



Your Ref : (6) in EP 2/N7/A/ 2 Ax(1) Pt.24  
Our Ref : (NE/2014/03)/M45/200/J01524

29 May 2018

**By Hand**

→ CO(EA)2

Environmental Impact Assessment Ordinance Register Office  
Environmental Protection Department  
27/F, Southorn Centre,  
130 Hennessy Road,  
Wanchai, Hong Kong

Attn.: Mr. Steve Li

Dear Sirs,

**Contract No. NE/2014/03**  
**Liantang / Heung Yuen Wai Boundary Control Point**  
**Site Formation and Infrastructure Works – Contract 7**

**Environmental Permit No. EP-404/2011/D**  
**Condition 3.2 – Waste Management Plan**

We refer to your above referenced letter dated 6 April 2018 provided with your comments regarding the submission.

In response to the comments and with reference to Condition 3.2 of the Environmental Permit (EP) No. EP-404/2011/D for the Project titled "Liantang / Heung Yuen Wai Boundary Control Point and Associated Works", and on behalf of the Permit Holder, Civil Engineering and Development Department (CEDD), I submit herewith three hard copies of Waste Management Plan, certified by ET Leader and verified by IEC, for the captioned Contract for your approval.

Please be advised that the Waste Management Plan has been prepared in accordance with ETWB TC(W) No. 19/2005 "Environmental Management on Construction Sites" and I have no further comment on the submitted Waste Management Plan.

.../Cont'd



Your Ref : (6) in EP 2/N7/A/ 2 Ax(1) Pt.24  
Our Ref : (NE/2014/03)/M45/200/J01524

Should you have any queries, please contact the undersigned or our Mr. Perry Yam at 2171 3350.

Yours faithfully,



Simon Leung  
Chief Resident Engineer  
AECOM Asia Co. Ltd.

Encl.

c.c. CEDD/NDO	- Attn: Mr. Joe Yip / Mr. Michael Chan
AECOM	- Attn: Mr. Francis Leong / Mr. Pat Lam
SMEC(IEC)	- Attn: Mr. Antony Wong
AUES(ET)	- Attn: Mr. T. W. Tam
KRSCGJV	- Attn: Mr. P Y Cheng

SL/KL/MW/PY/st

Responses to comments in EPD letter ref. (6) in EP 2/N7/A/52 Ax(1) Pt.24 dated 6 April 2018:

	EPD Comments	Our Response
1)	The WMP requires further improvements on the following aspects:	
i)	The approved waste disposal locations;	We do not have any alternative waste disposal locations; all of the C&D waste will go to the designated public fill reception facilities, i.e. inert waste will go to Tuen Mun Area 38 or Tseung Kwan O Area 137 while non-inert waste will go to NENT landfill as stated in WMP section 3.1.
ii)	The implementation of Trip Tickets System; and	The implementation of Trip Ticket System has been addressed and amended in section 3.1. CHIT will be used for waste disposal to the public fill reception facilities.
iii)	Records keeping mechanism.	In section 3.3 of WMP, "records system on C&D waste" has been addressed and amended, we added a bullet for showing our improvement: <ul style="list-style-type: none"> <li>● The record of CHIT will be made available for inspection by ET and IEC upon request.</li> </ul>

	EPD Comments	Our Response
2)	A focused Implementation Schedule (IS) is suggested for inclusion to better reflect and summarise the details of specific mitigation measures recommended in WMP. A template of the IS for mitigation measures to be recommended in a WMP is attached in Annex 2 for follow-up.	As stated in section 1.0, an Implementation Schedule (IS) which is attached in the Environmental Monitoring & Auditing (EM&A) Manual of the Contract (as shown in Appendix H) will be adopted to summarize the committed measures or actions for implementation.
3)	You may wish to observe and make reference to the relevant legislation, regulations and guidelines on waste management. Please be reminded that the anticipated disposal outlets are subjects to agreement with the respective facilities management authorities.	The relevant legislation, regulations and guidelines on waste management have been made reference as listed on section 1.0.
4)	Please mention as appropriate "According to clauses 3.2 and 3.3 of the EP- 404/2011/D, the WMP shall be submitted and all measures recommended in the approved WMP shall be fully implemented. For the purpose of compliance checking, a focused Implementation Schedule of this WMP is prepared at Appendix X to summarise the committed measures or actions for implementation."	In section 1.0, the suggested paragraph has been mentioned.  For the purpose of compliance checking, an Implementation Schedule (IS) which is attached in the Environmental Monitoring & Auditing (EM&A) Manual of the Contract (as shown in Appendix H) will be adopted to summarize the committed measures or actions for implementation.

	EPD Comments	Our Response
5)	Waste Management Organization Chart and Responsibilities of Key Members: The role of ET and IEC should be included.	The Waste Management Organization Chart has been updated in section 2.0.4. The role of ET and IEC are included in section 2.0.
6)	Trip Ticket System: Please add to this system the roles of ET and IEC and specify their responsibilities. It is also suggested that for disposal at non-government facilities, the contractor should check the information recorded in the DRS against the disposal records in these non- government facilities within reasonable time. Please add the CHIT and DDF will be made available for inspection by ET and IEC upon request.	<p>According to the EM&amp;A Manual, the relevant role of ET and IEC has been stated as shown in Appendix I.</p> <p>The CHIT will be made available for inspection by ET and IEC upon request as stated in section 3.3.</p>
7)	Monthly Waste Flow Table: The summaries shall be made available to ET and IEC upon request.	The summaries shall be made available to ET and IEC upon request as stated in section 3.3. The monthly waste flow table will be also included in the Monthly EM&A report.
8)	Please add the roles of ET and IEC for their responsibilities to perform audit against the committed measures as stated in the focused IS of this WMP.	The roles of ET and IEC for their responsibilities to perform audit against the committed measures as stated in the focused IS of this WMP have been stated in Appendix I.

**Civil Engineering and Development Department**

**Contract No. NE/2014/03**

**Liantang/ Heung Yuen Wai Boundary Control Point Site  
Formation and Infrastructure Works – Contract 7**

**Waste Management Plan**

(Environmental Permit No.: EP-404/2011/D)

**Kwan On – Richwell – SCG JV**

**April 2018**

Our ref: 7076192/L23074/AB/AW/MCC/rw

24 May 2018

AECOM  
8/F, Grand Central Plaza, Tower 2  
138 Shatin Rural Committee Road  
Shatin, N.T.

By Email & Post

Attention: Mr Simon LEUNG

Dear Sirs

**Agreement No. CE 45/2008 (CE)**  
**Liantang/Heung Yuen Wai Boundary Control Point and Associated Works**  
**Independent Environmental Checker – Investigation**  
**Waste Management Plan (Rev. 1) – Contract No. NE/2014/03 (Contract 7)**

With reference to the Waste Management Plan (WMP) Revision 1 provided to us on 19 May 2018 and the ET Leader's certification (ET's ref.: TCS00694/13/300/L1573 dated 23 May 2018), we have no adverse comments on the captioned submission. We herewith verify the WMP of Contract 7 (NE/2014/03) of the captioned Project in accordance with Condition 3.2 of Environmental Permit No. EP-404/2011/D.

Thank you for your attention and please do not hesitate to contact the undersigned on tel. 3995 8120 or by email to antony.wong@smec.com; or our Mr Arthur CHIU on tel. 3995 8144 or by email to arthur.chiu@smec.com.

Yours faithfully



**Antony WONG**  
Independent Environmental Checker

cc	CEDD/BCP	-	Mr LU Pei Yu / Mr William CHEUNG	by fax: 3547 1659
	AECOM	-	Mr Pat LAM / Mr Perry YAM	by email
	KRSJV	-	Mr Matthew TSANG	by email
	AUES	-	Mr TW TAM	by email

Our Ref: TCS00694/13/300/L1573

**AECOM**  
**8/f Grand Central Plaza, Tower 2**  
**138 Shatin Rural Committee Road**  
**Shatin, Hong Kong**

**Attn: Mr. Simon Leung**

**23 May 2018**  
By E-mail

Dear Sir,

**Re: CEDD Contract NE/2014/03**  
**Liantang/Heung Yuen Wai Boundary Control Point Site Formation and**  
**Infrastructure Works – Contract 7**  
**Waste Management Plan (Rev.1)**

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With reference to the Waste Management Plan provided by the Contractor of Contract 7 (KRSJV) on 19 May 2018, please note that we have no adverse comment on this submission. We herewith certify the captioned submission accordance with *Condition 3.2* of Environmental Permit (EP) No. EP-404/2011/D.

