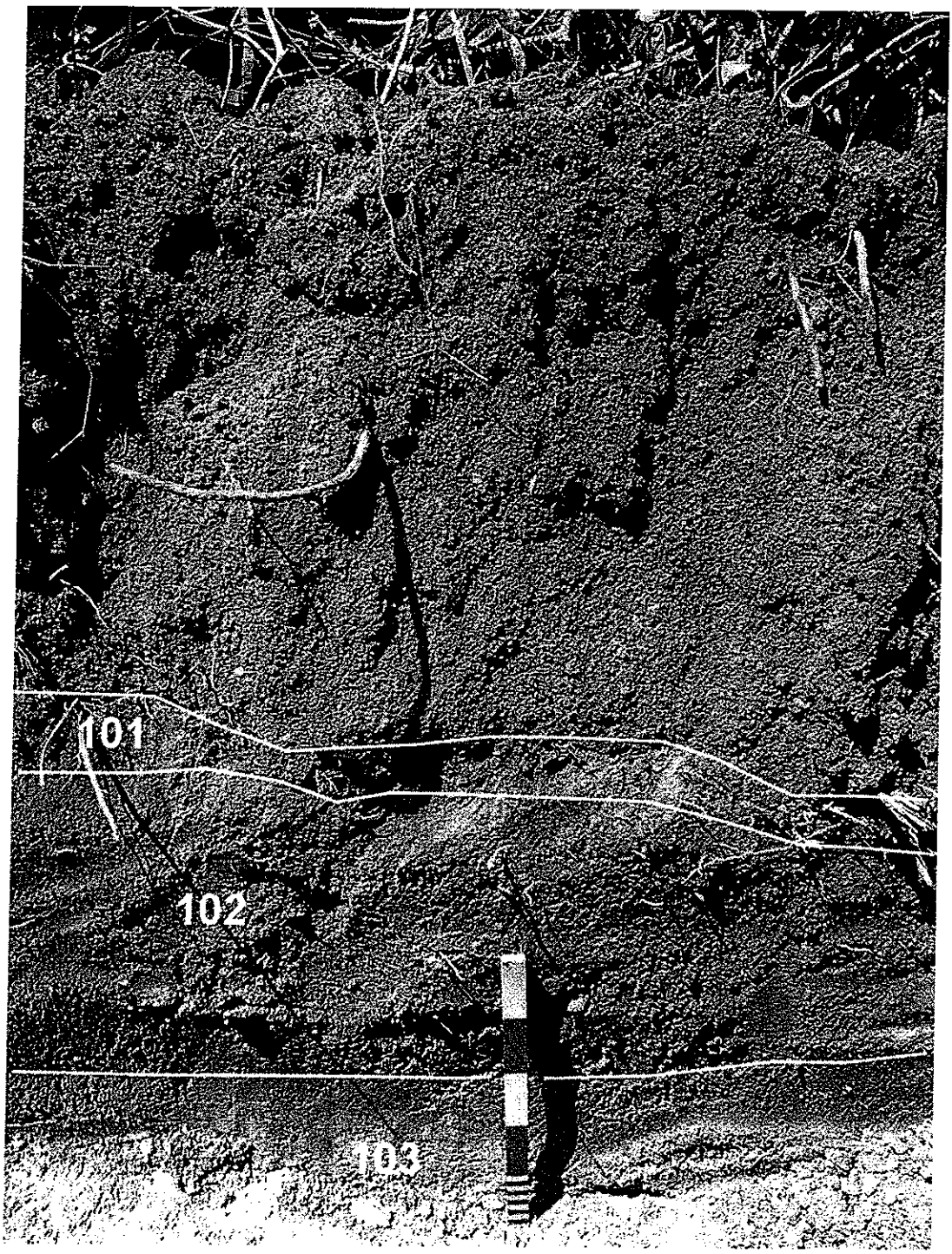


Plate 6: East facing section at MH S54

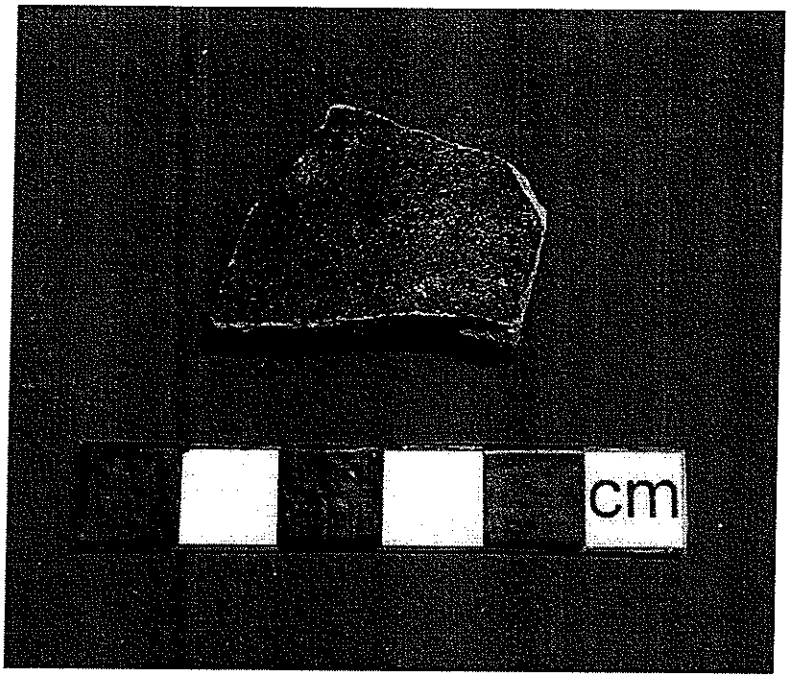


Plate 7: Undiagnostic village ware sherd found on surface of topsoil 101

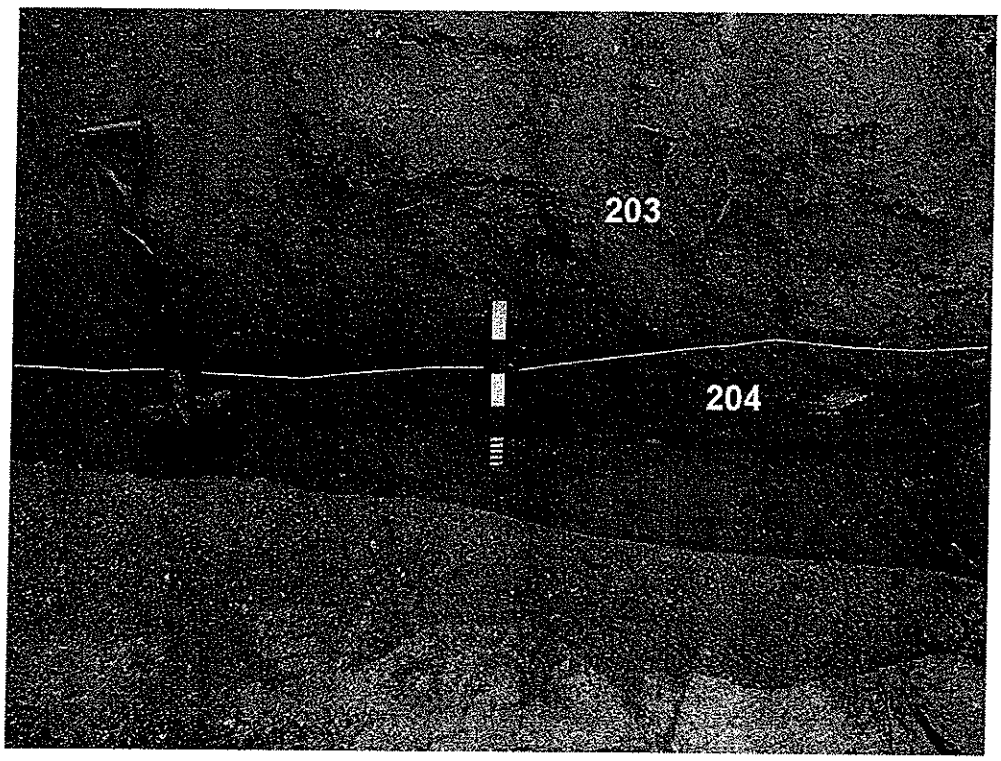


Plate 8: West facing section in environs of MH S50

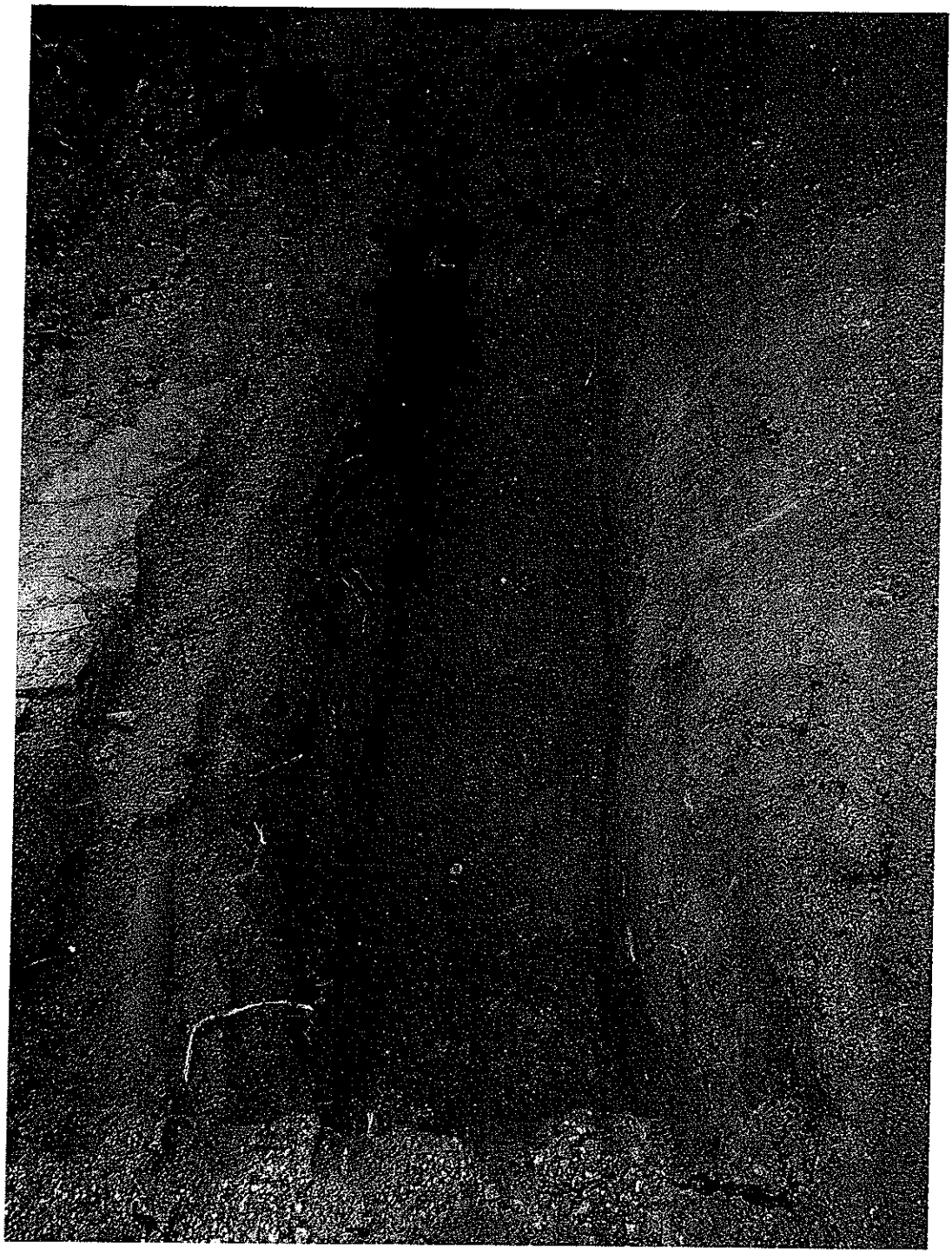


Plate 9: Post-excavation view in environs of MH S50 – looking north

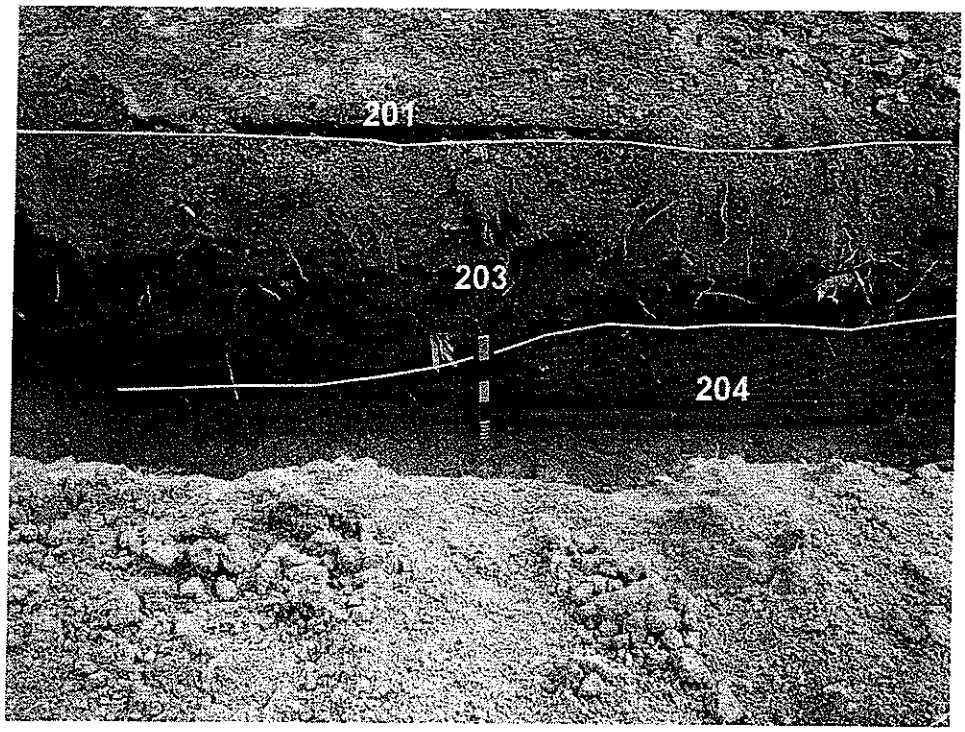


Plate 10: East facing section in environs of MH S51

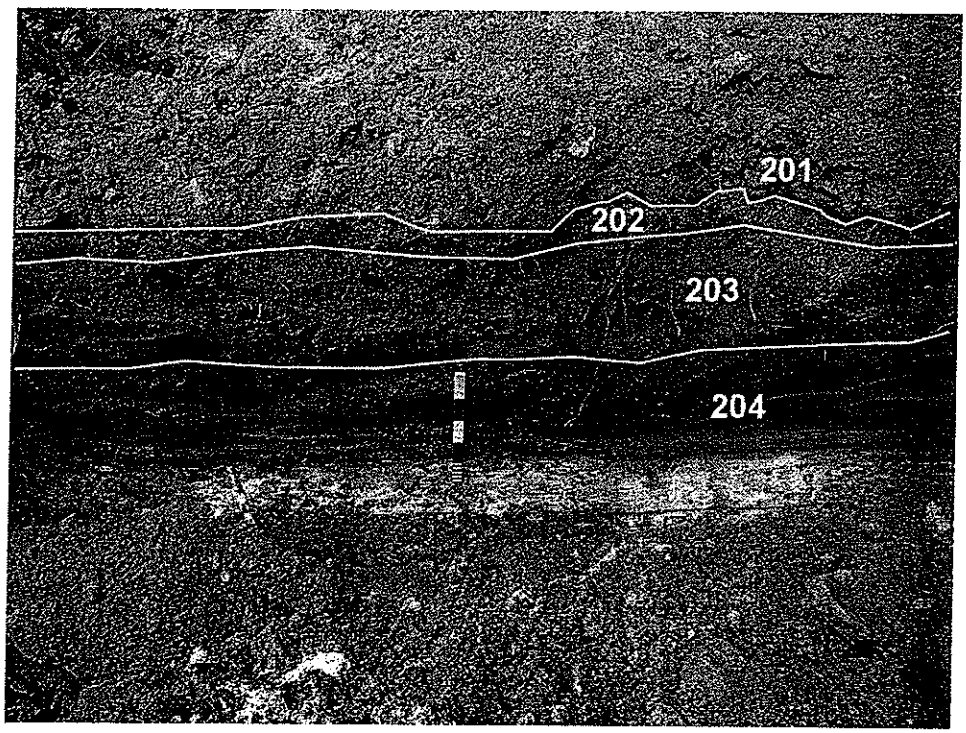


Plate 11: East facing section in environs of MH S51A

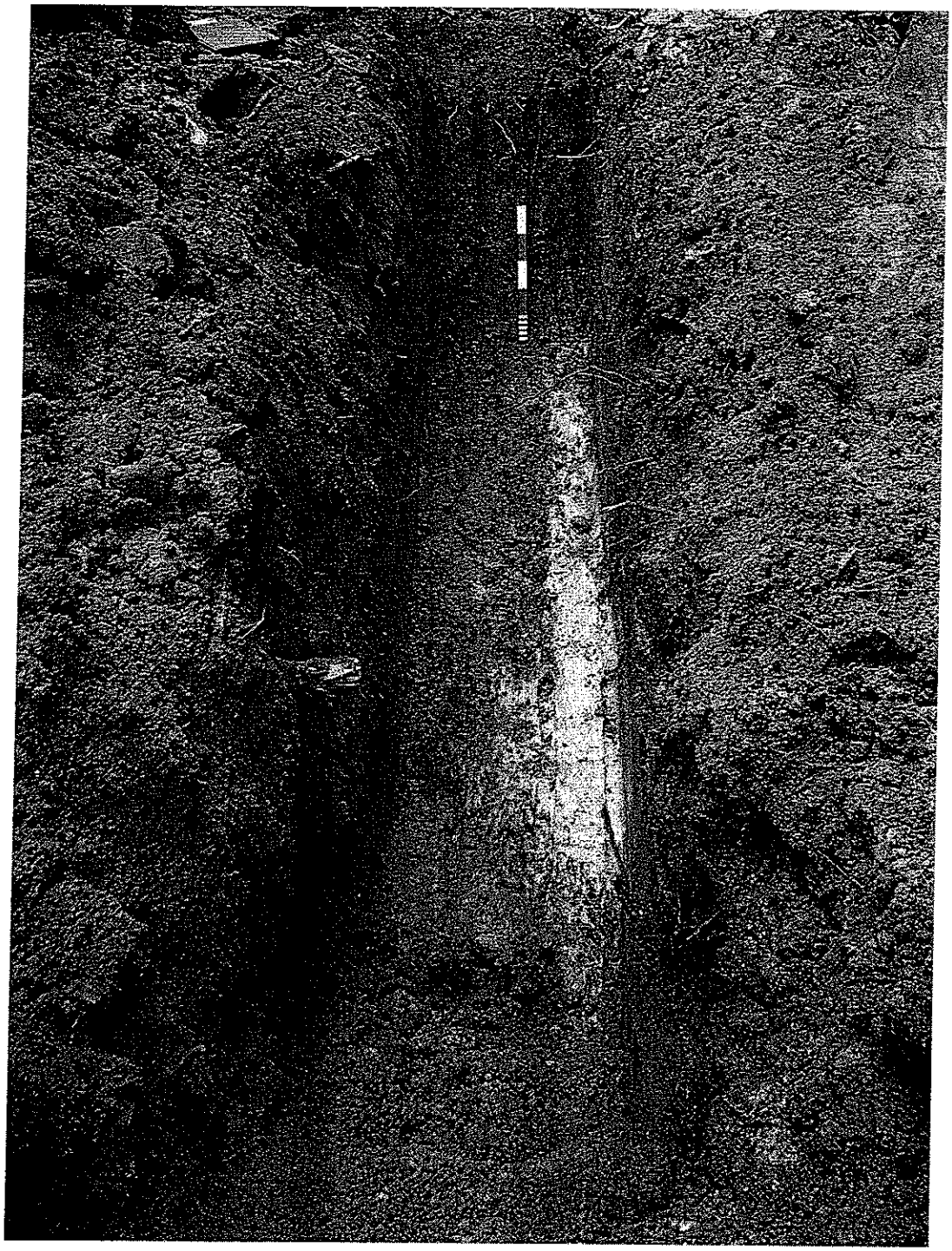


Plate 12: Post-excavation view in environs of MH S51A – looking south

10. Supporting Data

10.1 MHs S52 to S54: Tabulated stratigraphic, contextual and finds summary

Context	Description	Finds & Dating	Thickness
101	Topsoil: Greyish brown (10YR 5/2) slightly sandy, clayey SILT	1 sherd of undiagnostic VW: date unknown	0.10m max.
102	Slope Deposits: Strong brown (7.5YR 5/6) gravelly CLAY	None: date unknown	0.70-0.80m
103	CDG: Reddish Yellow (7.5YR 6/8) clayey GRAVEL	None: date unknown	1.5m at l.o.e

10.2 MHs S50 to S51A: Tabulated stratigraphic, contextual and finds summary

Context	Description	Finds & Dating	Thickness
201	Footpath Surfacing: Grey concrete	None: modern	0.03-0.05m
202	Topsoil: Greyish brown (10YR 5/2) slightly sandy, clayey SILT	None: date unknown	0.10 max
203	Slope Deposits: Reddish yellow (7.5YR 6/8) very gravelly CLAY	None: date unknown	0.50m max.
204	Slope deposits: Strong brown (7.5YR 5/6) slightly gravelly CLAY	None: date unknown	0.60m at l.o.e.

11. Supporting Documents

11.1 Requirements for Archaeological Watching Brief

11.1.1 Introduction

An archaeological watching brief is a programme involved observation and investigation which is required when engineering works impact on areas that have been assessed as having archaeological potential and where conventional testing methods are not possible due to inaccessibility, for examples, concrete coverage and housing settlement. The range of archaeological resources that require monitoring include both historical and prehistoric material and features.

The monitoring process entails the observation of the engineering works by qualified archaeologists in order to identify any archaeological material or features that revealed during the excavation phase of the works schedule. Upon identification of such material or features, the archaeologists will require immediate access to the excavation area for recording of the material/features in-situ location, artefact retrieval and sample collection.

These guidelines serve for two basic purposes, firstly, that the archaeological resources are adequately recorded and recovered and secondly, that appropriate measures are taken on site to create a minimum of delays to the engineering schedule.

11.1.2 Watching Brief Personnel

Watching brief should be undertaken by a qualified archaeologist, whose must apply for a licence under the Antiquities and Monuments Ordinance (Cap. 53) from the Authority before the monitoring works commence. All staff employed by the archaeologist must be suitably qualified and experience for their role.

11.1.3 Area to be Monitored

The Contractor shall carry out archaeological watching brief in Yung Shue Wan and Sok Kwu Wan except those areas at which rescue excavation are required as shown in Drawing No. 2005/C1/1004 to 1009.

11.1.4 Scale of Watching Brief

The sewer alignment identified for archaeological watching brief in Yung Shue Wan and Sok Kwu Wan as shown in Drawing No. 2005/C1/1004 to 1009 should be fully monitored by the archaeologist.

11.1.5 Site Access

Archaeologist should be allowed reasonable access to relevant areas of groundworks, so that deposits can be examined and recorded. Trenches may require temporary shoring and groundworks might need to be temporarily re-scheduled, to provide a safe environment for such works. Provision should be made, at the earliest of development programming, for specified blocks of time to be available for unrestricted archaeological access to areas of groundworks.

11.1.6 Schedule of Works

A construction programme should be provided by the Contractor to the archaeologist to arrange the monitoring schedule. The archaeologist should be notified no less than 2 working days prior to any change on the commencement of the excavation works so arrangement could be made to monitor the works. The Contractor should facilitate arrangement and liaison with the archaeologist.

11.1.7 Watching Brief and Retrieval Methodology

In Table 1 are the various categories of archaeological material and features that are most likely to occur in local contexts. Also listed are the recommended type and degree of recording and retrieval required for each category. Upon discovery of any archaeological relics, the qualified archaeologist will advise the Contractor who shall contact the AMO informing the discovery. Any archaeological relics recovered during the programme should be properly recorded and submitted to the AMO.

Table 1 – Categories of Archaeological Finds and Recommended Action

Categories of Archaeological Material	Retrieval Procedures
Human Burial • Skeletal remains • Item associated with Human Burial, i.e. grave goods.	**Full Recording and Recovery of Human Remains and Associated Features** • Complete recording by photography, drawing, written description. • Full measurement of burial and surrounding matrix. • Retrieval of human remains and associated items. • Retrieval of surrounding soil for further analysis.
Intact Features • Structural/ architectural remains. • Undisturbed contexts, e.g. hearth, midden, habitation area, assemblages of artefacts and/ or environmental material.	**Full Recording and Recovery of Archaeological Features** • Recording and measurement of salient features by photography, drawing and written description. • Retrieval of all archaeological material • Retrieval of samples from the surrounding matrix.
Intact Artefacts • Complete objects, e.g. pottery, metal objects, stone or bone tools. The objects are complete but isolated and are not part of assemblage or feature.	**Recovery of Artefacts** • Recovery of Objects • Sampling of surrounding matrix • Recording by written description and by photography.
Isolated Material • Sherds, non-human bone, artefact fragments (metal, pottery, glass). There are no compete objects, the material is isolated and fragmentary in nature.	**Recovery of Artefact Fragments/ Archaeological Material** • Recovery of material, e.g. artefact fragments, environmental material and sampling of surrounding matrix. • Recording by written description and by photography, if appropriate.
Deposits with Archaeological Potential • Soil deposits which exhibit characteristics associated with archaeological remains in Hong Kong.	**Sampling of Deposit** • Collection of soil samples from deposits displaying archaeological potential • Recording of soils by photography and written description.

