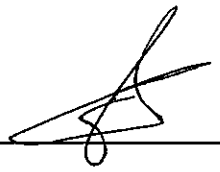
MTR Corporation Limited

West Island Line Project

Sampling and Testing Proposal for general fill material in Works Area B

Verified by: 

Position: Independent Environmental Checker

Date: 30 September 2014

MTR Corporation Limited

West Island Line Project

Sampling and Testing Proposal for general fill material in Works Area B

Certified by: _____

Position: Environmental Team Leader

Date: 30 SEP 2014

Gammon Construction Limited

West Island Line (WIL) 705

Fill sampling and Testing Proposal for ex-abattoir Site

Sept 2014

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Table of Content

Page

List of Tables

List of Figures

1 INTRODUCTION

1.1 Background

1.1.1 An Environmental Impact Assessment (EIA) for the Demolition of Buildings and Structures in the Proposed Kennedy Town Comprehensive Development Area site (KTCDA) was submitted under the Environmental Impact Assessment Ordinance (EIAO) in September 2001 and an Environmental Permit (EP) issued in May 2002 (EP No: EP-136/2002). In response to the changes in work areas, a revised EP (EP No: EP-136/2002/B) was issued by Environmental Protection Department (EPD) in October 2007. The revised EP allows part of the KTCDA site to be used as Works Area B (hereinafter referred as the "Site") for temporary site offices and materials storage for the West Island Line (WIL) project. The Site was originally Kennedy Town Incinerator Plant and Kennedy Town Abattoir sites with a total area of approximately 8,500m^2.

1.1.2 For the KTCDA project, it was proposed to be implemented in 2 main phases, as follows:

- Phase 1 - Part 1 would comprise the demolition and clearance of all the existing chimneys, buildings and ancillary structures above the existing concrete slab;
- Phase 1 - Part 2 would comprise the use of the site as Works Area B as temporary site offices and material storage for the West Island Line (WIL) project; and
- Phase 2 works would comprise the remediation of the contamination of the site in accordance with the EIA for Demolition of Buildings and Structures in the Proposed Kennedy Town Comprehensive Development Area site.

1.1.3 As the use of Works Area B under the WIL project has now been approaching the completion stage, under Clause 3.3.2 of the EP-313/2008 issued by EPD on 12 Jan 2009, a Fill Sampling and Testing Proposal (FSTP), a Sampling and Testing Report (STR) and a Remediation Action Plan (RAP) would need to be submitted to EPD for approval at least 4 months before the decommissioning works commence confirming what to be tested and the locations for sampling. The proposal should be certified by the Environmental Team (ET) Leader and verified by the Independent Environmental Checker (IEC) prior to issue to EPD.

1.1.4 AECOM Asia Co. Ltd. (AECOM) is commissioned by Gammon Construction Limited (GCL) as the environmental consultant to undertake the tasks (a) and (b) under Clause 3.3.2 of EP-313/2008 and with reference made to the document "West Island Line Consultancy Agreement No. C704 - KET Station and Overrun Tunnel, and Modification of SHW Station: Justification of Alternative Capping Slab Design for Works Area B" (hereinafter referred as the "*Justification from MTR*").

1.2 Objectives

1.2.1 This FSTP is prepared to fulfil the relevant requirements under Clauses 3.3.2 of the EP-313/2008 (hereinafter referred as the "EP"). The objectives of this FSTP are to provide a general fill material sampling and testing programme including the exact number and location of sampling points and the details of the contaminants of concern to be included, with reference to Appendix A of the EP.

1.2.2 Upon EPD's endorsement of this FSTP, intrusive site investigation will be undertaken and a STR, presenting the findings of the investigation, will be prepared. Should significant contamination be found, a RAP, discussing the strategy of the remedial measures, will be prepared as per Clause 3.3.2 of the EP.

1.3 Relevant Environmental Guidelines

1.3.1 The soil monitoring approach and acceptance criteria are developed in line with the the document "West Island Line Consultancy Agreement No. C704 - KET Station and Overrun Tunnel, and Modification of SHW Station: Justification of Alternative Capping Slab Design for Works Area B" (hereinafter referred as the "*Justification from MTR*") with update on the latest guidelines. Generally, they are based on (1) "Guidance Note for Contaminated Land Assessment and Remediation" (hereinafter referred to as ''Guidance Note''), (2) "Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management" (hereinafter referred to as ''Guidance Manual"), and (3) "Practice Guide for Investigation and Remediation of Contaminated Land" (hereinafter referred to as 'Practice Guide), superseding the former "Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshops".

