

Kowloon-Canton Railway Corporation

# KCRC East Rail Extensions Sheung Shui to Lok Ma Chau

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Monthly EM&A Report –  
January 2004

February 2004

Report no: EA00761/R125/1



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## EXECUTIVE SUMMARY

### INTRODUCTION

This Report (in HTML format) is the nineteenth Monthly EM&A Report for the Sheung Shui to Lok Ma Chau Spur Line and includes the Monthly EM&A Reports for construction contracts LDB201, LCC202 and LCC300. This Report and all monitoring data collected under the EM&A Programme are available on the KCRC East Rail Extensions Environmental Monitoring and Audit Website at [www.env-ere.kcrc.com](http://www.env-ere.kcrc.com).

### LDB201 Sheung Shui to Chau Tau Tunnels

The construction works for LDB201 commenced in late November 2002. This Report presents the EM&A findings in the period from 26 December 2003 to 25 January 2004. The main construction activities undertaken in the reporting month include:

- East Approach Area – San Wan Road & East Rail Area: Cable trough for CLP cable diversion, hoarding between existing East Rail uptrack and WSD watermains, removal of ballasts on abandoned up and down tracks, pre-drilling for driving sheet piles, removal of abandoned OHL masts and footings next to abandoned down track;
- Cut and cover cofferdam (near Sheung Shui Launching Shaft Area): Sheet piling work for cofferdam construction, PIP piling for ventilation building, pumping test and excavation, temporary steel decking for site access to Cut & Cover Tunnel and diversion of a diameter-250 Golf Club water pipe;
- TBM Works area: Tunnel boring and lining, and regular maintenance of TBM;
- East EAP (EAP 2): Shaft excavation, strut and Waler installation, diaphragm wall over break trimming and surface grinding;
- West EAP (EAP 5): Guide walls trimming, capping beam construction and shaft excavation;
- Future Kwu Tung Station Enabling Works Area: Shaft excavation, strut installation & dismantling, and cut & cover box base slab construction; and
- West Approach Area: Construction of the capping beam and parapet at extraction shaft, excavation of extraction shaft and cofferdam, installation of geotechnical instruments, sheet pile installation and construct tunnel box at Box A1, Chau Tau Channel.

LDB201 conducted the routine monitoring works at these monitoring locations: AM1, AM2 and AM3 for air quality, NM1, NM1A, NM2, NM3, NM4, NM5, NM6, NM7, NM8, NM9, NM10, NM11 and NM12 for noise, and URS, SR1, URB, RB1, UCTC and CTC1 for water quality, in this reporting month. Hydrological monitoring at Gates 1, 2, 3 and 4 was continued.

TSP monitoring was conducted once every six days and three sets of 1-hr TSP monitoring were conducted once every six days at the monitoring locations. There were a number of Action and Limit Levels exceedances of TSP at the monitoring locations during the reporting month. These exceedances were likely due to the poor ambient weather condition during the monitoring period. Nevertheless more frequent

watering of unpaved areas was recommended by the contractor's Environmental Team Leader (CET Leader) to reduce the potential dust impacts.

Noise monitoring of  $L_{eq(30min)}$  was conducted once every six days during non-restricted hours at the identified monitoring locations. There was no exceedance recorded in the reporting month.

Water quality monitoring was conducted at the identified water quality monitoring locations. Exceedances of turbidity and suspended solids were recorded at the river monitoring locations in the reporting month. The exceedances were likely due to the overflowing of silty water from a sedimentation tank without frequent removal of silt, the cleaning up of riverbed by DSD's contractor and the disturbance of sediment in the river. The Contractor was reminded to check the sedimentation tanks regularly and remove the silt whenever necessary.

The excavated spoil was mainly generated from the diaphragm wall construction at East EAP, TBM excavation, excavation works at Future Kwu Tung Station Box and West Cut & Cover Tunnels. These C&D waste were disposed of to Kai Tak Public Filling Barging Point. The excavated spoils were transferred to alternative sites for reuse including the works area under the EPD's Project of Development and Management of NENT Landfill, HyD's Project of Deep Bay Link – Northern Section, Housing Authority Project of Construction of Fanling Area 36, Phase 3 and Contract LCC202 – West Section Alignment and Associated Works. All the disposal and transportation of waste were recorded under the four-page trip ticket system. Delivery and arrival time of the trucks were also recorded.

No complaint, warning or prosecution was received during the reporting month.