11.1.8 Recording Forms for Watching Brief

A set of forms for the recording of any archaeological material identified during the watching brief process must be approved by the AMO. They should include the following:

- Registers to record finds, special finds, contexts, photographs, drawings, levels and samples

- Context descriptions forms

- A daily record form specifically designed for archaeological watching brief. This form must locate clearly the area of works monitored, the nature and extent of the works, summaries of the days findings and cross references to all register numbers used that day.

11.1.9 Safety Requirements

Archaeologists and staff employed in watching brief must follow the safety procedures enforced by the Contractor on site.

11.1.10 Watching Brief Report

The procedures and results of the watching brief programme should be presented in report form, following 'Guidelines for Archaeological Reports' set by the AMO. All data, material and records forming the site archive must be submitted to the AMO upon completion of the project.

11.1.11 Mitigation Measures

The Contractor should follow a flexibility to undertake the contingency arrangements. Should significant materials be discovered, appropriate mitigation measures will be designed and implemented.

12. Comments and Responses

12.1 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works, Draft Archaeological Watching Brief Report: Response to AMO Comments of 27/08/09

Item	AMO Comment	AAL Response
1	In the English Non-Technical Summary, please state the project name instead of "the above captioned project".	Text will be amended accordingly.
2	Please state the Chinese project name in the Chinese Non-technical Summary.	Text will be amended accordingly.
3	非技術性中文摘要(Chinese Non-technical Summary)內有錯別字、文法錯誤及行	Text will be amended accordingly.

	文不流暢等問題。請加以修改。	
4	It is noted that the alignment between MH S54 and S52 was carried out on a natural slope instead of running along the concrete footpath. Hence, the location of the said alignment in Figure 2 is not tally with the description. Please check and revise the figure accordingly.	Figure 2 will be checked and revised.
5	Given that a modern electricity cable was found under contexts 101 and 102, please explain why such layers are identified as naturally-formed deposits instead of disturbed layers.	The electricity cable was in a service trench which had been cut from the modern surface with layers 101-103 already in place. Therefore, the cable was not found under layers 101 & 102 but, rather, had been cut through them. Thus the only disturbed material was the backfill of the electricity cable trench which, as a modern intrusion, was not allocated a context number. Layers 101 and 102 are therefore correctly described as "naturally-formed deposits".
6	Given that a modern water pipe and an electricity cable were found under contexts 201, 202 and 203, please explain why such layers are identified as naturally-formed deposits instead of disturbed layers.	Context 201 is the concrete surface of the modern path, which was probably patched up after the utilities were inserted. The water pipe and electricity cable were in narrow utilities trenches which had been cut from the modern surface with layers 202-203 already in place. Therefore, the modern utilities were not found under layers 202-203 but, rather, had been locally cut through them. Thus the only disturbed material was the backfill of the utilities cuts which, as modern intrusions, were not allocated context numbers. Layers 202-203 are therefore correctly

		described as "naturally-formed deposits".
7	Please provide the coordinates of Figure 2.	The corner coordinates for Figure 2 are as follows: SW corner: 831400E, 806825N NW corner: 831400E, 806990N NE corner: 831555E, 806990N SE corner: 831555E, 806825N These coordinates will be added to the caption for Figure 2.
8	Please cite the relevant documents in Section 8 regarding the citations of "Hong Kong Government 1987" mentioned in Section 4.2 and "Hase (2002, 7)" mentioned in Section 4.3.	Cited documents will be added to References
9	Please provide the legend for Figures 5 and 6.	A legend will be provided for the two figures.
10	Please supplement the "Requirements for Archaeological Watching Brief" in Section 11.1.	The 'Requirements for Archaeological Watching Brief" text will be added to Section 11.1.

Appendix I

Vegetation Survey Report

and Photographic Records of the Uncommon Tree Species

IC3184

Kaden 基利

Your Ref.: DC200718/M45/800/O01571
Our Ref.: K0801/01.01.00.00/2710/L
Date: 20 November 2009

Scott Wilson CDM Joint Venture
38/F, Metroplaza Tower 1
223 Hing Fong Road
Kwai Fong, N.T.
Hong Kong

FAXED

Attn: Ir. Ian J. Jones

By Hand

Dear Sir,

Drainage Services Department
Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Impact Monitoring Report – Updated Vegetation and Plant Species Survey Report at SKW

We refer to your above referenced letter dated 17 November 09 the letters from AFCD as ref. (16) in AF EA 027/07 Pt.2 and from EPD as ref. (5) in EP771/E1/083 dated 13 & 16 November 09 respectively regarding the misidentification and mislabeling of uncommon species at Sok Kwu Wan as report in Impact Monitoring Report under Environmental Permit (EP-281/2009/A).

Please be informed that our landscape specialist sub-contractor "Bluet" has carried out further site investigation and vegetation survey on 18 November 09. We would like to clarify and confirm that uncommon tree species "Celtis Timorensis" from CT1 to CT12 were still existed in place. We then immediately rectified all mislabeling, fenced and protected.

Enclosed please find herewith the latest photographic records showing the plant with labels and figure with correct locations for your reference.

As a responsible contractor and permit holder of EP, we would strictly follow the permit condition and ensure the plants were properly labeled, fenced and protected in order to avoid any disturbance during construction in future.

Thank you for your kind attention.

Yours faithfully,
For and on behalf of
Kaden Construction Limited.

Stephen Leung
Site Agent

StL/JC/pys
Encl.

c.c.

AFCD	Attn: Dr. Joseph Cheung	(By Fax only: 2377 3327)
EPD	Attn: Mr. Matthew Chan	(By Fax only: 2591 0558)
DSD	Attn: Mr. C K Au	(By Fax only: 2833 9162)
IEC	Attn: Mr. Rodney Ip	(By Fax only: 2428 9922)
ETS	Attn: Mr. C. L. Lau	(By Fax only: 2695 3944)
Kaden – RP/WW/JC/AT/KKL/IS		

Kaden Construction Limited
Units 1001 - 1015, 10/F Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Sha Tin, N.T., Hong Kong
Tel (852) 2272 3670 Fax (852) 2528 1751
A MEMBER OF BUILD KING HOLDINGS 利基控股集團成員

Kaden Construction Ltd.
Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Location of the Uncommon Tree Species, Celtis Timorensis in SKW