2 SAMPLING AND TESTING PLAN FOR SITE INVESTIGATION

2.1 General Site Context

2.1.1 The Site covered under this FSTP originally Kennedy Town Incinerator Plant and Kennedy Town Abattoir sites with a total area of approximately 8,500m^2. It is located at the north-western side of Hong Kong Island, bounding to the east by Cadogan Street, to the south by Victoria Road and to the west by Victoria Harbour.

2.2 Sampling Locations

2.2.1 A site visit was carried out on 24th March 2014 to review and identify the existing land uses of the concerned areas and current conditions of the proposed sampling points as stated in the EP.

2.2.2 The proposed sampling programme is broadly based on a regular grid pattern with adjustments within grids to suit the site conditions.

2.2.3 During site walk it is observed that potential land contamination sources may have arisen from chemical storage and open storage areas on the ground surface with concrete paving. Transformer and Generator Room are also found. However, since the transformer room is not built on ground floor and with concrete paving and the generator is brand new without any usage since the operation of the site. Therefore, no land contamination is expected to be anticipated from these two locations.

2.2.4 The proposed sampling locations suggested in *Justification from MTR* will be adjusted to those potential land contamination areas (chemical storage and open storage areas). Since all the potential land contamination areas are fall within different sampling grids except one chemical storage area (Chemical Storage Area A). As such it is considered that one additional sampling location is needed.

2.2.5 The number of sampling points is estimated to be 19 and their proposed locations are shown in **Figure 1**. The current conditions of each proposed sampling location were shown in **Figure 2**. The potential land contamination areas and corresponding sampling locations are listed in **Table 2.1**.

2.2.6 After reviewing the list of testing parameters proposed in "Justification of Alternative Capping Slab Design for Works Area B" and concerning about the current site activities are mainly site offices and open storage areas with concrete paved. The proposed chemical of concerns (COC)(e.g BTEX, PCR, SVOC)are sufficient to cover the potential land contamination sources except in the chemical storage areas.

2.2.7 There are two chemical storage areas, their locations are shown in **Figure 1**. Chemicals stored in each area are detailed in **Table 2.1** below. Paints, primer, solvents and larvicidal oil are stored in Chemical Storage Area A and lube oil is stored in Chemical Storage Area B. Since the proposed testing parameters for SVOC only have few polyaromatic hydrocarbons (PAH) parameters and few VOC parameters are included. It is considered as insufficient to reveal the site condition. Therefore, with reference to Practice Guide, additional VOC parameters will be

tested for Chemical Storage Area A and additional PAH parameters will be tested for Chemical Storage Area B.

2.2.8 The tentative coordinates of the 19 sampling locations and the sampling and testing plan are summarized in **Table 2.2**. However, the exact sampling locations of the SI shall be further refined on site and subject to fine adjustment due to site specific conditions (e.g. locations, presence of foundations, underground utilities, delivery pipes and services).

Table 2.1 Potential Land Contamination Areas and Corresponding Proposed Sampling Locations

Current Activities	Description	Potential Contamination Impact	Need Additional Sampling?	Proposed Sampling Locations
Chemical Storage Area A	Paints, primer, solvents and larvicidal oil are stored on concrete paved floor and covered with impermeable sheets.	Potential impact due to leakage or spillage of chemicals.	Yes	S19
Chemical Storage Area B	Only lube oil is stored in Chemical Storage Area on concrete paved floor.	Potential impact due to leakage or spillage of lubricant thought the quantity stored is small quantity.	No	S9
Transformer Room	A transformer is inside the room and the room is located on a concrete platform which about 1m from the ground.	Not likely to cause adverse land contamination impact since the transformer room is not on the floor.	/	/
Generator Room	A new backup generator is stored in the room with instalment of drip tray to prevent chemical spillage. Also it has never been used. The room is concrete paved.	Not likely to cause adverse land contamination impact since the generator has never been used and with drip tray installed.	No	S7
Open Storage Areas	Inert materials e.g plastic pipe, footing parts are stored in different storage areas. No chemicals were found to be stored in these areas.	Not likely to cause adverse land contamination impact. However, the proposed sampling locations following regular grid pattern will be adjusted to these areas.	No	S11 S14 S16 S17

