Civil Engineering and Development Department

Contract No. KL/2008/02

Kai Tak Development- Decommissioning of the remaining parts (Ex-GFS Building and Radar Station) of the former Kai Tak Airport

Quarterly EM&A Report

(version 1.0)

September 2009 – November 2009

Certified By

(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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EXECUTIVE SUMMARY

Introduction

1. This is the Quarterly Environmental Monitoring and Audit (EM&A) Report for September 2009 to November 2009, prepared by Cinotech Consultants Limited for the *Kai Tak Development- Decommissioning of the remaining parts (Ex-GFS Building and Rader Station) of the former Kai Tak Airport* with Contract No. KL/2008/02. This report documents the findings of EM&A Works conducted between September 2009 and November 2009.

2. The construction activities undertaken in the reporting quarter were:

   September 2009
   - Site investigations for Radar Station.

   October 2009
   - Submission of revised copy of the RMS to EPD.

   November 2009
   - Excavation of contaminated soil in ex-GFS Building for biopiling;
   - Cement solidification; and
   - Soil sampling for closure assessment.

Environmental Monitoring Works

3. Environmental monitoring and audit works for the Project were performed regularly as stipulated in the EM&A Manual and the results were checked and reviewed. The implementation of the environmental mitigation measures and environmental complaint handling procedures were also checked.

Environmental Licensing and Permitting

4. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project. One Construction Noise Permit (CNP) and No Water Discharge License (WDL) was issued to the Project by EPD in the reporting quarter.

5. Registration of Chemical Waste Producer (License: 5213-247-K2822-02).

Key Information in the Reporting Quarter

6. Summary of key information in the reporting quarter is tabulated in Table I.

Table I Summary Table for Key Information in the Reporting Quarter

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N.A.	N.A.	---
Notifications of any summons & prosecutions received	0	---	N.A.	N.A.	---

Complaints and Prosecutions

7. No environmental complaint was received during the reporting quarter.

8. No warnings, summons and notifications of successful prosecution were received in the reporting period.

Future Key Issues

9. Key environmental issues in the coming month include:

- Backfilling of the excavation pit in ex-GFS Building.

1. INTRODUCTION

1.1 The decommissioning of the ex-Government Flying Service (GFS) building and the Radar Station within the former Kai Tak Airport that are classified as Designated Project (DP) under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (hereafter referred as "the DP3a Project" in this section). The remaining sites within the former Kai Tak Airport yet to be decommissioned include the ex-GFS building and the Radar Station in the South Apron area, the Hong Kong Aviation Club (HKAC) and the EMSD Headquarters in the North Apron area. The scope of the DP3a Project is limited to the decommissioning of the remaining facilities, structures and buildings of the ex-GFS building and Radar Station within the former Kai Tak Airport which were not covered under the previous EIAs on decommissioning of former Kai Tak Airport registered under the EIAO (namely EIA on Decommissioning of the former Kai Tak Airport other than the North Apron and EIA on Kai Tak Airport North Apron Decommissioning). The scope of the decommissioning of the Hong Kong Aviation Club is limited to disuse its function. It is also identified that no soil remediation works would be necessary and no building demolition is anticipated. The general layout of the Project site is shown in **Figure 1.1**

1.2 An Environmental Impact Assessment (EIA) Study for the Project has been undertaken in accordance with the EIA Study Brief (No. ESB-152/2006) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM). An EIA Report was approved by the Environmental Protection Department (EPD) on 4 March 2009.

1.3 An Environmental Permit (EP) No. EP-339/2009/A was issued on 18 June 2009 for the decommissioning designated project to Civil Engineering and Development Department (CEDD) as the Permit Holder. Cinotech Consultants Ltd. was commissioned by CEDD to undertake the Environmental Monitoring and Audit works for the Former Kai Tak Airport Decommissioning of the remaining parts (Ex-GFS Building and Rader Station).

1.4 Cinotech Consultants Ltd. was designated as the Environmental Team (ET) to undertake the EM&A works for the Project under EP condition 2.1. This is quarterly EM&A report summarizing the EM&A works for the Project between September 2009 and November 2009.

2. PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

2.1 Different parties with different levels of involvement in the project organization include:

- Project Proponent – Civil Engineering and Development Department (CEDD)
- Engineer (E) / Engineer's Representative (ER) – Maunsell Consultants Asia Ltd
- Environmental Team (ET) – Cinotech Consultants Limited.
- Independent Environmental Checker (IEC) – Nature & Technologies (HK) Limited
- Environmental Protection Department (EPD) – Environmental Regulations Enforcer
- Contractor – Kin Wing Construction Co., Ltd

2.2 The responsibilities of respective parties are detailed in Sections 1.4.1 to 1.4.9 of the Updated EM&A Manual of the Project. The project organization chart is presented in **Figure 1.2**.

