

Kowloon-Canton Railway Corporation

KCRC East Rail Extensions Sheung Shui to Lok Ma Chau

Monthly EM&A Report –
August 2004

September 2004

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EXECUTIVE SUMMARY

INTRODUCTION

This Report (in HTML format) is the twenty-sixth 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.

Further to the application of Variation of Environmental Permit (VEP) in December 2003, the Environmental Permit No. EP-129/2002/B was issued on 15 January 2004.

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 July to 25 August 2004. The main construction activities undertaken during the reporting month include:

- East Approach Area – San Wan Road & East Rail Area: Backfilling and remaining structure for 900mm diameter watermain diversion stage 2, construction of hoarding for San Wan Road Footbridge at area 3.2 to Choi Fat Street, drilling and grouting of mini piles for retaining wall RW1 and RW5, construction of retaining wall RW1 mini pile section, construction of retaining wall, RW2 from Bay 7 to Bay 9, construction of permanent surface drainage of ER up track;
- Cut and cover cofferdam (near Sheung Shui Launching Shaft Area): Construction of retaining wall and backfilling at Launching Shaft area, construction of roof slab up track and down track of tunnel Box E and application of waterproofing sikalastic 821 at tunnel walls, construction of sump pit and application of waterproofing membrane at Box E, construction of base slab and tunnel wall and application of sikalastic 821 at tunnel walls Box D, construction of blinding layer and waterproofing for base slab from tunnel box C1 and B, excavation of tunnel Box A, construction of blinding layer and waterproofing for base slab from tunnel box A, construction of tunnel base slab and walls at Box A;
- TBM Works area: Tunnel boring and lining, regular maintenance of TBM;
- East EAP (EAP 2): Rock excavation and rock dowel installation and shotcrete spraying;
- West EAP (EAP 5): Base slab waterproofing, layer 8 strutting and waling removal, base slab construction;
- Future Kwu Tung Station Enabling Works Area: Cut & cover box column and middle roof slab construction, cut & cover box north wall construction, Ho Sheung Heung Road utilities diversion; and
- West Approach Area: Excavation and lateral support of cofferdam at Boxes A0 and B, construction of tunnel box at Boxes B, C and C1, construction of CTVB lower plant room, backfilling between sheetpile and tunnel box at Box A, Installation of 2nd layer sheetpile, waling and strutting at Box E.

LDB201 conducted the routine monitoring works at these monitoring locations: AM1, AM2 and AM3 for air quality, NM1, 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, during this reporting month.

24-hour 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. Two action level exceedances for each monitoring parameter were recorded during the reporting month. The exceedances were likely due to the hazy weather during the monitoring period.

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 during the reporting month.

Water quality monitoring was conducted at the identified water quality monitoring locations. There was no exceedance recorded during the reporting month.

The excavated spoil was mainly generated from the shaft excavation at East EAP, West EAP, jet grouting works at Cross Passages and excavation at both East Approach and West Approach Cut & Cover Tunnels. These excavated spoils were disposed of to Kai Tak Public Filling Barging Point and Tuen Mun Area 38. Some of the excavated spoils were transferred to alternative sites for reuse including the works area under the EPD's Project of Development and Management of WENT Landfill, and DSD Contract DC/2002/06 – Construction of the Yuen Long Bypass Floodway. 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 warning, prosecution or complaint was received during the reporting month.

There were weekly site inspections carried out by the CET Leader and an IEC monthly site audit on 18 August. 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 managing water spraying carefully, cleaning up the pit and surface channels, providing drip trays for oil drums, providing sand bags along the channel edge to avoid sand falling off into the channel, removing stagnant water, regular collection of general refuse, checking potential water ponding areas especially after rain, instructing workers to put rubbish into rubbish bin and removing unused trays from site. 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 July to 24 August 2004. During the reporting month, the major construction works included ground beam construction and ramp wall construction at P3, viaduct erection and column construction at W61-66, pile cap and portal construction at W61-66.

LCC202 conducted the routine monitoring works at these monitoring locations: AM4 for air quality, and NM15 for noise in this reporting month. Water monitoring was not undertaken at USTR and STR1 at San Tin River in the reporting month. As the section of San Tin River where the water monitoring locations were temporarily rendered for New Boundary Bridge Crossing (NBB) construction works, the water monitoring at the River was suspended during the monitoring period. As FP1 and FP2 were maintained

dry to satisfy DSD flood storage criteria and FP3 was already filled for reedbed construction, no water quality monitoring was conducted at these locations.

24-hour 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 during 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 during the reporting month.

