



**Soil Contamination Assessment Report
Post-operation Monitoring Report**


SkyCity Nine Eagles Golf Course

October 2015



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PREPARATION, REVIEW AND AUTHORISATION

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EXECUTIVE SUMMARY

Since 2007, SkyCity Nine Eagles Golf Course has been operating at Hong Kong International Airport near to Terminal 2. Nine Eagles closed on 31 July 2015 after expiry of operation.

The *EM&A Manual* for Nine Eagles and the Environmental Permit require soil sampling and analysis before the beginning of operation (baseline), during operation (except at inaccessible locations) and after the end of operation. In compliance with these requirements, baseline sampling was carried out in 2006, mid-operation sampling in 2010 and post-operation sampling in 2015.

This *Soil Contamination Assessment Report / Post-operation Monitoring Report* is submitted pursuant to Environmental Permit Condition 2.11(iii) and contains the findings of the final soil sampling carried out at all 12 no. locations (S1-S12) within SkyCity Nine Eagles Golf Course on 11 August 2015.

The post-operation soil sampling and assessment that has been carried out and which is reported here is basically a check that the levels of contaminants in the soil after completion of the operation of the golf course – pesticides in the golf course soil above the sub-surface drainage system, and petroleum hydrocarbons in the ground below the maintenance area and car park – are no greater than those before the start of operation of the golf course, as reported in the *Baseline Monitoring Report* in 2006.

Soil samples from beneath the maintenance area and car park (locations S1 and S4) were analysed for Total Petroleum Hydrocarbons (TPH), whereas soil samples from beneath the golf course and the lake (locations S2, S3 and S5 to S12) were analysed for total pesticides.

With the exception of a low concentration of TPH at S1 at a depth of 1.5m during baseline sampling, TPH were not detected during the baseline sampling nor during the post-operation sampling. It can therefore be concluded that the soil beneath the maintenance area and car park has not been contaminated by golf course operations.

Pesticides were not detected during the baseline sampling, during the mid-operation sampling nor during the post-operation sampling. It can therefore be concluded that the soil beneath the golf course and lakes has not been contaminated by golf course operations.

Overall, therefore, the conclusion of this *Soil Contamination Assessment Report / Post-operation Monitoring Report* is that the operation of SkyCity Nine Eagles Golf Course has not resulted in any detectable soil contamination beneath the car park, maintenance area, lakes or golf course. As such, there is no need for any remediation work to be carried out by the Permit Holder, Airport Management Services Ltd.

1 PROJECT DESCRIPTION

1.1 Introduction

Since 2007, SkyCity Nine Eagles Golf Course (“Nine Eagles”) has been operating at Hong Kong International Airport near to Terminal 2 and adjacent to AsiaWorld-Expo as an interim arrangement prior to the area’s planned development (*see Figure 1-1*). The Golf Course is a Designated Project (DP) under the Environmental Impact Assessment Ordinance (EIAO). A Project Profile was submitted by Bhanja Cheung & Co in February 2006 to obtain the Environmental Permit (EP) required for construction and operation. Nine Eagles was constructed and has operated under EP-229/2005, which was issued on 17 October 2005. Nine Eagles closed on 31 July 2015 after expiry of operation.

Condition 2.11 of the EP relates to soil contamination and reads as follows:

The Permit Holder shall conduct a regular soil sampling and testing before operation, during operation and before expiry of operation of the Project to confirm and verify that there is no land contamination caused as a result of the operation of the golf course. The Permit Holder shall deposit the following submissions to the Director:

- (i) A soil sampling and monitoring plan no later than two weeks before commencement of construction of the Project to include details of sampling plan, parameters to be analysed, necessary remedial measures and reporting requirements;*
- (ii) A baseline monitoring report no later than two weeks before operation of the Project to confirm the baseline condition of the soil;*
- (iii) A soil contamination assessment report no later than four weeks after expiry of operation of the Project to include all soil monitoring and testing results and interpretations and if any remedial measures are required.*

Pursuant to EP 2.11(i) a *Soil Sampling Plan* (SSP) was prepared by Bhanja Cheung & Co, which identified 12 no. sampling locations (S1-S12) and was submitted to the Environmental Protection Department (EPD) in December 2005; pursuant to EP 2.11(ii), a *Baseline Monitoring Report* including sampling results from locations S1-S12 was prepared by Hyder Consulting in November 2006 and submitted to EPD; and pursuant to EP 2.11, soil sampling “during operation” at accessible locations, i.e. excluding S1 (maintenance area), S4 (car park), S5 (Lake A), S6 (Lake A) and S9 (Lake B), was carried out by SMEC Asia in July 2010.