2.3 The key contacts of the Project are shown in **Table 2.1.**

Table 2.1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
CEDD	Permit Holder	Mr. Patrick Chan	Engineer	23011464	23694980
MCAL	Engineer	Mr. Johnny Leung	Resident Engineer	27980771	27980783
		Mr. Patrick Ko	Assistant Resident Engineer		
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089	31071388
		Ms. Cara Heung	Project Coordinator & Audit Team Leader	2151 2078	
		Mr. Henry Leung	Monitoring Team Leader	2151 2087	
Nature & Technologies	Independent Environmental Checker	Ir Dr Gabriel C K Lam	Independent Environmental Checker	2877 3122	25110922
Kin Wing	Contractor	Mr. Eric Wong	Site Agent	2637 5066	27259316
		Mr. W.P. Wong	General Foreman		

Construction Programme and Synopsis of Work

2.4 The site activities undertaken in the reporting quarter included:

- Site investigations for Radar Station.
- Submission of revised copy of the RMS to EPD.
- Excavation of contaminated soil in ex-GFS Building for biopiling;
- Cement solidification; and
- Soil sampling for closure assessment.

3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

3.1 The EM&A programme requires environmental site audit for decommissioning activities. The EM&A requirements for each parameter are described in the following sections, including:

- Event Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

4. ENVIRONMENTAL AUDIT

Implementation Status of Environmental Mitigation Measures

4.1 The implementation status of environmental mitigation measures (EMIS) is given in **Appendix A**.

Site Audit Summary

4.2 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the reporting period are summarized in **Appendix B**.

4.3 The major deficiencies identified by ET in the reporting quarter are summarized as follow:

Audit Summay for Kai Tak Development - Decommissioning of the remaining parts (Ex-GFS Building and Rader Station) of the Former Kai Tak Airport

- NA

Effectiveness of Mitigation Measures

4.4 The mitigation measures recommended in the EIA report and required by the EP are considered effective in minimizing environmental impacts. The Contractor has implemented the recommended mitigation measures except those mitigation measures not applicable at this stage, it is however considered that the Contractor could put greater efforts into proper implementation of these measures.

Status of Environmental Licensing and Permitting

4.5 Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project. One Construction Noise Permit (CNP) and no Water Discharge License (WDL) was issued to the Project by EPD in the reporting quarter.

4.6 Registration of Chemical Waste Producer (License: 5213-247-K2822-02).

4.7 The status of these licenses and permits obtained for the Project is summarized in **Appendix C**.

Status of Waste Management

4.8 The waste management of the Project has to follow the requirements and procedures stated in the Waste Management Plan which was prepared by the Contractor.

4.9 0.006 x 1000m^3 of general refuse was generated by the activities of both Projects (Kai Tak Development - Decommissioning and Decontamination works at South Apron and Decommissioning of the remaining parts (Ex-GFS Building and Rader Station) of the Former Kai Tak Airport) in the reporting quarter.

4.10 The monthly summary of waste flow table for September 2009 - November 2009 are provided in **Appendix D**.

5. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

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

5.1 There was no non-compliance from the site audits in the reporting quarter. The observations and recommendations made in each individual site audit session were attached in the Monthly Reports.

6. ENVIRONMENTAL COMPLAINTS AND PROSECUTIONS

6.1 No environmental complaint was received during the reporting quarter. The updated Complaint Log is attached in **Appendix E.**

6.2 No warning, summon and notification of successful prosecution was received in the reporting period.

6.3 There were no environmental complaints, warnings, summons and successful prosecutions received since the commencement of the Project.

7. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

7.1 The major construction activities in the coming month include:

- Backfilling of the excavation pit in ex-GFS Building.

7.2 According to the environmental audit performed in the reporting period, the following recommendations were made:

Dust Impact

- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To implement dust control measures for the dust generation work such as cement mixing and excavation works.
- To ensure water spray being applied for the dust emissive works, such as loading and unloading of soil materials and excavation works.
- To cover soil stockpiles and exposed slope surface by impervious tarpaulin sheets or other means.
- To ensure that all vehicles carrying dusty material are properly covered before leaving the site.
- To maintain the machinery and vehicles in a good working condition on site.
- To ensure that all vehicles use wheel washing facility (not applicable at this stage) or equivalent measures before leaving the site.

Noise Impact

- To inspect the noise sources inside the site.
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers.
- To review the works sequence of site activities so as to reduce the number of noisy equipment in concurrent operation.
- To employ quiet powered mechanical equipment if possible.

