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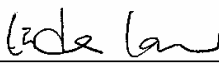
TEST REPORT

CHINA HARBOUR ENGINEERING CO. LTD.

**DELIVERY OF RECLAMATION MATERIAL TO
MAINLAND –
ENVIRONMENTAL MONITORING AND AUDIT
(CONTRACT NO.: CV/2005/01)**

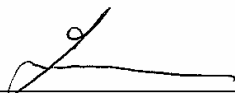
**TSEUNG KWAN O AREA 137 FILL BANK
QUARTERLY EM&A SUMMARY REPORT NO.7
(FROM JUNE TO AUGUST 2008)**

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Priority normal / urgent

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Attn. Mr C. L. Lau / Ms Linda Law Date 24 Sept 2008

From Joseph Poon No. of Pages 1 (Incl. this page)

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(China Harbour Engineering Co. Ltd.) Fax No. 2247 4108

Subject **Agreement No. CE 9/2005 (EP)**
Tseung Kwan O Area 137 Fill Bank –
Quarterly Environmental Monitoring & Audit Report for June – August 2008

We refer to the 7th Quarterly EM&A Report for June to August 2008 that we received through email on 23rd Sept 2008 and are pleased to confirm we have no further comment on the report.

Should you require further information, please feel free to contact us.

Best regards,



Joseph Poon
Independent Environmental Checker

JP/by

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EXECUTIVE SUMMARY

This is the seventh Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by ETS-Testconsult Ltd (ET) for the "Contract No. CV/2005/01 Delivery of Reclamation Material to Mainland – Tseung Kwan O Area 137 Fill Bank" (The Project).

This report documents the findings of EM&A Works conducted during the operation phase of Fill Bank at Tseung Kwan O Area 137 from June to August 2008.

Construction Progress

As informed by the Contractor, the construction activities in this reporting quarter were as below:

- Removal & delivery of public fill stockpiled material to Mainland
- Operation of the road water lorries and the road sweeper
- Maintenance of haul road within fill bank area
- Delivery of public fill received at the QB Temporary Public Fill Barging Point to TKO fill bank
- Operation of the tipping hall (A1, A2 & A3)
- Operation at the queuing area for public truck lorries

Dump truck traffic and hauling activities at Barge Handling Area (BHA) were the major dust sources. Barge delivery of fill material was also undertaken in the reporting quarter. Besides the Fill Bank operation, the other dust sources near TKO Area 137 also included operation of C&DMSF at PBR2 Project and dumping activities at the SENT Landfill.

The desilting facilities were in proper operation to avoid silty discharge and the silt curtains were properly installed. There was no sediment plume observed during the monitoring events.

The major noise sources during the reporting quarter were the dump truck traffic and construction activities near the site egress. Noise impact on the sensitive receivers was insignificant in the reporting quarter according to the results of noise monitoring and site inspections.

Environmental Monitoring Works

Noise Monitoring

No exceedances of Action and Limit levels for noise monitoring were recorded in the reporting quarter.

Air Monitoring

During the reporting quarter, no exceedances of Action and Limit levels were recorded for 24-hr and 1-hr TSP monitoring. The air quality during the operation hours of the Fill Bank was considered acceptable.

Marine Water Quality Monitoring

Marine water quality monitoring was conducted in accordance with the EM&A Manual.

According to the summary of marine water monitoring results, no exceedances of Action and Limit Level were recorded in this quarter.

Landscape and Visual

Erection of hoarding and chain link fencing was provided at the Fill Bank site boundary. The germination rate on the panel was satisfactory in this reporting quarter.

Environmental Complaints, Notification of summons and successful prosecutions

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

1.0 INTRODUCTION

China Harbour Engineering Company Limited (CHEC) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for the “Contract No. CV/2005/01 Delivery of Reclamation Material to Mainland – Tseung Kwan O Area 137 Fill Bank” (The Project).

In accordance with the Environmental Permit (No.: EP-134/2002/F) (the EP), an EM&A programme should be implemented in accordance with the procedures and requirements in the EM&A Manual of the approved EIA report (Registration No. AEIAR-060/2002). The EM&A programme for this study as stated in Section 2.3.1 of the EM&A Manual covers the following environmental aspects during the establishment, operation and removal phases of the Fill Bank at Tseung Kwan O Area 137:

- *Fugitive Dust;*
- *Noise generation from onsite activities;*
- *Water Quality; and*
- *Landscape and Visual.*

The EM&A programme requires environmental monitoring for air quality, noise and water quality and environmental site inspections for air quality, noise, water quality, landscape and visual, and waste management. The EM&A requirements for each parameter described in the following sections include:

- *All monitoring parameters;*
- *Monitoring schedules for the reporting month and forthcoming months;*
- *Action and Limit levels for all environmental parameters;*
- *Event/Action Plans;*
- *Environmental mitigation measures, as recommended in the Project EIA study final report; and*
- *Environmental requirements in contract documents.*

Baseline monitoring was completed in August and September 2002 by MaterialLab. Action and Limit Levels were established for air and water quality parameters based on the baseline monitoring results.

