Drainage Service Department

Monthly Environmental Monitoring & Auditing report for

Contract No.DC/2006/11 Drainage Improvement in Southern Lantau

May 2009

2nd Revision

Environmental Pioneers & Solutions Limited

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EXECUTIVE SUMMARY

This is the tenth monthly Environmental Monitoring and Audit (EM&A) report for "Drainage Improvement in Southern Lantau Investigation". The environmental permit number is "EP-237/2005/A". The report concludes the impact monitoring for the activities undertaken during the period of 1st May 2009 to 31st May 2009. The major activities in this reporting month include construction works of box culvert at Pak Ngan Heung (PNH) River, box culvert at Luk Tei Tong (LTT), as well as U-channel at Ling Tsui Tau.

Noise, water quality and ecological monitoring were performed. Results obtained were checked against the previously established Action / Limit (A/L) levels. Additionally, the implementation status of environmental mitigation measures, event/ action plan and environmental complaint handling procedures were inspected during weekly site environmental audit.

In general, waste management was satisfactory during the reporting month.

Impact monitoring for construction noise was conducted in the reporting period. No exceedance of A/L level was reported.

Furthermore, impact monitoring for water quality was conducted. Total 60 non-compliance events of water quality criteria were recorded in this reporting month. Exceedances were mainly caused by site water discharge by the other project and influence of rainstorm.

During ecological monitoring survey, no White-shouldered Starling was recorded breeding in the watch tower. And there was no sign of disturbance from the Project to the watch tower, though the breeding season of White-shouldered Starling in this year has begun. The watch tower may not be suitable for birds as nesting habitat. In addition, no disturbance on the flora and fauna in the river channels were observed during the ecological monitoring.

Furthermore, there was no complaint, notification of any summons and successful prosecutions against the project received during the reporting period.

Environmental concerned regarding to the mangrove area to the east of Luk Tei Tong River and the widened rip-rap based river channel at bottleneck A of Tai Tei Tong River were raised by green groups during site visit. Outcome and follow up actions please refer to Section 11.3

Key construction activity in the coming month will be construction of box culvert at PNH, haul access and gabion walls at TTT River and retaining walls, gabion blocks as well as box culvert at LTT River. It is expected that noise, air and water quality impacts will be resulted from the works. With reference to the EM&A manual and mitigation measure report, mitigation measures are proposed to be taken, if necessary.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirement.

1. Introduction

This is the tenth monthly Environmental Monitoring and Audit (EM&A) Report for "Drainage Improvement in Southern Lantau Investigation" project (Environmental Permit No. EP-237/2005/A)

2. Project Information

2.1 Construction program

The "Drainage Improvement in Southern Lantau Investigation" project will be completed by January 2011. The project comprises the following:

- Construction of approximately 80m long gabion with natural bed in Pak Ngan Heung River, approximately 180m of three cells 3m x 2m box culvert and approximately 100m of rectangular channel at Pak Ngan Heung River;
- Construction of approximately 250m of 0.75m wide U-Channel at Ling Tsui Tau Village in Mui Wo;
- Construction of bypass channel of about 350m and 240m long of gabion channels at Luk Tei Tong River respectively; and Widening three existing bottlenecks with gabion lined at Tai Tei Tong River

Appendix A shows the construction program and location plan of the project.

2.2 Project Organization

The Main Contractor, Yick Hing Construction Company Limited, has commissioned Environmental Pioneers & Solutions Limited and Ecosystems Limited as the Environmental Team, which comprises the environmental team leader, the ecologists and the environmental technicians to undertake the environmental monitoring and audit work for this project.

The environmental management structure and is shown in Fig 2.2.1.

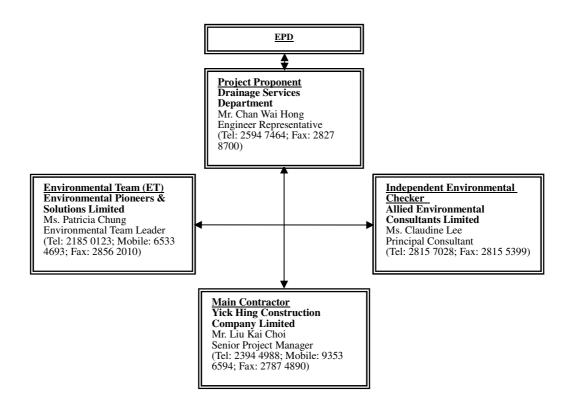


Figure. 2.2.1 Environmental Management structure for the project

2.3 Key Personal Contact information chart

Detailed contact of key persons involved in environmental aspect of the project is shown in Appendix B.

3. Construction Stage

3.1 Construction Activities in the reporting month

Major activities in the reporting month included the followings:

- 1. Construction of retaining wall H at TTT River;
- 2. Construction works of box culvert at PNH River;
- 3. Construction of retaining wall J, Gabion blocks & box culvert A at LTT River; and
- 4. Sewerage works at Ling Tsui Tau.

3.2 Construction Activities for the coming month

Key Construction works in the coming month will include:

- 1. Construction of box culvert at PNH River;
- 2. Formation of haul road access in TTT River between bottleneck A and B;
- 3. Construction of gabion walls at TTT River bottleneck B;
- 4. Construction of retaining wall J, gabion blocks and box culvert A at LTT River; and
- 5. Sewerage works at Ling Tsui Tau.

3.3 Environmental Status

Appendix A shows the drawing of the project area.

Locations of the monitoring and control stations with environmental sensitive receivers are presented in Section 4.3, 5.3 and 6.3 for noise, water and ecological monitoring respectively.

4. Noise Monitoring

4.1 Monitoring Parameters and Methodology

The construction noise level was measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq (30minutes)}$ was used as the monitoring parameter for the impact monitoring in the time period between 0700 to 1900 hours on normal weekdays. For all other time period, $L_{eq (5minutes)}$ was employed for comparison with the Noise Control Ordinance (NCO) criteria.

Noise measurement results obtained from each monitoring location were recorded in the Construction Noise Monitoring Data Sheet (Appendix E) immediately after the measurement. As supplementary information for data auditing, statistical results L_{10} and L_{90} were also be recorded for reference.

In case of non-compliance with the construction noise criteria, more frequent monitoring, as specified in the Action plan in table 4.5.2, shall be carried out. This additional monitoring shall be carried out until the recorded noise levels are rectified or proved to be irrelevant to the construction activities.

4.2 Monitoring Equipment

The sound level meters and calibrators comply with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications as referred to in the Technical Memorandum (TM) to the Noise Control Ordinance was deployed as monitoring equipment for noise measurement.

Noise measurement was not be made in the presence of fog, rain, wind with a steady speed exceeding 5ms⁻¹ or wind with gust exceeding 10ms⁻¹. Thus wind speed was checked by the portable wind speed indicator capable of measuring the wind speed in m/s. Table 4.2.1 summarizes the equipment list for noise monitoring

Equipment	Manufacturer & Model No.	Precision Grade	Qty
Integrated sound level meter	ACO Japan, model 6224	IEC 651 Type 1 IEC 804 Type 1	1
Windscreen	Microtech gefell model W2	N/A	1
Acoustical calibrator	Castle GA 607	IEC 942 Type 1	1
Wind speed indicator	Kestrel K1000	N/A	1
Remarks: Calibration reference	details for the sound level me	eter is given in Append	lix C for

 Table 4.2.1 Equipment List for Noise Monitoring

4.3 Monitoring Locations

According to the Baseline Monitoring Report issued in May 2008 for the captioned project, four locations where are alternative from the locations proposed in EM&A manual, were designated for baseline noise monitoring. For the data validation, impact noise monitoring was undertaken in the same locations during the construction phase of the project. The proposed monitoring locations are summarized in Table 4.3.1. Figure 4.3.1 shows the Noise Monitoring Locations

Noise measurement in each monitoring locations were taken at a point 1m from the exterior of the selected premises and at a height with no disturbance to the dweller and least obstructed view.

Identification No.	Noise Monitoring Locations
N1	No. 73, Village House, Ling Tsui Tau Tsuen (ground level)
N2	No. 31, Village House, Ling Tsui Tau Tsuen (ground level)
N3	Fence wall outside No. 5 village house adjacent to Luk Tei Tong River Outlet (ground level)
N4	No. 23, Village House, Tai Tei Tong River (ground level)

Table 4.3.1 Noise Monitoring Locations during Construction Phase

In accordance with the requirements in the EM&A manual, weekly impact monitoring was conducted. For the time period between 0700 and 1900 hours on normal weekdays, and noise parameter of $L_{eq~(30minutes)}$ was measured. As if the construction works were carried out during restricted period (ie. 1900-2300, 2300-0700 of next day and Sundays / general holiday), impact monitoring that comprises 3 consecutive $L_{eq~(5minutes)}$ would be carried out.

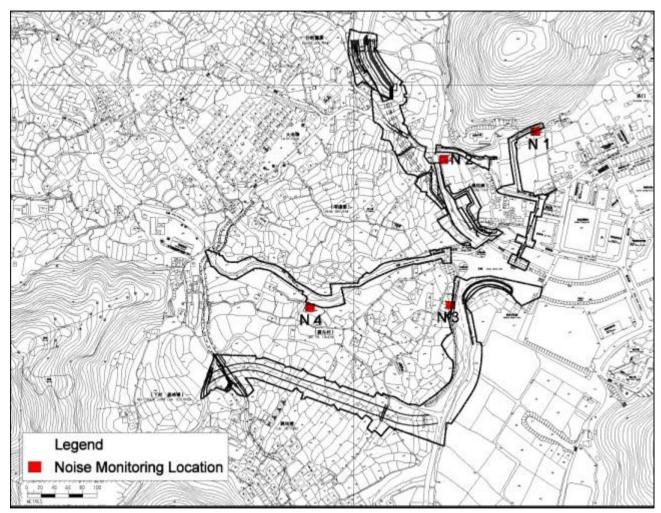


Figure 4.3.1 Impact noise monitoring locations

4.4 Monitoring Results and Interpretation

Relevant details of the noise monitoring results are presented in Table 4.4.1. The results, ranged between 46.7 dB (A) and 62.5 dB (A), were within the limit levels and therefore, no exceedance was found.

Table 4.4.1 Noise Monitoring Results for the reporting month									
Location	Parameter	Date	Time	L _{Aeq} dB(A)	Limit dB(A)	Exceedance	Weather		
N1	Leq 30mins	4/05/09	14:15	46.7	75	Ν	Sunny		
N1	Leq 30mins	11/05/09	14:20	48.6	75	Ν	Sunny		
N1	Leq 30mins	20/05/09	14:45	51.3	75	Ν	Cloudy		
N1	Leq 30mins	29/05/09	14:45	48.1	75	Ν	Cloudy		
N2	Leq 30mins	4/05/09	13:40	53.5	75	Ν	Sunny		
N2	Leq 30mins	11/05/09	10:35	52.3	75	Ν	Sunny		
N2	Leq 30mins	20/05/09	14:10	60.4	75	Ν	Cloudy		
N2	Leq 30mins	29/05/09	14:10	52.6	75	Ν	Cloudy		
N3*	Leq 30mins	4/05/09	13:05	62.4	75	N	Sunny		
N3*	Leq 30mins	11/05/09	11:10	62.5	75	Ν	Sunny		
N3*	Leq 30mins	20/05/09	13:00	58	75	Ν	Cloudy		
N3*	Leq 30mins	29/05/09	13:00	60.9	75	Ν	Cloudy		
N4	Leq 30mins	4/05/09	14:25	52.6	75	Ν	Sunny		
N4	Leq 30mins	11/05/09	15:00	52.6	75	Ν	Sunny		
N4	Leq 30mins	20/05/09	13:35	55.9	75	Ν	Cloudy		
N4	Leq 30mins	29/05/09	13:35	54.1	75	Ν	Cloudy		

Table 4.4.1 Noise monitoring results

Remarks: Raw datasheet for noise monitoring are attached in appendix E for reference.

Remark*: The equivalent noise level of N3 is corrected by +3 dB from the raw data result due to the fact that free field measurement was carried out in the location.

4.5 Action and Limit level for Construction noise

The Action and Limit (A/L) levels for construction noise are defined in Table 4.5.1. Should non-compliance of the criteria occur, action in accordance with the Action Plan in Table 4.5.2 should be carried out.

There was no recorded exceedance in the reporting month.

Table 4.5.1 Action and Limit Levels for Construction noise								
Time PeriodAction LevelLimit Level								
0700 – 1900 hours on normal weekdays	75dB(A)							
Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.								

EVENT	ACTION												
	ET	IC(E)	ER	Contractor									
Action Level	 Notify IC(E) and Contractor; Carry out investigation; Report the results of investigation to the IC(E), ER and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness. 	proposed remedial measures by the Contractor and advise ER accordingly; 3. Supervise the implementation of remedial measures.	 Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures are properly implemented. 	mitigation proposals to IC(E); 2. Implement Noise mitigation proposals.									
Limit Level	 Identify source; Inform IC(E), ER, EPD and Contractor; Repeat measurements to confirm findings; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IC(E), ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results If exceedance stops, cease additional monitoring 	 Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	 for remedial actions to IC(E) within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the 									

4.6 Noise Mitigation Measures

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The following mitigation measures were observed from the weekly site inspection in the reporting month:

- Use of quiet powered mechanical equipment (PME)
- Implementation of the following good site practices:
 - Only well-maintained and regularly serviced plant should be operated on site;
 - Silencers or mufflers on construction equipment;
 - Mobile plant, if any, should be sited as far from noise sensitive receivers as possible; and
 - Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.

5. Water Monitoring

5.1 Water Quality Monitoring Parameters and methodology

Turbidity in Nephelometric Turbidity Unit (NTU), Dissolved Oxygen (DO) in mg/L and Suspended Solids (SS) in mg/L are required to measure in this project. Turbidity, DO was measured in-situ while water samples were delivered to Accredited HOKLAS Laboratory for analysis of SS.

Other relevant data such as monitoring location, time, water depth, temperature, salinity, weather conditions and any other special phenomena and work underway at the construction site were recorded during sampling.

According to the requirement of the EM&A manual, two consecutive measurements for parameters of DO concentration, DO saturation and Turbidity are required to be taken at each monitoring location. When the difference in value between the first and second reading of DO or Turbidity is more than 25%, the reading would be discarded and further reading would be taken.

5.2 Monitoring Equipment

Turbidity, DO, Salinity, pH and temperature was measured by an instrument complied with the following requirements:

The instrument is a portable as well as weatherproof multimeter complete with cable and uses a DC power source. It is capable of measuring:

- A turbidity between 0-800NTU;
- A dissolved Oxygen level in the range of 0-20mg/L and 0-200% saturation;
- A temperature of 0-50°C;
- Salinity in the range of 0-40ppt;
- pH in the range of 0-14.

Suspended solid was determined by the water samples collected from the monitoring locations for further analysis in accredited HOKLAS laboratory. Water samples were contained by polythene bottles, packed in ice (cooled in 4°C without frozen) and delivered to the laboratory for analysis as soon as possible after collection. Duplicate samples from each independent sampling event were undertaken during impact monitoring.

Detailed calibration records of the multimeter were shown in Appendix C for reference.

5.3 Monitoring Locations

Seven locations included a control station in upstream of each stream/ river, a monitoring station at the end of each stream/ river of the works area and a monitoring station at Silver River were proposed for the impact water quality monitoring. Water samples were collected at mid-depth of each proposed monitoring stations for measurements and sample collection. The Location Plan is shown in Figure 5.3.1 for reference.

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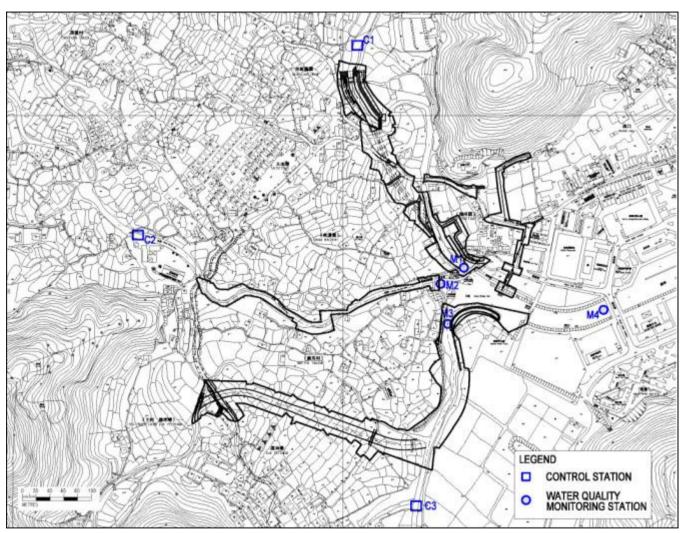


Figure 5.3.1 Water Quality Monitoring Locations

5.4 Monitoring Frequency

Impact water quality monitoring was undertaken three days per week and at ebb tides during the course of the construction river works. Upon the completion of the construction works, the monitoring exercises at the designated monitoring stations will be continued for four weeks in the same manner as the impact monitoring.

5.5 Monitoring Results and Interpretation

Water quality monitoring was carried out twelve times during May. Detailed on-site measurements and laboratory analysis reports including QA/QC results are shown in Appendix F1 and F2 respectively, while Table 5.5.1 presents consolidated results throughout the reporting month.

Exceedance events on parameters of turbidity and suspended solids were recorded in this reporting period according to the established level. Findings from the investigations showed that the total 60 exceedance events were mainly caused by:

- 1.) Construction activities belonged to the other projects carried out at the upper stream area of TTT River.
- 2.) Water quality changes due to heavy rainstorm.

Detailed information of the exceedance events and action taken were presented in Section 7.

	M1		M2			М3			M4			
	MIN	MAX	Ave	MIN	MAX	Ave	MIN	MAX	Ave	MIN	MAX	Ave
Turbidity (NTU)	2.7	14.7	9.8	2.4	54.1	12.7	5.9	25.9	13.7	0.1	56.3	12.3
DO (mg/l)	6.5	9.2	7.9	7.4	10.1	8.8	6.0	9.0	7.1	6.0	8.1	7.1
Suspended Solid (mg/l)	4.1	12.0	8.5	2.4	17.3	6.8	5.6	20.2	11.2	4.6	32.6	10.3

Table 5.5.1 Water quality monitoring results in May 2009

	C1			C2			C3		
	MIN	MAX	Ave	MIN	MAX	Ave	MIN	MAX	Ave
Turbidity (NTU)	0.0	7.3	2.6	6.8	385.7	147.7	4.7	14.1	9.1
DO (mg/l)	4.4	8.2	6.6	6.2	9.0	7.7	4.4	8.3	6.3
Suspended Solid (mg/l)	1.0	8.6	3.1	2.1	186.6	75.4	3.4	13.4	8.5

* Remarks: Detection limit for Turbidity, DO and SS are 1 NTU, 0.1 mg/L and 1 mg/L respectively.

5.6 Action and limit level for Water Quality

Based on the criteria stipulated in EM&A manual Section 4.8 and baseline water quality monitoring data obtained, the A/L levels are shown in Table 5.6.1 and Table 5.6.2. If the water quality monitoring results at any impact stations exceeded the criteria, the actions in accordance with the Event and Action Plan in Table 5.6.3 should be taken.

Parameters	Action	Limit
DO in mg/L (mid-depth)	- 5%-ile of baseline data	- 4mg/L
SS in mg/L (mid-depth)	 95%-ile of baseline data 120% of control station' SS on the same day of measurement 	· · · ·
Turbidity in NTU (mid-depth)	 95%-ile of baseline data 120% of control station' turbidity on the same day of measurement 	s - 130% of control station's

Table 5.6.1 Water quality criteria for monitoring

Table 5.6.2 Action and Limit Levels established according to baseline data	a
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	Monitoring locations								
Danamatana	M1		M2		Μ	[3	M4		
Parameters	Action	Limit	Action	Limit	Action	Limit	Action	Limit	
	Level	Level	Level	Level	Level	Level	Level	Level	
Turbidity (NTU)	15.2	16.9	5.3	6.5	16.8	26.0	16.2	18.0	
DO (mg/L)	5.7	4.0	6.2	4.0	5.9	4.0	5.9	4.0	
SS (mg/L)	12.2	12.8	3.1	4.2	12.4	17.7	13.9	15.2	

Remarks:

For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits

For SS and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

EVENT		AC	TION	
	ET	IC(E)	ER	Contractor
Action Level being exceed by one sampling day	 Repeat in situ measurement to confirm findings; Identify reasons for non-compliance and source(s) of impact; Inform IC(E) and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IC(E) and Contractor; Repeat measurement on next day of exceedance. 	 and Contractor on the mitigation measures; 2. Review proposals in mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the 	 IC(E) on the proposed mitigation measures; 2. make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures. 	 confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods;
Action level being exceed by more than two consecutive sampling days	 Repeat in situ measurement to confirm findings; Identify reasons for non-compliance and source(s) of impact; Inform IC(E) and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IC(E) and Contractor; Ensure mitigation measures are implemented; prepare to increase the monitoring frequency to daily Repeat measurement on next day of exceedance 	 Discuss with ET and Contractor on the mitigation measures; Review proposals in mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	 IC(E) on the proposed mitigation measures; 2. make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures. 	 confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods;
Limit level being exceeded by one sampling day	 Repeat in situ measurement to confirm findings; Identify reasons for non-compliance and source(s) of impact; Inform IC(E) and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IC(E) and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit Level 	 and Contractor on the mitigation measures; 2. Review proposals in mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 	 IC(E) on the proposed mitigation measures; 2. make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures. 	 confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods;

Table 5.6.3 Event and action Plan for Water Quality

5.7 Water Quality Mitigation Measures

Construction Run-off and Drainage

The site practices outlined in ProPECC PN 1/94 'Construction Site Drainage" should be followed as far as practicable during both construction and operation phase of the drainage improvement works in order to minimize surface runoff and the chance of erosion, and also to retain and reduce any suspended solids prior to discharge.

As recommended in the final EM&A manual, attention would be paid specially construction run-off and drainage, general construction activities, sewage discharged from construction workforce and river channel excavation works.

As for the forthcoming wet season, contractor was recommended to provide sufficient water treatment facilities for accumulated site water.

5.8 Water Monitoring Schedule for the Next reporting period

Water monitoring in the next reporting period is scheduled for 3, 4, 5, 8, 10, 12, 15, 18, 19, 22, 24, 26 and 29 June.

6. Ecology Monitoring

6.1 Ecological Monitoring Parameters

According to the Final EM&A Manual, a specific ecological monitoring programme of the improved section of PNH and LTT Rivers is recommended. The monitoring parameters required to measure in this project and survey methodology are described below:

(1) Avifauna species and abundance: Birds will be surveyed quantitatively using transect count method. Birds within the river channel and on the riverbank will be identified and their abundance will be recorded.

(2) Aquatic macroinvertebrate community species composition and abundance: Survey on aquatic fauna will focus on determination of the diversity and abundance of stream aquatic communities. Sampling methods, such as active searching, direct observation, netting, and kick sampling, will be determined according to the site conditions during field survey.

(3) Fish community species composition and abundance: Sampling methods, such as active searching, direct observation, and hand netting, will be determined according to the site conditions during field survey.

(4) Adult odonate community species composition and abundance: Adult dragonfly will be surveyed quantitatively using transect count method. Adult dragonflies within the river channel and on the riverbank will be identified and their abundance will be recorded. Species requiring close examination will be netted.

(5) Aquatic, emergent and riparian vegetation community species composition and abundance: The area will be walked through. Plant species composition and their relative abundance will be recorded.

(6) Surveys of White-shouldered Starling Sturnus sinensis will be conducted at the disused watchtowers next to LTT river. Breeding of the White-shouldered Starlings will be determined by checking signs of attempt to breed or sign of breeding which include carrying nesting materials, to-and-fro movement of adults carrying food, presence of recently fledged juveniles, etc. The number of breeding pairs and the site observation will be recorded whenever possible. Water Quality Monitoring along LTT and PNH River as well as LTT bypass channel was carried out. Water quality monitoring will include Turbidity in Nephelometric Turbidity Unit (NTU), Dissolved Oxygen (DO) in mg/L and Suspended Solids (SS) in mg/L are required to measure in this project. Moreover, additional water monitoring parameters will be taken for the purposes of ecological monitoring of water quality in this project. The added information will include: BOD, Ammonia, Nitrate and Phosphate concentrations. Turbidity, DO, pH and water flow will be measured in-situ while water samples will be delivered to Accredited HOKLAS Laboratory accredited laboratory and the analyses followed the standard methods according to APHA Standard Methods for the Examination of Water and Wastewater, 20th Edition, or equivalent for analysis of SS, BOD, Ammonia, Nitrate and Phosphate concentrations.

Other relevant data such as monitoring location, time, water depth, temperature, salinity, weather conditions and any other special phenomena and work underway at the construction site will be recorded during sampling.

According to the requirement of the EM&A manual, two consecutive measurements for parameters of DO concentration, DO saturation and Turbidity are required to be taken at each monitoring. When the difference in value between the first and second reading of DO or Turbidity is more than 25%, the reading will be discarded and further reading will be taken.

6.2 Monitoring Equipment and Methodology

Turbidity, DO, Salinity, pH and Temperature will be measured by a instrument complied with the following requirements:

The instrument is a portable as well as weatherproof multimeter complete with cable and uses a DC power source. It is capable of measuring:

- A turbidity between 0-800NTU;
- A dissolved Oxygen level in the range of 0-20mg/L and 0-200% saturation;
- A temperature of 0-50°C;
- Salinity in the range of 0-40ppt;
- pH in the range of 0-14.

Suspended solid was determined by the water samples collected from the

monitoring locations for further analysis in accredited HOKLAS laboratory. Water samples were contained by polythene bottles, packed in ice (cooled in 4°C without frozen) and delivered to the laboratory for analysis as soon as possible after collection. Duplicate samples from each independent sampling event were undertaken during impact monitoring.

6.3 Monitoring Locations

According to the Final EM&A Manual, the improved section of the river channels will be divided into 50m long sections, and ecological survey will be carried out in each of the 50m sections. A total of nine sections will be divided for the two rivers which include:

- Two sections for existing upstream of PNH river (i.e. the proposed 80m long trapezoidal channel)

- Two sections for existing downstream of PNH river (i.e. the proposed 100m long rectangular channel)

- Five sections for existing Luk Tei Tong River (i.e. the proposed 240m long trapezoidal channel)

The disused watchtowers are located at the confluence of the three rivers and next to LTT river.

The Location Plan for ecological is shown in Figure 6.1 for reference.

The improved sections of the river channels require to carrying out water quality monitoring for the ecological purpose. The sampling points for impact monitoring was undertaken in the same place as the baseline monitoring proposed, where include:

- Three points for existing of PNH river
- Three points for existing of Luk Tei Tong River

The Location Plan for ecological water monitoring is shown in Figure 6.2 for reference.

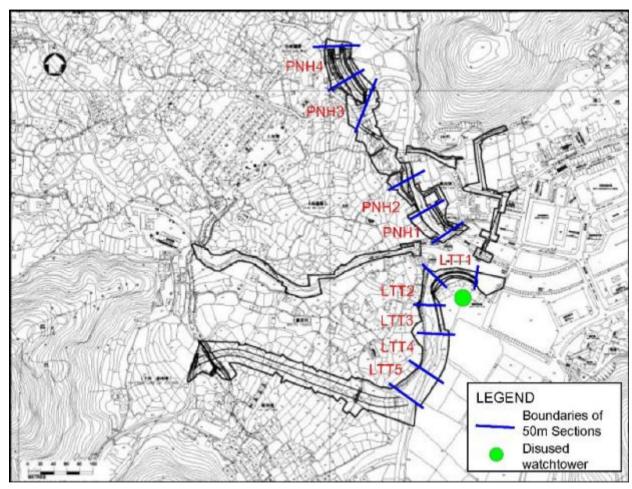


Figure 6.1 Ecological Monitoring Locations

Contract No. DC/2006/11 – Drainage Improvement in Southern Lantau Monthly EM&A Report for May 2009 (2nd Revision)

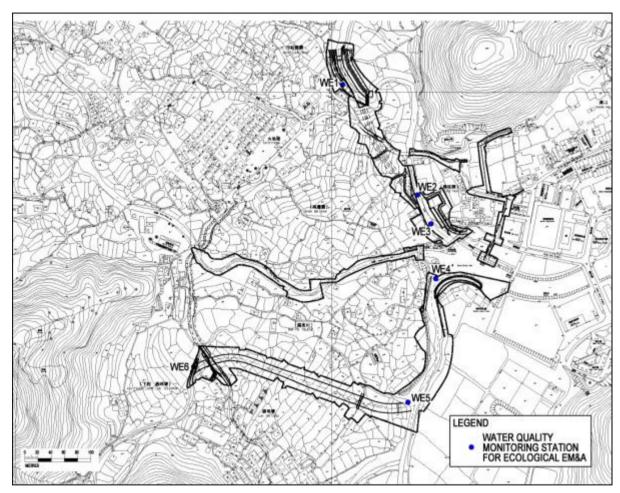


Figure 6.2 Ecological Water Quality monitoring locations

6.4 Monitoring Frequency

As proposed, ecological impact monitoring was carried out once for each monitoring location in the reporting month.

6.5 Monitoring results

Pak Ngan Heung Stream N and S sections

Vegetation

Surveys were conducted on 27 May 2009. The north section of Pak Ngan Heung Stream was fairly modified. Part of the west bank was lined with rock gabion bank and occupied by village houses and abandoned agricultural field. The stream channel was wider than the downstream section, but the stream bank was still fairly narrow and steep in gradient. Compared to the south section, the north section was relatively shaded due to presence of more trees with larger canopy.

The walk through survey recorded a total of 75 species, including 21 trees, 14 shrub, 21 herb and 8 grass species (Appendix D1). 60 of the species recorded are natives, while 15 were exotics. The quantitative sampling recorded 24 species at the north section. Large native (e.g. Celtis sinensis, Cleistocalyx operculata, Ficus hispida) and exotic trees (Acacia confusa) dominated the transects. Other species recorded include common and typical native pioneer forest and streamside tree species and ruderal species. No species of conservation interest was recorded.