Should you have any queries, please feel free to contact the undersigned at Tel: 2959-6059 or Fax: 2959-6079 or E-mail: [twtam@fordbusiness.com](mailto:twtam@fordbusiness.com).

Yours sincerely,  
For and on Behalf of  
**Action-United Environmental Services & Consulting**



T. W. Tam  
Environmental Team Leader  
TW/nh

cc	Kwan On-Richwell-SCG JV (Contractor of C7)	Mr. Matthew Tsang	by e-mail
	SEMC (IEC)	Mr. Antony Wong	by e-mail



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## **1.0 Introduction**

Kwan On – Richwell – SCG JV (hereinafter referred to as the “KRSJV”) has been awarded by the Civil Engineering & Development Department (hereinafter referred to as the “CEDD”) for the Contract NE/2014/03, titled “Laintang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 7” (hereinafter referred to as “the Contract”). The Works to be executed under the Contract (hereinafter referred to as “the Project”) include, but not exclusively, the following major items:

- (a) The HKSAR sections of four cross boundary vehicular bridges (Bridge A, Bridge B, Bridge D, and Bridge E) over Shenzhen River, including the ramps of Bridge A and Bridge E;
- (b) the HKSAR section of the cross boundary pedestrian bridge (Bridge C) over Shenzhen River;
- (c) noise barrier works on Bridge D, Bridge E and the ramp of Bridge E;
- (d) the associated at-grade road works, drainage; reinstatement works for Shenzhen River and boundary fences, and other ancillary works;
- (e) Landscape Softworks;

The project commencement is 15 February 2016.

This Waste Management Plan (hereinafter referred to as the “WMP”) is prepared according to the requirement in Condition 3.2 of Environmental Permit no. EP-404/2011/D.

This WMP has been made reference to the relevant legislation, regulations and guidelines on waste management as listed on follow:-

- Waste Disposal Ordinance (Cap 354), Waste Disposal Regulation
- Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)
- Public Dumping License under the Land (Miscellaneous Provisions) Ordinance (Cap 28)
- Waste Management on Construction Sites (ETWB TC No. 15/2003)
- Environmental Management on Construction Sites (ETWB TC No. 19/2005)
- Trip Ticket System for Disposal of C&D Materials (BD TC No. 6/2010)

According to clause 3.2 and 3.3 of the EP-404/2011/D, the WMP shall be submitted and all measures recommended in the approved WMP shall be fully implemented. For the purpose of compliance checking, an Implementation Schedule (IS) which is attached in the Environmental Monitoring & Auditing (EM&A) Manual of the Contract (as shown in Appendix H) will be adopted to summarize the committed measures or actions for implementation.

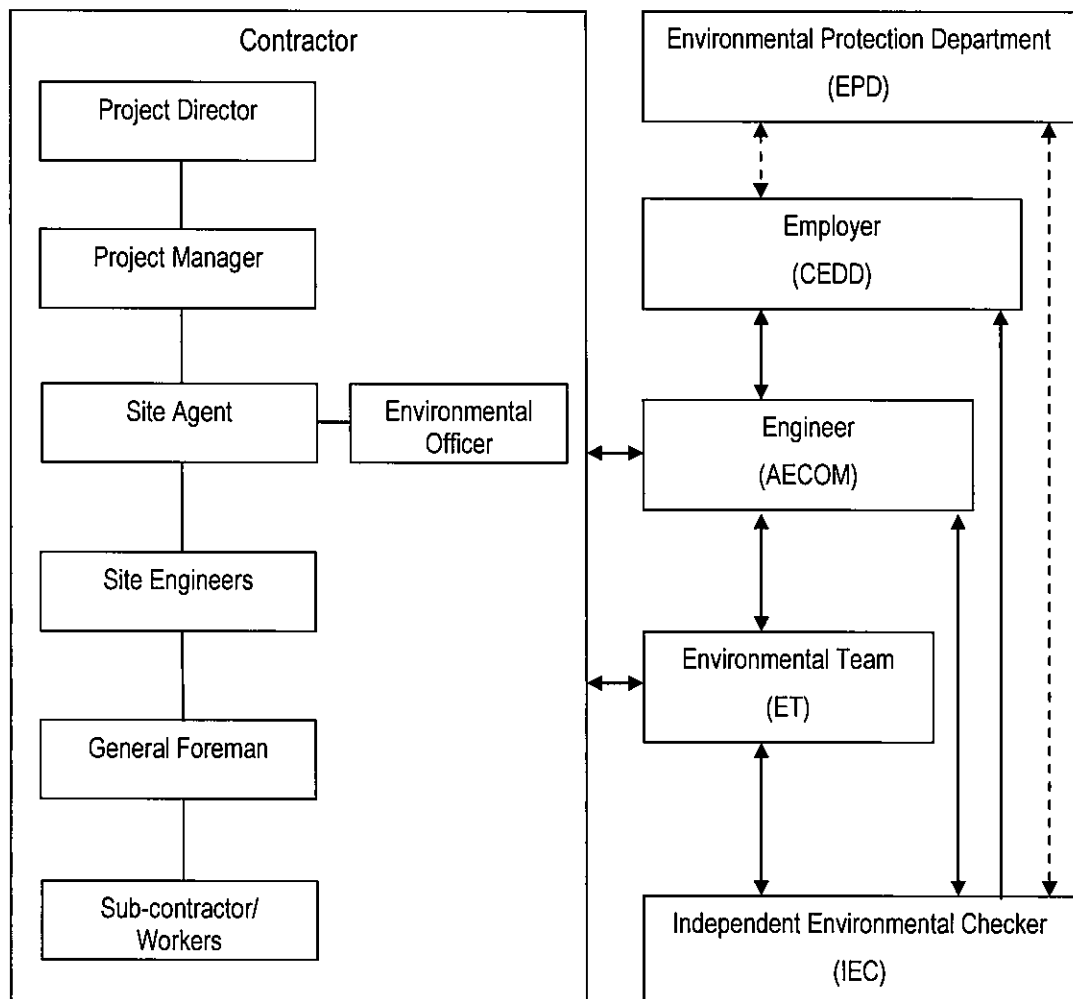
## 2.0 Waste Management

2.0.1 KRSJV will observe and comply with the Waste Disposal Ordinance and its subsidiary regulations and any additions or amendments thereto coming into effect before completion of the Project.

2.0.2 KRSJV is responsible for waste control within the construction site, removal of the waste material produced from site and implementation of any mitigation measures to minimize waste or redress problems in respect of waste production throughout the construction process.

2.0.3 In addition, KRSJV will provide training and instruction to all relevant site staff, in form of tool box talk training and included in site specific induction training, to raise their awareness and draw attention to waste management issues and the need to minimize waste generation. The organization structure in the following outlines the responsibilities of key staffs that have significant contributions to make in the successful implementation of waste management.

### 2.0.4 Waste Management Organization



- **Project Director** (hereinafter referred to as the “PD”)/ **Project Manager**(hereinafter referred to as the “PM”)

They are the Management Representative. They have the overall responsibilities on environmental issues of the Project include:

- Oversee the implementation of the WMP; and
- Assign adequate resources for the implementation of the WMP.

- **Site Agent** (hereinafter referred to as the “SA”)

He is resident on site and is the point of contact for the site environmental issues. His responsibilities include:

- Ensure the environmental monitoring activities are carried out;
- Communicate with the Engineer and EPD with respect to environmental issues;
- In the event of recurring exceedance, non-compliance or unwillingness of site workers (including sub-contractors) to follow correct procedures, inform and discuss with the respective Project Manager and carry out necessary actions.