This quarterly report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tseung Kwan O Area 137 in June, July and August 2008.

2.0 PROJECT INFORMATION

2.1 Construction Progress in this reporting quarter

The scale and scope of the Project as stated in the EP include:

- *Site clearance;*
- *Construction of a temporary storm water system;*
- *Stockpiling of 6 million m³ of public fill;*
- *Setting up two barging points: one at the Tseung Kwan O Basin (TKO Basin) and one at the Construction and Demolition Material Sorting Facility (C&DMSF) for transporting the stockpiled public fill by barges;*
- *Construction and operation of a Construction and Demolition Material Sorting Facility (C&DMSF);*
- *Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin; and*
- *Remove the temporary fill bank.*

2.2 Site Description

Tseung Kwan O Area 137 is located at the southern end of Wan Po Road. In the vicinity of the site are other industrial uses such as SENT landfill, TKO Industrial Estate, etc. Both Island Resort and Fullview Garden are also situated at more than 1.8km from the site. Other existing ASRs and NSRs, including resident developments and schools, are located at a further distance away from TKO Area 137.

2.3 Construction Programme

Details of construction programme are shown in Appendix G.

2.4 Project Organization and Management Structure

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

2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

<i>Organization</i>	<i>Name of Key Staff</i>	<i>Project Role</i>	<i>Tel. No.</i>	<i>Fax No.</i>
<i>CEDD</i>	<i>Mr. W T CHAU Mr. H C TANG</i>	<i>Engineer's Representative</i>	<i>2760 5835</i>	<i>2714 0113</i>
<i>IEC (Materialab)</i>	<i>Mr Joseph POON</i>	<i>IEC</i>	<i>2450 8238</i>	<i>2450 6138</i>
<i>Contractor (CHEC)</i>	<i>Mr. William CHAN</i>	<i>Contractor's Agent</i>	<i>9772 7055</i>	<i>2243 4089</i>
<i>ET (ETL)</i>	<i>Mr C. L. Lau</i>	<i>ET Leader</i>	<i>2946 7791</i>	<i>2695 3944</i>

3.0 SUMMARY OF EM&A REQUIREMENTS

3.1 EM&A Programme

The EM&A programme required environmental monitoring for air quality, noise and marine water quality and environmental site inspections for air quality, noise, marine water quality, landscape and visual, and waste management. The EM&A requirements for each parameter described in the following sections include:

- *All monitoring parameters;*
- *Monitoring schedules for the reporting month and forthcoming months;*
- *Action and Limit levels for all environmental parameters;*
- *Event/Action Plans;*
- *Environmental mitigation measures, as recommended in the Project EIA study final report; and*
- *Environmental requirements in contract documents.*

The advice on implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 4 of the Report.

3.2 Monitoring Stations and Parameters

The EM&A Manual designates several locations to monitor environmental impacts in terms of air quality, noise and water quality due to the Project. The description and detailed locations of monitoring stations for air quality, noise and marine water quality are shown in Figures 1, 2 and 3 and relevant sections of this Report.

3.3 Monitoring Methodology and Calibration Details

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

3.4 Environmental Quality Performance Limits (Action/Limit Levels)

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

3.5 Environmental Mitigation Measures

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

4.0 MONITORING RESULTS

4.1 Air Quality

In accordance with the EM&A Manual, 1-hr and 24-hr TSP air quality monitoring were conducted three times and once per six days correspondingly. In the reporting quarter, all the 1-hr and 24-hr TSP monitoring results complied with the AL Levels. The trend of air quality during the reporting quarter is present in Appendices B.

Major dust sources in the Fill Bank were dump truck traffic and hauling activities at BHA.

Table 4.1 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring event included regular monitoring events and additional ones.

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

Monitoring Parameter	Level of Exceedance	June 2008	July 2008	August 2008
24-hr TSP	No of monitoring events	6	5	5
	Action Level	0	0	0
	Limit Level	0	0	0
	Total	0	0	0
1-hr TSP	No of monitoring events	17	16	15
	Action Level	0	0	0
	Limit Level	0	0	0
	Total	0	0	0

Table 4.2 presents the 1-hr and 24-hr TSP averages in the baseline period and for each month in the reporting quarter. It was found that the 1-hr and 24-hr TSP averages at both stations in the reporting quarter were higher than the baseline levels but they were within the AL Levels. As a result, the Contractor should provide more mitigation measures refer to the EM&A Manual to avoid dust generation.

