MOTT MACDONALD

Expansion of Hong Kong International Airport into a Three-Runway System

Supplementary Contamination Assessment Plan

October 2017

Airport Authority Hong Kong

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Supplementary Contamination Assessment Plan

October 2017

This Submission of Supplementary Contamination Assessment Plan

has been reviewed and certified by

the Environmental Team Leader (ETL) in accordance with

Condition 2.20 of Environmental Permit No. EP-489/2014.

Certified by:

Terence Kong
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date 19 October 2017

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By Email

Airport Authority Hong Kong
HKIA Tower, 1 Sky Plaza Road
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Attn: Mr. Lawrence Tsui, Principal Manager

19 October 2017

Dear Sir,

Contract No. 3102
3RS Independent Environmental Checker Consultancy Services

Supplementary Contamination Assessment Plan

Reference is made to the ET's submission of Supplementary Contamination Assessment Plan under Condition 2.20 of the Environmental Permit No. EP-489/2014 certified by the ET Leader on 19 October 2017.

We would like to inform you that we have no adverse comment on the captioned submission. Therefore we write to verify the captioned submission in accordance with the requirement stipulated in Condition 1.9 of EP-489/2014.

Should you have any query, please feel free to contact the undersigned at 3922 9376.

Yours faithfully,
AECOM Asia Co. Ltd.

Jackel Law
Independent Environmental Checker

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1 Introduction

1.1 Background

The Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-185/2014) prepared for the "Expansion of Hong Kong International Airport into a Three-Runway System" (the project) has been approved by the Director of Environmental Protection, and an Environmental Permit (EP) (Permit No.: EP-489/2014) has been issued for the project under the Environmental Impact Assessment Ordinance.

As part of the EIA study, a Contamination Assessment Plan (CAP) (hereafter referred to as the Approved CAP) was prepared and presented as Appendix 11.1 of the approved EIA Report. In accordance to Section 8.1.1.1 of the Updated Environmental Monitoring and Audit (EM&A) Manual, which was submitted under Condition 3.1 of the EP, and Section 11.10.1.2 of the EIA Report, six areas (i.e. fuel tank room within Terminal 2 (T2) building, fuel tank room to the west of Civil Aviation Department (CAD) antenna farm, seawater pump house, switching station, pumping station and fire training facility), as presented in **Figure 1.1**, were inaccessible for site reconnaissance at the time of preparing the EIA Report.

According to Sections 11.5.4.14 and 11.5.4.37 of the EIA Report, it is anticipated that any potential land contamination concern related to possible leakage/ spillage of fuel in the fuel tank room within T2 building and fuel tank room to the west of CAD antenna farm will not cause any insurmountable impact. Furthermore, as mentioned in Sections 11.5.4.38, 11.5.4.47 and 11.5.4.50 of the EIA Report, the seawater pump house, switching station, pumping station and fire training facility are not identified as potential contaminative land use types as given in Table 2.3 of the Practice Guide for Investigation and Remediation of Contaminated Land, hence no potential land contamination along these areas are anticipated.

As part of the ongoing detailed design of the project, relocation of the switching station is no longer required for the modification of existing North Runway. Hence site appraisal process for land contamination potential at the switching station is considered not necessary. Further site reconnaissance has been carried out at the remaining five assessment areas (i.e. the fuel tank room within T2 building, fuel tank room to the west of CAD antenna farm, seawater pump house, pumping station and fire training facility) to confirm the findings under EIA stage. Subject to the further site reconnaissance findings, a Supplementary CAP shall be prepared in accordance with EP Condition 2.20 and submitted to the Environmental Protection Department (EPD) for endorsement. Mott MacDonald Hong Kong Limited (MMHK), as the project's Environmental Team, was appointed by Airport Authority Hong Kong (AAHK) to establish a Supplementary CAP to fulfil the EP Condition 2.20.

1.2 Objectives

This Supplementary CAP is prepared to fulfil the EP Condition 2.20 and the objectives of this Supplementary CAP are to:

- Present the findings of further site reconnaissance;
- Propose additional site investigation (SI) if necessary, and
- Propose, where necessary, sampling and laboratory chemical analysis required to determine the nature and extent of any potential land contamination identified.

After the completion of SI works, if any, the results will be reported in the Contamination Assessment Report (CAR). Nevertheless, it is anticipated that any potential land contamination concern related to possible leakage/ spillage of fuel is not anticipated to cause any insurmountable impact.

1.3 Report Structure

Section 1 Introduction

Section 2 Assessment Criteria and Methodology

Section 3 Appraisal of Land Contamination Potential

Section 4 Proposed Site Investigation Works

Section 5 Proposed Laboratory Analysis

Section 6 Potential Remediation Measures

Section 7 Conclusion

2 Assessment Criteria and Methodology

2.1 Relevant Standards, Guidelines and Requirements

As described in Section 11.2 of the EIA Report, EPD promulgated two guidelines for utilising the Risk-based Remediation Goals (RBRGs) developed for Hong Kong, namely, “Guidance Note for Contaminated Land Assessment and Remediation” (Guidance Note) in August 2007 and “Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management” (Guidance Manual) in December 2007. The land contamination assessment should be carried out in accordance with the Guidance Manual and Guidance Note as well as section 3 of Annex 19 of the Technical Memorandum on EIA Process issued under the EIA Ordinance (EIAO-TM). In addition, reference would also be made to the “Practice Guide for Investigation and Remediation of Contaminated Land” (Practice Guide).

2.2 Assessment Methodology

Further site reconnaissance was undertaken to identify the presence of any potentially contaminative land within the assessment areas. Relevant information was gathered with collection of latest records from the relevant Government departments and reviewed in preparing the Supplementary CAP, including:

- The Approved CAP;
- Records of active (current) and inactive (past) registered chemical waste producers at the assessment areas from the EPD;
- Records of current and past dangerous goods (DG) licences at the assessment areas from the Fire Service Department (FSD); and
- Records of accidents that involved spillage/ leakage of chemical waste or DG from EPD and FSD.

3 Appraisal of Land Contamination Potential

3.1 Review of Relevant Information from Government Departments

Information from the EPD and FSD have been collected and reviewed during the EIA stage. The EPD and FSD have been re-contacted to collect the latest information of the assessment areas to confirm the findings in the EIA Report. Latest information collected are listed below:

- Records of active (current) and inactive (past) registered chemical waste producer(s) and any reported accidents of chemical spillage/leakage at the assessment areas; and
- Records of any licensed DG store(s) and any reported accidents of spillage/ leakage of DG at the assessment areas.

Relevant documentation from EPD and FSD is provided in **Appendix A** and the information provided is summarised below.

3.1.1 Environmental Protection Department

A review of the chemical waste producer (CWP) records was conducted at the EPD's Territory Control Office. No registered CWP was identified at the assessment areas.

Based on the information given by EPD, there is no record of chemical spillage/ leakage within the assessment areas as shown in **Appendix A**.

The above-mentioned findings are consistent with the information presented in Section 11.5.1.3 of the EIA Report.

3.1.2 Fire Services Department

According to the reply from FSD, there are three DG records at the assessment areas including a 900 L diesel tank at the fuel tank room to the west of CAD antenna farm, a 3,000 L above-ground diesel tank at the fuel tank room within T2 building and a 10,000 L above-ground kerosene tank at the fire training facility. The DG records are considered valid based on the findings of the site reconnaissance survey as presented in **Section 3.2**.

FSD reported that no incident of spillage/ leakage of DG was found within the assessment areas. The response from FSD is shown in **Appendix A**.

3.2 Site Reconnaissance Survey

As mentioned in Sections 11.5.4.14 and 11.5.4.37 of the EIA Report, the fuel tank room to the west of CAD antenna farm and fuel tank room within T2 building were inaccessible due to safety and operational issues. SI has been proposed at these areas based on relevant drawings during EIA stage. As mentioned in Sections 11.5.4.38, 11.5.4.47 and 11.5.4.50 of the EIA Report, seawater pump house, pumping station and fire training facility were inaccessible. Further site reconnaissance surveys have been conducted under this Supplementary CAP at these areas, with details listed in the following sub-sections. A site walkover checklist has been filled in upon completion of site reconnaissance at each assessment area.

3.2.1 Fuel Tank Room to the West of CAD Antenna Farm

Access to the fuel tank room to the west of CAD antenna farm was granted by CAD operator and site reconnaissance survey was carried out on 18 May 2017. During the survey, a 900 L above-ground tank containing diesel fuel was found. The diesel fuel is used for the emergency power

supply system. The tank is located on a concrete-paved ground and equipped with drip tray. Bund wall is also provided in the access of the fuel tank room. No oil stain or crack was found on the ground. SI has been proposed in Section 11.6.2.4 of the EIA Report for the above-ground fuel tank to ascertain any potential contamination issues before commencement of any construction works at this area. The proposed SI locations in the EIA Report (i.e. BH16 and BH17) are still considered valid in this Supplementary CAP. The drawing MCL/P132/EIA/11-015 documented in the EIA Report is presented in **Appendix C** for reference.

The completed site walkover checklist and the photographic records of the fuel tank room to the west of CAD antenna farm are provided in **Appendix B** and **Figure 3.1** respectively.

3.2.2 Fuel Tank Room within T2 Building

A site reconnaissance survey was carried out at the fuel tank room within T2 building on 11 May 2017. During the survey, a 3,000 L above-ground tank containing diesel fuel was found. The diesel fuel is used for the emergency power supply system. The tank is located on a concrete-paved ground and equipped with drip tray. Bund wall is also provided in the access of the fuel tank room. No oil stain or crack was found on the ground. SI has been proposed in Section 11.6.2.2 of the EIA Report for the above-ground tank to ascertain any potential contamination issues before commencement of any construction works at this area. The proposed SI location in the EIA Report (i.e. BH9) is still considered valid in this Supplementary CAP. The drawing MCL/P132/EIA/11-014 documented in the EIA Report is presented in **Appendix C** for reference.

The completed site walkover checklist and the photographic records of the fuel tank room within T2 building are provided in **Appendix B** and **Figure 3.2** respectively.

3.2.3 Seawater Pump House

As described in Section 11.5.4.38 of the EIA Report, the seawater pump house is used for delivering cooling water to different facilities for the operation of airport. A site reconnaissance survey was carried out at the seawater pump house on 22 September 2016. During the survey, it was observed that only seawater pumps and control panels are located in the seawater pump house. The ground surfaces of seawater pump house are fully paved with intact concrete and no apparent stains were observed. Therefore, no signs of land contamination were observed at the seawater pump house during the survey.

As mentioned in Section 11.5.4.38 of the EIA Report, seawater pump house is not identified as one of the potential contaminative land use types in accordance with Table 2.3 of the Practice Guide. Therefore, taking into account the latest available information and the findings of site reconnaissance survey, no potential land contamination is anticipated at the seawater pump house and thus SI has not been recommended.

The completed site walkover checklist and the photographic records of the seawater pump house are provided in **Appendix B** and **Figure 3.1** respectively.

3.2.4 Pumping Station

As mentioned in Section 11.5.4.47 of the EIA Report, the pumping station is used to convey sewage from T2 building. A site reconnaissance survey was carried out at the pumping station on 8 December 2016. During the survey, it was observed that control panels are located on the concrete-paved ground. Two sewage pumps are located underground to convey sewage from T2 building. No apparent stains were observed at the ground surface. As mentioned in Section 11.5.4.47 of the EIA Report, pumping station is not identified as one of the potential contaminative land use types in accordance with Table 2.3 of the Practice Guide. Therefore, taking into account the latest available information and the findings of site reconnaissance survey, no potential land contamination is anticipated at the pumping station and thus SI has not been recommended.

The completed site walkover checklist and the photographic records of the pumping station are provided in **Appendix B** and **Figure 3.2** respectively.

3.2.5 Fire Training Facility

As mentioned in Section 11.5.4.50 of the EIA Report, the fire training facility is used for fire training exercises. Access was granted by FSD operator and a site reconnaissance survey was carried out at the fire training facility on 11 May 2017. A simulator is located at the centre of facility for fire training exercise. The whole training area is concrete paved. No oil stain or crack was found on the ground. An effluent pit is located under the simulator for collection of stormwater and water generated from fire training exercise. The collected stormwater will be stored in the three underground storage tanks and convey to the wastewater treatment plant for treatment.