- **Environmental Officer** (hereinafter referred to as the “EO”)

The Environmental Officer (EO) is resident on site and is the point of contact for the day-to-day environmental issues. His responsibilities include:

- Prepare, implement and update the Environmental Management Plan ((hereinafter referred to as the “EMP”)) and Waste Management Plan (WMP);
- Advise on measures to be taken in the interest of environmental protection, and implement such measures;
- Liaise on all matters relating to environmental monitoring and auditing;
- Carry out inspections of the Site for identifying potential hazards to the environment, and to report findings with recommendations for corrective actions;
- Participate in the weekly environmental walks with the nominated site staff of the Engineer, and to supervise and monitor the environmental performance on the Site;
- Check and ensure that any polluting or potentially polluting situation is promptly rectified;
- Attend Site Safety and Environmental Management Committee (SSEMC) meetings and Site Safety and Environmental Committee (SSEC) meetings;
- Arrange environmental management training to the relevant staff;
- Arrange and provide the environmental training including the site specific induction training and toolbox talks for the staff and workers on the Site, and to organize environmental promotional activities;
- Advise the Contractor on the implementation of an environmental management system;
- In the event of unacceptable work practice or infringements of the EMP and WMP requirements, inform the site workers (including sub-contractors) the correct procedures and ensure that they understand and agree to follow, and afterwards check whether they have followed the correct procedures;
- Maintain all relevant environmental records stipulated in the EMP and WMP; and
- Discuss environmental concerns with the Engineer, other staff of the Contractor, and the Environmental Team (ET) Leader and Independent Environmental Checker (IEC).

- **Site Engineers** (hereinafter referred to as the “SE”)/ **General Foreman**(hereinafter referred to as the “GF”)/ **Sub-contractor /Workers**

They shall assist the Environmental Officer (EO) in his day-to-day management of on-site environmental management issues. Their responsibilities include:

- Assist the Environmental Officer (EO) carrying out his duties;
- Advise the Environmental Officer (EO) on the keeping of environmental performance and standards of the Site;
- Carry out any instruction as requested by Environmental Officer (EO).

- **Environmental Team** (hereinafter referred to as the “ET”)

During the course of the construction, an Environmental Team (ET) which is led by the Environmental Team Leader (ETL) as required under the Environmental Permit (EP) will be established by the Employer to undertake the environmental monitoring and audit during the construction stage. The ETL will be responsible for checking and certifying the overall environmental performance of the Contract, including the implementation of all the environmental protection and mitigation measures and any submissions relating to environmental monitoring and audit for the Contract. With reference to EM&A manual, the responsibilities of ET may include:

- Monitor and audit various environmental parameters as required in this EM&A Manual
- Analyse the environmental monitoring and audit data, review the success of EM&A programme and
- the adequacy of mitigation measures implemented, confirm the validity of the EIA predictions and
- identify any adverse environmental impacts arising
- Carry out regular site inspection to investigate and audit the Contractors' site practice, equipment/plant and work methodologies with respect to pollution control and environmental mitigation, and effect proactive action to pre-empt problems
- Monitor compliance with conditions in the EP, environmental protection, pollution prevention and control regulations and contract specifications
- Audit environmental conditions on site
- Report on the environmental monitoring and audit results to EPD, the ER, the IEC and Contractor or their delegated representatives
- Recommend suitable mitigation measures to the Contractor in the case of exceedance of Action and Limit levels in accordance with the Event and Action Plans
- Liaise with the IEC on all environmental performance matters and timely submit all relevant EM&A proforma for approval by IEC

- **Independent Environmental Checker** (hereinafter referred to as the “IEC”)

The Independent Environmental Checker (IEC) will be appointed by the Employer as required in the EP. The IEC will be responsible for checking, reviewing, verifying and validating the overall environmental performance, including the implementation of all the environmental protection and mitigation measures and any submissions relating to environmental monitoring and audit for the Contractor.

## **2.1 Waste Reduction and Handling Measures**

2.1.1 KRSJV will adopt a waste management hierarchy for the Project. The waste management options will be categorized in terms of preference from an environmental viewpoint. The options considered to be preferable have the least impacts and are more sustainable in long term. The hierarchy is as follows:

- i) Avoidance and minimization;
- ii) Reuse of materials, thus avoiding disposal generally with limited reprocessing;
- iii) Recovery and recycling, in which substantial reprocessing may be required; and
- iv) Storage, treatment and disposal, according to relevant laws, regulations, guidelines and good practice as the last option.

2.1.2 The hierarchy is used to evaluate and select waste management options. The aim is to reduce and minimize the amount of waste to be generated and hence reduce the waste handling and disposal costs.

2.1.3 KRSJV will minimize the generation of waste from his work. Avoidance and minimization of waste generation can be achieved through changing or improving design and practices, careful planning and good site management. Waste management aims at identifying the types and nature of waste generated during construction, their handling methods and measures to minimize waste production. A simple monitoring and auditing proposal will also be included.

2.1.4 For each of the materials generated, specific measures will be implemented in order to minimize, reuse or treat and dispose them, which are listed as follows.

### 2.1.5 Excess Excavated Materials

2.1.5.1 KRSJV will reuse the excavated material in filling works as far as possible. Excavated material shall be temporarily stockpiled properly on site for reuse.

2.1.5.2 Suitable dust suppression measures shall be adopted for temporary open storage of excavated materials on site. Such measures may include covering the stockpile with tarpaulin or similar fabric or spraying the stockpiled sand with water to maintain constant wetness. During rainstorms, any washout of construction or excavated materials shall be diverted to the drainage system via appropriate sediment traps.

2.1.5.3 If there is still surplus excavated material, they will be transported and disposed at an approved filling area (Tuen Mun Area 38 – Inert Material, Tseung Kwan O Area 137 – Slurry and bentonite, North East New Territories (NENT) Landfill – non-inert material).

### 2.1.6 Construction Waste

2.1.6.1 In order to minimize waste creation and keep environmental impacts within acceptable levels, the following mitigation measures shall be adopted:

- i) Minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering;

- ii) The design of formwork shall maximize the use of standard timber/panels so that high reuse levels can be achieved. Metal tube shall be used for scaffolding to increase the potential for reuse. Where possible, formwork other than timber will be used.
- iii) The construction waste shall be recycled as much as possible on site. To facilitate recycling, proper segregation of waste shall be undertaken on site. Different areas of site shall be designated for segregation and storage whenever site conditions are suitable.
- iv) Materials with high scrap value such as metals are normally recycled. The remaining materials should be separated into inert and non-inert materials for disposal at public dump and landfill.

2.1.6.2 General construction waste should be removed from site as soon as practicable in order to avoid adverse environmental impacts due to on site storage of the materials.

2.1.6.3 General construction waste with more than 25% inert material should not be disposed of at landfill. It will therefore be arranged on site to segregate wastes before disposing of the inert materials (e.g. concrete, soil cement, etc) at public filling areas and the non-inert waste (e.g. wood, paper, plastic, etc) at landfills.

2.1.6.4 Segregated wastes should be disposed off Site as soon as practicable in order to avoid adverse environmental impacts due to on site storage of the materials, inert materials should be disposed to the public fill area, and the non-inert materials should be disposed to landfill site as directed by the Engineer Representative..

#### 2.1.7 Chemical Waste

2.1.7.1 KRSJV will practice careful design, planning and proper site management to ensure that excessive chemical waste will not be produced at the site. For those processes which generate chemical waste, it may be possible to find alternatives which generate reduced quantities or even on chemical waste, or less dangerous types of chemical waste.

2.1.7.2 If possible, designated area for construction works involved the use of chemicals (e.g. construction equipment maintenance with the use of lubricating oil) should be determined by the Site Agent so that the area where generated chemical waste could be confined.

2.1.7.3 The General Foreman should ensure that all chemical wastes generated by the construction works are properly labelled, packaged, and temporarily stored at a designated chemical waste storage area within the construction site. The chemical waste handling and storage requirements should be in accordance with the Environmental Protection Department's "Code of Practice on the Packaging, Handling and Storage of Chemical".

2.1.7.4 Containers used for storage of chemical wastes should be resistant to the contents, in good condition, and securely closed. Their sizes and types should be in accordance with the Code Of Practice. Labels showing the nature of chemical waste in both English and Chinese should be properly displayed on the containers.

