

**JOB No.: TCS00814/15**



**EP-502/2015/A**

**OPERATION OF THE EXISTING TAI LAM EXPLOSIVES  
MAGAZINE AT TAI SHU HA, YUEN LONG FOR  
LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL  
POINT PROJECT**

**MONTHLY ENVIRONMENTAL MONITORING AND AUDIT  
(EM&A) REPORT – MARCH 2017**

**PREPARED FOR**

**DRAGAGES HONG KONG LIMITED**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Certified By</b>
13 April 2017	TCS00814/15/600/R0027	 Ben Tam (Environmental Consultant)	 Tam Tak Wing (Environmental Team Leader)

<b>Version</b>	<b>Date</b>	<b>Remarks</b>
1	10 April 2017	First Submission
2	13 April 2017	Amended against the IEC's comments on 11 April 2017



Dragages Hong Kong Limited  
3/F, Island Place Tower  
510 King's Road  
North Point  
Hong Kong

Your reference:

Our reference: HKDHL01/50/104237

Date: 18 April 2017

Attention: Mr Simon Wong

**BY EMAIL & POST**

**(email:**

**simon.wong@dragageshk.com)**

Dear Sirs

Contract No.: CV/2012/08  
Liantang / Heung Yuen Wai Boundary Control Point  
Site Formation and Infrastructure Works – Contract 2  
Consultancy Agreement No. CV/2012/08-CA031 – Independent Environmental Checker Services  
for Explosives Magazine at Tai Shu Ha  
Monthly EM&A Report for March 2017

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We refer to emails of 10 and 13 April 2017 attaching a Monthly EM&A Report for March 2017 prepared by the Environmental Team (ET) for the captioned project.

We have no further comment and hereby verify the Monthly EM&A Report in accordance with Clause 3.2 of the Environmental Permit no. EP-502/2015/A.

Please do not hesitate to contact the undersigned on 2618 2836 should you have any queries.

Yours faithfully  
ANEWR CONSULTING LIMITED

Adi Lee  
Independent Environmental Checker

LYMA/csymb

cc AUES – Mr Ben Tam (email: bentam@fordbusiness.com)

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## EXECUTIVE SUMMARY

- ES.01 The existing Tai Lam Explosives Magazine (TLEM) has been licensed and was in used by the MTR Corporation Limited (MTRC) for the construction of the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) until end of February 2016, under Environmental Permit No. EP-349/2009/L, being used by the MTR XRL 824 Contractor.
- ES.02 The TLEM was handed over to Dragages Hong Kong Limited (hereinafter referred as Dragages or “permit holder”) in early March 2016 and start operating for storage the explosives for tunnel works of CEDD Contract CV/2012/08 - Liantang/Heung Yuen Wai Boundary Control Point and Associated Works Contract 2 (hereinafter referred as “the Project”). Operation of TLEM is a Designated Project to be implemented under Environmental Permit number EP-502/2015/A (hereinafter referred as “the EP-502/2015/A” or “the EP”).
- ES.03 Dragages Hong Kong Limited has appointed Action-United Environmental Services and Consulting (AUES) as the independent Environmental Team (ET) to implement the relevant EM&A program.
- ES.04 There are two phases in this project, operation and decommission phase. During the operation phase no noise, air quality, water quality and ecological monitoring is required according to the EP requirement.
- ES.05 This is the 13<sup>th</sup> Environmental Monitoring and Audit Monthly Report covering the period from 1 to 31 March 2017 (the Reporting Period).

## ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

- ES.06 Environmental monitoring activities under the EM&A program in this Reporting Month are summarized in the following table.

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Inspection / Audit	ET Monthly Environmental Site Inspection	1
	IEC Monthly Environmental Site Audit	1

## ENVIRONMENTAL COMPLAINT

- ES.07 No environmental complaint was recorded or received in this Reporting Month. The statistics of environmental complaint are summarized in the following table.

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
Since the project commencement	0	0	NA
March 2017	0	0	NA

## NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- ES.08 No environmental summons or successful prosecutions were recorded in this Reporting Month. The statistics of environmental complaint are summarized in the following tables.

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
Since the project commencement	0	0	NA
March 2017	0	0	NA

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
Since the project commencement	0	0	NA
March 2017	0	0	NA

**REPORTING CHANGE**

ES.09 There are no reporting changes in this Reporting Month.

**SITE INSPECTION BY EXTERNAL PARTIES**

ES.10 No site inspection was undertaken by external parties i.e. EPD or AFCD in this Reporting Month.

**FUTURE KEY ISSUES**

ES.11 Housekeeping and hazard to life are the key environmental issues during the operation phase of the project. The permit holder should follow the implementation schedule to provide proper mitigation measures to maintain the good practice of housekeeping and hazard to life issue. Moreover, mitigation measures to avoid ingress of surface runoff into nearby water bodies and the protection off the existing tree from the site should be properly maintained.

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## 1 INTRODUCTION

### 1.1 PROJECT BACKGROUND

- 1.1.1 The existing Tai Lam Explosives Magazine (TLEM) has been licensed and was in used by the MTR Corporation Limited (MTRC) for the construction of the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) until end of February 2016, under Environmental Permit No. EP-349/2009/L, being used by the MTR XRL 824 Contractor.
- 1.1.2 The TLEM was handed over to Dragages Hong Kong Limited (hereinafter referred as Dragages or “permit holder”) in early March 2016 and start operating for storage the explosives for tunnel works of CEDD Contract CV/2012/08 - Liantang/Heung Yuen Wai Boundary Control Point and Associated Works Contract 2 (hereinafter referred as “the Project”). Operation of TLEM is a Designated Project to be implemented under Environmental Permit number EP-502/2015/A issued on 21 September 2016 (hereinafter referred as “the EP-502/2015/A” or “the EP”).
- 1.1.3 The Project is located at the existing TLEM in Tai Shu Ha (Land Allocation GLA-TYL 1288), Yuen Long District, New Territories. The location and site plan of the Project are shown in [Appendix A](#). The existing TLEM is composed of the following components:
- Two stores each with a capacity of 400 kg explosives;
  - Secure fence;
  - CCTV system;
  - Guard house; and
  - Street fire hydrant water tank (245 m<sup>3</sup>) and 2 pumps..
- 1.1.4 Action-United Environmental Services & Consulting (hereinafter referred as “AUES”) was appointed by Dragages as an Environmental Team (hereinafter referred as “the ET”) to implement the relevant EM&A program in accordance with the EM&A Manual, as well as the associated duties.
- 1.1.5 This is the 13<sup>th</sup> Monthly EM&A Report presenting the monitoring results and inspection findings for the reporting period from 1 to 31 March 2017.