As mentioned in Section 11.5.4.50 of the EIA Report, fire training facility is not identified as one of the potential contaminative land use types as given in Table 2.3 of the Practice Guide. During the survey, a 10,000 L above-ground tank containing kerosene was found. The tank is located on a concrete-paved ground and is surrounded by concrete bund wall on all four sides. No oil stain or crack was found on the ground. According to the latest information from detailed design consultant, a new fire training facility is planned to be constructed in the western support area to replace the existing training facility; however, demolition of the existing above-ground kerosene tank is yet to be confirmed and still subject to detailed design. SI is proposed for the kerosene tank to ascertain any potential contamination issues before commencement of any construction works at this area, and details will be discussed in **Section 4**. Nevertheless, it is anticipated that any potential land contamination concern related to possible leakage/spillage of fuel will not cause any insurmountable impact.

The completed site walkover checklist and the photographic records of the fire training facility are provided in **Appendix B** and **Figure 3.3** respectively.

3.3 Identification of Land Contamination Potential

Based on the findings obtained from review of the Government responses as well as the site reconnaissance survey, only the fire training facility has been identified as a potentially contaminated site in this Supplementary CAP, in addition to those which have already been identified in the Approved CAP. Additional SI works are therefore proposed for this area as detailed in **Section 4**.

As described in **Section 3.2.1** and **3.2.2**, the proposed SI locations at the fuel tank room to the west of CAD antenna farm and fuel tank room within T2 building presented in the EIA Report (i.e. MCL/P132/EIA/11-014 and MCL/P132/EIA/11-015 in **Appendix C**) are still considered valid.

A summary of further site investigation recommended in this Supplementary CAP is presented in **Table 3.1**.

Table 3.1: Summary of Further Site Investigation Recommended

Location	Potential Land Contamination Impact	Need for Further Site Investigation	Figure No.
Fuel Tank Room to the West of CAD Antenna Farm	A 900 L above-ground tank containing diesel fuel was found during the site reconnaissance survey. Potential leakage or spillage of fuel may cause land contamination concern.	SI locations have been proposed during EIA stage and are still considered valid. SI will be conducted prior to the commencement of construction works at site.	Figure 3.1 and EIA drawing MCL/P132/EIA/11-015 as presented in **Appendix C**
Fuel Tank Room within T2 Building	A 3,000 L above-ground tank containing diesel fuel was found during the site reconnaissance survey. Potential leakage or spillage of fuel may cause land contamination concern.	SI locations have been proposed during EIA stage and are still considered valid. SI will be conducted prior to the commencement of construction works at site.	Figure 3.2 and EIA drawing MCL/P132/EIA/11-014 as presented in **Appendix C**
Seawater Pump House	No contaminative land use types were identified.	No	Figure 3.1
Switching Station	During detailed design of the project, relocation of the switching station is no longer required. Therefore, site appraisal process for land contamination potential is considered not necessary.		Figure 3.1
Pumping Station	No contaminative land use types were identified.	No	Figure 3.2
Fire Training Facility	A 10,000 L above-ground tank containing kerosene was found during the site reconnaissance survey. Potential leakage or spillage of fuel may cause land contamination concern.	Yes, SI will be conducted prior to the commencement of construction works at site.	Figure 3.3

4 Proposed Site Investigation Works

4.1 Site Investigation Works Proposed in EIA Stage

4.1.1 Fuel Tank Room to the West of CAD Antenna Farm

As mentioned in **Section 3.2.1**, a 900 L above-ground tank containing diesel fuel was found during the site reconnaissance survey. A total of two boreholes (i.e. BH16 and BH17) were proposed in the EIA drawing MCL/P132/EIA/11-015 as presented in **Appendix C** for the above-ground fuel tank. The proposed SI locations are still considered valid in this Supplementary CAP. Sampling and testing works will be conducted prior to commencement of any construction works at this area.

4.1.2 Fuel Tank Room within T2 Building

As mentioned in **Section 3.2.2**, a 3,000 L above-ground tank containing diesel fuel was found during the site reconnaissance survey. One borehole (i.e. BH9) was proposed in the EIA drawing MCL/P132/EIA/11-014 as presented in **Appendix C** for the 3,000 L above-ground fuel tank. The proposed SI location is still considered valid in this Supplementary CAP. Sampling and testing works will be conducted prior to commencement of any construction works at this area.

4.2 Additional Site Investigation Works

4.2.1 Fire Training Facility

As mentioned in **Section 3.2.5**, the fire training facility is not identified as one of the potential contaminative land use types as given in Table 2.3 of the Practice Guide. A 10,000 L above-ground tank containing kerosene fuel was found during the site reconnaissance survey, hence SI is proposed for this above-ground kerosene tank.

One new borehole (BH18) is proposed at the 10,000 L above-ground fuel tank inside the fire training facility. The tentative sampling location is shown in **Figure 4.1**. Sampling and testing works will be conducted prior to commencement of any construction works at this area.

4.3 Sampling Details

4.3.1 Sampling and Testing Plan

The sampling and testing plan, including sampling locations and depths, is recommended in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land as shown in **Table 4.1**. The exact locations and depths for soil and groundwater sampling shall be determined by the on-site land contamination specialist to suit the actual site condition during site investigation.

Table 4.1: Sampling and Testing Plan

Proposed Sampling Locations	Sample Matrix[2]		Parameters to be Tested[3]				Rationale of Sampling
			Heavy Metals	PCRs[4]	VOCs[4]	SVOCs[4]	
Fuel Tank Room within T2 Building*							
BH9[1]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from the above-ground fuel tank
	GW	If present^	Mercury only	✓	✓	✓	
Fuel Tank Room to the West of CAD Antenna Farm*							
BH16[1]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from the fuel tank
	GW	If present^	Mercury only	✓	✓	✓	
BH17[1]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from the fuel tank
	GW	If present^	Mercury only	✓	✓	✓	
Fire Training Facility							
BH18[1]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from the above-ground fuel tank
	GW	If present^	Mercury only	✓	✓	✓	

Remarks:
[1] Exact sampling locations will be identified on site after the removal of the fuel tank.

[2] bgs = Below Ground Surface; GW = groundwater.

[3] ✓ = testing proposed.

[4] PCRs = Petroleum Carbon Ranges; VOCs = Volatile Organic Chemicals; SVOCs = Semi-volatile Organic Chemicals;

^ Samples will only be collected if groundwater is encountered during SI works.

* The sampling and testing plan for Fuel Tank Room within T2 Building and Fuel Tank Room to the West of CAD Antenna Farm are extracted from Table 4.2 of the Approved CAP.

4.3.2 Soil Sampling Method and Depth of Sampling

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

Borehole should be undertaken by means of dry rotary drilling method, i.e. without the use of flushing medium, to prevent cross-contamination during sampling. For safety reasons, an inspection pit should be excavated down to 1.5 m below ground surface (bgs) to inspect for underground utilities at the proposed borehole location. Disturbed soil samples should be collected at depth of 0.5 m bgs. Soil boring using drill rigs should then be performed from depth of 1.5 m bgs to the maximum boring depth. Undisturbed U100/U76 soil samples should be collected at 1.5 m and 3.0 m bgs as well as above groundwater level. Groundwater samples should be collected at the level of groundwater (if encountered).

Where borehole drilling is not possible due to site constraints (e.g. insufficient head room or accessibility of drilling rigs), sampling using trial pit methods will be adopted. For trial pit methods, disturbed soil samples, using stainless steel hand tools, will be taken at 0.5 m, 1.5 m and 3.0 m bgs in order to delineate the vertical profile of contamination.

Appropriate safety precautionary measures such as shoring support, stepping/sloping of sides will be implemented for the excavation of trial pit exceeding 1.2 m, with reference to the “Practice Guide for Investigation and Remediation of Contaminated Land” issued by EPD and “Guide to Trench Excavations (Shoring Support and Drainage Measures)” issued by Utilities Technical Liaison Committee of Highway Department and Geotechnical Engineering Office of Civil Engineering Department.

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.

4.3.3 Strata Logging

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.

4.3.4 Free Product and Groundwater Level Measurement

The thickness of any free product and ground water level (if present) at sampling locations should be measured with an interface probe. The free product (if encountered in sufficient amounts) should be collected for laboratory analysis to determine the composition.

4.3.5 Groundwater Sampling

It is proposed to collect groundwater samples if groundwater is encountered at the sampling locations.

For each proposed borehole sampling location, a groundwater sampling well should be installed into the boreholes if groundwater is encountered or agreed by the land contamination specialist. A typical configuration of a groundwater monitoring well is shown in **Appendix D**. After installation of the monitoring wells, the depth to water table at all monitoring wells should be measured at the same time with an interface probe in order to delineate the groundwater table contours at the subject site. Well developments (approximately five well volumes) should be carried out to remove silt and drilling fluid residue from the wells. The wells should then be allowed to stand for a day to permit groundwater conditions to equilibrate. Groundwater level and thickness of free product layer, if present, should be measured at each well before groundwater samples are taken.

Prior to groundwater sampling, the monitoring wells should be purged (at least three well volumes) to remove fine-grained materials and to collect freshly refilled representative groundwater samples.

After purging, one groundwater sample should then be collected at each well using Teflon bailer and decanted into appropriate sample vials or bottles in a manner that minimises agitation and volatilization of volatile organic chemicals (VOCs) from the samples. All samples should be uniquely labelled.

If required, one groundwater sample at each trial pit using Teflon bailer should be taken if groundwater is encountered. The groundwater should only be taken after all required soil samples at the sampling location have been collected. The trial pit should be pumped to near dry and allowed to stand for 24 hours before sampling.

If groundwater sample is collected in trial pit, the trial pit should be enclosed on four sides by impervious sheeting at the end of each day to avoid potential contamination such as dust from the surrounding environment during groundwater sampling.

Immediately after collection, groundwater samples should be transferred to new, clean, laboratory-supplied glass jars for sample storage/transport. The sampling glass jars should be of “darkened” type. Groundwater samples should be placed in the glass jars with zero headspace and promptly sealed with a septum-lined cap. Immediately following collection, samples should

be placed in ice chests, cooled and maintained at a temperature of about 4 ºC until delivered to the analytical laboratory.

4.3.6 Sample Size and Decontamination Procedures

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.

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.

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, Petroleum Hydrocarbon Ranges or other volatile chemicals.

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 be more than 10 days.

4.3.7 Quality Assurance / Quality Control Procedures

Quality Assurance / Quality Control (QA/QC) samples should be collected with the following frequency during the SI. Chain of Custody protocol should be adopted.

- One equipment blank per 20 samples for full suite analysis;
- One field blank per 20 samples for full suite analysis;
- One duplicate sample per 20 samples for full suite analysis; and
- One trip blank per trip for the analysis of volatile parameters.

4.3.8 Health and Safety

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. Workers Compensation Insurance and third party insurance must be provided for the SI.

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.

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

- Instruction of works on work procedures, safe practices, emergency duties, and applicable regulations;
- Regularly scheduled meetings of the workers in which the possible hazards, problems of the job, and related safe practices are emphasised and discussed;
- Good housekeeping practices; and

- Availability of and instruction in the location, use and maintenance of personal protective equipment.

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:

- Maintain proper safety devices and barriers to minimise hazards during performance of the work;
- Prohibit smoking and open flames and the carrying of matches and lighters;
- Develop and maintain a written emergency plan applicable to the work site;
- Maintain equipment in good operating condition and have emergency and first aid equipment ready for immediate use, where applicable;
- 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;
- 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;
- Require the site personnel to wear respirator and gloves for vapour exposure protection, if necessary; and
- Ensure all site staff members wear safety helmet and protective boots.

5 Proposed Laboratory Analysis

5.1 Fire Training Facility

Laboratory analysis is proposed for the soil and groundwater (if any) samples collected at the fire training facility in order to screen the presence of potential contaminants that are of concerns as shown in **Table 4.1**.

Table 5.1 summarises the parameters, the minimum requirement of the reporting limits and reference methods for the laboratory analyses of soil and groundwater samples.