2.1.7.5 Storage areas should be clearly labelled as chemical waste storage area in both English and Chinese and should be used solely for the storage of chemical wastes. These storage areas should be enclosed on at least 3 sides, adequately ventilated, adequately covered to prevent rainfall entering, be designed to allow for proper separation of incompatible materials, and should have impermeable floor and earth bund of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in the area, whichever is the greatest.

2.1.7.6 In case of quantity of waste has reached 80% of the capacity of the designated area, KRSJV will employ a licensed chemical waste contractor to collect and dispose of the chemical wastes.

2.1.7.7 Chemical waste generated from the Site will be handled by trained workers, and stored in the Chemical Storage Area which is authorized by the Environmental Protection Department, and collection and disposal of such chemical waste by specialist contractors.

2.1.7.8 KRSJV will employ a licensed chemical waste contractor to collect and dispose of the chemical wastes when necessary. The frequency of the disposal of chemical waste shall be depended on the quantity of chemical waste being stored on site.

#### 2.1.8 General Refuse

2.1.8.1 Office wastes shall be reduced through recycling of paper, plastic bottles and aluminium. Papers should be used on both sides where practicable. One container will be provided to collect used paper for recycling in each office.

2.1.8.2 Waste shall be crushed to minimize volume in order to increase the effectiveness of recycling.

2.1.8.3 General refuse generated on site shall be stored in enclosed bins separate from construction and chemical waste. Plastic bags will be provided to individual sub-contractor for temporary storage of refuse. The refuse will be cleared daily to cover rubbish bins. Rubbish bins with covers will be provided in a set of three, one for aluminium cans, one for plastic bottles, and one for general refuses. And the covered general refuse bins will be provided on the Site at a ratio of one set for every 20 workers. The sub-contractors will be responsible for the tidiness of their working area.

2.1.8.4 The rubbish bins will be cleaned on a every other day basis, to minimize odour, pest, and litter impacts. The refuse form the rubbish bins will be collected into plastic bags and transported to the general construction waste storage area for storage.

2.1.8.5 The recyclable plastic cans and aluminium cans will be collected by recycling sub-contractors for recycling.

2.1.8.6 General refuse generated on site will be stored at the general refuse storage area and removed with them. The disposal location for the general refuse is North East New Territories



(NENT) Landfill.

### 2.1.9 Timbers

2.1.9.1 Use of timber in temporary works construction will be avoided, reduced or minimized as far as possible. Wherever use of timber is necessary for a temporary works construction process/activity with an estimated quantity exceeding 5m<sup>3</sup>, the Site Agent will submit a method statement to the Engineer Representative for agreement prior to commencement of the relevant temporary works.

2.1.9.2 The method statement should include the justification for and the measures taken to minimize the use of timber in the said temporary works. In addition, the Environmental Officer will provide a summary table containing the description, justification and the estimated quantity for every work process/activity requiring the use of timber for temporary construction irrespective of the quantity of timber used. A proforma of the summary table is attached in Particular Specification Appendix 1.28.

2.1.9.3 The summary table on the use of timber for temporary works construction will be updated and submitted to the ER together with the summary Waste Flow Table for monitoring and review. The attention of the ER should be drawn to the work process/activity for which the estimated quantities have been revised. For the avoidance of doubt, any over-sized public fill/construction and demolition materials other than rock should be broken down to less than 200mm in size so as to become suitable general filling materials for use.

2.1.9.4 Timber waste generated on site will be stored at the general construction waste storage area and removed with them. The disposal location for the timber waste is North East New Territories (NENT) Landfill..

## **2.2 Waste Avoidance**

2.2.1 KRSJV will endeavor to reduce the generation of waste materials, and thus minimize the amount of waste disposal to landfills. Specific measures include the followings.

- (a) Sort all excavated materials and recover the inert portion of C&D materials, such as hard rock, soil and broken concrete, for reuse on the Site or, if cannot be used on the Site, disposal to designated outlets for reuse;
- (b) Recover all metallic waste for collection by recycling sub-contractors;
- (c) Recover all cardboard and paper packaging, and properly stockpile them in dry and covered condition to prevent cross contamination;
- (d) Collect all chemical waste and properly dispose them by specialist sub-contractor(s);
- (e) Sort all demolition debris to recover broken concrete, reinforcement bars, mechanical and electrical fittings, hardware and all other fittings/materials that have established recycling outlets.

2.2.2 In order to achieve the target of recycling, KRSJV will make arrangements with potential recycling contractors to facilitate that recyclable materials sorted from the Site are collected with reasonable care.

### **2.3 On-site Sorting of C&D Materials for Reuse, Recovery and Recycling**

2.3.1 C&D materials will be sorted on site. The sources of generation will be identified and the quantity will be estimated, on site sorting and/or collection, temporary storage areas will be arranged commensurate with the Site situations.

2.3.2 The C&D materials will be sorted at source into:

- (a) Hard rock, and/or those naturally occurring hard materials whose geological nature is to be regarded as rock, suitable for reuse on the Site which shall be further sorted and deposited to designated areas as shown on the drawing for various types of rock fill materials according to different size/weight within site for further reuse, and without further breaking down if possible;
- (b) Broken concrete, brickwork, concrete, reinforced concrete, masonry, and/or artificial hard materials which will be broken down to size smaller than 200mm and used as general fill materials, and with any materials unsuitable for filling disposed off Site, e.g. metal;
- (c) Bituminous Material for reuse in temporary road;
- (d) Metals for reuse and recycling;
- (e) Paper and plastics for reuse and recycling;
- (f) Any other materials suitable for disposal at public fill reception facilities, sorting facilities and landfills/outlying island transfer facilities (disposal at the sorting facilities should first be approved by the ER).

2.3.3 Thorough sorting of C&D materials generated from demolition works will be carried out in order to recover broken concrete, brickwork, concrete, reinforced concrete, masonry, bituminous paving, and/or artificial hard materials, reinforcement bars, mechanical and electrical fittings, hardware as well as other fittings/materials that have established recycling outlets.

2.3.4 Equipment and material packaging will be recovered, properly stockpiled in dry and covered condition to prevent cross contamination by other C&D materials, especially in the course of collecting paper for recycling.

2.3.5 Sufficient space will be identified and provided for sorting and temporary storage of C&D materials to facilitate collection and/or sorting on the Site. The space provided will commensurate with the estimated quantity for each type of C&D materials generated and the conditions of the Site.

2.3.6 Except for those inert C&D materials to be reused on the Site, all other C&D materials will be removed off the Site as soon as practicable in order to optimize the use of the on-site storage space.

2.3.7 The Site Agent will ensure that the segregated wastes are stored properly in designated storage points to avoid possible loss or leakage and that wastes are covered properly to minimize windblown litter and dust during transportation as far as practicable. The General Foreman will ensure that the waste storage areas are cleaned regularly and wastes are removed in a timely manner.

2.3.8 The subcontractor will be responsible for collection of recyclable material like paper, plastic and metals generated from their own works. The recyclable material will be collected daily and store in recycle bins. The recyclable material shall be delivered to recycling companies for recycling.

2.3.9 The bituminous material shall separate from other inert C&D materials before disposal to fill banks.

2.3.10 Metals like metal formwork and I-beam for temporary works should be store at site properly for reuse. For metal like wastage of reinforcement that cannot be reuse, the metal should be store and delivery to recycling companies for recycling.

2.3.11 Paper that use in one side should be stored and sorted for reuse in the blank side as far as possible in office. Paper packaging for materials that cannot be reused should be store and delivery to recycling companies for recycling.

2.3.12 Plastic bottle should be store and reuse at site (e.g. cover to sharp objects) as far as possible. Other plastic that cannot be reused should be sorted in recyclable and non-recyclable. The recyclable plastic store and delivery to recycling companies for recycling.