	Relative % cover				
Species	PNH3	PNH4			
Acacia confusa		13.56			
Acorus graminifolia		0.52			
Alocasia macrorrhiza		0.78			
Aporosa dioica		2.22			
Bamboo	8.52				
Celtis sinensis	30.66	22.06			
Christella parasitica	0.68	3.00			
Cleistocalyx operculata	28.28				
Embelia ribes		1.04			
Ficus hispida	2.39	20.86			
Hibiscus rosa-sinensis		0.52			
Liriope spicata		0.52			
Litsea glutinosa		6.52			
Macaranga tanarius		12.78			
Mallotus paniculatus	13.63				
Microstegium ciliatum		1.96			
Mikania micrantha	4.43	2.97			
Neyraudia reynaudiana		2.22			
Phyllanthus urinaria		0.26			
Pueraria phaseoloides		1.96			
Sageretia thea		2.48			
Sporobolus fertilis		3.78			
Syzygium jambos	11.07				
Wedelia triloba	0.34				
Total Relative % Cover*	100.0	100.0			
Total Transect Length (m)	13	34			

Table 6.5.1Relative percentage cover of vegetation recorded at Pak NganHeung (N) Section

*Total Cover rounded up to one decimal place to avoid round-off error.

The south section of Pak Ngan Heung Stream was highly modified. Both banks were lined with rock gabions and were occupied by village houses immediately beyond the channel. The stream channel was lack of riparian zone and vegetation. A total of 19 species recorded, 14 of which were native and 5 were exotic. It was composed of isolated individuals of mangrove (Kandelia obovata), backshore species (Clerodendrum inerme), native (Celtis sinensis) and planted trees (Acacia confusa) (Appendix D2). No species of conservation interest was recorded.

Terrestrial Fauna

Surveys were conducted on 15 May 2009.

A total of nine species of birds were recorded in the proposed work area of the Pak Ngan Heung River (Table 6.5.2). All are common in Hong Kong.

Common names	Latin names	PNH	PNH	PNH	PNH	Commonness
		1	2	3	4	& distribution
Large Hawk	Hierococcyx			1		CW
Cuckoo	sparverioides					
Spotted Dove	Streptopelia		1			CW
	chinensis					
Chinese Bulbul	Pycnonotus	1			1	CW
	sinensis					
Magpie Robin	Copsychus				1	CW
	saularis					
Black-faced	Garrulax		2			CW
Laughingthrush	perspicillatus					
Common	Orthotomus				1	CW
Tailorbird	sutorius					
Black-necked	Sturnus nigricollis	2				CW
Starling						
Great Tit	Parus major			1	1	CW
Fork-tailed	Aethopyga				1	CW
Sunbird	christinae					

Table 6.5.2Avifauna in Pak Ngan Heung

CW = common and widespread, CL = common/uncommon and localized

Six species of dragonfly was recorded in the proposed work area of the Pak Ngan Heung River (Table 6.5.3). All are common and widespread in Hong Kong.

Common names	Latin names	tin names PNH PNH PNH PNH				Commonness
		1	2	3	4	& distribution
Black-banded	Euphaea decorata			2	7	А
Gossamerwing						
Orange-tailed	Ceriagrion				2	А
Sprite	auranticum					
Common Blue	Rhinocypha				1	А
Jewel	perforata					
Black Threadtail	Prodasineura			5	1	А
	autumnalis					
Common Blue	Orthetrum			1		А
Skimmer	glaucum					
Crimson Dropwing	Trithemis aurora				5	А

Table 6.5.3Dragonfly in Pak Ngan Heung River

A = abundant, UC = uncommon

Aquatic fauna and fish

10 species of fish and 4 crustacean were recorded in the 4 sections at PNH. All are common and widespread in Hong Kong. Though Predaceous Chub was observed, the another one fish species of conservation concern reported in the EIA report, i.e. Flagtail *Kuhlia marginata*, was not recorded in PNH during the present monthly monitoring survey.

Common names	Scientific names	PNH 1	PNH 2	PNH3	PNH4
Invertebrates	· · ·				
Atyid shrimp	Caridina elongata				+
	Macrobrachium				
Palaemond shrimp	hainanensis			+	+
Crab	Varuna litterata	++	++		
Mitten Crab	Eriocheir japonica				
Mangrove mud crab	Scylla paramamosain	+			
Fish				•	•
Mosquito fish	Gamusia affinis				+
Barcheek Goby	Rhinogobius giurinus				+
Goby	Rhinogobius duospilus		+		
Swordtail	Xiphophorus hellerii				+
	Puntius				
Six-banded Barb	semifasciolatus				+
Unidentified Cichlid					
fish					
Tilapia		++	++	+	
Predaceous Chub	Parazacco spilurus			++	
Jarbua Terapon	Terapon jarbua	++	+		
Common Silver-biddy	Gerres oyena	++			
Mullet	Mugil cephalus	+++	+++		
Broken-band	Liniparhomaloptera				
Hillstream Loach	disparis				

Table 6.5.4 Aquatic Invertebrates and fish in Pak Ngan Heung

+ =Occasional, less than 5 individuals were found; ++ =Common, 5 - 20

individuals were found; +++ = Abundant, more than 20 individuals were found.

Luk Tei Tong Stream Section

Vegetation

Surveys were conducted on 27 May 2009. The Luk Tei Tong Stream Section was highly modified. Vegetation only established on isolated muddy patches at the estuary and remaining semi-natural banks of Section 1 and Section 2. Vegetation on the eastern stream bank from the second half of Section 3 to Section 5 were largely cleared while the western bank was still lined with rock gabions or concrete. The whole section appeared to be subject to tidal influence, as mangrove associated or backshore species were recorded along the whole channel.

The walk through survey recorded a total of 27 species, including 11 tree, 5 shrub, 4 grass species (Appendix D3). 22 of the species recorded are natives, while 5 were exotics. The quantitative sampling recorded 8 species at Sections 2. Section 2 was dominated by Terminalia catappa and Wollastonia biflora. No quantitative survey was carried out on Section 3 and 4 due to vegetation clearance on stream banks as part of the site clearance works under the project. Remants of mangrove stand were still observed along Section 3, which will be cleared in due course.

Due to the patchiness of streamside vegetation, the quantitative data should be interpreted with cautions and used as a reference only.

Table 6.5.5Relative percentage cover of vegetation recorded at Luk Tei Tong
Stream Section

	Relative % cover
Species	LLT2
Acanthus ilicifolius	6.42
Celtis sinensis	13.70
Execoecaria agallocha	6.34
Fimbristylis sp.	10.96
Papalum paspaloides	2.35
Premna serratifolia	3.13
Terminalia catappa	38.37
Wollastonia biflora	18.72
Total Relative % Cover*	100.0
Total Transect Length (m)	11

*Total Cover rounded up to one decimal place to avoid round-off error.

Terrestrial Fauna

The proposed work area of Luk Tei Tong River was divided into 5 sections. All recorded avifauna and dragonfly species are common in Hong Kong

Surveys were conducted on 15 May 2009.

A total of seventeen species of birds were recorded in these sections (Table 6.5.6). Most of these species are common and widely distributed in Hong Kong. Crested Goshawk is uncommon in Hong Kong.

Common names	Latin names	LTT	LTT	LTT	LTT	LTT	Commonness
		1	2	3	4	5	& distribution
Little Egret	Egretta garzetta	1				1	CW
Grey Heron	Ardea cinerea	1					CL
Crested Goshawk	Accipiter trivirgatus	1					R
Common Koel	Eudynamis scolopacea			1			CW
Greater Coucal	Centropus sinensis					1	CW
House Swift	Apus nipalensis	1					CW
Chinese Bulbul	Pycnonotus sinensis			4			CW
Crested Bulbul	Pycnonotus jocosus	1		4			CW
Magpie Robin	Copsychus saularis	1					CW
Black-necked	Sturnus nigricollis	1					CW
Starling							
Great Tit	Parus major	1					CW
Japanese White-eye	Zosterops japonica	2					CW
Yellow-bellied Prinia	Prinia flaviventris					2	CW
Crested Myna	Acridotheres cristatellus		4			2	CW
Black-necked Starling	Sturnus nigricollis				3		CW
Jungle Crow	Corvus macrorhynchus		3				CW
Common Magpie	Pica pica					1	CW

Table 6.5.6Avifauna in Luk Tei Tong River

CW = common and widespread, CL = common/uncommon and localized, R = uncommon/rare and localised

Two species of dragonfly were recorded in the Luk Tei Tong River (Table 6.5.7). Both are common and widespread in Hong Kong.

Table 6.5.7Dragonfly in Luk Tei Tong River

Common names	Latin names	LTT	LTT	LTT	LTT	LTT	Commonness
		1	2	3	4	5	& distribution
Saddlebag Glider	Tramea virginia					1	С
Crimson Dropwing	Trithemis aurora					1	А

A = abundant, C = common

Aquatic invertebrates and fish

6 species of fish, 4 species of crustacean and 4 species of mollusks were recorded in the 5 sections at LTT. All are common and widespread in Hong Kong. The two fish species of conservation concern reported in the EIA report, i.e. Flagtail *Kuhlia marginata* and Predaceous Chub *Parazacco spilurus* were not recorded in LTT during the present monitoring as well as the baseline monitoring survey.

 Table 6.5.8
 Aquatic invertebrates and fish in Luk Tei Tong River

Common names	Scientific names	LTT1	LTT2	LTT3	LTT4	LTT5
Invertebrates						
Mangrove clam	Geloina erosa					
Rock oyster	Saccostrea cuculata		+++	+		
Snail	Melanoides tuberculata			+		
Snail	<i>Terebralia</i> sp.					
Snail	Nerita sp.		++	+		
Snail	Littoraria articulata		+	++		
Crab	Varuna litterata	+	+	+		
Fiddler crab	Uca lactea		+			
Fiddler crab	Uca arcuata					
Fiddler crab	Uca crassipes					
Crab	Perisesarma bidens		+			

Mangrove mud crab	Scylla paramamosain	+	+		
Mitten crab	Eriocheir japonica				
Fish					
	Periophthalmus	+			
Common mudskipper	cantonensis				
Tilapia		+			
Jarbua terapon	Terapon jarbua		+	+	
Mullet	Mugil cephalus	+++	+++	++	
Common Silver-biddy	Gerres oyena		+	+	
Barcheek Goby	Rhinogobius giurinus			+	

+ = Occasional, less than 5 individuals were found; ++ = Common, 5 – 20 individuals were found; +++ = Abundant, more than 20 individuals were found.

Disused Watchtowers

Surveys were conducted on 15 May 2009.

There was no sign (e.g., adults carrying food or nesting materials) of use of the watchtower as nesting habitat by White-shouldered Starling. This species was not observed during the May 2009 monitoring. No bird of other species was observed entering the watchtower.

Since the monitoring surveys commenced in August 2008, no bird was observed entering the watchtower. It seems the birds do not prefer the watchtower as roosting or nesting habitat.

Ecological Water Quality Monitoring (EWQM)

EWQM was conducted on 6 May 2009. Monitoring results are summarized in Table 6.9. Detailed on-site measurements and laboratory report are presented in Appendix D4 and D5.

Table 6.10 shows the baseline results of Ecological Water Quality Monitoring, from the information given in Baseline Monitoring Report.

To review the results in Table 6.9 in general, the measured results were found similar with past months.

Parameters	Limit of detection	WE1	WE2	WE3	WE4	WE5	WE6
Suspended Solid (mg/l)	1	1.90	4.95	6.35	12.20	7.40	1.00
Nitrogen (Ammonia) (mg/l)	0.01	0.03	0.93	0.40	0.53	2.76	0.01
Nitrogen (Nitrate) (mg/l)	0.01	0.06	0.38	0.24	0.33	0.21	0.06
Phosphorous (mg/l)	0.01	0.03	0.16	0.11	0.08	0.48	0.03
BOD ₅ (mg/l)	1	3	4	4	2	4	2
DO (mg/l)	0.01	6.49	7.72	8.76	7.35	9.98	6.16
Turbidity (NTU)	0.01	2.15	2.30	7.55	15.90	8.45	0.70
Temperature (oC)	0.1	24.0	23.8	24.3	23.7	25.9	23.4
рН	0.01	6.29	7.07	7.34	6.95	6.88	5.92
Salinity (ppt)	0.1	0.1	1.7	11	15.4	3.3	0
Conductivity (ms/m)	0.1	19.8	336.0	1840.0	2500.0	602.0	7.7
Water Flow (m/s)	N/A	0	0.038	0.015	0.025	0.007	0

Table 6.9 Summarized Ecological water quality monitoring results (6 May 2009)

Table 6.10 Baseline Results of Ecological water quality monitoring

Parameters	WE1	WE2	WE3	WE4	WE5	WE6
Suspended Solid (mg/l)	1.0	2.0	3.0	3.0	<1	<1
Nitrogen (Ammonia) (mg/l)	0.07	0.12	0.11	0.23	0.03	0.02
Nitrogen (Nitrate) (mg/l)	0.12	0.13	0.13	0.31	0.04	0.05
Phosphorous (mg/l)	0.04	0.06	0.06	0.09	0.06	0.05
BOD ₅ (mg/l)	<2	<2	<2	<2	<2	<2
DO (mg/l)	6.58	6.82	6.37	7.61	6.87	5.70
Turbidity (NTU)	4.44	5.12	5.93	6.96	4.65	2.73
РН	6.4	7.1	7.0	6.8	6.6	6.1
Salinity (ppt)	<0.1	0.1	0.3	7.6	0.1	<0.1

6.6 Action and Limit level for Monitoring of White-shouldered Starlings

A simple Event and Action Plan is shown in Table 6.6.1. Should the Event occur, action in accordance with the Action Plan should be carried out.

There was no recorded event in the reporting month.

EVENT	ACTION	
	ET Leader	Contractor
Identification of	1. Increase frequency of	1. Check all construction
disturbance to breeding	monitoring to twice	actions and working
White-shouldered	weekly	methods
Starlings	2. Notify Site Engineer	2. Submit proposals for
		remedial action to prevent
		abandonment of the
		breeding site.
	3. Review construction	3. Implement remedial
	activities of previous	action.
	week.	
	4. Identify any changes in	4. Liaise with ET
	construction activities in	regarding effectiveness of
	previous week	remedial actions.
	5. Discuss remedial	
	actions with Site Engineer	

Table 6.6.1 Event / Action Plan for Monitoring of White-shouldered Starlings

6.7 Ecological monitoring Schedule

The next ecological surveys are scheduled on 11th, 12th and 26th June, while ecological water quality monitoring is scheduled on 6th June.

7. Action taken in Event of Exceedence

If the measurements (Noise, Water, Ecology) exceed the action / limit level, exceedance details will be reported and follow-up actions will be taken by relevant parties involved.

During the reporting period there was no exceedance for noise, ecological measurements recorded; therefore no actions were taken.

Total 60 non-compliance events of water quality limits (Turbidity and Suspended Solids) were recorded in this reporting period according to the established level. ET has arranged site investigations for the exceedance events. Findings from the inspection showed causes were substantially attributable Channel clearance works carried out at the upper stream are of TTT River, and water quality changes due to heavy rainstorm.

The summary of non-compliance is listed in Table 7.1 for reference.

Among the 60 events of non-compliance recorded in this reporting month, 16 of them were believed to be caused by improper site practice carried out by the contractor.

Although the deterioration of water quality was not mainly caused by the project, Contractor was reminded to be cautious on their site practice and conduct necessary mitigation measures so as to keep the disturbance on water quality to minimal levels.

Date	Location	Parameter	Level of exceedance	Main cause of exceedance
0.4/05/0000	M1	Turbidity, S.S.	Limit Level	
04/05/2009	M3	Turbidity	Limit Level	M1 & M3 - No particular observations
00/05/0000	M1	Turbidity, S.S.	Limit Level	
06/05/2009	M3	Turbidity, S.S.	Limit Level, Action Level	M1 & M3 - No particular observations
00/05/0000	M1	Turbidity, S.S.	Limit Level	M1 – No particular observation
08/05/2009	M2	S.S.	Action Level	M2 - Channel clearance works at upper stream area
	M1	Turbidity, S.S.	Limit level	
11/05/2009	M2	S.S	Limit level	M1, M2 & M3 - No particular observations
	M3	Turbidity, S.S	Action Level	
	M1	Turbidity, S.S.	Limit Level	M1 – No particular observation
13/05/2009	M2	Turbidity, S.S.	Limit Level	M2 - Channel clearance works at upper stream area
	M3	S.S.	Limit Level	M3 – No particular observation
	M1	Turbidity, S.S.	Limit Level	M1 – No particular observation
15/05/2009	M2	Turbidity, S.S.	Limit Level	M2 - Channel clearance works at upper stream area
	M3	S.S.	Limit Level	M3 – No particular observation
20/05/2000	M1	Turbidity, S.S.	Limit Level	M1 – No particular observation
20/05/2009	M2	Turbidity, S.S	Limit Level	M2 - Channel clearance works at upper stream area
	M1	Turbidity, S.S.	Limit Level	M1 – No particular observation
21/05/2000	M2	Turbidity, S.S	Limit Level	M2 - Channel clearance works at the upper stream
21/05/2009	M3	Turbidity, S.S.	Limit Level	General Observation – Heavy rainstorm occurred at early
	M4	Turbidity, S.S	Limit Level, Action Level	morning before monitoring
	M1	Turbidity, S.S.	Limit Level	M1 – No particular observation
22/05/2009	M2	Turbidity, S.S.	Limit Level	M2 - Channel clearance works at upper stream area
	M3	Turbidity, S.S	Limit Level	M3 – No particular observation
	M1	Turbidity		Concret Observation . Userva reinstarm securred at early
25/05/2009	M2	Turbidity, S.S.	Limit Level	General Observation - Heavy rainstorm occurred at early morning before monitoring
	M4	Turbidity		morning before monitoring
	M1	Turbidity, S.S.		M1 – No particular observations
07/05/0000	M2	Turbidity, S.S.		M2 - Channel clearance works at upper stream area
27/05/2009	M3	Turbidity, S.S.	Limit Level	M3 – No particular observations
	M4	Turbidity, S.S.		M4 – Water quality was affected by the upper stream area
	M1	Turbidity, S.S.	Limit Level	M1 - No particular observations
29/05/2009	M2	S.S.	Action Level	M2 - Channel clearance works at upper stream area
	M3	Turbidity, S.S.	Action Level, Limit Level	M3 - No particular observations

 Table 7.1 Summary of Non-compliance for Water Quality

8. Construction waste disposal

It is the contractor's responsibility to ensure that all wastes produced during the construction phase for the drainage improvement works are handled, stored and disposed of in accordance with good waste management practices and EPD's regulation and requirement. Waste materials generated during construction activities, such as construction and demolition (C&D) material, chemical wastes and general refuse, are recommended to be audited at regular intervals to ensure that proper storage, transportation and disposal practices are being implemented.

Contractor has completed the registration of Waste Producer under the Waste Disposal (Chemical Waste)(General) Regulation. The Waste Producer Number, WPN 5213-950-Y2443-03 was assigned by EPD on 12 Aug 2008. The Contractor would be responsible for the implementation of any mitigation measure to minimize waste or redress problems arising from the waste materials.

Table 8.1 is a summary of updated figures of the construction wastes disposal provided by the Contractor.

	Amount of Construction Waste disposed					
Month	Inert Waste Non-inert Waste C		Chemical Waste			
	(to Public Fill)	(to Landfill)	(to treatment plant)			
1 st May, 09 to	1021.23 (ton)	Nil	Nil			
31 st May 09						
Total (from June	10044.12 (ton)	65.23 (ton)	0			
08 to April 09)						

Table 8.1 Summary of Construction Waste Disposal

9. Status of Permits and Licenses obtained

Table 9.1 is the updated status of environmental related permits/ license obtained for the construction activities

Description	License / Permit No.#	Date of Issue	Date of Expiry	Remarks
Environmental Permit	EP-237/2005/A	05 Mar 2008		Issued
Registration of C&D Waste Producer	7006521			Issued
Chemical Waste Producer	5213-950-Y2443-03	12 Aug 2008		Issued
Construction Noise Permit	N/A	N/A	N/A	N/A
Effluent Discharge License	EP890/W2/XG032 EP890/W2/XG033 EP890/W2/XG034 EP890/W2/XG035 EP890/W2/XG036 EP890/W2/XG037 EP890/W2/XG038 EP890/W2/XG039 EP890/W2/XG040 EP890/W2/XG041	23 Oct 2008	31 Oct 2013	Issued

Table 9.1 Status of Permits and Licenses Obtained

The contractor implemented various environmental mitigation measures as recommended in the Environmental Permit and Final Mitigation Measures Report. The implemented schedule is presented in Appendix H.

10. Complaint Log

There was no formal complaint received during the reporting month.

Table 10.1 Summary of Formal Complaints received							
	Noise	Water	Ecology	Cultural	Others		
May 2009	0	0	0	0	0		
Total	0	0	0	0	0		

11. Site Environmental Audits

11.1 Site Inspection

With an intention to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented, regular environmental site inspections have been scheduled.

Within the reporting month, site inspections were conducted on 8, 15, 21 and 29 May.

A detailed checklist of each site inspection together with comments, relevant photos and maps have been filed and kept. A summary of observation and follow-up action is shown in Table 11.1

- .	Date Observations Advice from ET Action taken Closing							
Date			Action taken	Closing Date				
2 Apr 09	Underground water was found		Regular removal of accumulated	Ongoing				
	accumulated in the excavated	should be removed for mosquito	water was conducted as reported					
	pits of box culvert bay 3 and bay	control and hygiene issues.	by contractor					
	12 at PNH							
17 Apr,	Stagnant water was observed	Contractor was advised to trace	Regular removal of accumulated	08 May 09				
23 Apr &	at the site ground located at the	the source of the water, stagnant	water was conducted as reported					
30 Apr 09	end of LTT bypass channel	water should be removed for	by contractor					
		mosquito control						
08 May 09	Open stockpile of fine earthy	Contractor was advised to	Stockpile was removed and/or	15 May 09				
	material was found at the site	prevent stockpiling.	used prior to the site inspection					
	entrance of Ling Tsui Tau		on 15 May					
08 May 09	Wood board coverings to the	Contractor was urged to rectify	Still outstanding until the end of	Ongoing				
	U-channel outside of the PNH	such discrepancies as soon as	reporting month. To be follow up.					
	BC12 were found seriously	possible to prevent debris of						
	damaged U-channel next to the	construction materials entering						
	excavated pit for BC8 was not	the public drain						
	well covered also							
08 May &	Earth bunds at ch.2B 150~200 of	Contractor was advised to rectify	Discrepancy has been rectified	21 May 09				
15 May 09	LTT River was found poorly	the defective coverings to	prior the site inspection					
	covered with geo-textile during	prevent erosion from the exposed	on 22 May					
	inspection	soil surface.						
15 May 09	Chemical container without	Contractor was reminded to	The chemical container was	21 May 09				
	proper drip pan was found at LTT	provide proper secondary	removed from the site prior to site					
	ch.2B 150~200 where under	spillage containment for	inspection on 22 May					
	gabion wall construction.	chemicals used on site. Unused						
		chemical should be returned to						
		designate chemical storage area						
		and should not be stored on site.						

	Table 11.1 Summary of site inspection							
Date	Observations	Advice from ET	Action taken	Closing Date				
15 May 09	Water was leaking from the	Contractor was advised to rectify	Idle hydrant was properly locked	21 May 09				
	hydrant located at the site	the discrepancy and provide	up during the inspection on 22					
	entrance of PNH BC12 and	proper coverings to the public	Мау.					
	caused surface runoff to the	drains nearby project site.						
	public U-channel							
15 May &	Definition of site boundary for the	Contractor was urged to define	Still outstanding until the end of	Ongoing				
21 May &	area of gabion walls at LTT River	their site boundaries as soon as	the reporting month. To be follow					
29 May 09	ch.2B 150~200 was still	possible and reinstate the area	ир					
	outstanding. Vegetation at the	out of boundaries as if						
	area was removed and	practicable.						
	excavated during inspection							
21 May 09	Vehicle was found washing at the	Contractor was advised to assign	Still outstanding until the end of	Ongoing				
	entrance of temporary access at	a proper wheel washing area with	the reporting month. To be follow					
	behind of Yuen's compound,	proper water collection facilities,	up					
	where without proper water	to avoid site runoff entering the						
	collection facility.	mangrove area.						
29 May 09	River water was found entered	Contractor was reminded on site	To be follow up	Ongoing				
	the enclosed section of retaining	water should be entered the river						
	wall H during high tide	course and site at the river sides						
		should be well enclosed.						
29 May 09	Accumulated rain water in the	Contractor was advised to	To be follow up	Ongoing				
	LTT bypass channel was found	provide proper bunds or barriers						
	seeped into the branch of LTTR	to prevent site water directly						
	due to overflow	enter the river course.						
		Also contractor was reminded to						
		remove accumulated rain water						
		from the bypass channel in						
		accordance with the mitigation						
		measures proposed for the						
		application of VEP.						

11.2 Compliance with legal and Contractual requirement

ET leader has reviewed the progress and programme of the works to check any relevant environmental laws has not violated.

11.3 Environmental Complaint and follow up actions

During this reporting period, there was no documented complaint received. Therefore, follow up actions for the Environmental Complaint is not required

During the month of May 2009, concerns on the mangrove area to the east of Luk Tei Tong River and the widened rip-rap based river channel at bottleneck A of Tai Tei Tong River were raised by green groups during site visit.

The mangrove area was located to the east of the section of Luk Tei Tong River to be channelised under the present Project. The mangrove area, based upon its location and the bund structures inside, might be originally ponds for aquaculture, but were colonized by species of mangroves and mangrove associates after the ponds were abandoned. There were regular water exchanges between the mangrove areas and Luk Tei Tong River via a small box culvert. During high tide, the water level in Luk Tei Tong River is elevated due to the incoming tidal flush, and water would go into the mangrove area, while during low tide, water inside the mangrove area would flow into Luk Tei Tong River, which is usually of low water level during low tide.

Due to the works for the gabion wall along Luk Tei Tong River, the small box culvert had to be temporarily removed, before a replacement box culvert is provided in the new gabion wall.

A site visit with green groups was made on 11 May 2009. One of the major concerns from green groups was the temporary blockage of tidal flow to the mangrove area due to construction of the Gabion Wall

Green groups proposed that the tidal flow in the mangrove area should be

maintained.

Pipe or pipes of sufficient diameter that pumps river water into the mangrove areas shall be installed.

It was agreed in the follow-up meetings that, a twin temporary inlet pipes, each with a diameter of 400mm would be installed to allow flowing of water from Luk Tei Tong River to the mangrove area until completion of gabion construction and reinstatement of the tidal inlet. And before the pipes are installed, water pumps would be provided to create water exchanges.

Furthermore, the ecologist of the ET will monitor the mangrove area beside the Luk Tei Tong River weekly for one month starting form 27 May 2009. Thereafter, the monitoring will be monthly till the original water inlet is reinstated.

For the widened bottleneck at the downstream of Mui Wo School (hereafter as bottleneck A). A major concern was raised by green groups that there was no surface flow on top of the rip-rap based channel bed observed. This made movement of aqua fauna between the upstream and downstream areas become impossible.

For the connectivity for movement of aqua fauna along the river, Green groups suggested decreasing the riverbed level by removing boulders and forming a meandering dry weather flow on top of the riverbed. Advises were taken and the follow up actions would be carried out in June.

ET will continue to inspect implementation status and performance of the mitigation measures taken and give comment whenever necessary.

12. Future key issues

Key construction activity in the coming month will include construction of box culvert at PNH, haul access and gabion walls at TTT River and retaining walls, gabion blocks as well as box culvert at LTT River. It is expected that several impacts on environmental aspects will be generated on-site. With reference to the EM&A manual, mitigation measure report as well as the environmental permit, proper mitigation measures are proposed to be taken, if necessary.

Contractor was reminded to provide proper measures to mitigate water quality impacts to the river channels due to construction works. River based construction activities should be carried out in enclosed as well as dry condition to prevent discharge of site water to the stream; containment measures such as bunds and barriers should be provided as to restrict the carrying out of construction works within enclosed dry area of the river.

Underground water and site water may be accumulated on site. Contractor is recommended to treat the accumulated site water by proper silt removal facilities before discharging to the designated discharge point; also reuse of site water should be considered.

Contractor was reminded to be cautious on erosion and surface run-off from the stockpiles of earth materials and exposed earth surfaces. Coverings with tarpaulin and/or geo-textile materials should be provided to minimize the concerned impacts.

Dust impact may be resulted by boulder movement, breaking and installation works of gabion blocks, contractor is reminded to provide regular watering to the dusty static site area and stockpile. Meanwhile, size and height of stockpiles should be controlled as such erosion issue could be minimized.

13. Conclusions

In this reporting month, construction works of box culvert at PNH River, box culvert at LTT, as well as U-channel at Ling Tsui Tau.

Regular site meetings and inspection audits led by the seniors for discussing site environmental matters were held among Project Proponent, Contractor and the ET on weekly basis. Also monthly site meeting and inspection audits with the above parties and IEC were carried out at the mid of the reporting month.

For noise level monitoring, all results were within the established A/L limits.

For water quality monitoring, total 60 non-compliance events of water quality criteria were recorded in this reporting month. Although exceedances were found mainly caused by site water discharged by the other project at the upper stream area of TTT River, and influence of heavy rainstorm. Contractor was reminded to be cautious on their site condition and implementation status of mitigation measures. According to the monthly ecological water monitoring results performed on 06 May 2009, measurements recorded in the monitoring locations were found similar with past months.

During ecological monitoring survey, no White-shouldered Starling was recorded breeding in the watch tower. There was no sign of disturbance from the Project to the watch tower. The breeding season of White-shouldered Starling in this year has begun. However, the absence of nesting of White-shouldered Starling in the watch tower did not seem to be related to construction works in Luk Tei Tong River. A bird species nests in village house should be to certain extent disturbance tolerant.

No bird was observed entering the watchtower since the monitoring surveys commenced in August 2008. Also, no breeding was recorded in the baseline survey in September 2007. It appears that the birds do not prefer to roost or nest in the watch tower.

Also, there were not any notifications of summons recorded during the reporting period. Furthermore, there were not any formal prosecution and complaints recorded.

Site water control was the major concern in this reporting month. Contractor was recommended to provide proper de-silting facilities for site water treatment, and provide necessary mitigation measures to minimize impacts to the river streams.