Kaden 基利

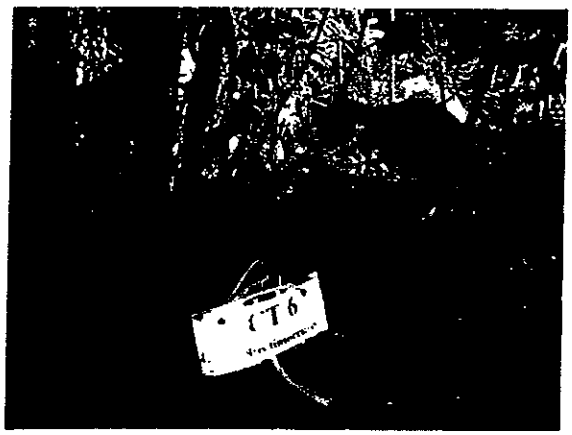
Date: 19 Nov 2009

CT 1 and CT 2

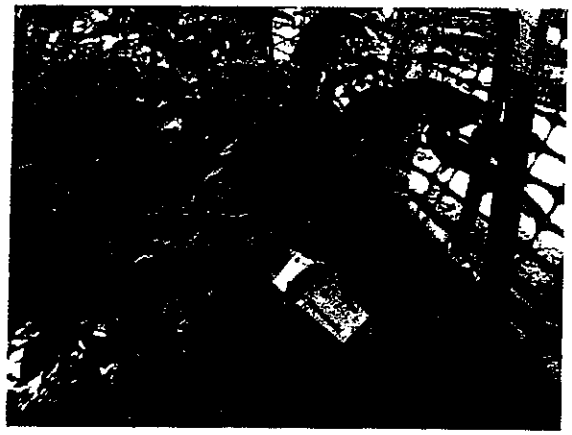
CT 3

CT 4

CT 5



CT 6

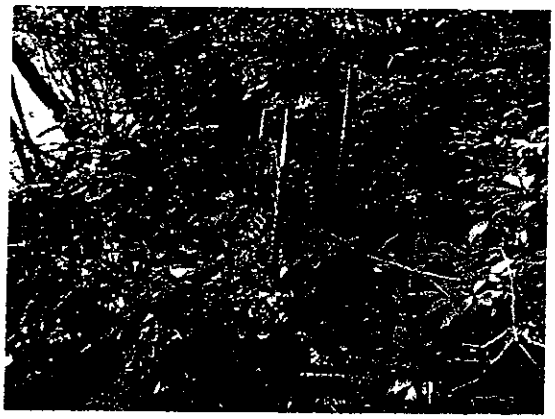


CT 7

CT 8

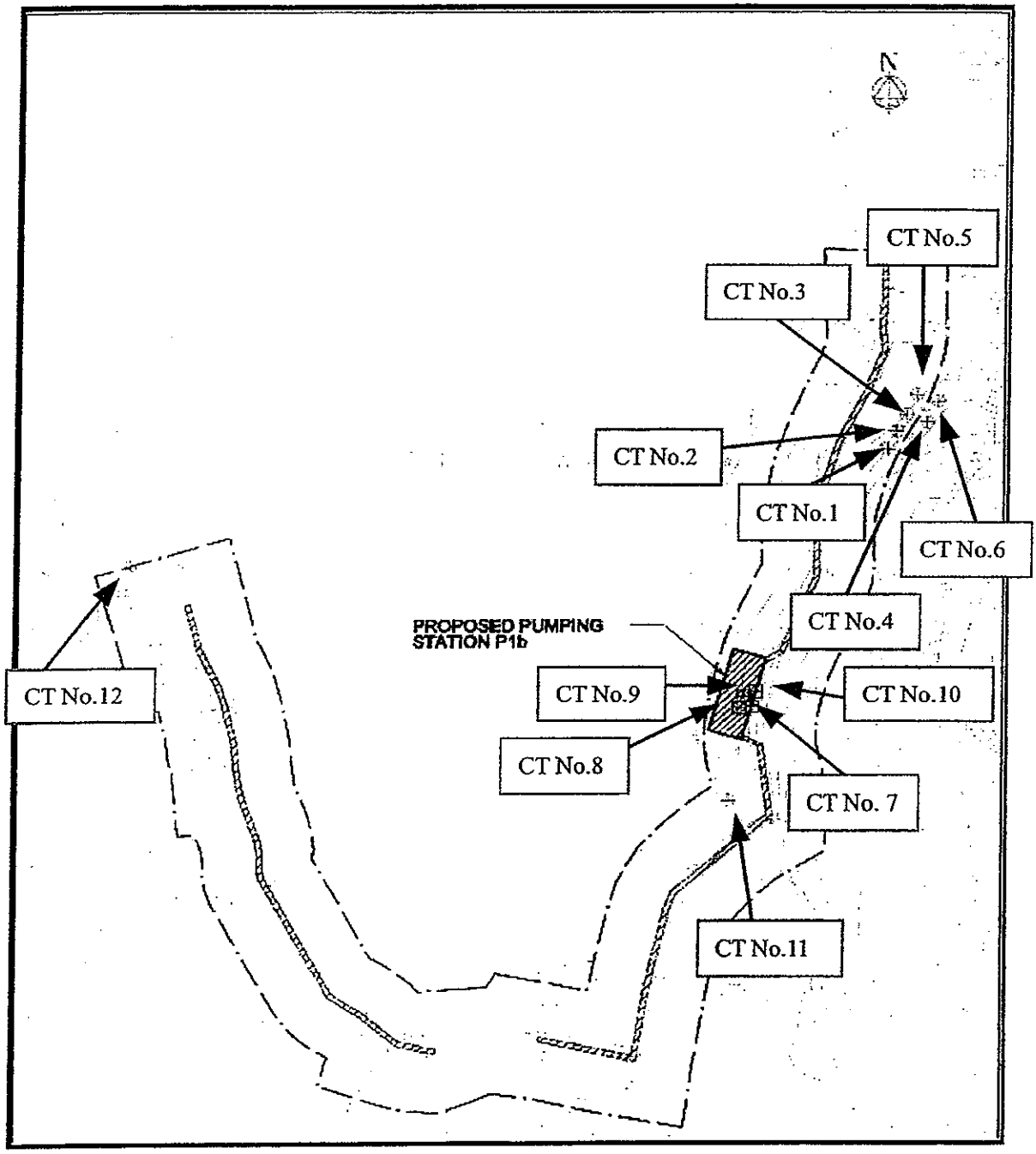
CT 9

CT 10



CT 11

CT 12



LEGEND

- CELTIS TIMORENSIS TO BE LABELLED, FENCED AND PROTECTED AND TO BE TRANSPLANTED IN ADVANCE OF PUMPING STATION CONSTRUCTION
- CELTIS TIMORENSIS TO BE LABELLED, FENCED AND PROTECTED
- VEGETATION SURVEY BOUNDARY (10m OFFSET FROM SEWERAGE ALIGNMENT)
- PROPOSED SEWERAGE ALIGNMENT AND PUMPING STATION AREAS

Your Ref.: (12) in EP771/E1/083
Our Ref.: K0801/03.09.00.00/2816/L
Date: 17 December 2009

Environmental Protection Department
Environmental Compliance Division
Regional Office (South)
2/F, Chinachem Exchange Square
1 Hoi Wan Street
Quarry Bay, Hong Kong

Attn: Mr. Chan Ho Sun

By Fax & By Post
(Fax No.: 2960 1760)

Dear Sir,

Drainage Services Department
Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Impact Monitoring Report at Sok Kwu Wan

Thank you for your above refcrenced letter dated 8 December 09 regarding the captioned.

Please be informed that our landscape specialist sub-contractor "Bluet" has carried out further site investigation and vegetation survey on 15 December 09. We would like to clarify and confirm that tree species "Celtis Timorensis" numbering from CT13 to CT15 were exist in place. We then immediately rectified all mislabeling, fenced and protected.

Enclosed please find herewith the latest photographic records and layout plan for above three species showing the plant with labels and figure with correct locations for your reference.

We would strictly follow the permit condition under the EIAO and ensure the plants were properly labeled, fenced and protected during construction in future.

Thank you for your kind attention.

Yours faithfully,
For and on behalf of
Kaden Construction Limited.

Stephen Leung
Site Agent

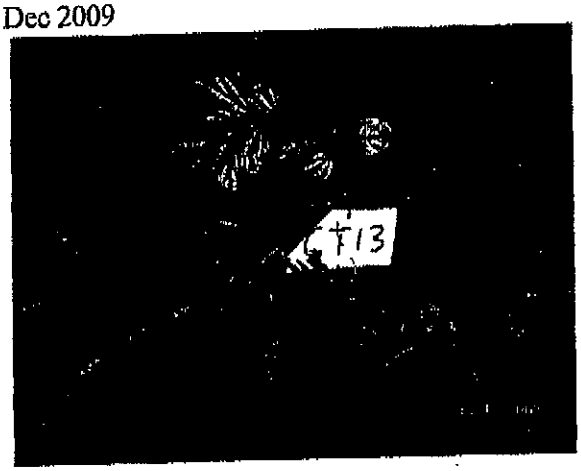
StL/RP/mf
Encl.

c.c.

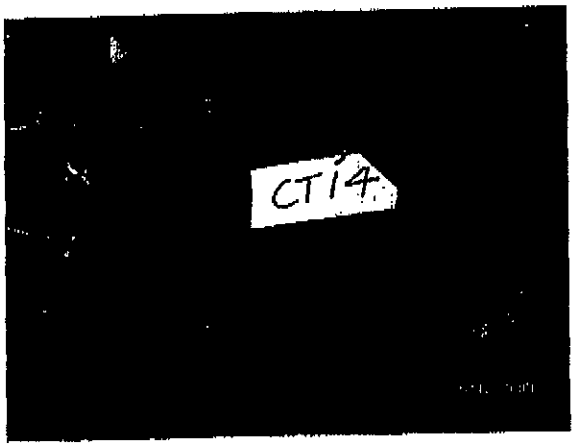
AFCD	Attn: Dr. Joseph Choung	(By Fax only: 2377 3327)
EPD	Attn: Mr. Matthew Chan	(By Fax only: 2591 0558)
DSD	Attn: Mr. C K Au	(By Fax only: 2833 9162)
IEC	Attn: Mr. Rodney Ip	(By Fax only: 2428 9922)
ETS	Attn: Mr. C. L. Lau	(By Fax only: 2695 3944)
Kaden	– RP/WW/JC/AT/KKL/IS	

Kaden Construction Limited
Units 1001 - 1015, 10/F Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Sha Tin, N.T., Hong Kong
Tel (852) 2272 3670 Fax (852) 2528 1751
A MEMBER OF BUILD KING HOLDINGS 利基控股集團成員

Kaden Construction Ltd
Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewwerage, Stage 1 Works
Date : 17 Dec 2009

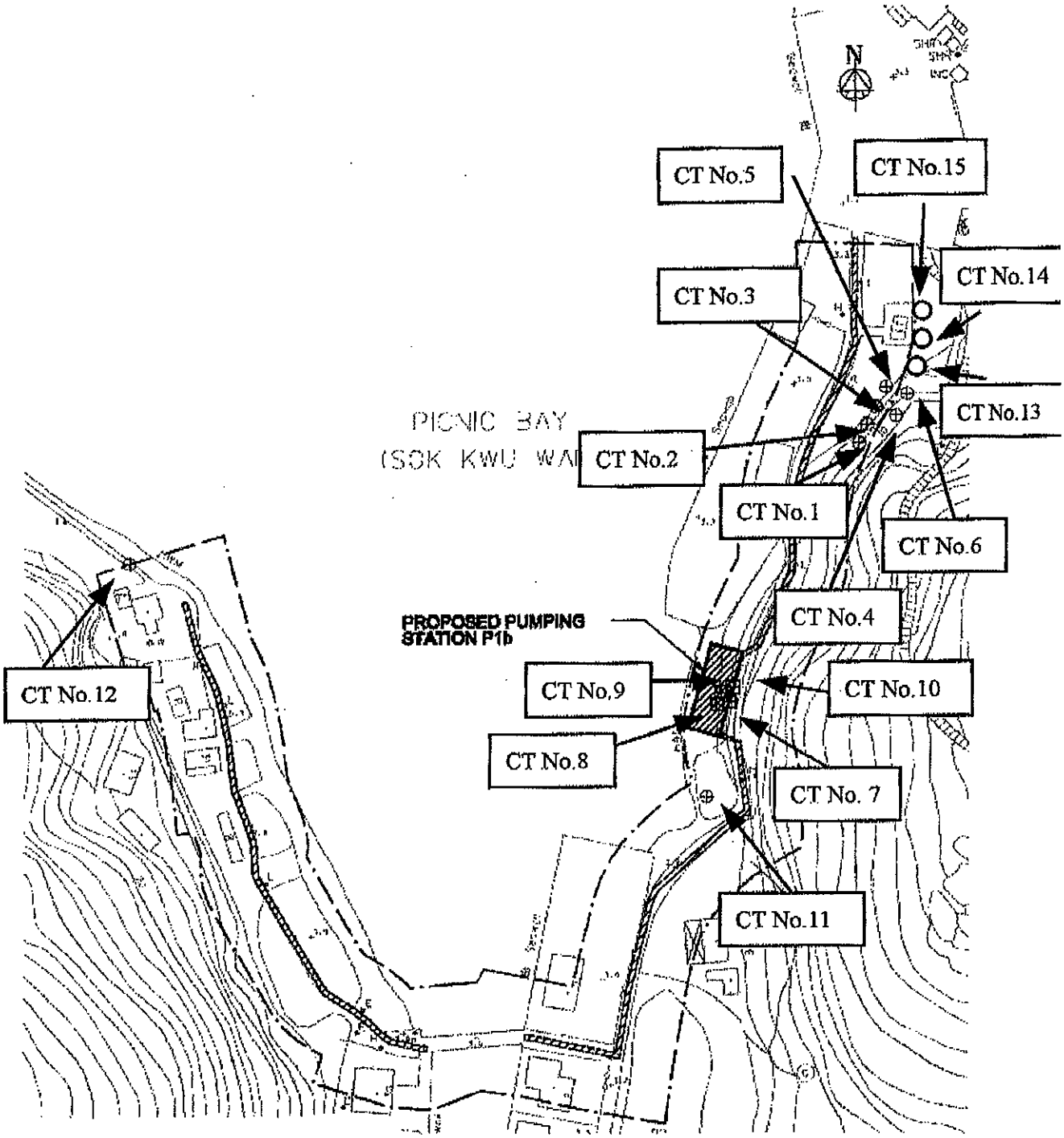


CT 13



CT 14

CT 15



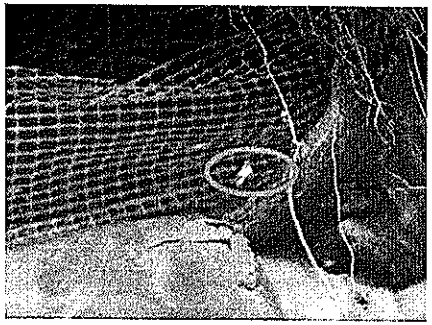
LEGEND

- ⊞ CELTIS TIMORENSIS TO BE LABELLED, FENCED AND PROTECTED AND TO BE TRANSPLANTED IN ADVANCE OF PUMPING STATION CONSTRUCTION
- ⊕ CELTIS TIMORENSIS TO BE LABELLED, FENCED AND PROTECTED
- — — VEGETATION SURVEY BOUNDARY (10m OFFSET FROM SEWERAGE ALIGNMENT)
- ▨ PROPOSED SEWERAGE ALIGNMENT AND PUMPING STATION AREAS

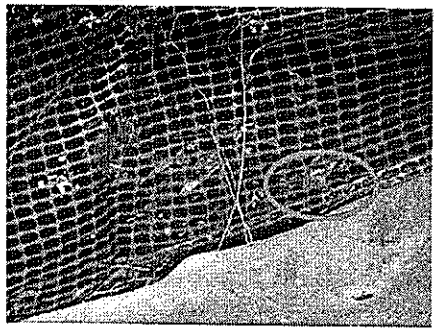
CT No.	Page
1,2	P.4
3,4,5,6,	P.5
7,8	P.6
9,10	P.7
11,12	P.8
13,14,15	see attachment

Photos (Date of Weekly Inspection: 28-12-09)

CT No.01

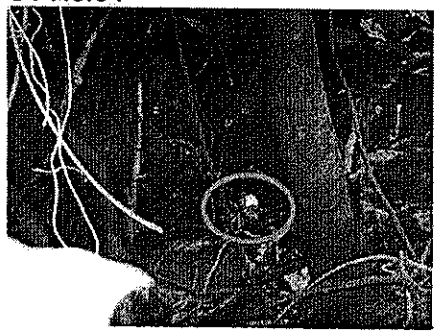


CT No.02

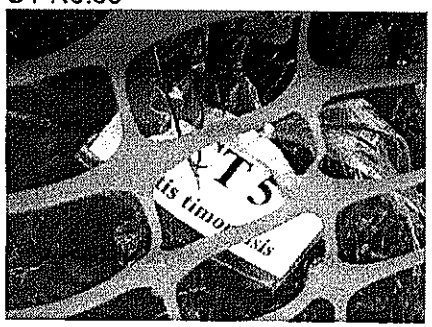


CT No.03

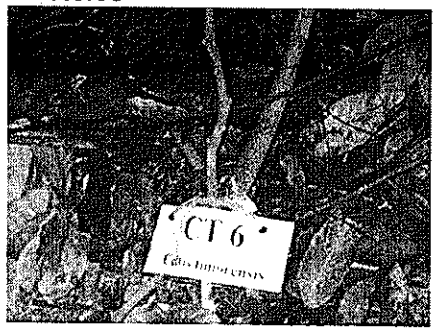
CT No.04



CT No.05



CT No.06



CT No.07

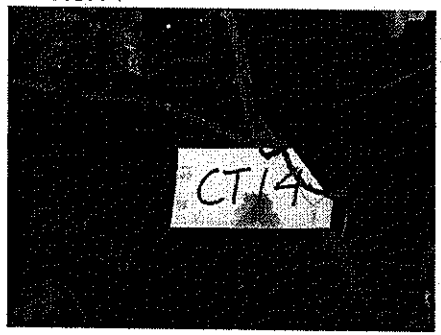
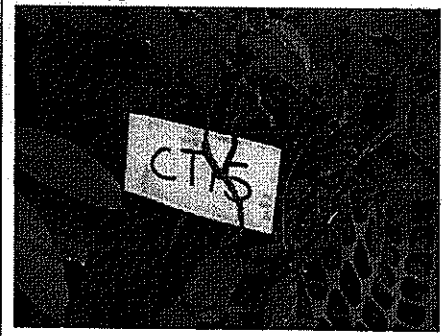
CT No.08