### 1.2 REPORT STRUCTURE

- 1.2.1 The Monthly Environmental Monitoring and Audit (EM&A) Report is structured into the following sections:-

<b>SECTION 1</b>	<b>INTRODUCTION</b>
<b>SECTION 2</b>	<b>PROJECT ORGANIZATION AND ENVIRONMENTAL SUBMISSION</b>
<b>SECTION 3</b>	<b>SUMMARY OF MONITORING REQUIREMENTS</b>
<b>SECTION 4</b>	<b>WASTE MANAGEMENT</b>
<b>SECTION 5</b>	<b>SITE INSPECTIONS</b>
<b>SECTION 6</b>	<b>ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCE</b>
<b>SECTION 7</b>	<b>IMPLEMENTATION STATUES OF MITIGATION MEASURES</b>
<b>SECTION 8</b>	<b>CONCLUSIONS AND RECOMMENDATION</b>

## 2 PROJECT ORGANIZATION AND ENVIRONMENTAL SUBMISSION

### 2.1 PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

2.1.1 Organization structure of relevant parties involved in the EM&A process and the organizational structure of the organizations responsible for implementing the EM&A program are shown in [Appendix B](#).

### 2.2 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.1.2 Summary of the relevant permits, licences, and/or notifications on environmental protection for this Project in this Reporting Month is presented in [Table 2-1](#).

**Table 2-1 Status of Environmental Licenses and Permits**

Item	Description	License/Permit Status
1	Environmental permit (EP: EP-502/2015/A)	Application date: 26/08/2016 Date approved: 21/9/2016
2	Discharge License	Not necessary during operation phase
3	Registered chemical waste producer	Not necessary during operation phase
4	Billing Account for Disposal of Construction Waste	Not necessary during operation phase

2.1.3 In accordance with the EP No. EP-502/2015/A Condition 3.1, Project Environmental Monitoring and Audit (EM&A) Manual has been submitted to EPD before the commencement of using the magazine.



### 3 SUMMARY OF IMPACT MONITORING REQUIREMENT

#### 3.1 GENERAL

3.1.1 The Environmental Monitoring and Audit requirements are set out in the EM&A manual. Environmental issues such as hazard to life and general good site practice were identified as the key issues and no air or noise monitoring is required during the operation phase of the Project.

#### 3.2 MONITORING PARAMETERS

3.2.1 The EM&A programmes of operation phase shall cover the following environmental issues:

- Hazard to life; and
- General good site practice

3.2.2 A summary of the EM&A activities is presented in *Table 3-1* below

**Table 3-1 Summary of EM&A Requirements**

Environmental Issue	EM&A Activities
Hazard to life and General good site practice	<ul style="list-style-type: none"> <li>• undertake site inspections of on-site practices and procedures each month</li> </ul>

**4 WASTE MANAGEMENT**

**4.1 GENERAL WASTE MANAGEMENT**

4.1.1 Waste management was carried out by an Environmental Officer or an Environmental Supervisor from time to time.

**4.2 RECORDS OF WASTE QUANTITIES**

4.2.1 During the operation phase, there only very small amount of domestic general refuse created. The small amount of the general refuse will be disposed to the nearby public refuse collection point everyday by the site staff. The permit holder will apply the disposal account during the decommissioning phase for dispose of C&D material.

## 5 SITE INSPECTION

### 5.1 REQUIREMENTS

5.1.1 According to the EM&A Manual, the environmental site inspection shall be formulation by ET Leader. Monthly environmental site inspections during operation phase should carry out to confirm the environmental performance.

### 5.2 FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

5.2.1 In the Reporting Period, joint site inspection to evaluate the site environmental performance by the IEC, ET and the permit holder has been carried out on **31 March 2017**. No non-compliance was noted during the site inspection. The checklist of the monthly inspection is shown in [Appendix C](#).

5.2.2 Observations for the site inspections and monthly audit within this Reporting Month are summarized in [Table 5-1](#).

**Table 5-1 Site Observations**

Date	Findings / Deficiencies	Follow-Up Status
31 March 2017	<ul style="list-style-type: none"> <li>The explosives magazine area is clean and tidy and no environmental issue was observed during the site inspection.</li> </ul>	Nil

## 6 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

### 6.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

6.1.1 No environmental complaint, summons and prosecution was received in this reporting period. The statistical summary table of environmental complaint, environmental summons and prosecution are presented in *Tables 6-1, 6-2 and 6-3* respectively.

**Table 6-1 Statistical Summary of Environmental Complaints**

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
Since the project commencement	0	0	NA
March 2017	0	0	NA

**Table 6-2 Statistical Summary of Environmental Summons**

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
Since the project commencement	0	0	NA
March 2017	0	0	NA

**Table 6-3 Statistical Summary of Environmental Prosecution**

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
Since the project commencement	0	0	NA
March 2017	0	0	NA

## 7 IMPLEMENTATION STATUS OF MITIGATION MEASURES

### 7.1 GENERAL REQUIREMENTS

- 7.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the EM&A Manual covered the issues of ecological, noise, water, hazard to life and waste and they are summarized presented in [Appendix D](#).
- 7.1.2 The Permit Holder under the Project shall be implementing the required environmental mitigation measures according to the EM&A Manual as subject to the site condition. Environmental mitigation measures generally implemented by the Permit Holder in this Reporting Period are summarized in [Table 7-1](#).