Table 4.2 Comparison of Baseline and Various Period of Averaged 1-hr and 24-hr TSP Impact monitoring Results

Period	1-hr TSP ($\mu\text{g}/\text{m}^3$)		24-hr TSP ($\mu\text{g}/\text{m}^3$)	
	TKO-A1	TKO-A2	TKO-A1	TKO-A2
Baseline (29/08 – 13/09)	195		123	
June 2008	277	270	116	116
July 2008	282	296	123	139
August 2008	305	325	138	164

4.2 Noise

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

Table 4.3 presents the limited level and average impact noise monitoring results during the reporting quarter.

Table 4.3 Summary of Impact Monitoring results of Noise Daytime Monitoring

Monitoring Location	Limit Level	June 2008	July 2008	August 2008
	Leq, dB(A)			
TKO-N1	75	68.7	67.7	64.1

The major noise sources in the reporting quarter were dump truck traffic and construction activities near the site egress. The noise impact was insignificant as the Fill Bank was remote from sensitive receivers.

4.3 Marine Water Quality

In accordance with the EM&A Manual, the marine water quality monitoring was conducted at the monitoring station (M4) and the control station (C1) in the reporting quarter.

Impact marine water quality monitoring was conducted three days per week. Measurements were taken at both mid-ebb and mid-flood tides at three depths (i.e. 1m below surface, mid depth and 1m above seabed). The AL Levels are included in Appendix E.

Table 4.4 presents the total number of marine water quality exceedances in the reporting quarter. The trend of marine water quality in the past three months is depicted in Appendix D.

Table 4.4 Total Number of Marine Water Quality Exceedances in the Quarter

Parameter	Exceedance Level	June 2008	July 2008	August 2008
Number of monitoring days		12	13	11
Dissolved Oxygen, DO (S&M)	Action	0	0	0
	Limit	0	0	0
	Total	0	0	0
Dissolved Oxygen, DO (B)	Action	0	0	0
	Limit	0	0	0
	Total	0	0	0
Turbidity	Action	0	0	0
	Limit	0	0	0
	Total	0	0	0
Suspended Solids, SS	Action	0	0	0
	Limit	0	0	0
	Total	0	0	0
Total Number of DO, Turbidity and SS Exceedances	Action	0	0	0
	Limit	0	0	0
	Total	0	0	0

A comparison between the quarterly mean/median of SS and the 1.3 times of the baseline mean was made for each tide at each station. The statistical analysis results are given in Appendix I and it shows that a generally better marine quality was recorded in the reporting quarter in respect to 130% of the baseline mean. Monitoring stations with significant difference ($p < 0.05$) is summarized in Table 4.5.

Table 4.5 Summary of Statistically Significant Results of SS

Monitoring Station	Significant difference?	
	Mid-ebb	Mid-flood
C1	√	√
M4	√	√

5.0 INSPECTION RESULTS

5.1 Implementation Status of Environmental Mitigation Measures

ET conducted weekly site inspections to monitor the Contractor's implementation of environmental mitigation measures. After each site inspection, the Contractor was notified of ET's observations and recommendations. A corrective action plan detailing the environmental observations was prepared by ET and the Contractor then completed this plan to propose/report their remedial works.

Air quality was the major environmental issue in the reporting quarter. The Contractor generally implemented most of the environmental mitigation measures in the reporting quarter. Dump truck traffic was the major dust source in the Fill Bank. Generally, the Contractor implemented adequate dust mitigation measures in the reporting quarter including dampening of haul roads, water spraying on the truckloads, operation of automatic wheel washing facilities and mist spraying systems, dampening of fill material prior to handling or stockpiling, etc.

Dump truck traffic and construction activities near the site egress were the major noise sources. As the Fill Bank was remote from the nearby NSRs, the noise impact was minimal. The powered mechanical equipment were generally operated and maintained properly.

Regarding the observations about accumulation of fill materials on the concrete pavement at the BHA in the reporting quarter, the Contractor was reminded to clean up the fill materials as soon as each unloading activity completed to avoid the fill materials from being washed into the sea. Furthermore, the Contractor should also regularly inspect and maintain the oil interceptor at the car park to ensure it properly functions.

The site toilet and shower room had been in use since October 2003. They were properly operated in the reporting quarter.

Although there were a few observations regarding improper handling of oil drums and chemical containers, such as lack of drip tray and accumulated of stagnant water in the drip tray, the Contractor rectified most of these problems. Besides, the Contractor should provide tarpaulin sheets before repairing and maintenance works and also carry out proper cleaning activities immediately after such works.

The germination rate on the panel was satisfactory in this reporting quarter. The Contractor was reminded to maintain the panel properly.

5.2 Status of Environmental Licensing and Permitting

The status of licences and permits is summarized in Table 5.1.