Table 2.2 Fill Sampling Plan for Site

Proposed Sampling Location[1]	Sampling Method	Tentative Coordinates		Sample Matrix[2]		Parameters to be Tested[3]				
		Easting	Northing			PCR	VOC[4]	SVOC[4]	PAH[4]	Metals[4]
S1	Trial pit	830762.50	815994.93	Soil	0.5m below concrete slab (bcs)	X	X	X		X
S2	Trial pit	830795.75	815974.30	Soil	0.5m bcs	X	X	X		X
S3	Trial pit	830804.13	815941.05	Soil	0.5m bcs	X	X	X		X
S4	Trial pit	830806.88	816002.72	Soil	0.5m bcs	X	X	X		X
S5	Trial pit	830816.50	815976.97	Soil	0.5m bcs	X	X	X		X
S6	Trial pit	830835.45	815962.71	Soil	0.5m bcs	X	X	X		X
S7	Trial pit	830865.64	815964.54	Soil	0.5m bcs	X	X	X		X
S8	Trial pit	830868.77	816014.48	Soil	0.5m bcs	X	X	X		X
S9	Trial pit	830869.58	815998.39	Soil	0.5m bcs	X	X	X	X	X
S10	Trial pit	830911.76	816040.43	Soil	0.5m bcs	X	X	X		X
S11	Trial pit	830920.22	816018.34	Soil	0.5m bcs	X	X	X		X
S12	Trial pit	830929.07	815996.21	Soil	0.5m bcs	X	X	X		X
S13	Trial pit	830955.71	815998.67	Soil	0.5m bcs	X	X	X		X
S14	Trial pit	830948.21	816033.62	Soil	0.5m bcs	X	X	X		X
S15	Trial pit	830938.84	816056.37	Soil	0.5m bcs	X	X	X		X
S16	Trial pit	831000.11	816016.89	Soil	0.5m bcs	X	X	X		X
S17	Trial pit	830980.87	816035.73	Soil	0.5m bcs	X	X	X		X
S18	Trial pit	830984.46	816067.03	Soil	0.5m bcs	X	X	X		X
S19	Trial pit	830909.41	816025.16	Soil	0.5m bcs	X	X[7]	X		X

QA/QC Samples	Sample Matrix		Parameters to be Tested[3]			
			PCR	VOC[4]	SVOC[4]	Metals[4]
Duplicate sample	Soil	N/A	X	X	X	X
Equipment blank	Water	N/A	X	X	X	X
Field blank	Water	N/A	X	X	X	X
Trip blank	Water	N/A	X[6]	X[6]	N/A	N/A

Remarks:
1. Please refer to **Figure 1** for locations.
2. The exact sampling depth shall be determined on-site
3. X = testing proposed
4. Full list refers to the parameters as shown in **Table 3.1** and **Table 4.1.**
5. PCR stands for Petroleum Carbons Range; VOC stands for Volatile Organic Compounds and SVOCs stands for Semi Volatile Organic Compounds.
6. For Trip Blank, only C6-C8, Benzene, Toluene, Ethylbenzene and Xylenes (total) are needed to be tested.
7. Additional VOC parameters need to be included for S19. Full list of additional parameters are shown in **Table 3.1** and **Table 4.1**.

