

**Central Reclamation, Phase III
Quarterly EM&A Report No. 33
(August 2011 through October 2011)**

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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

Not Used

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 33rd 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 August 2011 to 31st October 2011.

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 2009, 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. The compliance monitoring was completed mid-September 2011. The Post project Water quality monitoring was conducted on October 2011.

Exceedance of Action and Limit Levels

There were no exceedances in TSP level were recorded at the two monitoring stations during this reporting quarter.

145 noise exceedances were recorded on 18th June 2011. On 18th June 2011, According to the site observation, there were maintenance works for the City Hall (repave the road) at the ground floor near City Hall during August 2011. On 5th, 6th and 8th September 2011, the exceedances may have been attributed to the Project works, possibly due to the breaking concrete rubbles activities. The contractor implement noise mitigation measures such as use of portable noise barriers and install a muffler around the breaker head. No further exceedances due to project related were recorded since 9th September 2011. On 16th, 17th and 19th September 2011, the noise exceedances were considered to be attributed to maintenance works of city Hall rather than the project works. 24 noise exceedances were recorded at the monitoring station on 1st, 7th, 8th, 11th, 25th, 27th and 28th October 2011. On 1st October 2011, fireworks display was carried out at night. As such, the noise exceedances are considered to be attributed by external factors and unlikely to be related to project works. On 7th, 8th and 11th October 2011, the major noise source was noise generated from concrete

breaking for City Hall maintenance works at the ground floor near the monitoring location during the monitoring period. On 25th, 27th and 28th October 2011, excavation and breaking activities by hand-held breakers were undertaken in the works area of former Queen's Pier during monitoring period. Therefore, the exceedances were considered to be attributed to the Project works, possibly due to noise generated by the hand-held breakers. ET communicated this with the Contractor representative on 28th October 2011 (approx. 16:30). According to site observations and Contractor record, adopting the use of single hand-held breaker and decreasing the frequency of breaking in the works area of former Queen's Pier were undertaken to reduce the nuisance to the NSR.

Water quality exceedances were recorded on 24 sampling days on August and September 2011. All exceedances have been investigated. All exceedances of Action Level for DO and 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.

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:

4th August 2011

Stockpiles of sand was found with improperly cover in Road P2. The contractor was reminded to avoid the dust emission from stockpiles by properly cover.

The contractor was reminded to remove the rubbish and stagnant water in the garbage bucket. The contractor was also reminded to remove the rubbish regularly and keep the site tidiness

The contractor was reminded to clear the accumulated water and spray larvicidal oil to prevent mosquito breeding.

11th August 2011

The accumulated water was found on the I-beams at FRAE works area. The contractor was reminded to clear the accumulated water and spray larvicidal oil to prevent mosquito breeding.

The recycle materials were found in the garbage bucket. The contractor was reminded to implement the on-site sorting and separation of waste properly in the site.

Executive Summary

19th August 2011

The accumulated water was still found on the I-beams at FRAE works area. According to contractor, those I-beams cannot be moved in further period, and contractor was sprayed larvicidal oil to prevent mosquito breeding.

The recycle materials were still found in the garbage bucket. The contractor was reminded to implement the on-site sorting and separation of waste properly in the site.

25th August 2011

The muffler was installed around the breaker head to reduce noise in Lung Mui Road work areas.

1st September 2011

The contaminated soil was found near the access road at FRAE. The contractor was reminded to remove the contaminated soil and treat as chemical waste.

The dust emission was found from the loading activities at the Fomer Queen's Pier work area. The contractor was reminded to prevent the dust emission buy regular watering during the loading activities.

8th September 2011

The contaminated soil was still found near the access road at FRAE. The contractor has arranged the date to collect and treat the chemical soil properly.

15th September 2011

The wheel-washing water was found discharge to drainage without sediment traps or tanks. The discharge of wheel-washing water was stopped immediately during the site inspection. The contractor has provided temporary sediment traps for the wheel-washing after the site inspection.

22nd September 2011

The fuel drum was found without drip tray at the work area of Lung Wo Road. The contractor was reminded to provide secondary containment (drip tray, etc) for chemical drums / oil bucket.

29th September 2011

Cement bags were found with improperly cover in portion 6. Cement bags in portion 6 had been covered properly by contractor immediately.

6th October 2011

Nil.

13th October 2011

Nil.

20th October 2011

Oil barrels and small containers filled with lubricates were observed near the general post office area. The contractor was reminded to provide drip trays for barrels containing lubricants.

27th October 2011

Workers were found to remove the crushed stones by the water jet at the seafront near the pumping room of portion 4. The contractor was reminded to avoid the trashes or crushed stones fall to sea form the seafront during the cleaning process.

Not Used

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 33rd 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 August 2011 to 31st October 2011.

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 26th May 2008 and 17th July 2009. This was then superseded by another variation of Further Environmental Permit for the Project (EP-01/122/2003/D) granted on 1st 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
- General filling works above +2.5mPD in IRAE
- Surcharging in FRAW and FRAE
- Installation of removable panels at caisson
- Installation of remaining seawall blocks and retaining wall on the west side of culvert F
- Construction of storm and foul drainage and gullies in hinterlands for Road P2 and Road D9
- Roadworks for Road P2
- Construction of GPO boundary wall
- Construction of PLA boundary wall and entrance
- Construction of Promenade enhancement works
- Construction of buildings at PLA berth
- Road P2 Underpass structures
- Construction of CWB structure
- Backfilling and waterproofing works for CWB structure

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- Importation of fill material
- Strengthening of Man Yiu Street Footbridge

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	L_{eq} (30 mins), L_{eq} (15 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.	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. The compliance monitoring was completed mid-September 2011. The Post project Water quality monitoring was conducted on October 2011
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**.