## **2.4 Waste Flow**

2.4.1 KRSJV will ensure that the following issues are well implemented:

- (a) Different types of waste are segregated on site and stored in different containers, skips or stockpiles to facilitate reuse/recycling of waste and, as the last resort, disposal at different outlet as appropriate.
- (b) Permitted waste transporter shall be used to collect and transport wastes to the appropriate disposal point.
- (c) Wastes will be handled and stored in a manner which ensures that they are held securely without leakage, thereby minimizing the potential of pollution.
- (d) Waste will be removed in a timely manner.
- (e) Open burning of debris or other materials will be strictly prohibited.
- (f) Waste storage areas will be maintained and cleaned regularly.
- (g) Windblown litter and dust during transportation will be minimized by either mechanical covering trucks with tarpaulin or transporting waste in enclosed containers. And in case the quantity of waste has reached 80% of the capacity of the designated area, KRSJV will identify another suitable area for the waste storage or arrange additional disposal off-site when necessary.
- (h) The necessary waste disposal permits will be obtained from the appropriate authorities.
- (i) Waste materials will disposed at licensed sites.
- (j) Trip Ticket System (TTS) will be followed, to facilitate tracking of disposal, particularly for chemical waste, and to ensure that illegal disposal of wastes will not occur.
- (k) Disposal Delivery Form (DDF) as attached in PS Appendix 25.8 shall be used to maintain records of the quantities of wastes generated, recycled and disposed properly.
- (l) Site Management Plan for Implementation of Trip Ticket System will be established and implemented in the disposal of waste materials off the Site.

2.4.2 The quantities of C&D materials reused, recycled and/or removed from the Site will all be recorded and reported in the monthly summary Waste Flow Table pursuant to Particular Specification Appendix 25.6.

2.4.3 The Monthly Waste Flow Table summaries shall be made available to ET and IEC upon request.

## **2.5 Type of C&D Materials**

The C&D materials include the inert portion and non-inert portion. The inert portion of C&D materials comprises of brick, asphalt, broken concrete, rock, soil and excavated earth, etc. It can be re-used as public fill for use in formation works and reclamation. It shall be disposed of at the Public Fill Reception Facilities at Tuen Mun Area 38 or Tseung Kwong O Area 137 or other disposal outlets as directed by the Engineer.

The remaining materials are non-inert portion of the C&D materials and called C&D wastes, comprising of bamboo, plastic, timber and packaging wastes, etc. They are often mixed and contaminated and are not suitable for re-use in reclamation works. It shall be disposal of at NENT (Northeast New Territories) Landfill.

### **3.0 Trip Ticket System**

#### **3.1 Site Procedures**

- Trip ticket system by using CHIT which applied from Environmental Protection Department before the commencement of disposal of inert/ non-inert material off-site.
- General Foreman will arrange the C&D waste to be sorted on site. Inert waste and non-inert waste will be separated for different disposal ground. The waste will be checked every day and arrange disposal until certain amount is accumulated.
- General Foreman will arrange dump truck / grab truck to collect C&D waste on site.
- General Foreman / Environmental Officer will record the completed, signed / stamped CHIT before each truckload of C&D materials off site for monitoring purpose. The Part 1 of daily record summary (DRS) will be filled to record the situation of truck when leaving the site.
- General Foreman will check whether the dump truck well covered before off site and hand the duly completed CHIT to truck drivers.
- General Foreman will hand the duly completed CHIT to truck drivers for disposal of the inert portion of C&D materials to the designated public fill reception facilities (Tuen Mun Area 38 or Tseung Kwan O Area 137) or the non-inert portion of C&D materials to NENT landfill.
- Upon the trucks reach the designated public filling bank/ landfill, the CHIT shall be presented to the facility operator for checking, recording and stamping. Afterwards, the stamped CHIT as well as a transaction receipt shall be returned to the truck drivers.
- General Foreman will collect and check all the returned CHIT and transaction receipt from the truck drivers. Then, all of return will be passed to Contractor's representative for completing all information in Part 2 of DRS.

#### **3.2 Surveillance of Trucks**

General Foreman shall responsible to ensure that truck drivers must bear a valid Dumping Licence and every truckload of C&D materials leaving the Site must be a duly completed, signed and stamped DDF. Otherwise, General Foreman will stop all improper disposal activities and warn any non-compliance truck drivers.

Load meter is encouraged to install inside the truck. Before the truck leaving the Site, General Foreman will check the load meter to ensure there is no overloading. In addition, the mechanical cover also be checked and ensure covered.

Overloading and illegal dumping are strictly prohibited. Remedial actions will be as follows if non-compliance and complaint is made by the sub-contractor or truck drivers:

Extra toolbox talk will be carried out by the Site Agent and Environmental Officer to draw further attention on the topic of "Overloading" and "Illegal Dumping";

Warning letters will be given to the sub-contractor or truck drivers who are responsible for the non-compliance and complaint;

All the remedial works corresponding to the overloading and illegal dumping must be carried out within 24 hours and completed to the standard satisfied by ER supervisory staff; and

If the non-compliance and complaint re-occurred, the sub-contractor or truck drivers will be removed offsite.

### **3.3 Record System on C&D Waste**

To maintain a comprehensive record of the disposal of C&D materials, a daily record of disposal, the Daily Record Summary (DRS), to be submitted to ER for recording. The details are as below:

The representative of Contractor will complete all information in Part 1 of DRS according to the disposal records by Foreman on that of disposal. The Part 1 shall be submitted to ER by 1:00 p.m. of the working day following the date of disposal.

After collecting the returned DDF and transaction receipt from Foreman, the rest of information in Part 2 of DRS should be completed. The information should be checked with data from CEDD's website.

Monthly waste flow table will be prepared to summarize the amount of C&D waste from all CHIT record and submit in monthly report.

The record and summary of CHIT will be made available for inspection by ET and IEC upon request.

**Appendix A – Daily Cleaning and Weekly Tidying Record**

Inspection Checklist for Daily Cleaning

Contract No.: NE/2014/03  
 Contract Title: Liantang/Heung Yuen Wai Boundary Control Point  
 Site Formation and Infrastructure Works-Contract 7

Inspection Location: Portion A / B-H / Z

Inspection By: Jacky Lam/Sam Wong

Joint Checked By: K.W.Cheung/Kelvin Lee/T.Y.Leung

Inspection Date: \_\_\_\_\_

Date: \_\_\_\_\_

Item No.	Description of Checking	Compliance			Action Required	Remarks
		Y	N	N/A		
1	Maintenance of passageways, common accesses and public areas free of obstructions. 保持行人路、公共通道及公共地方暢通無阻					
2	Proper storage and stacking of materials 適當儲存及堆放物料					
3	Proper placement and storage of tools and equipment after work 工作後適當放置及儲存工具及設備					
4	Proper sorting, storage and / or disposal of waste materials 適當分類、儲存及/或棄置廢料					
5	Proper securing of hoarding, barriers, guarding, lighting, and signing of works 適當穩固工程的圍街板、圍欄、欄河、照明及標誌					
6	Prevention and removal of water ponds and flooding 清理積水, 防止水浸					
7	Clearing of stockpiling and wastes arising from the works 清理工程所產生的貯存物及廢物					
8	Conditions of cleanliness and tidiness of the Site including Public Cleaning Areas in perspective of general public 地盤(包括公共地方)的清潔及齊整					
9	Removal of rubbish and debris dumped into the Site by public 清理公眾所棄置於工地上的垃圾及殘廢					
10	Other cleaning requirements as instructed by Engineer's Representative 工程師代表的其他清潔要求					

Y - Yes N/A - Non Applicable

N - No

Note: Checklist is prepared according to PS Clause 1.32A



Inspection Checklist for Weekly Tidying

Contract No.: NE/2014/03  
 Contract Title : Liantang/Heung Yuen Wai Boundary Control Point  
 Site Formation and Infrastructure Works-Contract 7

Inspection Location: Portion A / B-H / Z

Inspection By: Jacky Lam/Sam Wong

Joint Checked By: K.W.Cheung/Kelvin Lee/T.Y.Leung

Inspection Date: \_\_\_\_\_

Date: \_\_\_\_\_

Item No.	Description of Checking	Compliance			Action Required	Remarks
		Y	N	N/A		
1	Through Cleansing of passageways, common access and public areas 清潔行人路、通道及公共地					
2	Re-organizing of storage materials for better utilization of storage spaces and safe stracking. 重安排物料的存放以致善用存放空間及安全的堆放					
3	Maintenace and re-conditioning of tools and equipment. 保養及維修工具和設備					
4	Collection and removal of wasted materials off site 收集及清理廢料離開工地					
5	Pcleansing, rconditioning and replacement of hoarding, barriers, guarding, lighting, signing of works to good working conditions 清潔、維修及更換工地上的圍板、欄河、照明、標誌致良好的工作狀態					
6	Pcleaning of drain and channels to prevent flooding. 清理排水管道及渠坑，防止止水浸					
7	Cother cleaning requirements as instructed by Engineer's Reperesentative 工程師代表的其他清潔要求					
8	Cleaning of external covers for plant and equipment 清潔外部機構及設備					

Y - Yes N/A - Non Applicable

N - No

Note: Checklist is prepared according to PS Clause 1.32A

**Appendix B – Monthly Waste Flow Table**

Name of Department: CEDD

Contract No.: NE/2014/03

Monthly Summary Waste Flow Table for \_\_\_\_ (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Jan											
Feb											
Mar											
Apr											
May											
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total											

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )

- Notes:
- (1) The performance targets are given in PS Clause 6(14).
  - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
  - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
  - (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m<sup>3</sup>.