CT No.09

CT No.10

CT No.11

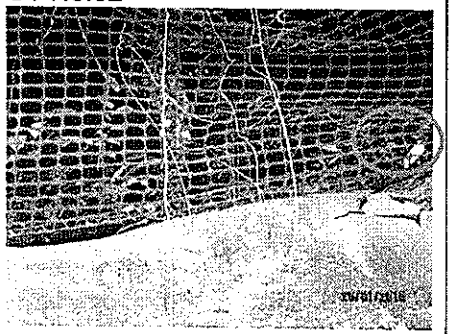
CT No.12

CT No.13	CT No.14	CT No.15	
			

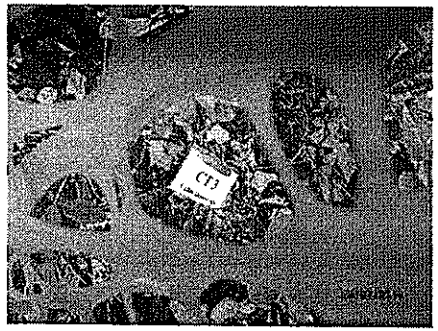
Photos (Date of Monthly Inspection: 26-01-10)

CT No.01

CT No.02

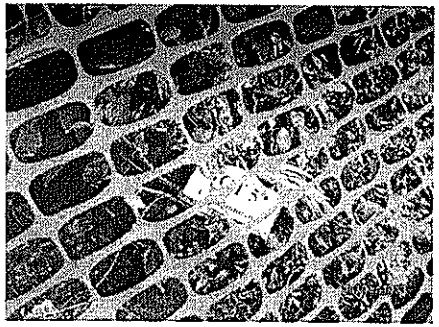


CT No.03

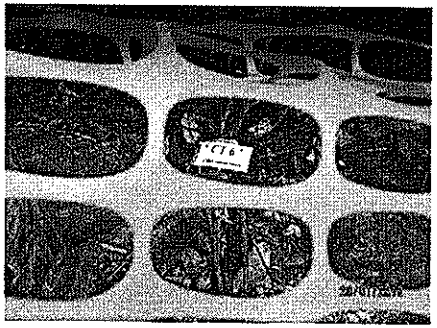


CT No.04

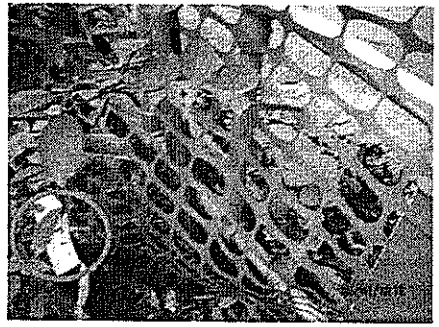
CT No.05



CT No.06



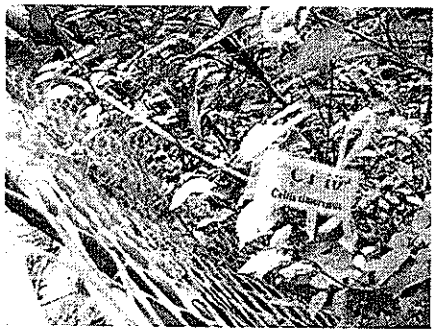
CT No.07



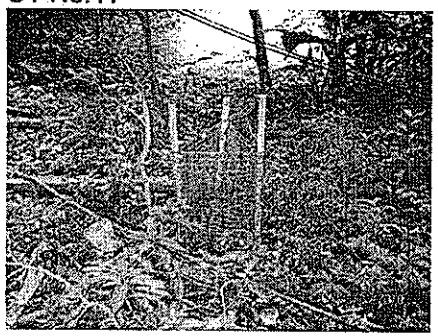
CT No.08

CT No.09

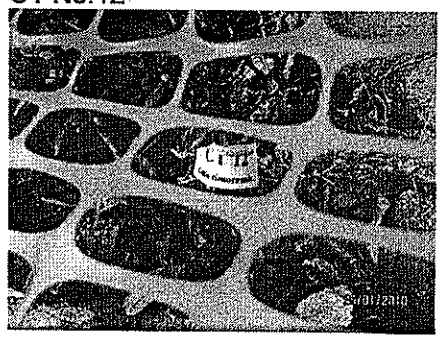
CT No.10



CT No.11



CT No.12



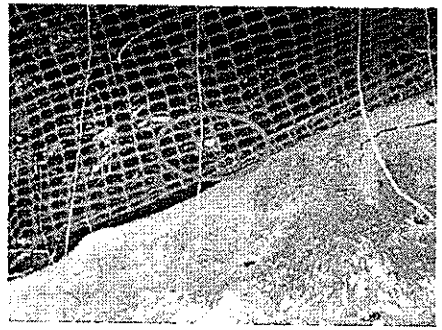
Photos (Date of Monthly Inspection: 26-01-10)

CT No.13	CT No.14	CT No.15
		

Uncommon Trees Photos (Date of Monthly Inspection: 23-02-10)

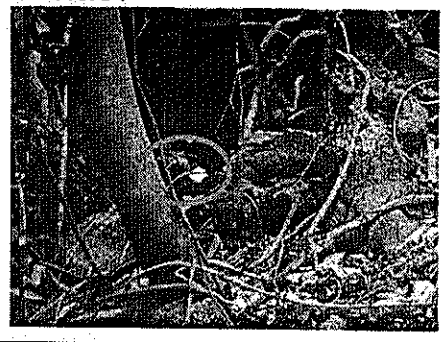
CT No.01

CT No.02

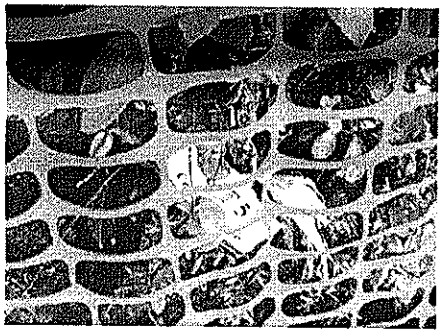


CT No.03

CT No.04



CT No.05

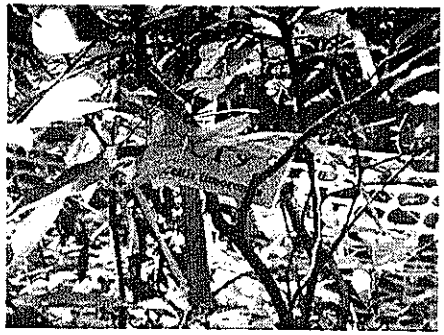


CT No.06

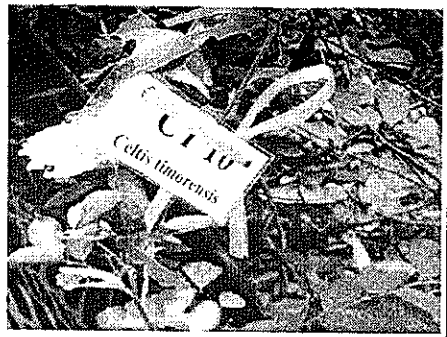
CT No.07

CT No.08

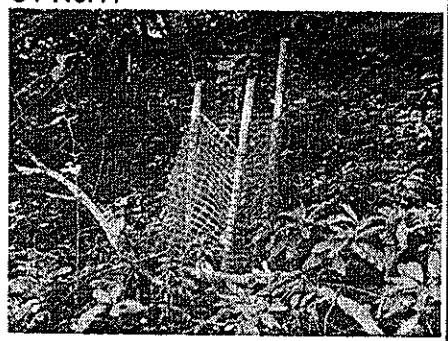
CT No.09



CT No.10



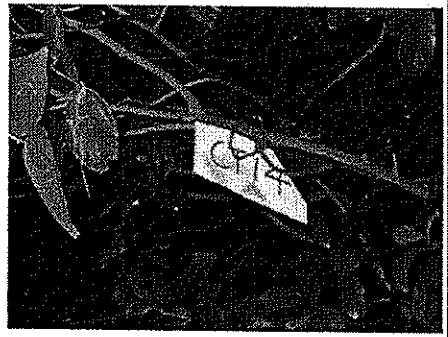
CT No.11



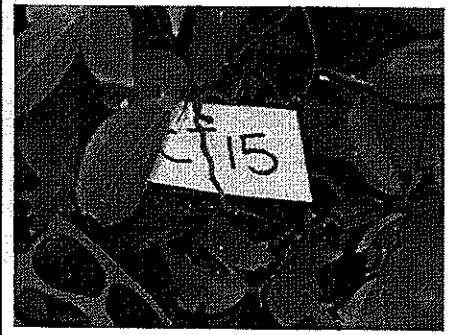
CT No.12

CT No.13

CT No.14



CT No.15



Appendix J

Letter of Variation Environmental Permit (VEP-299/2009)

本署檔號 OUR REF: Annex (10) to EP2/N9/F/50 IV
來函檔號 YOUR REF:
電話 TEL. NO.: 2835 1105
圖文傳真 FAX NO.: 2591 0558
電子郵件 E-MAIL:
網址 HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Branch Office
28th Floor, Southorn Centre,
130 Hennessy Road,
Wan Chai, Hong Kong.

環境保護署分區
香港灣仔
軒尼詩道
一百三十號
修頓中心廿八樓

23 September 2009

By Registered Post & Fax : 2833 9162
Drainage Services Department,
5th Floor, Western Magistracy,
2A Pok Fu Lam Road,
Hong Kong.

(Attn.: Mr. CHEUNG Kai Cheung)

Dear Sir,

Environmental Impact Assessment (EIA) Ordinance, Cap. 499
Application for Variation of an Environmental Permit
Project Title : Outlying Islands Sewerage Stage 1 Phase 2 – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities
(Application No.: VEP-299/2009)

I refer to your application submitted on 28 August 2009 under Section 13(1) of the EIA Ordinance (the Ordinance).

Pursuant to Section 13(5) of the Ordinance, we have amended the Environmental Permit (EP-281/2007). We attach the Environmental Permit as amended (EP-281/2007/A) for your use.

Should you have any question, please contact our Mr. Colin Keung at Tel : 2835 1125.

Yours faithfully,

(Sam W.H. Wong)
Principal Environmental Protection Officer
for Director of Environmental Protection

Encl.

ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE
(CHAPTER 499)
SECTIONS 10 and 13

環境影響評估條例
(第499章)
第 10 及 13 條

ENVIRONMENTAL PERMIT TO CONSTRUCT AND OPERATE A DESIGNATED PROJECT

建造及營辦指定工程項目的環境許可證

PART A (MAIN PERMIT)
A部 (許可證主要部分)

Pursuant to Section 10 of the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection (the Director) granted the environmental permit EP-281/2007 to the DRAINAGE SERVICES DEPARTMENT (hereinafter referred to as the "Permit Holder") on 29 June 2007. Pursuant to Section 13 of the Ordinance, the Director amends the Environmental Permit (No. EP-281/2007) based on the Application No. VEP-299/2009. The amendments, described below, are incorporated into this Environmental Permit (No. EP-281/2007/A). This Environmental Permit as amended is for the construction and operation of the designated project described in Part B subject to the conditions specified in Part C.
根據《環境影響評估條例》(環評條例)第10條的規定，環境保護署署長(署長)於2007年6月29日將環境許可證編號 EP-281/2007 批予渠務署 (下稱"許可證持有人")，根據條例第 13 條的規定，署長因應申請書編號 VEP-299/2009 修訂環境許可證編號 EP-281/2007，下文說明的修訂，已包含在本環境許可證內 (EP-281/2007/A)，本經修訂的環境許可證，適用於建造及營辦B部所說明的指定工程項目，但須遵守C部所列明的條件。

The issue of this Environmental Permit is based on the documents, approval or permissions described below :
本環境許可證乃依據下列的文件、批准或許可而簽發：

Application No. 申請書編號	VEP-299/2009
Document in the Register : 登記冊上的文件:	1. Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities - Final Environmental Impact Assessment Report - Final Environmental Impact Assessment Executive Summary - Final Environmental Monitoring and Audit Manual Hereinafter referred to as the "EIA Report" (Register No. : AEIAR-075/2003) 離島污水收集計劃第I階段第II期工程組件J-索罟灣污水收集、處理及排放 - 環境影響評估報告 - 環境影響評估行政摘要 - 環境監察及審核手冊 下稱 "環評報告" (登記冊編號 AEIAR-075/2003)

Application No. 申請書編號	VEP-299/2009
Document in the Register : 登記冊上的文件:	2. The Director's letter of approval of the EIA Report dated 25 October 2003 in Ax (10) to EP2/N9/F/50 II 環境保護署署長於二〇〇三年十月二十五日發出批准環評報告的信件，檔案編號 Ax (10) to EP2/N9/F/50 II 3. Application for Environmental Permit received on 5 June 2007 (Application No.: AEP-281/2007) 於二〇〇七年六月五日提交的環境許可証申請文件（申請書編號：AEP-281/2007） 4. Environmental Permit issued on 29 June 2007 (Permit No. EP-281/2007) 於二〇〇七年六月二十九日發出的環境許可證 (許可證編號 EP-281/2007) 5. Application for Variation of an Environmental Permit submitted by the Permit Holder on 28 August 2009 (Application No. VEP-299/2009) 許可證持有人於二〇〇九年八月二十八日提交的更改環境許可證申請文件(申請書編號 VEP-299/2009)

Application No. 申請編號	Date of Application 申請日期	List of Amendments Incorporated into Environmental Permit 已包含在環境許可證內的修訂項目	Date of Amendments 修訂日期
VEP-299/2009	28 August 2009 2009年8月28日	(1) Vary Conditions 1.7 and 3.7 in Part C (2) Vary Figure 4 (1) 更改 C 部條件第 1.7 及3.7 項 (2) 更改附圖 4	23 September 2009 2009年9月 23 日

23 September 2009
Date
日期

(Sam W H WONG)
Principal Environmental Protection Officer (Regional Assessment)
for Director of Environmental Protection
環境保護署署長
(首席環境保護主任(區域評估) 黃偉康代行)

PART B (DESCRIPTION OF DESIGNATED PROJECT)
B部 (指定工程項目的說明)

Hereunder is the description of the designated project mentioned in Part A of this environmental permit (hereinafter referred to as "the Permit");
下列爲本環境許可證(下稱"許可證")A部所提述的指定工程項目的說明:

Title of Designated Project 指定工程項目的名稱	Outlying Islands Sewerage Stage 1 Phase 2 – Sok Kwu Wan Sewage Collection, Treatment and Disposal Facilities. (This designated project is hereafter referred to as "the Project") 離島污水收集計劃第1階段第2期 - 索罟灣污水收集、處理及排放。 (本指定工程項目下稱"工程項目")
Nature of Designated Project 指定工程項目的性質	A submarine sewage outfall; and 海底污水渠口; 及 Sewers in a conservation area. 在自然保育區內的污水管道。
Location of Designated Project 指定工程項目的地點	Sok Kwu Wan, Lamma Island. 南丫島索罟灣。 The location of the Project is shown in Figure 1 and Figure 2 of this Permit. 工程項目的地點展示於本許可證圖1及圖2內。
Scale and Scope of Designated Project 指定工程項目的規模和範圍	The Project is mainly to construct and operate the following sewage infrastructures : - a sewage treatment works of capacity about 1,430m^3/day; - a submarine outfall of about 750m in length and 225mm in diameter; and - village sewage works including two pumping stations and underground sewerage pipes. 工程項目主要爲建造及營辦下列的污水處理基礎設施: - 一所處理量達約每日 1,430 m^3 的污水處理設施; - 長約 750m 和直徑約 225mm 的海底排放渠; 及 - 鄉村污水收集系統, 其中包括二所污水泵房和地下污水管道。

PART C (PERMIT CONDITIONS)

1. General Conditions

1.1 The Permit Holder and any person working on the Project shall comply with all conditions set out in this Permit. Any non-compliance by any person may constitute a contravention of the Environmental Impact Assessment Ordinance (Cap.499) and may become the subject of appropriate action being taken under the Ordinance.

1.2 The Permit Holder shall ensure full compliance with all legislation from time to time in force including, without limitation to, the Noise Control Ordinance (Cap. 400), Air Pollution Control Ordinance (Cap. 311), Water Pollution Control Ordinance (Cap. 358), Dumping at Sea Ordinance (Cap. 466) and Waste Disposal Ordinance (Cap. 354). This Permit does not of itself constitute any ground of defense against any proceedings instituted under any legislation or imply any approval under any legislation.

1.3 The Permit Holder shall make copies of this Permit together with all documents referred to in this Permit and the documents referred to in Part A of the Permit readily available at all times for inspection by the Director or his authorized officers at all sites/offices covered by this Permit. Any reference to the Permit shall include all documents referred to in the Permit and also the relevant documents in the Register.

1.4 The Permit Holder shall give a copy of this Permit to the person(s) in charge of the site(s) and ensure that such person(s) fully understands all conditions and all requirements incorporated by the Permit. The site(s) refers to site(s) of construction and operation of the Project and shall mean the same hereafter.

1.5 The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public's information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including any amended Permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s).

1.6 The Permit Holder shall construct and operate the Project in accordance with the project description in Part B of this Permit.