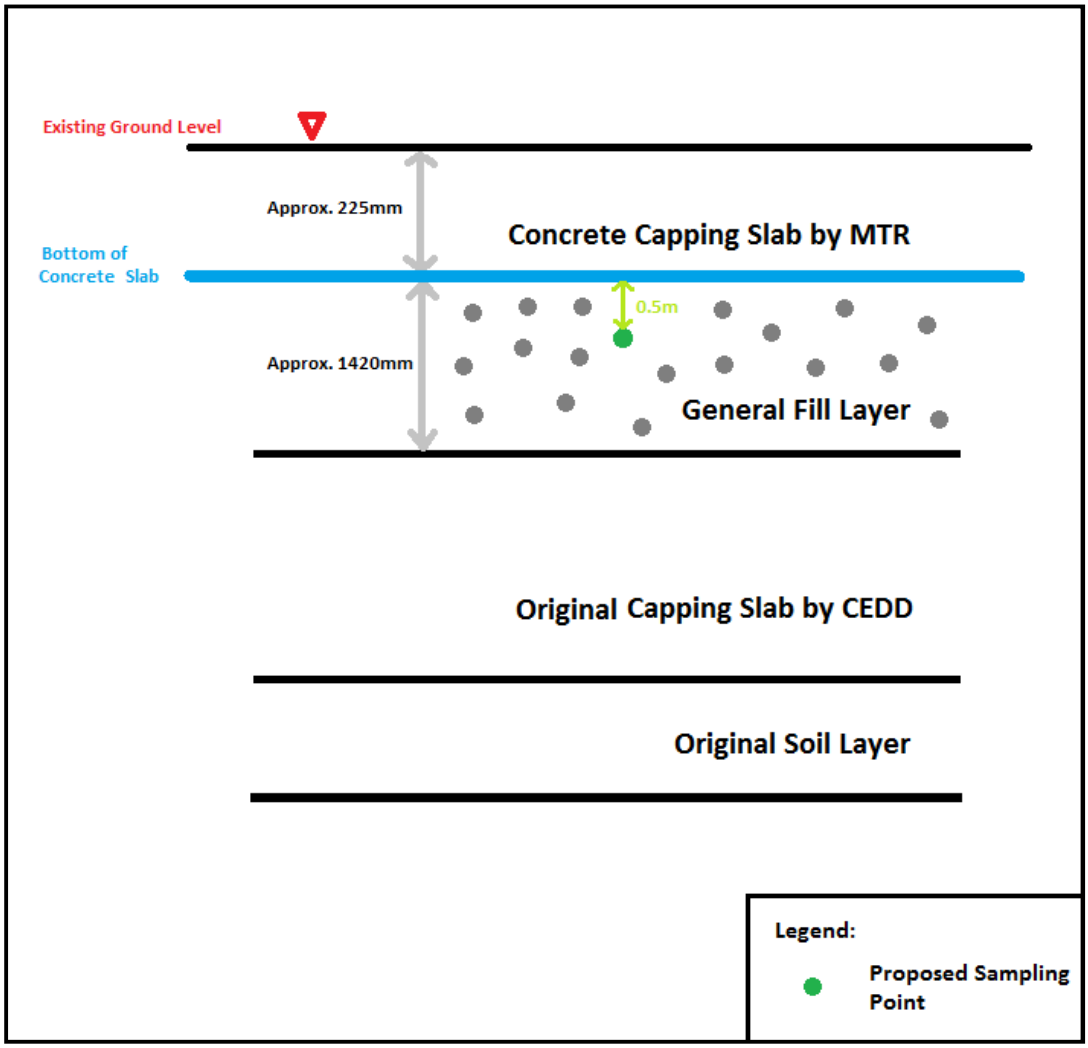
2.3 Soil Sampling Method and Depth of Sampling

2.3.1 All soil boring / excavation and sampling should be supervised by a land contamination specialist.

2.3.2 Under the Clause 3.3.2 of the EP-313/2008, "Sampling and Testing proposal for the general fill material, to be implemented at no less than 15 sampling points. The proposal shall confirm the exact number and location of sampling points and the details of the contaminants of concern to be included in the general fill material sampling and testing programme.", it is therefore stated that contamination assessment is only required for the fill material within the general fill layer.

2.3.3 According to Appendix B of the *Justification from MTR*, the thickness of the general fill layer is about 1420mm thick (i.e. 1.42m) and the capping slab layer is about 225 mm thick. Nevertheless, the thickness of concrete slab and fill layers may vary across the Site.

2.3.4 One fill sample collected at 0.5m below the concrete capping slab is considered enough for a fill layer of about 1.5m thick, where the exact sampling depth will depend on the thickness of concrete slab and shall be determined on-site. The structure of the slab and fill layers is illustrated as below:



2.3.5 The concrete slab shall be removed prior to sampling and a hand excavated inspection pit should be undertaken up to a depth of 1.5m below concrete slab (bcs). Given the varying thicknesses of the slab and fill layers, the use of trial pit for sampling can provide an opportunity to reveal the layers and therefore to obtain the required fill samples at the fill layer. The trial pit shall be excavated by hand to expose the strata and allow samples to be taken.

The sides of trial pits shall be trimmed by manual methods to remove all disturbed materials. In case the thickness of the concrete slab is found too deep to penetrate by pit excavation, a rotary drilling rig using dry drilling method will be engaged to perform the soil boring to greater depths.Excavation shall be terminated once utility pipeworks were identified. Hand operated power tools may be used to assist excavation where hard strata cannot be broken out without the use of such tools.

2.3.6 At each sampling location/depth, sufficient quantity of soil sample (as specified by the laboratory) should be taken. All soil samples should be uniquely labelled. Backup samples should be retained and stored at 0 - 4 ºC in laboratory.