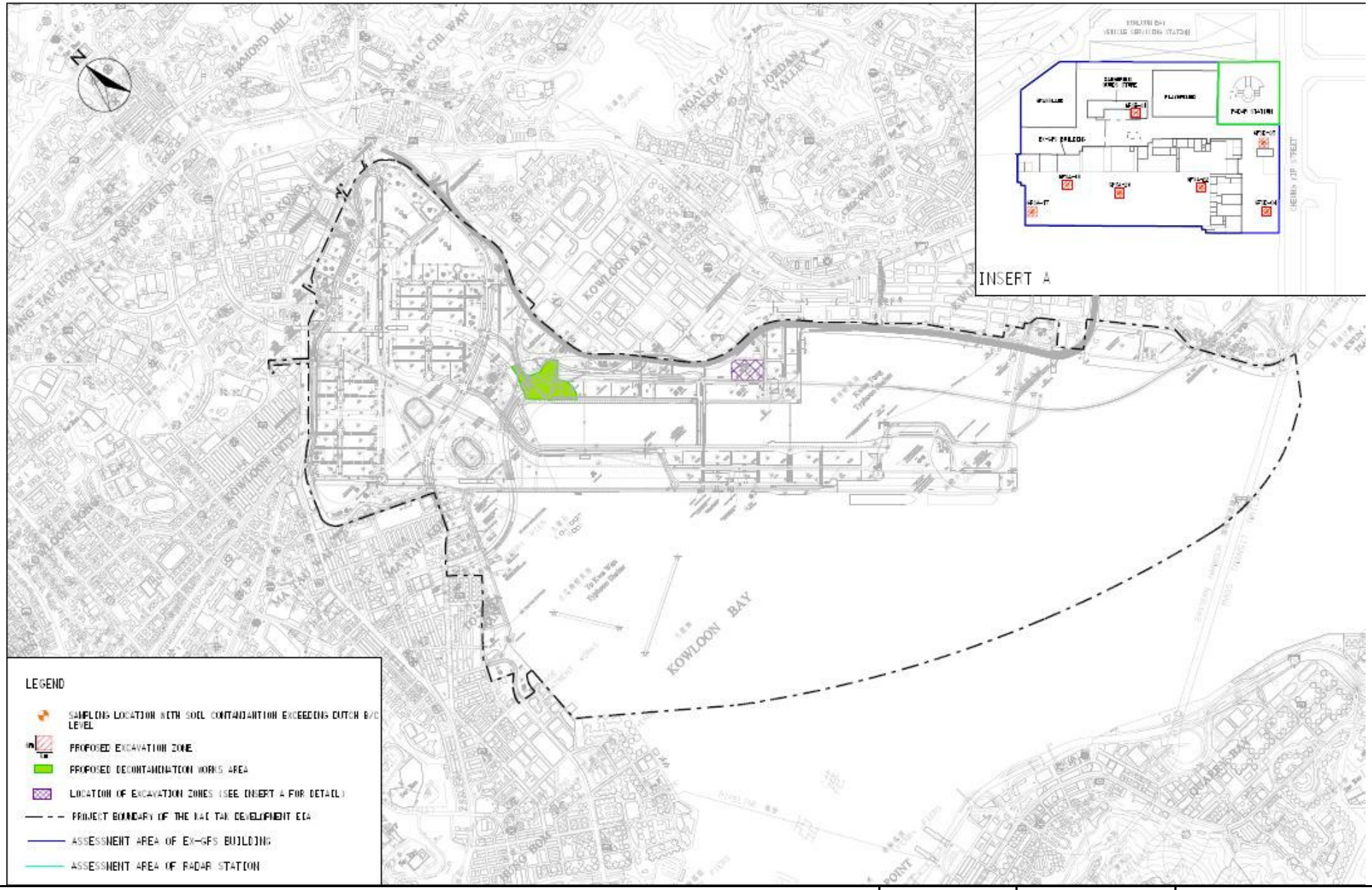
Water Impact

- To prevent contaminated surface runoff discharge into drainage system.
- To ensure properly maintenance for de-silting facilities
- To review the capacity of de-silting facilities for discharge.
- To identify any wastewater discharges from site.
- To avoid accumulation of stagnant and ponding water on site.

Waste/Chemical Management

- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To avoid improper handling or storage of oil drum on site.