**Table 7-1 Environmental Mitigation Measures**

Issues	Environmental Mitigation Measures
Hazard to Life	<ul style="list-style-type: none"> <li>• Security plan addresses different alert security levels.</li> <li>• Followed the emergency plan</li> <li>• Magazine kept locked all the time and provided with proper security measures</li> <li>• No delivery vehicles remained within the site secured fence off magazine store area</li> </ul>
Ecological	<ul style="list-style-type: none"> <li>• Protect the existing tree near the magazine site</li> </ul>
General	<ul style="list-style-type: none"> <li>• The site was generally kept tidy and clean.</li> </ul>

- 7.1.3 Based on site inspection, it is considered that the environmental mitigation measures implemented by the Permit Holder in this Reporting Period are effective.

### 7.2 KEY ISSUES FOR THE COMING MONTH

- 7.2.1 Key issues to be considered in the coming month for the Permit Holder include:
- Implementation of security plan at all times;
  - Provide proper security measures for the magazine;
  - Protect the existing tree near the magazine site;
  - Housekeeping of the magazine site.

## **8 CONCLUSIONS AND RECOMMENDATIONS**

### **8.1 CONCLUSIONS**

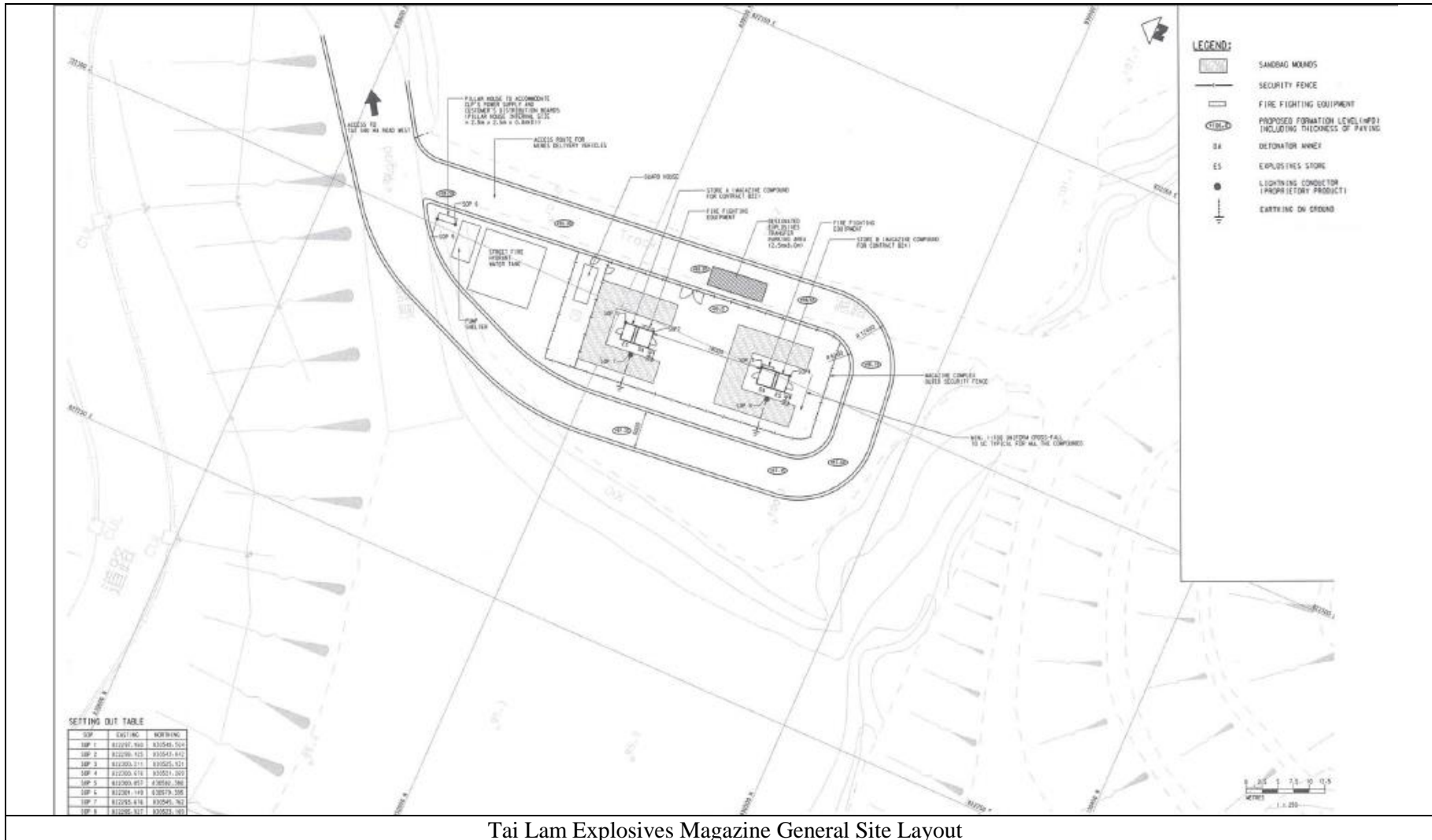
- 8.1.1 This is the **13<sup>th</sup>** monthly EM&A report, covering the construction period from **1 to 31 March 2017** (the Reporting Month).
- 8.1.2 No documented complaint, notification of summons or successful prosecution was received.
- 8.1.3 Joint site inspection to evaluate the site environmental performance by the IEC, ET and the Permit Holder was carried out on **31 March 2017**. No non-compliance was observed during the inspection. In general, the explosives magazine site is clean and tidy and no environmental issue was observed during the site inspection. The environmental performance of the Project was therefore considered satisfactory.
- 8.1.4 No site inspection was undertaken by any external party in this Reporting Month.