1.7 The Permit Holder shall ensure that the Project is designed, constructed and operated in accordance with the information and recommendations described in the approved EIA Report (Register No. AEIAR-075/2003), the application documents for Environmental Permit (Application No. AEP-281/2007), the application documents for variation of an environmental permit (Application No. VEP-299/2009) and other relevant documents in the Register, the information and mitigation measures described in this Permit, mitigation measures to be recommended in submissions that shall be deposited with or approved by the Director as a result of permit conditions contained in this Permit, and mitigation measures to be recommended under on-going surveillance and monitoring activities during all stages of the Project. Where recommendations referred to in the documents of the Register are not expressly referred to in this Permit, such recommendations are nevertheless to be implemented unless expressly excluded or impliedly amended in this Permit.

1.8 All deposited submissions, as required under this Permit, shall be rectified and resubmitted in accordance with the comments, if any, made by the Director within one month of the receipt of the Director's comments or otherwise specified by the Director.

1.9 All submissions approved by the Director, all submissions deposited without comments by the Director, or all submissions rectified in accordance with comments by the Director under this Permit shall be construed as part of the permit conditions described in Part C of this Permit. Any variation of the submissions shall be approved by the Director in writing or as prescribed in the relevant permit conditions. Any non-compliance with the submissions may constitute a contravention of the Environmental Impact Assessment Ordinance (Cap.499). All submissions or any variation of the submissions shall be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) referred to in Condition 2.1 and 2.2 below before submitting to the Director under this Permit.

1.10 The Permit Holder shall release all finalized submissions, as required under this Permit, to the public by depositing copies in the Environmental Impact Assessment Ordinance Register Office, or in any other places, or any internet websites as specified by the Director, or by any other means as specified by the Director for public inspection. For this purpose, the Permit Holder shall provide sufficient copies of the submissions.

1.11 All submissions to the Director required under this Permit shall be delivered either in person or by registered mail to the Environmental Impact Assessment Ordinance Register Office (currently at 27/F, Southorn Centre, 130 Hennessy Road, Wanchai, Hong Kong). Electronic copies of all finalized submissions required under this Permit shall be prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 4.0 or later), unless otherwise agreed by the Director and shall be submitted at the same time as the hard copies.

1.12 The Permit Holder shall notify the Director in writing the commencement dates of construction and operation of the Project no later than two weeks prior to the commencement of construction and operation of the Project. The Permit Holder shall notify the Director in writing immediately if there is any change of the commencement dates of the construction and operation.

1.13 For the purpose of this Permit, "commencement of construction" does not include works related to site clearance and preparation or other works as agreed by the Director.

2. Measures before Commencement of the Construction of the Project

2.1 An Environment Team (ET) shall be established by the Permit Holder no later than one month before commencement of construction of the Project. The ET shall not be in any way an associated body of the Contractor or the Independent Environmental Checker (IEC) for the Project. The ET shall be headed by an ET Leader. The ET Leader shall be a person who has at least 7 years of experience in environmental monitoring and auditing (EM&A) or environmental management. The ET and the ET Leader shall be responsible for the implementation of the EM&A programme in accordance with the requirements as contained in the EM&A Manual provided in the application documents for Environmental Permit (Application No. AEP-281/2007). The ET Leader shall keep a contemporaneous log-book of each and every instance or circumstance or change of circumstances which may affect the environmental impact assessment and each and every non-compliance with the recommendations of the approved EIA Report (Register No. AEIAR-075/2003), application documents for Environmental Permit (Application No. AEP-281/2007) and this Permit. The ET Leader shall notify the IEC within one working day of the occurrence of any such instance or circumstance or change of circumstances. The ET Leader's log-book shall be kept readily available for inspection by all persons assisting in supervision of the implementation of the recommendations of the approved EIA Report (Register No. AEIAR-075/2003), application documents for Environmental Permit (Application No. AEP-281/2007) and this Permit or by the Director or his authorized officers. Failure to maintain

records in the log-book, failure to discharge the duties of the ET Leader as defined in the EM&A Manual or failure to comply with this Condition would entitle the Director to require the Permit Holder by notice in writing to replace the ET Leader. Failure by the Permit Holder to make replacement, or further failure to keep contemporaneous records in the log-book despite the employment of a new ET Leader may render the Permit liable to suspension, cancellation or variation.

2.2 An Independent Environmental Checker (IEC) shall be employed by the Permit Holder no later than one month before commencement of construction of the Project. The IEC shall not be in any way an associated body of the Contractor or the ET for the Project. The IEC shall be a person who has at least 7 years of experience in EM&A or environmental management. The IEC shall be responsible for duties defined in the EM&A Manual provided in the application documents for Environmental Permit (Application No. AEP-281/2007) and shall audit the overall EM&A performance, including the implementation of all environmental mitigation measures, submissions required in the EM&A Manual, and any other submissions required under this Permit. In addition, the IEC shall be responsible for verifying the environmental acceptability of permanent and temporary works, relevant design plans and submissions under this Permit. The IEC shall verify the log-book(s) mentioned in above condition of this Permit. The IEC shall notify the Director by fax, within one working day of receipt of notification from the ET Leader of each and every occurrence, change of circumstances or non-compliance with the Approved EIA Report (Register No. AEIAR-075/2003), application documents for Environmental Permit (Application No. AEP-281/2007) and this Permit, which might affect the monitoring or control of adverse environmental impacts from the Project. In the case where the IEC fails to so notify the Director of the same, fails to discharge the duties of the IEC as defined in the EM&A Manual or fails to comply with this Condition, the Director may require the Permit Holder by notice in writing to replace the IEC. Failure to replace the IEC as directed or further failure to so notify the Director despite employment of a new IEC may render the Permit liable to suspension, cancellation or variation. Notification by the Permit Holder is the same as notification by the IEC for the purpose of this Condition.

3. <u>Submissions or Measures during the Construction of the Project</u>

Management Organization of Main Construction Companies

3.1 The Permit Holder shall, within one month after commencement of construction of the Project, inform the Director in writing the management organization of the main companies and/or any form of joint ventures associated with the construction of the Project. The submitted information shall include at least an organization chart, names of responsible persons and their contact details.

Measures to Mitigate Water Quality, Marine Ecological and Fisheries Impacts during Construction

3.2 No marine dredging works within 500m from the shore as shown in Figure 2 of this Permit shall be carried out for the construction of the submarine outfall of the Project. Only Horizontal Directional Drilling (HDD) technique shall be used for the construction of this inner part of the submarine outfall.

3.3 The Permit Holder shall, no later than one month before commencement of construction of the submarine outfall of the Project, deposit with the Director four hard copies and one electronic copy of the detailed arrangements of using HDD technique for the construction of the submarine outfall. The submission shall include the construction details, the length of submarine outfall using HDD technique for construction, the depth of submarine outfall below the seabed, the details of drilling fluid to be used in the HDD process and the disposal arrangements of the HDD

drilling fluid. Before submission to the Director, the proposal shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the Approved EIA Report (Register No. AEIAR-075/2003) and the application documents for Environmental Permit (Application No. AEP-281/2007) to mitigate the water quality, marine ecological and fisheries impacts during construction.

3.4 The following mitigation measures shall be implemented when carrying out marine dredging works in areas further than 500m from the shore for the construction of the outer part of the submarine outfall as shown in Figure 2 of this Permit:

i) not more than one closed grab dredger, with dredging rate not more than 55m^3/hr, shall be used;

ii) two layers of silt curtain as shown in Figure 3 of this Permit shall be used, with the first layer enclosing the grab and the second layer deploying at around 50m from the dredging area;

iii) dredging shall only be carried out during ebb tide; and

iv) no dredged materials shall be allowed to overflow, splash or leak into the sea during loading or transportation.

Measures to Avoid, Minimize or Mitigate Terrestrial Ecological Impact during Construction

3.5 The sewage treatment works and the village sewerage works of the Project shall be constructed at the locations shown in Figure 1 of this Permit. No woodland and Romer's Tree Frog habitats shall be affected during construction of the Project.

3.6 All sewers shall be laid underground in the urbanized areas or existing footpaths.

3.7 The uncommon tree species, *Celtis Timorensis*, as shown in Figure 4 of this Permit shall be labeled, fenced and protected in order to avoid any disturbance during construction of the Project. Before commencement of construction of the pumping station P1b, the uncommon tree species, *Celtis Timorensis*, found in the pumping station P1b area as shown in Figure 4 of this Permit shall be properly transplanted to the area immediately south of the pumping station P1b in accordance with the information and recommendations described in the application documents for variation of an environmental permit (Application No. VEP-299/2009). The Permit Holder shall, no later than three weeks before commencement of the transplantation, deposit with the Director a transplantation proposal showing details of the location(s) of reception site(s), methodology, implementation programme, post-transplantation monitoring and personnel for supervising the transplantation. Before submission to the Director, the transplantation proposal shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the application documents for variation of an environmental permit (Application No. VEP-299/2009) to effectively transplant the uncommon tree species, *Celtis Timorensis*.

3.8 All temporary works area shall be reinstated upon completion of works. Local native plant species shall be used as far as practicable.

4. Submissions or Measures for the Operation of the Project

Effluent from the Submarine Outfall

4.1 All influent shall be treated by Membrane Bioreactor (MBR) process, Sequencing Batching

Reactor (SBR) with ultra-violet disinfection process or other process as agreed with the Director in the sewage treatment works of the Project prior to discharge. Effluent shall only be discharged through the submarine outfall of the Project.

4.2 The Permit Holder shall, no later than three months before commencement of operation of the Project, deposit with the Director four hard copies and one electronic copy of the schematic design of the Project showing the treatment and discharge processes used in the Project. Before submission to the Director, the schematic design shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the Approved EIA Report (Register No. AEIAR-075/2003) and the application documents for Environmental Permit (Application No. AEP-281/2007).

Design of the Submarine Outfall

4.3 Effluent shall only be discharged through the diffuser of the submarine outfall of the Project. The diffuser of the submarine outfall shall be located at a distance greater than 600m from the shore and at a water depth greater than 13m.

4.4 Except the outermost location of the submarine outfall for the diffuser, no protective backfill and rock armour for the submarine outfall shall be protruded above the seabed.

4.5 The Permit Holder shall, no later than one month after completion of construction of the Project, deposit with the Director four hard copies and one electronic copy of the as-built drawings showing the details of the submarine outfall and its diffuser. Before submission to the Director, the as-built drawings shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the Approved EIA Report (Register No. AEIAR-075/2003) and the application documents for Environmental Permit (Application No. AEP-281/2007).

Emergency Discharge

4.6 No emergency discharge shall be made at the locations of the sewage treatment works and the pumping station P2. 24-hour temporary storage capacity shall be provided at the two pumping stations.

4.7 The Permit Holder shall, no later than three months before the commencement of operation of the Project, deposit with the Director a detailed response and action plan for the emergency discharge. Before submission to the Director, the plan shall be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the Approved EIA Report (Register No. AEIAR-075/2003) and the application documents for Environmental Permit (Application No. AEP-281/2007).

5. Environmental Monitoring and Audit (EM&A) for the Project

5.1 The EM&A programme shall be implemented in accordance with the procedures and requirements in the EM&A Manual provided in the application documents for Environmental Permit (Application No. AEP-281/2007). Any changes to the EM&A programme shall be certified by the ET Leader and verified by the IEC as conforming to the requirements set out in the EM&A Manual and shall seek the prior approval from the Director before their implementation.

5.2 Samples, measurements and necessary remedial actions shall be taken in accordance with the requirements of the EM&A Manual provided in the application documents for Environmental

Permit (Application No. AEP-281/2007) by;

i) conducting baseline environmental monitoring;

ii) conducting impact monitoring; carrying out remedial actions described in the Event/Action Plans of the EM&A Manual in accordance with the time frames set out in the Event/Action Plans, or as agreed by the Director, in case where specified criteria in the EM&A Manual are exceeded; and logging and keeping records of details of all parameters within 3 working days of the collection of data or completion of remedial action(s), for the purpose of preparing and submitting the monthly EM&A Reports and to make available for inspection on site; and

iii) conducting post-construction and post-commissioning water quality monitoring.

5.3 Four hard copies and one electronic copy of the Baseline Monitoring Report shall be submitted to the Director at least 2 weeks before commencement of construction of the Project. The submissions shall be certified by the ET Leader and verified by the IEC before submission to the Director. Additional copies of the submission shall be provided upon request by the Director.

5.4 Four hard copies and one electronic copy of the monthly EM&A Report shall be submitted to the Director within 2 weeks after the end of the reporting month. The monthly EM&A Report shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit levels), the status of submission required under this Permit and the types, quantities and disposal locations of all surplus excavated materials and wastes arising from the Project. The submissions shall be certified by the ET Leader and verified by the IEC before submission to the Director. Additional copies of the submission shall be provided upon request by the Director.

5.5 All environmental monitoring and audit data submitted under this Permit shall be true, valid and correct.

5.6 To ensure a high degree of transparency regarding the monitoring data and results in view of the public concern about the Project, all environmental monitoring and audit data and results and all submissions and all performance test data and results required by this Permit shall be made available by the Permit Holder to the public through a dedicated web site to be set up by the Permit Holder under Condition 6.2 below, in the shortest practicable time and in no event later than 2 weeks after such information is available.

6. Electronic Reporting of EM&A Information

6.1 To facilitate public inspection of the Baseline Monitoring Report and the monthly EM&A Reports via the EIAO Internet Website and at the EIAO Register Office, electronic copies of these Reports shall be prepared in the Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 4.0 or later), unless otherwise agreed by the Director and shall be submitted at the same time as the hard copies as described in Conditions 5.3 and 5.4 of this Permit. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of these Reports shall be included in the beginning of the document. Hyperlinks to all figures, drawings and tables in these Reports shall be provided in the main text from where the respective references are made. All graphics in these Reports shall be in interlaced GIF format unless otherwise agreed by the Director. The content of the electronic copies of these Reports must be the same as the hard copies.

6.2 The Permit Holder shall set up a dedicated web site and notify the Director in writing the internet

address where the environmental monitoring and project data is to be placed within six weeks after the commencement of construction of the Project. All environmental monitoring results described in Condition 6.1 above and all submissions required by this Permit shall be made available to the public via this dedicated web site to be set up by the Permit Holder in the shortest time practicable, and in no event later than 2 weeks after the relevant environmental monitoring data are collected or become available, unless otherwise agreed with the Director. The Permit Holder shall maintain the dedicated website throughout the entire construction stage and during the first operating year of the Project to facilitate public access to environmental monitoring data.

6.3 The internet website as described in Condition 6.2 above shall enable user-friendly public access to the monitoring data and project data including the EIA report, the environmental permit(s) and project profile of the Project. The internet website shall have features capable of:

i) providing access to all environmental monitoring data collected since the commencement of work and all submissions under this permit;

ii) searching by date;

iii) searching by types of monitoring data; and

iv) hyperlinks to relevant monitoring data after searching;

or otherwise as agreed by the Director.

Notes :

1. This Permit consists of three parts, namely, Part A (Main Permit), Part B (Description of Designated Project) and Part C (Permit Conditions). Any person relying on this permit should obtain independent legal advice on the legal implications under the Ordinance, and the following notes are for general information only.

2. If there is a breach of any conditions of this Permit, the Director or his authorized officer may, with the consent of the Secretary for the Environment, order the cessation of associated work until the remedial action is taken in respect of the resultant environmental damage, and in that case the Permit Holder shall not carry out any associated works without the permission of the Director or his authorized officer.

3. The Permit Holder may apply under Section 13 of the Environmental Impact Assessment Ordinance (the "Ordinance") to the Director for a variation of the conditions of this Permit. The Permit Holder shall replace the original permit displayed on the Project site by the amended permit.

4. A person who assumes the responsibility for the whole or a part of the Project may, before he assumes responsibility of the Project, apply under Section 12 of the Ordinance to the Director for a further environmental permit.

5. Under Section 14 of the Ordinance, the Director may with the consent of the Secretary for the Environment, suspend, vary or cancel this Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site.

6. If this Permit is cancelled or surrendered during construction or operation of the Project, another environmental permit must be obtained under the Ordinance before the Project could be

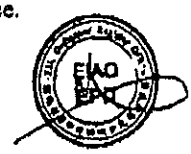
continued. It is an offence under Section 26 (1) of the Ordinance to construct or operate a designated project listed in Schedule 2 of the Ordinance without a valid environmental permit.

7. Any person who constructs or operates the Project contrary to the conditions in the Permit, and is convicted of an offence under the Ordinance, is liable:

(i) on a first conviction on indictment to a fine of $2 million and to imprisonment for 6 months;
(ii) on a second or subsequent conviction on indictment to a fine of $5 million and to imprisonment for 2 years;
(iii) on a first summary conviction to a fine at level 6 and to imprisonment for 6 months;
(iv) on a second or subsequent summary conviction to a fine of $1 million and to imprisonment for 1 year; and
(v) in any case where the offence is of a continuing nature, the court or magistrate may impose a fine of $10,000 for each day on which he is satisfied the offence continued.

8. The Permit Holder may appeal against any condition of this Permit under Section 17 of the Ordinance within 30 days of receipt of this Permit.

9. The Notes are for general reference only and that the Permit Holder should refer to the EIA Ordinance for details and seek independent legal advice.