FIGURES



Title	Contract No. KL/2008/02 Kai Tak Development- Decommissioning of the remaining parts (Ex-GFS Building and Rader Station) of the former Kai Tak Airport)	Scale N.T.S	Project No. MA8017
	Layout Plan of Project Site	Date Oct-09	Figure 1.1

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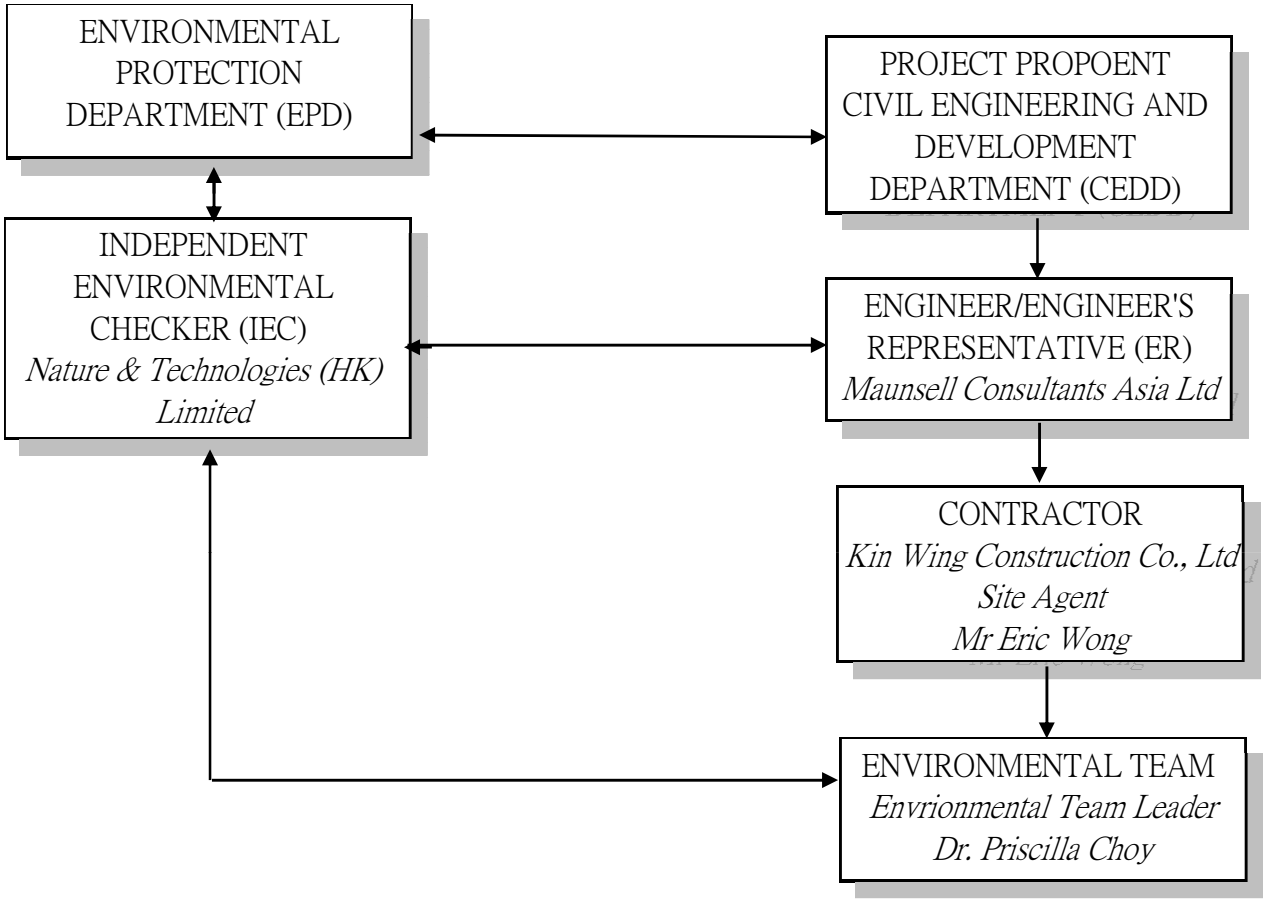

Title: Contract No. KL/2008/02 KAI TAK DEVELOPMENT- DECOMMISSIONING AND DECONTAMINATION WORKS AT THE SOUTH APRON OF THE FORMER KAI TAK AIRPORT Project Organization Chart	Scale: N.T.S	Project No.: MA8017	CINOTECH
	Date: Jan-09	Figure: 1.2	

APPENDIX A
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)

Appendix A Environmental Mitigation Implementation Schedule (EMIS)

Appendix A1 Implementation Schedule for Land Contamination Measures

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Excavation and decontamination works							
	• Personal protective equipment (PPE) shall be used by site workers during soil excavation / free product skimming.	Excavation zones / During excavation	Contractor			√	√	^
	• When free product is detected at groundwater surface during excavation, the free product shall be skimmed off, drummed properly, stored in a designated drum storage area with containment and collected by a licensed chemical waste collector for proper disposal.	Excavation zones / During excavation	Contactor			√		^
	• All contaminated soil within the Project area shall be excavated and treated on-site at a centralized decontamination works area located at the northern part of the south apron.	Excavation zones / During excavation	Contractor	√		√	√	^
	• After excavation, confirmation sampling and testing shall be conducted to ensure complete excavation of contaminated soils.	Excavation zones / During excavation	Contractor	√		√		^
	• Contaminated soils shall be sorted and handled with respect of their contamination.	Excavation zones / During excavation	Contractor			√		^

Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
			Des	De	Ex	Tre	
• Health and safety plan for excavation shall be followed.	Excavation zones / During excavation	Contractor			√		^
• The following remediation processes shall be applied for different types of soil contamination: - Biopiling for TPH/VOCs/SVOC contamination; - Solidification/stabilization for metal contamination - Biopiling and solidification/stabilization for TPH and metal contamination	Decontamination works area / During excavation	Contractor	√		√	√	^
<u>To minimise the potentially adverse environmental impacts arising from the handling of potentially contaminated materials.</u> ***Free Product Recovery*** • The skimmed free product should be drummed properly, stored in a designated drum storage area with containment and collected by a licensed chemical waste collector for proper disposal. The storage of skimmed free product should comply	Excavation zones and / During excavation, soil treatment Excavation zones and decontamination	Contractor Contractor	√		√ √		^

Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
			Des	De	Ex	Tre	
with the requirements in the Waste Disposal (Chemical Waste) (General) Regulation including the type of drum and containment measures.	works area/ During excavation, soil treatment						
Excavation and Transportation							
• Excavation profiles must be properly designed and executed.							^
• Stockpiling site(s) shall be lined with impermeable sheeting and bunded. Stockpiles shall be properly covered by impermeable sheeting to reduce dust emission. If this is not practicable due to frequent usage, regular misting shall be applied. Watering shall be avoided on stockpiles of contaminated soil to minimise contaminated runoff.							^
• Stockpiles of contaminated soil should be properly covered by impermeable sheeting to minimize contaminated runoff from the stockpiles.							^
• Excavation and stockpiling shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils.							^
• Supply of suitable clean backfill material is needed after excavation.							^
• Vehicles containing any excavated materials should be suitably covered to limit potential	Excavation zones and decontamination	Contractor	√			√	^

Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
			Des	De	Ex	Tre	
dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet conditions.	works area/ During excavation, soil treatment						
• Speed control for the trucks carrying contaminated materials should be enforced;							^
• Vehicle wheel and body washing facilities at the site's exist points shall be established and used.							^
Biopiling							*
• To avoid fugitive emissions of dust or any air pollutants from the biopile(s) and to minimise runoff from the stockpiled soils, the stockpiled soils at the biopiles shall be covered by impermeable sheeting such that not longer than 5m of the biopile is exposed to open air.							
• Impermeable sheeting shall be placed at the bottom of the biopiles and leachate collection sump shall be constructed along the perimeter of the biopiles to prevent leachate from contaminating the underlying soil/groundwater. All leachate generated from the operation of biopiling shall be collected and recycled to the biopile.							^
• The vented air from the biopile(s) shall be connected to blower and carbon adsorption system for treatment before release to the atmosphere. Exhaust air from the blower and carbon adsorption system shall be monitored	Excavation zones and decontamination	Contractor	√			√	^

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	for VOCs regularly.	works area/ During excavation, soil treatment						
	• Spend activated carbon of the carbon adsorption system shall be replaced at appropriate intervals such that the VOC emission rate from the system is acceptable.							^
	• Silencers shall be installed at the biopile blowers to minimise noise impact.			√			√	^
	• Contaminated runoff from biopile(s) shall be prevented by constructing a concrete bund along the perimeter of the biopiles.	Excavation zones and decontamination works area/ During design decommissioning, excavation and soil treatment						^
	Solidification / Stabilization							
	• Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact.							N/A
	• Mixing of contaminated soils and cement / water / other additive(s) should be undertaken at a solidification plant to minimise the potential for leaching.							N/A
	• Runoff from the solidification / stabilization area should be prevented by constructing a concrete bund along the perimeter of the solidification / stabilization area.							N/A

Appendix A2 Implementation Schedule for Waste Management Measures

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Good Site Practices Recommendations for good site practices during the decommissioning works include: • nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; • training of site personnel in proper waste management and chemical waste handling procedures; • provision of sufficient waste disposal points and regular collection for disposal; • appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Work site / During decommissioning	Contractor		√			^ ^ ^ ^ ^ ^

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	<u>Waste Reduction Measures</u> Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals • segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • to encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force; • any unused chemicals or those with remaining functional capacity shall be recycled; • proper storage and site practices to minimise the potential for damage or contamination of construction materials; and • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	Work site / During design stage, decommissioning, excavation and soil treatment	Contractor	√	√	√	√	^ ^ N/A ^ N/A N/A