ET has reminded the contractor to provide environmental pollution control measures wherever necessary; and to keep a good environmental management at site practice.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirement.

Appendix A

Construction Programmer and Location plan

Act ID	Description	Orig Dur	Rem Dur	Early Start	Early Finish	% Predecessors	2008 2009 2010 2011 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB
0000	DRAINAGE IMPROVEMENT WORK IN S LANTAU	534 *	534 * (06AUG2009	21JAN2011	0	
0001	Section Commencement	11		07JAN2008 A	17JAN2008 A	100	Section Commencement
0010	Preliminaries	534 *		06AUG2009	21JAN2011	0	Preli
0020	Engineer's Accommodation	80			26MAR2008 A	100	Brginser's Accommodation
0030	Contactor's Accommodation	55 40		07JAN2008 A 07JAN2008 A	01MAR2008 A	100	
0040	Engineer's Accommodation (Secondary) Record Survey & Site Investigation	180			15FEB2008 A 04JUL2008 A	100	Engineer's Accommodation (Secondary)
0060	Recruitment of Environment Team	80			26MAR2008 A	100	Recruitment of Environment Team
0070	Establish Base line monitoring for EP	30			25APR2008 A	100 0060	Establish Base line monitoring for EP
0080	Monitoring for Environmental Permit	1001			21JAN2011	47 0070	
0100	Temporary Traffic Management Schemes	180	0 0	7JAN2008 A	04JUL2008 A	100	And
0110	Construction Proposals and Submissions	80	0 0	7JAN2008 A	26MAR2008 A	100	Construction Proposals and Submissions
0120	Permits Application & Approval	180		The Property of the Address of the Addre	04JUL2008 A	100	Participation and the second provide the second sec
0130	Liaison Works with Others (Initial)	220		07JAN2008 A	13AUG2008 A	100	Liaison Works with Others (Initia)
0140	Temporary Noise Barrier (Fabrication)	60			120CT2008 A	100 0130	► Harving Temporary Noise Barrier (Fabrication)
1000	Works at Ling Tsui Tau &TTT River (D2&D3, D4)	510		8JAN2008 A	10JUN2009 A	100 0001	Works at Ling Tsui Tau &TTT River (D2&D3, D4)
1010	Drainage Channel at Ling Tsui Tau (D2&D3)	510		8JAN2008 A	10JUN2009 A	100 0001	Drainage Channel at Ling Tsui Tau (D2&D3)
1020 1030	Sub. & app. from AMO by Archaeologist Covered U-Channel	268		07JAN2008 A	30SEP2008 A	100 1000	Sub. & app. from AMO by Archaeologist
1030	600 & Covered 750 U-Channel (D3)	120			28JAN2009 A	100 1020 100 1030	Covered U-Channel
1032	Covered 300 U-Channel (D2)	30		25FEB2009 A	26MAR2009 A	100 1030	Covered 300 U-Channel (D2)
1040	Concrete Pipe Drainage at Ling Tsui Tau (D3)	0		2APR2009 A		100	Covered Sob C-Chainer (D2)
1040	CP1.3 to MH1.4 (2 x DN600)	14			05MAY2009 A	100 1040	Conceller Pipe Drainage at Ling Tsui rau (D3)
1042	MH1.4 to MH1 (2 x DN 600)	14		6MAY2009 A	19MAY2009 A	100 1041	→ ■ MH1.4 to MH1 (2 x DN 600)
1043	MH1 to MH2 (2 x DN 600)	21	0 2	20MAY2009 A	09JUN2009 A	100 1042	→ ■■■ MH1 to MH2 (2 × DN 600)
1044	MH2 to MH3 (2 x DN 600)	75	18 1	0JUN2009 A	23AUG2009	76 1043	► HH2 to MH3 (2 × DN 600)
1045	MH3 to MH4 (2 x DN 600)	21	21 2	1AUG2009 *	10SEP2009	0 1044	→ ■ MH3 to MH4 (2 × DN 600)
1046	MH4 to MH5 (2 x DN 600)	14		1SEP2009	24SEP2009	0 1045	〒→■MH4 to MH5 (2 x DN 600)
1047	MH5 to MH6 (2 x DN 600)	14		25SEP2009	08OCT2009	0 1046	→ 篇 MH5 to MH6 (2 × DN 600)
1048	MH6 to MH7 (2 x DN 600)	14		90CT2009	22OCT2009	0 1047	→ ■MH6 to MH7 (2 × DN 600)
1049	MH7 to MH8 (2 x DN 750)	80		9JUN2009 A	16SEP2009	48	MH7 to MH8 (2 x DN 750)
1050 1100	MH8 to Outlet Structure Gabion Channel at Tai Tei Tong River (D4)	21 510		3OCT2009 8JAN2008 A	12NOV2009 10JUN2009 A	0 1048, 1049 100 0001	uii → manu MH8 to Outlet Structure
1110	Preparation Work for Gabion Channel	409		The second s	01MAR2009 A	100 0001	Fremention Work for Gabion Channel at Tai Tei Tong River (D4)
1120	Bottleneck A widening excavation (LHS)	10		2MAR2009 A	11MAR2009 A	100 1110	Preparation Work for Gabion Chamber ■ Bottleneck A widening excavation (LHS)
1121	Bottleneck A type 6 gabion (LHS)	20		The second s	31MAR2009 A	100 1120	H ■ Bottleneck A type 6 gabion (LHS)
1122	Bottleneck A widening excavation (RHS)	10		1APR2009 A	10APR2009 A	100 1121	Stateried iv type o gabler (cho)
1123	Bottleneck A type 6 gabion (RHS) & river bed	20	0 1	1APR2009 A	30APR2009 A	100 1122	→ ■ Bottleneck A type 6 gabion (RHS) & river bed
1130	Approval of temp access from bottleneck A to B	60	0 3	1MAR2009 A	29MAY2009 A	100	Approval of temp access from bottleneck A to B
1131	Forming of access form bottleneck A to B	12	0 3	0MAY2009 A	10JUN2009 A	100 1130	Forming of access form bottleneck A to B
1132	Bottleneck B widening excavation (North Side)	85	29 1	1JUN2009 A	03SEP2009	66 1131	Patricks Buildenck B widening excavation (North Side)
1133	Bottleneck B type 6 gabion (South Side)	25	25 0	4SEP2009	28SEP2009	0 1132	Bottleneck B type 6 gabion (South Side)
1134	Bottleneck B widening excavation (RHS)	14		9SEP2009	12OCT2009	0 1133	Source B widening excavation (RHS)
1135	Bottleneck B type 6 gabion (RHS) & river bed	14		A REPORT OF A DESCRIPTION	26OCT2009	0 1134	🐂 🛲 Bottleneck B type 6 gabion (RHS) & river bed
1140	Reinforced Concrete Retaining Wall [H]	0		1APR2009 A	070550000	100	Reinforced Concrete Retaining Wall [H]
	R C Retaining Wall H	180 0			27SEP2009	71 1140	A Drainage Works for Changels & Bataining Wall
1150 1151	Drainage Works for Channels & Retaining Wall U-Channel and Catchpit for Widened Bottle Neck A	15		7JAN2008 A 7OCT2009	10NOV2009	0 1123, 1135	w ⊔rainage works for Channels & Retaining Wall,
1152	U-Channel and Catchpit for Widened Bottle Neck A	15			10NOV2009	0 1123, 1135	http://www.u-Channel and Catchpit for Widened Bottle Neck A
1152	U-Channel and Catchpit for Retaining Wall H	20		8SEP2009	170CT2009	0 1135	
	Soft & Hard Landscaping Works	20		80CT2009	1.0012003	0 1123, 1153	U-Channel and Catchpit for Retaining Wall H
1170	Hard Landscaping & Paving Works	50			06DEC2009	0 1153	Hard Landscaping Works
	Soft Landscaping (Planting) Works	50		And the second	06DEC2009	0 1153	Soft Landscaping (Planting) Works
1200	Phase 2 sewerage works at TTT river	60		1SEP2009 *	30OCT2009	0	Phase 2 sewerage works at TTT river
	Submission and approval MS by DSD & EPD	90			29JUL2009 A	100	Submission and approval MS by DSD & EPD
	Excavation 1st half trench at TTT river	20			20SEP2009	0 1210	► → ■ Excavation 1st half trench at TTT river
	Pipe laying and backfilling 1st half trench	5			25SEP2009	0 1220	Pipe laying and backfilling 1st half trench
	Excavation 2nd half trench at TTT river	20	20 2	6SEP2009	15OCT2009	0 1230	Excavation 2nd half trench at TTT river
Start o							Early bar
Finish	-1-1- 0041100000						Drainage Improvement Work in South Lantau Dragress bar
Data o Run d		ction Co	. Ltd.				and Construction of Mui Wo Village Sewerage Phase 1
	number 1A						Master Programme (Rev.9b)
	imavera Systems, Inc.						
							Finish milestone point

Act	Description	Orig	Rem	Early Start	Early Finish	% Predecessors	2008 2010 2011 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB
ID 1250	Pipe laying and backfilling 2nd half trench	Dur 5	Dur	160CT2009	200CT2009	0 1240	►§ Pipe laying and backfilling 2nd half trench
1250	Connection to existing manholes	4		210CT2009	240CT2009	0 1250	► Connection to existing manholes
1200	Site clearance and reinstatement of river	5		25OCT2009	29OCT2009	0 1260	⇒ #Site clearance and reinstatement of river
2000	Works at D6, D7 & D8 (HTST, LUT & CShST)	614	48	18JAN2008 A	22SEP2009	92 0001	🗜 🕶
2100	Drainage Works at Pui O - Ham Tin San Tsuen (D6)	614	48	18JAN2008 A	22SEP2009	92 0001	→ Drainage Works at Pui O - Ham Tin San Tsuen (D6)
2110	Preparation works	430		18JAN2008 A	22MAR2009 A	100 0001	Preparation works
2111	Sheet piling for flood protection wall	120		23MAR2009 A	20JUL2009 A	100 2110	→ The second se
2112	Set up cover dam for excavation of FPW	90		23MAR2009 A	20JUN2009 A	100 2110	Set up cover dam for excavation of FPW
2113	excavation and shoring for bay 1 FPW	50 30	survey a service real county was an	21JUN2009 A 10AUG2009	09AUG2009 08SEP2009	92 2112 0 2113	excavation and shoring for bay 1 FPW
2114	Concreting mass concrete wall bay 1 FPW	20		09SEP2009	28SEP2009	0 2113	► • • • • • • • • • • • • • • • • • • •
2115 2116	excavation and shoring for bay 2 FPW Concreting mass concrete wall bay 2 FPW	15		29SEP2009	13OCT2009	0 2115	Concreting mass concrete wall bay 2 FPW
2117	excavation and shoring for bay 3 FPW	20		140CT2009	02NOV2009	0 2116	► 📾 excavation and shoring for bay 3 FPW
2118	Concreting mass concrete wall bay 3 FPW	15	5 15	03NOV2009	17NOV2009	0 2117	🖙 🗰 Concreting mass concrete wall bay 3 FPW
2120	Associated Railing & Paving Works	60	60	29SEP2009 *	27NOV2009	0 2113, 2118	Image: Associated Railing & Paving Works
2130	Associated Granite Paving (vertical)	60	60	29SEP2009	27NOV2009	0 2113, 2118	-► ====================================
2200	Drainage Works at Pui O - Lo Uk Tsuen (D7)	614		18JAN2008 A	22SEP2009	92 0001	Prainage Works at Pui O - Lo Uk Tsuen (D7)
2210	Permit Application and Approval	400		18JAN2008 A	20FEB2009 A	100 0001	Extension of the second s
2211	Mobilization of plant and equipment	5 15		21FEB2009 A 26FEB2009 A	25FEB2009 A 12MAR2009 A	100 2210 100 2211	Mobilization of plant and equipment
2212 2213	Trial holes excavation Reinstatement of trial hole	13		13MAR2009 A	17MAR2009 A	100 2211	► Reinstatement of trial hole
2213	Issuing VO no.8 (Twin DI pipe crossing CP A & B)	1		06APR2009 A	06APR2009 A	100 2212	Issuing VO no.8 (Twin DI pipe crossing CP A & B)
2223	Mobilization of plant and equipment	10		07APR2009 A	16APR2009 A	100 2220	F ■ Mobilization of plant and equipment
2224	Pipe layer at crossing CP A to MH6	65	5 0	17APR2009 A	20JUN2009 A	100 2223	Pipe layer at crossing CP A to MH6
2225	Reinstatement of carriageway at CP A	7	⁷ 0	21JUN2009 A	27JUN2009 A	100 2224	► Reinstatement of carriageway at CP A
2226	Excavation of crossing at CP B to MH7	70		17APR2009 A	25JUN2009 A	100 2223	Excertising Excertisin of crossing at CP B to MH7
2227	Reinstatement of carriageway at CP B	7		26JUN2009 A	02JUL2009 A	100 2226	
2230	Pre-cast Concrete Pipeline and Manhole	0		03JUL2009 A	450072000	100 2225, 2227	Pre-cast Concrete Pipeline and Manhole
2231 2232	MH6 to MH7 MH7 to MH8	105		03JUL2009 A 16OCT2009	15OCT2009 14DEC2009	32 2230 0 2231	► STANDARD MH7 to MH8
2232	MH8 to MH9	45		15DEC2009	28JAN2010	0 2232	L+ management MH8 to MH9
2234	MH9 to MH10	31		29JAN2010	28FEB2010	0 2233	→ MH9 to MH10
2235	MH10 to Outlet B	21		01MAR2010	21MAR2010	0 2234	
2236	Connection to existing catchpit A & B	7	7 7	17MAR2010	23MAR2010	0 2235	Genection to existing catchpit A & B
2240	Reinstatement of South Lantau Road	170	170	16OCT2009	03APR2010	0 2231, 2236	► Reinstatement of South Lantau Road
2300	Drainage Works at Cheung Sha Sheung Tsuen (D8)	614		18JAN2008 A	22SEP2009	92 0001	► Drainage Works at Cheung Sha Sheung Tsuen (D8)
2310	Permit Application and Approval	353		18JAN2008 A	04JAN2009 A	100 0001	Permit Application and Approval. ▲ Mobilization of plant and equipment
2311	Mobilization of plant and equipment	35		05JAN2009 A 18APR2009 A	09JAN2009 A 22MAY2009 A	100 2310 100 2311	DSD request a quotation for re-lining
2312 2313	DSD request a quotation for re-lining Approval of re-lining	60		23MAY2009 A	21JUL2009 A	100 2312	→ memorane Approval of re-lining
2313	Material ordering	75		22JUL2009 A	04OCT2009	20 2313	Haterial ordering
2315	MHS2 - MHS1	3	3 3	05OCT2009	07OCT2009	0 2314	₩HS2 - MHS1
2316	MHS1 - MHS0	3	3 3	08OCT2009	10OCT2009	0 2315	■ MHS1 - MHS0
2317	MHS0 - Outlet	3		11OCT2009	13OCT2009	0 2316	C+ IMHS0 - Outlet
2340	Site clearance	5		14OCT2009	18OCT2009	0 2317	Site clearance Box Culvert & Gabion Wall at PN
3000	Box Culvert & Gabion Wall at PNH River (D1)	926		18JAN2008 A	31JUL2010 31OCT2008 A	61 0001 100 0001	Preparation of Works & Frogs Capture
3010	Preparation of Works & Frogs Capture	288		18JAN2008 A 18JAN2008 A	28AUG2008 A	100 0001	
3020 3030	EVA application Erection of Control Gate of EVA	224		29AUG2008 A	22SEP2008 A	100 3020	Erection of Control Gate of EVA
3040	Maintenance of EVA	876		29AUG2008 A	21JAN2011	39 3020	
3100	Pak Ngan Heung River Box Culvert	C		29AUG2008 A		100 3020	Pak Ngan Heung River Box Culvert
3110	Construction of Wheel Washing Bays	30			27SEP2008 A	100 3100	L→ and Construction of Wheel Washing Bays
3111	RC Box Culvert (3mx3mx2,25m) Bay 10	35			01NOV2008 A	100 3110	The second RC Box Culvert (3mx3mx2,25m) Bay 10
3112	RC Box Culvert (3mx3mx2,25m) Bay 9	35			24NOV2008 A	100 3111	RC Box Culvert (3mx3mx2,25m) Bay 9
3113	RC Box Culvert (3mx3mx2,25m) Bay 2	35		13NOV2008 A	17DEC2008 A	100 3112	, Teresta RC Box Culvert (SintXintz.2011) Bay 2
3114	RC Box Culvert (3mx3mx2,25m) Bay 3	35		06DEC2008 A	09JAN2009 A	100 3113	La Contract PC Ray Culvert (20x20x2 25m) Ray 11
3115	RC Box Culvert (3mx3mx2,25m) Bay 11	45		29DEC2008 A 31JAN2009 A	11FEB2009 A 16MAR2009 A	100 3114 100 3115	
3116	RC Box Culvert (3mx3mx2,25m) Bay 12	45			30APR2009 A	100 3115	(Approval of tree felling at Mui Wo
3117 Stort	Approval of tree felling at Mui Wo date 07JAN2008		0	00AL 112003 A	A		Early bar
	date 07JAN2008 h date 21JAN2011						Drainage Improvement Work in South Lantau Progress bar
And and a state of the second second second	date 06AUG2009 Yick Hing Constru	ction C	bt Lo:				and Construction of Mui Wo Village Sewerage Phase 1
Run	Tick Thing Consta	00010					—— Summary bar
	e number 2A						Master Programme (Rev.9b)
c F	Primavera Systems, Inc.						Finish milestone point

Act ID	Description	Orig Dur	Rem Dur	Early Start	Early Finish	%	Predecessors	2008 Sors JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN	2011 JAN FEB
3118	RC Box Culvert (3mx3mx2,25m) Bay 13	55	0	01MAY2009 A	24JUN2009 A	100	3117	Financial RC Box Culvert (3mx3mx2.25m) Bay 13	
3119	Approval of tree tranplant at bay 7 & 8	41	0	01MAY2009 A	10JUN2009 A	100		Approval of tree tranplant at bay 7 & 8	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3120	RC Box Culvert (3mx3mx2,25m) Bay 8	40	0	11JUN2009 A	20JUL2009 A	100	3119	► ■ ■ ■ ■ ■ RC Box Culvert (3mx3mx2,25m) Bay 8	
3121	RC Box Culvert (3mx3mx2,25m) Bay 7	40	19	16JUL2009 A	24AUG2009	53	3120	RC Box Culvert (3mx3mx2,25m) Bay 7	001003
3122	Awaiting divertion of UU at bay 4, 5 & 6	70	0	01MAY2009 A	09JUL2009 A	100		Awaiting divertion of UU at bay 4, 5 & 6	
3123	RC Box Culvert (3mx3mx2,25m) Bay 4	40	13	10JUL2009 A	18AUG2009	68	3122	RC Box Culvert (3mx3mx2,25m) Bay 4	
3124	RC Box Culvert (3mx3mx2,25m) Bay 5	40	40	14AUG2009	22SEP2009	0	3123	RC Box Culvert (3mx3mx2.25m) Bay 5	
3125	RC Box Culvert (3mx3mx2,25m) Bay 6	35	35	18SEP2009	22OCT2009	0	3124	RC Box Culvert (3mx3mx2,25m) Bay 6	
3130	Backfill and Reinstatement EVA	20		23OCT2009	11NOV2009		3125	► Backfill and Reinstatement EVA	
3140	Backfilling for RC Box Culvert	385			21NOV2009		3111, 3125		
3150	PNHR Box Culvert Inlet & Outlet Structure	0		01NOV2009 *		0			1 8 1 8 1 8 1 8 1 1 8 1 8 1 8 1 8 1 9 1 8 1 8 1 8 1 8 1 9
3160	RC Box Culvert Outlet Structure (Bay 14)	50		01NOV2009	20DEC2009		3150	RC Box Culvert Outlet Structure (Bay 14)	
3170	RC Box Culvert Inlet Structure (Bay 1-Partly)	50		11NOV2009	30DEC2009	0	3150	★ RC Retaining Walls at PNH River (D1)	на стат По теат
3300	RC Retaining Walls at PNH River (D1)	0		01OCT2009 * 15NOV2009			3510	→ RC Retaining Walls at FMI River (CF)	, , , , , , , , , , , , , , , , , , , ,
3310	RC Retaining Wall A Retaining Wall A - Bay 1	20		15NOV2009	04DEC2009		3310	→ To recalling wan A	1 1 1 1 1 1 1 1 1 1
3311	Retaining Wall A - Bay 3	15		25NOV2009	09DEC2009		3311	Retaining Wall A - Bay 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3312 3313	Retaining Wall A - Bay 2	15		30NOV2009	14DEC2009		3312	→ Retaining Wall A - Bay 2	1 8 1 1 1 8 8 1 1 1 1 1 1 1 1 1 1 1 1 . 1 1 1 1 1 1 1
3313	Retaining Wall A - Bay 2 Retaining Wall A - Bay 4	15		05DEC2009	19DEC2009		3313	Retaining Wall A - Bay 4	
3315	Gabion block at retaining wall A	5		20DEC2009	24DEC2009		3314	← ■Gabion block at retaining wall A	1 1 1 1 1 1 1 1 1 1 1
3320	RC Retaining Wall B	0		31DEC2009			3170, 3315		
3321	Retaining Wall B - Bay 1	20		31DEC2009	19JAN2010		3320	► mining Wall B - Bay 1	
3322	Retaining Wall B - Bay 2	15		10JAN2010	24JAN2010	0	3321	Retaining Wall B - Bay 2	
3323	Retaining Wall B - Bay 3	15	15	15JAN2010	29JAN2010		3322	Retaining Wall B - Bay 3	11111111
3324	Retaining Wall B - Bay 4	15	15	20JAN2010	03FEB2010	0	3323	► 🛲 Retaining Wall B - Bay 4	, , , , , , , , , , , , , , , , , , ,
3325	Retaining Wall B - Bay 5	15	15	25JAN2010	08FEB2010	0	3324	➡■ Retaining Wall B - Bay 5	
3326	Retaining Wall B - Bay 6	15	15	30JAN2010	13FEB2010	0	3325	🕞 🥅 Retaining Wall B - Bay 6	
3327	Gabion block at retaining wall B	5	5	14FEB2010	18FEB2010	0	3326	Sabion block at retaining wall B	
3330	RC Retaining Wall C	0	0	01NOV2009 *		0			2 F F F F F F F F F
3331	Retaining Wall C - Bay 1	30	30	01NOV2009	30NOV2009	0	3330	Retaining Wall C - Bay 1	
3332	Retaining Wall C - Bay 2	30	30	01DEC2009	30DEC2009		3331	S + mini Retaining Wall C - Bay 2	
3333	Retaining Wall C - Bay 3	30		31DEC2009	29JAN2010		3332	Retaining Wall C - Bay 3.	
3334	Gabion block at retaining wall C	7		30JAN2010	05FEB2010		3333	⇒≋Gabion block at retaining wall C	
3340	RC Retaining Wall D	0		01AUG2009 A		100		≪RC Retaining Wall D	
3341	Retaining Wall D - Bay 1	30		01NOV2009 *	30NOV2009		3344		
3342	Retaining Wall D - Bay 2	21		01DEC2009	21DEC2009		3341	► 🗰 Retaining Wall D - Bay 3	
3343	Retaining Wall D - Bay 3	21		01AUG2009 A	21AUG2009 05SEP2009		3340 3343	Retaining Wall D - Bay 4	
3344 3345	Retaining Wall D - Bay 4 Gabion block at retaining wall D	7		22DEC2009	28DEC2009		3342	-→■Gabion block at retaining wall D	
3350	RC Retaining Wall E	0		01NOV2009 *	200202000	0		→ RC Retaining Wall E	
3351	Retaining Wall E - Bay 1	30		01NOV2009	30NOV2009		3350	Retaining Wall E - Bay 1	*******
3352	Retaining Wall E - Bay 2	30		01DEC2009	30DEC2009		3351	Retaining Wall E - Bay 2	
3360	RC Maintanence Ramp	0		06SEP2009			3344		
3361	Ramp bay 1	20	20	06SEP2009	25SEP2009	0	3360	Ramp bay 1	00000
3362	Ramp bay 2	20		26SEP2009	15OCT2009	0	3361	Ramp bay 2	4 4 9 8 1 1 1 1 1 9 8 9 8 8 8 8 9 9 9 9 8 9 8 1 8 1 8 1 9
3363	Ramp bay 3	30	30	16OCT2009	14NOV2009	0	3362	En Ramp bay 3	******
3368	Gabion block at maint. ramp	10	10	15NOV2009	24NOV2009	0	3363	► ■ Gabion block at maint. ramp	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3369	Turning Bay & Maintenance Access	70		26SEP2009	04DEC2009		3361	Turning Bay & Maintenance Access	
3370	Retaining Wall F	0		05DEC2009			3369	Retaining Wall F	
3371	Retaining Wall F - Bay 1	30	4	05DEC2009	03JAN2010		3370	Retaining Wall F - Bay 1	
3372	Retaining Wall F - Bay 2	30		30DEC2009	28JAN2010	CARD AND PROPERTY AND ADDRESS.	3371	Retaining Wall F - Bay 2	11111111
3373	Retaining Wall F - Bay 3	25		24JAN2010	17FEB2010		3372		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3374	Gabion block at retaining wall F	7		18FEB2010	24FEB2010		3373		
3380	RC Retaining Wall G	0		27MAR2010			3421		
3381	Retaining Wall G - Bay 1	30		27MAR2010	25APR2010		3380		
3382	Retaining Wall G - Bay 2	30		11APR2010	10MAY2010		3381 3382	Retaining Wall G - Bay 3	
3383	Retaining Wall G - Bay 3	30		26APR2010 11MAY2010	25MAY2010 09JUN2010		3382	Retaining Wall G - Bay 4	
3384	Retaining Wall G - Bay 4	30	30	110/412010	0000112010				and a standard sector to the standard sector to the standard sector of the standard sector of the standard sector se

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Act ID	Description	Orig	Rem	Early	Early	% Predece	2008 2009 2010 2011 Sors JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB
3385	Retaining Wall G - Bay 5	Dur	Dur	Start	Finish		THE AND THE AN
		30		26MAY2010	24JUN2010	0 3384	
3386 3400	Gabion block at retaining wall G Alternative Mass Retaining Walls 1& 2	10		25JUN2010	04JUL2010	0 3385	► Cabion block at retaining wall G
3400	RW1	45		22DEC2009 22DEC2009	045500040	0 3342	Alternative Mass Retaining Walls 1& 2
3411	Skin Wall for RW1	45	CONTRACTOR AND A CONTRACT	05FEB2010	04FEB2010 19FEB2010	0 3400	
3412	Gabion block at RW1	7		20FEB2010	26FEB2010	0 3410	> ₩iii Skin Wall for RW1
3420	RW2	35		05FEB2010	11MAR2010	0 3411	► Sabion block at RW1
3421	Skin Wall for RW2	15		12MAR2010	26MAR2010	0 3352, 34	
3422	Gabion block at RW2	7		27MAR2010	02APR2010	0 3420	
3500	Gabion Wall (Type 2, 3, 4 & 5) at PNH River	0		010CT2009 *	02/11/12010	0	⊨⊠Gabion block at RW2
3510	Gabion Wall (opposite to RW-A & B)	45		01OCT2009	14NOV2009	0 3500	Gabion Wall (Type 2, 3, 4 & 5) at PNH River
3530	Fish Ladder and Diversion Dam	50		14FEB2010	04APR2010	0 3326	Gabion Wall (opposite to RW-A & B)
3600	Drainage Works Provision to New PNHR Channel	0		10JUN2010	0.0.0.0	0 3385	Fish Ladder and Diversion Dam
3610	Pre-cast Pipe Drains	50		10JUN2010	29JUL2010	0 3600	Prainage Works Provision to New PNHR
3620	Concrete U-Channels	50		10JUN2010	29JUL2010	0 3600	→ and Pre-cast Pipe Drains
3630	Catchpits	50	50	10JUN2010	29JUL2010	0 3600	► Internet Concrete U-Channels
4000	Luk Tei Tong Bypass Channel and River (D5)	926	360	18JAN2008 A	31JUL2010	61 0001	- Catchpits
4010	Preparation Work	288	0	18JAN2008 A	310CT2008 A	100 0001	Subsection Work
4020	No Excavation Period (1)	214	0*	01APR2008 A	310CT2008 A	100	And the second
4100	Luk Tei Tong By-pass Channel	0	0	01NOV2008 A		100 4020	Luk Tei Tong By-pass Channel
4101	General Site Clearance	20	0	01NOV2008 A	20NOV2008 A	100 4100	Concrat Site Clearance
4102	Mobilization of Plant and Equipment	15	0	21NOV2008 A	05DEC2008 A	100 4101	Mobilization of Plant and Equipment
4103	Preparation Work of Gabion Block Mesh	61	0	01NOV2008 A	31DEC2008 A	100 4100	+ statutes Preparation Work of Gabion Block Mesh
4110	LTT By-pass Channel (CH0+50 to Ch2+60)	0	0	01JAN2009 A		100 4103	└┯♥ LTT By-pass Channel (CH0+50 to Ch2+60)
4111	LTT BPC CH2A 2+60 to CH2A 2+00	30		01JAN2009 A	30JAN2009 A	100 4110	LTT BPC CH2A 2+60 to CH2A 2+00
4112	LTT BPC CH2A 2+00 to CH2A 1+50	30	0	21JAN2009 A	19FEB2009 A	100 4111	The LT BPC CH2A 2+00 to CH2A 1+50
4113	LTT BPC CH2A 1+50 to CH2A 1+00	30	0	10FEB2009 A	11MAR2009 A	100 4112	
4114	LTT BPC CH2A 1+00 to CH2A 0+50	30			31MAR2009 A	100 4113	TT BPC CH2A 1+00 to CH2A 0+50
4200	No Excavation Period (2)	214	87 *	01APR2009 A	31OCT2009	59 4110	No Excavation Period (2)
4210	LTT By-pass Channel (CH2A 2+60 to Ch2A 3+30)	0		01NOV2009		0 4200	LTT By-pass Channel (CH2A 2+60 to Ch2A 3+30)
4211	LTT BPC CH2A 2+60 to CH2A 3+00	30	30	01NOV2009	30NOV2009	0 4210	LTT BPC CH2A 2+60 to CH2A 3+00
4212	LTT BPC CH2A 3+00 to CH2A 3+30	50	50	21NOV2009	09JAN2010	0 4211	► HTT BPC CH2A 3+00 to CH2A 3+30
4220	LTT By-pass Channel (CH2A 0+50 to Ch2A 0+00)	0	0	01NOV2009		0 4200	LTT By-pass Channel (CH2A 0+50 to Ch2A 0+00)
4221	LTT BPC CH2A 0+50 to CH2A 0+00	50	50	01NOV2009	20DEC2009	0 4220	LTT BPC CH2A 0+50 to CH2A 0+00
4230	LTT Rectangular Channel A	90	90	21DEC2009	20MAR2010	0 4221	LTT Rectangular Channel A
4240	Box Culvert - A	75	46	08JUL2009 A	20SEP2009	39	Box Culvert - A
4241	Reprovision of EVA & Footpath at BC-A	10	10	21SEP2009	30SEP2009	0 4240	Reprovision of EVA & Footpath at BC-A
4250	Box Culvert - B	60	0	31JAN2009 A	31MAR2009 A	100 4111	P Box Culver - B
4260	Reprovision of EVA & Footpath at BC-B	180	53	01APR2009 A	27SEP2009	71 4250	Reprovision of EVA & Footpath at BC-B
4300	LTT River Channel & Sea Wall	0	0	01NOV2009		0 4200	LTT River Channel & Sea Wall
4310	LTT RC (CH2B 0+00 to CH2B 1+50) East Side	0	0	01NOV2009		0 4300	► LTT RC (CH28 0+00 to CH28 1+50) East Side
4311	LTT RC (CH2B 0+00 to CH2B 0+50) ES	31		01NOV2009	01DEC2009	0 4310	LTT RC (CH2B 0+00 to CH2B 0+50) ES
4312	LTT RC (CH2B 0+50 to CH2B 1+00) ES	25		22NOV2009	16DEC2009	0 4311	H → LTT RC (CH2B 0+50 to CH2B 1+00) ES
4313	LTT RC (CH2B 1+00 to CH2B 1+50) ES	25		07DEC2009	31DEC2009	0 4312	LTT RC (CH2B 1+00 to CH2B 1+50) ES
4314	LTT RC (CH2B 2+00 to CH2B 0+00) West Side	0		20JAN2010		0 4313, 442	LTT RC (CH2B 2+00 to CH2B 0+00) West Side
4315	LTT RC (CH2B 2+00 to CH2B 1+50) WS	30		20JAN2010	18FEB2010	0 4314	LTL RC (CH22 2+00 to CH22 1+50) WS
4316	LTT RC (CH2B 1+50 to CH2B 1+00) WS	25		19FEB2010	15MAR2010	0 4315	LTT RC (CH2B 1+50 to CH2B 1+50) WS
4317 4318	No works between Apr & Oct 2010	214		01APR2010 *	31OCT2010	0	A second s
ACCOUNT 1000 ACCOUNTS	LTT RC (CH2B 1+00 to CH2B 0+50) WS	30		01NOV2010	30NOV2010	0 4317	LTT RC (CH:
	LTT RC (CH2B 0+50 to CH2B 0+00) WS LTT Sea Wall (CH2B 2+00 to CH2B3+00)	16		01DEC2010	16DEC2010	0 4318	► TT Sog Wall (CLUP 2400 to CLUP2 100)
		75		01NOV2009	141410010	0 4300	
	LTT SW (CH2B 3+00 to CH2B2+50) LTT SW (CH2B 2+00 to CH2B2+50)	75 75		01NOV2009 15JAN2010	14JAN2010 30MAR2010	0 4320	LTTSW (CH2B 3+00 to CH2B2+50)
	Coping Concret Wall	75 50		15JAN2010 31MAR2010		0 4321	L11 SW (CH2B 2+00 to CH2B2+50)
and the second s	Drainage & Railing	88	Contraction of the Contraction of the	24APR2010	19MAY2010	0 4322 0 4323	Coping Concret Wall
	RC Retaining Wall J at LTT River (D5)	88		24APR2010 01JUN2009 A	20JUL2010	100	
·····	Retaining Wall J - Bay 1	30			30JUN2009 A	100 4340	
	Retaining Wall J - Bay 2	21		and the second sec	21JUL2009 A	100 4340	G⊫ sasa Retaining Wall J - Bay 1
		21	•		2.0002003 A	.00 7341	Retaining Wal J - Bay 2