This *Soil Contamination Assessment Report / Post-operation Monitoring Report* is submitted pursuant to EP 2.11(iii) and contains the finding of the final soil sampling carried out at all locations (S1-S12) on 11 August 2015, which was after the end of operation. This report is also referred to as the “*Post-Operation Report (Final Monitoring Report)*” in para.4.5.1 of the *EM&A Manual*. It should be noted that while EP 2.11(iii) required submission of this report “no later than four weeks after expiry of operation of the Project”, the *EM&A Manual* requires submission “no later than two weeks prior to the handover of the project site to the subsequent user”. The submission date of this report has followed the EP requirement, i.e. on or before 27 August 2015.

In addition to the above, the Permit Holder, Airport Management Services Limited, will also surrender the EP under Section 11 of the EIAO.

1.2 Operation

Traditionally, golf courses have used artificial chemical fertilisers and pesticides to maintain the turfgrass to high standards but often, as a result, have caused environmental pollution. Given the location of Nine Eagles within the areas frequented by Chinese White Dolphins and close to the ecologically sensitive Tung Chung Bay, the Project Proponent committed in the Project Profile to operating the golf course using “organic” principles, without the use of artificial chemical fertilisers or pesticides.

The Golf Course has been designed to contain water within two artificial lakes, which are linked together by two underwater pipes. The lakes provide a source of freshwater for irrigation. All rainwater and surplus irrigation water collected within the Golf Course will drain back into the lakes for reuse, through a sub-soil drainage system, shown in *Figure 1-2*.

1.3 Purpose of this Report

The post-operation soil sampling and assessment that has been carried out and is reported here is basically a check that the levels of contaminants in the soil after completion of the operation of the golf course – pesticides in the golf course soil above the sub-surface drainage system, and petroleum hydrocarbons in the ground below the maintenance area and car park – are no greater than those before the start of operation of the golf course, as reported in the *Baseline Monitoring Report* in 2006.

In the *Soil Sampling Plan*, issued in 2005, reference was made to Appendix IV of *ProPECC PN3/94 Contaminated Land Assessment and Remediation* (which lists soil and groundwater criteria used in the Netherlands for contaminated land – the “Dutch List”) to justify the list of contaminants proposed for soil sampling. The *Soil Sampling Plan* also confirmed that “there is no reason to suspect that the site has been contaminated by previous uses” and therefore that the soil beneath the golf course prior to operation was considered to be uncontaminated.

As there is potential for chemicals used in the operation of the Golf Course to cause soil contamination, the purpose of soil sampling and analysis for this project (EP condition 2.11 refers) is to demonstrate that soil has not been contaminated by golf course operations. Hence, the analysis of samples in this report will be compared only to the baseline analysis (before operation), not to EPD’s Risk Based Remediation Goals (RBRG), which have superseded Dutch List.

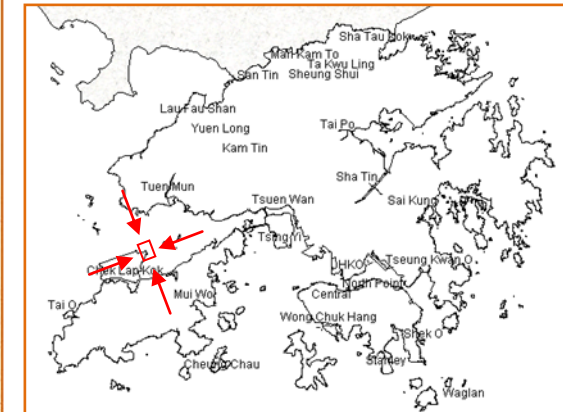
The purpose of the soil sampling and analysis presented in this report is NOT to determine the acceptability of the site for future development by reference to RBRG, but to confirm that soil has not been contaminated by golf course operations.

Figure 1-1 Location of SkyCity Golf Course on the Airport Island



Source: Image courtesy of Airport Authority.