### **8.2 RECOMMENDATIONS**

- 8.2.1 Housekeeping and hazard to life are the key environmental issues during the operation phase of the project. The permit holder should follow the implementation schedule to provide proper mitigation measures to maintain the good practice of housekeeping and hazard to life issue.
- 8.2.2 Moreover, mitigation measures to avoid ingress of surface runoff into nearby water bodies and the protection of the existing tree from the site should be properly maintained.
- 8.2.3 To control the site performance on environmental issue, Dragages is reminded to implement the recommended environmental mitigation measures according to the Environmental Monitoring and Audit Manual.

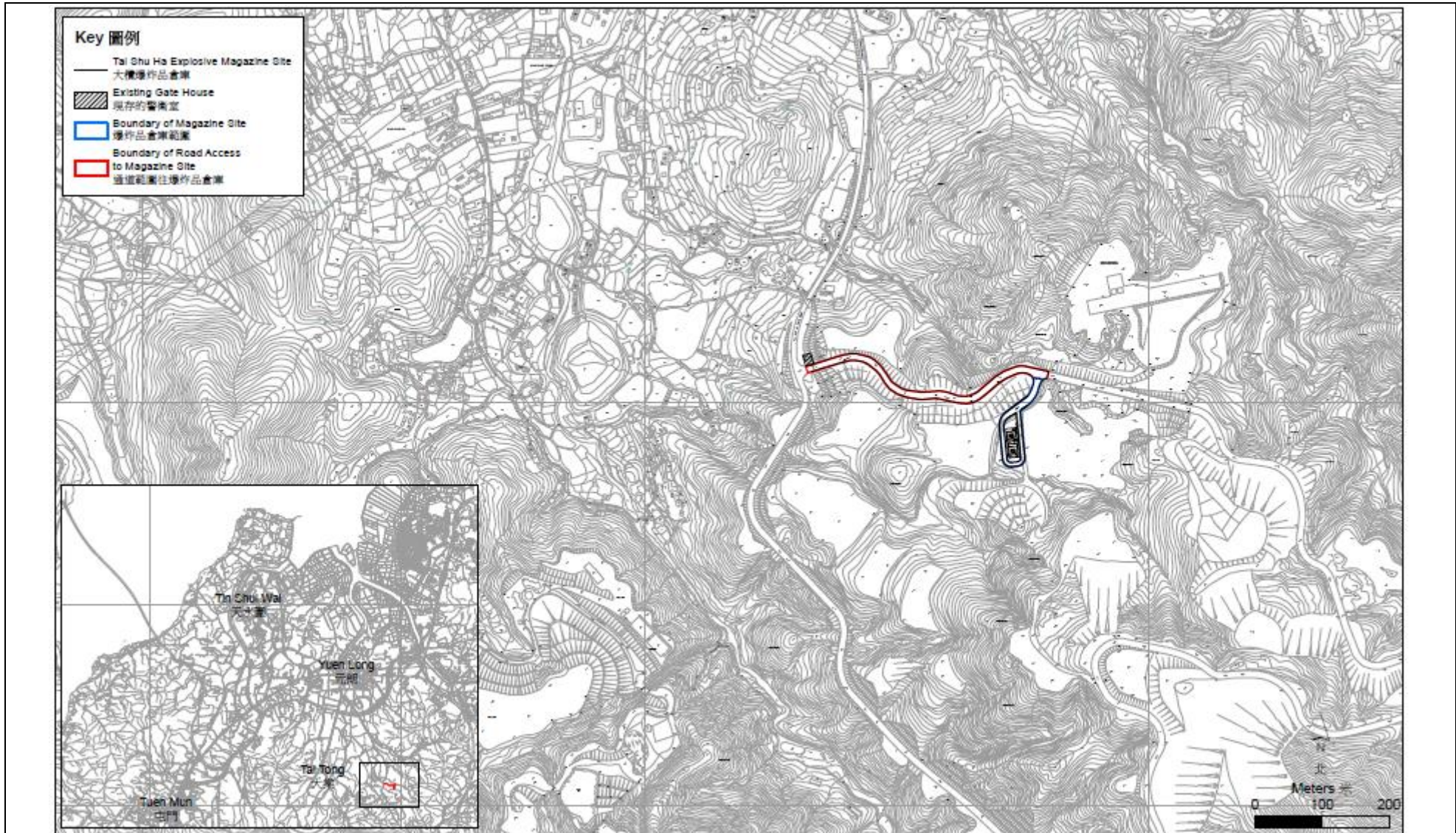
## **Appendix A**

### **LOCATION AND SITE PLAN OF THE TLEM**



Tai Lam Explosives Magazine General Site Layout

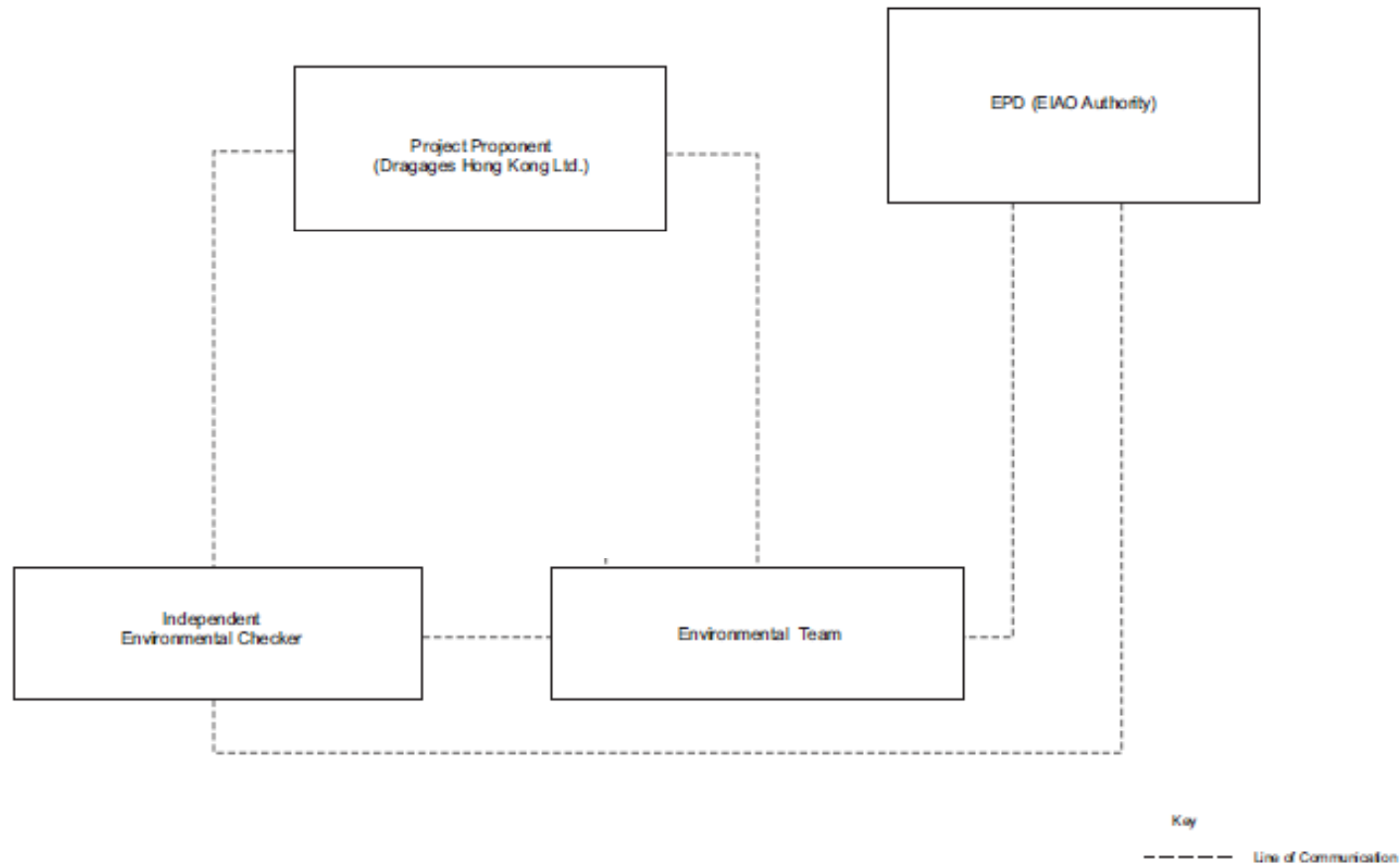




Site Plan of the Existing Tai Lam Explosives Magazine

## **Appendix B**

### **ORGANIZATION STRUCTURE**



## **Appendix C**

### **ENVIRONMENTAL CHECKLIST FOR THE REPORTING MONTH**

## Environmental Team –Site Inspection and Environmental Audit Checklist

**Project:** Operation of the Existing Tai Lam Explosives Magazine at Tai Shu Ha, Yuen Long for Liantang/Heung Yuen Wai Boundary Control Point Project **Checklist No:** EP- 502/2015-20170331

**Date:** 31 March 2017  
**Time:** 16:30  
**Environmental Permit** EP- 502/2015/A

**Inspected by:**  
**IEC** ANewR  
**ET** AUES  
**Contractor** Dragages

**PART A: GENERAL INFORMATION**

**Weather:** Sunny  Fine  Cloudy  Rainy  Temperature: 20 °C  
**Humidity:** High  Moderate  Low   
**Wind:** Strong  Breeze  Light  Calm

**PART B: SITE AUDIT**

<b>Note:</b> Not Obs.: Not Observed; <b>Yes:</b> Compliance; <b>No:</b> Non-Compliance; <b>Follow Up:</b> Observations requiring follow-Up actions <b>N/A:</b> Not Applicable	<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
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**Section 1: Water Quality**

1.01	Is effluent discharge licence for the Contract obtained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.02	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.03	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.04	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.05	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.09	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Are there any wheel washing facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.11	Are there wheel washing facilities well maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.12	Is runoff from wheel washing facilities avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.13	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there any vehicles and plant within the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Is the oil leakage or spillage from vehicle or plant avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.18	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.19	Are mobile toilets provided on site and located away from the stream course?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Is licensed collector employed for handling the waste generated from mobile toilet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Section 2: Air Quality**