Not Used

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 2009, 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.

Not Used

4. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

4.1 Environmental Exceedances

There were no exceedances in TSP level were recorded at the two monitoring stations during this reporting quarter.

145 noise exceedances were recorded on 18th June 2011. On 18th June 2011, According to the site observation, there were maintenance works for the City Hall (repave the road) at the ground floor near City Hall during August 2011. On 5th, 6th and 8th September 2011, the exceedances may have been attributed to the Project works, possibly due to the breaking concrete rubbles activities. The contractor implement noise mitigation measures such as use of portable noise barriers and install a muffler around the breaker head. No further exceedances due to project related were recorded since 9th September 2011. On 16th, 17th and 19th September 2011, the noise exceedances were considered to be attributed to maintenance works of city Hall rather than the project works. 24 noise exceedances were recorded at the monitoring station on 1st, 7th, 8th, 11th, 25th, 27th and 28th October 2011. On 1st October 2011, fireworks display was carried out at night. As such, the noise exceedances are considered to be attributed by external factors and unlikely to be related to project works. On 7th, 8th and 11th October 2011, the major noise source was noise generated from concrete breaking for City Hall maintenance works at the ground floor near the monitoring location during the monitoring period. On 25th, 27th and 28th October 2011, excavation and breaking activities by hand-held breakers were undertaken in the works area of former Queen's Pier during monitoring period. Therefore, the exceedances were considered to be attributed to the Project works, possibly due to noise generated by the hand-held breakers. ET communicated this with the Contractor representative on 28th October 2011 (approx. 16:30). According to site observations and Contractor record, adopting the use of single hand-held breaker and decreasing the frequency of breaking in the works area of former Queen's Pier were undertaken to reduce the nuisance to the NSR.

Water quality exceedances were recorded on 24 sampling days on August and September 2011. All exceedances have been investigated. All exceedances of Action Level for DO and SS were considered to have not been related to the Project works.

Table 4.1 - Summary Water Quality Exceedances from August 2011 to October 2011

Date	Tide	Parameter	Exceedance	Station
Water Quality Monitoring in Accordance with EM&A Manual				
1 st August 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
3 rd August 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
5 th August 2011	Mid-flood	DO	AL	M1A and M4B
12 th August 2011	Mid-flood	DO	AL	M1A and M4B
15 th August 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
17 th August 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
19 th August 2011	Mid-flood	DO	AL	M1A and M4B
22 nd August 2011	Mid-flood	DO	AL	M1A
24 th August 2011	Mid-flood	DO	LL	M4B
26 th August 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
29 th August 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
31 st August 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
2 nd September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
5 th September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	LL	M1A and M4B
7 th September 2011	Mid-ebb	DO	LL	M1A and M4B
	Mid-flood	DO	AL	M1A
			LL	M4B
9 th September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
12 th September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
14 th September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
16 th September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
19 th September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	LL	M1A
		DO	AL	M4B
21 st September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B

Date	Tide	Parameter	Exceedance	Station
23 rd September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
26 th September 2011	Mid-ebb	DO	AL	M1A and M4B
	Mid-flood	DO	AL	M1A and M4B
28 th September 2011	Mid-ebb	DO	AL	M1A and M4B
		SS	AL	M1A
	Mid-flood	DO	AL	M1A and M4B
30 th September 2011	Mid-flood	SS	AL	M1A

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.

Not Used

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.

There were no exceedances in TSP level were recorded at the two monitoring stations during this reporting quarter.

145 noise exceedances were recorded on 18th June 2011. On 18th June 2011, According to the site observation, there were maintenance works for the City Hall (repave the road) at the ground floor near City Hall during August 2011. On 5th, 6th and 8th September 2011, the exceedances may have been attributed to the Project works, possibly due to the breaking concrete rubbles activities. The contractor implement noise mitigation measures such as use of portable noise barriers and install a muffler around the breaker head. No further exceedances due to project related were recorded since 9th September 2011. On 16th, 17th and 19th September 2011, the noise exceedances were considered to be attributed to maintenance works of city Hall rather than the project works. 24 noise exceedances were recorded at the monitoring station on 1st, 7th, 8th, 11th, 25th, 27th and 28th October 2011. On 1st October 2011, fireworks display was carried out at night. As such, the noise exceedances are considered to be attributed by external factors and unlikely to be related to project works. On 7th, 8th and 11th October 2011, the major noise source was noise generated from concrete breaking for City Hall maintenance works at the ground floor near the monitoring location during the monitoring period. On 25th, 27th and 28th October 2011, excavation and breaking activities by hand-held breakers were undertaken in the works area of former Queen's Pier during monitoring period. Therefore, the exceedances were considered to be attributed to the Project works, possibly due to noise generated by the hand-held breakers. ET communicated this with the Contractor representative on 28th October 2011 (approx. 16:30). According to site observations and Contractor record, adopting the use of single hand-held breaker and decreasing the frequency of breaking in the works area of former Queen's Pier were undertaken to reduce the nuisance to the NSR.

Water quality exceedances were recorded on 24 sampling days on August and September 2011. All exceedances have been investigated. All exceedances of Action Level for DO and 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.

Not Used

Annex A

***Project Organisation/
Contact Information***

Annex B

***Quality Performance Limits for
Air, Noise and Water Quality***

Annex C

Event Action Plans for Air, Noise and Water Quality

Annex D

Monitoring Stations Locations

Annex E

Contractor's Work Programme

Annex F

***Graphical Representation of
Air Quality Monitoring Results***

Annex G

***Graphical Representation of
Noise Monitoring Results***

Annex H

***Graphical Representation of
Water Quality Monitoring Results***

Annex I

Additional DO water monitoring results

Annex J

***Quarterly Assessment of Construction
Impacts on Suspended Solids***