**Appendix C – Estimated Timber Used Form**

PS Appendix 1.28

**SUMMARY TABLE FOR WORK PROCESSES OR ACTIVITIES REQUIRING TIMBER FOR TEMPORARY WORKS**  
 (PS Clause 1.99)

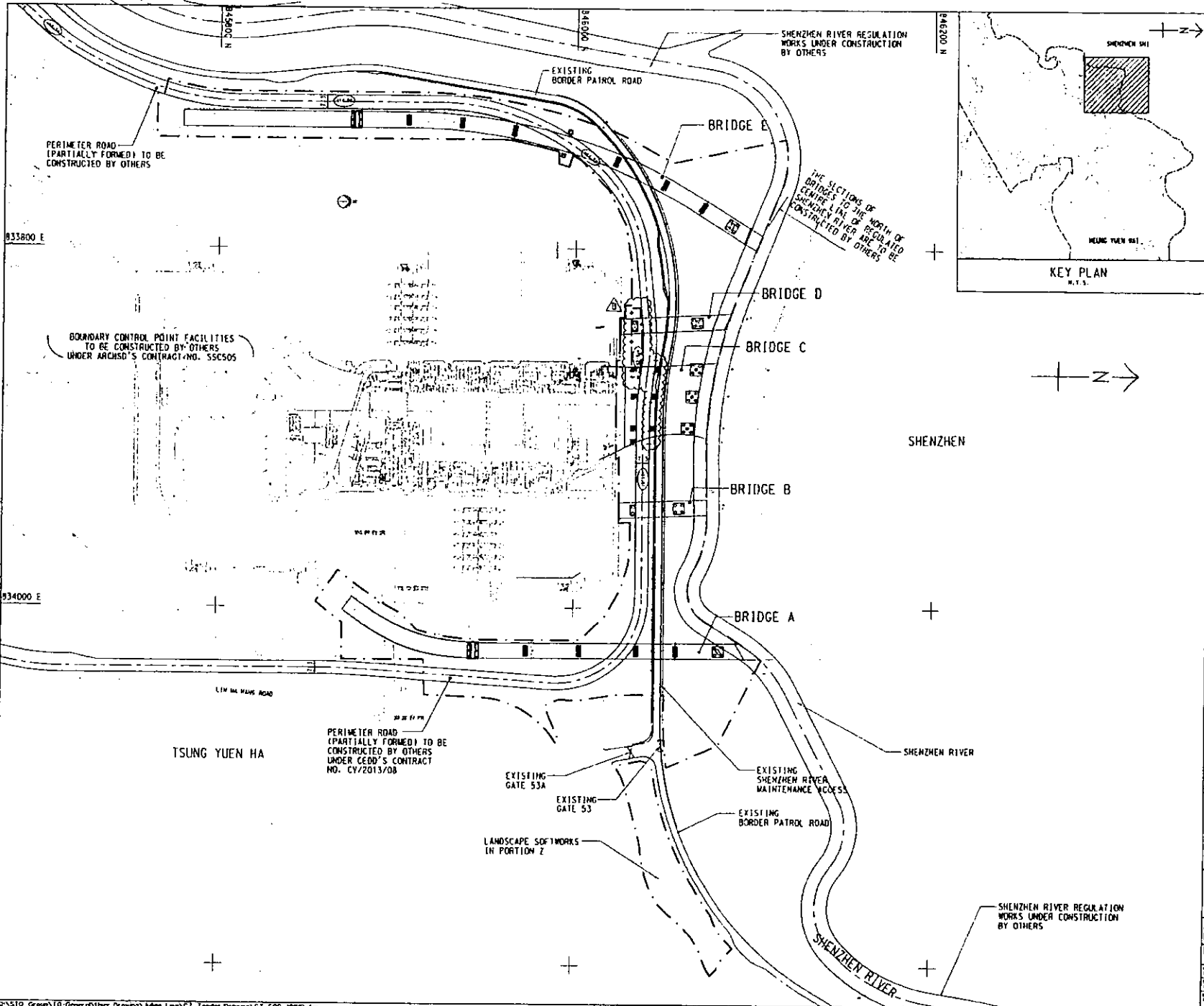
Contract No.: \_\_\_\_\_

Contract Title: \_\_\_\_\_

Item No.	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m <sup>3</sup> )	Actual Quantities used (m <sup>3</sup> )	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
Total Estimated Quantity of Timber Used					

- Notes: (a) The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.
- (b) The summary table shall be submitted to the \*Architect/Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the PS clause 1.99.

**Appendix D – Site Location Plan**

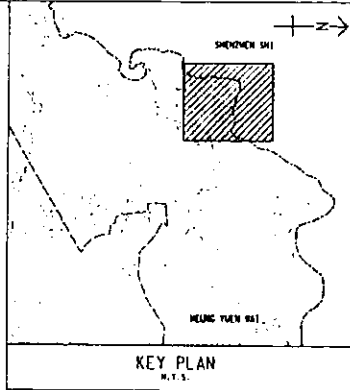


**NOTES:**


- BEFORE ERECTION OF BRIDGE SPANS, THE CONTRACTOR SHALL GAIN ACCESS TO SHENZHEN RIVER ONLY VIA GATE 53 AND GATE 53A, WHICH ARE MANNED AND CONTROLLED BY THE POLICE.

**LEGEND:**

- SITE BOUNDARY
- EXISTING PRIMARY SECURITY FENCE FOR EXISTING BORDER PATROL ROAD
- - - - - PROPOSED SECONDARY BOUNDARY FENCE OR REINSTATED SECONDARY BOUNDARY FENCE



5	TENDER ADDENDUM NO. 3	PRJL SEP-15
4	TENDER ADDENDUM NO. 2	PRJL SEP-15
3	TENDER DRAWING	PRJL AUG-15


 土木工程發展署  
 CEDD  
 Civil Engineering and Development Department  
 (LIANG/MUNG YUEN YAT) BOUNDARY CONTROL POINT SITE FORMATION AND INFRASTRUCTURE WORKS - CONTRACT 1

**GENERAL LAYOUT OF CROSS BOUNDARY BRIDGES**

**AECOM**

PROJECT NO. 圖式編號	60212563/C7/C00/1001B		
DATE 日期	REVISED BY 校核	DATE 日期	SCALE 比例
12	W./2014/03	1:1	1:1
1:1			
DATE 日期	AT 1: FOOD		
1:1			
DATE 日期			
1:1			

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P:\1. File By: 22/09/2015 2:11:24 PM



**Appendix E – Daily Record Summary for disposal C&D Waste  
Material from Site**

Appendix 25.6  
(PS Clause 25.25(6)(a)(ii))

"Daily Record Summary" to record daily disposal of construction & demolition (C&D) materials from the \*Site  
"每日運載記錄摘要" 記錄每日由\*地點所傾卸的拆建物料

- (1) Contract no. & title 合約編號及名稱 : \_\_\_\_\_
- (2) Date of disposal 傾卸日期: \_\_\_\_\_
- (3) Disposal ground (s) designated in the Contract or directed by the Architect/Engineer 合約指定或建築師/工程師指示接收設施: (a) \_\_\_\_\_  
(b) Others 其它 \_\_\_\_\_
- (4) Approved alternative disposal grounds 另可接受的接收設施 \_\_\_\_\_