2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.05	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.06	Is the surface where any drilling, cutting, polishing or breaking operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

## Environmental Team –Site Inspection and Environmental Audit Checklist

Note:	Not Obs.:	Yes	No	Follow Up	N/A	Photo/Remarks	
Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable		Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
2.07	continuously sprayed with water? Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2.08	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2.09	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.10	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2.11	Are site vehicles travelling within the speed limit not more than 10km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.12	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
2.13	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.14	All non-road vehicles using on site are granted the emission labels under the regulation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
<b>Section 3: Noise</b>							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3.08	Are flaps and panels of mechanical equipment closed during operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
3.09	Are Construction Noise Permit(s) applied for percussive piling works or construction activities out of restricted hours?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.05	Is the Contractor registered as a chemical waste producer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.06	Are the chemical waste containers properly labelled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.08	Is the chemical waste storage area properly labelled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

## Environmental Team –Site Inspection and Environmental Audit Checklist

<b>Note:</b> <b>Not Obs.:</b> Not Observed; <b>Yes:</b> Compliance; <b>No:</b> Non-Compliance; <b>Follow Up:</b> Observations requiring follow-Up actions <b>N/A:</b> Not Applicable		<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/ Remarks</b>
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.17	Is construction waste disposed of properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
4.20	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.03	Are surgery works carried out for the damaged trees?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.04	Is damage to trees outside site boundary due to construction activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
<b>Section 6: Hazard to Life</b>							
6.01	Is the security plan addresses different alert security levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.02	Is the emergency plan (i.e. magazine operational manual) shall be followed and amended if necessary to address uncontrolled fire in magazine area and transport?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.03	Is good house-keeping maintained within the site magazine area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.04	Is the site magazine kept locked all the time and provided with proper security measures?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.05	No delivery vehicles remained within the site secured fence off magazine store area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<b>Section 7: Others</b>							
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____