Environmental Permit No. EP-281/2007/A
環境許可證編號 EP-281/2007/A

Environmental Permit No.: EP-281/2007/A
環境許可證編號：EP-281/2007/A

Figure 1: Location Plan of the Project (1 of 2)
圖 1：工程項目地點 (二之一)

Figure 2: Location Plan of the Project (2 of 2)
圖 2：工程項目地點（二之二）

Figure 3: Arrangement of Silt Curtain during Construction

圖 3：施工期間設置淤泥屏障的安排

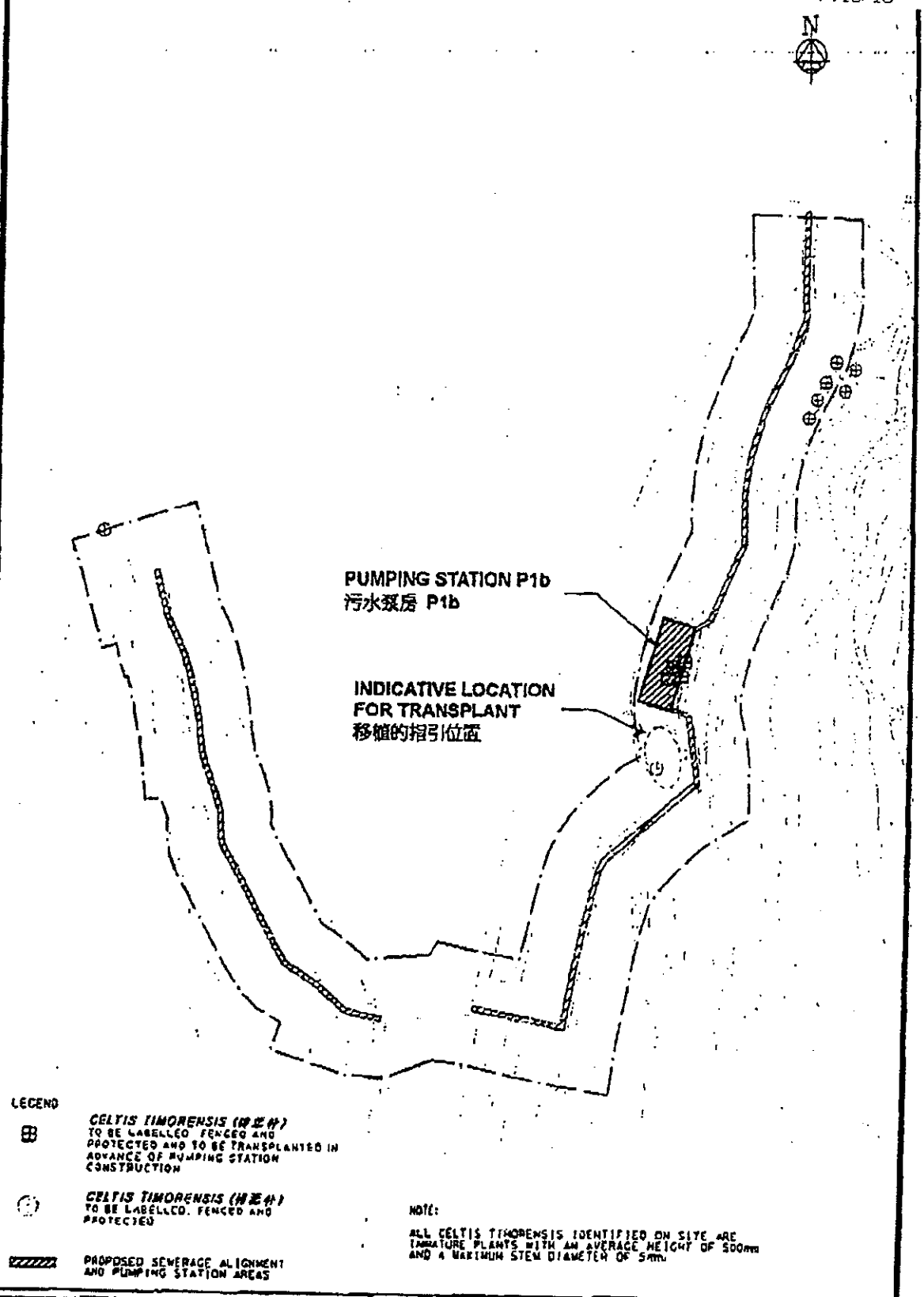


Figure 4: Location of the Uncommon Tree Species, *Celtis timorensis*
圖 4：不常見樹 *糙葉朴*的位置

Environmental Permit No. EP-281/2007/A
環境許可證編號：EP-281/2007/A

Appendix K

AFCD Letters dated on 28 October 2009 and 13 November 2009

16-NOV-2009 12:02 FROM KADEN CONSTRUCTION LTD TO K0801 P.01/03

c.c. ... John, pls. immediate take action
Z03155

漁農自然護理署
九龍長沙灣道 303 號
長沙灣政府合署七樓

AGRICULTURE, FISHERIES AND CONSERVATION DEPARTMENT
7/F, Cheung Sha Wan Government Offices
303 Cheung Sha Wan Road,
Kowloon, Hong Kong

本署檔號 Our Ref. : (16) in AF EA 027/07 Pt.2
來函檔號 Your Ref. : K0801/03.23.0.00/2633/L
電 話 Tel No. : (852) 2150 6942
圖文傳真 Fax No. : (852) 2377 4427

By Fax
2528 1751

13 November 2009

Kaden Construction Limited
Units 1001-1015, 10/F Grand Central Plaza, Tower 1
138 Shatin Rural Committee Road
Sha Tin, N.T.
(Attn.: Mr. Stephen LEUNG)

Dear Mr. LEUNG,

Drainage Services Department
Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Impact Monitoring Report

I refer to your letter dated 4 November 2009 on the captioned.

Upon site visit, we found that 6 nos. of the labelled plants were misidentified as *Celtis timorensis*, including CT3, CT4, CT5, CT6, CT10 and CT12. On the other hand, 7 nos. of *C. timorensis*, possibly corresponding to CT1 to CT6 and CT10 in Figure 4 of EP-281/2007/A, were found not labelled or some even left unattended (see enclosed photos). No *C. timorensis* was found at the location of CT12 in the Figure. Please ensure that all *C. timorensis* shown in the Figure are accurately identified for labelling, fencing and protection in order to avoid any disturbance during construction of the captioned project.

Yours sincerely,

(Dr. CHEUNG Ka-hong, Joseph)
for Director of Agriculture, Fisheries and Conservation

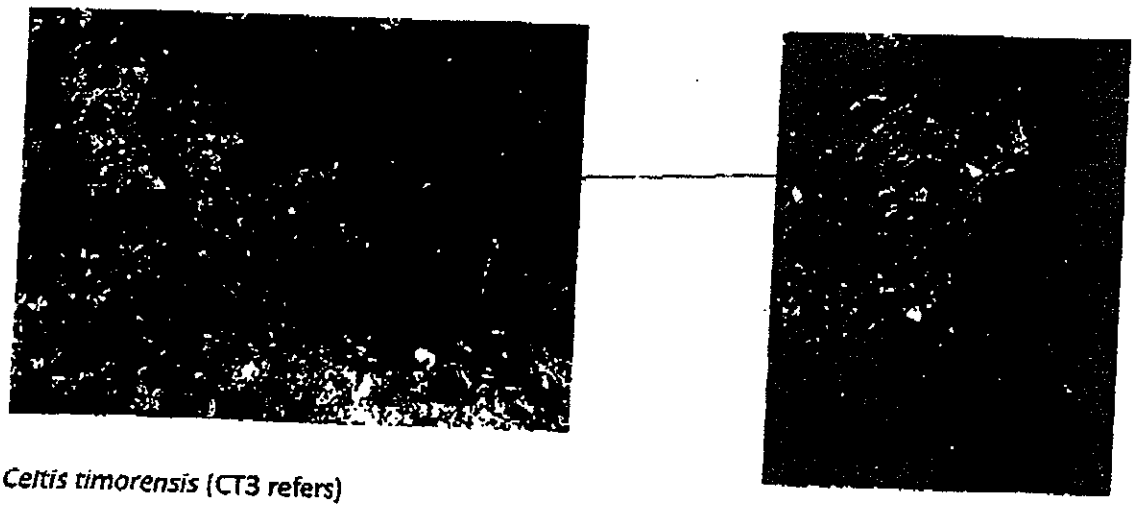
Encl.

c.c. Environmental Protection Department (Attn.: Mr. Matthew CHAN; Fax: 2591 0558)
Drainage Services Department (Attn.: Ir. Henry CHEUNG; Fax: 2833 9162)

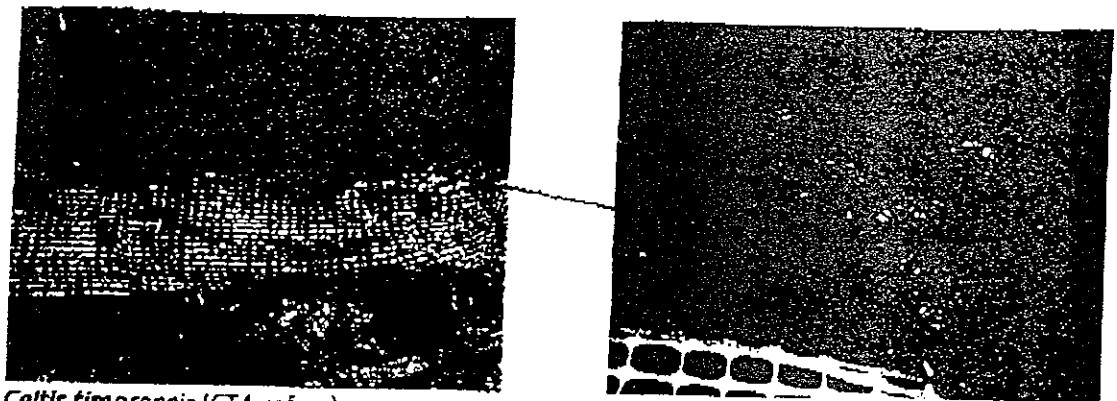
Drainage Services Department Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Impact Monitoring Report

Celtis timorensis (CT1 refers)

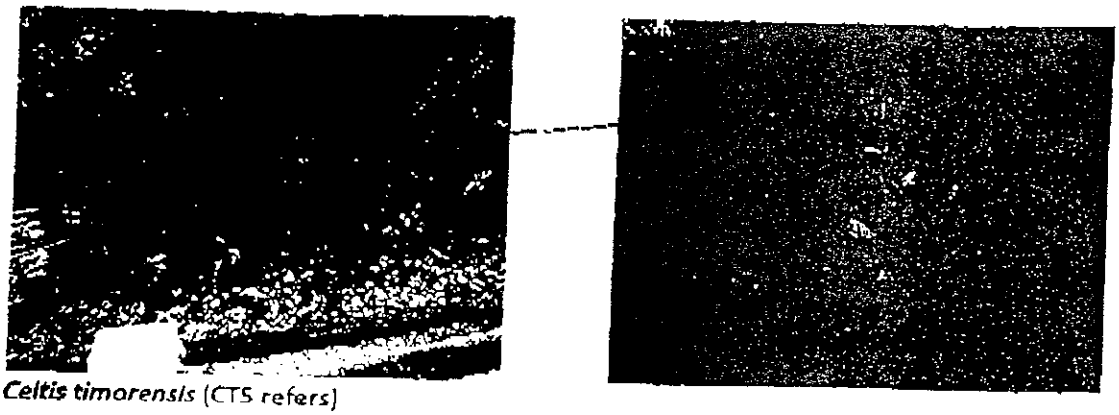
Celtis timorensis (CT2 refers)



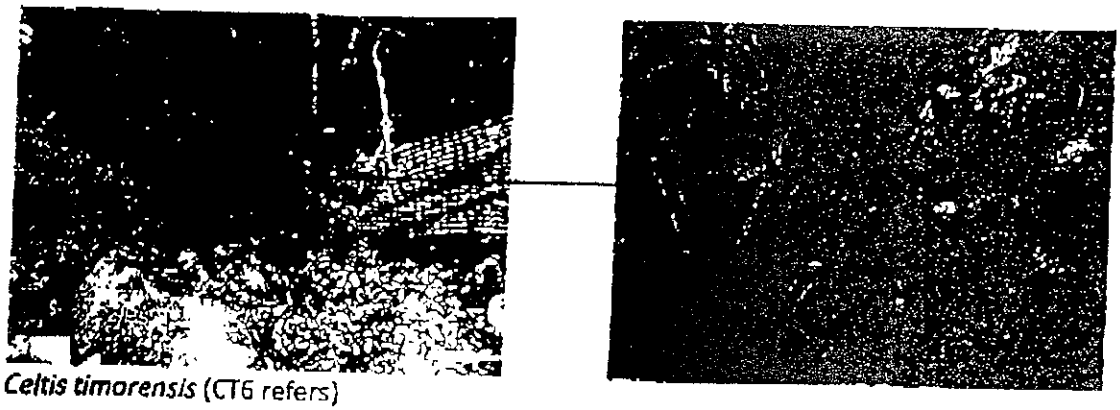
Celtis timorensis (CT3 refers)



Celtis timorensis (CT4 refers)



Celtis timorensis (CT5 refers)



Celtis timorensis (CT6 refers)

Celtis timorensis (CT10 refers)

漁農自然護理署
九龍長沙灣道 303 號
長沙灣政府合署七樓

AGRICULTURE, FISHERIES AND CONSERVATION DEPARTMENT
7/F, Cheung Sha Wan Government Offices
303 Cheung Sha Wan Road,
Kowloon, Hong Kong

本署檔號 Our Ref. : (13) in AF EA 027/07 Pt.2
來函檔號 Your Ref. : OC/906296/CLL
電 話 Tel No. : (852) 2150 6942
圖文傳真 Fax No. : (852) 2377 4427

By Fax
2695 3944

28 October 2009

ETS-TESTCONSULT LIMITED
8/F., Block B, Veristrong Industrial Centre
34-36 Au Pui Wan Street, Fotan
Hong Kong

(Attn.: Mr. C.L. LAU)

Dear Mr. LAU,

Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Impact Monitoring Report

I refer to your letter dated 23 October 2009 on the captioned.

Based on the information provided, I note that the uncommon plants CT Nos. 1, 2 and 12 were found missing during the Environmental Team site inspection on 10 September 2009. Please be reminded that all uncommon tree species, *Celtis timorensis*, as shown in Figure 4 of Environmental Permit No. EP-281/2007/A should be labelled, fenced and protected in order to avoid any disturbance during construction of the captioned Project.

Yours sincerely,

(Dr. CHEUNG Ka-hong, Joseph)
for Director of Agriculture, Fisheries and Conservation

c.c. Environmental Protection Department
(Attn.: Mr. Matthew CHAN; Fax: 2591 0558)

Drainage Services Department
(Attn.: Ir. Henry CHEUNG; Fax: 2833 9162)

Appendix L

EPD Letter dated on 16 November 2009 and 08 December 2009

本署檔案 OUR REF: (6) in EP771/E1/083
來函檔案 YOUR REF: 2516 1719
傳 真 TEL NO:
圖文傳真 FAX NO: 2960 1760
網 址 HOMEPAGE: http://www.epd.gov.hk/

Environmental Protection Department
Environmental Compliance Division
Regional Office (South)
2/F., Chinachem Exchange Square
1 Hoi Wan Street
Quarry Bay, Hong Kong

環境保護署
環保法規管理科
區域辦事處(南)
香港鰂魚涌
海灣街一號，
華懋交易廣場二樓

ETS-TESTCONSULT LIMITED
8/F, Block B, Veristrong Industrial Centre,
34-36 Au Pui Wan Street, Fotan, Hong Kong
(Attn: Ms. Law Sau Yee)

16 November 2009

Dear Ms. Law,

Drainage Services Department Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Impact Monitoring Report

Please find enclosed a copy of the letter to Kaden Construction Limited dated 16 November 2009 on the protection of *Celtis Timorensis* issue for the captioned project.

Best Regards,

CHAN Ho-sun
Assistant Environmental Protection Officer
Environmental Protection Department

本署檔案 OUR REF: (5) in EP771/E1/083
來函檔案 YOUR REF: 2516 1719
電話 TEL NO:
圖文傳真 FAX NO: 2960 1760
網址 HOMEPAGE: http://www.epd.gov.hk/

Environmental Protection Department
Environmental Compliance Division
Regional Office (South)
2/F., Chinachem Exchange Square
1 Hoi Wan Street
Quarry Bay, Hong Kong

環境保護署
環保法規管理科
區域辦事處(南)
香港鰂魚涌
海灣街一號
華懋交易廣場二樓

Kaden Construction Limited
Units 1001-1015, 10/F Grand Central Plaza, Tower 1
138 Shatin Rural Committee Road, Shatin, N.T.
(Attn: Mr. Stephen LEUNG)

By post and by fax (2528 1751)

16 November 2009

Dear Mr. Leung,

Drainage Services Department Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Impact Monitoring Report

Further to AFCD's letters dated 28 October 2009 and 13 November 2009.