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			Start	Finish		
Retaining Wall J - Bay 3	21		22JUL2009 A	11AUG2009	71 4342	Retaining Wall J - Bay 3
Retaining Wall J - Bay 4	21	21	12AUG2009	01SEP2009	0 4343	Retaining Wall J - Bay 4
Retaining Wall J - Bay 5	21	21	02SEP2009	22SEP2009	0 4344	→ mar Retaining Wall J - Bay 5
Retaining Wall J - Bay 6	25	25	23SEP2009	17OCT2009	0 4345	► mm Retaining Wal J - Bay 6
Retaining Wall J - Bay 7	25	25	18OCT2009	11NOV2009	0 4346	► ■ Retaining Wal J - Bay 7
	149	149	01NOV2009 *	29MAR2010	0	Phase 2 sewer at LTT River (Section A)
	80	80	01NOV2009 *	19JAN2010	0	
	12	12	01NOV2009 *	12NOV2009	0	■ Sewers J139a.1
	12	12	13NOV2009	24NOV2009	0 4421	⊢itti Sewers J140a.1
	12	12	25NOV2009	06DEC2009	0 4422	► 關 Sewers J141a.1
	12	12	07DEC2009	18DEC2009	0 4423	► Sewers J142a.1
	12	12	19DEC2009	30DEC2009	0 4424	F⊨≣Sewers J143a.1
				11JAN2010	0 4425	Fim Sewers J144a.1
	8			19JAN2010	0 4427	Fin Sewers J146a.1
						Section A Sewers (144.1, B135.1 & B136.1)
						► Sewers 144.1
						Fmi Sewers B136.1
						Reinstatement of gabion block
						Mini-bored Pile Wall C at LTT River
				000002000		→ Mini-bored Pile Wall C (RC Retaining Wall);
				4 410 (2000		── MP-C bay 1
		1				► MP-C bay 2
MP-C bay 2						► MP-C bay 3
MP-C bay 3						► MP-C bay 4
MP-C bay 4						₩P-C bay 5
MP-C bay 5						→ Skin Wall for PPW - C
Skin Wall for PPW - C						Remain We
Remain Works within PNH & LTT River (D1&D5)	1010	444	18JAN2008 A	23OCT2010	56 0001	
Approval of use of EVA	0	0	29AUG2008 A		100 3020	Approval of use of EVA
No exca period (1) at Confluence of PNH,TTT<T	214	0	01APR2008 A	310CT2008 A	100	No exca period (1) at Confluence of PNH,TTT<T
Works within Section 3 (A) at PNH River	151	0	01NOV2008 A	31MAR2009 A	100 4820	The second
Works within Section 3 (B) at LTT River	151	0	01NOV2008 A	31MAR2009 A	100 4820	Works within Section 3 (B) at LTT River
	214	87	01APR2009 A	31OCT2009	59	No exca period (2) at Confluence of PNH,TTT<T
	151	151	01NOV2009	31MAR2010	0 4850	Works within Section 3 (B) at LTT River
	214	214	01APR2010	31OCT2010	0 4860	No exca p
	50	50	01JUN2010	20JUL2010	0 3385	Remaining Drainage Works
			01JUN2010	20JUL2010	0 3385	Remaining Drainage Works
					0 4910	Remain Road & Paving
	4				0 4920	► material Remain Road & Pa
						Remain Soft La
						Works within Portions S1 of the Site (Chung Hau)
				and the second sec		► security construction definite Construction Proposals and Submissions
						── UPVC Sewer (DN160-400) (New works)
						→ monoscience and a provide a second
Applocation and Approval of XP				02NOV2008 A		
uPVC Sewer (DN225>400) (On-line Replace)						→■ Preparation works for sewers.
Preparation works for sewers		+				MH EB13 - MH EB18
MH EB13 - MH EB18						MH EB13- MH EB25
MH EB18 - MH EB25						MH EB11 - MH EB13,
MH EB11 - MH EB13				26JAN2010		
MH EB25 - MH EB26	50	50	27JAN2010	17MAR2010	0 5044	
MH EB26 - MH EB31 - EB8	145	5 145	29OCT2009	22MAR2010	0 5042	MIC C2/2 - MIC E03 - C00
	863	3 297	18JAN2008 A	29MAY2010	66 0001	
			18JAN2008 A	27MAY2008 A	100 0001	Prepartion for works (Minor Portion)
			28MAY2008 A	12JAN2009 A	100 6010	
			13JAN2009 A	30AUG2009	89 6020	uPVC Sewer (DN160-400) M/H C45 - M/H C131
				06MAY2010	0 6030	
Sewerage at TWT (S3A & 3B)	638		18JAN2008 A	search and share on a broad state of the second state of the secon	89 0001	► Sewerage at TWT (S3A & 3B)
	Phase 2 sewer at LTT River (Section A) Section A Sewers (J139a.1 - J146a.1) Sewers J139a.1 Sewers J140a.1 Sewers J141a.1 Sewers J142a.1 Sewers B135.1 Sewers B135.1 Sewers B136.1 Reinstatement of gabion block Mini-bored Pile Wall C at LTT River Mini-bored Pile Wall C (RC Retaining Wall) MP-C bay 1 MP-C bay 2 MP-C bay 3 MP-C bay 3 MP-C bay 4 MP-C bay 5 Skin Wall for PPW - C Remain Works within PNH & LTT River (D1&D5) Approval of use of EVA No exca period (1) at Confluence of PNH,TTT<T Works within Section 3 (B) at LTT River No exca period (2) at Confluence of PNH,TTT<T Works within Section 3 (B) at LTT River No exca period (3) at Confluence of PNH,TTT<T Works within Section 3 (B) at LTT River No exca period (3) at Confluence of PNH,TTT<T Remaining Drainage Works for (3A) Embankment Remain Road & Paving Works for (3A) Embankment Remain Road & Paving Works for (4) Embankment Remain R	Phase 2 sewer at LT River (Section A) 149 Section A Sewers (J139a.1 - J146a.1) 80 Sewers J140a.1 12 Sewers J140a.1 12 Sewers J141a.1 12 Sewers J142a.1 12 Sewers J144a.1 10 Sewers B135.1 100 Sewers B135.1 100 Sewers B136.1 10 Reinstatement of gabion block 20 Mini-bored Pile Wall C at LTT River 60 Mini-bored Pile Wall C (RC Retaining Wall) 0 MP-C bay 1 14 MP-C bay 3 14 MP-C bay 4 14 MP-C bay 5 14 Skin Wall for PPW - C 24 Remain Works within PNH & LTT River (D18D5) 1010 Approval of use of EVA 0 No exca period (2) at Confluence of PNH,TTT<T 214 Works within Section 3 (B) at LTT River 151	Normage Name 149 149 Phase 2 sever at LTT River (Section A) 149 149 Section A Sewers (J139a.1 - J146a.1) 80 80 Severs J130a.1 112 112 Severs J140a.1 12 12 Severs J141a.1 12 12 Severs J142a.1 12 12 Severs J144a.1 12 12 Severs J144a.1 10 10 Section A Sewers (144.1, B135.1 & B136.1) 69 69 Severs B135.1 10 10 10 Sewers B136.1 10 10 10 Reinstatement of gabion block 20 20 Mini-bored Pile Wall C at LTT River 60 60 Mini-bored Pile Wall C (RC Retaining Wall) 0 0 MP-C bay 1 14 14 MP-C bay 2 14 14 MP-C bay 3 14 14 MP-C bay 4 14 14 MP-C bay 5 14 14 Approval of use of EVA 0	Notaming 1rbs of year 149 149 149 01NOV2009 * Section A Sewers (J139a.1 - J146a.1) 80 80 01NOV2009 * Sewers J140a.1 12 12 12 01NOV2009 * Sewers J140a.1 12 12 12 01NOV2009 * Sewers J141a.1 12 12 12 0NOV2009 Sewers J142a.1 12 12 19DEC2009 Sewers J144a.1 12 12 19DEC2009 Sewers J144a.1 8 12,JAN2010 Sewers 1444.1 10 10 20JAN2010 Sewers B135.1 10 10 20JAN2010 Sewers B135.1 10 10 30JAN2010 Sewers B135.1 10 10 30JAN2010 Sewers B136.1 10 10 30JAN2010 Reinstatement of gabion block 20 0 OFEE2010 Mini-bored Pile Wall C at LTT River 66 60 1NOV2009 * MP-C bay 1 14 14 120NO2009 MP-C bay 1 14 14 120NO2009 MP-C bay 1	Nummy Trans Quark 149 149 149 01NOV2009 29MAR2010 Section A Sewers (J139a 1 - J146a.1) 80 80 01NOV2009 13UNOV2009 13UNOV2009 13UNOV2009 13UNOV2009 24NOV2009 Sewers J140a 1 12 12 13NOV2009 24NOV2009 Sewers J142a 1 12 12 13NOV2009 24NOV2009 Sewers J142a 1 12 12 15DEC2009 Sewers J143a 1 12 12 13DEC2009 30DEC2009 Sewers J144a 1 12 12 13DEC2009 30DEC2009 Sewers J144a 1 12 12 13DA2010 29MAR2010 Sewers J144a 1 10 10 20AN2010 29MAR2010 Sewers J143a 1 10 10 20AN2010 29MAR2010 Sewers J143a 1 10 10 20AN2010 29MAR2010 Sewers J144a 1 10 10 20AN2010 29JAN2010 Sewers J144a 1 10 10 20AN2010 29JAN2010 Sewers J144a 1 10 10 20AN2010 29JAN2010 Sewers J144a 1 14 140V2009 14AV2009 14	Number Numbr Numbr

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Act		Oria	Rem	Early	Early			2008	2009	2010	2011
ID	Description	Dur	Dur	Start	Finish	%	Predecessors	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV	DEC JAN FEB
7010	Preparation for works (Minor Portion)	131	0	18JAN2008 A	27MAY2008 A	100	0001	Preparation for works (Minor Portio	n)		
	Non-working Period at TWT Beach (1)	196	0.*	01APR2008 A	130CT2008 A	100			Period at TWT Beach (1)		
	uPVC Sewer (DN160-400) M/H A16 - M/H A34	465	30	28MAY2008 A	04SEP2009	04	7010		<u> </u>	60-400) M/H A16 - M/H A34	
		50							a na bana na kana kana kana kana kana k	50-400) M/H AT6 - M/H A34	
	uPVC Sewer (DN160-400) M/H A15 - M/H A13			+	02DEC2008 A		7020		C Sewer (DN160-400) M/H A15 - M/H A13		
7050	uPVC Sewer (DN160-400) M/H A11 - M/H A7	50	0	03DEC2008 A	21JAN2009 A	100	7040		uPVC Sewer (DN160-400) M/H A11 - M/H A7		111111111111
7060	uPVC Sewer (DN160-400) M/H A1 - M/H A3	65	0	22JAN2009 A	27MAR2009 A	100	7050		PVC Sewer (DN160-400) M/H A1 - M/H A3		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
8000	Sewerage works at PNH (S4)	772	206	18JAN2008 A	27FEB2010	73	0001			Sewerage works at PNH (S4)	
8010	Preparation of works	168	0	07JAN2008 A	22JUN2008 A	100		Preparation of works			1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
8020	uPVC Sewer (DN160-400) M/H ED2 -D28 - D118	320	0	23JUN2008 A	08MAY2009 A	100	8010		Weine Weine UPVC Sewer (DN160-400) M/H ED2 -I	028 - D118	
8030	uPVC Sewer (DN160-400) M/H D1 - D27	280	191	09MAY2009 A	12FEB2010	32	8020	1350763763763163763763763763763763763763763763		uPVC Sewer (DN160-400) M/H D1 - D27	
9000	Preservation & Protection of Exist Trees	534 *	534 *	06AUG2009	21JAN2011	0	0001				Pres
9010	Preparton for works	100	0	07JAN2008 A	15APR2008 A	100	1	Preparton for works			1 6 1 6 1 6 1 6 1 6 1 6 9 6 1 6 1 6 1 6
9020	Protection & Transplanting Works	1011	534	16APR2008 A	21JAN2011	47	9010				Proti

Start date	07JAN2008	
Finish date	21JAN2011	
Data date	06AUG2009	Yick Hing Construction Co. Ltd.
Run date	15AUG2009	Hold Hing Scholadolori Co. 244
Page number	6A	
c Primavera	Systems, Inc.	

Drainage Improvement Work in South Lantau and Construction of Mui Wo Village Sewerage Phase 1

Master Programme (Rev.9b)

Early bar Progress bar Critical bar Summary bar Start milestone point Finish milestone point

Description	Orig Dur	Rem Dur	Early Start	Early Finish	% Predecessors	2008 2009 2010 3 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
00 DRAINAGE IMPROVEMENT WORK IN S LANTAU	534 *			21JAN2011	0	
0 Preliminaries	534 *			21JAN2011	0	
30 Monitoring for Environmental Permit	1001			21JAN2011	47 0070	
4 MH2 to MH3 (2 x DN 600)	75			23AUG2009	76 1043	••••••••••••••••••••••••••••••••••••••
5 MH3 to MH4 (2 x DN 600)	21	21 21	IAUG2009 *	10SEP2009	0 1044	► 🛲 MH3 to MH4 (2 x DN 600)
6 MH4 to MH5 (2 x DN 600)	14	14 11	ISEP2009	24SEP2009	0 1045	► MH4 to MH5 (2 × DN 600)
7 MH5 to MH6 (2 x DN 600)	14		5SEP2009	08OCT2009	0 1046	→ ■■ MH5 to MH6 (2 × DN 600)
3 MH6 to MH7 (2 x DN 600)	14	14 09	OCT2009	22OCT2009	0 1047	H■ MH6 to MH7 (2 × DN 600)
MH7 to MH8 (2 x DN 750)	80		JUN2009 A	16SEP2009	48	MH47 to MH8 (2 x DN 750)
MH8 to Outlet Structure	21	21 23	3OCT2009	12NOV2009	0 1048, 1049	¹¹ → mmMH8 to Outlet Structure
2 Bottleneck B widening excavation (North Side)	85	29 11	IJUN2009 A	03SEP2009	66 1131	Bottleneck B widening excavation (North Side)
Bottleneck B type 6 gabion (South Side)	25	25 04	SEP2009	28SEP2009	0 1132	₩ ■ Bottleneck B type 6 gabion (South Side)
Bottleneck B widening excavation (RHS)	14	14 29	SEP2009	12OCT2009	0 1133	Bottleneck B widening excavation (RHS)
Bottleneck B type 6 gabion (RHS) & river bed	14	14 13	3OCT2009	26OCT2009	0 1134	■ Bottleneck B type 6 gabion (RHS) & river bed
R C Retaining Wall H	180		APR2009 A	27SEP2009	71 1140	R C Retaining Wall H
U-Channel and Catchpit for Widened Bottle Neck A	15		OCT2009	10NOV2009	0 1123, 1135	
U-Channel and Catchpit for Widened Bottle Neck B	15		OCT2009	10NOV2009	0 1125, 1135	→ → ■ U-Channel and Catchpit for Widened Bottle Neck A
	20			170CT2009		
	20		SEP2009	170012009	0 1141	U-Channel and Catchpit for Retaining Wall H
Soft & Hard Landscaping Works Hard Landscaping & Paving Works			BOCT2009	06050000	0 1123, 1153	Soft & Hard Landscaping Works
	50 50		3OCT2009	06DEC2009	0 1153	Hard Landscaping & Paving Works
			BOCT2009	06DEC2009	0 1153	Soft Landscaping (Planting) Works
Phase 2 sewerage works at TTT river	60		SEP2009 *	30OCT2009	0	Phase 2 sewerage works at TTT river
Excavation 1st half trench at TTT river Pipe laying and backfilling 1st half trench	20		SEP2009 *	20SEP2009	0 1210	texes and the second se
Pipe laying and backfilling 1st half trench	5		SEP2009	25SEP2009	0 1220	h⊫⊈ Pipe laying and backfilling 1st half trench
Excavation 2nd half trench at TTT river	20		SEP2009	15OCT2009	0 1230	► ■ Excavation 2nd half trench at TTT river
Pipe laying and backfilling 2nd half trench	5		SOCT2009	20OCT2009	0 1240	► ≋ Pipe laying and backfilling 2nd half trench
Connection to existing manholes	4			24OCT2009	0 1250	Connection to existing manholes
Site clearance and reinstatement of river	5			29OCT2009	0 1260	Site clearance and reinstatement of river
Works at D6, D7 & D8 (HTST, LUT & CShST)	614			22SEP2009	92 0001	Works at D6, D7 & D8 (HTST, LUT & CShST)
Drainage Works at Pui O - Ham Tin San Tsuen (D6)	614			22SEP2009	92 0001	Prinage Works at Pui O - Ham Tin San Tsuen (D6)
excavation and shoring for bay 1 FPW	50			09AUG2009	92 2112	excavation and shoring for bay 1 FPW
Concreting mass concrete wall bay 1 FPW	30			08SEP2009	0 2113	Concreting mass concrete wall bay 1 FPW
excavation and shoring for bay 2 FPW	20			28SEP2009	0 2114	excavation and shoring for bay 2 FPW
Concreting mass concrete wall bay 2 FPW	15		SEP2009	13OCT2009	0 2115	► ME Concreting mass concrete wall bay 2 FPW
excavation and shoring for bay 3 FPW	20			02NOV2009	0 2116	
Associated Railing & Paving Works	60	60 29		27NOV2009	0 2113, 2118	Associated Railing & Paving Works
Associated Granite Paving (vertical)	60	60 29	SEP2009	27NOV2009	0 2113, 2118	Associated Granite Paving (vertical)
Drainage Works at Pui O - Lo Uk Tsuen (D7)	614	48 18	3JAN2008 A	22SEP2009	92 0001	Drainage Works at Pui O - Lo Uk Tsuen (D7)
MH6 to MH7	105	71 03	JUL2009 A	15OCT2009	32 2230	MH6 to MH7
MH7 to MH8	60	60 16	OCT2009	14DEC2009	0 2231	HT to MH8
Reinstatement of South Lantau Road	170	170 16	OCT2009	03APR2010	0 2231, 2236	► Management and Reinstatement of South Lantau Road
Drainage Works at Cheung Sha Sheung Tsuen (D8)	614	48 18	JAN2008 A	22SEP2009	92 0001	Drainage Works at Cheung Sha Sheung Tsuen (D8).
Material ordering	75			04OCT2009	20 2313	Material ordering
MHS2 - MHS1	3			07OCT2009	0 2314	
MHS2 - MHS1 MHS1 - MHS0	3		OCT2009	10OCT2009	0 2315	-
MHS0 - Outlet	3		OCT2009	13OCT2009	0 2316	S⇒IMHS0 - Outlet
Site clearance	5		OCT2009	18OCT2009	0 2317	
Box Culvert & Gabion Wall at PNH River (D1)	926			31JUL2010	61 0001	Box Culvert & Gabion Wa
Maintenance of EVA	876			21JAN2011	39 3020	
RC Box Culvert (3mx3mx2,25m) Bay 7	40			24AUG2009	53 3120	C Box Culvert (3mx3mx2,25m) Bay 7
RC Box Culvert (3mx3mx2,25m) Bay 4	40			18AUG2009	68 3122	RC Box Culvert (3mx3mx2 25m) Bay 4
RC Box Culvert (3mx3mx2,25m) Bay 5	40			22SEP2009	0 3123	RC Box Culvert (3mx3mx2.25m) Bay 5
RC Box Culvert (3mx3mx2,25m) Bay 6	35			220CT2009	0 3124	Provide the second se
	20			11NOV2009	0 3124	Backfill and Reinstatement EVA
Backfill and Reinstatement EVA					72 3111, 3125	
Backfilling for RC Box Culvert	385			21NOV2009		
RC Retaining Walls at PNH River (D1)	0		OCT2009 *	04441000000	0	
Retaining Wall D - Bay 3	21	16 01	AUG2009 A		24 3340	
Retaining Wall D - Bay 4	15	1	AUG2009	05SEP2009	0 3343	► 爾 Retaining Wall D - Bay 4

 Start date
 07JAN2008

 Finish date
 21JAN2011

 Data date
 06AUG2009

 Run date
 15AUG2009

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G2009 G2009 G2009

Drainage Improvement Work in South Lantau and Construction of Mui Wo Village Sewerage Phase 1 Early bar Progress bar Critical bar Summary bar Start milestone point Finish milestone point

3-Month Rolling Programme (Rev.9b)

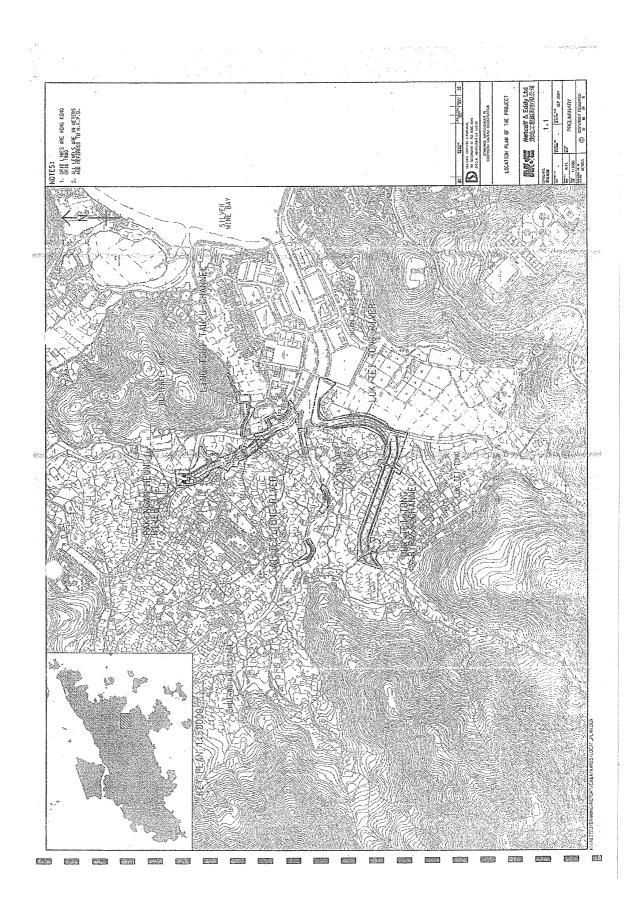
Act		Orig	Rem	Early	Early			2008		2009		2010	2011
ID	Description	Dur	Dur	Start	Finish	% Predecessors	JAN FEB MAR APR MAY	JUN JUL AUG SEP	OCT NOV DEC JAN FEB MAR APR N	MAY JUN JUL /	AUG SEP OCT NOV DE	C JAN FEB MAR APR MAY JUN JUL	AUG SEP OCT NOV DEC JAN FE
3360	RC Maintanence Ramp	0	0	06SEP2009		0 3344		 			RC Maintanence	e Ramp	
3361	Ramp bay 1	20	20	06SEP2009	25SEP2009	0 3360					Ramp bay 1		
3362	Ramp bay 2	20	20	26SEP2009	15OCT2009	0 3361					► 🛲 Ramp bay	2	
3363	Ramp bay 3	30	30	16OCT2009	14NOV2009	0 3362	3 1 1 2 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	$\begin{smallmatrix} & 1 & 4 & 3 & 1 & 2 & 3 & 4 & 3 & 4 & 3 & 4 & 3 & 4 & 4 & 4$		1 8 1 4 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Ram	bay 3	
3369	Turning Bay & Maintenance Access	70	70	26SEP2009	04DEC2009	0 3361				1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 1 8 8 1 8 1	÷	Irning Bay & Maintenance Access	* * * * * * * * * * * * * * * * * * *
3500	Gabion Wall (Type 2, 3, 4 & 5) at PNH River	0	0	01OCT2009 *		0					🕸 Gabion Wa	(Type 2, 3, 4 & 5) at PNH River	1 1
3510	Gabion Wall (opposite to RW-A & B)	45	45	01OCT2009	14NOV2009	0 3500					🕨 🗰 Gabi	on Wall (opposite to RW-A & B)	
4000	Luk Tei Tong Bypass Channel and River (D5)	926	360	18JAN2008 A	31JUL2010	61 0001							Luk Tei Tong Bypass Channel a
4200	No Excavation Period (2)	214	87 *	01APR2009 A	31OCT2009	59 4110				┿┿┿┿┿┿┿┿┿┿	No Exc	avation Period (2)	(1947))))))))))))))))))))))))))))))))))))
4240	Box Culvert - A	75	46	08JUL2009 A	20SEP2009	39					Box Culvert	A	1 1
4241	Reprovision of EVA & Footpath at BC-A	10	10	21SEP2009	30SEP2009	0 4240					Reprovision	of EVA & Footpath at BC-A	
4260	Reprovision of EVA & Footpath at BC-B	180	53	01APR2009 A	27SEP2009	71 4250					Reprovision	of EVA & Footpath at BC-B	
4343	Retaining Wall J - Bay 3	21	6	22JUL2009 A	11AUG2009	71 4342					Retaining Wall J - Ba	y 3 Internet of the test of the test	0100103101010100100101
4344	Retaining Wall J - Bay 4	21	21	12AUG2009	01SEP2009	0 4343					Retaining Wall J	Bay 4	I I
4345	Retaining Wall J - Bay 5	21	21	02SEP2009	22SEP2009	0 4344					Retaining Wa	I J - Bay 5	
4346	Retaining Wall J - Bay 6	25	25	23SEP2009	17OCT2009	0 4345					► Retaining	Wall J - Bay 6	
4347	Retaining Wall J - Bay 7	25	25	18OCT2009	11NOV2009	0 4346		$\begin{array}{c} 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 $		1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 /	🕨 🕨 Retai	ning Wall J - Bay 7	
4800	Remain Works within PNH & LTT River (D1&D5)	1010	444	18JAN2008 A	23OCT2010	56 0001				1 PRI PRI PRI PRI P		οτροτοτοτοτοτοτοτο	Remain Works wit
4850	No exca period (2) at Confluence of PNH,TTT<T	214	87	01APR2009 A	31OCT2009	59					No exc	a period (2) at Confluence of PNH,T	TT<T
5000	Works within Portions S1 of the Site (Chung Hau)	748	182	18JAN2008 A	03FEB2010	76 0001		****				Works within Portions S1 of	
5042	MH EB13 - MH EB18	350		13NOV2008 A	28OCT2009	76 5041					MH EB1	3 - MH EB18	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
5043	MH EB18 - MH EB25	145	145	29OCT2009	22MAR2010	0 5042						MH EB18 - MH EB2	5
5044	MH EB11 - MH EB13	90		29OCT2009	26JAN2010	0 5042						MH EB11 - MH EB13	
5046	MH EB26 - MH EB31 - EB8	145		29OCT2009	22MAR2010	0 5042	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	111111111111111111111 1111111111111111		************		MH EB26 - MH EB3	1 - EB8
6000	Sewerage Works at TTT (S2A & 2B)	863		18JAN2008 A	29MAY2010	66 0001						Sewerag	e Works at TTT (S2A & 2B)
6030	uPVC Sewer (DN160-400) M/H C85 - M/H C131	230		13JAN2009 A	30AUG2009	89 6020					uPVC Sewer (DN	160-400) M/H C85 - M/H C131	
6040	uPVC Sewer (DN160-400) M/H C1 - M/H C47	249		31AUG2009	06MAY2010	0 6030	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					uPVC Sewer	(DN160-400) M/H C1 - M/H C47
7000	Sewerage at TWT (S3A & 3B)	638		18JAN2008 A	16OCT2009	89 0001					Sewerage	at TWT (S3A & 3B)	
7030	uPVC Sewer (DN160-400) M/H A16 - M/H A34	465		28MAY2008 A	04SEP2009	94 7010				* * * * * * * * * * * * * *	uPVC Sewer (D)	1160-400) M/H A16 - M/H A34	19111111111111111111111111111111111111
8000	Sewerage works at PNH (S4)	772		18JAN2008 A	27FEB2010	73 0001						Sewerage works at PNH	(S4)
8030	uPVC Sewer (DN160-400) M/H D1 - D27	280		09MAY2009 A	12FEB2010	32 8020				1		uPVC Sewer (DN160-400)	M/H D1 - D27
9000	Preservation & Protection of Exist Trees	534 *		06AUG2009	21JAN2011	0 0001							Pre
9020	Protection & Transplanting Works	1011	534	16APR2008 A	21JAN2011	47 9010							Pro