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Construction and Demolition Material	Work site / During decommissioning	Contractor		√			
	• C&D material should be sorted on-site into inert C&D material (that is, public fill) and C&D waste. The inert C&D material would require disposal to the designated public fill reception facility. C&D material should be transported from the site by barge wherever possible to reduce environmental impacts associated with road transportation. C&D waste, such as steel and other metals should be re-used or recycled and, as a last resort, disposed of to landfill. It is recommended that a suitable area be designated to facilitate the sorting process and a temporary stockpiling area will be required for the separated materials							^
	• In order to monitor the disposal of public fill and C&D waste at the designated public fill reception facility and landfill, respectively, and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system	Work site / During decommissioning	Contractor and Independent Environmental Checker		√			^

Environmental Protection Measures / Mitigation Measures		Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	General Refuse • General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. • Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem..	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^ ^
	Chemical Wastes • After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^

- Des – Design, De – Decommissioning, Ex – Excavation, and Tre – Soil Treatment

Appendix A3 Implementation Schedule for Water Quality Measures

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
Decontamination Processes								
	Soil Excavation • During excavation, all exposed pits shall be whenever possible backfilled immediately or covered. Where it is unavoidable to transiently pile up soils next to the excavation pit, the transient pile shall be bottom-lined, bunded and covered with impervious membrane during rain event in order to avoid generation of contaminated runoff.	Work site / During excavation	Contractor			√		^
	• Final surfaces after excavation shall be well compacted and the subsequent permanent work or surface protection shall be carried out as soon as practical after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate intercepting channels and partial shelters shall be provided where necessary to prevent rainwater from collecting within trenches or footing excavations.	Work site / During excavation	Contractor			√		^

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Decontaminated Water and Wastewater from Wheel Washing • During excavation, dump trucks or excavators shall be decontaminated before they leave the site to ensure that no contaminated earth, mud or debris is deposited by them on roads. A wheel washing bay shall be provided at every site exit that equipped with an adequately sized centralized wastewater treatment unit. The wastewater treatment unit shall deploy suitable treatment processes to settle out sands/ silts with contaminants cohered and remove other contaminants in wheel washes and decontamination water. The polluting parameters in effluent of the wastewater treatment unit shall be in compliance with the discharge standards stipulated in the TM-DSS before the effluent being discharged into the storm drains. The installation and operation of the wastewater treatment unit shall be licensed and subject to the effluent monitoring as required under the WPCO which is under the ambit of regional office (RO) of EPD. In any case, discharge of wheel wash water shall be minimized and recycled where possible. The selection of construction road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent surface runoff from entering public road drains.	Work site / During excavation	Contractor			√		^

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Operation of Solidification / Stabilization Facility							
	• The solidification facility shall be sheltered and area of soil unloading / loading shall be provided with shed to avoid contaminated runoff. Excessive addition of water shall be avoided during the solidification process.	Decontamination works area / During soil treatment	Contractor				√	N/A
	• Any pit used for solidification area shall be shallower than the water table to minimize the leaching of the contaminated soils. An impermeable membrane / sheet shall be placed at the bottom of any solidification pit during the solidification process.	Decontamination works area / During soil treatment	Contractor				√	N/A
	• Any leachate generated from the solidification process shall be collected and treated in the centralized wastewater treatment unit before being discharged. The polluting parameters in effluent of the wastewater treatment unit shall be in compliance with the discharge standards stipulated in the TM-DSS before the effluent being discharged. The installation and operation of the wastewater treatment unit shall be licensed and subject to the effluent monitoring as required under the WPCO.	Decontamination works area / During soil treatment	Contractor				√	N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Operation of Biopiling							^
	• Impermeable liner shall be placed at the bottom of the biopiles and leachate collection sump shall be constructed along the perimeter of the biopiles to prevent leachate from contaminating the underlying soil/ groundwater. Concrete bund shall be constructed along the perimeter of biopiles to prevent the runoff coming out from the contaminated soil. Biopiles after formation and during rain shall be covered by anchored low permeability geotextiles to prevent contaminated runoff. It is proposed that the exposed biopile section at any time shall not be more than 5 m in length.	Decontamination works area / During soil treatment	Contractor				√	
	• All leachate generated from the operation of biopiling shall be collected and recycled to the biopile to avoid effluent discharge.	Decontamination works area / During soil treatment	Contractor				√	N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Groundwater Cleanup • Floating oil/free product (of TPH) has only been found in the apron area of the Ex-GFS site. It is proposed that where free product is detected at the groundwater surface at excavated area, only the free product shall be skimmed off from the water surface. The skimmed free product shall be drummed properly and collected by a licensed chemical waste collector for disposal. The storage of skimmed free product should comply with the requirements in the Waste Disposal (Chemical Waste) (General) Regulation including the type of drum and containment measures.	Work site / During excavation	Contractor			√		^
	TPH Removal • Petrol interceptor should be adopted, where appropriate, as the first tier of treatment to removal TPH contaminant from contaminated runoff and effluent discharge from the decontamination works area.	Work site / During the decommissioning, excavation and soil treatment	Contractor		√	√	√	N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Failure of Centralized Wastewater Treatment Unit • In the event of wastewater treatment unit failure, all decontamination activities should be ceased to avoid emergency discharge.	Work site / During the decommissioning, excavation and soil treatment	Contractor		√	√	√	N/A
Demolition Works								
	• The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion.	Work site / During decommissioning	Contractor		√			N/A
	• There is a need to apply to EPD for a discharge licence under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff, wastewater or extracted groundwater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Regular monitoring of the treated effluent quality from the centralized wastewater treatment unit and stormwater discharges from major storm outfalls within the works areas will be conducted. Monitoring parameters should constantly include SS, turbidity, oil and grease, COD and less frequently include	Work site / During decommissioning	Contractor		√			N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	TPH, BTEX and selected metals. Parameters included in the WPCO licence, will also be included in the monitoring programme. The chemical testing of water samples collected in the monitoring programme should be undertaken by a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory. Detail monitoring programme / plan will be submitted at later stage for EPD's agreement.							
Sewage from Workforce								
	• Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor would be responsible for appropriate disposal of waste matter and maintenance of these facilities.	Work site / During the decommissioning, excavation and soil treatment	Contractor		√	√	√	N/A
Accumulation of Solid Waste and Accidental Spillage								
	• Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used.	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^
	• Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the nearby harbour waters, all	Work site / During the decommissioning, excavation and soil	Contractor		√	√	√	^