About 570m³ of excavated material were delivered to the Government public fill barging point. About 74m³ of general refuse was collected by a licensed collector for disposal during 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 26 August. In response to the observations raised by the ET Leader and the IEC, the Contractor has proposed mitigation measures including cleaning up of oil spillage, removal of general refuse, compaction of soil at both sides of Tributary B, covering water tanks properly, applying mosquito larvicide more frequently, replacing tarpaulin sheets, desilting the catchpit and perimeter channel and removing stagnant water. 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 July to 25 August 2004. During the reporting month, the principal work activities included minor earth works for surcharge maintenance in terminus and along station access road, construction of superstructure works at station and immigration hall, electrical/mechanical works and fitting-out work inside the station area, the construction of permanent sewage treatment plant and overrun rail-track, the construction of retaining structure of Ha Wan Channel bridge, trench excavation for utility works along the station access road. In accordance with the new EP conditions, acoustic panels as specified in the Construction Noise Impact Assessment report under the EP should be provided. The installation of the acoustic panels was commenced in early February 2004.

LCC300 conducted the routine monitoring works at these monitoring locations: AM4 for air quality, NM13, NM14 and NM15 for noise, and two alternative water quality monitoring locations, namely, FPBBL1 and FPBBL2 for water quality, in August 2004. As FP3 was filled and no construction works of this contract is likely to affect San Tin River, these alternative water quality monitoring locations which are located to the south of the terminus site were identified to replace FP3, STR1 and USTR. The proposal of the alternative water quality monitoring location was accepted by EPD.

24-hour 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. One action level exceedance of 24-hour TSP was recorded during the reporting month. It was likely due to the hazy weather.

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 during the reporting month.

Water quality monitoring was conducted at the approved alternative monitoring locations. The action and limit levels were under review. Fluctuation of pH values was recorded at the fish ponds. It was likely due to the natural variation and pH conditioning undertaken by Contract LFCC-007 wetland enhancement works.

114m³ of inert C&D materials were disposed of to Public Filling Barging Point at Kai Tak and 151m³ of non-inert C&D materials were disposed of to NENT landfill. Recycling of used paper, and the reuse of aluminium cans and plastic bottles were implemented on site. The aluminium cans and plastic bottles were reused for capping the steel bars for the sake of safety. 600m³ of surcharge sand materials were imported from LDB201 for reuse.

No notification of summons and prosecution was received. However two verbal complaints from EPD were received during the reporting month. The first complaint was related to the muddy condition of sedimentation ponds (Pong No. 9 and Pond No. 10) observed on 16 August 2004. After site investigation, the Contractor reported that the incident was due to the improper connection and handling of discharge from pile cap excavation. The malpractice was stopped immediately and the subcontractor was reminded to maintain the discharge pipe and the sedimentation ponds regularly. The second complaint was related to the blockage of wheel-washing facilities at station access road at area C exit. The incident was observed on 23 August 2004. The blockage of access to wheel washing facilities was due to the misuse for storage of construction materials by the adjacent contract, NBB. The Contractor has requested the NBB contractor to remove the construction materials and resume the wheel-washing facilities within 24 hours. The Contractor has also sought the Engineer's assistance to resolve the interface problem.

The CET Leader and the Engineer conducted regular site inspections and the IEC conducted a monthly site audit on 18 August. In response to the observations raised by the IEC during the site audit, the Contractor has instigated an action plan to rectify the inadequacies. The remedial actions included increasing frequency of general refuse removal, checking and maintaining bulldozer, paving the ramp with asphalt chips, providing submarine pump to remove stagnant water, proper implementation of waste segregation, prompt removal of wastes and sweeping the road. The implementation and effectiveness of the corrective actions will be assessed during the next site audit.

1 Introduction

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 twenty-sixth 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. Non-compliances and observations issued by the IEC are based on the requirements of KCRC's Environmental Management System.

2 IEC monthly site audits

IEC monthly site audits were conducted for LDB201 and LCC300 on 18 August, and LCC202 on 26 August. Special concern on the mosquito control was expressed during the site audits. All three contracts have implemented mosquito control measures and recorded the implementation status. The environmental performance of each Contract was maintained at an acceptable level in general.

2.1 Contract LDB201

The IEC site audit for LDB201 was undertaken on 18 August. The main construction activities undertaken in the reporting month include:

- East Approach Area – San Wan Road & East Rail Area: Backfilling and remaining structure for 900mm diameter watermain diversion stage 2, construction of hoarding for San Wan Road Footbridge at area 3.2 to Choi Fat Street, drilling and grouting of mini piles for retaining wall RW1 and RW5, construction of retaining wall RW1 mini pile section, construction of retaining wall, RW2 from Bay 7 to Bay 9, construction of permanent surface drainage of ER up track;
- Cut and cover cofferdam (near Sheung Shui Launching Shaft Area): Construction of retaining wall and backfilling at Launching Shaft area, construction of roof slab up track and down track of tunnel Box E and application of waterproofing sikalastic 821 at tunnel walls, construction of sump pit and application of waterproofing membrane at Box E, construction of base slab and tunnel wall and application of sikalastic 821 at tunnel walls Box D, construction of blinding layer and waterproofing for base slab from tunnel box C1 and B, excavation of