**Finding Non-compliance in this weekly site inspection:**

Nil

**Observation in this weekly site inspection: (31 March 2017)**

**Observation**



The explosives magazine area is clean and tidy and no environmental issue was observed during the site inspection. (Operation Phase)

*IEC's representative*

*ET's representative*

*Contractor's representative (EO)*

**Name**

**Ben Tam**

Date:

31 March 2017



**Finding Non-compliance in this weekly site inspection:**  
 Nil

**Observation in this weekly site inspection: (31 March 2017)**

**Observation**



The explosives magazine area is clean and tidy and no environmental issue was observed during the site inspection. (Operation Phase)

**IEC's representative**

**ET's representative**

**Contractor's representative (EO)**

**Name**

Adi Lee

Ben Tam

HO Ming Kin.

**Date:**

31 Mar 17

31 March 2017

31 Mar 2017

## **Appendix D**

### **IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES (ISEMM)**

## Implementation Schedule of Recommended Mitigation Measures

Note: Chapters 1 to 2 of the EIA report present the background information of the Project and Project Description. Chapters 3 to 8 of the EIA report present the EIA findings and mitigation measures, as described below with cross-reference to the EIA report. Chapters 9 & 10 summarize the environmental monitoring and audit requirements and provide a conclusion along with a summary of the environmental outcomes of the EIA.

\* O = Operation; D = Decommissioning of the TLEM; CoP = Completion of Project

EIA Ref	EM& A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines	
		<b>Ecological Impact (Operation &amp; Completion of Project)</b>						
S3.5		<ul style="list-style-type: none"> <li>Reinstatement planting should be carried out at the site according to the XRL EIA Vegetation Survey Report for Tai Shu Ha Road West and the Tree Planting and Landscape Plan TLP-10: Works in Yuen Long District (Tai Shu Ha) (hereafter TLP).</li> </ul>	<p>To restore the habitat back to borrow area reinstatement plantation, as it was prior to the construction of the TLEM for the MTRC's use.</p> <p>To ensure the proposed mitigation recommended in the approved XRL EIA for loss of green areas affected by the XRL Project, is implemented.</p>	The reinstatement planting will be implemented by DHK. The maintenance agent will be DLO as confirmed in the TLP.	Tai Lam Explosives Magazine (TLEM) site/ During - site restoration prior to mitigation planting, Planting & Establishment period of at least 12 months.	CoP	<p>XRL EIA Vegetation Survey Report for Tai Shu Ha Road West</p> <p>Tree Planting and Landscape Plan TLP-10: Works in Yuen Long District (Tai Shu Ha)</p> <p>DEVB TCW No. 10/2013 – Tree Preservation (supersedes ETWB TC(W) No. 3/2006 )</p>	
		<b>Noise Impact (Operation and Decommissioning)</b>						
S4.4.1		No adverse impacts anticipated.	To ensure good site practices are adopted and noise generation minimized during decommissioning	Contractor for DHK	Approximately one month during decommissioning of the TLEM	D	<i>Recommended Clauses for Construction Contracts – Section 3 - Noise Control</i>	
		<b>Air Quality (Operation and Decommissioning)</b>						
S5		<ul style="list-style-type: none"> <li>Not applicable (n/a) - no adverse impacts anticipated.</li> </ul>	n/a	n/a	n/a	n/a	n/a	

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
		<i>Waste Management (Operation and Decommissioning)</i>					
S6.5		<ul style="list-style-type: none"> <li>Good site management practice will be adopted by the contractors of the Project and waste on-site will be properly segregated to increase the potential for reuse and recycling.</li> <li>General refuse is removed from the Project Site regularly (i.e. once per day).</li> </ul>	Avoid adverse environmental impacts related to handling and disposal of waste.	DHK	Tai Lam Explosives Magazine (TLEM) site/ During operation of TLEM & approximately one month during decommissioning of the TLEM	O, D	<i>Waste Disposal Ordinance (WDO) (Cap 354);</i> <i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354N);</i> <i>Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C);</i> <i>Land (Miscellaneous Provisions) Ordinance (Cap 28); and</i> <i>Public Health and Municipal Services Ordinance (Cap 132) - Public Cleansing and Prevention of Nuisances Regulation.</i>
S6.5		<ul style="list-style-type: none"> <li>Chemical refuse will be properly stored and disposed of separately to general waste.</li> </ul>	Avoid contamination by chemical waste.	Licensed Chemical Waste Collector for DHK	Tai Lam Explosives Magazine (TLEM) site/ During operation of TLEM & approximately one month during decommissioning of the TLEM	O, D	<i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), EPD, Hong Kong Government</i>