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event.	treatment						
Site Inspection								
	Regular site inspections shall be undertaken to inspect the works areas in order to ensure that the recommended mitigation measures are properly implemented.	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^

* Des - Design, De - Decommissioning, Ex – Excavation, and Tre - Soil Treatment

Appendix A4 Implementation Schedule for Air Quality Measures

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	<u>Good site practices to minimise dust and other air pollutants impacts during soil excavation, transportation, loading and unloading the excavated contaminated soils</u> • Excavation profiles should be properly designed and executed. • The excavation area should be limited to as small in size as possible and backfilled with clean and/or treated soil shortly after excavation work. • The exposed excavated area shall be covered by the tarpaulin during night time. • The top layer soils shall be sprayed with fine misting of water immediately before the excavation. • Stockpiling site(s) shall be lined with impermeable sheeting and bunded. Stockpiles shall be properly covered by impermeable sheeting to reduce dust and other air pollutants emission. • Misting for the dusty material shall be carried out before being loaded into the vehicle. • Any vehicle with an open load carrying area shall have properly fitted side and tail boards. • Material having the potential to create dust shall not be loaded from a level higher than the side and tail boards and shall be dampened and covered by a clean tarpaulin.	Work site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^ ^ ^ ^ ^ ^ ^ ^ ^

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	• The tarpaulin shall be properly secured and shall extent at least 300 mm over the edges of the sides and tailboards. The material shall also be dampened if necessary before transportation.							^
	• The vehicles shall be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads shall be compacted and kept free of lose materials.							^
	• Vehicle washing facilities should be provided at every vehicle exit point.							^
	• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.							^
	• Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.							N/A
	• Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.							^
	• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.							

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Operation of solidification / Stabilization	Decontamination works area / During soil treatment	Contractor			√	√	
	• The solidification pit/area shall be provided with dust suppression measures.							N/A
	• Handling and mixing of cement shall follow Air Pollution Control (Construction Dust) Regulation to limit cement emission.							N/A
	• The bin should be covered during residence period after mixing process.							N/A
	Operation of biopiling							
	• During the course of biopile formation, the stockpiled soils at the biopiles shall be covered by tarpaulin or low permeable sheet to avoid fugitive emissions of dust or any air pollutants from the biopiles affecting the surrounding environment and to minimise runoff from the stockpiled soils. Biopile(s) shall be covered by impermeable sheeting (such that no longer than 5m of a biopile shall be exposed to open air) to avoid fugitive emissions of dust or any pollutants from the biopile(s).	Decontamination works area / During soil treatment	Contractor			√	√	^
	• Upon formation of a biopile, the biopile shall be covered by low permeable geotextiles to prevent dust emission and runoff.							*
	• During the operation of biopile, the biopiles shall be fully covered to control the extraction of VOCs.							N/A

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	• Carbon absorber with 99% control efficiency shall be installed for the biopiling system to treat the off-gas prior to discharge and the location of the exhaust of the carbon filter should be sited as far away as possible from the nearby ASRs. • Spent activated carbon of the carbon absorber shall be replaced regularly such that the VOC emission rate from the system is acceptable (i.e. the measured TVOC is below 20 ppm). The carbon adsorption system should also be monitored regularly to check the performance of the carbon filter. • Gas samples at the exhaust of the carbon filter for VOCs should be monitored regularly. The biopile operation shall be terminated when unacceptable air quality is monitored at the site boundary. Resumption of biopiling will only be allowed after confirmation and implementation of appropriate mitigation measures.							^ ^ ^

