

**Central Reclamation, Phase III  
Quarterly EM&A Report No. 3  
(February through April 2004)**

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	<i>Name</i>	<i>Sign</i>	<i>Date</i>
<i>Prepared by :</i>	Albert Chan, ACL - Environmental Consultant		10 May 2004
<i>Reviewed by:</i>	Susana Bezy, ACL – ET Leader		10 May 2004
<i>Authorised by :</i>	Jon Varndell, ACL – Project Mgr		10 May 2004
<i>Distribution</i>			
<i>Copy No</i>	<i>Issue to</i>	<i>Attention</i>	<i>Corr. Ref.</i>
1	TDD	Mr H H Yeung	3128/M45/200/OC5966/al
2, 3	EPD	Mr M W Ho	3128/M45/200/OC5966/al
4	EPD (LCO)	Mr Allan Hung	3128/M45/200/OC5966/al
5	Leighton-China State-Van Oord JV	Mr Malcolm Plummer	3128/M45/200/OC5966/al
6	CRIII Sites/PRE	Mr Douglas Miller	3128/M45/200/OC5966/al
7	Independent Checker (Environment)	Mr Bill Douglas	3128/M45/200/OC5966/al
8	Environmental Team Leader	Ms Susana Bezy	3128/M45/200/OC5966/al
9	Office Copy		

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ACL	Atkins China Limited
CRIII	Central Reclamation Phase III
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EPD	Environmental Protection Department
ER	Engineer’s Representatives
ET	Environmental Team
IEC	Independent Environmental Checker
LCSD	Leisure and Cultural Services Department
LCSVO-JV	Leighton-China State-Van Oord Joint Venture
TDD	Territory Development Department
TSP	Total Suspended Particulates

## **Executive Summary**

Atkins China Limited (ACL) has been appointed by TDD to implement the Environmental Monitoring and Audit (EM&A) programme that was identified in the EIA Report for the CRIII Project and is providing Environmental Team services during the duration of the construction works.

This is the third quarterly EM&A - TDD Progress Report for the works specified in Section 1.3 of the CRIII EIA Report. This report summarises the monitoring results and audit findings of the EM&A program during the reporting period from 1 February to 30 April 2004.

### ***Environmental Monitoring and Audit Progress***

Noise and water quality monitoring was conducted during this quarter. Weekly environmental site inspections were also conducted during the reporting quarter. Joint site inspections were also carried out on 11 February 2004 and 22 April 2004. The IEC's environmental site inspection reports are included in ***Annex H***.

### ***Exceedances of Action and Limit Levels***

The noise monitoring carried out during this quarter did not find any exceedances that were attributable to the project works. Although the continuous monitoring data indicated several instances where the Leq (30 minutes) exceeded 75 dB(A) during the reporting quarter, investigations into these levels found that they were due to local noise conditions at the City Hall monitoring location and were not due to the project. Off-site inspections carried out by the IEC previously noted that City Hall is affected by various noise sources unrelated to the project. The IEC's observations noted that the main sources of noise near City Hall were from helicopter and vehicle traffic and passer-by activities in the area.

From the analysis of water quality monitoring results collected during this quarter, no exceedances were found to be attributable to the project marine works. Although suspended solids (SS) levels beyond the water quality criteria were found, investigations into these exceedances determined that they were likely due to natural variation in ambient conditions and/or local influencing factors in proximity of the affected monitoring stations, and they were not due to the project. The investigations considered the conditions from baseline monitoring, which was conducted during February to April 2003, and results from the control stations located outside the project's influence. A review of the monitoring results showed that control stations located outside the project's influence had similar values as marine impact stations. Seawater intake monitoring data showed variable results and exceedances were found to be localised near existing stormwater outfalls. These findings were similar to the conditions observed during baseline monitoring. Further, silty discharges from outfalls within the project area have been documented on various occasions.

### ***Complaint Log***

There were no environmental complaints received during the reporting period.

### ***Notifications of Summons and Prosecutions***

There were no notifications of summons or prosecutions received during this reporting quarter.

### ***Site Inspection and Audit***

Weekly environmental site inspections were carried out during this quarter. Any minor deficiencies noted during the site inspections were rectified by the Contractor upon receipt of notification.

The Contractor carried out a Jet Grout Column Trial on 22 April 2004. A silt curtain was used to enclose the drilling platform to prevent the dispersion of suspended sediments. EPD was notified of the works. A comprehensive monitoring programme of the trial works was also undertaken. The monitoring results will be provided in the subsequent monthly report.

