

have a major contamination problem but for specific hot-spots localised heavy metal contamination was found. However, the extent of heavy metal contamination found in the SI is not expected to cause immediate environmental/health hazard. Elevated levels of TPH and heavy metals were observed in groundwater at some sampling locations. Immediate environmental / health hazard arising from groundwater contamination is not expected. Further land contamination assessment is recommended for local potential industries / installations (such as oil filling stations, gas works and car repair workshops) on a case-by-case basis where redevelopment is proposed”.

8.3.3.3 The existing conditions within these urban areas had been reviewed as part of this EIA Study to confirm the validity of the previous findings. The reviewed findings are presented in Section 8.4 below.

Table 8.1 Summary of Information on Various Contaminative Landuses

Potentially Contaminative Uses	Information obtained from field observation and questionnaires	
	General Information	Possible/potential sources of contamination
Car Repair Workshops	<ul style="list-style-type: none"> Size: typical 400 to 800 sq.ft; Activities: car repair, maintenance, rarely some car washing; Long history of operations at Ma Tau Wai (>5 years); and Two large clusters found in Ma Tau Wai, others scattered over Kowloon City. 	<ul style="list-style-type: none"> Waste oils e.g. lubricating oils, transmission fluid and engine coolant; and At present, waste oils collected by licensed chemical waste collector but previously such wastes were drained to nearby sewers or stormwater drains.
Petrol Stations	<ul style="list-style-type: none"> Activities: refueling, storage of fuel, replacing motor oil and car washing. 	<ul style="list-style-type: none"> Underground fuel storage tank leakage (none recorded); Accidental oil spillage (none recorded); and Waste oils and car washing water contaminating drain (none recorded).
Ma Tau Kok Gas Works	<ul style="list-style-type: none"> New site: N. Works size 12500 sq meters; Old site: S. Works demolished 1993 company operation for 63 years; Activities: town gas production, naphtha and diesel storage; and Underground pipelines for fuel and gas transportation. 	<ul style="list-style-type: none"> Leakage from storage facilities; Leakage from pipelines; and For the old site, a land contamination study report was produced in 1993.
Bus Terminals	<ul style="list-style-type: none"> No refueling, bus washing or fuel storage at bus terminals. 	<ul style="list-style-type: none"> Not likely to cause significant land contamination.
Ferry Terminals	<ul style="list-style-type: none"> Passenger ferry pier at Kowloon City; Size: 1744 sq.m with 39 years of operation; and No refueling or fuel storage some ferry cleaning. 	<ul style="list-style-type: none"> Only application of lubricating oil, transmission fluids and paints (no disposal needed).
EMSD Workshop	<ul style="list-style-type: none"> Activities: government vehicle repairing and maintenance (about 3000 veh per month); and Long history of operation. 	<ul style="list-style-type: none"> A large underground waste oil tank was identified; and Waste disposal and oil & fuel storage generally follows government environmental requirements at present.
Light Industries	<ul style="list-style-type: none"> As they are mostly located at multi-storey industrial premises, land contamination is unlikely. 	<ul style="list-style-type: none"> Contamination may have arisen around the sewerage utilities serving these premises as a result of leakage.

8.4 Additional Site Investigations

8.4.1 GFS Hangar

8.4.1.1 As discussed in paragraph 8.3.2.6 above, additional investigation has been undertaken for the GFS Hangar site located at the south apron as part of this study (see **Drawing No. 22936/EN/297**). A site history review was undertaken to assess the potential of underground contamination caused by the hangar operation.

