

**Central Reclamation, Phase III
Quarterly EM&A Report No. 26
(November 2009 through January 2010)**

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Abbreviations & Acronyms

ACL	Atkins China Limited
AL	Action Level
CEDD	Civil Engineering and Development Department
CRIII	Central Reclamation Phase III
DO	Dissolved Oxygen
EIA	Environmental Impact Assessment
EIAO	Environmental Impact Assessment Ordinance
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
LL	Limit Level
PLA	People's Liberation Army Forces Hong Kong
TDD	Territory Development Department
TSP	Total Suspended Particulates
SS	Suspended Solids
WMP	Waste Management Plan

Executive Summary

The Central Reclamation Phase III (CRIII) Works, Contract No. HK 12/02, was awarded to Leighton China State Van Oord Joint Venture (LCSVO-JV) by the Civil Engineering and Development Department (CEDD). (Previously called the Territory Development Department before merger with the Civil Engineering Department on 1st July 2004.)

The works under the Contract HK 12/02 commenced on 28th February 2003. Contract HK 16/03 for the CRIII Hinterland Drainage Improvement Works was awarded to Wang Kee Construction Co. Ltd., and works for this contract commenced on 17th December 2003.

Atkins China Limited (ACL) has been commissioned by CEDD as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme described in the approved EM&A Manual for the CRIII Project.

This is the 26th quarterly EM&A 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 1st November 2009 to 31st January 2010.

Environmental Monitoring and Audit Progress

Air quality, noise and water quality monitoring were conducted during this quarter. Weekly environmental site inspections were also conducted during this reporting quarter.

Additional water quality monitoring was conducted, since 14th December, for the “the water quality of embayment area between the eastern seawall and the Hong Kong Convention and Exhibition Centre (HKCEC) upon completion of eastern seawall”, in accordance with the Environmental Permit No. EP-01/122/2003/D Condition 3.9.

The water quality monitoring conducted by the ET was changed, as approved by EPD, since 11th January 2010, from 8 stations to 3 stations.

Exceedance of Action and Limit Levels

No exceedance in TSP level was recorded at the two monitoring stations during this reporting quarter.

17 exceedance in noise level was recorded at the City Hall monitoring station on 9th, 11th and 12th November 2009, 5th, 6th, 14th and 31st December 2009 and 1st, 11th and 26th January 2010. On 9th, 11th and 12th November 2009, 6th, 14th and 31st December 2009 and 26th January 2010, the noise exceedances were considered to be attributed by the extension work on Hong Kong Planning and Infrastructure Exhibition Gallery rather than the project works. On 5th December 2009, activities East Asian Games opening ceremony which included firework display was carried out on the floating platform of Victoria Harbour. On 1st January 2010, a protest parade was held near the City Hall. On 11th January 2010, the major noise source during the monitoring period was Ceremonial opening of Legal Year 2010 which held in City Hall.

Water quality exceedances were recorded on 14 sampling days in this reporting quarter. All exceedances have been investigated. All exceedances of Action/Limit Level for DO were considered to have not been related to the Project works. All

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exceedances of Action/Limit Level for SS were also considered to have not been related to the Project works.

Complaint Log

There were no complaints received in relation to environment impact during this reporting quarter.

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. Minor deficiencies noted during the site inspections were rectified by the Contractor upon receipt of notification. The observations and findings are outlined below:

5th November 2009

The used batteries were placed outside of Chemical Waste Storage Area. The contractor was reminded to dispose batteries into Chemical Waste Storage Area.

12th November 2009

N.A.

19th November 2009

N.A.

26th November 2009

N.A.

3rd December 2009

The stockpiles were found at FRAW near the site office without cover. The Contractor was reminded to cover the stockpile to prevent dust generation.

Water ponds were found at FRAE near the foreman's office. The Contractor was reminded to remove/ fill up the ponds as soon as possible.

9th December 2009

N.A.

17th December 2009

N.A.

22nd December 2009

N.A.

30th December 2009

N.A.

7th January 2010

N.A.

14th January 2010

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A part of access roads were observed dry in FRAE works area. The contractor was reminded to prevent the dust emission from the access roads by properly watering.

Drip tray for oil drum was broken near the mouth of culvert J works area. The contractor was reminded to replace the drip tray as soon as possible.

22nd January 2010

N.A.