Table 5.1: Parameters, Detection Limits and Reference Methods for Laboratory Analysis

Parameter	Soil		Groundwater	
	Detection Limit (mg/kg) or other stated	Reference Method	Detection Limit (µg/L) or other stated	Reference Method
VOCs				
Acetone	50	USEPA 8260 or similar method*	500	USEPA 8260 or similar method*
Benzene	0.2		5	
Bromodichloromethane	0.1		5	
2-Butanone	5		50	
Chloroform	0.04		5	
Ethylbenzene	0.5		5	
Methyl tert-Butyl Ether	0.5		5	
Methylene Chloride	0.5		50	
Styrene	0.5		5	
Tetrachloroethene	0.04		5	
Toluene	0.5		5	
Trichloroethene	0.1		5	
Xylenes (Total)	2		20	
SVOCs				
Acenaphthene	0.5	USEPA 8270D or similar method*	2	USEPA 8270D or similar method*
Acenaphthylene	0.5		2	
Anthracene	0.5		2	
Benzo(a)anthracene	0.5		N/A	
Benzo(a)pyrene	0.5		N/A	
Benzo(b)fluoranthene	0.5		1	
Benzo(g,h,i)perylene	0.5		N/A	
Benzo(k)fluoranthene	0.5		N/A	
Bis-(2-Ethylhexyl)phthalate	5		N/A	
Chrysene	0.5		1	
Dibenzo(a,h)anthracene	0.5		N/A	
Fluoranthene	0.5		2	
Fluorene	0.5		2	
Hexachlorobenzene	0.2		4	
Indeno(1,2,3-cd)pyrene	0.5		N/A	
Naphthalene	0.5		2	

Parameter	Soil		Groundwater	
	Detection Limit (mg/kg) or other stated	Reference Method	Detection Limit (µg/L) or other stated	Reference Method
Phenanthrene	0.5		2	
Phenol	0.5		N/A	
Pyrene	0.5		2	
Metals				
Antimony	1	USEPA 6020 or similar method*	N/A	USEPA 6020 or similar method*
Arsenic	1		N/A	
Barium	1		N/A	
Cadmium	0.2		N/A	
Chromium III	1		N/A	
Chromium VI	1		N/A	
Cobalt	1		N/A	
Copper	1		N/A	
Lead	1		N/A	
Manganese	1		N/A	
Mercury	0.05		0.5	
Molybdenum	1		N/A	
Nickel	1		N/A	
Tin	1		N/A	
Zinc	1		N/A	
Petroleum Carbon Ranges				
C6 - C8	5	USEPA 8260B / 8015 or similar method*	20	USEPA 8260B / 8015 or similar method*
C9 - C16	200		500	
C17 - C35	500		500	
PCBs				
PCBs	0.1	USEPA 8070 or similar method*	1	USEPA 8070 or similar method*

Remark:

* Alternative testing methods with accreditation by HOKLAS or its Mutual Recognition Arrangement partner are also acceptable.

N/A - Not Available.

5.2 Interpretation of Results

The soil and groundwater samples collected from the proposed SI works will be compared with RBRGs as stipulated in Table 2.1 and Table 2.2 of the Guidance Manual.

The RBRGs are developed based on a risk assessment approach to suit the local environmental conditions and community needs in Hong Kong. Decisions on contaminated soil and groundwater (if any) remediation are based on the nature and extent of the potential risks that are posed to human receptors as a result of exposure to chemicals in the soil and/or groundwater. RBRGs are developed for four different land use scenarios reflecting the typical physical settings in Hong Kong under which people could be exposed to contaminated soil and groundwater. Each land use scenario is described below:

- **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 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.

In addition to the RBRGs, screening criteria (soil saturation limits, C_{sat}, developed for Non-aqueous Phase Liquid (NAPL) in soil and water solubility limits for NAPL in groundwater) for the more mobile organic chemicals must be considered to determine whether a site requires further action.

Since the future land uses of the fire training facility will be used for operations of the airport, the RBRGs corresponding to the land use categories of Industrial should be adopted according to the Guidance Note.

The relevant parameters and soil and groundwater RBRGs levels for the SI works are presented in **Table 5.2**.

Table 5.2: Relevant RBRGs for Soil and Groundwater

Parameter	Soil		Groundwater	
	RBRGs for Industrial (mg/kg)	Soil Saturation Limit (C_{sat}) (mg/kg)	RBRGs for Industrial (mg/L)	Groundwater Solubility Limit (mg/L)
VOCs				
Acetone	10,000*	***	10,000*	N/A
Benzene	9.21	336	54	1750
Bromodichloromethane	2.85	1030	26.2	6740
2-Butanone	10,000*	***	10,000*	N/A
Chloroform	1.54	1100	11.3	7920
Ethylbenzene	8,240	138	10,000*	169
Methyl tert-Butyl Ether	70.1	2380	1,810	N/A
Methylene Chloride	13.9	921	224	N/A
Styrene	10,000*	497	10,000*	310
Tetrachloroethene	0.777	97.1	2.95	200
Toluene	10,000*	235	10,000*	526
Trichloroethene	5.68	488	14.2	1100
Xylenes (Total)	1,230	150	1,570	175
SVOCs				
Acenaphthene	10,000*	60.2	10,000*	4.24
Acenaphthylene	10,000*	19.8	10,000*	3.93
Anthracene	10,000*	2.56	10,000*	0.0434
Benzo(a)anthracene	91.8	N/A	N/A	N/A
Benzo(a)pyrene	9.18	N/A	N/A	N/A
Benzo(b)fluoranthene	17.8	N/A	7.53	0.0015
Benzo(g,h,i)perylene	10,000*	N/A	N/A	N/A
Benzo(k)fluoranthene	918	N/A	N/A	N/A
Bis-(2-Ethylhexyl)phthalate	91.8	N/A	N/A	N/A
Chrysene	1140	N/A	812	0.00160
Dibenzo(a,h)anthracene	9.18	N/A	N/A	N/A
Fluoranthene	10,000*	N/A	10,000*	0.206
Fluorene	10,000*	54.7	10,000*	1.98
Hexachlorobenzene	0.582	N/A	0.695	6.2
Indeno(1,2,3-cd)pyrene	91.8	N/A	N/A	N/A
Naphthalene	453	125	862	31
Phenanthrene	10,000*	28.0	10,000*	1
Phenol	10,000*	7260	N/A	N/A
Pyrene	10,000*	N/A	10,000*	0.135
Metals				
Antimony	261	N/A	N/A	N/A
Arsenic	196	N/A	N/A	N/A
Barium	10,000*	N/A	N/A	N/A
Cadmium	653	N/A	N/A	N/A
Chromium III	10,000*	N/A	N/A	N/A
Chromium VI	1960	N/A	N/A	N/A
Cobalt	10,000*	N/A	N/A	N/A
Copper	10,000*	N/A	N/A	N/A

Parameter	Soil		Groundwater	
	RBRGs for Industrial (mg/kg)	Soil Saturation Limit (C_{sat}) (mg/kg)	RBRGs for Industrial (mg/L)	Groundwater Solubility Limit (mg/L)
Lead	2290	N/A	N/A	N/A
Manganese	10,000*	N/A	N/A	N/A
Mercury	38.4	N/A	6.79	N/A
Molybdenum	3260	N/A	N/A	N/A
Nickel	10,000*	N/A	N/A	N/A
Tin	10,000*	N/A	N/A	N/A
Zinc	10,000*	N/A	N/A	N/A
Petroleum Carbon Ranges				
C6 - C8	10,000*	1,000	1,150	5.23
C9 - C16	10,000*	3,000	9,980	2.8
C17 - C35	10,000*	5,000	178	2.8
PCBs				
PCBs	0.748	N/A	5.11	0.031

Remark:

*Indicates a 'ceiling limit' concentration.

N/A - Not Available.

5.3 Reporting

According to Section 11.6.1 of the EIA Report, SI works at SkyCity Golf Course (hereafter referred to as the golf course) will be carried out by Airport Management Services (AMSL). The golf course was closed on 31 July 2015 after expiry of operation. SI works proposed in the EIA Report was conducted in August 2015. The SI results were presented in the Contamination Assessment Report (for Golf Course Area) which was approved by EPD on 6 April 2016.

The rest of the SI works proposed in the EIA Report have not been commenced. After the SI works as mentioned in the EIA Report and this Supplementary CAP have been completed, a corresponding Contamination Assessment Report (CAR) which documents the detailed methodology of SI, assessment criteria, on-site observations and the analytical results from the SI works will be submitted to EPD for endorsement. Should remediation be required, Remediation Action Plan (RAP) and Remediation Report (RR) will be prepared for EPD's approval prior to commencement of the proposed remediation and any construction works respectively.

6 Potential Remediation Measures

The possible contaminants that may be found at the assessment areas in this Supplementary CAP include heavy metals, organic compounds and PCRs. Possible remediation methods will be applied depending on the quantity and quality of contaminated soil. With reference to the Practice Guide, a list of available and commonly adopted remediation methods is presented in **Table 6.1** for the potential contaminated soil.

Table 6.1: List of Potential Remediation Methods

Remediation Options	Possible Contaminants	Descriptions
Contaminated Soil		
Stabilisation/ Solidification	Heavy metals	Ex-situ immobilisation technique treating contaminated soil by mixing soil with binding agents. The most common binding agent is cement
Biopiling	PCRs and Organic contaminants	Ex-situ bioremediation method that facilitate bacterial growth in contaminated soil and degradation of contaminants into harmless products
Soil Vapour Extraction (SVE)	PCRs and Organic contaminants	In-situ bioremediation method by removal of contaminants by suction / volatilisation, in the form of vapours. The vapours can be extracted by applying vacuum
Thermal Desorption	PCRs and Organic contaminants	A method to remove / separate contaminants from the soil matrix. Apply heat to the contaminated soil in order to increase the volatility of contaminants
Contaminated Groundwater		
Air Sparging	PCRs and Organic contaminants	In-situ remediation technique to inject pressurised air into contaminated water enabling a phase transfer of hydrocarbons from a dissolved state to a vapour phase. Vacuum extraction is then applied to remove the contaminants
Recovery Trenches / Wells	PCRs	Pump the groundwater out for recovering of free floating products from a plume

If any contamination is identified and warrant remediation based on the SI result, a RAP presenting the proposed remediation methods will be prepared and submitted to EPD for approval prior to commencement of the remediation works. As the remediation methods are well established and sufficient to deal with the nature of possible contaminants, it is anticipated that any contamination issues at the potentially contaminated areas will not cause any insurmountable impact.

7 Conclusion

This Supplementary CAP has been prepared in accordance with the EP Condition 2.20 to assess whether there are any potential land contamination issues at the assessment areas which have become accessible for site reconnaissance after the EIA stage.

There were no records of chemical waste spillage or leakage at the assessment areas, according to the information obtained from EPD. As a result, no land contamination due to spillage or leakage of chemical waste within the assessment areas would be anticipated. According to the information obtained from FSD, there were no recorded DG spillage/ leakage incidents at the assessment areas.

The proposed SI locations in the EIA Report at the fuel tank room to the west of CAD antenna farm and fuel tank room within T2 building are still considered valid. A borehole has been proposed in this Supplementary CAP to take into account the 10,000 L above-ground kerosene tank identified at the fire training facility during the site reconnaissance survey.

All sampling and testing works will be conducted prior to commencement of any construction works at these areas. After completion of the SI, the CAR will be prepared and submitted to EPD for approval prior to commencement of the proposed construction works at the assessment areas. Should remediation be required, RAP and RR will be prepared for EPD's approval prior to commencement of the proposed remediation and any construction works respectively.