Table 5.1 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Amended Environmental Permit	EP-134/2002/F	26/01/06	---	(Valid) <ul style="list-style-type: none"> ▪ Site clearance ▪ Construction of a temporary storm water system ▪ Stockpiling of 6 million m3 of public fill ▪ Setting up two barging points for transporting the stockpiled public fill by barges ▪ Setting up a temporary barging point at the existing Explosive Off-loading Barging Point for the period of May 2004 to December 2004 for transporting the stockpiled public fill by barge ▪ Construction of operation of a construction and Demolition Material Sorting Facility (C&DMSF) ▪ Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin ▪ Remove the temporary fill bank
Chemical Waste Producer	5123-839-C1186-05	04/01/07	---	Spent Lubricating oil / Spent Flammable Liquid / Spent Battery / Surplus Paint
Effluent Discharge License	RE/D1185/839/1	06/07/07	31/07/12	Wastewater arising from the wheel washing bay, Sedimentation Tank & Desilting Tank

5.3 Advice on Solids and Liquid Waste Management Status

The Contractor usually disposed of non-inert waste, including general refuse and materials segregated from the existing stockpiles, to SENT landfill. Table 5.2 summarizes data on offsite waste disposal in the quarter.

Table 5.2 Estimated Offsite Waste Disposal in the Reporting Quarter

Waste Type	Examples	June 2008	July 2008	August 2008
C&D Waste	Domestic waste (site) collected in garbage bins and general refuse	0	0	0
Chemical Waste	Waste oil (L) / Chemical Waste (kg)	420 kg	450 kg	400 kg
Recycle Material	Metal scraps	0	0	0

The site toilet and shower room and several chemical toilets were in use throughout the reporting quarter. Discharge from the site toilet and shower room was made to the additional drainage DP4 after passing through the sewage treatment system. A licensed collector also regularly collected waste from the chemical toilets.

6.0 NON-COMPLIANCE OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

6.1 Summary of Non-compliance

In this reporting quarter, no exceedances of Action and Limit Level of marine water quality, 24-hr and 1-hr TSP monitoring results were recorded. Besides, no day-time noise level measured at the monitoring station exceeded the Action and Limit Level in this reporting quarter.

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

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

6.3 Summary of Actions Taken

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

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

No complaints, notifications of summons and successful prosecutions were received. A summary of environmental complaints and prosecutions was given in Table 6.1 and further details of the complaint could be found in the Complaint Log (Appendix K).

Table 6.1 Summary of Environmental Complaints and Prosecutions

<i>Period</i>	<i>Complaints logged</i>	<i>Summon served</i>	<i>Successful Prosecution</i>
<i>June 2008</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>July 2008</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>August 2008</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Cumulative</i>	<i>0</i>	<i>0</i>	<i>0</i>

7.0 COMMENTS, CONCLUSIONS AND RECOMMENDATION

This report presents the fourth quarter of the Fill Bank operation. Major activity in the Fill Bank was the import and dumping of fill material. Air quality was the major environmental issue in the Fill Bank. Generally, the Contractor implemented most of the mitigation measures to minimize the dust impact.

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

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

According to the ET weekly site inspection and IEC site audits carried out in this quarter, it was indicated that site practices of the Contractor were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was up to standard. The Contractor generally implemented sufficient dust mitigation measures, including operation of the mist spraying systems and automatic wheel washing facilities, dampening of haul roads and stockpiling areas.

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

Air Quality

- Ensure the frequency of water spraying on haul roads, unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Conduct road sweeping on the public road and the main haul roads outside and near the site egress by the road sweeper.
- Undertake water spraying on stockpiling area;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Provide water spraying onto the truckloads during inspection of fill material;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;
- Operate mist spraying systems and automatic water sprinklers in the Fill Bank;
- Implement the dust mitigation measures for the construction activities; and
- Ensure all vehicles to be washed before leaving the site egress through the provision, operation and maintenance of automatic wheel washing facilities.

Noise

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

Water Quality

- Maintain the drainage system, including the trapezoidal channels, permanent desilting chambers, DP3 & DP4 regularly;
- Operate and maintain the silt curtains regularly;
- Check and maintain the silt curtain regularly;
- Operate the cleaning vessel within the TKO Basin regularly;
- Provide proper treatment for the wastewater discharged from the area near air monitoring station TKO-A1;
- Clean up the fill material on the concrete pavement at BHA frequently; and
- Remove the stagnant water or provide pesticide for the stagnant water in the permanent desilting chambers, if any.

Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain mesh screen on top of the additional drainage, DP3 to avoid improper dumping of rubbish;
- Maintain good housekeeping at the workshop area;
- Ensure sufficient tarpaulin sheets are provided to cover drip trays; and
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any.

Landscape and Visual

- Provide hydroseeding on the exposed slopes, on which the final profile has been formed;
- Erect all the site hoarding / chaining fences in accordance with agreed design at proper location; and
- Maintain the hydroseeding slopes in accordance with the Landscape Plan.