28th January 2010

The fuel drums were temporary storage without drip tray near the sub-contractor office at FRAW works area. The contractor was reminded to provide the drip tray for the oil drums to avoid soil contamination.

1. INTRODUCTION

1.1 Basic Project Information

The Main Works Contract HK 12/02 for CRIII commenced on 28th February 2003 and was awarded to Leighton-China State-Van Oord Joint Venture (LCSVO-JV) 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.

This is the 26th quarterly EM&A 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 1st November 2009 to 31st January 2010.

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 CEDD as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme described in the approved EM&A Manual and required under Clause 4 of the Variation of Further Environmental Permit (No. EP-01/122/2003/A) issued to Leighton-China State-Van Oord Joint Venture in December 2007 for the CRIII Project. A variation of the Further Environmental Permit for the Project (EP-01/122/2003/B) and (EP-01/122/2003/C) were granted on 26 May 2008 and 17 July 2009. This was then superseded by another variation of Further Environmental Permit for the Project (EP-01/122/2003/D) granted on 1 September 2009. The CRIII Project Organisation is shown 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 this reporting quarter include:

- Type A filling in FRAW and FRAE above +2.5mPD
- Surcharging in FRAW and FRAE
- Construction of cantilever slab at caisson
- Piling for Culvert F
- Sheet piling, excavation, structural works and backfilling for Culvert F
- General filling works above +2.5 mPD in IRAE
- Construction of storm and foul drainage and gullies in hinterlands for Road P2, Road D7, Road D8 and Road D9 and adjacent to the GPO
- Roadworks along Lung Wui Road, Tim Wa Avenue (Road D8) and Road P2
- Backfilling to Culvert K extension
- Precasting for seawall blocks and retaining wall (offsite)
- Installation of cooling water mains for Tamar Development Project at IRAE
- Installation of cooling mains discharge pipes in FRAE
- Installation of lift at Man Yiu Street footbridge
- Diaphragm walling and barrettes for CWB Works.

2. EM&A REQUIREMENTS

2.1 Summary of Impact EM&A Requirements

The EM&A programme requires environmental monitoring for air quality, noise, waster 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

Parameters	Descriptions	Locations	Frequencies	Duration
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 ₁₀ , L ₉₀ .	1 Location	Continuous measurements	Two weeks before Construction and During Construction
Water Quality	Dissolved Oxygen; Salinity; Temp; Suspended Solids; Turbidity.	Before 11 th Jan 2010 8 Locations Since 11 th January 2010 3 Locations ⁽¹⁾	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

Note (1) Seawater Intake M01A, M04B and land based Monitoring Station "Culvert F" was monitored since 11th January 2010

2.2 Environmental Quality Performance Limits

Environmental Quality Performance Limits for air quality, 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 quality, 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.

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

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

3.4 Noise Quality Monitoring Results

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

3.5 Water Quality Monitoring Results

The graphical plot of water quality monitoring results for this reporting quarter is provided in **Annex H**.

The additional water quality monitoring results, since 14th December, for the “the water quality of embayment area between the eastern seawall and the Hong Kong Convention and Exhibition Centre (HKCEC) upon completion of eastern seawall”, in accordance with the Environmental Permit No. EP-01/122/2003/D Condition 3.9, are presented in **Annex I**.

3.6 Solid and Liquid Waste Management Status

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

3.7 Landscape and Visual Audit

As the works undertaken during this reporting quarter were mainly related to reclamation, buildings and infrastructure works, the landscape and visual impacts are considered to be minimal.

4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

4.1 Environmental Exceedances

No exceedance in TSP level was recorded at the two monitoring stations during this reporting quarter.

17 exceedance in noise level was recorded at the City Hall monitoring station on 9th, 11th and 12th November 2009, 5th, 6th, 14th and 31st December 2009 and 1st, 11th and 26th January 2010. On 9th, 11th and 12th November 2009, 6th, 14th and 31st December 2009 and 26th January 2010, the noise exceedances were considered to be attributed by the extension work on Hong Kong Planning and Infrastructure Exhibition Gallery rather than the project works. On 5th December 2009, activities East Asian Games opening ceremony which included firework display was carried out on the floating platform of Victoria Harbour. On 1st January 2010, a protest parade was held near the City Hall. On 11th January 2010, the major noise source during the monitoring period was Ceremonial opening of Legal Year 2010 which held in City Hall.