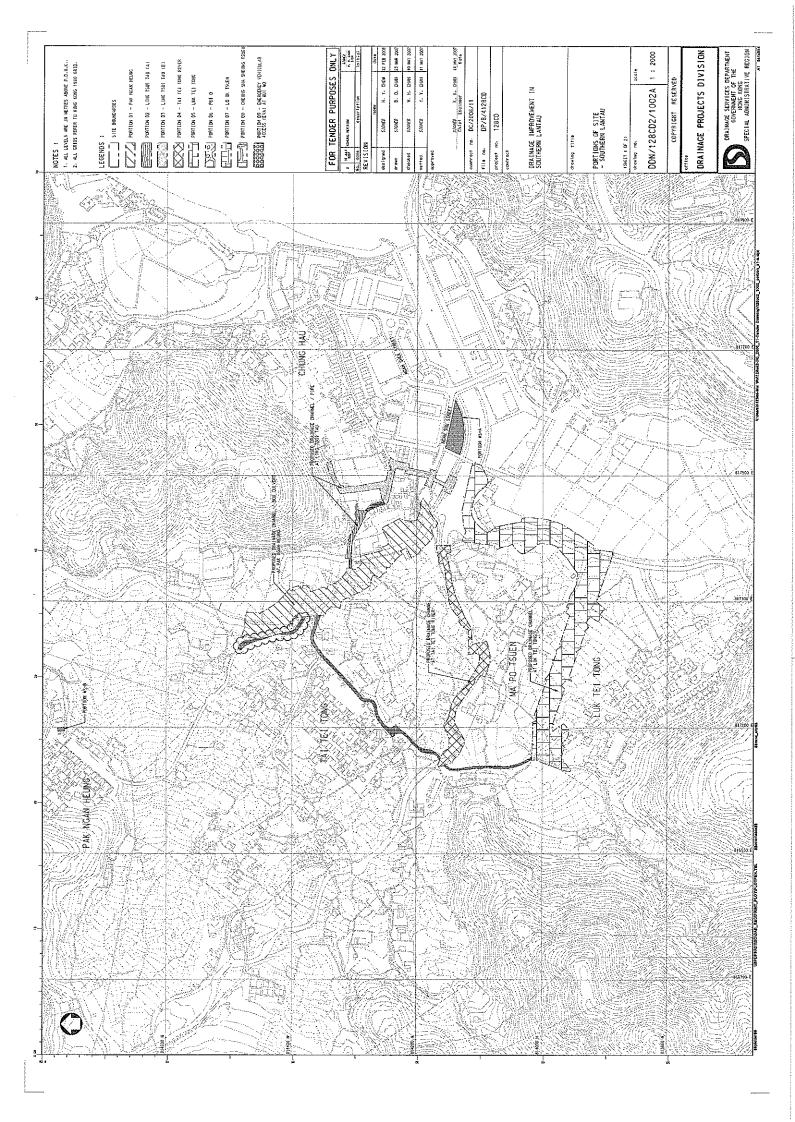
Start date07JAN2008Finish date21JAN2011Data date06AUG2009Run date15AUG2009Page number2Ac Primavera Systems, Inc.

Drainage Improvement Work in South Lantau and Construction of Mui Wo Village Sewerage Phase 1

3-Month Rolling Programme (Rev.9b)

Early bar Progress bar Critical bar Summary bar Start milestone point Finish milestone point





Organization Name	Role	Title	Name	Telephone	Fax Number
Drainage Service Department	Project Proponent	Engineering Representative	Mr. Chan Wai Hong	2594 7464	2827 8700
Allied Environmental Consultants Limited	Independent Environmental Checker (IEC)	Principal Consultant	Ms. Claudine Lee	2815 7028	2815 5399
Yick-Hing Construction Company Limited	Main Contractor	Senior Project Manager	Mr. Liu Kai Choi	2394 4988	2787 4890
Environmental Pioneers & Solutions Limited	Environmental Team (ET)	Environmental	Ms. Patricia Chung	2185 0123	2856 2010

Appendix B Key Personal Contact information chart

Appendix C

Calibration Certificates for Measuring Equipments



Report for Calibration of Hand-held Water Quality Meter WQC-24

Calibration Reference No. : GCE	/CAL/2009/MW/WQM/C2
Client : ENVIRONMENTAL PION	EER AND SOLUTION LIMITED
Equipment No. : WQC-24	Location : Mui Wo Site
Manufacturer :DKK-TOA	Serial No.: 617892
Calibration Date : 07 to 09-05-2009	Due Date : 06-08-2009

Criterion: (Repeatabilty, Linearity)

· •		
pH	:	Both within $\pm 0.05 \text{pH}$
Dissolved oxygen	:	Both within ± 0.1 mg/L
Electric conductivity	:	Both within $\pm 1\%$ FS
Turbidity	:	Repeatability : within ±3%FS
Temperature	:	Repeatability ±0.25°C; Linearity ±0.5°C; (Ambient 5~45°C)

Electric Conductivity (Salinity converted from EC):

(Reference: APHA 20ed 2510 B, ISO 7888 – 1985 (E) and DKK-TOA Hand-held Water Quality Meter WQC-24 Instruction Manual)

Concentration of KCl Standard Solution (M)	Reference conductivity value at 25.0 °C	Indicated value by meter	Linearity (R ²)	
0	0.0 mS/m*	0.0 mS/m		
0.001	14.7 mS/m	15.5 mS/m		
0.005	71.8 mS/m	72.8 mS/m	1.0000	
0.01	0.141 S/m	0.148 S/m]	
0.05	0.667 S/m	0.675 S/m		
0.1	1.29 S/m	1.30 S/m	Acceptance Criterion	
0.5	5.87 S/m	5.88 S/m	$R^2 > 0.995$	
	1 st time	0.00 , 5.88 S/m		
Repeatability	2 nd time	0.00 , 5.88 S/m	1	
	3 rd time	0.00 , 5.88 S/m	1 -	
	0.00 , 5.88 S/m	0.00,0.00]	

* 1 S/m = $10^4 \mu mhos/cm = 10^3 mS/m$

Remark: For repeatability, the maximum difference from the average value of 3 measurements was taken.



Dissolved Oxygen:

(Reference : APHA 20ed 4500-O B&C, ISO 5814:1990(E) and DKK-TOA Hand-held Water Quality Meter WQC-24 Instruction Manual)

DO value evaluated by Iodometric		Indicated value by meter	Linearity
Method (mg/L)		(mg/L)	(R^2)
	0.00	0.00	
	3.72	3.85	0.9990
	6.28	6.47	
8.56		8.81	
	10.69	10.58	Acceptance Criterion
	13.77	13.58	$R^2 > 0.995$
	1 st time	0.00, 8.83	
Repeatability	2 nd time	0.00,8.80	-
	3 rd time	0.00, 8.81	7
	0.00, 8.56	0.00 , 0.03	

Remark: For repeatability, the maximum difference from the average value of 3 measurements was taken.

pH Value:

(Reference : APHA 20ed 4500-H⁺ B, ISO 10523:1994(E) and DKK-TOA Hand-held Water Quality Meter WQC-24 Instruction Manual)

Calibration	Input value	Indicated pH value	Linearity
pH buffer	(pH buffer)	by meter	
(25°C)	(25°C)	(25°C)	(R^2)
pH = 1.67	1.67	1.70	
pH = 6.86	4.00	4.03	1.0000
pH = 7.42	7.00	7.03]
pH = 9.18	10.00	10.04	Acceptance Criterion
pH = 12.45	12.45	12.50	$R^2 > 0.995$
	1 st time	4.03, 10.04	
Repeatability	2 nd time	4.03, 10.05] -
	3 rd time	4.02, 10.04]
	pH 4.00, 10.00	0.01,0.01	

Remark: For repeatability, the maximum difference from the average value of 3 measurements was taken.



Temperature:

(Reference : APHA 20ed 2550 B, In-house method and DKK-TOA Hand-held Water Quality Meter WQC-24 Instruction Manual)

Setting Temperature	Indicated va	Linearity		
(°C)		C)		
5.0	4,	.9		
15.0	15	.2	$R^2 = 0.9999$	
25.0	24	.8	And	
35.0	35	5.4	$SD = \pm 0.15$ °C	
45.0	45	5.2	Acceptance Criterion	
55.0	55	5.5	$R^2 > 0.995$ and	
	1 st time	5.2, 55.4		
Repeatability	2^{nd} time 5.2, 55.5		-	
	3 rd time 5.1, 55.6			
	5.0,55.0	0.1,0.2		

Remark: For repeatability, the maximum difference from the average value of 3 measurements was taken.

Turbidity:

(Reference : APHA 20ed 2130 B and DKK-TOA Hand-held Water Quality Meter WQC-24 Instruction Manual)

Formazin Standards	Indicated va	Linearity	
(NTU)	(N)	TU)	(R ²)
0.0	0.	.0	
20.0	21	1.0000	
100.0	102		
400.0	404	Acceptance Criterion	
800.0	80	5.4	$R^2 > 0.995$
	1 st time 0.3, 805.8		
Repeatability	2^{nd} time 0.3, 805.4		
	$3^{\rm rd}$ time 0.3, 805.0		-
	0.0 , 800.0	0.0,0.8	

Remark: For repeatability, the maximum difference from the average value of 3 measurements was taken.

Comments : _____Pass, comply with the criteria..

Tested by : Ho Tin Kau Certified by

Gu Chin Chemist

Checked by : <u>Gu Chin</u> Date

9-5-2008

Page 3 of 3

Form No. : CAL/WQM/R (2-12-2008)



Tel : (852) 2873 6860 Fax : (852) 2555 7533



D094

CERTIFICATE OF CALIBRATION

Certificate No.:	09CA0102 01-01		Page	1	of	2
Item tested						
Description: Manufacturer: Type/Model No.: Serial/Equipment No.: Adaptors used:	Sound Level Meter ACO, Japan 6224 060166 -	r (Type I) .	_			
Item submitted by	·		<u></u> .			
Customer Name: Address of Customer: Request No.: Date of request:		ncrete Engineering (H bad, Hung Hom, Kow				
Date of test:	02-01-2009		TC-TO-TC-COLOR-		,	
Reference equipment (used in the calibr	ation				
Description: Multi function sound calibrator Signal generator Signal generator	Model: B&K 4226 DS 360 DS 360	Serial No. 2288444 33873 61227	Expiry Date: 11-01-2009 12-06-2009 18-07-2009		Traceat CIGISME CEPREI CEPREI	
Ambient conditions						
Temperature: Relative humidity: Air pressure:	23 ± 2 °C 55 ± 15 % 1010 ± 15 hPa					
Test specifications	· · · · · · · · · · · · · · · · · · ·	·······				· · · · · · · · · · · · · · · · · · ·

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of <u>+20%</u>.
- The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

02-01-2009

Test results

Approved Signatory:

(

This is to certify that the Sound Level Meter conforms to BS 7580; Part 1: 1997 for the conditions under which the test was performed.

Date:

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

To

Huang-Jian Mirt/Feng Jun Qi

Còmpany Chop:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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Form No.CARP152-1/Issue 1/Rev.C/01/02/2007

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this certificate were determined by this laboratory in accordance with its terms of accreditation. Such terms of accreditation stipulate that the results shall be traceable to the International System of Units (S.I.) or recognised measurement standards. This certificate shall not be reproduced except in full.



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CERTIFICATE OF CALIBRATION (Continuation Page)

D094

Certificate No.:	09CA0102 01-01	Page	2	of	2	

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Uncertanity (dB) / Coverage Factor
Self-generated noise	A	Pass	0.3
_	С	Pass	1.0 2.1
	Lin	Pass	1.5 2.2
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3
	Reference SPL on all other ranges	Pass	0.3
	2 dB below upper limit of each range	Pass	0.3
	2 dB above lower limit of each range	Pass	0.3
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3
Frequency weightings	Α	Pass	0.3
	С	Pass	0.3
	Lin	Pass	0.3
Time weightings	Single Burst Fast	Pass	0.3
	Single Burst Slow	Pass	0.3
Peak response	Single 100µs rectangular pulse	N/A	N/A
R.M.S. accuracy	Crest factor of 3	Pass	0.3
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3
	Repeated at frequency of 100 Hz	Pass	0.3
Time averaging	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4
Overload indication	SPL	Pass	0,3
	Leq	Pass	0.4

2, Acoustic tests

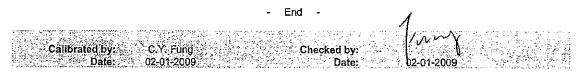
The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

<u>Test:</u>	Subtest	Status	Uncertanity (dB) / Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3
	Weighting A at 8000 Hz	Pass	0.5

3, Response to associated sound calibrator

 $\left(\cdot \right)$

The uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.



The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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CERTIFICATE OF CALIBRATION

	CERTIFIC		IBRATION	2095
Certificate No.:	09CA0102 01-02		Page:	1 of 2
Item tested				
Description: Manufacturer: Type/Model No.: Serial/Equipment No.: Adaptors used:	Acoustical Calibrat Castle Group Ltd. GA607 039543 -	lor (Class 1)		
Item submitted by				Autor
Curstomer: Address of Customer: Request No.: Date of request:		ncrete Engineering (H.) oad, Hung Hom, Kowlo		
Date of test:	02-01-2009	1. — 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		
Reference equipment	used in the calib	ration		
Description: Lab standard microphone Preamplifier Measuring amplifier Signal generator Digital multi-meter Audio analyzer Universal counter	Model: B&K 4180 B&K 2673 B&K 2610 DS 360 34401A 8903B 53132A	Serial No. 2412857 2239857 2346941 61227 US36087050 GB41300350 MY40003662	Expiry Date: 29-06-2009 02-12-2009 03-12-2009 18-07-2009 03-12-2009 27-11-2009 11-07-2009	Traceable to: SCL CEPREI CEPREI CEPREI CIGISMEC CEPREI CEPREI
Ambient conditions		- · · · · · · · · · · · · · · · · · · ·		
Temperature: Relative humidity: Air pressure:	22 ± 1 °C 55 ± 10 % 1010 ± 15 hPa			
 and the lab calibratic The calibrator was te The results are roun 	on procedure SMTP00 ested with its axis verti- ded to the nearest 0.0	4-CA-156. cal facing downwards a 1 dB and 0 1 Hz and ba	at the specific frequency	ed in IEC 60942 1997 Annex using insert voltage techniqu or variations from a reference tt is insensitive to pressure
Test results				
Details of the performed mea Approved Signatory: Hu Comments: The results repo	- Ja- ang Jian MinuFeng Jun Qi	Date: 02-01-2	009 Company Ch	

carry no implication regarding the long-term stability of the instrument.

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Form No.CARP156-1/Issue 1/Rev.D/01/03/2007

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09CA0102 01-02

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2

Page:



CERTIFICATE OF CALIBRATION

(Continuation Page)

of

2095

2

1, Measured Sound Pressure Level

Certificate No.:

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

			 Output level in dB re 20 µPa
Frequency	Output Sound Pressure	Measured Output	Estimated
Shown	Level Setting	Sound Pressure Level	Uncertainty
Hz	dB	dB	dB
1000	94.00	94.30	0.1

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz	STF = 0.002 dB
Estimated uncertainty	0.005 dB

3, **Actual Output Frequency**

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz	Actual Frequency = 1000.0 Hz	
Estimated uncertainty	0.1 Hz	Coverage factor k = 2.2

4, **Total Noise and Distortion**

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz	TND = 2.1%
Estimated uncertainty	0.7%

The uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.

· _	End -	1
Calibrated by: C.Y. Fung Date: 02-01-2009	Checked by: Date:	MM

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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Form No.CARP156-2/Issue 1/Rev.C/01/05/2005 Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for

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			Relative	Occur	rrence
Species	Habit	Native	Abundance	PNH3	PNH4
Acacia confusa	tree	no	occasional		+
Acorus gramineus	herb	yes	scarce		+
Acronychia pedunculata	tree	yes	scarce		+
Alangium chinensis	tree	yes	scarce		+
Alocasia macrorrhiza	herb	yes	occasional	+	+
Aporosa dioica	tree	yes	occasional	+	+
Ardisia crenata	shrub	yes	occasional	+	+
Atalantia buxifolia	tree	yes	scarce		+
Bamboo	herb	-	scarce	+	
Bischofia javanica	herb	yes	scarce	+	
Breynia fruticosa	shrub	yes	scarce		+
Bridelia tomentosa	tree	yes	scarce		+
Caryota mitis	herb	yes	scarce		+
Celtis sinensis	tree	yes	occasional	+	+
Centotheca lappacea	grass	yes	scarce	+	
Christella parasitica	fern	yes	occasional	+	+
Cleistocalyx operculata	tree	yes	occasional	+	+
Commelina sp.	herb	yes	scarce	+	+
Conyza canadensis	herb	no	scarce	+	+
Desmos chinensis	shrub	yes	occasional	+	
Dimocarpus longan	tree	no	occasional		+
Elephantopus tomentosa	herb	yes	scarce		+
Embelia ribes	climber	yes	scarce		+
Ficus hispida	tree	yes	common	+	+
Ficus superba	tree	yes	occasional		+
Garcinia oblongifolia	tree	yes	occasional		+
Glochidion puberum	shrub	yes	scarce	+	
Hedychium coronarium	herb	no	scarce		+
Hibiscus rosa-sinensis	shrub	no	occasional		+
Ipomoea cairica	climber	yes	occasional		+
Lantana camara	shrub	no	scarce		+
Liriope spicata	herb	yes	scarce		+
Litsea glutinosa	tree	yes	occasional		+

Appendix D1 Plant species recorded at Pak Ngan Heung River (N)

			Relative	Occu	rrence
Species	Habit	Native	Abundance	PNH3	PNH4
Litsea rotundifolia	shrub	yes	scarce	+	
Lophatherum gracile	grass	yes	scarce	+	
Lygodium japonicum	fern	yes	scarce	+	+
Macaranga tanarius	tree	yes	occasional	+	+
Maesa perlarius	shrub	yes	scarce	+	
Mallotus paniculatus	tree	yes	scarce	+	
Microcos paniculata	tree	yes	scarce		+
Microstegium ciliatum	grass	yes	common	+	+
Mikania micrantha	climber	no	common	+	+
Millettia nitida	climber	yes	scarce	+	
Mimosa pudica	herb	yes	scarce	+	
Murraya paniculata	shrub	no	scarce	+	
Musa paradisiaca	tree	no	scarce	+	
Mussaenda erosa	shrub	yes	scarce	+	
Mussaenda pubescens	shrub	yes	scarce	+	
Neyraudia reynaudiana	grass	yes	occasional	+	+
Oxalis corymbosa	herb	yes	scarce		+
Panicum maximum	grass	no	common		+
Paspalum conjugatum	grass	yes	scarce	+	
Phyllanthus urinaria	herb	yes	scarce	+	+
Pilea microphylla	herb	no	occasional		+
Plantago major	herb	yes	scarce		+
Pogonatherum crinitum	grass	yes	scarce		+
Polygonum barbatum	herb	yes	scarce	+	
Polygonum chinense	herb	yes	occasional	+	
Polygonum sp.	herb	yes	scarce	+	
Psychotria asiatica	shrub	yes	common	+	+
Psychotria asiatica	shrub	yes	scarce		+
Pteris ensiformis	fern	yes	scarce		+
Pueraria phaseoloides	climber	yes	occasional	+	+
Sageretia thea	climber	yes	occasional		+
Scleria sp.	herb	yes	scarce		+
Sida rhombifolia	herb	yes	scarce		+
Sporobolus fertilis	grass	yes	scarce		+
Sterculia lanceolata	tree	yes	common	+	+

			Relative	Occur	rrence
Species	Habit	Native	Abundance	PNH3	PNH4
Syngonium podophyllum	climber	no	occasional	+	
Syzygium jambos	tree	no	common	+	+
Syzygium levinei	tree	yes	scarce	+	
Urena lobata	herb	yes	scarce		+
Uvaria microcarpa	shrub	yes	occasional		+
Wedelia trilobata	climber	no	scarce	+	
Zanthoxylum avicennae	tree	yes	scarce		+

			Relative	Occur	rence
Species	Habit	Native	Abundance	PNH1	PNH2
Acacia confusa	tree	no	occasional	+	
Acanthus ilicifolius	shrub	yes	scarce	+	
Acrostichum aureum	fern	yes	scarce	+	
Celtis sinensis	tree	yes	occasional	+	
Clerodendrum inerme	shrub	yes	occasional	+	
Dendrotrophe frutescens	climber	yes	scarce	+	
Ficus microcarpa	tree	yes	scarce		+
Ficus superba	tree	yes	occasional		+
Ipomoea cairica	climber	yes	occasional		+
Kandelia obovata	shrub	yes	scarce	+	
Melaleuca quinquenervia	tree	no	common	+	
Morus alba	tree	no	scarce		+
Neyraudia reynaudiana	grass	yes	occasional	+	
Panicum maximum	grass	no	common		+
Phyllanthus urinaria	shrub	yes	common		+
Sapium sebiferum	tree	yes	occasional		+
Toxocarpus wightianum	climber	yes	scarce	+	
Wedelia triloba	climber	no	occasional	+	+
Wollastonia biflora	climber	yes	occasional	+	

Appendix D2 Plant species recorded at Pak Ngan Heung River (S)

			Relative	Occurrence				
Species	Habit	Native	Abundance	LLT1	LLT2	LLT3	LLT4	LLT5
Acanthus ilicifolius	shrub	yes	common	+	+			
Acrostichum aureum	fern	yes	scarce					
Aegiceras corniculatum	shrub	yes	scarce	+	+			
Bougainvillea spectabilis	climber	no	scarce	+				
Bridelia tomentosa	tree	yes	occasional	+				
Celtis sinensis	tree	yes	scarce	+	+	+		
Clerodendrum inerme	shrub	yes	abundant	+	+		+	
Cyperus malaccensis	sedge	yes	occasional		+			
Derris trilfoliata	climber	yes	occasional	+	+			
Excoecaria agallocha	shrub	yes	common	+	+			
Ficus microcarpa	tree	yes	scarce			+		
Ficus superba	tree	yes	occasional	+				
Fimbristylis ferruginea	sedge	yes	occasional		+		+	
Hibiscus tiliaceus	tree	yes	abundant	+			+	
Kandelia obovata	tree	yes	common	+	+			
Leucaena leucocephala	tree	no	occasional	+				
Litsea glutinosa	tree	yes	scarce		+	+		
Neyraudia reynaudiana	grass	yes	occasional	+		+		+
Panicum maximum	grass	no	common	+		+		
Paspalum paspaloides	grass	no	occasional		+			
Premna serratifolia	tree	yes	scarce		+			
Saccharum arundinaceum	grass	yes	scarce	+				
Scolopia chinensis	tree	yes	scarce					
Terminalia catappa	tree	no	scarce		+			
Toxocarpus wightianus	climber	yes	scarce		+			
Wikstroemia indica	shrub	yes	scarce					
Wollastonia biflora	climber	yes	occasional	+	+			

Appendix D3 Plant species recorded at Luk Tei Tong River

Appendix D4

Ecological Water Monitoring Results (on-site measurements)

Ecological Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling:	6/5/200	9		Wea	ther Co	ndition:	Sunny											
Monitoring Location		WE1			WE2			WE3			WE4			WE5			WE6	
Time (hhmm)		1150			1140			1115			1130			1230			1210	
Tide Mode		ebb			ebb			ebb			ebb			ebb			ebb	
River Condition		Normal			Normal			Normal			Normal			Normal			Normal	
Water Depth (m)		< 1.0			< 1.0			< 1.0			< 1.0			< 1.0			< 1.0	
pH value		6.29			7.07			7.34			6.95			6.88			5.92	
Temperature (oC)		24.0			23.8			24.3			23.7			25.9			23.4	
Salinity (ppt)		0.1			1.7			11.0			15.4			3.3		0.0		
Conductivity (ms/m)		19.8			336.0			1840.0	2500.0			602.0			602.0 7.7		7.7	
Water flow (m/s)		0.000			0.038			0.015 0.025 0.007		0.015 0.025 0.		5 0.007			0.000			
Turbidity (NTU)	2.2	2.1	Average 2.15	2.3	2.3	Average 2.30	7.5	7.6	Average 7.55	15.9	15.9	Average 15.9	8.4	8.5	Average 8.45	0.7	0.7	Average 0.7
DO (mg/l)	6.49	6.49	Average 6.49	7.72	7.72	Average 7.72	8.75	8.76	Average 8.76	7.35	7.35	Average 7.35	9.98	9.98	Average 9.98	6.16	6.16	Average 6.16
DO Saturation (%)	77	77	Average 77	92	92	Average 92	112	112	Average	95	95	Average 95	127	127	Average	73	73	Average 73
Prepared By:		ime Cheng	_	Ţ	ature	-		ate 2009	-		emark or ervation:							

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Appendix D5

Ecological Water Monitoring Results (lab report)



TEST SUMMARY ON ENVIRONMENTAL ANALYSIS OF WATER AND WASTEWATER

							Page 1 of 1
Report No.	:	GCC090500040			Date of Issue	:	11-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		Date Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial C	entre Building, 20	Lee Chung Street, Chaiwa	n, HK.		
		DSD Contract No. DC/20	06/11 - Drainage I	mprovement in Southern L	antau & Construct	ion	of
Project*	:	Mui Wo Village Sewerage	e Phase 1				
Test Location	:	G/F, 20 Pak Kung Stree	et, Hung Hom, Kow	/loon.	Date Started	:	06-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	07-05-2009
GCE Serial No.	;	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descrip	Analysis Description Test Me			bd	Units	Units Quality Control Results						5	
		**************************************				Metho Blank	-	QC 500 m	ng/L	QC Duplicat	e	RPD%	Spike 25 mg/L
Suspended Solid	s (SS)	APHA	4 20ed 25	540 D	mg/L	< 1.0)	499		483		3.3	27.3
			Acce	eptance	Criteria	<2.5 mg	g/L	475 ≤ C	ontrol	Limit ≤ 514	\$	≤±5%	21 ≤ R ≤ 29
	Sam	ple ID	WE1	-	VE1 blicate	WE2	[WE2 Duplicate	WES	3 WE Duplic			
TEST RESULTS	T RESULTS Sampling Date/Time 06 May 2009 / 11:50 06 M		06 May	06 May 2009 / 11:40 06 May 2009 / 11			11:15						
	LOD	Units											
Suspended Solids (SS)	1	mg/L	2.1	1	1.7	4.8		5.1	6.1	6.6	3		
	Sam	ple ID	WE4		/E4 licate	WE5		WE5 Duplicate	WE	B WE Duplic	-		
TEST RESULTS	EST RESULTS Sampling Date/Time		06 May 2009 / 11:30		06 May 2009 / 12:30		06 N	1ay 2009 / 1	12:10	1			
	LOD	Units											
Suspended Solids (SS)	1	mg/L	12.1	1	2.3	7.6		7.2	< 1.	0 < 1	.0	- And the second second second second	

* : Information provided by client

Note : This laboratory has no responsibility on sampling and all the test results relate only to the sample tested as received.

Remarks : Location M1 & WE3 and Location M3 & WE4 are the same location.