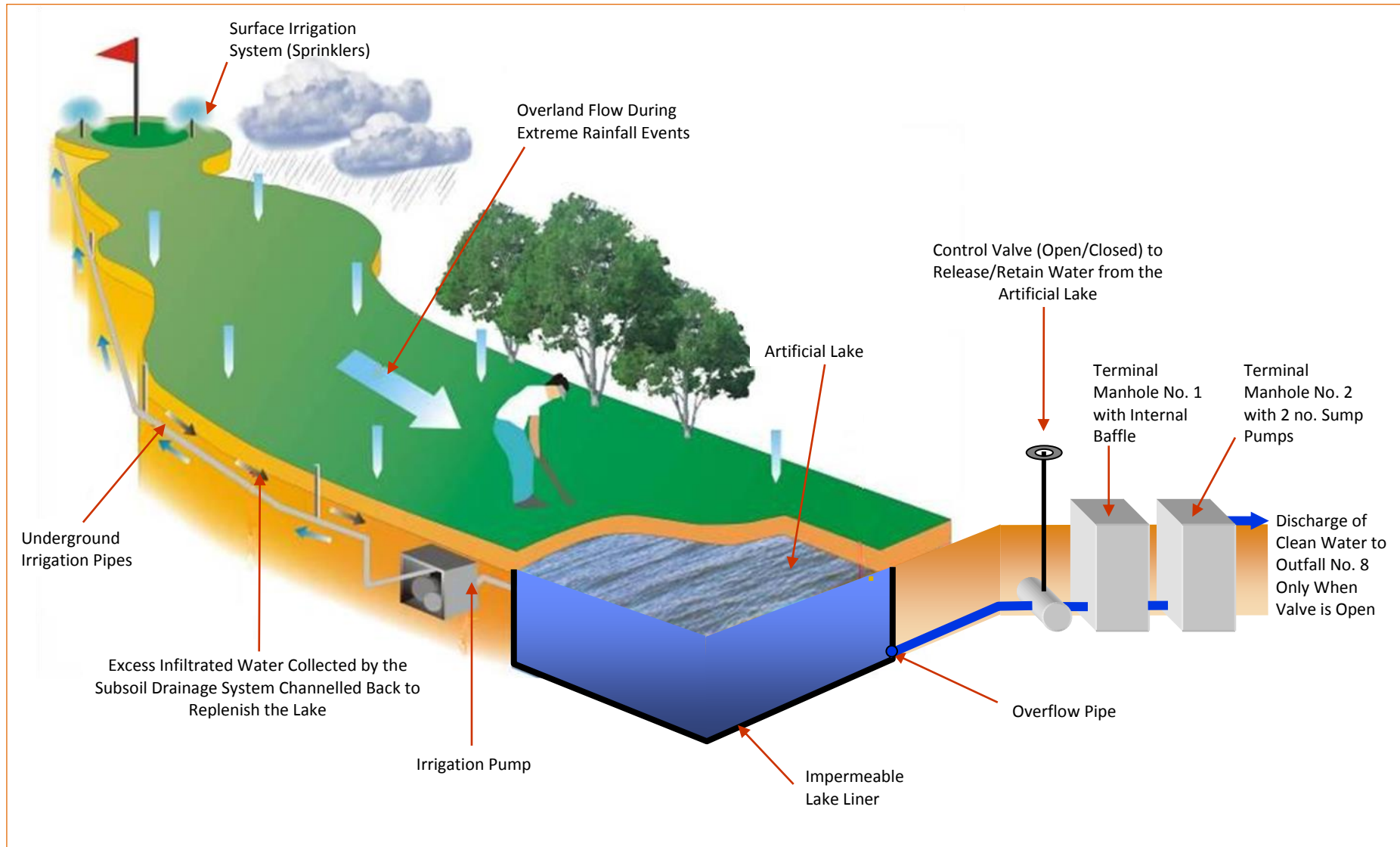
Location Map



Key

- ① Terminal 2 & SkyPlaza
(Retail, F&B & Entertainment)
二號客運大樓及翔天廊(零售、食肆及娛樂區)
- ② HKIA Tower
機場行政大樓
- ③ AsiaWorld - Expo
亞洲國際博覽館
- ④ 2nd on-airport hotel
第二間機場酒店
- ⑤ SkyPier
海天客運碼頭
- ⑥ SkyCity Nine Eagles Golf Course
航天城高爾夫球場
- ⑦ Airport World Trade Centre
暫名:機場世界貿易中心

Figure 1-2 Schematic of Lake Water Control System



2 SAMPLING METHODOLOGY

2.1 Overview

The *Soil Sampling Plan* identified sampling locations (shown in *Figure 2-1*), parameters for analysis and frequency of sampling as shown in *Table 2-1*.

Table 2-1 Description of Sampling Points

Sampling Point	Location	Parameter		Frequency		
		Total Pesticides	Total Petroleum Hydrocarbons	Before Beginning of Operation	Mid-point of Operation	After End of Operation
S1	Maintenance Facility		✓	✓	--	✓
S2	Fairway	✓		✓	✓	✓
S3	Fairway	✓		✓	✓	✓
S4	Car Park		✓	✓	--	✓
S5	Lake A	✓		✓	--	✓
S6	Lake A	✓		✓	--	✓
S7	Rough	✓		✓	✓	✓
S8	Green	✓		✓	✓	✓
S9	Lake B	✓		✓	--	✓
S10	Green	✓		✓	✓	✓
S11	Rough	✓		✓	✓	✓
S12	Rough	✓		✓	✓	✓

Note: -- Inaccessible during operation of golf course therefore not sampled.

Source: Table 4.2 of the *Soil Sampling Plan*, 2005.

Three rounds of soil sampling have been carried out at Nine Eagles:

1. Pre-operation (baseline) conducted on 19 May and 29 September 2006 and reported in the *Baseline Monitoring Report*, dated November 2006. Sampling was carried out at all 12 no. sampling locations.
2. Mid-operation soil sampling conducted on 27 July 2010. Sampling was carried out at all accessible locations, i.e. at S2, S3, S7, S8 and S10 to S12, but not at S1, S4 to S6 nor S9, which were inaccessible (i.e. beneath maintenance area, car park or lakes).
3. Post-operation soil sampling conducted on 11 August 2015 and the analysis is presented in this report. Sampling was carried out at all 12 no. sampling locations.