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM& A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
		<i>Other (Operation and Decommissioning)</i>					
S7.1		<p>No adverse impacts anticipated. For good measure adopt the following good practice measures:</p> <ul style="list-style-type: none"> <li>Surface run-off from construction site should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site /Approximately one month during decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>
S7.1		<ul style="list-style-type: none"> <li>Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site /Approximately one month during decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>
S7.1		<ul style="list-style-type: none"> <li>Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site /Approximately one month during Decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
S7.1		<ul style="list-style-type: none"> <li>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site / Approximately one month during decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>
S7.1		<ul style="list-style-type: none"> <li>Precautions and actions, as stipulated in Appendix A2 of <i>ProPECC PN1/94</i>, should be taken at any time of year when rainstorms are likely, when a rainstorm is imminent or forecast, or during and after rainstorms.</li> </ul>	Minimize construction site runoff during decommissioning	Contractor for DHK	TLEM site / Approximately one month during Decommissioning of the TLEM	D	<i>Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)</i>
S7.1		<ul style="list-style-type: none"> <li>To minimize erosion of exposed soil in between the removal of paved area and the re-vegetation / plantation, exposed soil should be covered with geotextile promptly after the removal works.</li> </ul> <p><b>Hazard to Life (Operation - Storage)</b></p>	Minimize construction site runoff and soil erosion during decommissioning	Contractor for DHK	TLEM site / Approximately one month during Decommissioning of the TLEM	D	-
S8.9.1		<ul style="list-style-type: none"> <li>Ensure the security plan addresses different alert security levels. The corresponding security procedure should be implemented with respect to prevailing security alert status announced by the Government.</li> </ul>	Reduce opportunity for arson/ deliberate initiation of explosives.	DHK	TLEM site / Throughout operation of the Project	O	-
S8.9.1 & S8.9.2 & S8.9.3		<ul style="list-style-type: none"> <li>Emergency plan (i.e. magazine operational manual) shall be followed and amended if necessary to address uncontrolled fire in magazine area and transport. The case of fire near an explosive carrying truck in jammed traffic should also be covered. Drill of the emergency plan should be carried out at regular intervals.</li> </ul>	Minimize risk of uncontrolled fire in TLEM and along transport route	DHK	For TLEM site and Transport route / Throughout operation of the Project	O	-

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
S8.9.1		<ul style="list-style-type: none"> <li>Adverse weather working guideline should be followed and amended if necessary to clearly define procedure for transport explosives during thunderstorm.</li> </ul>	Minimize explosive truck accident frequency.	DHK	TLEM site / Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>The Magazine storage quantities need to be reported on a monthly basis</li> </ul>	Ensure that the two day storage capacity is not exceeded	Contractor for DHK	TLEM site / Throughout operation of the Project	O	Dangerous Goods Ordinance
S8.9.2		<ul style="list-style-type: none"> <li>A suitable work control system should be followed and amended if necessary, such as an operational manual including Permit-to-Work system</li> </ul>	Ensure work activities undertaken during the operation of the Magazine are properly controlled.	DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Good house-keeping within the Magazine</li> </ul>	Ensure combustible materials are not allowed to accumulate.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Good housekeeping outside the Magazine stores to be followed.</li> </ul>	To ensure combustibles (including vegetation) are removed and reduce risk and severity of any accidental fire onsite.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>The Magazine shall be without open drains, traps, pits or pockets into which any molten ammonium nitrate could flow and be confined in the event of a fire.</li> </ul>	Reduce risk of severity of accidental fire and contamination of site.	DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>The Magazine building shall be regularly checked for water seepage through the roof, walls or floor.</li> </ul>	Ensure explosives being stored remain dry.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Caked explosives shall be disposed of in an appropriate manner.</li> </ul>	Ensure general safe practice	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
S8.9.3		<ul style="list-style-type: none"> <li>If disposal is required for small quantities, it should be made in a controlled and safe manner by a Registered Shotfirer.</li> </ul>	To reduce the risk during explosives transport	Registered Shotfirer for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Delivery vehicles shall not be permitted to remain within the secured fenced off magazine store area</li> </ul>	Avoid accidents involving vehicles within the site boundary.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>A speed limit within the magazine area should be enforced</li> </ul>	Reduce the risk of a vehicle impact or incident within the Magazine area.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
S8.9.2		<ul style="list-style-type: none"> <li>Traffic Management should be implemented within the Magazine site, to ensure that no more than one (1) vehicle will be loaded at any time.</li> </ul>	Avoid accidents involving multiple vehicles within the site boundary.	Contractor for DHK	For TLEM site / Throughout operation of the Project	O	-
<b><i>Hazard to Life (Operation - Transport)</i></b>							
S8.9.1		<ul style="list-style-type: none"> <li>Truck design should comply with the Requirements for Approval of an Explosives Delivery Vehicle (CEDD 2) and limit the amount of combustibles in the cabin. The fuel carried in the fuel tank should also be minimised to reduce the duration of any fire.</li> </ul>	Ensure delivery vehicle is as safe as possible.	Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>Implement a dedicated training programme for both the driver and his attendants, including regular briefing sessions, implementation of a defensive driving attitude.</li> </ul>	Minimize explosive truck accident frequency.	DHK	Vehicle driver & attendants for Transport route/ Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>As far as practicable combine explosive deliveries for a given work area</li> </ul>	Reduce number of journeys required	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-



## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
S8.9.1		<ul style="list-style-type: none"> <li>Only the required quantity of explosives for a particular blast should be transported.</li> </ul>	Avoid the return of unused explosives to the Magazine.	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>Whenever practicable, a minimum headway between two consecutive truck convoys of 10 minutes is recommended and separation of vehicles should be maintained during the whole trip.</li> </ul>	Minimize explosive truck accident severity.	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-
S8.9.1		<ul style="list-style-type: none"> <li>Implement a better emergency response and training to make sure the adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible.</li> <li>All explosive vehicles should be equipped with the required amount and type of fire extinguishers and shall be agreed with Mines Division.</li> </ul>	Minimize explosive truck fire involvement frequency.	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Detonators shall not be transported in the same vehicle with other Class 1 explosives and separation of vehicles should be maintained during the trip.</li> </ul>	Minimize explosive truck accident frequency.	Contractor for DHK	Transport vehicle/ Throughout operation of the Project		-
S8.9.3		<ul style="list-style-type: none"> <li>Location for stopping and unloading from truck to be provided as close as possible to shaft, free from dropped loads, hot work, etc. during time of unloading.</li> </ul>	To ensure that the risks from the proposed explosives storage and transport would not be unacceptable	Contractor for DHK	End of Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Develop procedure to ensure that parking space on the site is available for the explosive truck. Confirmation of parking space should be communicated to truck drivers before delivery. If parking space on site cannot be secure, delivery should not commence.</li> </ul>	To ensure that the risks from the proposed explosives storage and transport would not be unacceptable	Contractor for DHK	End of Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Ensure lining is provided within the transportation box on the vehicle and in good condition before transportation.</li> </ul>		Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	-