Appendices

A. Documentation from EPD and FSD

A1. Documentation from EPD

MOTT MACDONALD

Environmental Protection Department
Environmental Compliance Division
Territorial Control Office
Chemical Waste Collection Licensing Section
25th floor, Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

Our Reference
JP/EC/TK/T355482/02/02/
L0181

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Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Chemical Waste Producer and Spillage/ Leakage Incidents

16 March 2017

Dear Sir/ Madam,

As part of the Supplementary Contamination Assessment Plan for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes the existing airside seawater pump house and existing pumping station as shown in the attached drawing **SK/012**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered Chemical Waste Producer(s) within the Study Area (preferably with the registration date, nature and quantity of the chemical waste and storage location); and

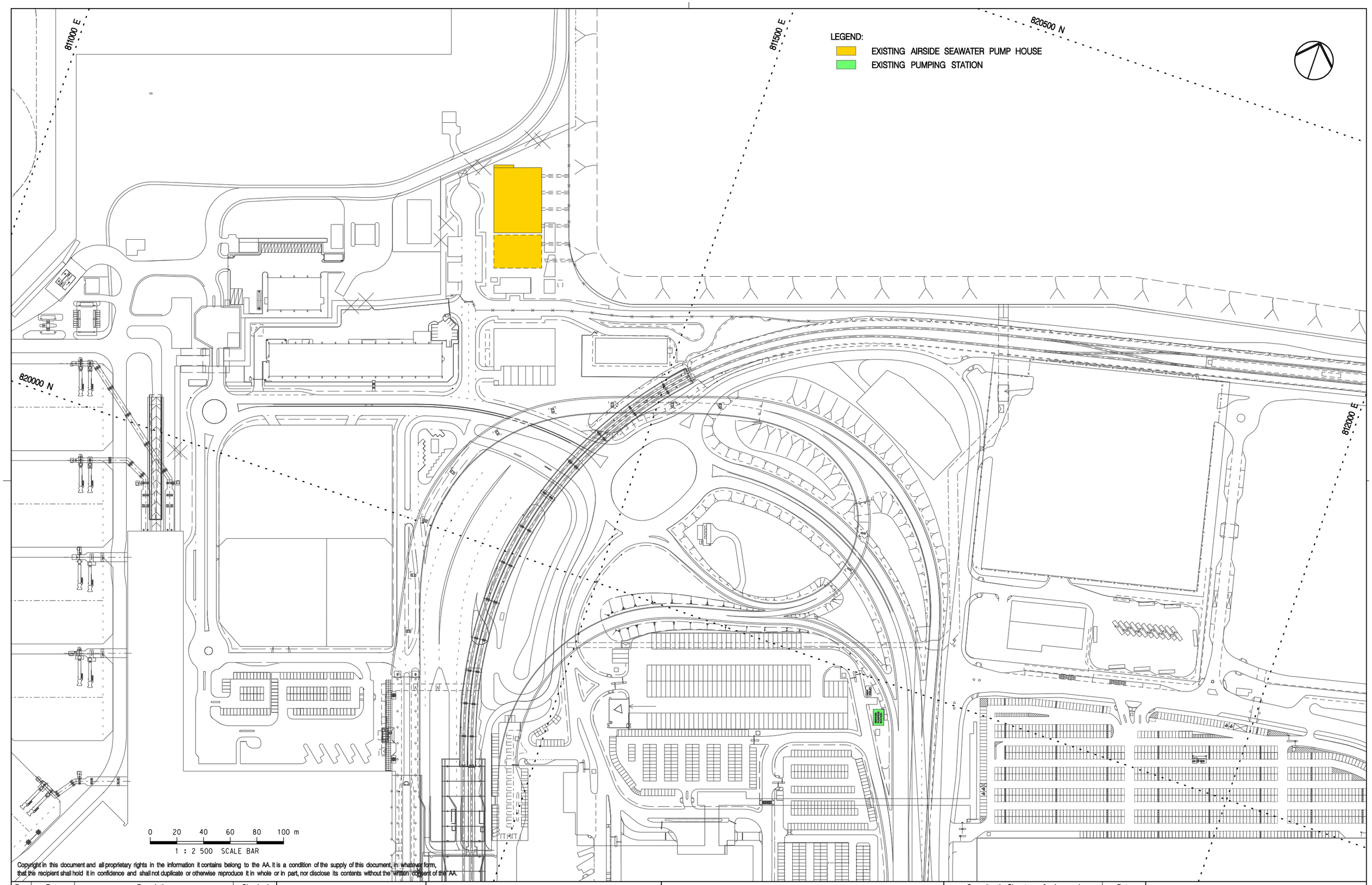
2. Any records of spillage/ leakage of chemical waste or chemicals at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 31 March 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui



Rev.	Date	Description	Checked
A	16MAR17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2188 7111 Fax : (852) 2824 0777

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	16MAR17
Checkers	JC / TK	16MAR17
Approver	EC	16MAR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 012

Scale at A3 1 : 2500

Rev. A

Filename: J:\355482\SKETCH\SK012\SK012.dgn

本署檔案 EP60/C3/3 Annex 5(2)
OUR REF:
來函檔案 JP/EC/TK/T355482/02/02/L0181
YOUR REF:
電　話 2835 1165
TEL NO.:
傳　真 2305 0453
FAX NO.:
電　郵 beatricewong@epd.gov.hk
E-MAIL:
網　址
HOMEPAGE : http://www.epd.gov.hk

Environmental Protection Department
Environmental Compliance Division
Territorial Control Office
28/F, Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

環境保護署
環保法規管理科
總區辦事處
香港灣仔
軒尼詩道一百三十號
修頓中心廿八樓

	To	Action	Inform	Copy	Sign	Date
1	BZ		✓		2	29/3
2	PL					
Rec'd	29 MAR 2017					
3	AM					
4						
File No.				MOTT MACDONALD	M	M

By Mail

Mott Macdonald Hong Kong Limited
20/F AIA Kowloon Tower
Landmark East, 100 How Ming Street
Kwun Tong, Kowloon
(Attn : Terence Kong)

24 March 2017

Dear Mr. KONG,

Request for Information of Chemical Waste Producer and Spillage/Leakage incidents for Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014)-Environmental Monitoring and Audit

I refer to your letter dated 16 March 2017 on the captioned.

As registered chemical waste producers at the location are concerned, a register of chemical waste producers is available for inspection in the Territorial Control Office of this department. If you would like to inspect, please contact Mr. HO Shui-lun, Aaron at 2835 1017 for making appointment to view the records.

We have no record of chemical spillage/leakage accident of chemical waste or chemicals at the concerned location.

Should you have any query on the above matter, please contact the undersigned at 2835 1165.

Yours faithfully,

Beatrice

(Ms Beatrice WONG)
Territorial Control Office
for Director of Environmental Protection

c.c. TCG/EPD (Attn: Mr. HO Shui-lun, Aaron Fax: 23050453)

MOTT MACDONALD

Environmental Protection Department
Environmental Compliance Division
Territorial Control Office
Chemical Waste Collection Licensing Section
25th floor, Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

Our Reference
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Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Chemical Waste Producer and Spillage/ Leakage Incidents

28 April 2017

Dear Sir/ Madam,

As part of the environmental monitoring and audit for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes the fire training facility as highlighted in the attached drawing **SK/016**, the airside fuel tank room as highlighted in the attached drawing **SK/017** and the 3,000L above-ground fuel tank room as highlighted in the attached drawing **SK/018**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered Chemical Waste Producer(s) within the Study Area (preferably with the registration date, nature and quantity of the chemical waste and storage location); and

2. Any records of spillage/ leakage of chemical waste or chemicals at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 12 May 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

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Environmental Team Leader
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terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui

808000 E
809000 E
810000 E
818000 N
817000 N
渡輪碼頭
FERRY PIER
鷂殼灣
HAU HOK WAN
灣
WAN
85
152
較寮
KAU LIU
田心
TIN SAM
磡頭
HAM TAU

LEGEND:

FIRE TRAINING FACILITY

0 50 100 150 200 m
1 : 7 000 SCALE BAR

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A	27APR17	FIRST ISSUE	PL

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Airport Authority HKIA Tower,1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2181 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	27APR17
Checkers	JC / TK	27APR17
Approver	EC	27APR17

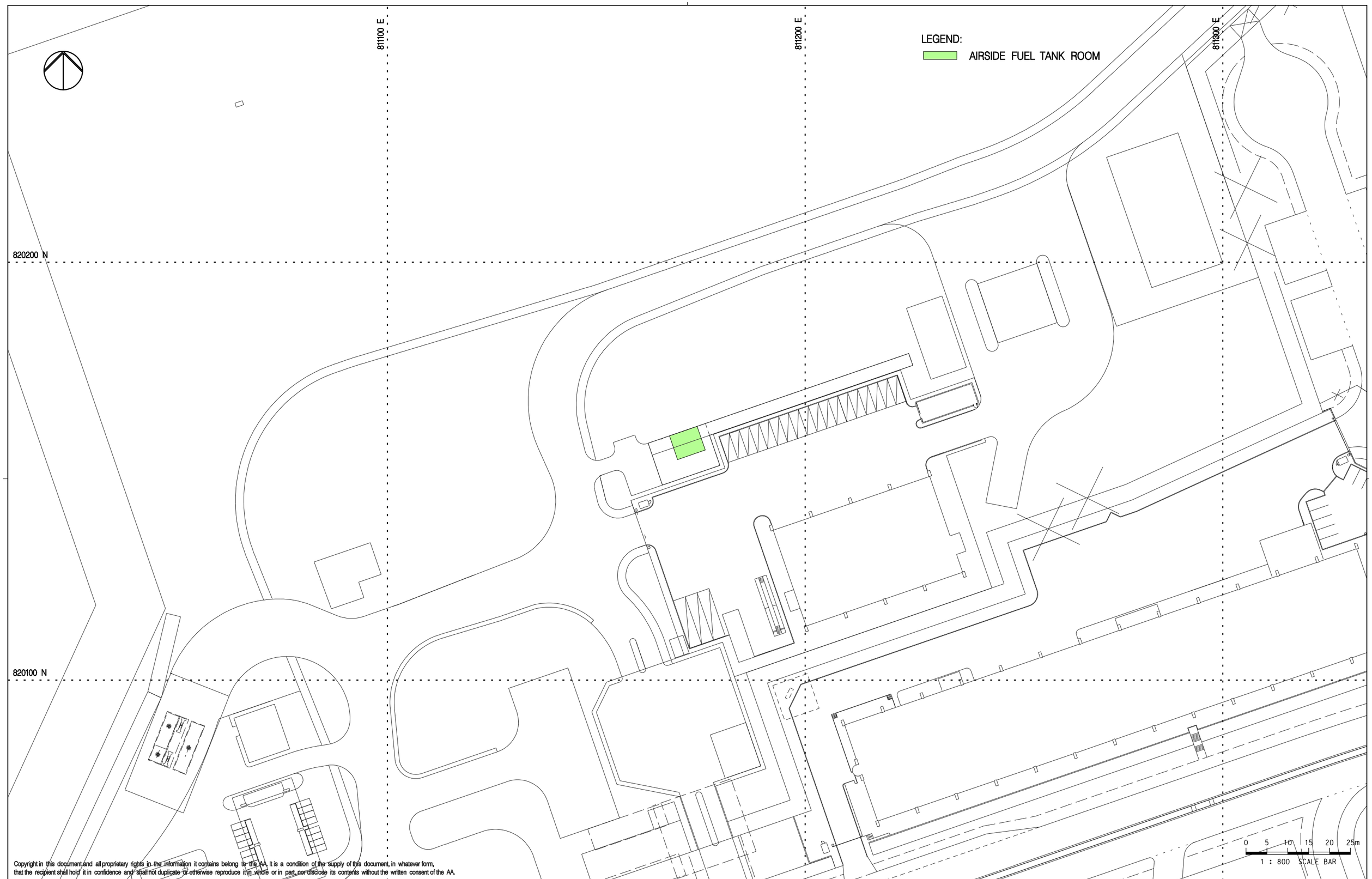
EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 016

Scale at A3 1 : 7000

Rev. A

Filename: J:\355482\SKETCH\SK016-SK017\SK016.dgn



Rev.	Date	Description	Checked
A	28APR17	FIRST ISSUE	PL

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MOTT MACDONALD

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LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
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EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 017

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK017.dgn

811500 E

811600 E

811700 E

819900 N

819800 N

LEGEND:

3000L ABOVE-GROUND FUEL TANK ROOM

0 5 10 15 20 25m

1 : 800 SCALE BAR

Rev.	Date	Description	Checked
A	28APR17	FIRST ISSUE	PL

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MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

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Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 018

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK018.dgn

Liu, Patrick

From: tsso@epd.gov.hk [mailto:tsso@epd.gov.hk]
Sent: 31 May 2017 16:29
To: Kong, Terence <Terence.Kong@mottmac.com>
Cc: beatricewong@epd.gov.hk; lokamwah@epd.gov.hk
Subject: Re. Request for information about Chemical Waste Producer and Spillage/Leakage incidents

Dear Terence,

I refer to your attached letter dated 28/4/2017.

2. Please note that according to the past five years record, there was no record of spillage/leakage of chemical waste or chemicals for the past five years at the areas (ie. the fire training facility, the airside fuel tank room, and the 3,000L above-ground fuel tank room) in the Hong Kong International Airport highlighted in your drawings.

3. For the part on chemical waste producer registration, you may contact Mr. HO Shui-lun, Aaron of our Territory Control Group (tel. 2835 1017) for making appointment to view the records.