- tunnel Box A, construction of blinding layer and waterproofing for base slab from tunnel box A, construction of tunnel base slab and walls at Box A;
- TBM Works area: Tunnel boring and lining, regular maintenance of TBM;
 - East EAP (EAP 2): Rock excavation and rock dowel installation and shotcrete spraying;
 - West EAP (EAP 5): Base slab waterproofing, layer 8 strutting and waling removal, base slab construction;
 - Future Kwu Tung Station Enabling Works Area: Cut & cover box column and middle roof slab construction, cut & cover box north wall construction, Ho Sheung Heung Road utilities diversion; and
 - West Approach Area: Excavation and lateral support of cofferdam at Boxes A0 and B, construction of tunnel box at Boxes B, C and C1, construction of CTVB lower plant room, backfilling between sheetpile and tunnel box at Box A, Installation of 2nd layer sheetpile, waling and strutting at Box E.

Environmental permits, licences and records including the trip-ticket system were inspected. Seven observations were raised during the site audit:

Observations

East Approach - Access No. 3

1. Washing water from the entrance was flowing into the drain at the opposite side of the road.

East Approach - Access No. 2

2. Soil / sand accumulated inside the sand pit and surface channel was observed. Cleaning up is necessary.

West Tunnel Approach

3. Sand piles near Fu Tai car park were close to the perimeter channel. Falling off of sand into the channel is a potential problem.
4. Stagnant water was observed near the steel storage area of Area P3.

West Tunnel Approach (Area P3) and EAP5

5. Skip for general refuse was full already. Prompt removal is necessary.

EAP5

6. The drip tray which was not in use should be removed to avoid mosquito breeding.

Kwu Tung

7. Drip tray(s) should be provided to oil drums near the site office.

As a result of the observations raised by the IEC the contractor has proposed some mitigation measures which include managing water spraying carefully, cleaning up the pit and surface channels, providing drip trays for oil drums, providing sand bags along the channel edge to avoid sand falling off into the channel, removing stagnant water, regular collection of general refuse, checking potential water ponding areas especially after rain, instructing worker to put rubbish into rubbish bin and removing unused trays from site. 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 26 August 2004. The major construction works include ground beam construction and ramp wall construction at P3, viaduct erection and column construction at W61-66, pile cap and portal construction at W61-66.

Environmental permits, licences and records including the trip-ticket system were inspected. Eight observations were raised during the site audit:

Observations

Area P3

1. Oil spillage on muddy ground was observed. Proper cleaning up is necessary.

W26

2. General refuse was observed under the viaduct.

W27

3. Compaction of soil at both sides of Tributary B is necessary to avoid falling off of soil or erosion during the rain

W31 & W33

4. The water tanks were partially covered. Contractor should remind the workers to cover the water tank after use each time to avoid mosquito breeding.

W40-42

5. Replacement of tarpaulin sheets for covering the stockpiles is necessary.

W46

6. Stagnant water was observed. Leveling and filling the ground are necessary.

W49

7. Perimeter channel and silt trap were silty. Cleaning up is necessary.

W66

8. Cofferdam strip was accumulated with rainwater. Applying larvicide is required.

As a result of the observations raised by the IEC, the contractor has proposed to clean up of oil spillage, remove general refuse, compact soil at both sides of Tributary B, cover water tanks properly, apply mosquito larvicide more frequently, replace tarpaulin sheets, desilt the catchpit and perimeter channel and remove stagnant water. 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 18 August 2004. The major construction works include minor earth works for surcharge maintenance in terminus and along station access road, construction of superstructure works at station and immigration hall, electrical/mechanical works and fitting-out work inside the station area, the construction of permanent sewage treatment plant and overrun rail-track, the construction of retaining structure of Ha Wan Channel bridge, trench excavation for utility works along the station access road.

Environmental permits, licences and records including the trip-ticket system were inspected. Six observations were raised during the site audit:

Observations

Immigration Hall – F16 and Terminus

1. General refuse on the ground was observed. No rubbish bin was provided near the works area.

At the site boundary, next to fish ponds (Pond 20A)

2. Dark smoke emitting from a bulldozer was observed.

Terminus site – haul road

3. Dust emission was observed when truck traveling along the haul road. The road should be watered and the exhaust of truck should direct emission upward.

Lok Ma Chau Road

4. Stagnant water was observed at excavated trench (Ch. 740).
5. Waste segregation was not properly implemented. Wood, plastic bottles and cans were mixed in a pile. Moreover disposal of these general refuse is necessary (Ch. 300).
6. Some sections of LMC Road were silty. Cleaning up is necessary.

In response to the observations raised by the IEC, the Contractor has proposed some improvement measures including increasing frequency of general refuse removal, checking and maintaining bulldozer, paving the ramp with asphalt chips, providing submarine pump to remove stagnant water, proper implementation of waste segregation, prompt removal of wastes and sweeping the road. The implementation and effectiveness of these measures will be assessed and verified during the next site audit.

3 Public Consultation

There was no public consultation meeting held in August 2004.