2.4 Strata Logging

2.4.1 Strata logging for boreholes should be undertaken during the course of drilling/digging and sampling by a qualified geologist. The logs should include the general stratigraphic description, depth of soil sampling, sample notation and level of groundwater (if encountered). The presence of rocks/boulders/cobbles and foreign materials such as metals, wood and plastics should also be recorded.

2.5 Sample Size and Equipment Decontamination Procedures

2.5.1 All equipment in contact with the ground should be thoroughly decontaminated between each excavation, drilling and sampling event to minimise the potential for cross contamination. The equipment (including drilling pit, digging tools and soil/groundwater samplers) should be decontaminated by steam cleaning or high-pressure hot water jet, then washed by phosphate-free detergent and finally rinsed by distilled / deionised water as far as practical.

2.5.2 Prior to sampling, the laboratory responsible for analysis should be consulted on the particular sample size and preservation procedures that are necessary for each chemical analysis.

2.5.3 The sample containers should be laboratory cleaned, sealable, water-tight, made of glass or other suitable materials with aluminium or Teflon-lined lids, so that the container surface will not react with the sample or adsorb contaminants. No headspace should be allowed in the containers which contain samples to be analysed for VOCs, PCR or other volatile chemicals.

2.5.4 The containers should be marked with the sampling location codes and the depths at which the samples were taken. If the contents are hazardous, this should be clearly marked on the container and precautions taken during transport. Samples should be stored at between 0-4 ºC but never frozen. Samples should be delivered to laboratory within 24 hours of the samples being collected and analysed within the respective retention period but should not more than 10 days.

2.6 QA/QC Procedures

2.6.1 Quality assurance/quality control (QA/QC) samples should be collected in the following frequency during the SI:

- 1 equipment blank per 20 samples for full suite analysis (except PAH and additional VOC) as listed in **Table 2.2**;
- 1 duplicate sample per 20 samples for full suite analysis (except PAH and additional VOC) as listed in **Table 2.2**;
- 1 field blank per 20 samples for full suite analysis (except PAH) as listed in **Table 2.2** and;
- 1 trip blank sample per 10 trips for C6-C8 and BTEX.

2.6.2 Based on the sampling and testing plan as outlined in **Table 2.2**, there would be about 19 soil samples. The total number of equipment blank, duplicate sample and field blank would therefore be approximately 3; whereas number of trip blanks will be dependent of the number of trips for sample delivery.

2.7 Health and Safety

2.7.1 The specific safety measures to be taken depend on the nature and content of contamination, the site conditions and the regulations related to site safety requirements. Workmen Compensation Insurance and third party insurance must be provided for the SI.

2.7.2 Extreme care should be exercised when toxic gases or other hazardous materials are encountered. Any abnormal conditions found shall be reported immediately to the safety officer and the land contamination specialist.

2.7.3 The SI contractor shall establish and maintain a Health and Safety Plan before commencement of the SI that will include the following:

(a) Instruction of works on work procedures, safe practices, emergency duties, and applicable regulations;

(b) Regularly scheduled meetings of the workers in which the possible hazards, problems of the job, and related safe practices are emphasized and discussed;

(c) Good housekeeping practices; and

(d) Availability of and instruction in the location, use and maintenance of personal protective equipment.

2.7.4 The SI Contractor shall maintain equipment and supplies reasonably required in an emergency, including lifesaving, evacuation, rescue and medical equipment in good working order and condition at all times. The SI Contractor shall use all reasonable means to control and prevent fires and explosions, injury to personnel and damage to equipment of property. Without limiting the foregoing, the SI Contractor shall:

(a) Maintain proper safety devices, barriers to minimize hazards during performance of the work;

(b) Prohibit smoking and open flames and the carrying of matches and lighters;

(c) Develop and maintain a written emergency plan applicable to the Work and Site;

(d) Maintain equipment in good operating condition and have emergency and first aid equipment ready for immediate use, where applicable;

(e) Conduct equipment tests to ensure that equipment is properly placed and in good operating condition, and that workers are able to respond to emergency situations;

(f) Require all workers employed or retained by the Contractor, or a subcontractor, to at all time wear clothing suitable for existing work, weather and environmental conditions; and

(g) The personnel are required to wear respirator and gloves for vapour exposure protection, if necessary. Safety helmet and protective boots should be worn.

3 LABORATORY ANALYSIS

3.1.1 The laboratory testing parameters for fill materials are proposed based on the *Justification from MTR* and Appendix A of the EP. **Table 3.1** summarizes the proposed contaminants of concern (COCs), the minimum requirements of the reporting limits and reference test methods for the laboratory analyses of fill samples, with reference made to Table 6.1 of the VEP application document (No. VEP-333/2010), Condition 3.3.2 of the EP and ''Guidance Manual".