Regards,
TS SO
EPD

A2. Documentation from FSD

MOTT MACDONALD

Fire Services Department
Fire Services Headquarters Command
9th Floor, Fire Services HQ Building
1 Hong Chong Road
Tsim Sha Tsui East
Kowloon

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Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Dangerous Goods Storage and Spillage/ Leakage Incidents

16 March 2017

Dear Sir/ Madam,

As part of the Supplementary Contamination Assessment Plan for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes the existing airside seawater pump house and existing pumping station as shown in the attached drawing **SK/012**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered of storage of dangerous goods within the Study Area (with type of dangerous goods, storage method, quantity, licence No./ date of issue, and location of storage); and

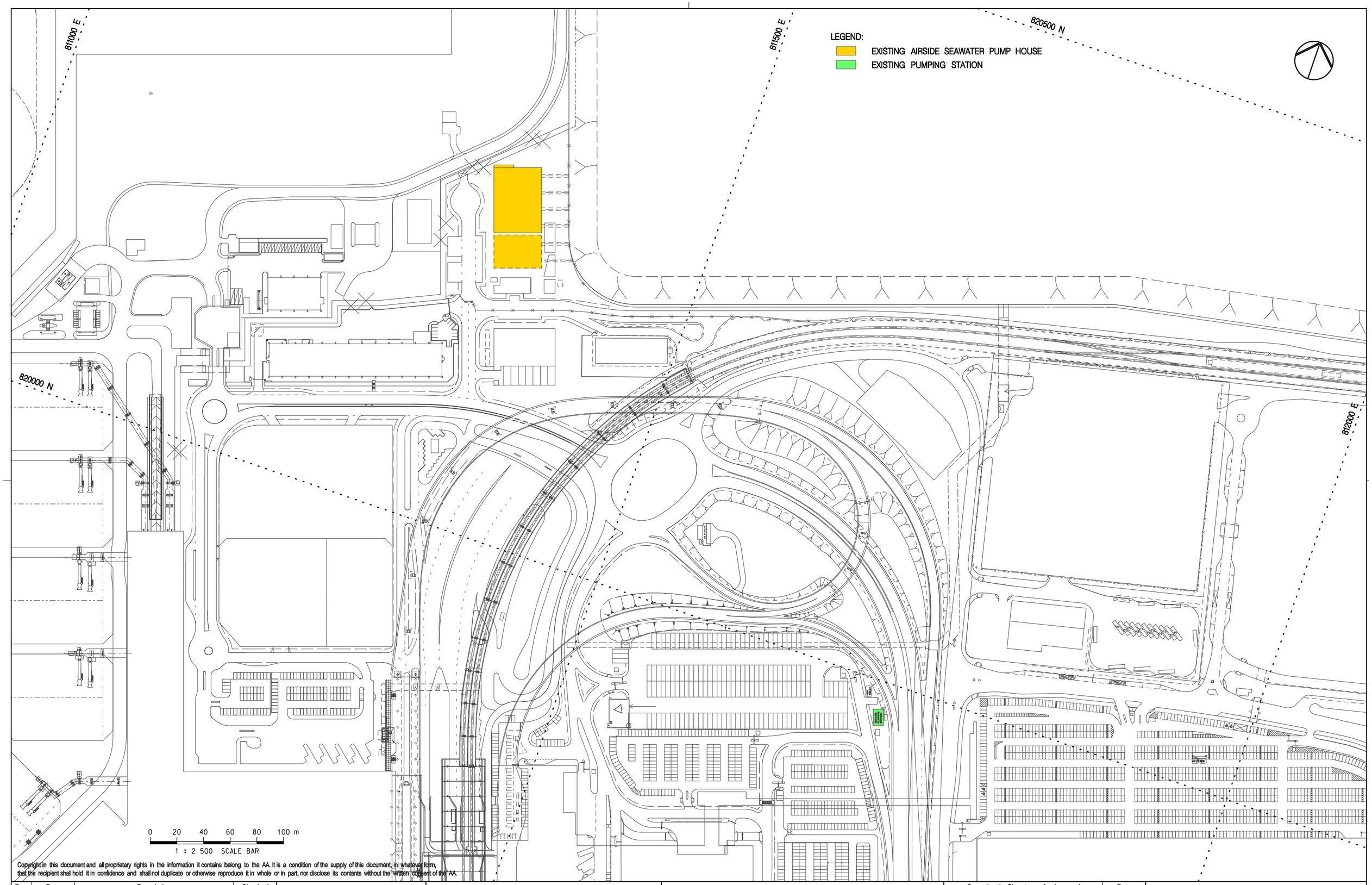
2. Any records of spillage/ leakage of dangerous goods at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 31 March 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui



Rev.	Date	Description	Checked
A	16MAR17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
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MOTT MACDONALD

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LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	16MAR17
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Approver	EC	16MAR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 012

Scale at A3 1 : 2500

Rev. A

Filename: J:\355482\SKETCH\SK012\SK012.dgn

消 防 處
香港九龍尖沙咀東部康莊道 1 號
消防總部大廈

FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 **OUR REF.** : (159) in FSD GR 6-5/4 R Pt. 14
來函檔號 **YOUR REF.** : JP/EC/TK/T355482/02/02/L0182
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2739 5879
電　　話 **TEL NO.** : 2733 7741

3 April 2017

Mott MacDonald Hong Kong Limited,
20/F, AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
Kwun Tong, Kowloon
Hong Kong
(Attn: Mr. Terence KONG, Environmental Team Leader)

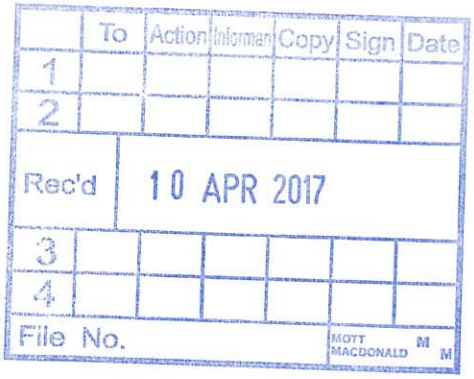
Dear Mr. KONG,

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information of Dangerous Goods & Incident Records

I refer to your letter of 16.3.2017 regarding the captioned request and reply below in response to your questions.

1. No Dangerous Goods Licence was issued in respect of the captioned address.

2. A total of three incident records was found at the subject location. Please refer to **Appendix A** for details.



Yours sincerely,

(CHEU Yu-kok)
for Director of Fire Services

Appendix A

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information of Dangerous Goods & Incident Records

No.	Date	Type of Incident	Address
1.	21.5.2014	Special Service	Baggage Hall, Level 2, Hong Kong International Airport
2.	17.2.2015	Special Service	Parking Stand, Hong Kong International Airport
3.	29.5.2015	Special Service	Parking Stand, Hong Kong International Airport

Liu, Patrick

From: yu_kok_cheu@hkfsd.gov.hk on behalf of ado_mg_1@hkfsd.gov.hk
Sent: 20 April 2017 08:48
To: Liu, Patrick
Subject: Re: 3RS - Request for Information of Dangerous Goods & Incident Records

Dear Patrick,

Please be informed that the 3 incident records in Appendix A of my previous letter ref. (159) in FSD GR 6-5/4R Pt. 14 were found outside the Study Area as demarcated in the attachment "SK_012 - Study Area of the Project.pdf".

Best Regards,

(CHEU Yu-kok)
Assistant Divisional Officer (Management Group)1
Fire Services Department
Tel: 2733 7741

From: "Liu, Patrick" <Patrick.Liu@mottmac.com>
To: "ado_mg_1@hkfsd.gov.hk" <ado_mg_1@hkfsd.gov.hk>
Cc: "Mung, Ada" <Ada.Mung@mottmac.com>
Date: 13/04/2017 18:18
Subject: 3RS - Request for Information of Dangerous Goods & Incident Records

---

Dear Mr. Cheu,

We spoke this afternoon. Further to your letter providing information of dangerous goods and incident records (Your Ref.: (159) in FSD GR 6-5/4 R Pt. 14), a total of three incident records was found at the subject location and the detailed locations of the incident records were located at baggage hall and parking stand of Hong Kong International Airport as mentioned in Appendix A of your letter.

However, the Study Area of our Project is limited to the airside seawater pump house and pumping station only, as highlighted in yellow and green in the attached SK/012 figure respectively (This is the same figure as enclosed in our letter of information request (Our ref: JP/EC/TK/T355482/02/02/L0182) dated 16 Mar 2017). Therefore, we are writing to seek your clarification on whether the three incident records were found at the Study Area of our Project or not.

We would be most grateful if you could provide the clarification to us at your earliest convenience, preferably by 28 Apr 2017. Should you have any queries, please feel free to contact me at 2585 8515. Thank you.

Regards,
Patrick

[attachment "SK_012 - Study Area of the Project.pdf" deleted by yu_kok CHEU/FSD/HKSARG]

MOTT MACDONALD

Fire Services Department
Fire Services Headquarters Command
9th Floor, Fire Services HQ Building
1 Hong Chong Road
Tsim Sha Tsui East
Kowloon

Our Reference
JP/EC/TK/T355482/02/02/L0203

20/F AIA Kowloon Tower
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Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Dangerous Goods Storage and Spillage/ Leakage Incidents

28 April 2017

Dear Sir/ Madam,

As part of the environmental monitoring and audit for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes the fire training facility as highlighted in the attached drawing **SK/016**, the airside fuel tank room as highlighted in the attached drawing **SK/017** and the 3,000L above-ground fuel tank room as highlighted in the attached drawing **SK/018**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered of storage of dangerous goods within the Study Area (with type of dangerous goods, storage method, quantity, licence No./ date of issue, and location of storage); and

2. Any records of spillage/ leakage of dangerous goods at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 12 May 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui

808000 E
809000 E
810000 E
818000 N
817000 N
渡輪碼頭
FERRY PIER
鷂殼灣
HAU HOK WAN
灣
WAN
85
152
較寮
KAU LIU
田心
TIN SAM
磡頭
HAM TAU

LEGEND:

FIRE TRAINING FACILITY

0 50 100 150 200 m
1 : 7 000 SCALE BAR

Rev.	Date	Description	Checked
A	27APR17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower,1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2181 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	27APR17
Checkers	JC / TK	27APR17
Approver	EC	27APR17

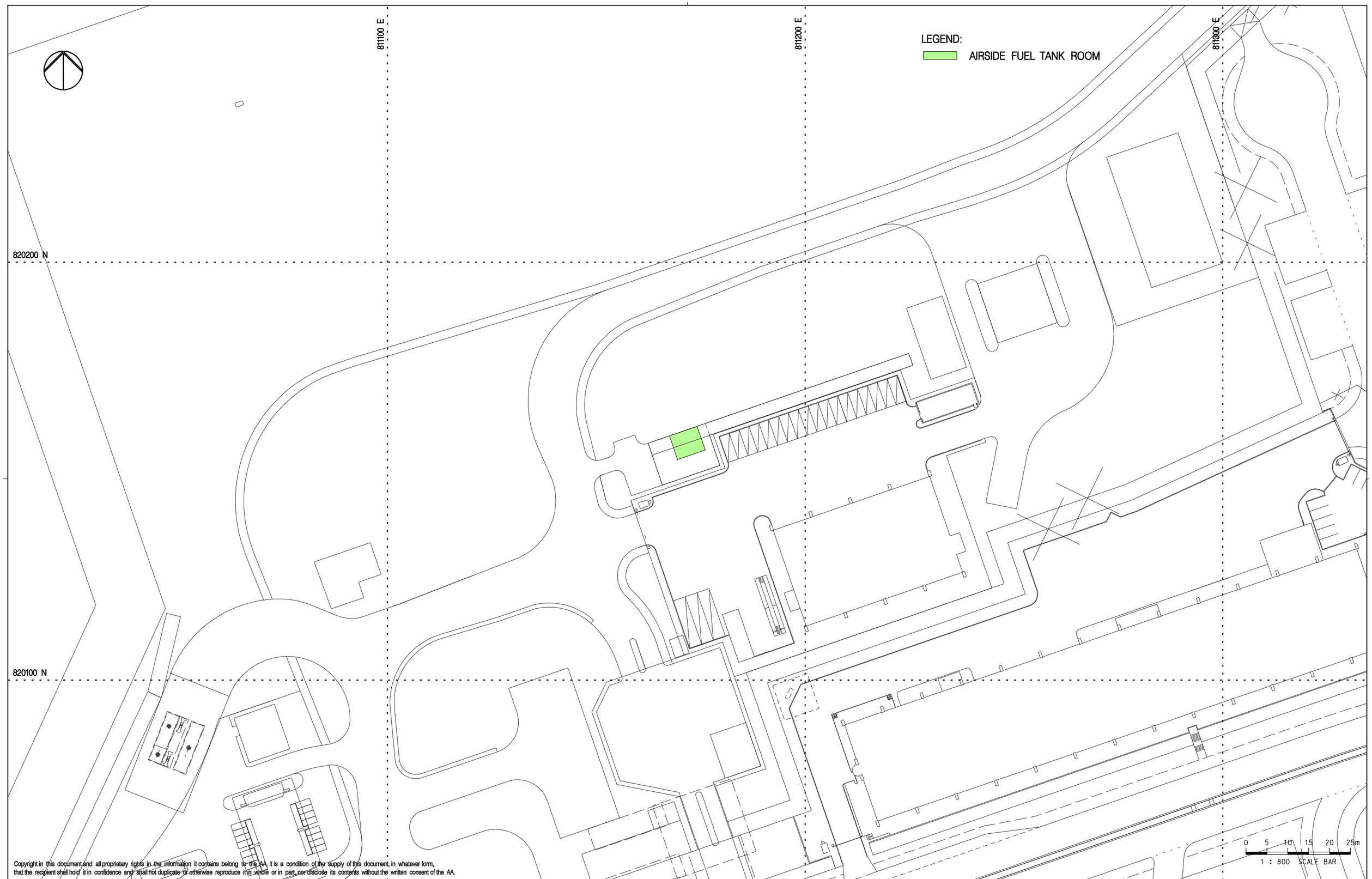
EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 016