2.2 Post-operation Sampling Methodology

For the maintenance area and car park (locations S1 and S4), sampling was carried out at three depths, namely 0.5m, 1m and 1.5m respectively, by means of trail pit. Given the use of these areas, the parameter to be analysed was total petroleum hydrocarbons (TPH). Within the golf course area (locations S2, S3, S7, S8, S10, S11 and S12) samples were taken from within the 200-300mm deep sand layer that lies above the sub-base but below the turfgrass. To maintain consistency within the area occupied by the artificial lakes (locations S5, S6 and S9), samples were also taken at 200-300mm below the final lake bed level. The parameter to be analysed at these locations is total pesticides.

Samples from locations S1 and S4 were analysed in a HOKLAS laboratory to determine the existing (post-operation) concentrations of TPH. Samples from all other locations were analysed in a laboratory to determine the existing (post-operation) concentrations of total pesticides.

In general, TPH consists of four hydrocarbon fractions, namely C6-C9, C10-C14, C15-C28 and C29-C36, all of which are analysed. Each fraction consists petroleum molecules with the number of carbon atoms in the range as indicated. Petrol is one of the common light petroleum hydrocarbons and falls within the C6-C9 fraction. Diesel is one of the common heavy petroleum hydrocarbons and falls within C15-C28 fraction. Detection limits for C6-C9, C10-C14, C15-C28 and C29-C35 range from 2mg/kg to 100mg/kg.

Total pesticides consist of organochlorine pesticides, organophosphorus pesticides and triazine pesticides all of which were analysed. The detection limit of these pesticides is 0.05mg/kg.

All soil samples taken were placed in a sample containers provided by the HOKLAS laboratory. Sufficient sample size was collected for the laboratory analysis. Samples were marked with the name of the site, sampling identification number and sampling depth with appropriate chain-of-custody form. Following sampling, samples were stored in a cool box at a temperature of between 0°C and 4°C and transported to the laboratory immediately after completion of sampling.

In order to avoid cross-contamination, all sampling equipment was thoroughly decontaminated or cleaned prior to sampling, by washing with non-phosphate detergent and rinsing with distilled water.

2.3 Analysis

The detailed analytical results of the baseline, interim and post operation soil samples are given in **Appendix 1** to **Appendix 3**, respectively.

Table 2-2 summarises the results of the analysis of TPH at locations S1 and S4 by providing a comparison between the results of the baseline and post-operation sampling (no mid-operation sampling was carried out at S1 and S4 because these locations are beneath the maintenance area and car park were therefore inaccessible while the golf course was operating).

Table 2-2 Summary of Analytical Results for TPH at S1 and S4

Sample	Depth (m)	TPH (mg/kg)		
		Baseline (19 May 2006)	Mid-operation (27 Jul 2010)	Post-operation (11 Aug 2015)
S1	0.5	ND	--	ND
	1.0	ND	--	ND
	1.5	251	--	ND
S4	0.5	ND	--	ND
	1.0	ND	--	ND
	1.5	ND	--	ND

Note: ND Not detected
-- Inaccessible during operation of golf course therefore not sampled.

From the above it can be seen that with the exception of a low concentration of TPH at S1 at a depth of 1.5m during baseline sampling, TPH were not detected during baseline sampling nor during post-operation sampling. TPH at S1 at a depth of 1.5m was no longer detectable during post-operation sampling, likely the result of natural breakdown of hydrocarbons by soil micro-organisms over time. Based on the above, it can be concluded that the soil beneath the maintenance area and car park has not been contaminated by golf course operations.

Table 2-3 summarises the results of the analysis of total pesticides at locations S2, S3 and S5 to S12 by providing a comparison between the results of the baseline, mid-operation and post-operation sampling (no mid-operation sampling was carried out at S5, S6 or S9 because these locations are beneath the lakes and were therefore inaccessible while the golf course was operating).