Our staff inspected the project area on 5 November 2009, and noted that the *C. Timorensis* marked as CT-12 was still in place. However, CT-1 and CT-2 were removed due to accidental damages. Moreover, as advised by AFCD in their letter on 13 November, you may have either mislabeled or did not properly labeled the species as shown in Figure 4 of the Environmental Permit (EP-281/2009/A).

It was understood that as the holder of said environmental permit, the Permit Holder should strictly follow the permit conditions as issued by this department, particularly Section 3.7, i.e.

*"The uncommon tree species, Celtis Timorensis, as shown in Figure 4 of this Permit shall be **labeled, fenced and protected** in order to avoid any disturbance during construction of the Project....."*

To avoid further contravention to the Environmental Impact Assessment Ordinance (Cap. 499), please rectify the situations immediately and provide us with a copy of your proposed follow-up actions. Your advise upon the completion of the remediation works is much appreciated.

We will closely monitor the above situations. Should you have any queries, please feel free to contact me or Mr. Sit at 2516 1700.

Best regards,

CHAN Ho-sun
Assistant Environmental Protection Officer
Environmental Protection Department

c.c. by fax

Environmental Protection Department	(Attn: Mr. Matthew Chan	Fax: 2591 0558)
Drainage Services Department	(Attn: Mr. C K Au	Fax: 2833 9162)
Agriculture, Fisheries and Conservation Department	(Attn: Dr. Joseph Cheung	Fax: 2377 4427)

c.c. by post

ETS-Testconsult Limited	(Attn: Law Sau Yee - Senior Environmental Officer)

本署檔案 OUR REF: (12) in EP771/E1/083
來函檔案 YOUR REF: 2516 1719
電話 TEL NO:
圖文傳真 FAX NO: 2960 1760
網址 HOMEPAGE: http://www.epd.gov.hk/

Environmental Protection Department
Environmental Compliance Division
Regional Office (South)
2/F., Chinachem Exchange Square
1 Hoi Wan Street
Quarry Bay, Hong Kong

環境保護署
環保法規管理科
區域辦事處(南)
香港鰂魚涌
海灣街一號
華懋交易廣場二樓

Kaden Construction Limited
Units 1001-1015, 10/F Grand Central Plaza, Tower 1
138 Shatin Rural Committee Road, Shatin, N.T.
(Attn: Mr. Stephen LEUNG)

By post and by fax (2528 1751)

8 December 2009

Dear Mr. Leung,

Drainage Services Department Contract No. DC/2007/18
Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works
Impact Monitoring Report

I refer to your letter dated 20 November 2009.

Our staff has jointly inspected the project area with AFCD and further confirmed the locations of C. Timorensis with an on-site engineer from Kaden on 4 December 2009. However, as advised by AFCD, there are three more C. Timorensis found within the project area (i.e. adjacent to CT1 to CT6), which are not identified, numbered, fenced and protected by your landscape specialist contractor.

For your further information and immediate actions, enclosed please find a set of photos which records both the identified and unidentified C. Timorensis.

To avoid contravention to the Environmental Impact Assessment Ordinance (Cap. 499), please rectify the situations immediately and provide us with a copy of your proposed follow-up actions. Your advise by **18 December 2009** is very much appreciated.

Should you have any queries, please feel free to contact the undersigned.

Best regards,

CHAN Ho-sun
Assistant Environmental Protection Officer
Environmental Protection Department

Encl: Photos (8 pages)

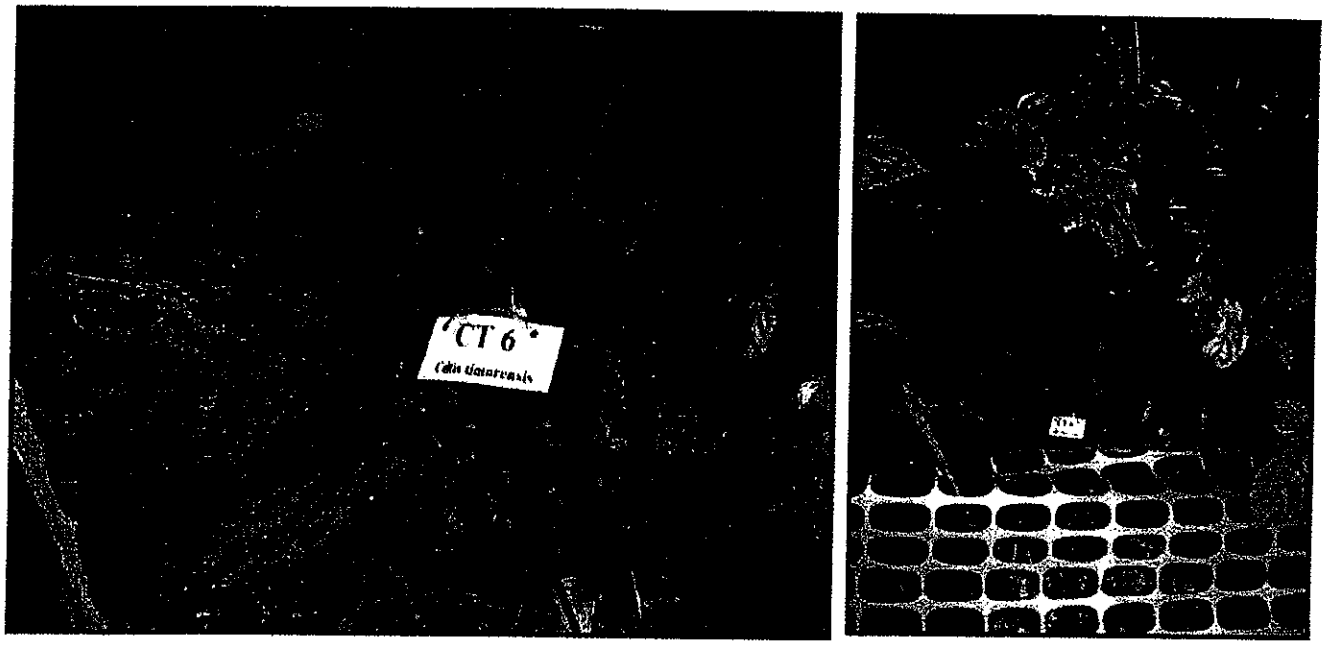
c.c. by email

Environmental Protection Department	(Attn: Mr. Matthew Chan)
Drainage Services Department	(Attn: Mr. C K Au)
Agriculture, Fisheries and Conservation Department	(Attn: Dr. Joseph Cheung)

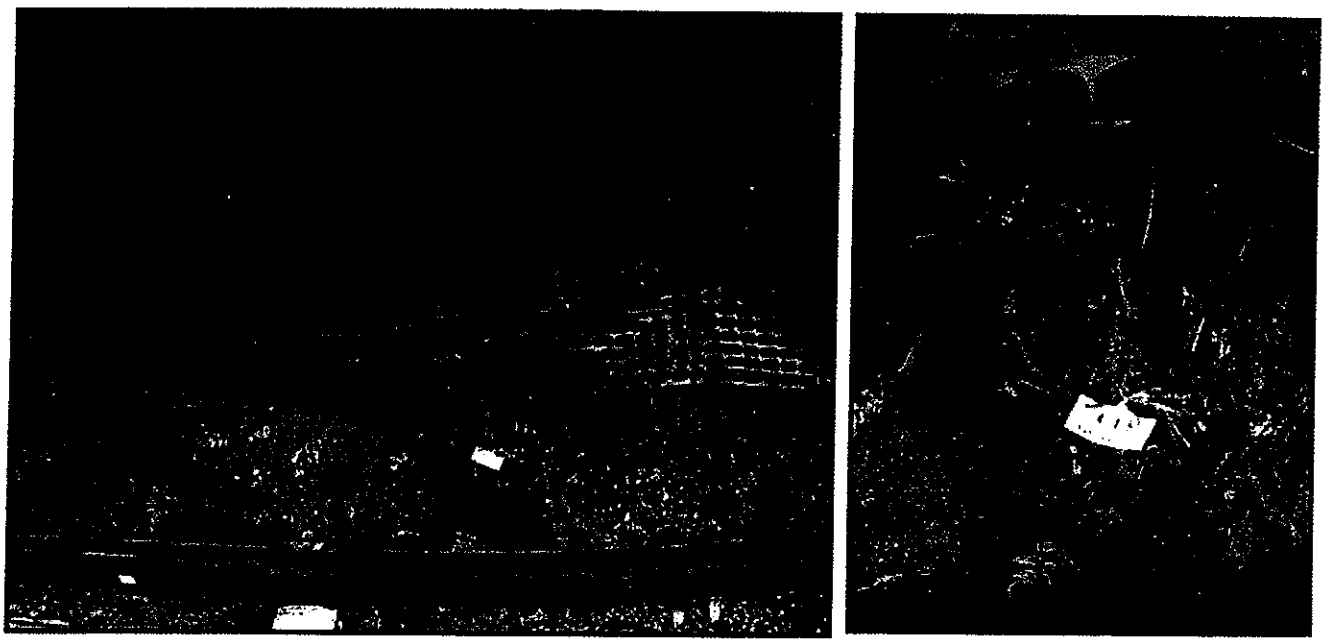
c.c. by fax

IEC – Mr. Rodney Ip	(Fax: 2428 9922)
ETS – Mr. C L Lau	(Fax: 2695 3944)

EP-281/2007A



Location of CT6 (Low Level)



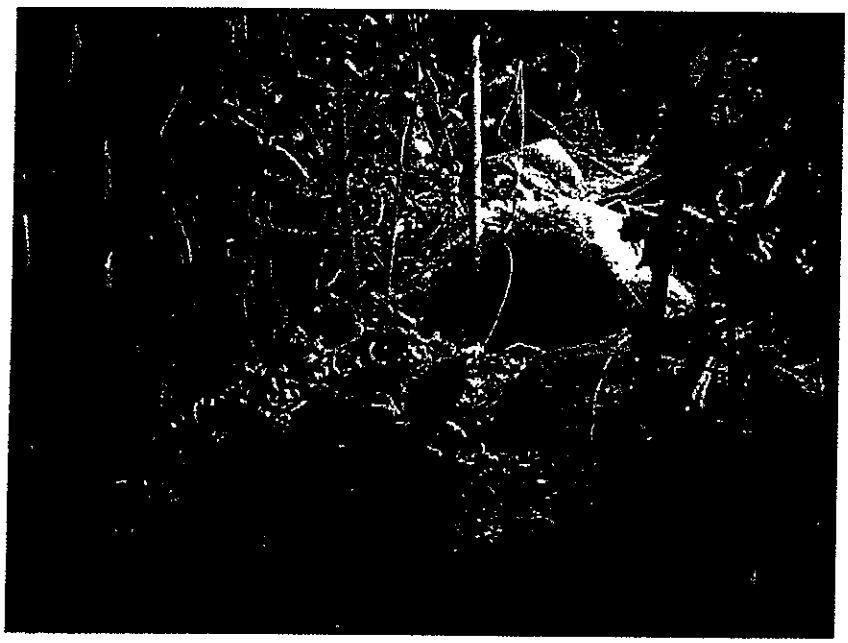
Location of CT5 (Low Level)

4-Dec-2009

EP-281/2007A

Location of CT3
(Low Level)

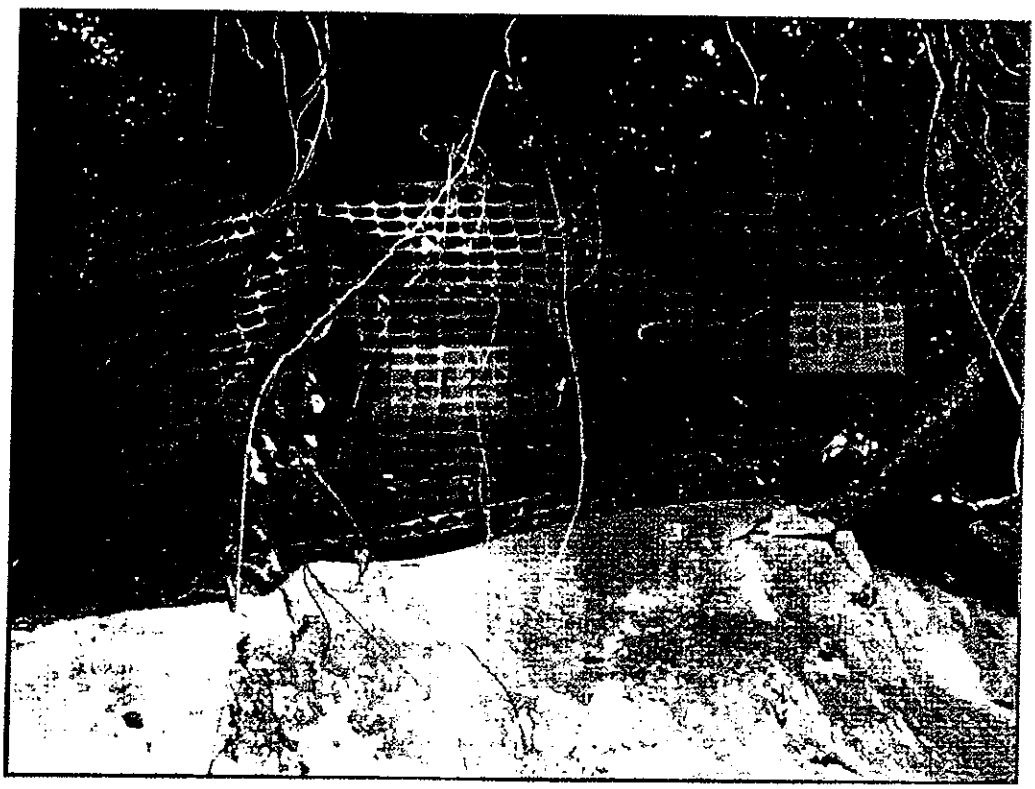
Location of CT4
(High Level)



Location of CT4 (High Level)

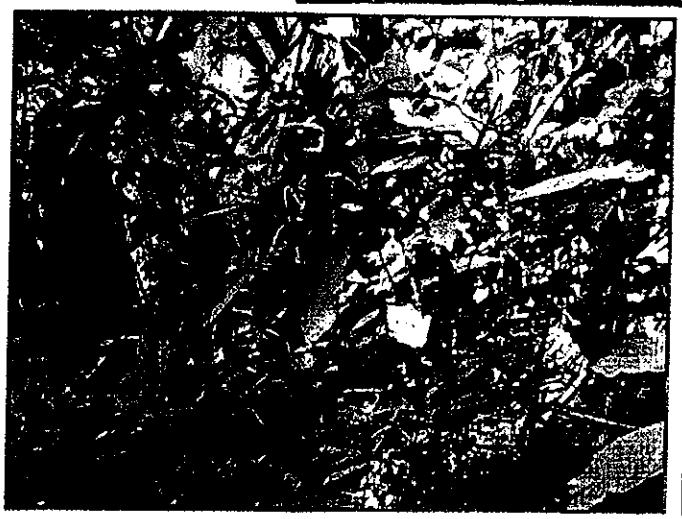
4-Dec-2009

Location of CT 1 & 2 (High Level)