- 8.4.1.2 A questionnaire was sent to GFS to collect information on the site uses, length of operation and chemicals used and their disposal method. The completed questionnaire is attached in **Appendix 8A**. From the information provided in the questionnaire returned, the hangar site is about 40,000 sq.m (including the hangar of about 7,300 sq.m and the open landing area). The hangar was operated by GFS for about 5 years up to June 1998. The site was used for helicopter and fixed wing aircraft operation and maintenance. Fuels, lubricating oils, cleaning solvents and anticorrosive paints were used and stored within the site and disposed through collection by Enviropace Co. Ltd which is a registered chemical waste disposal agent. There have been no regulatory violation or complaints on environmental performance and no spillage or leakage incidence during the length of operation. The site had been returned to Government Property Agency after the closure of Kai Tak Airport.
- 8.4.1.3 We have reviewed the uses of the site prior to the hangar by review of historical aerial photographs. Aerial photos of the same site at years 1998, 1996, 1993, 1992, 1990, 1985, 1984 & 1980 and the corresponding land survey maps were obtained from Mapping Office and reviewed in details. Based on these maps, the site was an open area in 1980 (and probably before). It was used as the Kai Fook Temporary Housing Area from 1984 to 1990. Construction of the south apron area including the hangar was noticed in the 1992 photo. The construction works included removal of vegetation and lining of concrete. Helicopter and small planes parked outside the hangar were noticed in the 1993, and 1996 photos. The hangar was still present in the 1998 photo but no helicopter or small planes were noticed using the site.
- 8.4.1.4 We tried to arrange a site visit through liaison with GPA. It turns out that half of the site has been leased to a private helicopter company and the other half of the site was leased to Custom of Immigration Department. We were advised that site access would be difficult to arrange because part of the site belongs to a private company and part of it was used to store confidential goods by the Custom¹.
- 8.4.1.5 In the absence of site observation information, we have to assess the potential of contamination based on the desk-top data collected. It seems that there may be a potential for the hangar operation to cause underground contamination although the impact is likely to be insignificant because:
- (1) the site was used for hangar operation for a short period of time (5 years);
 - (2) the site was used for non-polluting use (open area and temporary housing site) before the hangar;
 - (3) the presence of hard covering in the form of concrete (which is common for hangar operation);
 - (4) the absence of underground fuel hydrant pipeline; and
 - (5) the handling & disposal of chemical waste was undertaken by a registered chemical waste collector.
- 8.4.1.6 A sample Contamination Assessment Plan (CAP) with proposals on sampling and analysis to determine the nature and extent of land contamination at the GFS hangar is included in **Appendix 8B**. The GFS hangar is being occupied by private company and Government users at present. It is recommended that when access is gained in future, a site reconnaissance should be conducted and the CAP should be reviewed taking into account all past and current land uses and site activities prior to the development of the site. The CAP should also be reviewed on the number and location of sampling points

¹ Telephone conversation with Mr. Chan, Senior Building Supervisor of GPA and Mr. Lam, Manager of Sing Shun Property Management Company Ltd (the management company hired by GPA to manage the Kai Tak Airport site).

8.4.2 Areas outside the Assessment Area

8.4.2.1 A site visit to the same area assessed in the SEKDFS study (Kowloon City, Ma Tau Wai, Ma Tau Kok & Hung Hom) was undertaken on 11th December 2000. A street-by-street investigation was conducted and the landuse and general conditions were recorded and compared to the findings presented in the SEKDFS EIA report.

8.4.2.2 It was found that the area visited was mainly occupied by small car repair workshops much the same as what was reported in the previous study. The petrol filling stations and Ma Tau Kok Gas Works identified in the previous study were still in operation. There was no new contaminating source identified within the area of investigation. Hence the findings presented in the SEKDFS EIA report is considered still representative of the situation of areas outside the Assessment Area.

8.5 Impacts Summary

8.5.1 Two relevant recent studies namely SEKDFS EIA and NAKTA Decommissioning EIA have been reviewed to provide the background information for assessment of land contamination impact. The previous studies identified a number of 'hotspots' within the Kai Tak Airport. Remediation works is now carrying out at the identified locations to decontaminate the land up to the remediation targets. Besides, findings from previous site investigation indicated that the urban area as a whole did not have a major contamination problem but for specific hotspots with localised land contamination.

8.5.2 Decontamination works are now carrying out at the identified remediation areas within NAKTA using Soil Vapour Extraction / Air Sparging system and excavation with biopile treatment in accordance with the NAKTA Decommissioning EIA Report.

8.5.3 Under the conditions of approval of the NAKTA Decommissioning EIA Report, the decontamination works at the NAKTA area should be carried out such that the remediation targets are fully met. Besides, environmental monitoring and audit should be carried out in accordance with the respective Environmental Monitoring and Audit Manual. Provided that the decontamination works could be completed satisfactorily to meet the remediation targets, residual impacts on the remediated site due to land contamination is not expected.

8.5.4 However, there are sites within the Assessment Area which are not included in the NAKTA decommissioning project. Sites of potential land contamination include those chemical storage tanks (mainly fuel storage tanks) located within the disused Kai Tak Airport. It is recommended that when access to these sites is gained in future, land contamination assessment should be conducted taking into account all past and current land uses and site activities prior to the development of the sites.

8.5.5 Additional investigation including review of site history and GFS hangar operation has been undertaken for the GFS Hangar site located at the south apron. There is a potential for the hangar operation to cause underground contamination although the impact is likely to be insignificant because of the short hangar operation period (5 years); non-polluting use (open area and temporary housing site) before the hangar; presence of concrete covering; absence of underground fuel hydrant pipeline; and the handling and disposal of chemical waste was undertaken by a registered chemical waste collector. In order to confirm the nature and extent of land contamination at the GFS hangar, if any, it is recommended that a land contamination assessment of the GFS hangar should be carried out before redevelopment of the area takes place.