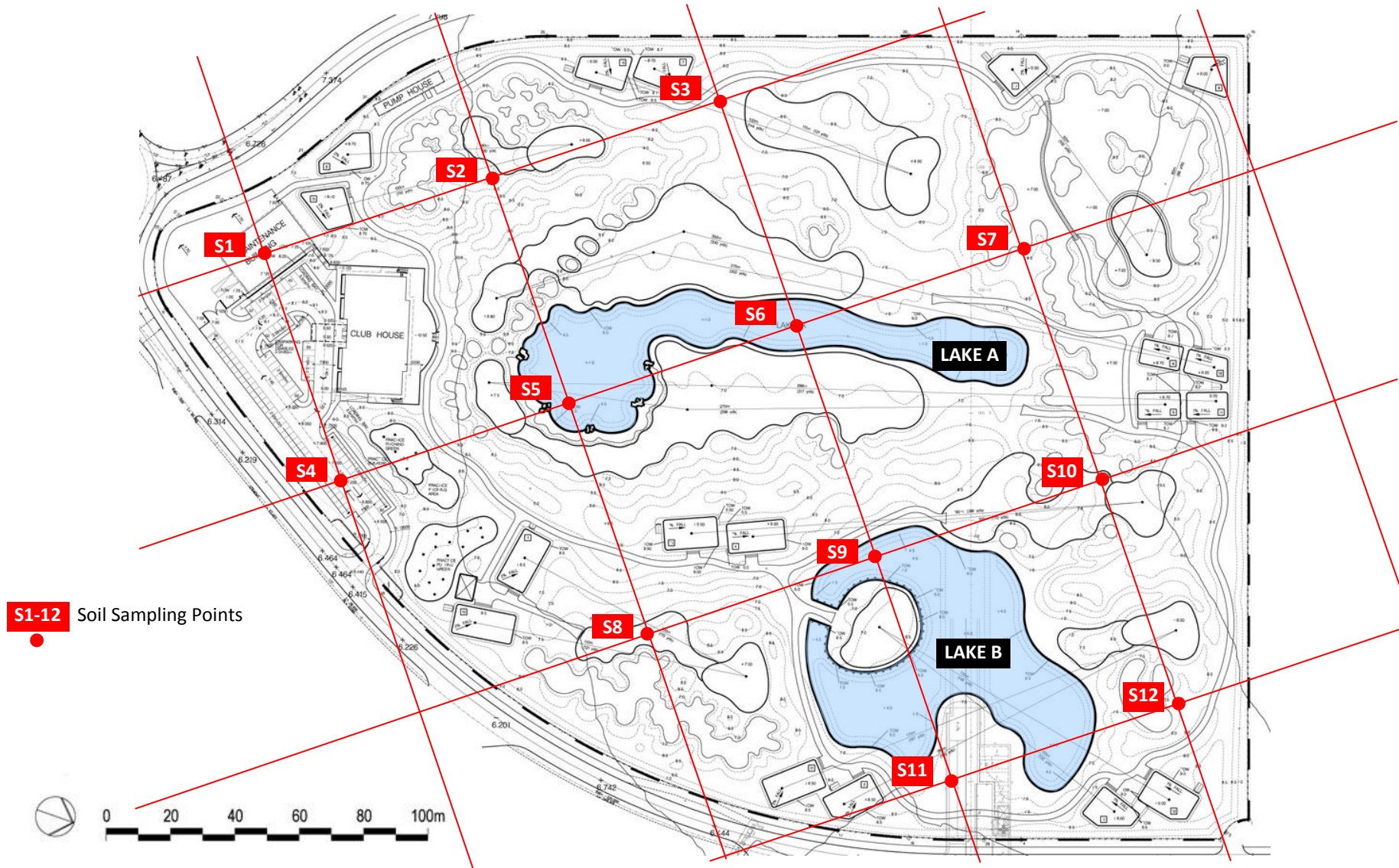
Table 2-3 Summary of Analytical Results for Total Pesticides at S2, S3 and S5 to S12

Sample	Depth (m)	Total Pesticides (mg/kg)		
		Baseline (19 May 2006)	Mid-operation (27 Jul 2010)	Post-operation (11 Aug 2015)
S2	0.2	ND	ND	ND
S3	0.2	ND	ND	ND
S5	0.2	ND	--	ND
S6	0.2	ND	--	ND
S7	0.2	ND	ND	ND
S8	0.2	ND	ND	ND
S9	0.2	ND	--	ND
S10	0.2	ND	ND	ND
S11	0.2	ND	ND	ND
S12	0.2	ND	ND	ND

Note: ND Not detected
-- Inaccessible during operation of golf course therefore not sampled.

From the above it can be seen that pesticides were not detected during baseline sampling, during mid-operation sampling nor during post-operation sampling. Based on the above, it can be concluded that the soil beneath the golf course and lakes has not been contaminated by golf course operations.

Figure 2-1 Locations of Soil Sampling Points



Source: Figure 4.1 of the *Soil Sampling Plan*, 2005.

3 CONCLUSION

The *EM&A Manual* for Nine Eagles and the Environmental Permit require soil sampling and analysis before the beginning of operation (baseline), during operation (except at inaccessible locations) and after the end of operation. In compliance with these requirements, baseline sampling was carried out in 2006, mid-operation sampling in 2010 and post-operation sampling in 2015.

Soil samples from beneath the maintenance area and car park (locations S1 and S4) were analysed for Total Petroleum Hydrocarbons (TPH), whereas soil samples from beneath the golf course and the lakes (locations S2, S3 and S5 to S12) were analysed for total pesticides.