Scale at A3 1 : 7000

Rev. A

Filename: J:\355482\SKETCH\SK016-SK017\SK016.dgn



Rev.	Date	Description	Checked
A	28APR17	FIRST ISSUE	PL

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Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
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MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	28APR17
Checkers	JC / TK	28APR17
Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 017

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK017.dgn

811500 E

811600 E

811700 E

819900 N

819800 N

LEGEND:

3000L ABOVE-GROUND FUEL TANK ROOM

0 5 10 15 20 25m

1 : 800 SCALE BAR

Rev.	Date	Description	Checked
A	28APR17	FIRST ISSUE	PL

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Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2188 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	28APR17
Checkers	JC / TK	28APR17
Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 018

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK018.dgn

消 防 處
香港九龍尖沙咀東部康莊道 1 號
消防總部大廈

FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 **OUR REF.** : (108) in FSD GR 6-5/4 R Pt. 15
來函檔號 **YOUR REF.** : JP/EC/TK/T355482/02/02/L0203
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2739 5879
電 話 **TEL NO.** : 2733 7741

31 May 2017

Mott MacDonald Hong Kong Limited
20/F, AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
(Attn: Mr. Terence KONG, Environmental Team Leader)

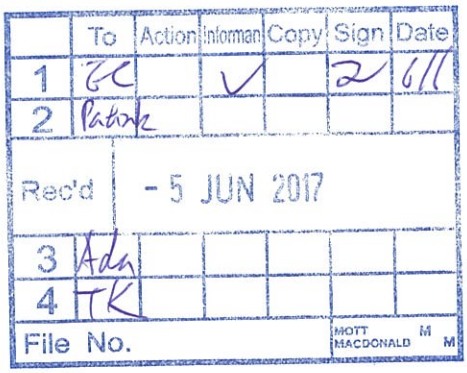
Dear Mr. KONG,

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014)
Request for Information of Dangerous Goods & Incident Records

I refer to your letter of 28.4.2017 regarding the captioned request and reply below in response to your questions:-

According to our record, from the year of 1990 to present moment, dangerous goods licenses have been issued by this department to the subject address, with details as shown in **Appendix A**. No incident record was found at the aforesaid location with your given conditions.

If you have further questions, please feel free to contact the undersigned.



Yours sincerely,

(CHEU Yu-kok)
for Director of Fire Services

Appendix A

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014)
Request for Information on Dangerous Goods and Incident Records

Item	Type of DG	Quantity	Storage Method
1.	Diesel (Cat.5/Class 3)	i) 30,000 litres; ii) 2 x 500 litres	i) U/G tank; and ii) Oil tanks
2.	Diesel (Cat.5/Class 3)	3,000 litres	A/G tank;

MOTT MACDONALD

Fire Services Department
Fire Services Headquarters Command
9th Floor, Fire Services HQ Building
1 Hong Chong Road
Tsim Sha Tsui East
Kowloon

Our Reference
JP/EC/TK/T355482/02/02/
L0219

20/F AIA Kowloon Tower
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Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Dangerous Goods Storage and Spillage/ Leakage Incidents

22 June 2017

Dear Sir/ Madam,

Further to your letter on 31 May 2017 providing information about dangerous goods storage and spillage/leakage incidents for the captioned project (Your ref.: (108) in FSD GR 6-5/4 R Pt. 15), we would like to request for the following:

1. During our site reconnaissance survey conducted at the **fire training facility** (refer to the enclosed drawing **SK/016** for the location), a 1,000L above-ground tank containing kerosene was observed. Hence we would like to request for records of dangerous goods storage and/or spillage/leakage incidents at this area.

2. During our site reconnaissance survey conducted at the **airside fuel tank room** (refer to the enclosed drawing **SK/017** for the location), a 900L above-ground tank containing diesel fuel was found. Hence we would like to request for records of dangerous goods storage and/or spillage/leakage incidents at this area.

3. In Item 1 of Appendix A of your letter, it is noted that there is a dangerous goods record of a 30,000L underground diesel tank and two 500L diesel tanks. We would like to clarify whether these dangerous goods are located at the fire training facility and airside fuel tank room (refer to enclosed drawings **SK/016** and **SK/017**).

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 30 June 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui

808000 E
809000 E
810000 E
818000 N
817000 N
渡輪碼頭
FERRY PIER
鷂殼灣
HAU HOK WAN
灣
WAN
85
152
較寮
KAU LIU
田心
TIN SAM
磡頭
HAM TAU

LEGEND:

FIRE TRAINING FACILITY

0 50 100 150 200 m
1 : 7 000 SCALE BAR

Rev.	Date	Description	Checked
A	27APR17	FIRST ISSUE	PL

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Airport Authority HKIA Tower,1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2181 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	27APR17
Checkers	JC / TK	27APR17
Approver	EC	27APR17

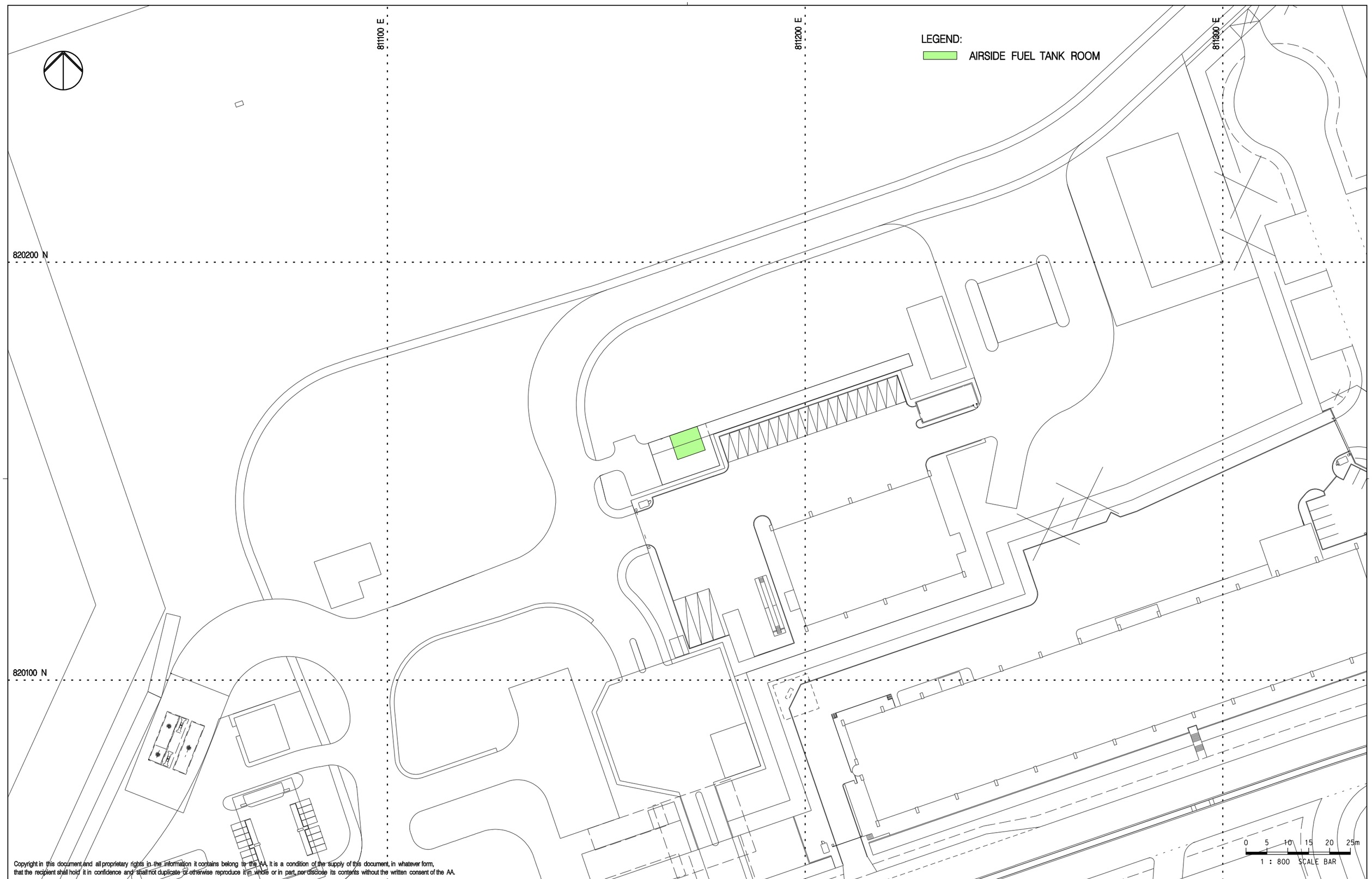
EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 016

Scale at A3 1 : 7000

Rev. A

Filename: J:\355482\SKETCH\SK016-SK017\SK016.dgn



Rev.	Date	Description	Checked
A	28APR17	FIRST ISSUE	PL

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Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 017

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK017.dgn

消 防 處
香港九龍尖沙咀東部康莊道 1 號
消防總部大廈

FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 **OUR REF.** : (89) in FSD GR 6-5/4 R Pt. 16
來函檔號 **YOUR REF.** : JP/EC/TK/T355482/02/02/L0219
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2739 5879
電 話 **TEL NO.** : 2733 7741

21 August 2017

Mott MacDonald Hong Kong Limited
20/F, AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
(Attn: Mr. Terence KONG, Environmental Team Leader)

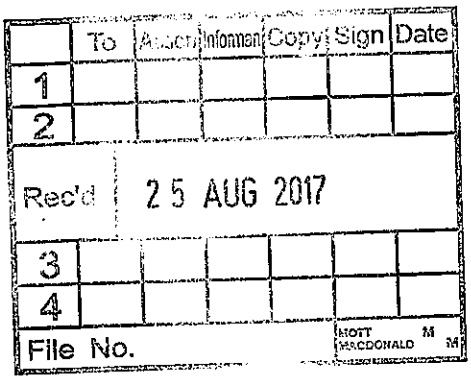
Dear Mr. KONG,

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information of Dangerous Goods

I refer to your letter of 22.6.2017 regarding the captioned request and reply below in response to your questions:-

According to our record, from the year of 1990 to present moment, dangerous goods licenses had been issued by this department to the subject address, with details as shown in **Appendix A**.

If you have further questions, please feel free to contact the undersigned.



Yours sincerely,

(KONG Wai-chung)
for Director of Fire Services

Appendix A

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit

Request for Information of Dangerous Goods

Item	Type of DG	Quantity	Licensed Premises	Storage Method
1.	Kerosene #1 (Category 5 Class 2 Div.1)	10,000 Litres	Airside Southern Main Rescue and Fire Fighting Station, HKIA, Chek Lap Kok	An A/G Storage tank on open ground inside the fire station
2.	Kerosene #2 (Category 5 Class 2 Div.1)	10,000 Litres		

Remarks

#1 The DG Licence no. 17418 was cancelled w.e.f. on 15.9.1999.

#2 The DG Licence no. 17499 was cancelled w.e.f. on 10.11.2000.

3. FSD has no objection to the provision of an A/G Storage tank of 10,000 litres to store kerosene (Cat.5 Class 2 Div.1) at Airside Southern Main Rescue and Fire Fighting Station, HKIA, Chek Lap Kok as from 22.12.2000 to present.

4. FSD has no objection to the provision of a 1 x 900L diesel fuel oil (Cat.5 Class 3) tank housed in a fuel tank room on G/F for emergency generator – Contract No. C402, West CAD Antenna Farm Building, Northern Runway, Chek Lap Kok as from 28.5.1999 to present.