It was observed during the trial that the water inside the silt curtain was quite turbid. The water outside the curtain however was visually unaffected. A mechanical failure of the jet grouting equipment caused the early termination of the trial and the Contractor has postponed the recommencement of the trial for May 2004.

## **1. INTRODUCTION**

### **1.1 Basic Project Information**

The Territory Development Department (TDD) of the Hong Kong Special Administrative Region (HKSAR) is constructing the Central Reclamation Phase III project (CRIII).

The Main Works Contract HK 12/02 for CRIII commenced on 28<sup>th</sup> February 2003. Leighton China State Van Oord Joint Venture (LCSVO-JV) was awarded the Contract No. HK 12/02 for the construction of the CRIII Engineering Works. The main construction works that were identified in the EIA Report for the Project, requiring environmental monitoring and audit, have commenced. Activities under this contract to date include demolition of Pier No.7, dredging works at IRAW and IRAE, marine piling works at IRAW and demolition of the General Post Office (GPO) Walkway.

The Contractor's works programme for the quarter is provided in **Annex E**.

### **1.2 Project Organisation and Management Structure**

Atkins China Limited (ACL) has been commissioned by TDD, the employer, to undertake the environmental monitoring and audit work for the project. ACL is also the Resident Engineers for the project and LCSVO-JV is the main contractor. An Independent Environmental Checker (IEC) has been employed to audit the EM&A programme. The contacts of key management are provided in **Annex A**.

### **1.3 Works Undertaken**

The works undertaken in the project area requiring environmental monitoring and audit as identified in the EIA Report (not including Chai Wan Basin) during the quarter included:

- Demolition work at Pier No. 7;
- Demolition of the General Post Office (GPO) Walkway;
- Dredging and rockfilling works at IRAW and IRAE;
- Marine piling at IRAW;
- Jet Grout Column Trial;
- Desilting and remedial work at Culvert F; and
- Maintenance and necessary repair work for seawater intake silt screens.

## 2. EM&A REQUIREMENTS

### 2.1 Summary of Impact EM&A Requirements

The EM&A programme requires environmental monitoring for air quality, noise, water quality, waste management and landscape and visual aspects as specified in the CRIII Project EIA. The EM&A requirements for each issue area are described in subsequent sections including:

- All required monitoring parameters;
- Action and Limit Levels; and
- Event-Action Plans.

A summary of impact EM&A requirements is presented in **Table 2-1**.

**Table 2.1 - Summary of Impact EM&A Requirements**

<b>Parameters</b>	<b>Descriptions</b>	<b>Locations</b>	<b>Frequencies</b>	<b>Duration</b>
TSP	24-Hour TSP	2 Locations	Once every 6 days	During dust generating construction works
	1-Hour TSP	2 Locations	Three times in every 6 days	During dust generating construction works
Noise	Leq (30 mins), L <sub>10</sub> , L <sub>90</sub> .	1 Location	Continuous measurements	Two weeks before Construction and During Construction
Water Quality	Dissolved Oxygen; Salinity; Temp; Suspended Solids; Turbidity.	14 Locations	3 times a week, Mid-ebb/flood tides	During Marine Works and for 4 weeks after completion of Marine Works
Waste	On-Site Waste Audit	Active Work Sites	Periodically	During Construction
	On-Site Waste Inspection			
Landscape and Visual	Audits to ensure effective implementation of mitigation measures			During Construction
General Site Conditions	Environmental Site Inspection	Works areas and areas affected by works	Periodically	During Construction

## 2.2 Environmental Quality Performance Limits

Environmental Quality Performance Limits for dust, noise and water quality have been established as part of the Baseline Monitoring Report and are provided in **Annex B**.

## 2.3 Event Action Plan

Event Action Plans for air, noise and water quality have been developed as part of the Baseline Monitoring Report and are provided in **Annex C**.

### **3. ENVIRONMENTAL STATUS**

#### **3.1 Implementation of Environmental Measures**

The Contractor has implemented relevant mitigation measures listed in the EIA Report, EM&A Manual and Further Environmental Permit. Seawater intake silt screens have been installed prior to the start of the dredging works and a silt curtain attached to a floating steel frame has been installed around the grab dredger.

#### **3.2 Environmental Monitoring Locations**

Drawings showing the project area and locations of the monitoring stations are provided in **Annex D**.