There were weekly site inspections carried out by the CET Leader and an IEC monthly site audit on 13 January 2004. The Contractor has proposed mitigation measures to rectify the environmental deficiencies or improve the environmental performance in response to the observations raised by the CET Leader during weekly site inspection and the IEC during the monthly site audit. The proposed measures include cleaning up of perimeter channels more frequently, providing wheel washing facilities at every site exit, using a well maintained concrete lorry pump, removing silt from the sedimentation tank, cleaning up of oil stain and rubbish, and providing drip trays for all oil containers. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

### **LCC202 West Section Alignment and Associated Works**

The commencement date for LCC202 started on 26 March 2003. This Report presents the EM&A works during the period from 25 December 2003 to 24 January 2004. Within this reporting month, the major construction works included pre-bored H-piling at P3, pre-bore drilling at W24-37 and W40-49, bored piling at P3, column construction at W24-37 and W40-49, as well as pile cap construction at W24-37 and W40-49. Construction Noise Permit (CNP) was obtained for the launching girder preparation for segment construction during the restricted hours and this has been conducted from 22 to 24 January 2004.

LCC202 conducted the routine monitoring works at these monitoring locations: AM4 for air quality, NM15 for noise, and FP2, USRT and STR1 for water quality, in this

reporting month. As FP1 was found dry and FP3 was already filled for reedbed construction, no water quality monitoring was conducted at these two locations.

TSP monitoring was conducted once every six days and three sets of 1-hr TSP monitoring were conducted once every six days at the monitoring location. There was no exceedance recorded in the reporting month.

Noise monitoring of  $L_{eq(30min)}$  was conducted once every six days during non-restricted hours at the identified monitoring location. There was no exceedance recorded in the reporting month.

Water monitoring was undertaken at USTR and STR1 at San Tin River, and the fishpond, namely, FP2. Exceedances on pH value, suspended solids and turbidity were recorded in this reporting month. The CET Leader conducted the site investigations on the cause of the exceedances. It was found that the exceedances were likely due to natural variation and other constructor's works conducted in the vicinity of the sampling locations. Moreover the nature of the monitoring locations were substantially changed comparing to the baseline monitoring period. Therefore the exceedances due to the works from LCC202 are unlikely.

There were about 1,692m<sup>3</sup> of reusable excavated material transported from LCC202 site to LFCC007 and about 104.16 m<sup>3</sup> of general refuse collected by a licensed collector for disposal in the reporting month. All the disposal and transportation of waste were recorded under a trip ticket system.

No notification of summons or complaint was received during the reporting month.

The CET Leader carried out weekly site inspections and an IEC monthly site audit was conducted on 20 January 2004. In response to the observations raised by the ET Leader and the IEC, the Contractor has proposed mitigation measures including maintaining the slope to avoid falling off of soil, performing wheel-washing activities properly to prevent depositing mud on road, maintaining good housekeeping and relocating the silt bund away from the channel to avoid washing off. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

### **LCC300 Lok Ma Chau Station and Associated Works**

The EM&A programme for LCC300 commenced in mid-December 2002. This report summarises the EM&A works conducted during the period from 26 December 2003 to 25 January 2004. During the reporting month the principal work activities included earth works for reedbed and surcharge areas, substructure and superstructure at the terminus area, construction of western channel outfall, bore-piling, pipe pile wall grouting, tree felling and trench excavation for utility works along the Emergency Access Road (EVA). Construction of Chau Tau Culvert commenced during the reporting month.

LCC300 conducted the routine monitoring works at these monitoring locations: AM4 for air quality, NM13, NM14 and NM15 for noise, and STR1 for water quality, in this reporting month. Due to the sand filling works at FP3, alternative water quality monitoring location was identified to replace FP3 and the proposal of the alternative water quality monitoring location was submitted to EPD for approval. Water quality monitoring was not conducted at USTR as construction works for San Tin Eastern Main Drainage Channel were undertaken at that monitoring station.

TSP monitoring was conducted once every six days and three sets of 1-hr TSP monitoring were conducted once every six days at the monitoring location. An Action Level exceedance of TSP was recorded during the reporting month. The exceedance was likely due to the frequent delivery of precast units for LCC202 works and the earth works of the Lok Ma Chau Crossing Improvements.

Noise monitoring of  $L_{eq(30min)}$  was conducted once every six days during non-restricted hours at the identified monitoring locations. There was no exceedance recorded in the reporting month.

Water quality monitoring was conducted at the downstream monitoring location, STR1, at San Tin River. No exceedance was recorded.

A small amount of general refuse and C&D materials were generated during the reporting month. They were transferred to the landfill site by a licensed collector. Recycling of used paper was undertaken.

No notification of summons or complaint was received during the reporting month.