Liu, Patrick

From: wai_chung_kong@hkfsd.gov.hk on behalf of ado_mg_1@hkfsd.gov.hk
Sent: 06 October 2017 18:23
To: Liu, Patrick
Cc: Mung, Ada
Subject: Re: Three Runway System - Request for Information of Dangerous Goods & Incident Records

Dear Patrick,

Please be advised that the previous mentioned DG record of ONE 30,000 L underground diesel tank and TWO 500 L diesel tanks are located outside the areas in your drawings SK/016 and SK/017.

If you have further questions, please feel free to contact me.

Best regards,

(KONG Wai-chung, Wilson)
Acting Assistant Divisional Officer
(Management Group)1
Fire Services Department
Office: 2733 7741
Mobile: 9338 1007
Fax: 2739 5879

From: "Liu, Patrick" <Patrick.Liu@mottmac.com>
To: "ado_mg_1@hkfsd.gov.hk" <ado_mg_1@hkfsd.gov.hk>
Cc: "Mung, Ada" <Ada.Mung@mottmac.com>
Date: 06/10/2017 17:39
Subject: Three Runway System - Request for Information of Dangerous Goods & Incident Records

---

Dear Mr. Kong,

We spoke this afternoon. Further to your letter dated 31 May 2017 providing information of dangerous goods and incident records (Your Ref.: (108) in FSD GR 6-5/4 R Pt. 15) and our subsequent letter dated 22 June 2017 requesting for clarification of dangerous goods record (Our ref.: JP/EC/TK/T355482/02/02/L0219), please kindly confirm whether the dangerous goods records of a 30,000L underground diesel tank and two 500L diesel tanks listed on your letter are located outside of our Study Area, that is the fire training facility and airside fuel tank room as indicated in the drawings SK/016 and SK/017 enclosed with our letter.

Should you have any queries, please feel free to contact me at 2585 8515. Thank you.

Regards,
Patrick

Patrick Liu
Assistant Environmental Consultant

D +852 2585 8515 T +852 2828 5757 F +852 2827 1823
Patrick.Liu@mottmac.com

Mott MacDonald
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

Website | **Twitter** | **LinkedIn** | **Facebook** | **YouTube**

B. Site Walkover Checklists

Site Walkover Checklist for Fuel Tank Room to the West of CAD Antenna Farm

1. General Site Details

Site Owner / Client: Civil Aviation Department

Property Address: Refer to Figure 3.1

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 18 May 2017

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	N/A
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A
Typical hours of operation:	24 hours	
Number of shifts:	N/A	
Days per week:	7	
Weeks per year:	52	
Scheduled plant shut-down:	N/A	

Detail the main sources of energy at the site:

Gas	No
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 45 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Existing North Runway

South: Gatehouse and vehicle inspection centre

East: Parking area

West: Parking area

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	For emergency power supply
2. How long have you been occupying the site?	--	Operation since 1998
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	Diesel fuel
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Stored in a 900 L above-ground tank within drip tray
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Monthly regular maintenance of the above-ground tank is carried out by EMSD.
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	Bund wall and drip tray are provided
2. What are the conditions of the bund walls and floors?	--	Good conditions
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Diesel fuel

Site Walkover Checklist for Fuel Tank Room within T2 Building

1. General Site Details

Site Owner / Client: Airport Authority

Property Address: Refer to Figure 3.2

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 11 May 2017

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	N/A
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A

Typical hours of operation: 24 hours

Number of shifts: N/A

Days per week: 7

Weeks per year: 52

Scheduled plant shut-down: N/A

Detail the main sources of energy at the site:

Gas	No
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: 12 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Parking area

South: Terminal 2 building

East: Parking area

West: Terminal 1 building

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	For emergency power supply
2. How long have you been occupying the site?	--	Since the operation of T2 building
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	Diesel fuel
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Stored in a 3000 L above-ground tank within drip tray
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Monthly visual checking is carried out to check if any spillage of above-ground tank.
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	Bund wall and drip tray are provided
2. What are the conditions of the bund walls and floors?	--	Good conditions
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Diesel fuel

Site Walkover Checklist for Seawater Pump House

1. General Site Details

Site Owner / Client: Airport Authority

Property Address: Refer to Figure 3.1

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 22 September 2016

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	*8*
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A

Typical hours of operation: 24 hours

Number of shifts: *2 shifts*

Days per week: 7

Weeks per year: 52

Scheduled plant shut-down: N/A

Detail the main sources of energy at the site:

Gas	No
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: 2,300 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach.

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Existing North Runway

South: Airside switching station and road networks

East: Eastern seawall

West: Airside facilities

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	Deliver cooling water to different facilities for the operation of the airport
2. How long have you been occupying the site?	--	Operation since 1998
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	No	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	Operation and maintenance of seawater pumping system
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	No	--
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	--
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	--	No chemicals handled on site
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	No	No chemical storage on site
2. What are the conditions of the bund walls and floors?	--	--
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	--	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	No	--

Site Walkover Checklist for Pumping Station

1. General Site Details

Site Owner / Client: Airport Authority

Property Address: Refer to Figure 3.2

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 8 December 2016

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	N/A
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A

Typical hours of operation: 24 hours

Number of shifts: N/A

Days per week: 7

Weeks per year: 52

Scheduled plant shut-down: N/A

Detail the main sources of energy at the site:

Gas	No
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 100 m^2

What area of the site is covered by buildings (%): 20%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Road networks and vegetated area

South: Parking area

East: Road networks and parking area

West: Parking area

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground with vegetation

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	To convey sewage from T2 building
2. How long have you been occupying the site?	--	Operation since 1998
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	No	--
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	--
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	No	
19. How are the wastes disposed of?	--	--
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	No	--
2. What are the conditions of the bund walls and floors?	--	--
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	No	--

Site Walkover Checklist for Fire Training Facility

1. General Site Details

Site Owner / Client: Fire Services Department

Property Address: Refer to Figure 3.3

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 11 May 2017

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	Approximately 120
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		Approximately 40

Typical hours of operation: 24 hours

Number of shifts: 3 shifts

Days per week: 7

Weeks per year: 52

Scheduled plant shut-down: N/A

Detail the main sources of energy at the site:

Gas	Yes
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 34,000 m^2

What area of the site is covered by buildings (%): 0%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Existing South Runway

South: DHL Central Asia Hub and road networks

East: Airport taxiways

West: HK Business Aviation Centre

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

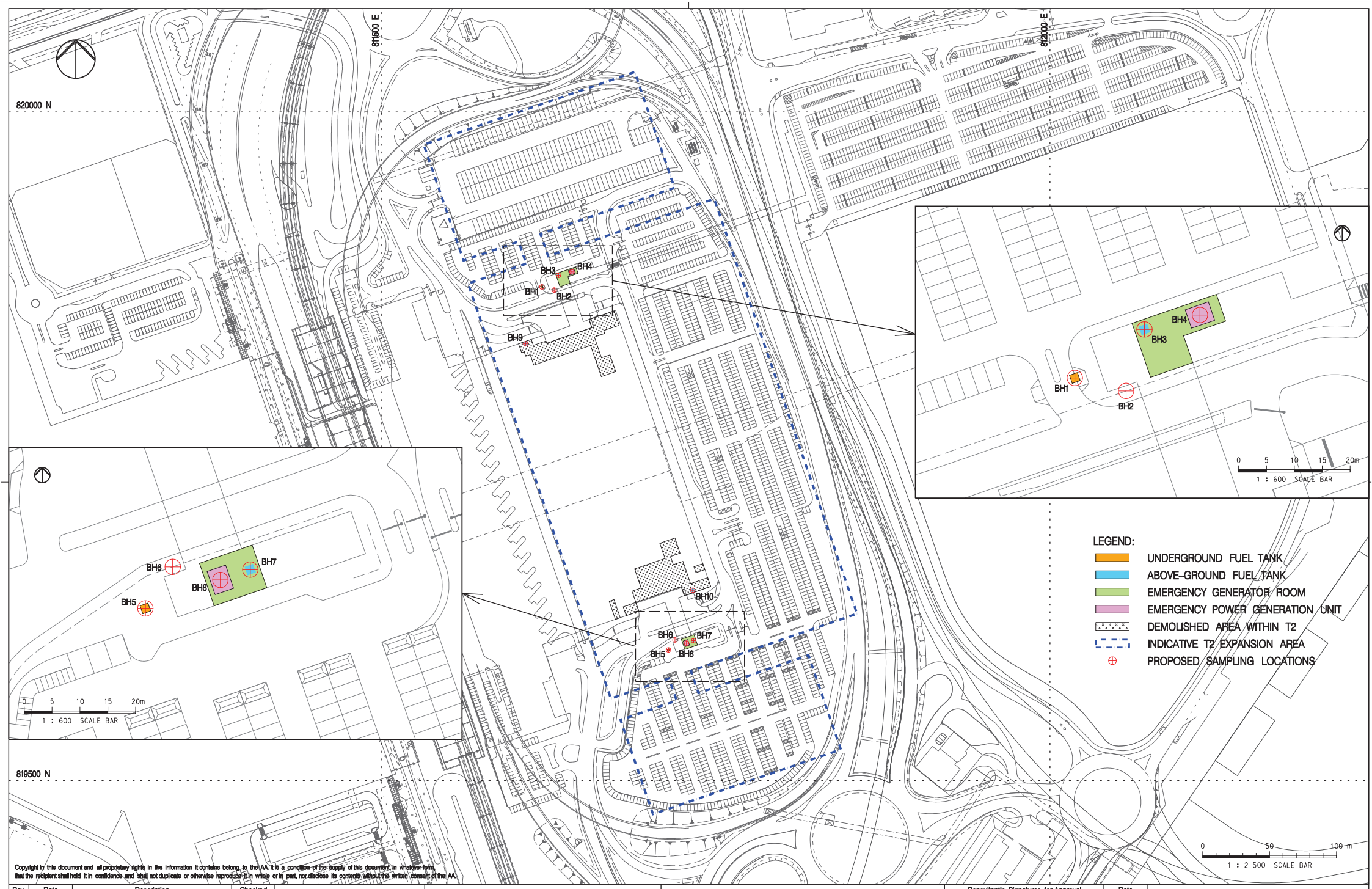
4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	Fire training exercise
2. How long have you been occupying the site?	--	Operation since 1998
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	Kerosene
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Stored in a 10,000 L above-ground tank within concrete bund wall
16. Do you have any underground storage tanks? (If yes, please provide details.)	Yes	3 underground storage tanks for receiving wastewater generated from fire training activity
17. Are there any disused underground storage tanks?	Yes	The abovementioned tanks in item 16 are no longer in used.
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Regular visual inspection is carried out to check if any spillage of above-ground tank.
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	An above-ground tank is made of steel and fabricated with concrete.
2. What are the conditions of the bund walls and floors?	--	Good conditions
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	Yes	An effluent pit for collection of rainwater
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Kerosene

C. Proposed SI Locations in the EIA



Rev.	Date	Description	Checked
A	23OCT13	FIRST ISSUE	EC
B	21NOV13	GENERAL REVISION	AM
C	17DEC13	GENERAL REVISION	AM

香港國際機場 | HONG KONG INTERNATIONAL AIRPORT

Airport Authority Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2188 7111 Fax : (852) 2384 6017

Mott MacDonald
In association with

ARUP
Atkins China Limited
Clymene Enterprises
Deltares
Ecosystems Limited
SDA Marine Limited
Urbis Limited
URS Limited

Title

PROPOSED SAMPLING LOCATIONS FOR EXPANSION OF T2 BUILDING

Consultant's Signatures for Approval		Date
Design	AM	23OCT13
Checkers	AM	23OCT13
Design Supervisor	EC	21MAR14
Authorised Representative	AFK	21MAR14