----- End -----

Tested By	:	K.L. Fong	Approved Signatory	:	
			Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist

Form No. : WQM/R1 (01-09-2008)



							Page 1 of 1
Report No.	:	GCC090500252			Date of Issue	: 30-0)5-2009
Client*	:	Environmental Pioneers &	Solutions Limited		Order Received	: 08-0	09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	entre Building, 20 L	ee Chung Street, Chaiwa	n, HK.		
		DSD Contract No. DC/200	6/11 - Drainage In	nprovement in Southern L	antau & Constructi	on of	
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	, Hung Hom, Kow	loon.	Date Started	: 06-0	05-2009
W.O. No.*	:		Contract No.*		Date Completed	: _27-(05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 11:50	Sample Type*	: Rive	r Water
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	: WE	
Descripption	:	River Water					

DESCRIPTION		TEST REFERENCE (in-House Method based on)	TEST RESULT
Appearance		APHA 20ed 2110	
Odour		APHA 20ed 2150 B	Odour Characteristics :
Oddur		APHA 2000 2150 B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B	
Colour	тси	APHA 20ed 2120 B	
Turbidity	NTU	APHA 20ed 2130 B	
Conductivity at 25°C	μS/cm	APHA 20ed 2510 B	
Salinity	g/L	APHA 20ed 2520 B	
-		APHA 20ed 4500-NH ₃ D	0.03
Nitrogen (Ammonia)	mg/L	APHA 20ed 4500-NH ₃ E	
		APHA 18ed 4500-NH ₃ C	
Nitrogen (Nitrate)	mg/L	APHA 20ed 4500-NO3 ⁻ E	0.06
Phosphorus	mg/L	APHA 20ed 4500-P D	0.03
Biochemical Oxygen Demand (BOI	D ₅) mg/L	APHA 20ed 5210 B	3
Chemical Oxygen Demand (COD)	mg/L	APHA 20ed 5220 D	
Total Suspended Solid	mg/L	APHA 20ed 2540 D	

* : Information provided by client

Sample	received	on 06	May	2009.
--------	----------	-------	-----	-------

REMARKS :	Sample Loc	ation WE1.			
		End	10 ga an 19 19		
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:	Last
			Name	:	Gu Chin
Checked By	:	Gu Chin	Post	:	Chemist



							Page 1 of 1
Report No.	;	GCC090500260			Date of issue	:	30-05-2009
Client*		Environmental Pioneers &		AVV	Order Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	ntre Building, 20 L	ee Chung Street, Chaiwar	n, HK.		
		DSD Contract No. DC/200	6/11 - Drainage In	nprovement in Southern La	antau & Constructio	on	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	;	G/F, 20 Pak Kung Street	, Hung Hom, Kow	loon.	Date Started	:	06-05-2009
W.O. No.*	:		Contract No.*		Date Completed	:	27-05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 11:50	Sample Type*	:	River Water
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	:	WE1 Duplicate
Descripption	:	River Water					

DESCRIPTION		TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance		APHA 20ed 2110	-
0.1		APHA 20ed 2150 B	Odour Characteristics :
Odour		AFHA ZUEU ZISU B	Threshold Odour Number (TON) :
pH Value at temperature [1 °C	APHA 20ed 4500-H ⁺ B	
Colour	тси	APHA 20ed 2120 B	
Turbidity	ΝΤυ	APHA 20ed 2130 B	-
Conductivity at 25°C	μS/cm	APHA 20ed 2510 B	-
Salinity	g/L	APHA 20ed 2520 B	
dani da un desta de la constante de la constant		APHA 20ed 4500-NH ₃ D	0.02
Nitrogen (Ammonia)	mg/L	APHA 20ed 4500-NH ₃ E	
		APHA 18ed 4500-NH $_3$ C	
Nitrogen (Nitrate)	mg/L	APHA 20ed 4500-NO3 [•] E	0.06
Phosphorus	mg/L	APHA 20ed 4500-P D	0.03
Biochemical Oxygen Demand (BOD ₅) mg/L		APHA 20ed 5210 B	3
Chemical Oxygen Demand (COD)	mg/L	APHA 20ed 5220 D	
Total Suspended Solid	mg/L	APHA 20ed 2540 D	

* : Information provided by client

REMARKS :	Sa	mple Location WE1.				
			End			
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:	<u>LJK</u>	
			Name	:	Gu Chin	
Checked By	:	Gu Chin	Post	:	Chemist	



							Page 1 of 1
Report No.	:	GCC090500278			Date of Issue	:	30-05-2009
Client*	:	Environmental Pioneers & S	Solutions Limited		Order Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	ntre Building, 20 L	ee Chung Street, Chaiwar	n, HK.		
		DSD Contract No. DC/200	6/11 - Drainage In	nprovement in Southern La	intau & Constructio	оп	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	, Hung Hom, Kowl	loon.	Date Started	:	06-05-2009
W.O. No.*	:		Contract No.*	:	Date Completed	:	27-05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 11:40	Sample Type*	:	River Water
GCE Reg. No.	;	GCE 081096	Test Unit No.	: CH 08258	Sample 1.D.*	:	WE2
Descripption	:	River Water					

DESCRIPTION	TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance	APHA 20ed 2110	
~ `	APHA 20ed 2150 B	Odour Characteristics :
Odour	APHA 20ed 2150 B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H* B	
Colour TCL	APHA 20ed 2120 B	-
Turbidity NTU	APHA 20ed 2130 B	
Conductivity at 25°C	APHA 20ed 2510 B	
Salinity g/l	APHA 20ed 2520 B	
	APHA 20ed 4500-NH ₃ D	0.93
Nitrogen (Ammonia) mg/l	APHA 20ed 4500-NH ₃ E	
	APHA 18ed 4500-NH ₃ C	-
Nitrogen (Nitrate) mg/l	APHA 20ed 4500-NO3 E	0.38
Phosphorus mg/l	APHA 20ed 4500-P D	0.16
Biochemical Oxygen Demand (BOD ₅) mg/l	APHA 20ed 5210 B	4
Chemical Oxygen Demand (COD) mg/	APHA 20ed 5220 D	
Total Suspended Solid mg/	APHA 20ed 2540 D	

* : Information provided by client

Sample	received	on 06	May	2009.
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REMARKS :	Sa	ample Location WE2.			
			End		
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:	1 ste
			Name	:	Gu Chin
Checked By	:	Gu Chin	Post	:	Chemist

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER

Report No.	:	GCC090500286			Date of Issue	:	Page 1 of 1 30-05-2009		
Client*	:	Environmental Pioneers &	Solutions Limited		Order Received	:	08-09-2008		
Client Address*	:	: 8/F, Chaiwan Industrial Centre Building, 20 Lee Chung Street, Chaiwan, HK.							
Project*		DSD Contract No. DC/200 Mui Wo Village Sewerage		nprovement in Southern L	antau & Constructi	on	of		
Test Location		G/F, 20 Pak Kung Street		loon.	Date Started	:	06-05-2009		
W.O. No.*	:		Contract No.*	:	Date Completed	:	27-05-2009		
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 11:40	Sample Type*	:	River Water		
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	:	WE2 Duplicate		
Descripption	:	River Water							

DESCRIPTION		TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance	A And A	APHA 20ed 2110	
0.1		APHA 20ed 2150 B	Odour Characteristics :
Odour		AFHA 2000 2150 B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B	
Colour	тси	APHA 20ed 2120 B	
Turbidity	NTU	APHA 20ed 2130 B	
Conductivity at 25°C	μ S /cm	APHA 20ed 2510 B	
Salinity	g/L	APHA 20ed 2520 B	
		APHA 20ed 4500-NH ₃ D	0.92
Nitrogen (Ammonia)	mg/L	APHA 20ed 4500-NH ₃ E	
		APHA 18ed 4500-NH ₃ C	-
Nitrogen (Nitrate)	mg/L	APHA 20ed 4500-NO3 ⁻ E	0.37
Phosphorus	mg/L	APHA 20ed 4500-P D	0.16
Biochemical Oxygen Demand (B	30D ₅) mg/L	APHA 20ed 5210 B	4
Chemical Oxygen Demand (CO	D) mg/L	APHA 20ed 5220 D	
Total Suspended Solid	mg/L	APHA 20ed 2540 D	

* : Information provided by client

Sample received	on 06	6 May 2009.
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REMARKS :	Sa	imple Location WE2.	(w/m)		
			End		
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:	Lit
			Name	:	Gu Chin
Checked By	:	Gu Chin	Post	:	Chemist

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER

							Page 1 of 1
Report No.	:	GCC090500294			Date of Issue	:	30-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		Order Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	ntre Building, 20 L	ee Chung Street, Chaiwar	п, НК.		
		DSD Contract No. DC/200	06/11 - Drainage In	nprovement in Southern La	antau & Construction	on	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	, Hung Hom, Kow	loon.	Date Started	:	06-05-2009
W.O. No.*	:		Contract No.*	:	Date Completed	:	27-05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 11:15	Sample Type*	:	River Water
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	:	WE3
Descripption	:	River Water					

DESCRIPTION	TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance	APHA 20ed 2110	
O.d.e.um	APHA 20ed 2150 B	Odour Characteristics :
Odour	AFHA ZUeu 2150 B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B	
Colour TCU	APHA 20ed 2120 B	-
Turbidity NTU	APHA 20ed 2130 B	
Conductivity at 25℃ µS/cm	APHA 20ed 2510 B	
Salinity g/L	APHA 20ed 2520 B	
	APHA 20ed 4500-NH ₃ D	0.39
Nitrogen (Ammonia) mg/L	APHA 20ed 4500-NH ₃ E	
	APHA 18ed 4500-NH ₃ C	
Nitrogen (Nitrate) mg/L	APHA 20ed 4500-NO3 ⁻ E	0.24
Phosphorus mg/L	APHA 20ed 4500-P D	0.1
Biochemical Oxygen Demand (BOD ₅) mg/L	APHA 20ed 5210 B	4
Chemical Oxygen Demand (COD) mg/L	APHA 20ed 5220 D	
Total Suspended Solid mg/L	APHA 20ed 2540 D	

* : Information provided by client

Note: This laboratory has no responsibility on sampling and all the test results relate only to the sample tested as received.

Sample received on 06 May 2009.

REMARKS :	Sample Location WE3.							
		End						
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:				
			Name	:	Gu Chin			
Checked By	:	Gu Chin	Post	:	Chemist			

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER

							Page 1 of 1
Report No.	:	GCC090500309			Date of Issue	:	30-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		Order Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	ntre Building, 20 L	ee Chung Street, Chaiwar	n, HK.		
		DSD Contract No. DC/200	6/11 - Drainage In	nprovement in Southern La	antau & Constructio	วท	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	, Hung Hom, Kow	loon.	Date Started	:	06-05-2009
W.O. No.*	:		Contract No.*		Date Completed	:	27-05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 11:15	Sample Type*	:	River Water
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	:	WE3 Duplicate
Descripption	:	River Water					

DESCRIPTION		TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance		APHA 20ed 2110	
O.I		APHA 20ed 2150 B	Odour Characteristics :
Odour		APHA ZUeu ZISU B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B	
Colour	тси	APHA 20ed 2120 B	
Turbidity	NTU	APHA 20ed 2130 B	
Conductivity at 25°C	μS/cm	APHA 20ed 2510 B	
Salinity	g/L	APHA 20ed 2520 B	
		APHA 20ed 4500-NH ₃ D	0.40
Nitrogen (Ammonia)	mg/L	APHA 20ed 4500-NH ₃ E	
		APHA 18ed 4500-NH ₃ C	
Nitrogen (Nitrate)	mg/L	APHA 20ed 4500-NO3 [°] E	0.24
Phosphorus	mg/L	APHA 20ed 4500-P D	0.11
Biochemical Oxygen Demand (I	BOD ₅) mg/L	APHA 20ed 5210 B	4
Chemical Oxygen Demand (CO	D) mg/L	APHA 20ed 5220 D	
Total Suspended Solid	mg/L	APHA 20ed 2540 D	

* : Information provided by client

Comple	received	~ ~	06	Mou	2000
Jample	receiveu	011	00	iviay.	2003.

REMARKS :	Sample Loc	ation WE3.			
		End			
Tested By	:	T.W. Lam, K.L. Fong	Certified By	•	Last
			Name	:	Gu Chin
Checked By	:	Gu Chin	Post	;	Chemist

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER

Report No. : GCC090500317		Date of issue	Page 1 of 1 : 30-05-2009						
Client* : Environmental Pioneers of Client Address* : 8/F, Chaiwan Industrial of DSD Contract No. DC/20		: 0 <u>8-09-2008</u>							
Project* : Mui Wo Village Sewerag	Project* : Mui Wo Village Sewerage Phase 1								
Test Location : <u>G/F, 20 Pak Kung Stre</u>	et, Hung Hom, Kowloon.	Date Started	: 06-05-2009						
W.O. No.* :	Contract No.* :	Date Completed	: 27-05-2009						
GCE Serial No. : WOM052009	Sampling Date* : 06-05-2009	/ 11:30 Sample Type*	: River Water						
GCE Reg. No. : <u>GCE 081096</u>	Test Unit No. : CH 08258	Sample I.D.*	: <u>WE4</u>						
Descripption : River Water									
DESCRIPTION	TEST REFERENCE (In-House Method based on)	TEST RI	ESULT						
Appearance	APHA 20ed 2110								
Odour	APHA 20ed 2150 B	Odour Characteristics :							
	ATTIA 20ed 2150 B	Threshold Odour Number (T	ON) :						
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B								
Colour TCU	APHA 20ed 2120 B								
Turbidity NTU	APHA 20ed 2130 B								
Conductivity at 25°C µS/cm	APHA 20ed 2510 B								
Salinity g/L	APHA 20ed 2520 B								
	APHA 20ed 4500-NH ₃ D	0.5	52						
Nitrogen (Ammonia) mg/L	APHA 20ed 4500-NH ₃ E								
	APHA 18ed 4500-NH ₃ C								
Nitrogen (Nitrate) mg/L	APHA 20ed 4500-NO ₃ ⁻ E	0.3	33						
Phosphorus mg/L	APHA 20ed 4500-P D	0.0	08						
Biochemical Oxygen Demand (BOD ₅) mg/L	APHA 20ed 5210 B	2							
Chemical Oxygen Demand (COD) mg/L	APHA 20ed 5220 D								
Total Suspended Solid mg/L	APHA 20ed 2540 D								

* : Information provided by client

Sample	received	on 06	May	2009.
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REMARKS :	Sample Lo	cation WE4.	······································		
		End			
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:	121-
			Name	:	Gu Chin
Checked By	:	Gu Chin	Post	:	Chemist



							Page 1 of 1
Report No.	:	GCC090500325			Date of Issue	:	30-05-2009
Client*	:	Environmental Pioneers & S	Solutions Limited		Order Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	ntre Building, 20 l	.ee Chung Street, Chaiwar	n, HK.		
		DSD Contract No. DC/200	6/11 - Drainage In	nprovement in Southern La	antau & Constructio	on	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	, Hung Hom, Kow	loon.	Date Started	:	06-05-2009
W.O. No.*	:		Contract No.*		Date Completed	:	27-05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 11:30	Sample Type*	:	River Water
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	:	WE4 Duplicate
Descripption	:	River Water					

DESCRIPTION	TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance	APHA 20ed 2110	
	APHA 20ed 2150 B	Odour Characteristics :
Odour	APHA ZUed 2150 B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B	
Colour TCU	APHA 20ed 2120 B	-
Turbidity NTL	APHA 20ed 2130 B	
Conductivity at 25°C µS/cm	APHA 20ed 2510 B	
Salinity g/L	APHA 20ed 2520 B	
ann an tha an	APHA 20ed 4500-NH ₃ D	0.53
Nitrogen (Ammonia) mg/L	APHA 20ed 4500-NH ₃ E	
	APHA 18ed 4500-NH ₃ C	
Nitrogen (Nitrate) mg/L	APHA 20ed 4500-NO3 [°] E	0.33
Phosphorus mg/L	APHA 20ed 4500-P D	0.08
Biochemical Oxygen Demand (BOD ₅) mg/L	APHA 20ed 5210 B	2
Chemical Oxygen Demand (COD) mg/l	APHA 20ed 5220 D	
Total Suspended Solid mg/L	APHA 20ed 2540 D	

* : Information provided by client

REMARKS :	Sa	mple Location WE4.				
			End			
Tested By	; _	T.W. Lam, K.L. Fong	Certified By	:	/ the	
			Name	:	Gu Chin	
Checked By	: _	Gu Chin	Post	:	Chemist	

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER

Report No.	:	GCC090500333			Date of Issue	: :	Page 1 of 1 30-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		Order Received	: _	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	ntre Building, 20 L	ee Chung Street, Chaiwar	n, HK.		
		DSD Contract No. DC/200	6/11 - Drainage In	nprovement in Southern La	antau & Constructio	on a	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	, Hung Hom, Kow	loon,	Date Started	: (06-05-2009
W.O. No.*	:		Contract No.*	:	Date Completed	: _	27-05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 12:30	Sample Type*	: _	River Water
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	: _	WE5
Descripption	:	River Water					

DESCRIPTION	TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance	APHA 20ed 2110	
Q.L	APHA 20ed 2150 B	Odour Characteristics :
Odour	APHA 20ed 2150 B	Threshold Odour Number (TON):
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B	
Colour TCU	APHA 20ed 2120 B	-
Turbidity NTU	APHA 20ed 2130 B	
Conductivity at 25°C µS/cm	APHA 20ed 2510 B	
Salinity g/L	APHA 20ed 2520 B	-
	APHA 20ed 4500-NH ₃ D	2.74
Nitrogen (Ammonia) mg/L	APHA 20ed 4500-NH ₃ E	-
	APHA 18ed 4500-NH $_3$ C	
Nitrogen (Nitrate) mg/L.	APHA 20ed 4500-NO3 ⁻ E	0.21
Phosphorus mg/L	APHA 20ed 4500-P D	0.48
Biochemical Oxygen Demand (BOD ₅) mg/L	APHA 20ed 5210 B	4
Chemical Oxygen Demand (COD) mg/L	APHA 20ed 5220 D	-
Total Suspended Solid mg/L	APHA 20ed 2540 D	

* : Information provided by client

Note : This laboratory has no responsibility on sampling and all the test results relate only to the sample tested as received.

Sample received on 06 May 2009.

REMARKS :	Sam	ble Location WE5.				
			End			
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:	Lit	
			Name	:	Gu Chin	
Checked By	:	Gu Chin	Post	:	Chemist	

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER

							Page 1 of 1
Report No.	:	GCC090500341			Date of Issue	:	30-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		Order Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	ntre Building, 20 l	.ee Chung Street, Chaiwa	n, HK.		
		DSD Contract No. DC/200	6/11 - Drainage In	nprovement in Southern La	antau & Constructi	on	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	, Hung Hom, Kow	loon.	Date Started	:	06-05-2009
W.O. No.*	:		Contract No.*	:	Date Completed	:	27-05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 12:30	Sample Type*	:	River Water
GCE Reg. No.	;	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	:	WE5 Duplicate
Descripption	:	River Water					

DESCRIPTION		TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance		APHA 20ed 2110	
Odour		APHA 20ed 2150 B	Odour Characteristics :
		AFRA ZUEU ZISU B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B	
Colour	тси	APHA 20ed 2120 B	
Turbidity	ΝΤυ	APHA 20ed 2130 B	
Conductivity at 25°C	μS/cm	APHA 20ed 2510 B	
Salinity	g/L	APHA 20ed 2520 B	
		APHA 20ed 4500-NH ₃ D	2.77
Nitrogen (Ammonia)	mg/L	APHA 20ed 4500-NH ₃ E	
		APHA 18ed 4500-NH ₃ C	
Nitrogen (Nitrate)	mg/L	APHA 20ed 4500-NO3 ⁻ E	0.20
Phosphorus	mg/L	APHA 20ed 4500-P D	0.48
Biochemical Oxygen Demand (BOI	D ₅ } mg/L	APHA 20ed 5210 B	4
Chemical Oxygen Demand (COD)	mg/L	APHA 20ed 5220 D	
Total Suspended Solid	mg/L	APHA 20ed 2540 D	

* : Information provided by client

Note : This laboratory has no responsibility on sampling and all the test results relate only to the sample tested as received.

Sample received on 06 May 2009.

REMARKS :	Sample Loc	ation WE5.			
		End			
Tested By	:	T.W. Lam, K.L. Fong	Certified By Name	:	Gu Chin
Checked By	:	Gu Chin	Post	: :	Chemist

GEOTECHNICS & CONCRETE ENGINEERING (H. K.) LTD. 6 KO SHAN RD., GROUND FL., HUNG HOM, KOWLOON, HONG KONG. TEL.: 852-2365 9123 FAX NO.: 852-2765 8034

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER

Report No.	:	GCC090500359			Date of Issue	:	Page 1 of 1 30-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		Order Received	:	08-09-2008
Client Address*	ess* : 8/F, Chaiwan Industrial Centre Building, 20 Lee Chung Street, Chaiwan, HK.						
		DSD Contract No. DC/200	6/11 - Drainage In	nprovement in Southern La	antau & Constructio	on	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	, Hung Hom, Kow	loon.	Date Started	:	06-05-2009
W.O. No.*	:		Contract No.*	·	Date Completed	:	27-05-2009
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 12:10	Sample Type*	:	River Water
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	:	WE6
Descripption	:	River Water					

DESCRIPTION		TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance		APHA 20ed 2110	
Odour		APHA 20ed 2150 B	Odour Characteristics :
		ALTIA 2000 2150 B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H $^+$ B	
Colour	тси	APHA 20ed 2120 B	
Turbidity	NTU	APHA 20ed 2130 B	
Conductivity at 25℃ µS	/cm	APHA 20ed 2510 B	
Salinity	g/L	APHA 20ed 2520 B	
		APHA 20ed 4500-NH ₃ D	0.01
Nitrogen (Ammonia)	mg/L	APHA 20ed 4500-NH ₃ E	
		APHA 18ed 4500-NH ₃ C	
Nitrogen (Nitrate)	mg/L	APHA 20ed 4500-NO ₃ [°] E	0.05
Phosphorus	mg/L	APHA 20ed 4500-P D	0.03
Biochemical Oxygen Demand (BOD ₅)	mg/L	APHA 20ed 5210 B	2
Chemical Oxygen Demand (COD)	mg/L	APHA 20ed 5220 D	
Total Suspended Solid	mg/L	APHA 20ed 2540 D	

* : Information provided by client

Note : This laboratory has no responsibility on sampling and all the test results relate only to the sample tested as received.

Sample received on 06 May 2009.

REMARKS :	Sample Loc	ation WE6.			
		End			
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:	1 str
			Name	:	Gu Chin
Checked By	• •	Gu Chin	Post	:	Chemist

Form No. : EWA-D2/R (19-1-2009)

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER

							Page 1 of 1	
Report No.	:	GCC090500367			Date of Issue	:	30-05-2009	
Client*	:	Environmental Pioneers &	Solutions Limited		Order Received	:	08-09-2008	
Client Address*	:	: 8/F, Chaiwan Industrial Centre Building, 20 Lee Chung Street, Chaiwan, HK.						
		DSD Contract No. DC/200)6/11 - Drainage Ir	nprovement in Southern L	antau & Constructio	on	of	
Project*	:	Mui Wo Village Sewerage	Phase 1					
Test Location	:	G/F, 20 Pak Kung Street	t, Hung Hom, Kow	loon.	Date Started	:	06-05-2009	
W.O. No.*	:		Contract No.*	;	Date Completed	:	27-05-2009	
GCE Serial No.	:	WQM052009	Sampling Date*	: 06-05-2009 / 12:10	Sample Type*	:	River Water	
GCE Reg. No.	:	GCE 081096	Test Unit No.	: CH 08258	Sample I.D.*	:	WE6 Duplicate	
Descripption	:	River Water						

DESCRIPTION	TEST REFERENCE (In-House Method based on)	TEST RESULT
Appearance	APHA 20ed 2110	
Odour	APHA 20ed 2150 B	Odour Characteristics :
	AFMA ZUEU ZIUU B	Threshold Odour Number (TON) :
pH Value at temperature [] °C	APHA 20ed 4500-H ⁺ B	
Colour TC	APHA 20ed 2120 B	
Turbidity NT	J APHA 20ed 2130 B	
Conductivity at 25°C µS/cr	n APHA 20ed 2510 B	
Salinity g/	L APHA 20ed 2520 B	
	APHA 20ed 4500-NH ₃ D	0.01
Nitrogen (Ammonia) mg/	L APHA 20ed 4500-NH ₃ E	
	APHA 18ed 4500-NH ₃ C	
Nitrogen (Nitrate) mg/	L APHA 20ed 4500-NO ₃ ⁻ E	0.06
Phosphorus mg/	L APHA 20ed 4500-P D	0.03
Biochemical Oxygen Demand (BOD ₅) mg/	L APHA 20ed 5210 B	2
Chemical Oxygen Demand (COD) mg/	L APHA 20ed 5220 D	
Total Suspended Solid mg/	L APHA 20ed 2540 D	

* : Information provided by client

Note : This laboratory has no responsibility on sampling and all the test results relate only to the sample tested as received.

Sample received on 06 May 2009.

REMARKS :	Sam	ple Location WE6.			
			End		
Tested By	:	T.W. Lam, K.L. Fong	Certified By	:	Lest.
			Name	:	Gu Chin
Checked By	:	Gu Chin	Post		Chemist

Form No. : EWA-D2/R (19-1-2009)

Appendix E



大成環境科技拓展有限公司

Environmental Pioneers and Solutions Limited

Monitoring Location	Monitoring Location			N2	
Description of Location			Façade	Façade	
Date of Monitoring	Date of Monitoring		4/5/2	2009	
Measurement Start Time	e (hhmm)	14:15	13:40	
Measurement Time Len	gth	(mins.)	30 1	mins	
Noise Meter Model/ Ider	ntificatio	n	ACO Japan,	model 6224	
Calibrator Model/ Identif	ication		Castle Gro	up, GA607	
Wind Speed	(n	n/s)	0.4	0.9	
	L90	(dB(A))	43.4	47.4	
Measurement Results	L10	(dB(A))	48.6	54.5	
	Leq	(dB(A))	46.7	53.5	
Weather condition:			Sunny		
Major Construction Noise Sourse(s) During Monitoring			1. Excavator noise	1. Excavator noise	
Other Noise Source(s) During Monitoring				1. Public noise	
Remarks					

	Name & Designation	<u>Signature</u>	Date:
		1	
Prepared by:	Jimmy Cheng	_ Y~~	4/5/2009



Monitoring Location	Monitoring Location			N4	
Description of Location			Freefield	Facede	
Date of Monitoring	Date of Monitoring		4/5/2	2009	
Measurement Start Time	e	(hhmm)	13:05	14:25	
Measurement Time Len	gth	(mins.)	30 r	mins	
Noise Meter Model/ Ider	ntificatio	n	ACO Japan,	, model 6224	
Calibrator Model/ Identif	ication		Castle Gro	oup, GA607	
Wind Speed	(r	n/s)	0.7	1.1	
	L90	(dB(A))	51.4	43.7	
Measurement Results	L10	(dB(A))	60.5	53.7	
	Leq	(dB(A))	59.4	52.6	
Weather condition:			Sunny		
Major Construction Noise Sourse(s) During Monitoring			1. Excavator noise	no construction works are being carried out during measurement.	
Other Noise Source(s) During Monitoring			1. Public noise 2. Traffic noise (Bicycles)	1. Public noise	
Remarks					

	Name & Designation	<u>Signature</u>	Date:
Prepared by:	Jimmy Cheng	A	4/5/2009
		1	



大成環境科技拓展有限公司

Environmental Pioneers and Solutions Limited

Monitoring Location		N1	N2		
Description of Location	Description of Location		Façade	Façade	
Date of Monitoring			11/5/	/2009	
Measurement Start Time	e (hhmm)	14:20	10:35	
Measurement Time Len	gth	mins.)	30 r	mins	
Noise Meter Model/ Ider	ntificatio	n	ACO Japan,	model 6224	
Calibrator Model/ Identif	ication		Castle Gro	up, GA607	
Wind Speed	(m	n/s)	0.4	0.8	
	L90	(dB(A))	41.7	46.1	
Measurement Results	L10	(dB(A))	49.8	55.3	
	Leq	(dB(A))	48.6	52.3	
Weather condition:			Sunny		
Major Construction Noise Sourse(s) During Monitoring			1. Excavator noise	1. Excavatpr noise	
Other Noise Source(s) During Monitoring				1. Public noise 2. Traffic noise	
Remarks					

	Name & Designation	<u>Signature</u>	Date:
		1	
Prepared by:	Jimmy Cheng	- Ym	11/5/2009



Monitoring Location		N3	N4		
Description of Location		Freefield	Facede		
Date of Monitoring			11/5/	/2009	
Measurement Start Time	e	(hhmm)	11:10	15:00	
Measurement Time Len	gth	(mins.)	30 1	mins	
Noise Meter Model/ Ider	ntificatio	n	ACO Japan	model 6224	
Calibrator Model/ Identif	ication		Castle Gro	up, GA607	
Wind Speed	(r	n/s)	0.9	1.2	
	L90	(dB(A))	48.5	43.8	
Measurement Results	L10	(dB(A))	62.9	54.9	
	Leq	(dB(A))	59.5	52.6	
Weather condition:			Sunny		
Major Construction Noise Sourse(s) During Monitoring		no construction works are being carried out during measurement.	no construction works are being carried out during measurement.		
Other Noise Source(s) During Monitoring		1. Public noise 2. Traffic noise	1. Public noise		
Remarks					

	Name & Designation	<u>Signature</u>	Date:
		1	
Prepared by:	Jimmy Cheng	Ym	11/5/2009



大成環境科技拓展有限公司

Environmental Pioneers and Solutions Limited

Monitoring Location		N1	N2		
Description of Location		Façade	Façade		
Date of Monitoring			20/5/	(2009	
Measurement Start Time	e	(hhmm)	14:45	14:10	
Measurement Time Len	gth	(mins.)	30 г	mins	
Noise Meter Model/ Ider	ntificatio	n	ACO Japan,	model 6224	
Calibrator Model/ Identif	ication		Castle Gro	up, GA607	
Wind Speed	(r	n/s)	0.7	1.2	
	L90	(dB(A))	42.9	50.5	
Measurement Results	L10	(dB(A))	53.6	61.8	
	Leq	(dB(A))	51.3	60.4	
Weather condition:			Cloudy		
Major Construction Noise Sourse(s) During Monitoring			No construction works are being carried out during measurement.	 Excavtor noise Power generator noise Hammer noise 	
Other Noise Source(s) During Monitoring				1. Public noise	
Remarks					

	Name & Designation	<u>Signature</u>	Date:
		1	
Prepared by:	Jimmy Cheng	Y	20/5/2009