The CET Leader and the Engineer conducted regular site inspections and the IEC conducted a monthly site audit on 16 January 2004 during the reporting month. In response to the NC and observations raised by the IEC during the site audit, the Contractor has instigated an action plan to rectify the inadequacies. The remedial actions included cleaning dust and dirt on road, ensuring wheel-washing activities undertaken properly, protecting the gaps at the bottom of concrete blocks to prevent seeping of muddy water, removing wet materials after unloading, reviewing the chemical dosing for the sedimentation process, providing chemical toilets, covering the stockpiles and slope, establishing housekeeping team to maintain good housekeeping, providing drip tray for oil drum, reminding workers not to use Gate 3, and proper segregation of waste in designated storage area and collection points. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

# 1 Introduction

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Hyder has been commissioned by KCRC as the IEC for the East Rail Extensions, which include the Ma On Shan to Tai Wai Rail, the Hung Hom to Tsim Sha Tsui Extension and the Lok Ma Chau Spur Line. A requirement of the Contract is for the IEC to prepare a combined EM&A Report on a monthly basis for each of the above rail lines. The combined report combines the Monthly EM&A Reports for each of the construction contracts within each rail line. This Report (in HTML format) is the nineteenth IEC Monthly EM&A Report for the Sheung Shui to Lok Ma Chau Spur Line and includes the Monthly EM&A Reports for construction contracts LDB201, LCC202 and LCC300 and a summary of the reports. It also includes a brief summary of the IEC Site Audits and information supplied by KCRC on Public Consultation activities.

## 2 IEC monthly site audits

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IEC monthly site audits were conducted on 13 January 2004 for LDB201, on 20 January 2004 for LCC202 and on 16 January 2004 for LCC300. Non-compliances and observations issued by the IEC are based on the requirements of KCRC's Environmental Management System.

### 2.1 Contract LDB201

The IEC site audit for LDB201 was undertaken on 13 January 2004. The main construction activities undertaken in the reporting month include:

- East Approach Area – San Wan Road & East Rail Area: Cable trough for CLP cable diversion, hoarding between existing East Rail uptrack and WSD watermains, removal of ballasts on abandoned up and down tracks, pre-drilling for driving sheet piles, removal of abandoned OHL masts and footings next to abandoned down track;
- Cut and cover cofferdam (near Sheung Shui Launching Shaft Area): Sheet piling work for cofferdam construction, PIP piling for Ventilation building, pumping test and excavation, temporary steel decking for site access to Cut & Cover Tunnel and diversion of a diameter-250 Golf Club water pipe;
- TBM Works area: Tunnel boring and lining, and regular maintenance of TBM;
- East EAP (EAP 2): Shaft excavation, strut and Waler installation, diaphragm wall over break trimming and surface grinding;
- West EAP (EAP 5): Guide walls trimming, capping beam construction and shaft excavation;



- Future Kwu Tung Station Enabling Works Area: Shaft excavation, strut installation & dismantling, and cut & cover box base slab construction; and
- West Approach Area: Construction of the capping beam and parapet at extraction shaft, excavation of extraction shaft and cofferdam, installation of geotechnical instruments, sheet pile installation and construct tunnel box at Box A1, Chau Tau Channel.

One non-compliance and eleven observations were raised during the site audit:

#### Non-compliance

##### Kwu Tung and Temporary Spoil Basin

1. The perimeter channel near DSD channel in Kwu Tung site and the perimeter channel near the temporary spoil basin were silty. Cleaning up and regular checking are necessary.

#### Observations

##### East Approach CH30+050, Choi Fat Street Access and CP8

2. Wheel washing facilities were not observed on site. Please ensure the facilities are provided before the commencement of major works.

##### West Approach Area

3. Clogged sediment was observed inside the final sedimentation tank. Cleaning up of the sedimentation tank is necessary.
4. The boundary of the contaminated area (near the extraction shaft) was not marked clearly.
5. Oil stain on the ground was observed.
6. Dusty ground was observed.

##### Area P3

7. Refuse and vegetation waste were observed on the contaminated area. Proper clean up and disposal of are necessary.

##### West Approach (near Lok Ma Chau Road next to Chau Tau Channel)

8. The channel for the collection of surface runoff should direct water to sedimentation system before discharge.

##### CP8

9. Drip trays for oil containers were not observed.

##### Kwu Tung

10. Oil was observed in the surface channel next to the AquaSed sedimentation plant.
11. Oil dripping from a concrete lorry pump was observed.