CHIT/ DDF no. 載運入帳 票/ 拆建 物料運載 記錄票編 號	Vehicle registration mark 車輛登記號 碼	Approx. vol (e.g. Full/Three Quarter/Half/One quarter) 大約承載量 (例如全、 3/4、半、1/4)	C&D materials type (e.g. inert or non-inert) 建築廢料種類 (例如惰性 或非惰性)	Disposal ground 接收設施	Signature & Name of the Contractor's Designated person before departure 於離開地盤 前· 承建商的指 定人仕姓名及 簽名	Departure time from *Site 離開地盤時 間	Signature & name of the Architect/Engineer's supervisory staff before departure or other time as agreed between the Architect/Engineer's Representative and the Contractor <sup>1</sup> 於離開地盤前或已與承建商與建 築師/工程師代表同意的時間· 建築師 /工程師監管人員姓名及簽名	Actual disposal ground 真正接收設 施	Arrival time at disposal ground 抵達接收設施 時間	Remarks 備註:

Part 1<sup>2</sup> 甲部

Part 2<sup>3</sup> 乙部

Submitted by 呈交:

[Name of Contractor's Designated Person  
承建商的指定人仕姓名

Signature 簽名: \_\_\_\_\_

Date 日期: \_\_\_\_\_

Received by 接收: \_\_\_\_\_

[Name and signature of the  
Architect/Engineer's staff]  
建築師/工程師監管人員姓名及簽名

Post 職位: \_\_\_\_\_

Date & Time 日期及時間: \_\_\_\_\_

<sup>1</sup> For term contract, if there are no full time site supervisory staff, the Architect/Engineer's supervisory staff should spot check and then sign as appropriate in accordance with paragraph 25 of DEVB TC(W) 6/2010 定期合約, 如沒有全職地盤監管人員, 應根據 DEVB TC(W) 6/2010 的第 25 段進行定點檢查及簽署

<sup>2</sup> Part 1 甲部- The Contractor shall complete Part 1 in duplicate and a copy should be kept by the Architect's/ Engineer's Representative. 承建商填寫甲部兩份, 副本由建築師/工程師代表持有

<sup>3</sup> Part 2 乙部- The Contractor shall complete Part 2 and submit the whole Summary to the Architect/Engineer's Representative. 承建商填寫乙部及將整份運載記錄摘要於記錄上載在環境保護署網頁後 1 個工作天內呈交給建築師/工程師代表

\*Delete "Site" and substitute "Sites" for term contracts. 定期合約將 "Site" 刪去及以 "Sites" 代替

**Appendix F – Weekly Environmental Walk Inspection Report**

**Weekly Environmental Walk Inspection Report**

**Summary of Follow-up Actions**

**Part I:**

Liantang/ Heung Yuen Wai Boundary Control Point

Contract No. NE/2014/03

Contract Title Site Formation and Infrastructure Works – Contract 7

Date of Inspection \_\_\_\_\_ Time \_\_\_\_\_

Persons making the inspection:

Name in Block Letters  
Signature

Designation

- |    |  |
|----|--|
| 1. | Contractor's Agent (or his representative if agreed by E)          |
| 2. | Environmental Officer (or Environmental Supervisor if agreed by E) |
| 3. | Engineer's nominated site representative                           |
| 4. |  |

Item No.	Location	Situation Requiring Follow-up Action	Agreed Due Date for Completion	Date Completed	Remarks
1.					
2.					
3.					
4.					
5.					
6.					

To be signed at the end of inspection:

The Contractor's performance on nuisance abatement and environmental management \*is/is not to the satisfaction of the Architect/Engineer's nominated site representative at the time of inspection. (\* delete as appropriate)

~~Architect/Engineer's~~ nominated site representative \_\_\_\_\_ Contractor's Agent or his representative \_\_\_\_\_

Contract No. NE/2014/03  
Point  
Particular Specification  
Works -  
Appendix  
Contract 7

Liantang / Heung Yuen Wai Boundary Control

Site Formation and Infrastructure

1.24

**Part II:** (To be countersigned after ALL actions are completed)

Contractor's Environmental Officer

Engineer's Representative

Date

Date

(Note: No payment will be made for the item of "Weekly Environmental Walk" under the PFSES if the Contractor's site environmental and environmental management performance is not satisfactory, or any one of the follow up actions is not completed on or before the "Agreed Due Date for Completion".)

**Appendix G – Summary Table for Work Processes or Activities  
Requiring Timber for Temporary Works**

PS Appendix 1.28

**SUMMARY TABLE FOR WORK PROCESSES OR ACTIVITIES REQUIRING TIMBER FOR TEMPORARY WORKS**  
 (PS Clause 1.99)

Contract No.: \_\_\_\_\_

Contract Title: \_\_\_\_\_

Item No.	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m <sup>3</sup> )	Actual Quantities used (m <sup>3</sup> )	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
Total Estimated Quantity of Timber Used					

- Notes: (a) The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.
- (b) The summary table shall be submitted to the \*Architect/Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the PS clause 1.99.

**Appendix H –Implementation Schedule to Environmental Mitigation  
Measures stated in EM&A Manual**



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
<b><u>Sewage and Sewerage Treatment Impact (Construction)</u></b>							
6.7	5	The sewage generated by the on-site workforce should be collected in chemical toilets and disposed of off-site by a licensed waste collector.	To minimize water quality impacts	Contractor	All construction works sites with on-site sanitary facilities	Construction phase	EIA recommendation and WPCO
<b><u>Sewage and Sewerage Treatment Impact (Operation)</u></b>							
6.6.3	5	Sewage generated by the BCP and Chuk Yuen Village Resite will be collected and treated by the proposed on-site sewage treatment facility using Membrane Bioreactor treatment with a portion of the treated wastewater reused for irrigation and flushing within the BCP.	To minimize water quality impacts	DSD	BCP	Operation phase	EIA recommendation and WPCO
6.5.3	5	Sewage generated from the Administration Building will be discharged to the existing local sewerage system.	To minimize water quality impacts	DSD	Administration Building	Operation phase	EIA recommendation and WPCO
<b><u>Waste Management Implication (Construction)</u></b>							
7.6.1.1	6	<p><b>Good Site Practices</b></p> <p>Adverse impacts related to waste management such as potential hazard, air, odour, noise, wastewater discharge and public transport as mentioned in section 3.4.7.2 (ii)(c) of the Study Brief are not expected to arise, provided that good site practices are strictly followed. Recommendations for good site practices during the construction activities include:</p> <ul style="list-style-type: none"> <li>▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site</li> <li>▪ Training of site personnel in proper waste management and chemical handling procedures</li> <li>▪ Provision of sufficient waste disposal points and regular collection of waste</li> <li>▪ Dust suppression measures as required under the Air Pollution Control (Construction Dust) Regulation should be followed as far as practicable. Appropriate measures to minimise windblown litter and dust/odour during transportation of waste by covering trucks or in enclosed containers</li> <li>▪ General refuse shall be removed away immediately for disposal. As</li> </ul>	To minimize adverse environmental impact	Contractor	Construction works sites (general)	Construction Phase	EIA recommendation; Waste Disposal Ordinance; Waste Disposal (Chemical Wastes) (General) Regulation; and ETWB TC(W) No. 19/2005, Environmental Management on Construction Site

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		<p>such odour is not anticipated to be an issue to distant sensitive receivers</p> <ul style="list-style-type: none"> <li>▪ Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust introduction from public road</li> <li>▪ Covers and water spraying system should be provided for the stockpiled C&amp;D material to prevent dust impact or being washed away</li> <li>▪ Designate different locations for storage of C&amp;D material to enhance reuse</li> <li>▪ Well planned programme for transportation of C&amp;D material to lessen the off-site traffic impact. Well planned delivery programme for offsite disposal and imported filling material such that adverse noise impact from transporting of C&amp;D material is not anticipated</li> <li>▪ Site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be adopted as far as practicable, such as cleaning and maintenance of drainage systems regularly</li> <li>▪ Provision of cover for the stockpile material, sand bag or earth bund as barrier to prevent material from washing away and entering the drains</li> </ul>					
7.6.1.2	6	<p><b>Waste Reduction Measures</b></p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal</li> <li>▪ Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force</li> <li>▪ Proper storage and site practices to minimise the potential for damage or contamination of construction materials</li> <li>▪ Plan and stock construction materials carefully to minimise amount</li> </ul>	To reduce the quantity of wastes	Contractor	Construction works sites (General)	Construction Phase	EIA recommendation and Waste Disposal Ordinance