Monitoring Location		N3	N4		
Description of Location		Freefield	Facede		
Date of Monitoring			20/5/	/2009	
Measurement Start Time	e	(hhmm)	13:00	13:35	
Measurement Time Len	gth	(mins.)	30 ו	mins	
Noise Meter Model/ Ider	ntificatio	n	ACO Japan,	, model 6224	
Calibrator Model/ Identif	ication		Castle Gro	oup, GA607	
Wind Speed	(r	n/s)	0.6	0.8	
	L90	(dB(A))	47.0	48.3	
Measurement Results	L10	(dB(A))	55.8	59.3	
	Leq	(dB(A))	55.0	55.9	
Weather condition:			Cloudy		
Major Construction Noise Sourse(s) During Monitoring			1. Excavator noise	No construction works are being carried out during measurement.	
Other Noise Source(s) During Monitoring			1. Public noise 2. Traffic noise (Bicycle)	1. Public noise	
Remarks					

	Name & Designation	<u>Signature</u>	Date:
Prepared by:	Jimmy Cheng	1	20/5/2009
r Tepareu by.	Jinning Cheng		20/3/2009
		V	



大成環境科技拓展有限公司

Environmental Pioneers and Solutions Limited

Monitoring Location		N1	N2		
Description of Location		Façade	Façade		
Date of Monitoring			29/5/	/2009	
Measurement Start Time	e	(hhmm)	14:45	14:10	
Measurement Time Len	gth	(mins.)	30 r	mins	
Noise Meter Model/ Ider	ntificatio	n	ACO Japan,	model 6224	
Calibrator Model/ Identif	ication		Castle Gro	up, GA607	
Wind Speed	(r	n/s)	0.3	0.4	
	L90	(dB(A))	44.6	50.5	
Measurement Results	L10	(dB(A))	50.3	53.5	
	Leq	(dB(A))	48.1	52.6	
Weather condition:			Sunny		
Major Construction Noise Sourse(s) During Monitoring			No construction works are being carried out during measurement.	 Power generator noise Excavator noise Construction truck noise 	
Other Noise Source(s) During Monitoring				1. Public noise	
Remarks					

	Name & Designation	<u>Signature</u>	Date:
		1	
Prepared by:	Jimmy Cheng	_ Y~~	29/5/2009



Monitoring Location		N3	N4		
Description of Location		Freefield	Facede		
Date of Monitoring			29/5/	/2009	
Measurement Start Time	e ((hhmm)	13:00	13:35	
Measurement Time Len	gth	(mins.)	30 ו	mins	
Noise Meter Model/ Ider	ntificatio	n	ACO Japan	model 6224	
Calibrator Model/ Identif	ication		Castle Gro	up, GA607	
Wind Speed	(n	n/s)	0.7	0.6	
	L90	(dB(A))	44.3	44.9	
Measurement Results	L10	(dB(A))	61.3	56.9	
	Leq	(dB(A))	57.9	54.1	
Weather condition:			Sunny		
Major Construction Noise Sourse(s) During Monitoring			1. Excavator noise	No construction works are being carried out during measurement.	
Other Noise Source(s) During Monitoring		1. Public noise 2. Traffic noise (Bicycle)	1. Public noise		
Remarks					

	Name & Designation	<u>Signature</u>	Date:
		1	
Prepared by:	Jimmy Cheng	Ym	29/5/2009

Appendix F1

Water Quality Monitoring Data Sheet

Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling: 2009/5/4 Sunny Monitoring M2 Μ4 C2 Location M1 М3 C1 C3 1045 1050 1100 1110 1120 1130 1140 Time (hhmm) mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb Tide Mode normal normal normal normal normal normal normal River Condition <1 < 1 < 1 1.1 < 1 < 1 < 1 Water Depth (m) 6.96 6.77 6.62 7.58 6.52 6.20 6.78 pH value 23.5 24.2 23.9 24.1 24.1 24.9 23.7 Temperature (oC) 1.7 0.1 8.6 22.1 0.2 0.0 1.7 Salinity (ppt) Average Average Average Average Average Average Average 31.5 31.5 Turbidity (NTU) 10.3 10.3 2.4 2.4 14.3 14.3 5.5 5.5 0.0 0.0 7.3 7.3 10.3 2.4 14.3 5.5 0.0 31.5 7.3 Average Average Average Average Average Average Average DO (mg/l) 9.64 6.84 6.84 6.60 5.46 5.46 8.41 5.33 7.86 7.86 9.64 6.60 8.41 5.33 7.86 9.64 6.84 6.60 5.46 8.41 5.33 Average Average Average Average Average Average Average DO Saturation (%) 95 95 114 114 86 86 91 91 66 66 100 100 64 64 95 114 86 91 66 100 64

Name

Signature

2009/5/4

remark or

observation:

Date

Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling:	2009/5/	6		Sunny	/											-						
Monitoring Location	M1			M2			М3			M4			C1			C2			C3			
Time (hhmm)	1115			1120			1130			1058			1150			1200			1225			
Tide Mode	mid-ebb			mid-ebb			mid-ebb			mid-ebb			mid-ebb			mid-ebb			mid-ebb			
River Condition	normal			normal			normal			normal			normal			normal			normal			
Water Depth (m)	<1			< 1			< 1			1.2			< 1			< 1			< 1			
pH value		7.34			7.18			6.95			7.91			6.29			6.12			6.80		
Temperature (oC)	24.3			23.3			23.7			24.4			24.0			23.6			24.4			
Salinity (ppt)	11.0			2.1			15.4			21.2			0.1			0.0			2.0			
Turbidity (NTU)	7.5	7.5	Average 7.5	3.1	3.1	Average 3.1	15.9	15.9	Average	2.7	2.8	Average	2.2	2.1	Average	18.3	18.3	Average	8.4	8.4	Average 8.4	
DO (mg/l)	8.75	8.76	Average 8.76	10.07	10.07	Average	7.35	7.35	Average 7.35	7.92	7.92	Average 7.92	6.49	6.49	Average 6.49	8.24	8.24	Average 8.24	7.50	7.50	Average 7.50	
DO Saturation (%)	112	112	Average	120	120	Average	95	95	Average 95	107	107	Average	77	77	Average	98	98	Average 98	93	93	Average 93	

Name

Signature

Date

2009/5/6

remark or observation:

Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling: 2009/5/8 Sunny Monitoring M2 Μ4 C2 Location M1 М3 C1 C3 1150 1155 1205 1140 1220 1230 1240 Time (hhmm) mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb Tide Mode normal normal normal normal normal normal normal River Condition 1.3 <1 < 1 < 1 < 1 < 1 < 1 Water Depth (m) 7.68 7.70 7.56 8.03 6.25 6.51 6.81 pH value 22.6 23.4 24.5 25.0 23.4 24.6 24.4 Temperature (oC) 16.9 7.9 19.3 22.9 0.0 0.0 11.3 Salinity (ppt) Average Average Average Average Average Average Average 0.1 30.8 Turbidity (NTU) 11.8 11.8 4.4 4.5 8.8 8.9 4.8 4.8 0.0 30.8 8.3 8.3 11.8 4.5 8.9 4.8 0.1 30.8 8.3 Average Average Average Average Average Average Average DO (mg/l) 8.11 8.11 8.54 7.68 7.68 7.87 7.87 8.17 8.17 8.61 5.47 8.54 8.61 5.47 8.17 8.11 8.54 7.68 7.87 8.61 5.47 Average Average Average Average Average Average Average DO Saturation (%) 105 105 108 108 104 104 105 105 95 95 104 104 79 79 105 108 104 105 95 104 79

Name

Signature

Date

2009/5/8

remark or observation:

Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling: 2009/5/11 Sunny Monitoring M2 C2 Location M1 М3 Μ4 C1 C3 1400 1350 1340 1410 1305 1320 1330 Time (hhmm) mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb mid-ebb Tide Mode normal normal normal normal normal normal normal River Condition 1.2 <1 < 1 < 1 < 1 < 1 < 1 Water Depth (m) 7.85 7.87 7.76 8.04 6.66 6.45 7.11 pH value 28.7 30.6 29.7 29.0 30.0 30.0 28.6 Temperature (oC) 18.0 10.5 22.4 23.5 0.0 0.0 12.2 Salinity (ppt) Average Average Average Average Average Average Average Turbidity (NTU) 10.4 10.4 4.7 4.7 14.4 14.4 8.1 8.1 0.0 0.0 6.8 6.8 11.7 11.7 10.4 4.7 14.4 8.1 0.0 6.8 11.7 Average Average Average Average Average Average Average DO (mg/l) 8.35 8.75 7.88 7.75 6.50 6.50 8.31 5.68 8.35 8.75 7.88 7.75 8.31 5.68 8.35 8.75 7.88 7.75 6.50 8.31 5.68 Average Average Average Average Average Average Average DO Saturation (%) 121 121 121 121 118 118 117 117 85 85 108 108 73 73 121 121 118 117 85 108 73

Name

Signature

Date

2009/5/11

remark or observation:

Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling:	13/5/20	09		Sunny	/																
Monitoring Location		M1			M2			М3			M4			C1			C2			C3	
Time (hhmm)		1455			1445			1450			1510			1410			1425			1435	
Tide Mode		mid-ebb)		mid-ebb			mid-ebb)		mid-ebb)		mid-ebb)		mid-ebb)		mid-ebb)
River Condition		normal			normal			normal			normal			normal			normal			normal	
Water Depth (m)		<1			< 1			< 1			1.3			< 1			< 1			< 1	
pH value		7.87			7.93			7.79			8.17			6.76			6.42			7.13	
Temperature (oC)		30.7			29.7			30.3			29.7			28.9			30.1			31.6	
Salinity (ppt)		18.2			10.6			21.2			28.5			0.3			0.1			12.5	
Turbidity (NTU)	13.8	13.8	Average	7.9	7.9	Average	12.7	12.7	Average	0.1	0.1	Average	2.4	2.4	Average 2.4	307.4	307.4	Average 307.4	13.6	13.6	Average
DO (mg/l)	9.15	9.15	Average 9.15	9.66	9.66	Average 9.66	8.35	8.35	Average 8.35	7.33	7.33	Average 7.33	5.96	5.96	Average 5.96	7.77	7.77	Average	6.78	6.78	Average 6.78
DO Saturation (%)	134	134	Average	135	135	9.00 Average	125	125	Average	113	113	Average	78	78	Average	98	98	Average 98	87	87	Average

Name

Signature

Muddy water is observed at location C2 because the

Prepared By: Jimmy Cheng

13/5/2009

Date

remark or construction works being carried out in the uppper stream of

TTT River the location C2.

Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling:	10,0/20			Sunny																	
Monitoring Location		M1			M2			М3			M4			C1			C2			C3	
Time (hhmm)		1620			1555			1610			1630			1525			1535			1545	
Tide Mode		mid-ebb)		mid-ebb			mid-ebb)		mid-ebb			mid-ebb)		mid-ebb)		mid-ebb)
River Condition		normal			normal			normal			normal			normal			normal			normal	
Water Depth (m)		<1			< 1			< 1			1.4			< 1			< 1			< 1	
pH value		7.95			7.99			8.03			8.21			6.71			6.23			7.14	
Temperature (oC)		29.6			29.2			30.1			29.8			29.0			28.0			30.1	
Salinity (ppt)		17.0			10.8			22.4			25.3			0.1			0.0			13.7	
Turbidity (NTU)	12.9	12.9	Average	6.4	6.4	Average	9.3	9.3	Average	5.6	5.6	Average	1.1	1.1	Average	283.7	283.7	Average	11.8	11.8	Average
			12.9			6.4			9.3			5.6			1.1			283.7			11.8
DO (mg/l)	8.86	8.86	Average	9.30	9.30	Average	8.95	8.95	Average	8.14	8.14	Average	6.12	6.12	Average	7.08	7.08	Average	8.34	8.34	Average
			8.86			9.30			8.95			8.14			6.12			7.08			8.34
DO Saturation (%)	129	129	Average	129	129	Average	131	131	Average	124	124	Average	80	80	Average	91	91	Average	107	107	Average
			129			129			131			124			80			91			107

Name Prepared By: Jimmy Cheng Signature

Date

15/5/2009

Muddy water is observed at location C2 due to the construction works being carried out in the uppper stream of TTT River the location C2.

Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling:	20/5/20	09		Sunny	/																
Monitoring Location		M1			M2			М3			M4			C1			C2			C3	
Time (hhmm)		1045			1050			1055			1035			1105			1115			1130	
Tide Mode		mid-ebb)		mid-ebb			mid-ebb)		mid-ebb			mid-ebb)		mid-ebb)		mid-ebb)
River Condition		normal			normal			normal			normal			normal			normal			normal	
Water Depth (m)		<1			< 1			< 1			1.3			< 1			< 1			< 1	
pH value		7.32			7.47			7.15			7.84			6.74			6.54			7.05	
Temperature (oC)		27.8			26.6			27.8			28.1			28.3			26.5			28.7	
Salinity (ppt)		5.8			0.2			15.9			20.6			0.2			0.1			1.2	
Turbidity (NTU)	7.6	7.6	Average 7.6	8.1	8.1	Average 8.1	13.7	13.7	Average	7.9	7.9	Average	5.0	5.1	Average	14.8	14.8	Average	14.1	14.1	Average
DO (mg/l)	7.82	7.82	Average	9.63	9.63	Average 9.63	6.07	6.07	Average 6.07	6.11	6.11	Average 6.11	5.87	5.87	Average	6.20	6.20	Average 6.20	7.01	7.01	Average
DO Saturation (%)	101	101	Average	120	120	Average	83	83	Average 83	84	84	Average 84	76	76	Average 76	81	81	Average 81	91	91	Average 91

Name

Signature

Construction works being carried out at the upstream of

Prepared By: Jimmy Cheng

Date 20/5/2009

remark or observation: location C2.

Water Quality Monitoring - Summary of On-site measurement results

Date of Sampling:	21/5/20	09		Sunny	/											-					
Monitoring Location		M1			M2			М3			M4			C1			C2			C3	
Time (hhmm)		1045			1050			1055			1110			1125			1135			1145	
Tide Mode		mid-ebb)		mid-ebb)		mid-ebb)		mid-ebb			mid-ebb)		mid-ebb)		mid-ebb)
River Condition		normal			normal			normal			normal			normal			normal			normal	
Water Depth (m)		<1			< 1			< 1			1.3			< 1			< 1			< 1	
pH value		7.06			7.27			7.03			7.71			7.11			6.95			6.89	
Temperature (oC)		28.0			27.9			29.8			28.7			28.6			27.9			28.2	
Salinity (ppt)		0.2			0.4			2.6			10.2			0.4			0.1			0.4	
Turbidity (NTU)	11.6	11.6	Average	54.1	54.1	Average	25.9	25.9	Average	23.4	23.4	Average	6.3	6.3	Average 6.3	227.9	227.9	Average	7.3	7.3	Average
DO (mg/l)	7.09	7.09	Average	8.69	8.69	Average	6.66	6.66	Average	7.14	7.14	Average	7.44	7.44	Average	7.15	7.15	Average	4.41	4.41	Average
DO Saturation (%)	91	91	7.09 Average	109	109	8.69 Average	89	89	6.66 Average	98	98	7.14 Average	98	98	7.44 Average	90	90	7.15 Average	58	58	4.41 Average
			91			109			89			98			98			90			58

Name

Signature

Muddy water is observed at location C2 and M2 due to the

Prepared By: Jimmy Cheng

21/5/2009

Date

remark or observation: construction works being carried out in the upper stream of TTT River the location C2. Heavy rainstorm at early morning.

Water Quality Monitoring - Summary of On-site measurement results

Monitoring Location		M1			M2			М3			M4			C1			C2			C3	
Time (hhmm)		1050			1055			1100			1040			1110			1120			1130	
Tide Mode		mid-ebb	D		mid-ebb			mid-ebb)		mid-ebb)		mid-ebb)		mid-ebb)		mid-ebb)
River Condition		normal			normal			normal													
Water Depth (m)		<1			< 1			< 1			1.2			< 1			< 1			< 1	
pH value		7.21			7.01			7.14			7.84			7.05			6.24			6.81	
Temperature (oC)		27.8			26.9			27.9			27.9			27.5			27.2			29.2	
Salinity (ppt)		6.7			1.2			10.9			15.7			0.4			0.1			1.4	
Turbidity (NTU)	8.6	8.8	Average	8.9	8.9	Average	14.2	14.2	Average	7.1	7.1	Average	4.3	4.4	Average	108.3	108.3	Average	5.8	5.8	Average
			8.7			8.9			14.2			7.1			4.4			108.3			5.8
DO (mg/l)	6.49	6.49	Average	7.89	7.89	Average	6.01	6.01	Average	6.05	6.05	Average	4.44	4.44	Average	7.10	7.10	Average	6.76	6.76	Average
			6.49			7.89			6.01			6.05			4.44			7.10			6.76
DO Saturation (%)	86	86	Average	100	100	Average	81	81	Average	85	85	Average	56	56	Average	90	90	Average	89	89	Average
			86			100			81			85			56			90			89

Name Prepared By: Jimmy Cheng Signature

Date

22/5/2009

Muddy water is observed at location C2 due to the construction works being carried out in the upper stream of

TTT River the location C2

Water Quality Monitoring - Summary of On-site measurement results

Monitoring																				
Location		M1			M2		М3			M4			C1			C2			C3	
Time (hhmm)		1310			1315					1300			1330			1345			1355	
Tide Mode		mid-ebb	D		mid-ebb		mid-ebb			mid-ebb			mid-ebb)		mid-ebb)		mid-ebb)
River Condition		normal			normal		normal			normal			normal			normal			normal	
Water Depth (m)		<1			< 1		< 1			1.5			< 1			< 1			< 1	
pH value		7.06			7.34					7.25			6.77			6.93			6.56	
Temperature (oC)		23.4			22.8					23.9			22.3			23.1			22.1	
Salinity (ppt)		0.1			0.0					1.6			0.0			0.0			0.0	
Turbidity (NTU)	14.7	14.7	Average	16.7	16.7	Average		Average	18.7	18.7	Average	7.3	7.3	Average	59.7	59.7	Average	8.7	8.7	Average
			14.7			16.7		#DIV/0!			18.7			7.3			59.7			8.7
DO (mg/l)	7.88	7.88	Average	8.37	8.37	Average		Average	7.32	7.32	Average	7.19	7.19	Average	8.96	8.96	Average	6.78	6.78	Average
			7.88			8.37		#DIV/0!			7.32			7.19			8.96			6.78
DO Saturation (%)	91	91	Average	99	99	Average		Average	87	87	Average	85	85	Average	109	109	Average	79	79	Average
			91			99		#DIV/0!			87			85			109			79

Name

Signature

Location M3 have not been monitored due to safety issue

Prepared By: Jimmy Cheng

25/5/2009

Date

remark or observation: of the access.

Water Quality Monitoring - Summary of On-site measurement results

Monitoring				· ·																	
Location		M1			M2			М3			M4			C1			C2			C3	
Time (hhmm)		1410			1415			1425			1400			1435			1440			1450	
Tide Mode		mid-ebt)		mid-ebb			mid-ebb)		mid-ebb	1		mid-ebb	1		mid-ebb)		mid-ebb)
River Condition		normal			normal			normal													
Water Depth (m)		<1			< 1			< 1			1.3			< 1			< 1			< 1	
pH value		7.24			7.07			7.06			7.12			7.33			7.01			6.85	
Temperature (oC)		27.1			26.8			27.1			27.7			27.1			27.4			26.7	
Salinity (ppt)		7.1			2.3			9.5			6.3			0.0			0.0			3.7	
Turbidity (NTU)	2.7	2.7	Average	30.9	30.9	Average	15.3	15.3	Average	56.3	56.3	Average	1.9	1.9	Average	385.7	385.7	Average	6.9	6.9	Average
			2.7			30.9			15.3			56.3			1.9			385.7			6.9
DO (mg/l)	7.66	7.66	Average	7.78	7.78	Average	5.97	5.97	Average	6.02	6.02	Average	7.34	7.34	Average	7.51	7.51	Average	5.83	5.83	Average
			7.66			7.78			5.97			6.02			7.34			7.51			5.83
DO Saturation (%)	101	101	Average	99	99	Average	76	76	Average	80	80	Average	95	95	Average	97	97	Average	70	70	Average
			101			99			76			80			95			97			70

Name

Signature

Muddy water is observed at location C2 and M2 due to the

Prepared By: Jimmy Cheng

Date 27/5/2009

remark or construction works being carried out in the upper stream of remark or TTT River the location C2

Water Quality Monitoring - Summary of On-site measurement results

Monitoring Location		M1			М2			М3			M4			C1			C2			C3	
Time (hhmm)		1615			1620			1625			1605			1530			1540			1550	
Tide Mode		mid-ebb)		mid-ebb	1		mid-ebb)		mid-ebb	,		mid-ebb)		mid-ebb)		mid-ebb)
River Condition		normal			normal			normal													
Water Depth (m)		<1			< 1			< 1			1.5			< 1			< 1			< 1	
pH value		7.07			7.07			6.86			6.45			7.11			6.28			6.36	
Temperature (oC)		24.0			23.6			24.2			23.3			22.6			23.0			23.1	
Salinity (ppt)		10.8			2.6			10.9			6.1			0.0			0.0			6.8	
Turbidity (NTU)	5.7	5.7	Average	5.1	5.1	Average	5.9	5.9	Average	7.1	7.1	Average	0.5	0.5	Average	297.1	297.1	Average	4.7	4.7	Average
			5.7			5.1			5.9			7.1			0.5			297.1			4.7
DO (mg/l)	6.52	6.52	Average	7.42	7.42	Average	6.31	6.31	Average	6.92	6.92	Average	8.03	8.03	Average	7.61	7.61	Average	6.21	6.21	Average
			6.52			7.42			6.31			6.92			8.03			7.61			6.21
DO Saturation (%)	83	83	Average	88	88	Average	71	71	Average	84	84	Average	93	93	Average	89	89	Average	69	69	Average
			83			88			71			84			93			89			69

Name Prepared By: Jimmy Cheng Signature

Date

29/5/2009

Muddy water is observed at location C2 due to the construction works being carried out in the upper stream of

TTT River the location C2

Appendix F2

Water Quality Monitoring Lab report



							Page 1 of 1
Report No.	:	GCC090500024			Date of Issue	:	11-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial C	entre Building, 20	Lee Chung Street, Chaiwa	n, HK.		
		DSD Contract No. DC/20	06/11 - Drainage li	mprovement in Southern L	antau & Constructi	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Stree	et, Hung Hom, Kow	/loon	Date Started	:	05-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	06-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descript	ion	T	est Metho	bd	Units				Quality	Control Resu	lts		
						Methoo Blank	-	QC 500 m	g/L C	1C Duplicate	RP	D%	Spike 25 mg/L
Suspended Solids	s (SS)	АРНА	20ed 25	540 D	mg/L	< 1.0		505		503	0	.4	24.0
			Acce	ptance	Criteria	<2.5 m	g/L	475 ≤ C	ontrol I	.imit ≤ 514	≤ 1	±5%	21 ≤ R ≤ 29
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	Duplicate	СЗ	C3 Duplic	ate		
TEST RESULTS		pling /Time	04 Мау	2009	/ 11:20	04 May	2009	9 / 11:30	04 M	ay 2009 / 11:	40		
	LOD	Units											
Suspended Solids (SS)	1	mg/L	2.1		2.5	14.5		14.3	10.3	10.3			
	Sam	ple ID	M1	M1 C	uplicate	M2	M2	Duplicate	M3	M3 Duplic	ate	M4	M4 Duplicate
TEST RESULTS		ipling /Time	04 May	2009	/ 10:45	04 May	200	9 / 10:50	04 N	lay 2009 / 11	:00	04 M	ay 2009 / 11:10
	LOD	Units											
Suspended Solids (SS)	1	mg/L	7.7		3.1	2.9		2.5	12.0	12.1	:	5.9	5.7

* : Information provided by client

			End		
Tested By	:	K.L. Fong	Approved Signatory	:	and
			Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist



							Page 1 of 1
Report No.	:	GCC090500032			Date of Issue	:	11-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Co	entre Building, 20	Lee Chung Street, Chaiwa	n, HK.		
		DSD Contract No. DC/200	06/11 - Drainage I	mprovement in Southern L	antau & Construct	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1	18-71-174 16-71 V-VIII-1741 -			
Test Location	:	G/F, 20 Pak Kung Stree	t, Hung Hom, Kow	/loon	Date Started	:	06-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	07-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descript	tion	T	est Metho	bd	Units				Qua	lity (Control Resu	llts		
						Methoo Blank		QC 500 m	g/L	۵۵	C Duplicate	R	PD%	Spike 25 mg/L
Suspended Solid	s (SS)	АРНА	20ed 25	540 D	mg/L	< 1.0	•	499			483		3.3	27.3
			Acce	ptance	Criteria	<2.5 m	g/L	475 ≤ C	ontro	ol Lir	mit ≤ 514	≤	±5%	21 ≤ R ≤ 29
	Sam	ple ID	C1	C1 D	uplicate	C2	cz	2 Duplicate	с	3	C3 Duplic	ate		
TEST RESULTS		pling /Time	06 May 2009 / 11:50			06 May	200	09 / 12:00	06	May	y 2009 / 12:	25		<u>.</u>
	LOD	Units												
Suspended Solids (SS)	1	mg/L	1.7	2	2.1	8.9		8.9	9.6		10.0			
	Sam	ple ID	M1	M1 D	uplicate	M2	M2	2 Duplicate	м	13	M3 Duplic	ate	M4	M4 Duplicate
TEST RESULTS		npling /Time	06 May	2009	/ 11:15	06 May	200	09 / 11:20	06	May	y 2009 / 11:	:30	06 Ma	ay 2009 / 10:58
	LOD	Units											-	
Suspended Solids (SS)	<u>1</u>	mg/L	6.1		5.6	2.3	. <u>.</u>	2.4	12		12.3		6.0	5.9

* : Information provided by client

Note : This laboratory has no responsibility on sampling and all the test results relate only to the sample tested as received.

Remarks : Location M1 & WE3 and Location M3 & WE4 are the same location.