#### Records

12. Waste disposal records of 2 and 3 January 2004 for West Tunnel Approach were inspected. A record showing late arrival time of a truck on 2 January 2004 was noted. Explanation or remark should be given in the record sheet.

As a result of the non-compliance and the observations raised by the IEC the contractor has proposed mitigation measures which include cleaning up of perimeter channels more frequently, providing wheel washing facilities at every site exit, using a well-maintained concrete lorry pump of good maintenance, removing silt from the sedimentation tank, cleaning up of oil stain and rubbish, and providing drip trays for all oil containers. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

## 2.2 Contract LCC202

The IEC site audit for LCC202 was undertaken on 20 January 2004. The major construction works include pre-bored H-piling at P3, pre-bore drilling at W24-37 and W40-49, bored piling at P3, column construction at W24-37 and W40-49, as well as pile cap construction at W24-37 and W40-49. Construction Noise Permit (CNP) has been obtained for the launching girder preparation for segment construction during the restricted hours and the works have been conducted from 22 to 24 January 2004. Five observations have been raised during the site audit:

### Observations

#### Pier W24

1. Loose soil surface of the excavated slope near the sheet pile was observed. Maintenance should be provided to avoid falling off of soil into the water stream.

#### Pier W38 – W39

2. Stagnant water was observed at the opposite side of the road outside the wheel washing bay beside Ha Wan Channel. Road washing should be conducted carefully to avoid water flowing to the other side of the road and eventually discharged into Ha Wan Channel.
3. Wet and silty bund was placed along the wire fence next to the wheel washing bay near Ha Wan Channel. The bund should be placed away from the Channel to avoid washing off of silt into the Channel.

#### EAP 6

4. Empty oil drums were observed lying on the bare ground. The oil drums should be disposed of or temporary stored properly.

### General

5. It is reminded that housekeeping should be properly maintained. For instance, stockpiles should be covered and construction materials should be tidy up in an orderly manner.

As a result of the observations raised by the IEC, the contractor has proposed mitigation measures including maintaining the slope to avoid falling off of soil, performing wheel-washing activities carefully to minimise silty trail on the ground, maintaining good housekeeping and relocating the silty bund away from the channel to avoid washing off. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

## 2.3 Contract LCC300

The IEC site audit was conducted on 16 January 2004. The major construction works include earth works for reedbed and surcharge areas, substructure and superstructure at the terminus area, construction of western channel outfall, bore-piling, pipe pile wall grouting, tree felling and trench excavation for utility works along the Emergency Access Road (EVA). Construction of Chau Tau Culvert commenced during the reporting month. One non-compliance and eight observations were raised during the site audit:

### Non-compliance

#### Chau Tau culvert, CH 400 (carpark entrance opposite Man Kee) and Border Road Gate 99

1. Silty road washing water was flowing into the nearby storm drains near Chau Tau culvert and at the carpark entrance opposite Man Kee. Silty washing water was also observed flowing through the gaps under the border fence and eventually discharged onto the embankment of Shum Shun River through the small drains on the pavement.

### Observations

#### Chau Tau culvert

2. Muddy water was seeping out under the concrete blocks onto Lok Ma Chau Road.
3. Sedimentation tank was silty and a blue hose was found being connected at the bottom outlet point. The blue hose was removed immediately as recommended on site.
4. Toilet should be provided near the works area. Instruction should be given to the workers.

#### Lok Ma Chau Road, CH1600 and Main Site

5. Some of the stockpiles and slope were not covered. Please make sure that they are covered properly, especially during the holidays and weekends.

#### CH1300 (station access road) and Main Site

6. Plastic bottles were observed on the ground.

### Area C exit

7. No drip tray was provided to oil drum next to the generator.

#### Main Site

8. Delivery of goods / material was observed at Gate 3 which should not be used for any vehicle access as agreed in the monthly environmental meeting.
9. Oil drum was found in a refuse stockpile. Waste segregation should be properly performed.

In response to the non-compliance and the observations raised by the IEC, the Contractor has proposed some improvement measures including cleaning dust and dirt on road, ensuring wheel-washing activities be done properly, protecting the gaps at the bottom of concrete blocks to prevent seeping of muddy water, removing wet materials after unloading, reviewing the chemical dosing for the sedimentation process, providing chemical toilets, covering the of stockpiles and slope, establishing housekeeping team to maintain good housekeeping, providing drip tray for oil drum, reminding workers not to use Gate 3, and proper segregation of waste in designated storage area and collection points. The implementation and effectiveness of these measures will be assessed and verified during the next site audit.

## 3 Public Consultation

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No public consultation was conducted in the reporting month.

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