With the exception of a low concentration of TPH at S1 at a depth of 1.5m during baseline sampling, TPH were not detected during baseline sampling nor during post-operation sampling at locations S1 and S4 (locations S1 and S4 beneath the maintenance area and car park were inaccessible during mid-operation sampling). TPH at S1 at a depth of 1.5m was no longer detectable during post-operation sampling, likely the result of natural breakdown of hydrocarbons by soil micro-organisms over time. Based on the above, it can be concluded that the soil beneath the maintenance area and car park has not been contaminated by golf course operations.

Pesticides were not detected during baseline sampling, during mid-operation sampling nor during post-operation sampling (locations S5, S6 and S9 below the lakes were inaccessible during mid-operation sampling). Based on the above, it can be concluded that the soil beneath the golf course and lakes has not been contaminated by golf course operations.

Overall, therefore, the conclusion of this *Soil Contamination Assessment Report / Post-operation Monitoring Report* is that the operation of SkyCity Nine Eagles Golf Course has not resulted in any detectable soil contamination beneath the maintenance area, car park, lakes or golf course. As such, there is no need for any remediation work to be carried out by the Permit Holder, Airport Management Services Ltd.

APPENDIX 1

Baseline Soil Sampling Results (extracted from the *Baseline Monitoring Report*)



CERTIFICATE OF ANALYSIS

<i>Client</i>	: HYDER CONSULTING LTD	<i>Laboratory</i>	: ALS Technichem (HK) Pty Ltd	<i>Page</i>	: 1 of 11
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<i>Project</i>	: EA01332	<i>Quote number</i>	: ----	<i>Date received</i>	: 29 Sep 2006
<i>Order number</i>	: ----			<i>Date of issue</i>	: 16 Oct 2006
<i>C-O-C number</i>	: 122693			<i>No. of samples</i>	- Received : 10
<i>Site</i>	: ----				Analysed : 10

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0604322 supersedes any previous reports with this reference. The completion date of analysis is 6 Oct 2006. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0604322 : **Samples were collected by ALS Technichem (HK) staff on 29 September,2006.**

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

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Analytical Results

				Client Sample ID :	S4-0.5M	S4-1.0M	S4-1.5M	S2	S3
				Laboratory Sample ID :	HK0604322-001	HK0604322-002	HK0604322-003	HK0604322-004	HK0604322-005
				Sample Date / Time :	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]
Submatrix: SOIL									
Method: Analysis Description	CAS number	LOR	Units						
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		4.5	9.6	4.1	8.5	2.6
EP-071/080: Total Petroleum Hydrocarbons (TPH Volatile) / BTEX									
EP080: C6 - C9 Fraction	----	2	mg/kg		<2	<2	<2	----	----
EP-071: Total Petroleum Hydrocarbons (TPH)									
EP071: C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
EP071: C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
EP071: C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
EP-080S: TPH(Volatile)/BTEX Surrogate								Surrogate control limits listed at end of this report.	
EP080: Dibromofluoromethane	1868-53-7	0.1	%		94.4	100	94.2	----	----
EP080: Toluene-D8	2037-26-5	0.1	%		94.0	96.9	94.7	----	----
EP080: 4-Bromofluorobenzene	460-00-4	0.1	%		91.1	87.0	85.8	----	----
EP-067A: Organochlorine Pesticides (OC)									
EP067: alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: beta- & gamma-BHC	319-85-7 58-89-9	0.10	mg/kg		----	----	----	<0.10	<0.10
EP067: delta-BHC	319-86-8	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Heptachlor	76-44-8	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Aldrin	309-00-2	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Endosulfan 1	959-98-8	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Dieldrin	60-57-1	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: 4.4'-DDE	72-55-9	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Endrin	72-20-8	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Endosulfan 2	33213-65-9	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: 4.4'-DDD	72-54-8	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: 4.4'-DDT	50-29-3	0.2	mg/kg		----	----	----	<0.2	<0.2
EP067: Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	<0.2	<0.2
EP067: Cypermethrins(total)	52315-07-8	0.2	mg/kg		----	----	----	<0.2	<0.2
EP-067B: Organophosphate Pesticides (OP)									
EP067: Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	<0.2	<0.2
EP067: Dimethoate	60-51-5	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Diazinon	333-41-5	0.05	mg/kg		----	----	----	<0.05	<0.05
EP067: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	<0.05	<0.05