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		<p>of waste generated and avoid unnecessary generation of waste</p> <ul style="list-style-type: none"> <li>In addition to the above measures, specific mitigation measures are recommended below for the identified waste arising to minimise environmental impacts during handling, transportation and disposal of these wastes.</li> </ul>					
7.6.1.3	6	<p><b>C&amp;D Materials</b></p> <p>In order to minimise impacts resulting from collection and transportation of C&amp;D material for off-site disposal, the excavated materials should be reused on-site as backfilling material as far as practicable. The surplus rock and other inert C&amp;D material would be disposed of at the Government's Public Fill Reception Facilities (PFRFs) at Tuen Mun Area 38 for beneficial use by other projects in the HKSAR as the last resort. C&amp;D waste generated from general site clearance and tree felling works would require disposal to the designated landfill site. Other mitigation requirements are listed below:</p> <ul style="list-style-type: none"> <li>A Waste Management Plan should be prepared and implemented in accordance with ETWB TC(W) No. 19/2005 Environmental Management on Construction Site; and</li> <li>In order to monitor the disposal of C&amp;D material and solid wastes at public filling facilities and landfills, and to control fly-tipping, a trip-ticket system (e.g. ETWB TCW No. 31/2004) should be included.</li> </ul>	To minimize impacts resulting from C&D material	Contractor	Construction Works Sites (General)	Construction Phase	EIA recommendation; Waste Disposal Ordinance; and ETWB TCW No. 31/2004
7.6.1.4	6	<p><b>General refuse</b></p> <p>General refuse should be stored in enclosed bins or compaction units separated from other C&amp;D material. A reputable waste collector is to be employed by the Contractor to remove general refuse from the site separately. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' litter.</p>	To minimize impacts resulting from collection and transportation of general refuse for off-site disposal	Contractor	Construction works sites (General)	Construction phase	Waste Disposal Ordinance and Public Health and Municipal Services Ordinance - Public Cleansing and Prevention of Nuisances Regulation
7.6.1.5	6	<p><b>Chemical waste</b></p> <p>If chemical wastes are produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical</p>	To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal	Contractor	Construction works sites (General)	Construction phase	Waste Disposal (Chemical Waste) (General) Regulation and Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to the licensed Chemical Waste Treatment Centre, or other licensed facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation					
<b>Waste Management (Operation Phase)</b>							
7.6.2.1	6	<p><b>General refuse</b></p> <p>General refuse should be collected on daily basis and delivered to the refuse collection point accordingly. A reputable waste collector should be employed to remove general refuse regularly to avoid odour nuisance or pest and vermin problem. Recycling containers are recommended to be provided to encourage recycling of aluminium cans and waste paper.</p>	To minimize impacts resulting from collection and transportation of general refuse for off-site disposal	Managing Authority of the BCP	BCP and its associated facilities	Operation phase	Waste Disposal Ordinance and Public Health and Municipal Services Ordinance - Public Cleansing and Prevention of Nuisances Regulation
7.6.2.2	6	<p><b>Chemical waste</b></p> <ul style="list-style-type: none"> <li>▪ Register with the EPD as a chemical waste producer should be made and guidelines stated in the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i> should be followed.</li> <li>▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. Licensed collector should be deployed to transport and dispose of the chemical wastes, to the licensed Chemical Waste Treatment Centre, or licensed facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</li> </ul>	To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal	Managing Authority of the BCP	BCP and its associated facilities	Operation phase	Waste Disposal (Chemical Waste) (General) Regulation and Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
<b>Land Contamination (Construction)</b>							
8.7	7	<p>The following measures are for contaminated material excavation and transportation:</p> <ul style="list-style-type: none"> <li>▪ To minimize the chance for construction workers to come into contact with any contaminated materials, bulk earth-moving excavation equipment should be employed;</li> <li>▪ Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as</li> </ul>	To minimize the potentially adverse effects on the health and safety of construction workers and impacts arising from the disposal of potentially	Contractor	Construction sites (General)	Construction phase	EIA recommendations

**Appendix I – Responsibilities of ET and IEC stated in EM&A  
Manual**

- Comply with the relevant contract conditions and specifications on environmental protection
- Employ an Environmental Team (ET) to undertake monitoring, laboratory analysis and reporting of EM&A
- Facilitate ET's monitoring and site inspection activities
- Participate in the site inspections by the ET and IEC, and undertake any corrective actions
- Provide information / advice to the ET regarding works programme and activities which may contribute to the generation of adverse environmental impacts
- Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event / Action Plans
- Implement measures to reduce impact where Action and Limit levels are exceeded
- Adhere to the procedures for carrying out complaint investigation

#### Environmental Team (ET)

The ET shall not be in any way an associated body of the Contractor, and shall be employed by the Project Proponent/Contractor to conduct the EM&A programme. The ET should be managed by the ET Leader. The ET Leader shall be a person who has at least 7 years' experience in EM&A and has relevant professional qualifications. The appointment of ET Leader should be subject to the approval of EPD. Suitably qualified staff should be included in the ET, and resources for the implementation of the EM&A programme should be allocated in time under the Contract, to enable fulfilment of the Project's EM&A requirements as specified in the EM&A Manual during construction of the Project. The ET shall report to the Project Proponent and the duties shall include:

- Monitor and audit various environmental parameters as required in this EM&A Manual
- Analyse the environmental monitoring and audit data, review the success of EM&A programme and the adequacy of mitigation measures implemented, confirm the validity of the EIA predictions and identify any adverse environmental impacts arising
- Carry out regular site inspection to investigate and audit the Contractors' site practice, equipment/plant and work methodologies with respect to pollution control and environmental mitigation, and effect proactive action to pre-empt problems
- Monitor compliance with conditions in the EP, environmental protection, pollution prevention and control regulations and contract specifications
- Audit environmental conditions on site
- Report on the environmental monitoring and audit results to EPD, the ER, the IEC and Contractor or their delegated representatives
- Recommend suitable mitigation measures to the Contractor in the case of exceedance of Action and Limit levels in accordance with the Event and Action Plans
- Liaise with the IEC on all environmental performance matters and timely submit all relevant EM&A proforma for approval by IEC

- Advise the Contractor on environmental improvement, awareness, enhancement measures etc., on site
- Adhere to the procedures for carrying out complaint investigation
- Liaison with DSD, Engineer/Engineer's Representative, ET, IEC and the Contractor of the "Construction of the DSD's Regulation of Shenzhen River Stage 4 (RSR 4)" Project discussing regarding the cumulative impact issues.

#### Independent Environmental Checker (IEC)

The Independent Environmental Checker (IEC) should not be in any way an associated body of the Contractor or the ET for the Project. The IEC should be employed by the Project Proponent/ Engineer prior to the commencement of the construction of the Project. The IEC should have at least 10 years' experience in EM&A and have relevant professional qualifications. The appointment of IEC should be subject to the approval of EPD. The IEC should:

- Provide proactive advice to the ER and the Project Proponent on EM&A matters related to the project, independent from the management of construction works, but empowered to audit the environmental performance of construction
- Review and audit all aspects of the EM&A programme implemented by the ET
- Review and verify the monitoring data and all submissions in connection with the EP and EM&A Manual submitted by the ET
- Arrange and conduct regular, at least monthly site inspections of the works during construction phase, and ad hoc inspections if significant environmental problems are identified
- Check compliance with the agreed Event / Action Plan in the event of any exceedance
- Check compliance with the procedures for carrying out complaint investigation
- Check the effectiveness of corrective measures
- Feedback audit results to ET by signing off relevant EM&A proforma
- Check that the mitigation measures are effectively implemented
- Report the works conducted, the findings, recommendation and improvement of the site inspections, after reviewing ET's and Contractor's works, and advices to the ER and Project Proponent on a monthly basis
- Liaison with DSD, Engineer/Engineer's Representative, ET, IEC and the Contractor of the "Construction of the DSD's Regulation of Shenzhen River Stage 4 (RSR 4)" Project discussing regarding the cumulative impact issues.