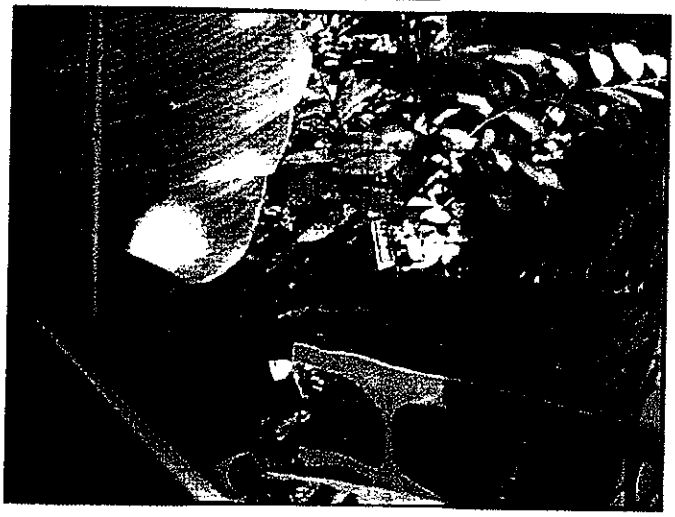


Location of CT 1 & 2 (High Level)

v



Location of CT 8



Location of CT 7

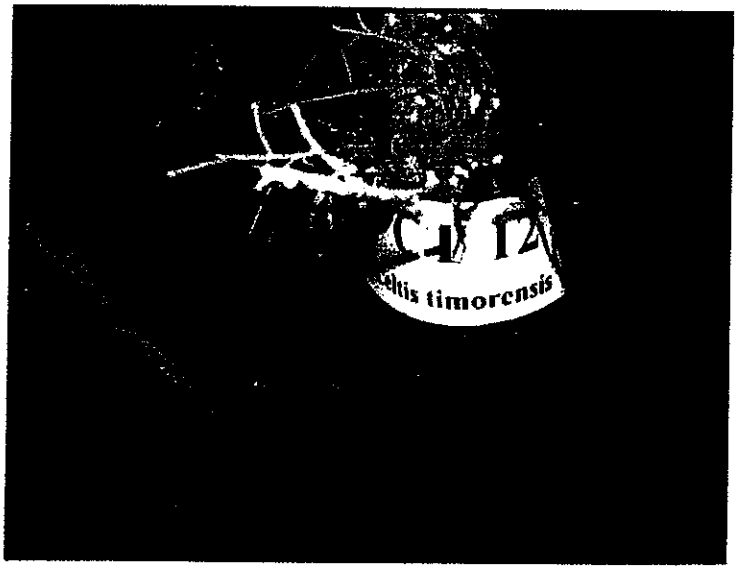
Location of CT9

Location of CT10

4-Dec-2009

EP-281/2007A

Location of CT 11



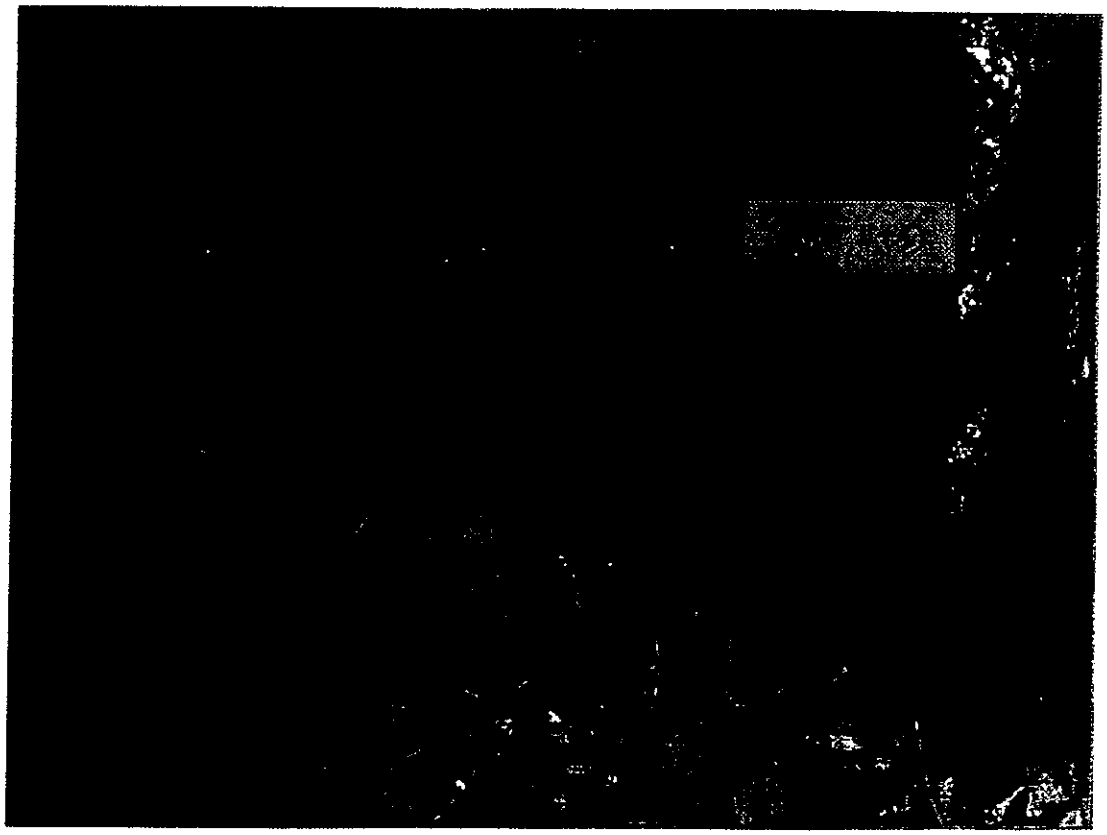
Location of CT 12

4-Dec-2009

EP-281/2007A

CT 12 was not in this area, fencing not required if C. Timorensis not existed

4-Dec-2009



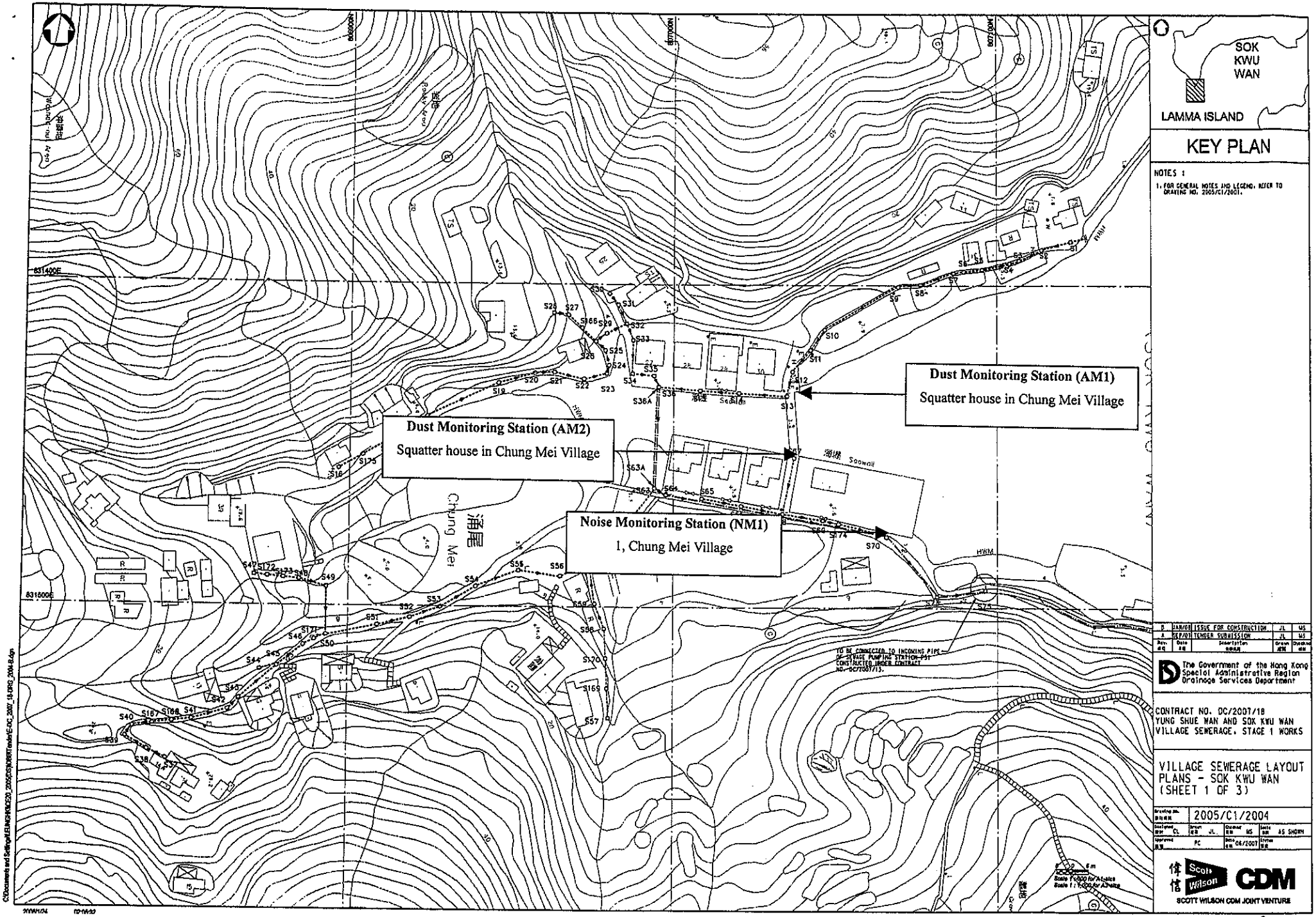
Location of New CT (1)

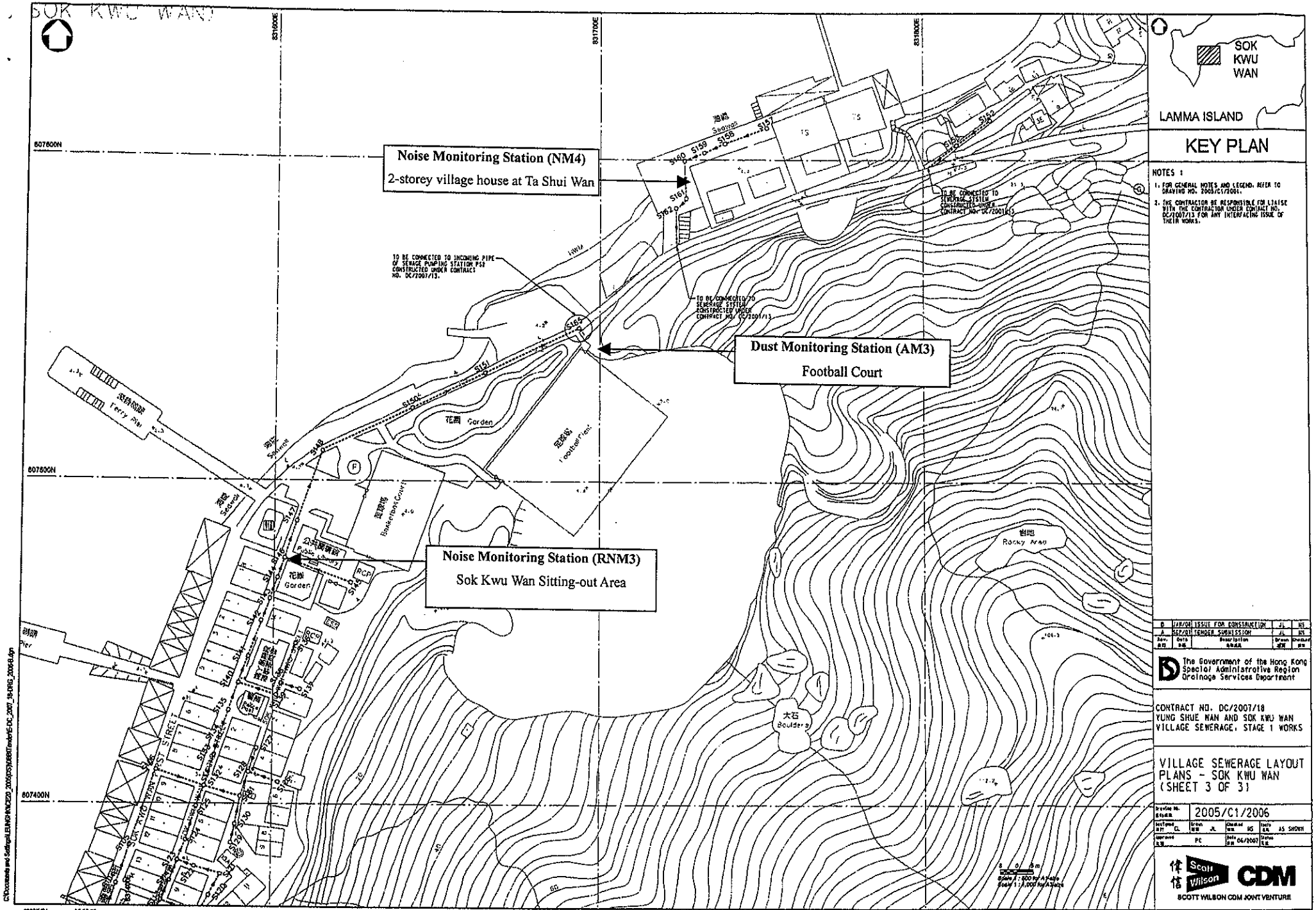
Location of New CT (B)

Location of New CT (C)

4-Dec-2009

Figures





SOK KWU WAN

LAMMA ISLAND

KEY PLAN

NOTES :

1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 2005/C1/2001.
2. THE CONTRACTOR BE RESPONSIBLE FOR LIAISE WITH THE CONTRACTOR UNDER CONTRACT NO. DC/2007/13 FOR ANY INTERFACING ISSUE OF THEIR WORKS.

Rev.	Date	Description	Drawn	Checked
B	JAN/08	ISSUE FOR CONSTRUCTION	JL	MS
A	SEP/07	TENDER SUBMISSION	JL	MS

The Government of the Hong Kong Special Administrative Region
Drainage Services Department

CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS

VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU WAN (SHEET 3 OF 31)

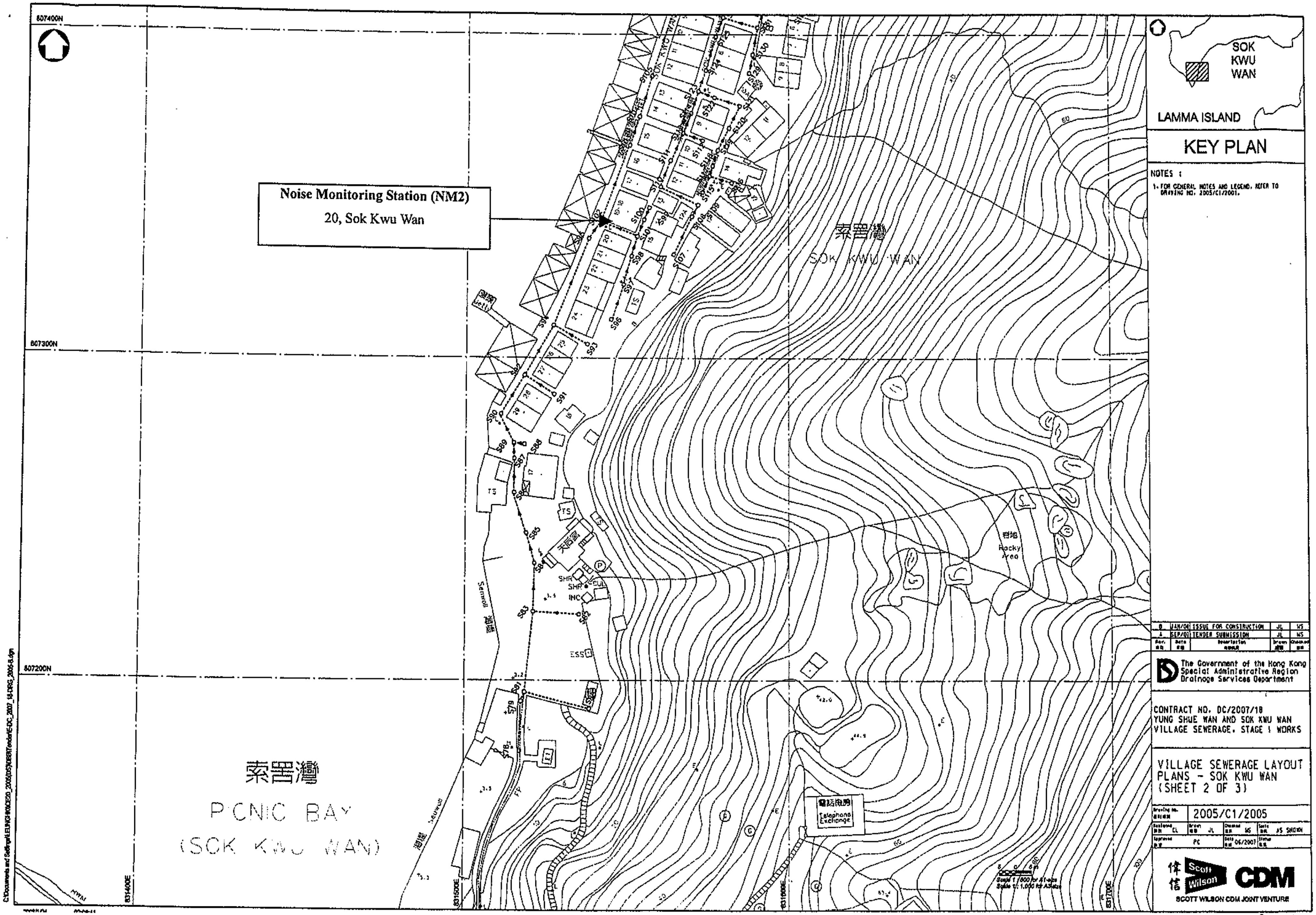
Drawing No. 2005/C1/2006

Scale: AS SHOWN

Date: 06/2007

Scott Wilson CDM

SCOTT WILSON CDM JOINT VENTURE



Noise Monitoring Station (NM2)
20, Sok Kwu Wan
索罟灣
SOK KWU WAN
索罟灣
PICNIC BAY
(SOK KWU WAN)
Rocky Area
Telephone Exchange
Jetty
Seawall
807400N
807300N
807200N
831400E
831500E
831600E
831700E
SOK KWU WAN
LAMMA ISLAND
KEY PLAN
NOTES :
1. FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 2005/C1/2001.
B JAN/08 ISSUE FOR CONSTRUCTION JL WS
A SEP/07 TENDER SUBMISSION JL WS
The Government of the Hong Kong Special Administrative Region Drainage Services Department
CONTRACT NO. DC/2007/18
YUNG SHUE WAN AND SOK KWU WAN VILLAGE SEWERAGE, STAGE 1 WORKS
VILLAGE SEWERAGE LAYOUT PLANS - SOK KWU WAN (SHEET 2 OF 3)
2005/C1/2005
AS SHOWN
06/2007
Scott Wilson
CDM
SCOTT WILSON CDM JOINT VENTURE