----- End -----

Tested By	: _	K.L. Fong	Approved Signatory	:	Jasti -
			Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist

Form No. : WQM/R1 (01-09-2008)



							Page I of I
Report No.	:	GCC090500058			Date of Issue	:	11-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial C	entre Building, 20	Lee Chung Street, Chaiwar	n, HK.		
		DSD Contract No. DC/20	06/11 - Drainage I	mprovement in Southern La	antau & Constructi	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Stree	t, Hung Hom, Kow	vloon.	Date Started	:	08-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	09-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descrip	tion	т	est Meth	əd	Units				Qual	ity	Control Resu	lts		
						Method Blank		QC 500 m	g/L	۵۵	C Duplicate	R	PD%	Spike 25 mg/L
Suspended Solid	s (SS)	APHA	1 20ed 21	540 D	mg/L	< 1.0		484			486	-	0.4	26.4
			Acce	ptance	Criteria	<2.5 mg	/L	475 ≤ C	ontro	l Lir	mit ≤ 514	≤	±5%	$21 \le R \le 29$
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	Duplicate	С	3	C3 Duplica	ate		
TEST RESULTS		npling e/Time	08 May	2009	/ 12:20	08 May 2	98 May 2009 / 12:30			May	y 2009 / 12:	40		<u> </u>
	LOD	Units												
Suspended Solids (SS)	1	mg/L	2.5	2	2.5	24.0		23.6	13.	6	13.1			
	Sam	ple ID	M1	M1 D	uplicate	M2	M2	Duplicate	M	3	M3 Duplica	ate	M4	M4 Duplicate
TEST RESULTS		npling /Time	08 May	2009	/ 11:50	08 May 2	2009	∂/11:55	08	Vlay	/ 2009 / 12:	05	08 Ma	y 2009 / 11:40
	LOD	Units					•							·
Suspended Solids (SS)	1	mg/L	10.0	F	.9	3.9	1977 - 1	3.7	8.7				6.4	5.9

* : Information provided by client

			End		
Tested By	:	K.L. Fong	Approved Signatory	:	L.J.K
			Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist



							Page 1 of 1
Report No.	:	GCC090500066			Date of Issue	: 2	1-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	: _0	8-09-2008
Client Address*	:	8/F, Chaiwan Industrial Co	entre Building, 20	Lee Chung Street, Chaiwa	in, HK.		
		DSD Contract No. DC/200	06/11 - Drainage Ir	mprovement in Southern L	antau & Constructi	on d	f
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Stree	t, Hung Hom, Kow	loon.	Date Started	: _1	2-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	: _1	3-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	: _	CH 08258

Analysis Descrip	Analysis Description T				Units				Quali	ity (Control Resul	ts		
						Method Blank	1	QC 500 m	g/L	oc	Duplicate	RF	PD%	Spike 25 mg/L
Suspended Solid	s (SS)	АРНА	20ed 25	540 D	mg/L	< 1.0		492			485	1	.4	26.7
		:	Acce	ptance	Criteria	<2.5 mg	j/L	475 ≤ Co	ontro	l Lin	nit ≤ 514	≤ :	±5%	21 ≤ R ≤ 29
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	Duplicate	C	3	C3 Duplica	te		
TEST RESULTS		ipling /Time	11 May 2009 / 13:05		11 May :	200	9 / 13:20	11	May	/ 2009 / 13:	30	******		
	LOD	Units			_			41.0 · · · · ·						
Suspended Solids (SS)	1	mg/L	1.9		1.9	2.0		2.2	6.9	Ð	7.2			
	Sam	ple ID	M1	M1 D	uplicate	M2	М2	Duplicate	M	3	M3 Duplica	ite	M4	M4 Duplicate
TEST RESULTS		npling /Time	11 May	2009	/ 14:00	11 May :	200	9 / 13:50	11	May	/ 2009 / 13:/	40	11 Ma	y 2009 / 14:10
	LOD	Units												
Suspended Solids (SS)	1	mg/L	10.5	1	0.9	2.9	· · · · ·	3.0	8.9		9.4			11.6

* : Information provided by client

			End		
Tested By	:	K.L. Fong	Approved Signatory	:	Lask
			Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist



							Page I of 1
Report No.	:	GCC090500074			Date of Issue	:	21-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	entre Building, 20	Lee Chung Street, Chaiwar	n, HK.		
		DSD Contract No. DC/200	06/11 - Drainage I	mprovement in Southern La	antau & Construct	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Street	t, Hung Hom, Kow	loon.	Date Started	:	13-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	14-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	;	CH 08258

Analysis Descript	tion	Те	est Metho	bd	Units				Qualit	y C	Control Resu	ilts		
						Method Blank	1	QC 500 m	g/L	QC	Duplicate	R	PD%	Spike 25 mg/L
Suspended Solid	s (SS)	АРНА	20ed 28	540 D	mg/L	< 1.0		484			490	-	1.2	22.9
		I	Acce	eptance	Criteria	<2.5 mg	9/L	475 ≤ C	ontrol	Lin	nit ≤ 514	≤	±5%	21 ≤ R ≤ 29
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	2 Duplicate	C3		C3 Duplica	ate		
TEST RESULTS		npling /Time	13 May 2009 / 14:10			13 May :	200	9 / 14:25	13 N	/lay	2009 / 14:	35		_!
	LOD	Units		-	~									
Suspended Solids (SS)	1	mg/L	5.2	Ę	5.5	187.6		185.6	8.1		7.9			
	Sam	ple ID	M1	M1 D	uplicate	M2	M2	2 Duplicate	МЗ		M3 Duplic	ate	M4	M4 Duplicate
TEST RESULTS		npling /Time	13 May	2009	/ 14:55	13 May :	200)9 / 14:45	13 N	/lay	2009 / 14:	50	13 Ma	ay 2009 / 15:10
	LOD	Units												
Suspended Solids (SS)	1	mg/L	11.7	1	1.3	8.8		9.2	11.3		11.2		6.0	5.9

* : Information provided by client

			End		
Tested By	:	K.L. Fong	Approved Signatory	:	/ JA
			Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist

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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER AND WASTEWATER

							Page 1 of 1
Report No.	:	GCC090500082			Date of Issue	;	21-05-2009
Client*	:	Environmental Pioneers & So	olutions Limited		P.O. Received	:	08-09-2008
Client Address*	;	8/F, Chaiwan Industrial Cent	re Building, 20 I	_ee Chung Street, Chaiwar	а, НК.		
		DSD Contract No. DC/2006/	/11 - Drainage Ir	nprovement in Southern La	intau & Constructi	on	of
Project*	:	Mui Wo Village Sewerage Ph	nase 1				
Test Location	:	G/F, 20 Pak Kung Street, H	Hung Hom, Kow	loon.	Date Started	:	16-05-2009
W.O. No.*	:	S	Sample Type*	: River Water	Date Completed	:	16-05-2009
GCE Serial No.	:	WQM052009 0	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descrip	tion	т	est Meth	od	Units									
wa _{kh1}						Metho Blank	-	QC 500 m	ıg/L	QC Duplicate	R	PD%	Spike 25 mg/L	
Suspended Solid	s (SS)	APH4	A 20ed 28	540 D	mg/L	< 1.0 50		502	510		-	1.6	24.2	
			Acce	eptance	Criteria	<2.5 m	g/L	475 ≤ C	ontrol	Limit ≤ 514	≤	±5%	21 ≤ R ≤ 29	
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	2 Duplicate	СЗ	C3 Duplic	ate			
TEST RESULTS		npling :/Time	15 May 2009 / 15:25			15 May	200	9 / 15:35	15 N	lay 2009 / 15	:45			
	LOD	Units												
Suspended Solids (SS)	1	mg/L	2.3	2	2.8	170.4		172.0	8.9	9.5				
	Sam	ple ID	M1	M1 D	uplicate	M2	м2	2 Duplicate	МЗ	M3 Duplic	ate	M4	M4 Duplicate	
TEST RESULTS		ipling /Time	15 May	2009 ,	/ 16:20	15 May	200	9 / 15:55	15 N	lay 2009 / 16	:10	15 Ma	ay 2009 / 16:30	
	LOD	Units												
Suspended Solids (SS)	1	mg/L	11.9	12	2.1	8.6		9.0	12.2		N.C	7.6	7.8	

* : Information provided by client

			End			
Tested By		K.L. Fong	Approved Signatory	:	Leng It	
			Name	:	GU CHIN	·
Checked By	:	GU CHIN	Post	:	Chemist	



							Page 1 of 1
Report No.	:	GCC090500090			Date of Issue	:	26-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial C	entre Building, 20	Lee Chung Street, Chaiwa	п, НК.		
		DSD Contract No. DC/20	06/11 - Drainage li	mprovement in Southern La	antau & Constructi	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Stree	t, Hung Hom, Kow	loon.	Date Started	:	21-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	21-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descript	ion	Т	est Metho	d	Units		Quality Control Results									
						Methoo Blank	-	ΩC 500 m	g/L (C Duplicate	R	PD%	Spike 25 mg/L			
Suspended Solids	s (SS)	APHA	20ed 25	i40 D	mg/L	< 1.0	-	494		483	2.3		27.4			
			Acce	ptance	Criteria	<2.5 mg	g/L	475 ≤ C	ontrol	Limit ≤ 514	≤	±5%	21 ≤ R ≤ 29			
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	2 Duplicate	C3	C3 Duplic	ate					
TEST RESULTS		pling /Time	20 May 2009 / 11:05			20 May	200	09 / 11:15	20 N	lay 2009 / 11	:30	-				
	LOD	Units														
Suspended Solids (SS)	1	mg/L	3.2	3	3.2	6.0		6.4	12.8	12.9						
	Sam	ple ID	M1	M1 D	uplicate	M2	M2 Duplicate		МЗ	M3 M3 Duplic		M4	M4 Duplicate			
TEST RESULTS		pling /Time	20 May	2009	/ 10:45	20 May	200	09 / 10:50	20 N	lay 2009 / 10	:55	20 Ma	y 2009 / 10:35			
	LOD	Units										-				
Suspended Solids (SS)	1	mg/L	9.2	9).8	6.0		5.7	8.9	8.7	n	9.2	9.1			

* : Information provided by client

			End		
Tested By		K.L. Fong	Approved Signatory	:	
	artislas (1, 10, 1	A 1999 A Martinet Radie Lander Annual Phone and a subdem a descend of the device and the set of the set of the	Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist



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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER AND WASTEWATER

							Page 1 of 1
Report No.	:	GCC090500105			Date of Issue	:	26-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Co	entre Building, 20	Lee Chung Street, Chaiwa	n, HK		
		DSD Contract No. DC/200	06/11 - Drainage li	mprovement in Southern L	antau & Construct	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Stree	t, Hung Hom, Kow	/loon	Date Started	:	21-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	23-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descript	ion	Те	st Metho	d	Units				Quality	/ Control Res	ults		
						Methoo Blank		0C 500 m	g/L (1C Duplicate	R	PD%	Spike 25 mg/L
Suspended Solids	(SS)	APHA	20ed 25	40 D	mg/L	< 1.0		510		504		1.2	23.9
		··	Acce	ptance	Criteria	<2.5 mg	g/L	475 ≤ C	ontrol	Limit ≤ 514	≤	±5%	21 ≤ R ≤ 29
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	Duplicate	СЗ	C3 Dupli	cate		
TEST RESULTS		ipling /Time	21 May	21 May 2009 / 11:25			200)9 / 11:35	21 N	lay 2009 / 1	1:45		
	LOD	Units	nits										
Suspended Solids (SS)	1	mg/L	2.4		2.3	118.4		119.6	6.5	6.1			
	Sam	ple ID	M1	M1 Duplicate		M2	м	2 Duplicate	M3	M3 Dupl	icate	M4	M4 Duplicate
TEST RESULTS		npling e/Time	21 May	2009	/ 10:45	21 May	200	09 / 10:50	21 N	1ay 2009 / 1	0:55	21 M	ay 2009 / 11:10
	LOD	Units	1										
Suspended Solids (SS)	1	mg/L	8.3		8.4	10.2		10.1	20.0			14.8	

* : Information provided by client

			End		
Tested By	:	K.L. Fong	Approved Signatory	:	Last
			Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist



							Page 1 of 1
Report No.	:	GCC090500113			Date of Issue	:	26-05-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	entre Building, 20	Lee Chung Street, Chaiwar	n, HK.		
		DSD Contract No. DC/200)6/11 - Drainage Ir	mprovement in Southern La	antau & Constructi	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Stree	t, Hung Hom, Kow	/loon	Date Started	:	23-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	25-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	СН 08258

Analysis Descript	ion	Te	st Metho	d	Units	Quality Control Results										
						Methoo Blank		QC 500 m	g/L	ΩC	Duplicate	RI	PD%	Spike 25 mg/L		
Suspended Solids	s (SS)	АРНА	20ed 25	40 D	mg/L	< 1.0		486		488		-0.4		27.5		
			Acce	ptance	Criteria	<2.5 m	g/L	475 ≤ C	ontrol	l Lin	nit ≤ 514	≤	±5%	21 ≤ R ≤ 29		
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	2 Duplicate	CS	3	C3 Duplica	ate				
TEST RESULTS		ipling /Time	22 May 2009 / 11:10			22 May	200	09 / 11:20	22	May	2009 / 11:	30				
	LOD	Units														
Suspended Solids (SS)	1	mg/L	3.4	:	3.8	56.4		54.8	7.1	1	6.9					
	Sample ID M1 M1 Duplicate M2 M2 Duplic		2 Duplicate	M	3	M3 Duplic	ate	M4	M4 Duplicate							
TEST RESULTS		npling e/Time	22 May	2009	/ 10:50	22 May	20(09 / 10:55	22	Мау	/ 2009 / 11	:00	22 Ma	ay 2009 / 10:4(
	LOD	Units														
Suspended Solids (SS)	1	mg/L	7.5	ļ	7.6	7.2		7.4	11.		11.1	ta-artr	7.0	7.3		

* : Information provided by client

			End		
Tested By	:	K.L. Fong	Approved Signatory	:	Juli:
			Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist



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TEST REPORT ON ENVIRONMENTAL ANALYSIS OF WATER AND WASTEWATER

							Page 1 of 1
Report No.	:	GCC090500472			Date of Issue	:	01-06-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial C	entre Building, 20	Lee Chung Street, Chaiw	/an, HK		
		DSD Contract No. DC/20	06/11 - Drainage li	mprovement in Southern	Lantau & Construct	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1				
Test Location	:	G/F, 20 Pak Kung Stree	et, Hung Hom, Kow	/Іооп.	Date Started	:	26-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	27-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	СН 08258

Analysis Descript	ion	Те	st Metho	d	Units				Qualit	y Control Resu	lts		
						Method Blank	C	2C 500 mg	g/L	QC Duplicate	RF	PD%	Spike 25 mg/L
Suspended Solids	; (SS)	АРНА	20ed 25	40 D	mg/L	< 1.0		502		498	c).8	24.5
			Acce	ptance	Criteria	<2.5 mg/	/L	475 ≤ Co	ontrol	Limit ≤ 514	≤ :	±5%	21 ≤ R ≤ 29
	Sam	ole ID	C1	C1 D	uplicate	C2	C2 I	Duplicate	C3	C3 Duplic	ate		
TEST RESULTS		pling /Time	25 May	2009	/ 13:30	25 May 2	2005) / 13:45	25 N	/lay 2009 / 13	:55		
	LOD	Units											
Suspended Solids (SS)	1	mg/L	8.7	- No.1	8.5	31.7		32.5	10.0	9.9			
	Sam	ple ID	M1	M1 C	uplicate	M2	M2	Duplicate	МЗ	M3 Duplic	ate	M4	M4 Duplicat
TEST RESULTS		ipling /Time	25 May	2009	/ 13:10	25 May 2	2009	9 / 13:15		· · · · ·		25 M	ay 2009 / 13:0
	LOD	Units											
Suspended Solids (SS)	1	mg/L	7.6	1	8.1	8.3		8.4	5.54 7 V			11.6	

* : Information provided by client

Remarks :			r			
			End			
Tested By	:	K.L. Fong	Approved Signatory	:		
			Name	:	GU CHIN	
Checked By	:	GU CHIN	Post	:	Chemist	
•	-					



							Page 1 of 1
Report No.	:	GCC090500480			Date of Issue	:	01-06-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial Ce	entre Building, 20	Lee Chung Street, Chaiwa	n, HK.		
		DSD Contract No. DC/200)6/11 - Drainage li	mprovement in Southern L	antau & Construct	ion	of
Project*	:	Mui Wo Village Sewerage	Phase 1	~///~~/			
Test Location	:	G/F, 20 Pak Kung Stree	t, Hung Hom, Kow	/loon.	Date Started	:	27-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	:	29-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descript	tion	Te	est Metho	bd	Units				Quality	Control Resu	ilts		
						Methoo Blank	-	QC 500 m	g/L C	C Duplicate	R	PD%	Spike 25 mg/L
Suspended Solid	s (SS)	АРНА	20ed 25	540 D	mg/L	< 1.0)	498		494	(0.8	24.0
			Acce	ptance	Criteria	<2.5 m	g/L	475 ≤ C	ontrol L	.imit ≤ 514	≤	±5%	21 ≤ R ≤ 29
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	2 Duplicate	СЗ	C3 Duplic	ate		
TEST RESULTS		pling /Time	27 May	2009	/ 14:35	27 May	200	09 / 14:40	0 27 May 2009 / 14:5		:50		
	LOD	Units											
Suspended Solids (SS)	1	mg/L	< 1.0	<	1.0	152.4		149.2	4.5	4.2			
	Sam	ple ID	M1	M1 D	uplicate	M2	M	2 Duplicate	мз	M3 Duplic	ate	M4	M4 Duplicate
TEST RESULTS	SULTS Sampling Date/Time 27 May 2009 / 14:10 27 May 200		09 / 14:15	27 M	ay 2009 / 14	:25	27 Ma	ay 2009 / 14:00					
	LOD	Units											
Suspended Solids (SS)		mg/L	4.3	1	3.9	17.5		17.1	12.3	12.0		32.8	32.4

* : Information provided by client

			End		
Tested By	:	K.L. Fong	Approved Signatory	:	/and/s
		AND	Name	:	GU CHIN
Checked By	:	GU CHIN	Post	:	Chemist



							Page 1 of 1
Report No.	:	GCC090500498			Date of Issue	:	01-06-2009
Client*	:	Environmental Pioneers &	Solutions Limited		P.O. Received	:	08-09-2008
Client Address*	:	8/F, Chaiwan Industrial C	entre Building, 20	Lee Chung Street, Chaiwa	n, HK.		
		DSD Contract No. DC/20	06/11 - Drainage li	mprovement in Southern La	antau & Constructi	ion	of
Project*	:	Mui Wo Village Sewerage	e Phase 1	- LPOP PAIL-			
Test Location	:	G/F, 20 Pak Kung Stree	et, Hung Hom, Kow	/loon.	Date Started	:	29-05-2009
W.O. No.*	:		Sample Type*	: River Water	Date Completed	;	30-05-2009
GCE Serial No.	:	WQM052009	GCE Reg. No.	: GCE 081096	Test Unit No.	:	CH 08258

Analysis Descrip	tion	т	est Metho	bd	Units				Quali	ty (Control Resu	lts		
						Methoo Blank		QC 500 m	g/L	00	C Duplicate	R	PD%	Spike 25 mg/L
Suspended Solid	s (SS)	АРНА	4 20ed 25	540 D	mg/L	< 1.0	I	512			500	1	2.4	27.6
			Acce	ptance	Criteria	<2.5 mį	g/L	475 ≤ C	ontrol	Lir	nit ≤ 514	≤	±5%	21 ≤ R ≤ 29
	Sam	ple ID	C1	C1 D	uplicate	C2	C2	2 Duplicate	CS	3	C3 Duplica	ate		
TEST RESULTS		npling /Time	29 May	2009	/ 15:30	29 May 2009 / 15:40		29	Viay	/ 2009 / 15:	50			
	LOD	Units												
Suspended Solids (SS)	1	mg/L	1.4		1.7	133.6		134.4	3.3	ł	3.5			
• • •	Sam	ple ID	M1	M1 D	uplicate	M2	M2	2 Duplicate	M	3	M3 Duplica	ate	M4	M4 Duplicate
TEST RESULTS		npling /Time	29 May	2009	/ 16:15	29 May	200)9 / 16:20	29	Иаγ	/ 2009 / 16:	25	29 Ma	ıγ 2009 / 16:05
	LOD	Units												
Suspended Solids (SS)	1	mg/L	5.9		i.7	3.5		3.1	5.4		5.7	· •. •.	4.7	4.5

* : Information provided by client

			End			
Tested By	:	K.L. Fong	Approved Signatory	:	Jul .	
			Name	:	GU CHIN	
Checked By	:	GU CHIN	Post	:	Chemist	

Appendix G Monitoring Schedule for May 2009

DC/2006/11 - DRAINAGE IMPROVEMENT IN SOUTHERN LANTAU

Master Schedule of EM&A works in May 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					5/1	5/2
5/3	5/4	5/5	5/6	5/7	5/8	5/9
	WQM at:		WQM & EWQM at:		WQM at:	
	10:18		10:47		11:55	
				Ecological Survey	Ecological Survey	
	Noise monitoring				Site inspection	
5/10	5/11	5/12	5/13	5/14	5/15	5/16
	WQM at:		WQM at:		WQM at:	
	13:39		14:49		16:08	
					Ecological Survey	
	Noise monitoring				Site inspection	
5/17	5/18	5/19			5/22	5/23
			WQM at:	WQM at:	WQM at:	
			10:11	10:18	10:49	
			Noise monitoring		Site inspection	
5/24 & 5/31	5/25	5/26	5/27	5/28	5/29	5/30
	WQM at:		WQM at:		WQM at:	
	12:49		13:42		16:26	
					Noise monitoring	
					Site inspection	

Noise Monitoring Locations: Total 4 Locations as N1, N2, N3 and N4

Water Quality Monitoring (WQM) Locations: Total 7 Locations as M1, M2, M3, M4, C1, C2 and C3

Ecological Water Quality Monitoring (EWQM) Locations: Total 6 Locations as WE1, WE2, WE3, WE4, WE5 and WE6

Environmental	Protection / Mitigation Measures	Implementation	Follow-up
Aspect		status	action
Air Quality	Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved road, with complete coverage.	Deficiencies found on 08 May 09	- Ongoing
	Use of frequent watering for particular dusty static construction areas and areas close to ASRs.	Implemented	-
	Tarpaulin covering of all dusty vehicle loads transported to and from and between site location;	•	-
	Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.	Deficiencies found on 21 May 09	- To be follow up
	Routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.	Implemented	-
Noise	Use of quiet powered mechanical equipment (PME)	Implemented	-
	Adoption of movable noise barriers and temporary noise barriers	Not applicable at this stage	-
	Application of good site practices mentioned in EM&A manual Clause 3.8.1	-	-
Water Quality	Before commencing any site formation works, all sewer and drainage connections should be sealed to prevent debris, soil, sand etc. from entering public sewers/drains.	Implemented	-
	Temporary ditches should be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond. No site run-off should enter the freshwater marshes at Luk Tei Tong.	Not applicable	-
	Sand/ silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove sand/ silt particles from runoff to meet the requirements of the Technical Memorandum standard under the Water Pollution Control Ordinance.	•	-
	Water pumped out from foundation excavations should be discharged into silt removal facilities.	Implemented	-
	During rainstorms, exposed slope surface should be covered by a tarpaulin or the means.	Implemented	-
	Exposed soil areas should be minimized to reduce potential for increased siltation and contamination of runoff.	Implemented	-
	Exposed soil surfaces should be protected by paving or fill material as soon as possible to reduce potential of soil erosion.	Implemented	-
	Open stockpiles of construction materials or construction wastes on-site of more than 50m ³ should be covered with tarpaulin or similar fabric during rainstorms.	Implemented	-
	Oils and fuels should only be used and stored on designated areas which have pollution prevention facilities.	Deficiencies found on 15 May 09	Follow up actions has been taken and settled on 21 May
	Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site.	Not applicable	-
	The excavation and widening works for the drainage improvements to the Pak Ngan Heung River, Tai Tei Tong River, Luk Tei Tong River	Implemented	-
	and Luk Tei Tong By-pass Channel should be carried out in sections (approximately 300 –400 m in length) and in dry condition.		

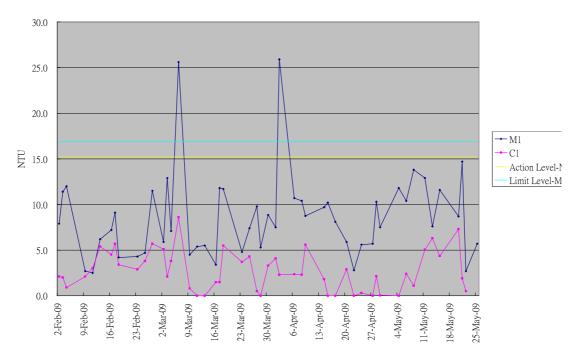
Appendix H Implementation Status of environmental protection / mitigation measures

Environmental	Protection / Mitigation Measures	Implementation	Follow-up
Aspect		status	action
	Maintenance desilitng of the re-profiled river channels of the Pak Ngan Heung River, Tai Tei Tong River, Luk Tei tong River and Luk Tei Tong By-pass Channel, temporary barrier walls should be used to provide a dry zone for desilitng work.	Not applicable at this stage	-
Ecology	Existing natural habitats should be retained as far as practicable	Implemented	-
	Boundary of working areas should be identified to prevent loss of vegetation	Implemented	
	All existing trees / plant should be well protected within the site or transplanted properly	Implemented	-
	Turf removal from the Luk Tei Tong marsh due to the construction of Luk Tei Tong Bypass Channel shall be minimized	Implemented	
	Turf from the Luk Tei Tong marsh shall be properly removed, stored, maintained and reused for lining the riverbed of the Luk Tei Tong Bypass Channel	Implemented	
Chemical and	Chemical wastes should be properly stored in a proper store as per statutory requirements (i.e. on a hard standing, within an enclosed and locked area)	Implemented	-
Solid Waste	Chemical waste stores should be provided with fire precaution facilities (i.e. fire extinguisher, no smoking warning etc).	Implemented	-
	Chemical wastes should be properly stored in corrosion resistant containers placed inside the store and labelled with warning signs in English and Chinese.	Implemented	-
	Chemical wastes should be disposed of by licensed chemical waste collector with supporting delivery records.	Implemented	-
	All containers for fuel, diesel and fluid chemical (in use) and oil filled stationery plants located with proper drip pans.	Deficiencies found on 15 May 09	- To be follow up
	Construction wastes should be managed and disposed to the designated public fill and landfill areas in acceptable manner.	Deficiencies found on 15 May 09	- To be follow up
	All waste disposals managed in a proper manner i.e. trip ticket system implementation.	Implemented	-

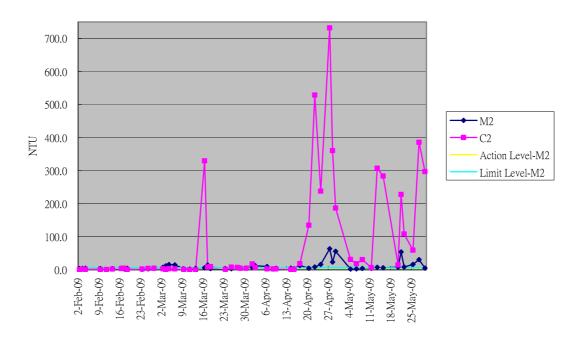
Appendix I

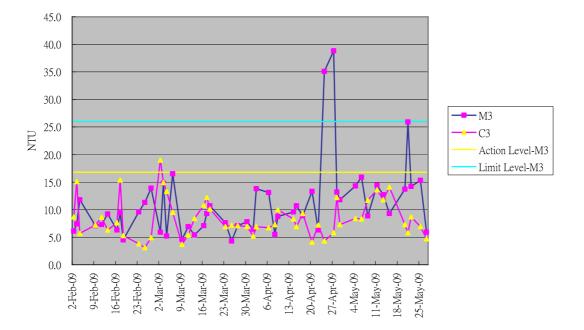
Graphical plot of water quality monitoring results (SS, DO, turbidity)

Graphical Plot of Turbidity Trend M1&C1 (Feb - May 09)



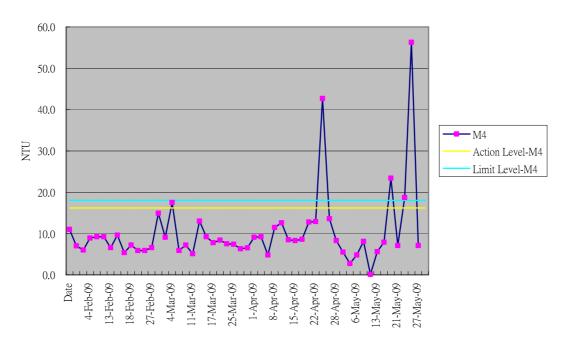
Graphical Plot of Turbidity Trend M2&C2 (Feb - May 09)

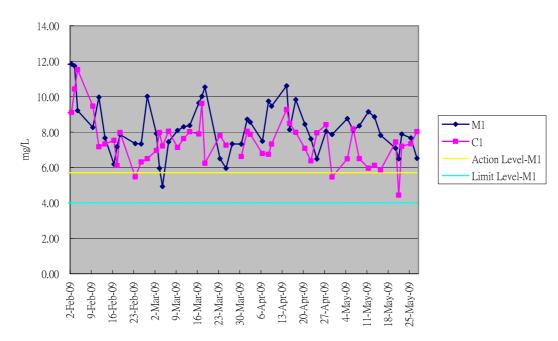




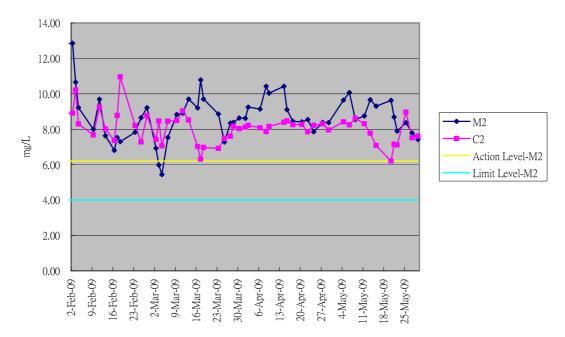
Graphical Plot of Turbidity Trend M3&C3 (Feb - May 09)

Graphical Plot of Turbidity Trend M4 (Feb - May 09)

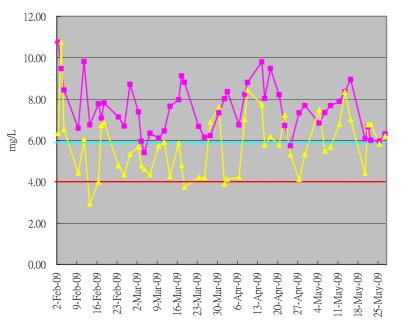




Graphical Plot of Dissolved Oxygen Trend M2&C2 (Feb - May 09)

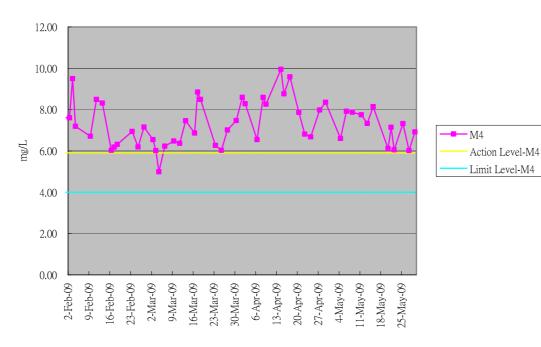


Graphical Plot of Dissolved Oxygen Trend M1&C1 (Feb - May 09)

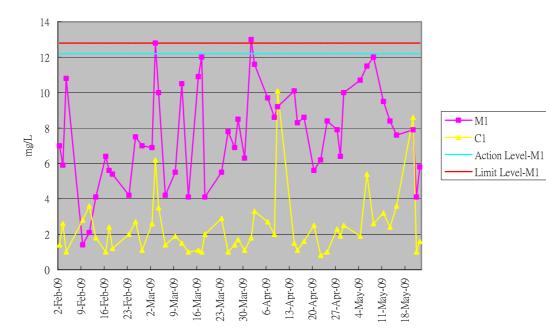


M3 C3 Action Level-M3 Limit Level-M3

Graphical Plot of Dissolved Oxygen Trend M4 (Feb - May 09)

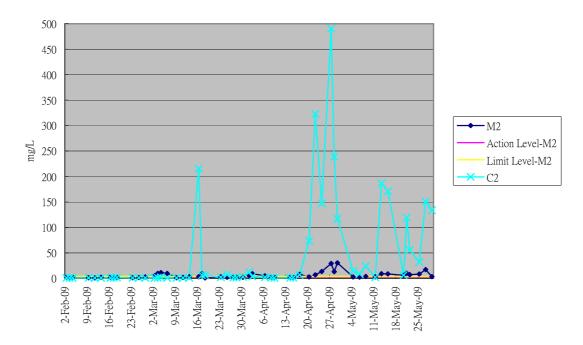


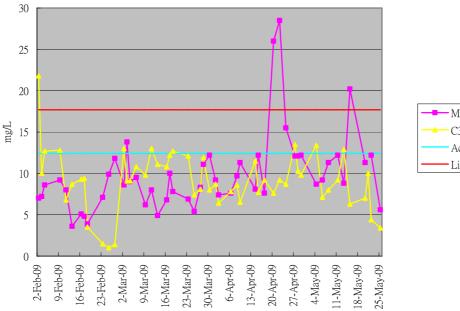
Graphical Plot of Dissolved Oxygen Trend M3&C3 (Feb - May 09)



Graphical Plot of Suspended Soild M1&C1 (Feb - May 09)

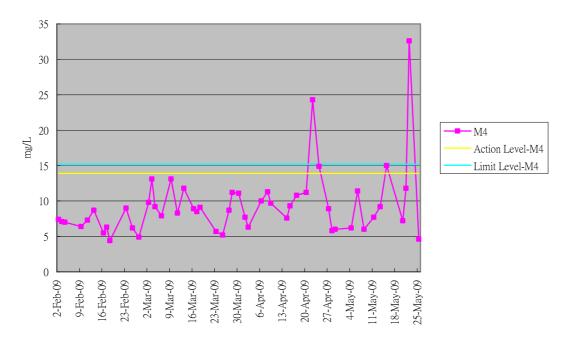
Graphical Plot of Suspended Soild M2&C2 (Feb - May 09)





M3 C3 Action Level-M3 Limit Level-M3

Graphical Plot of Suspended Soild M4 (Feb - May 09)



Graphical Plot of Suspended Soild M3&C3 (Feb - May 09)

Appendix J

Graphical plot of noise monitoring results