Table 3.1 Parameters, Reporting Limits and Reference Methods for Laboratory Analysis

COC	Reporting limits (mg/kg) or otherwise stated	Reference Method*
Metals		
Arsenic	1	USEPA 6020A
Barium	1	
Cadmium	0.2	
Copper	1	
Molybdenum	1	
Nickel	1	
Zinc	1	
Mercury	0.2	
Chromium III^	1	By Calculation
Chromium VI	1	USEPA 3060
VOCs and SVOCs		
Naphthalene	0.5	USEPA 8270
Anthracene	0.5	
Fluoranthene	0.5	
Pyrene	0.5	
Benzo(a)pyrene	0.5	
Benzene	0.2	USEPA 8260
Toluene	0.5	
Ethylbenzene	0.5	
Xylenes (Total)	2	
Additional VOCs		
Acetone	50	USEPA8260
Bromodichloromethane	0.1	
2-Butanone	5	
Chloroform	0.04	
Methyl tert-Butyl Ether	0.5	
Methylene Chloride	0.5	
Styrene	0.5	
Tetrachloroethene	0.04	
Trichloroethene	0.1	
PAH		
Acenaphthene	0.5	USEPA 8270
Acenaphthylene	0.5	
Benzo(a)anthracene	0.5	
Benzo(b)fluoranthene	0.5	
Benzo(g,h,i)perylene	0.5	
Benzo(k)fluoranthene	0.5	
Chrysene	0.5	
Dibenzo(a,h)anthracene	0.5	
Fluorene	0.5	
Indeno(1,2,3-cd)pyrene	0.5	
Phenanthrene	0.5	

COC	Reporting limits (mg/kg) or otherwise stated	Reference Method*
Petroleum Carbon Ranges (PCR)		
C6 - C8	5	USEPA 8015/8260
C9 - C16	200	
C17 - C35	500	

Notes:
^ Chromium III is quantified by calculation based on Chromium VI and Total Chromium measured under HOKLAS accredited methods.
* Alternative testing methods with accreditation by HOKLAS or its Mutual Recognition Arrangement partners are also accepted.
VOC stands for Volatile Organic Compounds and SVOCs stands for Semi Volatile Organic Compounds.

3.1.2 For sampling and laboratory analyses, chain of custody procedure should be included as QC/QA procedure.

3.1.3 All laboratory analyses for soil samples should be conducted by a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory. In addition, all laboratory test methods shall be accredited by HOKLAS or one of its Mutual Recognition Arrangement partners.

4 INTERPRETATION OF RESULTS

4.1.1 Interpretation of all results should make reference from the Guidance Note and the testing results of the soil samples collected will be compared with Risk-based Remediation Goals (RBRGs) as stipulated in Table 1 and Table 2 of the Guidance Note.

4.1.2 The RBRGs have been developed for four different post-restoration land uses to reflect the typical physical settings in Hong Kong under which people could b exposed to contaminated soil or groundwater. A description of each land use scenario is as follows:

- Urban residential – Sites located in an urban area where main activities involve habitation by individuals. The typical physical setting is a high rise residential building situated in a housing estate that has amenity facilities such as landscaped yards and children's playgrounds. The receptors are residents who stay indoors most of the time except for a short period each day, during which they are outdoors and have the chance of being in direct contact with soil at landscaping or play areas within the estate.
- Rural residential – Sites located in a rural area where the main activities involve habitation by individuals. These sites typically have village-type houses or low rise residential blocks surrounded by open space. The receptors are rural residents who stay at home and spend some time each day outdoors on activities such as gardening or light sports. The degree of contact with the soil under the rural setting is more than that under the urban setting both in terms of the intensity and frequency of contact.
- Industrial – Any site where activities involve manufacturing, chemical or petrochemical processing, storage of raw materials, transport operations, energy production or transmission, etc. Receptors include those at sites where part of the operation is carried out directly on land and the workers are more likely to be exposed to soil than those working in multi-storey factory buildings.
- Public parks – Receptors include individuals and families who frequent parks and play areas where there is contact with soil present in lawns, walkways, gardens and play areas. Parks are considered to be predominantly hard covered with limited areas of predominantly landscaped soil. Furthermore, public parks are not considered to have buildings present on them.