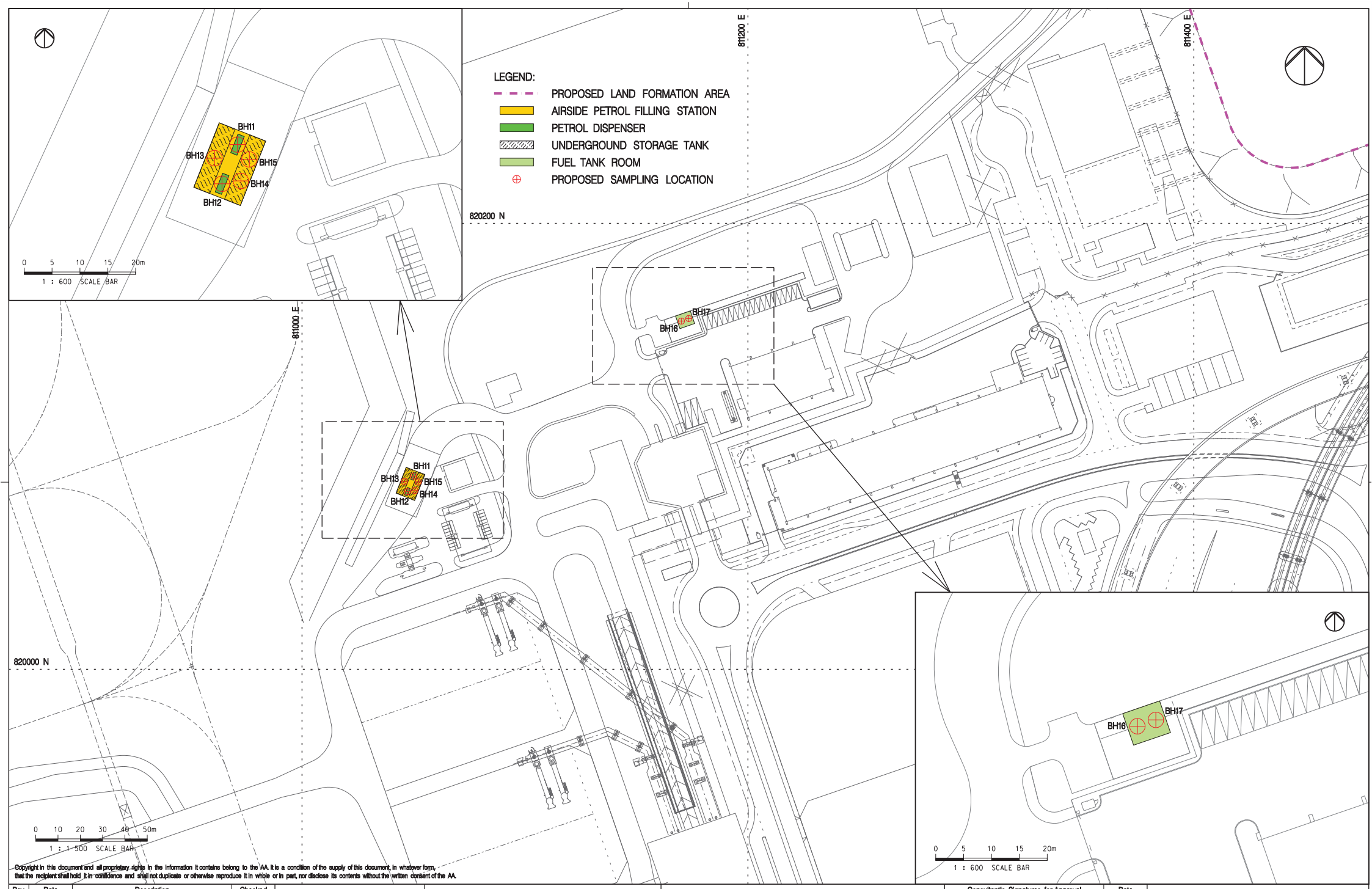
EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. MCL / P132 / EIA / 11-014

Scale at A3 1 : 2500

Rev. C

Filename: J:\308875\REPORT\ENV\EIA\140321\MCL-P132-EIA-11-014.dgn



Rev.	Date	Description	Checked
A	23OCT13	FIRST ISSUE	EC
B	28NOV13	GENERAL REVISION	AM

香港國際機場 HONG KONG INTERNATIONAL AIRPORT

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In association with
ARUP
Atkins China Limited
Clymene Enterprises
Deltares
Ecosystems Limited
SDA Marine Limited
Urbis Limited
URS Limited

Title

PROPOSED SAMPLING LOCATIONS FOR AIRSIDE PETROL FILLING STATION AND FUEL TANK ROOM

Consultant's Signatures for Approval		Date
Design	AM	23OCT13
Checkers	AM	23OCT13
Design Supervisor	EC	21MAR14
Authorised Representative	AFK	21MAR14

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

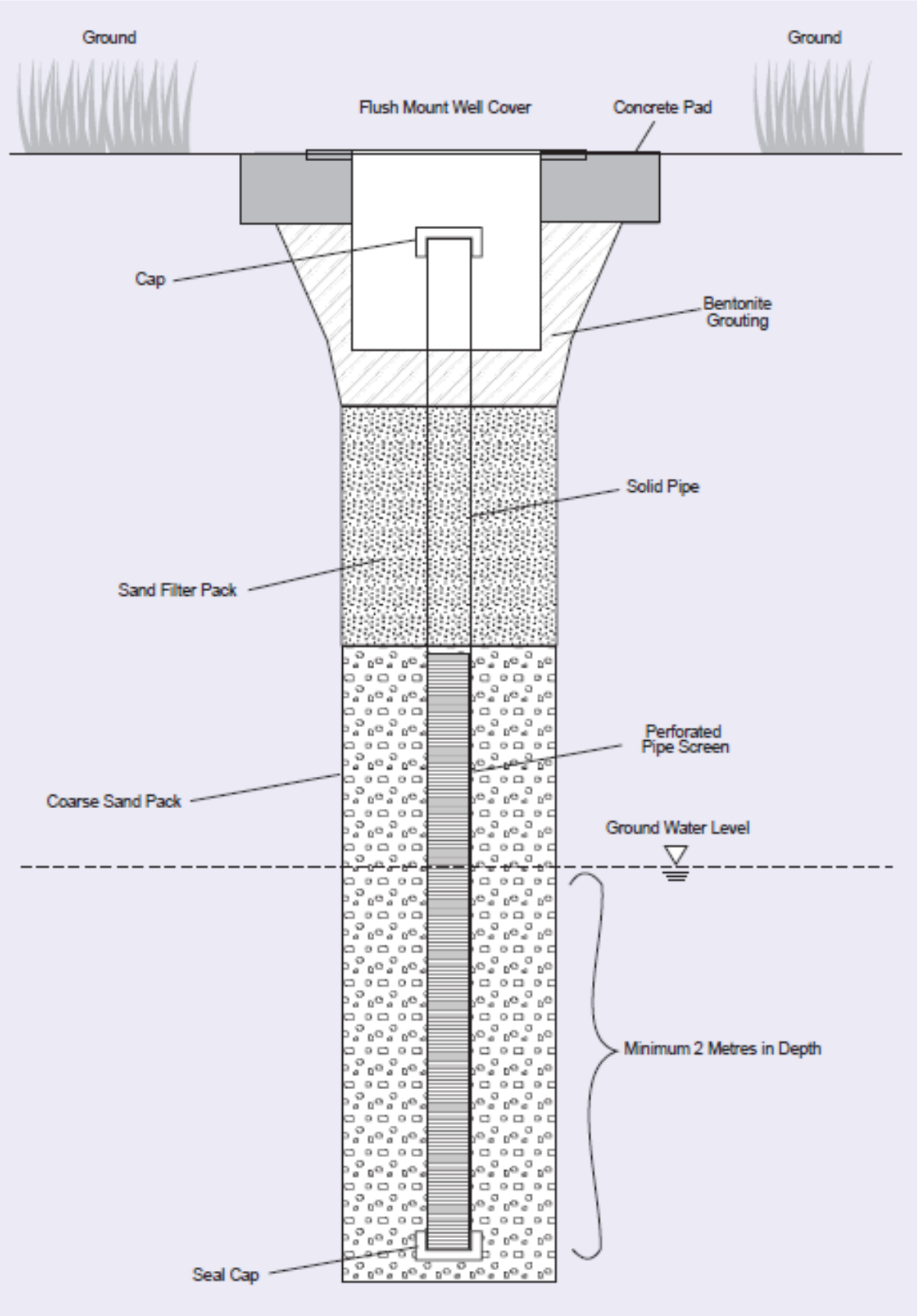
Drawing No. MCL / P132 / EIA / 11–015

Scale at A3 1 : 1500

Rev. B

Filename: J:\308875\REPORT\ENV\EIA\140321\MCL-P132-EIA-11-015.dgn

D. Schematic Drawing of Groundwater Monitoring Well



Remarks: Reference from Practice Guide for Investigation and Remediation of Contaminated Land, Annex E, EPD

Figures

824000 N
822000 N
820000 N
818000 N
804000 E
806000 E
808000 E
810000 E
812000 E
814000 E

LEGEND:
- RECLAMATION AREA
- SEAWATER PUMP HOUSE
- SWITCHING STATION
- PUMPING STATION
- FUEL TANK ROOM WITNIN T2 BUILDING
- FUEL TANK ROOM TO THE WEST OF CAD ANTENNA FARM
- FIRE TRAINING FACILITY

SEAWATER PUMP HOUSE

SWITCHING STATION

FUEL TANK ROOM TO THE WEST OF CAD ANTENNA FARM

PUMPING STATION

FUEL TANK ROOM WITNIN T2 BUILDING

FIRE TRAINING FACILITY

HKSAR BOUNDARY

沙洲 SHA CHAU

PAK CHAU

大廟灣 TAI MO TO

東涌 TUNG CHUNG

白沙咀 Pak Sha Tsui

0 250 500 750 1000 m

1 : 30 000 SCALE BAR

Rev.	Date	Description	Checked
A	28JUL17	FIRST ISSUE	PL
B	13OCT17	GENERAL REVISION	PL

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Tel : (852) 2181 7111 Fax : (852) 2024 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREAS

Consultant's Signatures for Approval		Date
Design	PL	13OCT17
Checkers	AM	13OCT17
Approver	EC	13OCT17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No.

FIGURE 1.1

Scale at A3 1 : 30000

Rev. B

Filename: J:\355482\REPORT\ENV\SC\171013\FIG 1-1.dgn

811100 E

820300 N

811400 E

LEGEND:

- SEAWATER PUMP HOUSE
- SWITCHING STATION
- FUEL TANK ROOM TO THE WEST OF CAD ANTENNA FARM

Photo 1

900L above-ground diesel tank eqipped with drip tray

Concrete-paved ground

Photo 2

Concrete-paved ground

Photo 3

0 10 20 30 40 m

1 : 1 000 SCALE BAR

Rev.	Date	Description	Checked
A	17MAR17	FIRST ISSUE	PL
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MOTT MACDONALD

Title

PHOTOGRAPHIC RECORD OF LAND CONTAMINATION ASSESSMENT AREAS (SHEET 1 OF 3)

Consultant's Signatures for Approval		Date
Design	PL	27JUL17
Checkers	AM	27JUL17
Approver	EC	27JUL17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No.

FIGURE 3.1

Scale at A3 1 : 1000

Rev. B

Filename: J:\355482\REPORT\ENV\SC\170727\FIG 3-1.dgn

820000 N

811700 E

NEW TOILET

SEWAGE PUMPING STATION

Photo 5

Photo 4

3,000L above-ground diesel tank equipped with drip tray

Concrete-paved ground

LEGEND:

- PUMPING STATION
- FUEL TANK ROOM WITHIN T2 BUILDING

0 10 20 30 40 m

1 : 1 000 SCALE BAR

Rev.	Date	Description	Checked
A	27JUL17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT

Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
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MOTT MACDONALD

Title

PHOTOGRAPHIC RECORD OF LAND CONTAMINATION ASSESSMENT AREAS (SHEET 2 OF 3)

Consultant's Signatures for Approval		Date
Design	PL	27JUL17
Checkers	AM	27JUL17
Approver	EC	27JUL17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. FIGURE 3.2

Scale at A3 1 : 1000

Rev. A

Filename: J:\355482\REPORT\ENV\SC\170727\FIG 3-2.dgn

809200 E

809400 E

817800 N

LEGEND:

FIRE TRAINING FACILITY

10,000L above-ground kerosene tank

Photo 7

Bund wall

Photo 6

Concrete-paved ground

0 10 20 30 40 m

1 : 1 000 SCALE BAR

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A	21JUN17	FIRST ISSUE	PL

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PHOTOGRAPHIC RECORD OF LAND CONTAMINATION ASSESSMENT AREAS (SHEET 3 OF 3)

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EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No.

FIGURE 3.3

Scale at A3 1 : 1000

Rev. A

Filename: J:\355482\REPORT\ENV\SC\170621\FIG 3-3.dgn

809200 E

809400 E

817800 N

LEGEND:

FIRE TRAINING FACILITY

10,000L KEROSENE TANK

PROPOSED SAMPLING LOCATIONS

BH18

0 10 20 30 40 m

1 : 1 000 SCALE BAR

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PROPOSED SAMPLING LOCATIONS FOR FIRE TRAINING FACILITY

Consultant's Signatures for Approval		Date
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Approver	EC	14AUG17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No.

FIGURE 4.1

Scale at A3 1 : 1000

Rev. A

Filename: J:\355482\REPORT\ENV\SC\170814\FIG 4-1.dgn