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
S8.9.3		<ul style="list-style-type: none"> <li>Ensure that packaging of detonators remains intact until handed over at blasting site.</li> </ul>	To meet the ALARP requirement.	Contractor for DHK	End of Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Emergency plan to include activation of fuel and battery isolation switches on vehicle when fire breaks out.</li> </ul>	Prevent fire spreading and reducing likelihood of prolonged fire leading to explosion.	Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Ensure that cartridged emulsion packages are damage free before every trip.</li> </ul>	To meet the ALARP requirement.	Contractor for DHK	Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Ensure that explosives will be offloaded and stored away from the railway protection area according to the MTRCL railway protection area plan.</li> </ul>	To meet the ALARP requirement.	Contractor for DHK	The three worksites (i.e. Mid-Ventilation Adit, North Portal and South Portal)/ Throughout operation of the Project	O	-

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
S8.9.3		<p>Vehicles should meet Licenced Vehicle Safety Requirements including:</p> <ul style="list-style-type: none"> <li>• Mobile telephone equipment;</li> <li>• Battery isolation switch;</li> <li>• Front mounted exhaust with spark arrestor;</li> <li>• Fuel level should be kept as far as possible to the minimum level required for the transport of explosives;</li> <li>• Minimum 1 × 9 kg water based AFFF fire extinguisher to be provided;</li> <li>• Minimum 1 × 9 kg dry chemical powder fire extinguisher to be provided;</li> <li>• Horizontal fire screen on cargo deck and vertical fire screen mounted at least 150mm behind the drivers cab and 100mm from the steel cargo compartment, the vertical screen shall protrude 150mm in excess of all three (3) sides of the steel cargo compartment;</li> <li>• Cigarette lighter removed;</li> <li>• Two (2) battery powered torches for night deliveries.</li> </ul>	Prevent fire spreading and reducing likelihood of prolonged fire leading to explosion.	Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	CEDD's <i>Guidance Note on Requirements for Approval of an Explosive Delivery Vehicle</i>
S8.9.3		<p>Vehicles shall be dedicated explosive transport vehicles and should be maintained in good operating condition;</p> <ul style="list-style-type: none"> <li>• Daily checks on tyres and vehicle integrity.</li> <li>• Regular monthly vehicle inspections for fuel system, exhaust system, brakes, electrics, battery, cooling system and engine oil leaks.</li> <li>• Vehicle log book in which monthly inspections and maintenance requirements are recorded</li> </ul>	Ensure vehicle remains as safe as possible	Contractor for DHK	Transport vehicle/ Throughout operation of the Project	O	-

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
S8.9.3		<ul style="list-style-type: none"> <li>• Drivers should be selected based on good safety record, and medical checks. Use only experienced driver(s) with good safety record.</li> <li>• It is recommended that drivers be registered by the Commissioner of Mines; over the age of 25 years with proven accident free record; have more than seven (7) year driving experience without suspension; .hold a Driving License for the class of vehicle for at least one (1) year; adopt a safe driving practice including having attended a defensive driving course; pass a medical check and are assessed as fit to drive explosives vehicles; and are not dependent on banned substances.</li> <li>• Drivers should attend relevant training courses recognized by the Commissioner of Mines, including but not limited to: the laws and Regulations relating to the transport of explosives: and Security and safe handling during the transport of explosives.</li> <li>• Drivers should attend training courses provided by the explosives manufacturer or distributor, covering:               <ul style="list-style-type: none"> <li>- explosives identification;</li> <li>- explosion hazards; and</li> <li>- explosives sensitivity;</li> <li>- dangers which could be caused by the types of explosives;</li> <li>- packaging, labelling and characteristics of the types of explosives;</li> <li>- the use of fire extinguishers and firefighting procedures; and</li> <li>- emergency response procedures in case of accidents.</li> </ul> </li> </ul>	Minimize explosive truck accident frequency and/ or severity.	Contractor for DHK	Vehicle driver for Transport route / Throughout operation of the Project	O	-

## Implementation Schedule of Recommended Mitigation Measures

EIA Ref	EM&A Ref	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location/ Duration of the measure	Implementation Stage (O, D, CoP*)?	Relevant Legislation & Guidelines
S8.9.3		<ul style="list-style-type: none"> <li>The Driver will also be responsible for various matters as listed in the EIA, including having a full set of Material Safety Data Sheets (MSDS) for each individual explosive aboard the vehicle and for the particular journey, etc.</li> <li>The MSDS and Removal Permit (where applicable) shall be produced to any officer of the Minds Division of CEDD upon request.</li> </ul>	Minimize explosive truck accident frequency and/ or severity.	Contractor for DHK	Vehicle driver for Transport route/ Throughout operation of the Project	O	-
S8.9.3		<ul style="list-style-type: none"> <li>Explosive Vehicle Attendants shall:                             <ul style="list-style-type: none"> <li>- Be the assistant to the driver in normal working conditions and in case of any emergency</li> <li>- Be conversant with the emergency response procedures</li> <li>- Be competent to use the fire extinguishers and the vehicle emergency cut-off switches</li> <li>- At least one of the vehicle attendant(s) should be equipped with a mobile phone and the relevant MSDS and emergency response plan</li> </ul> </li> </ul>	Reduce number of journeys required	Contractor for DHK	Vehicle driver attendants for Transport route/ Throughout operation of the Project	O	-
S8.9.3		<p>For explosive selection, the following should be considered:</p> <ul style="list-style-type: none"> <li>Cartridged Emulsions with perchlorate formulation should be avoided</li> <li>Cartridged Emulsions with high water content should be preferred.</li> </ul>	To meet the ALARP requirement.	Contractor for DHK	For TLEM site and Transport route / Throughout operation of the Project	O	-

\* O = Operation; D = Decommissioning of the TLEM; CoP = Completion of Project