4.1.3 Since the future use of the fill material is unknown, therefore the most stringent criteria should be adopted. Based on *Justification from MTR*, the Rural Residential Landuse (the most stringent criteria) recommended in the Guidance Note will be adopted as the assessment criteria except two parameters Benzo(b)fluoranthene and Chrysene. Since the RBRGs (Urban Residential) for Benzo(b)fluoranthene and Chrysene are more stringent than RBRGs (Rural Residential). Therefore, RBRGs (Urban Residential) will be adopted as the acceptance level for these two parameters. Relevant soil acceptance levels are presented in **Table 4.1**.

4.1.4 Following the testing, should contamination be found in the fill material, suitable remediation measures shall be proposed for the material.

4.1.5 As public fill had been used in the formation of the pavement and the surfacing material itself was deemed to be inert, its disposal for subsequent use as public fill was deemed to be an appropriate and environmentally acceptable disposal method.

4.1.6 Based upon the recommended level of remediation, a detailed proposal on the reuse and disposal of the general fill will be included in the CAR or RAP.

Table 4.1 Relevant Soil Acceptance Levels

COC	Acceptance Level (mg/kg)*	COC	Acceptance Level (mg/kg)*
Metals		**Additional VOCs**	
Arsenic	21.8	Acetone	4,260
Barium	10,000	Bromodichloromethane	0.129
Cadmium	72.8	2-Butanone	10,000
Copper	2,910	Chloroform	0.0529
Molybdenum	364	Methyl tert-Butyl Ether	2.8
Nickel	1,460	Methylene Chloride	0.529
Zinc	10,000	Styrene	1,540
Mercury	6.52	Tetrachloroethene	0.0444
Chromium III^	10,000	Trichloroethene	0.211
Chromium VI	218	**PAH*** **	
VOCs and SVOCs* **		Acenaphthene	3,280
Naphthalene	85.6	Acenaphthylene	1,510
Anthracene	10,000	Benzo(a)anthracene	11.4
Fluoranthene	2,270	Benzo(b)fluoranthene	9.88**
Pyrene	1,710	Benzo(g,h,i)perylene	1,710
Benzo(a)pyrene	1.14	Benzo(k)fluoranthene	114
Benzene	0.279	Chrysene	871**
Toluene	705	Dibenzo(a,h)anthracene	1.14
Ethylbenzene	298	Fluorene	2,250
Xylenes (Total)	36.8	Indeno(1,2,3-cd)pyrene	11.4
PCR* **		Phenanthrene	10,000
PCR C6 - C8	545		
PCR C9 - C16	1,330		
PCR C17 - C35	10,000		

Notes:
* Based on the ''Rural Residential Landuse'' recommended in the Risk-Based Remediation Goals promulgated in the EPD's (1) Guidance Note for Contaminated Land Assessment and Remediation, (2) Guidance Manual for Use of Risk-Based remediation Goals for Contaminated Land Management.
** "Urban Residential Landuse" is adopted.
***PCR stands for Petroleum Carbons Range; VOC stands for Volatile Organic Compounds, SVOCs stands for Semi Volatile Organic Compounds and PAH stands for Polyaromatic Hydrocarbon.

5 NEXT STAGE

Upon EPD's endorsement of this FSTP, intrusive site investigation will be undertaken and a STR, presenting the findings of the investigation, will be prepared. Should significant contamination be found in the fill material, a RAP, discussing the strategy of the remedial measures and a detailed proposal on the reuse and disposal of the general fill, will be prepared as per Clause 3.3.2 of the EP.