*Des - Design, De - Decommissioning, Ex – Excavation, and Tre - Soil Treatment

Appendix A5 Implementation Schedule for Noise Measures

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
	Good site practices to be implemented: • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. • Mobile plant, if any, should be sited as far away from NSRs as possible. • Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. • Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Work Site / During decommissioning, excavation and soil treatment	Contractor		√	√	√	^ ^ ^ ^ ^

* Des - Design, De - Decommissioning, Ex – Excavation, and Tre - Soil Treatment

Appendix A6 Implementation Schedule for Marine Ecological Measures

	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Status
				Des	De	Ex	Tre	
-	• As no significant ecological impact on marine habitats and associated wildlife is predicted, no necessary mitigation measure is considered as required in this assessment. The mitigation measures recommended in the water quality assessment to control water quality would serve also to protect marine ecological resources from indirect impacts and ensure no adverse impact on marine life would be resulted from the Project.	N/A	N/A					N/A

* Des - Design, De - Decommissioning, Ex – Excavation, and Tre - Soil Treatment

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
N/A Not Applicable; • Non-compliance but rectified by the contractor;
* Recommendation was made during site audit but improved/rectified by the contractor;
# Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

APPENDIX B
SITE AUDIT SUMMARY

Appendix B Summary of Observation and Recommendation Made during Site Inspection

Summary of Observation and Recommendation Made during Site Inspection in September 2009

Parameters	Date	Observations and Recommendations	Follow-up
NA	NA	NA	**NA**

Summary of Observation and Recommendation Made during Site Inspection in October 2009

Parameters	Date	Observations and Recommendations	Follow-up
NA	NA	NA	**NA**

Summary of Observation and Recommendation Made during Site Inspection in November 2009

Parameters	Date	Observations and Recommendations	Follow-up
NA	NA	NA	**NA**

APPENDIX C
SUMMARY STATUS OF ENVIRONMENTAL LICENCES AND PERMITS

Appendix C - Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-285/2008	8/1/08	N/A	Decontamination, demolition and removal of buildings/structures and abandoned facilities within the former Kai Tak Airport other than the North Apron.	Valid
Registration of Chemical Waste Producer				
5213-247-K2822-02	---	N/A	Chemical waste types: Spent lubricating oil and oil contaminated materials	Valid
Construction Noise Permit (CNP)				
GW-RE0498-09	16/11/09	28/02/10	Use of Powered Mechanical Equipment (PME) during 00:00-24:00 hours on general holidays (including Sundays), 00:00-07:00 and 19:000-24:00 hours on any day not being a general holiday.	Valid

APPENDIX D
WASTE GENERATED QUANTITY

Appendix VIII

Name of Department: CEDD

Contract No.: KL/2008/02

Monthly Summary Waste Flow Table for 2009 (year)

(All quantities shall be rounded off to 3 decimal places.)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan	0.170	0.100	0.070	0.000	0.000	3.308	0.000	0.000	0.000	0.000	0.000
Feb	0.030	0.000	0.030	0.000	0.000	5.900	0.000	0.000	0.000	0.000	0.000
Mar	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000
Apr	0.060	0.030	0.030	0.000	0.000	0.200	0.000	0.000	0.000	0.000	0.000
May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
June	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sub-total	0.260	0.130	0.130	0.000	0.000	9.414	0.000	0.000	0.000	0.000	0.000
July	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sept	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006
Dec	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Total	13.909	6.959	6.950	0.000	0.000	12.920	0.000	0.000	0.000	2.000	0.006

Forecast of Total Quantities of C & D Materials to be Generated from the Contract										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
18.704	7.150	7.150	0.000	0.000	16.000	11.000	0.000	0.000	2.250	0.200

Notes:

(1) The performance targets are given in the PS Clause 6(14).

(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(3) Plastics refer to plastics bottles/containers, plastic sheets/foam from packaging material.

(4) The contractor shall also submit the lastest forecast of the total amount of C & D materials expected to be generated fro the Works, together with a breakdown of the nature where the total amount of C & D materials expected to be generated from the Works is equal to or exceeding 50,000m³ . (PS Clause 1.105(4)(b) refers.

* This waste flow table is shared by both Projects [Kai Tak Development- Decommissioning and Decontamination works at South Apron of the Former Kai Tak Airport and Decommissioning of the remaining parts (Ex-GFS Building and Rader Station) of the former Kai Tak Airport]

APPENDIX E
COMPLAINT LOG

APPENDIX E – COMPLAINT LOG

Reporting Quarter: September 2009 – November 2009

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A	N/A

Remarks: No environmental complaint was received in the reporting quarter.