Water quality exceedances were recorded on 14 sampling days in this reporting quarter. All exceedances have been investigated. All exceedances of Action/Limit Level for DO were considered to have not been related to the Project works. All exceedances of Action/Limit Level for SS were considered to have not been related to the Project works.

Table 4.1 - Summary Water Quality Exceedances from November 2009 to January 2010

Date	Tide	Parameter	Exceedance	Station
Water Quality Monitoring in Accordance with EM&A Manual				
4 th November 2009	Mid-Flood	SS	AL	M6
6 th November 2009	Mid-Ebb	DO	AL	M6
	Mid-Flood	DO	AL	M6
		SS	AL	M6
9 th November 2009	Mid-Ebb	DO	AL	M6 and M7 (B)
	Mid-Flood	DO	AL	M6 and M7 (B)
11 th November 2009	Mid-Ebb	DO	AL	M4B, M5B and M6
	Mid-Flood	DO	AL	M4B, M5B and M6
20 th November 2009	Mid-Ebb	DO	AL	M4B, M5B and M6
23 rd November 2009	Mid-Ebb	DO	AL	M5B
	Mid-Flood	DO	AL	M4B, M5B and M6
25 th November 2009	Mid-Ebb	DO	AL	M1A, M4B, M5B, M6 and M7(B)
	Mid-Flood	DO	AL	M1A, M4B, M5B, M6 and M7(B)
27 th November 2009	Mid-Ebb	DO	AL	M1A, M4B and M5B
	Mid-Flood	DO	AL	M1A, M5B and M6
7 th December 2009	Mid-Ebb	DO	AL	M1 and M6
9 th December 2009	Mid-Ebb	DO	AL	M1A, M4B, M5B and M6
	Mid-Flood	DO	AL	M5B
11 th December 2009	Mid-Ebb	DO	AL	M5B
	Mid-Flood	DO	AL	M1A, M4B, M5B and M6
14 th December 2009	Mid-Ebb	DO	AL	M4B and M6

Date	Tide	Parameter	Exceedance	Station
	Mid-Flood	DO	AL	M4B and M5B
21 st December 2009	Mid-Ebb	DO	AL	M6
23 rd December 2009	Mid-Ebb	DO	AL	M6
	Mid-Flood	DO	AL	M1A, M4B and M5B

A statistical analysis (presented in **Annex J**) of the suspended solids monitoring results found that the quarterly mean is significantly less than 1.3 times of the ambient mean recorded during the baseline period. This indicates that the Project construction works did not cause adverse impacts during the reporting period with respect to the baseline condition.

No exceedances in additional DO water monitoring were recorded during the reporting period.

4.2 Non-Compliance

No non-compliance with regard to site environmental audit was recorded during the reporting period.

4.3 Summary of Actions Taken by the Contractor

The Contractor has implemented the following measures to prevent air and water quality impacts:

- Contractor has implemented their Drainage Management Plan to Control Site Run-off for the wet season – actions completed and underway include: repair and improvement of existing bunds/sandbags on the edge of the reclamation; installation of additional bunds; compaction of soil surface and paths where possible to prevent erosion, creation of drainage channels and soak pits;
- Provision of additional settlement tanks to remove suspended solids from discharge waters;
- Provision of catch pits to collect spill over from wheel washing facilities and increased frequency of cleaning of catch-pits; and
- Water browsing of haul roads and other areas of the site and covering of stockpiles.

4.4 Environmental Enquiries

No environmental enquiries were received during this reporting quarter.

4.5 Environmental Complaints and Prosecutions

No environmental complaints were received during this reporting quarter.

4.6 Record of Environmental Complaints and Summons & Prosecutions

There was no record of environmental complaints during this reporting quarter.

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

5. CONCLUSION

During the environmental site inspections conducted within this reporting quarter, no non-compliances were noted and no prosecutions were received during this reporting quarter.

No exceedance in TSP level was recorded at the two monitoring stations during this reporting quarter.

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Water quality exceedances were recorded on 14 sampling days in this reporting quarter. All exceedances have been investigated. All exceedances of Action/Limit Level for DO were considered to have not been related to the Project works. All exceedances of Action/Limit Level for SS were considered to have not been related to the Project works.

No exceedances in additional DO water monitoring were recorded during the reporting period.