#### **3.3 Air Quality Monitoring Results**

Once dust generating construction works have commenced, results of air quality monitoring will be presented with graphical plots to depict trends over a 4-month period (including the last month of the previous quarter and the present quarter).

#### **3.4 Noise Quality Monitoring Results**

The graphical plot of noise quality monitoring results for this quarter is provided in **Annex F**.

#### **3.5 Water Quality Monitoring Results**

The graphical plot of water quality monitoring results for this quarter is provided in **Annex G**. An analysis of the monitoring results did not find any construction impacts on suspended solids (SS) at the project site. Although elevated levels of SS were found, particularly at the seawater intake stations (M1 to M6 and M11 and M12), these were investigated and were found not to be due to project works. The elevated SS levels were generally localised and occurred at seawater intake stations located near outfalls. Silty discharges from outfalls that are unrelated to the project works have been observed and documented in the reporting period. These discharges have been reported to the Environmental Protection Department (EPD) and are currently being investigated.

#### **3.6 Solid and Liquid Waste Management Status**

Solid and liquid waste management was implemented according to the Waste Management Plan during the reporting quarter.

#### **3.7 Landscape and Visual Audit**

As the works undertaken during the reporting month were related to demolition works and marine construction works, the landscape and visual impacts are considered to be minimal.

#### **4. ENVIRONMENTAL ENQUIRY, COMPLAINT AND NON-COMPLIANCE**

##### **4.1 Environmental Exceedances**

There were no exceedances of air, noise and water quality due to the project works found during the reporting quarter.

##### **4.2 Summary of Actions Taken for Non-Compliance**

As there were no instances of non-compliance due to the project works in this reporting quarter, no actions and follow-up procedures were required.

##### **4.3 Environmental Enquiries**

TDD received three enquiries regarding the dumping of rock fill during April 2004. The first enquiry, addressed to EPD and received on 9 April 2004, questioned whether rock fill material used for the project are obtained from approved source. An investigation conducted by the ER showed that all rock fill sources have been previously approved. The other two enquiries received on 19 April 2004 were also investigated and was found that only suitable rock fill materials are used.

The ER carries out inspections of the Contractor's supply of rock fill to ensure the quality and correct grading of rock. Rejected materials are returned back to the originator. Additionally, silt curtains are placed around the grab when depositing rock fill to avoid dispersion of suspended solids and the water quality monitoring programme did not find any exceedances attributable to the rock filling activities.

##### **4.4 Environmental Complaints and Prosecutions**

No environmental complaints, prosecution notices or summons were received during the reporting quarter.

##### **4.5 Record of Environmental Complaints and Summons & Prosecutions**

The following table summarises all the complaints attributable to project works received (both written and verbal) and the liaison/consultation undertaken, and the actions and follow-up procedures taken.

**Table 4.1 - Summary of Complaints Received**

<b>Month/ Date of Complaint</b>	<b>Media</b>	<b>Complaint &amp; Action</b>	<b>Liaison/ Consultation Taken</b>	<b>Follow-up Action</b>
February 2004	N/A	None	N/A	N/A
March 2004	N/A	None	N/A	N/A
April 2004	N/A	None	N/A	N/A

There were no notifications of summons and prosecutions for the reporting quarter.

## **5. CONCLUSION**

During the reporting quarter, no exceedances of environmental performance criteria were found to be caused by the project works. For water quality monitoring, low DO levels and elevated SS concentrations recorded were investigated and are attributed to either ambient conditions or adverse influencing factors unrelated to project marine works. It was found that discharges from outfalls located near seawater intake monitoring stations are major influencing factors that adversely impact water quality within the works site area.

The marine-based impact monitoring stations established to monitor the overall impact of the reclamation activities on water quality in Victoria were shown to have similar results as the control stations which are located outside the influence of project works. As such, the water quality monitoring results did not indicate that the marine works were adversely affecting water quality outside the works boundary in Victoria Harbour.

During environmental site inspections conducted during the reporting quarter, minor deficiencies were noted. However, the Contractor rectified all deficiencies after receipt of notification.

TDD received three enquiries regarding the dumping of rock fill during April 2004. The enquiries were investigated and it was found that all rock fill sources have been previously approved and that only suitable rock fill materials are used. The ER carries out inspections of the Contractor's supply of rock fill to ensure the quality and correct grading of rock. Rejected materials are returned back to the originator. Additionally, silt curtains are placed around the grab when depositing rock fill to avoid dispersion of suspended solids and the water quality monitoring programme did not find any exceedances attributable to the rock filling activities.