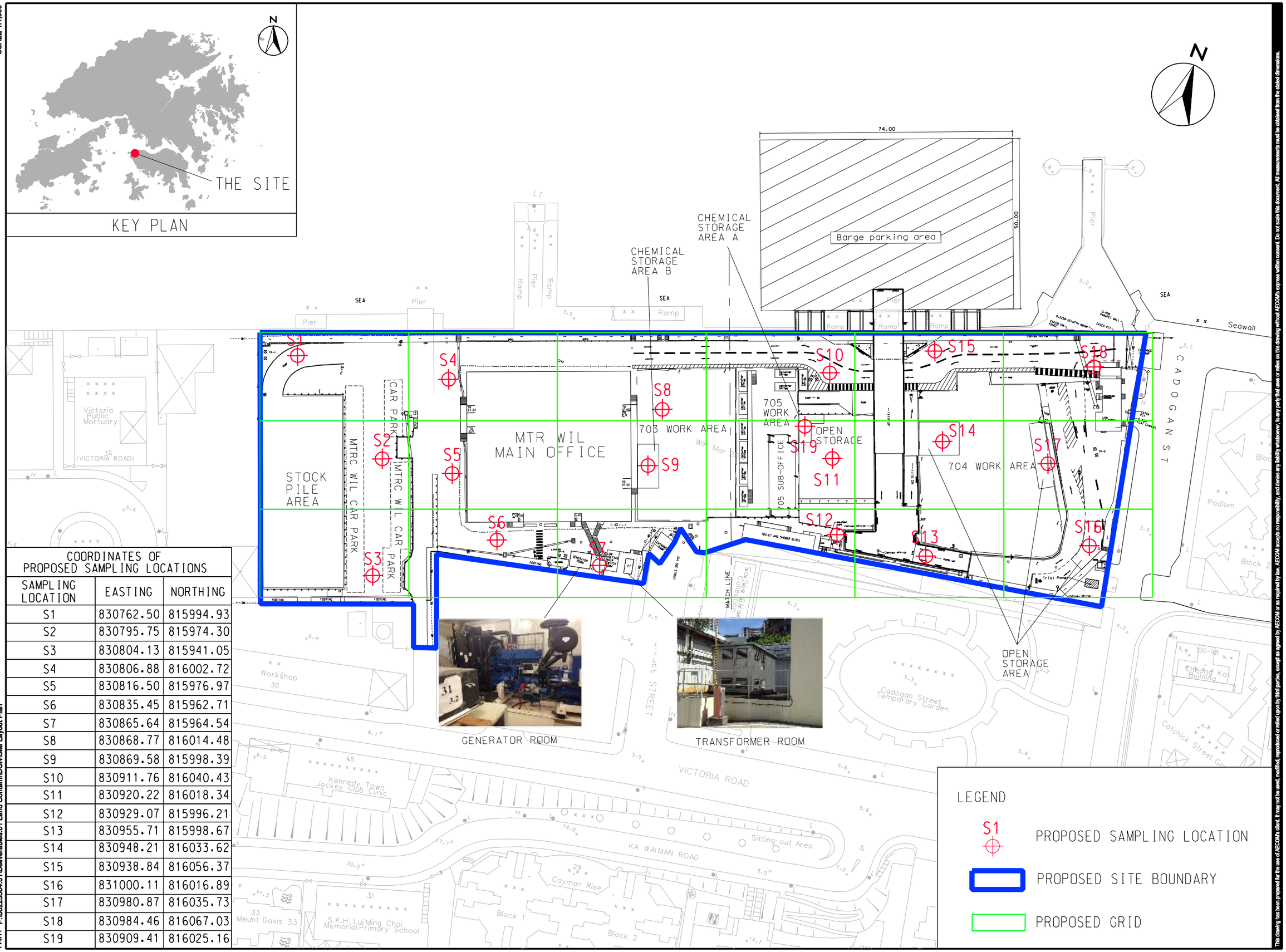
FIGURE

ISO A3 297mm X 420mm
SCALE 1:1,000

Checked:

Project Management Initials:

KEY PLAN



COORDINATES OF PROPOSED SAMPLING LOCATIONS		
SAMPLING LOCATION	EASTING	NORTHING
S1	830762.50	815994.93
S2	830795.75	815974.30
S3	830804.13	815941.05
S4	830806.88	816002.72
S5	830816.50	815976.97
S6	830835.45	815962.71
S7	830865.64	815964.54
S8	830868.77	816014.48
S9	830869.58	815998.39
S10	830911.76	816040.43
S11	830920.22	816018.34
S12	830929.07	815996.21
S13	830955.71	815998.67
S14	830948.21	816033.62
S15	830938.84	816056.37
S16	831000.11	816016.89
S17	830980.87	816035.73
S18	830984.46	816067.03
S19	830909.41	816025.16

Plot File by: SLSL
PATH P:\60223504.01\Deliverables.01 Land Contam\DGN\Site Layout Plan

AECOM

Figure 1

SAMPLING LOCATION PLAN

WEST ISLAND LINE (WIL) 705
FILL SAMPLING AND TESTING PROPOSAL FOR EX-ABATTOIR SITE

Project No.: 60223504 Date: APR. 2014

Figure 2 Current Conditions of Proposal Sampling Locations

S1

S2

S3

S4

S5

S6

S7

S8

S9

S10

S11

S12

S13

S14

S15

S16

S17

S18

S19