Analytical Results

				Client Sample ID :	S4-0.5M	S4-1.0M	S4-1.5M	S2	S3
				Laboratory Sample ID :	HK0604322-001	HK0604322-002	HK0604322-003	HK0604322-004	HK0604322-005
				Sample Date / Time :	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]
Submatrix: SOIL									
Method: Analysis Description	CAS number	LOR	Units						
EP-067B: Organophosphate Pesticides (OP)									
EP067: Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	----	<0.2	<0.2
EP067: Malathion	121-75-5	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Fenthion	55-38-9	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Parathion	56-38-2	0.2	mg/kg	----	----	----	----	<0.2	<0.2
EP067: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Chlorfenvinphos (E)	470-90-6	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Chlorfenvinphos (Z)	470-90-8	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Ethion	563-12-2	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Azinphos Methyl	86-50-0	0.2	mg/kg	----	----	----	----	<0.2	<0.2
EP-067C: Triazine Pesticides									
EP067: Simazine	122-34-9	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP067: Atrazine	1912-24-9	0.05	mg/kg	----	----	----	----	<0.05	<0.05
EP-067S: Pesticide Surrogate								Surrogate control limits listed at end of this report.	
EP067: Tetrachlorometaxylene	877-09-8	0.1	%	----	----	----	----	50.6	51.0
EP067: Dibutylchlorendate	1770-80-5	0.1	%	----	----	----	----	66.2	66.1



Analytical Results

				S7	S8	S10	S11	S12
Client Sample ID :				HK0604322-006	HK0604322-007	HK0604322-008	HK0604322-009	HK0604322-010
Laboratory Sample ID :								
Sample Date / Time :				[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]
Method: Analysis Description	CAS number	LOR	Units					
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	4.6	11.1	3.8	11.2	4.6
EP-067A: Organochlorine Pesticides (OC)								
EP067: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: beta- & gamma-BHC	319-85-7 58-89-9	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
EP067: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP067: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP067: Cypermethrins(total)	52315-07-8	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP-067B: Organophosphate Pesticides (OP)								
EP067: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP067: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP067: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP067: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Chlorfenvinphos (E)	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Chlorfenvinphos (Z)	470-90-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

				Client Sample ID :	S7	S8	S10	S11	S12
				Laboratory Sample ID :	HK0604322-006	HK0604322-007	HK0604322-008	HK0604322-009	HK0604322-010
				Sample Date / Time :	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]	[29 Sep 2006]
				Submatrix: SOIL					
Method: Analysis Description	CAS number	LOR	Units						
EP-067B: Organophosphate Pesticides (OP)									
EP067: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Azinphos Methyl	86-50-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-067C: Triazine Pesticides									
EP067: Simazine	122-34-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP067: Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP-067S: Pesticide Surrogate									
								Surrogate control limits listed at end of this report.	
EP067: Tetrachlorometaxylene	877-09-8	0.1	%	55.2	50.3	50.8	50.3	50.5	50.5
EP067: Dibutylchloredate	1770-80-5	0.1	%	82.2	68.1	80.4	76.7	82.0	82.0



Quality Control - Laboratory Duplicate (DUP) Results

Matrix Type: SOIL

Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Duplicate (DUP) Results		
						Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 284261)								
HK0604233-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	22.2	21.8	1.5
HK0604322-004	S2	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	8.5	9.0	6.0
EP-071/080: Total Petroleum Hydrocarbons (TPH Volatile) / BT (QC Lot: 284533)								
HK0604322-001	S4-0.5M	EP080: C6 - C9 Fraction	----	2	mg/kg	<2	<2	0.0
EP-071: Total Petroleum Hydrocarbons (TPH) (QC Lot: 284534)								
HK0604322-001	S4-0.5M	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0
		EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 283853)								
HK0604190-001	Anonymous	EP067: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: beta- & gamma-BHC	319-85-7	0.10	mg/kg	<0.10	<0.10	0.0
		58-89-9						
		EP067: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0
		EP067: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0
		EP067: Cypermethrins(total)	52315-07-8	0.2	mg/kg	<0.2	<0.2	0.0
EP-067B: Organophosphate Pesticides (OP) (QC Lot: 283853)								
HK0604190-001	Anonymous	EP067: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0
		EP067: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0
		EP067: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0
		EP067: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Chlorfenvinphos (E)	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0



Matrix Type: SOIL

Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Duplicate (DUP) Results		
						Original Result	Duplicate Result	RPD (%)
EP-067B: Organophosphate Pesticides (OP) (QC Lot: 283853) - continued								
HK0604190-001	Anonymous	EP067: Chlorfenvinphos (Z)	470-90-8	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0
EP-067C: Triazine Pesticides (QC Lot: 283853)								
HK0604190-001	Anonymous	EP067: Simazine	122-34-9	0.05	mg/kg	<0.05	<0.05	0.0
		EP067: Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	0.0



Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results

Matrix Type: SOIL

Method: Analysis Description	CAS number	Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
		LOR	Units	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						SCS	DCS	Low	High	Value	Control Limit
EP-071/080: Total Petroleum Hydrocarbons (TPH Volatile) / BT (QCLot: 284533)											
EP080: C6 - C9 Fraction	----	2	mg/kg	<2	4 mg/kg	89.8	----	72	103	----	----
EP-071: Total Petroleum Hydrocarbons (TPH) (QCLot: 284534)											
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	201 mg/kg	94.2	----	52	141	----	----
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	881 mg/kg	88.7	----	39	139	----	----
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	589 mg/kg	81.2	----	45	136	----	----
EP-067A: Organochlorine Pesticides (OC) (QCLot: 283853)											
EP067: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	93.5	----	53	144	----	----
EP067: beta- & gamma-BHC	319-85-7 58-89-9	0.10	mg/kg	<0.10	0.50 mg/kg	95.1	----	39	152	----	----
EP067: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	90.4	----	42	148	----	----
EP067: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	83.4	----	32	167	----	----
EP067: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	94.2	----	39	156	----	----
EP067: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	99.5	----	42	157	----	----
EP067: Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	90.6	----	45	149	----	----
EP067: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	90.2	----	43	157	----	----
EP067: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	96.5	----	52	147	----	----
EP067: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	122	----	42	161	----	----
EP067: Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	91.0	----	55	146	----	----
EP067: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	89.2	----	61	143	----	----
EP067: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	77.2	----	15	144	----	----
EP067: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	94.2	----	27	164	----	----
EP067: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	76.6	----	26	158	----	----
EP067: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	87.2	----	7	170	----	----
EP067: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	74.3	----	22	147	----	----
EP067: Cypermethrins(total)	52315-07-8	0.2	mg/kg	<0.2	0.25 mg/kg	92.8	----	47	133	----	----
EP-067B: Organophosphate Pesticides (OP) (QCLot: 283853)											
EP067: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	98.7	----	33	160	----	----
EP067: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	46.0	----	0	193	----	----
EP067: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	69.8	----	15	158	----	----
EP067: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	108	----	58	146	----	----
EP067: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	104	----	48	148	----	----
EP067: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	98.6	----	35	129	----	----
EP067: Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	87.6	----	45	148	----	----
EP067: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	101	----	45	150	----	----
EP067: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	105	----	58	147	----	----
EP067: Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	73.3	----	44	129	----	----
EP067: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	90.4	----	56	152	----	----



Matrix Type: SOIL		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
		LOR	Units	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						SCS	DCS	Low	High	Value	Control Limit
Method: Analysis Description	CAS number										
EP-067B: Organophosphate Pesticides (OP) (QCLot: 283853) - continued											
EP067: Chlorfenvinphos (E)	470-90-6	0.05	mg/kg	<0.05	0.025 mg/kg	98.9	----	47	132	----	----
EP067: Chlorfenvinphos (Z)	470-90-8	0.05	mg/kg	<0.05	0.25 mg/kg	73.6	----	48	127	----	----
EP067: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	104	----	63	153	----	----
EP067: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	74.4	----	39	130	----	----
EP067: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	101	----	63	142	----	----
EP067: Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	81.3	----	60	141	----	----
EP067: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	68.2	----	57	136	----	----
EP067: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	35.2	----	0	165	----	----
EP-067C: Triazine Pesticides (QCLot: 283853)											
EP067: Simazine	122-34-9	0.05	mg/kg	<0.05	0.25 mg/kg	77.6	----	31	152	----	----
EP067: Atrazine	1912-24-9	0.05	mg/kg	<0.05	0.25 mg/kg	102	----	50	148	----	----



Quality Control - Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results

Matrix Type: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results						
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
EP-071/080: Total Petroleum Hydrocarbons (TPH Volatile) / BT (QCLot: 284533)										
HK0604322-002	S4-1.0M	EP080: C6 - C9 Fraction	----	4 mg/kg	98.5	----	50	130	----	----
EP-071: Total Petroleum Hydrocarbons (TPH) (QCLot: 284534)										
HK0604322-002	S4-1.0M	EP071: C10 - C14 Fraction	----	201 mg/kg	93.8	----	50	130	----	----
		EP071: C15 - C28 Fraction	----	881 mg/kg	88.4	----	50	130	----	----
		EP071: C29 - C36 Fraction	----	589 mg/kg	80.2	----	50	130	----	----



Surrogate Control Limits

Submatrix Type: SOIL

<i>Method: Analysis Description</i>	<i>Units</i>	<i>Lower Limit</i>	<i>Upper Limit</i>
EP-080S: TPH(Volatile)/BTEX Surrogate			
EP080: Dibromofluoromethane	%	80	120
EP080: Toluene-D8	%	81	117
EP080: 4-Bromofluorobenzene	%	74	121
EP-067S: Pesticide Surrogate			
EP067: Tetrachlorometaxylene	%	50	130
EP067: Dibutylchlorendate	%	50	130

APPENDIX 2

Mid-operation Soil Sampling Results



CERTIFICATE OF ANALYSIS

Client	: SMEC ASIA LIMITED	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 8
Contact	: MR ALEXI BHANJA	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1016979
Address	: 14/F., HUA FU COMMERICAL BUILDING, 111 QUEEN'S ROAD WEST, SHEUNG WAN HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Alexi.bhanja@smec.com	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2517 1136	Telephone	: +852 2610 1044		
Facsimile	: +852 2540 3162	Facsimile	: +852 2610 2021		
Project	: NINE EAGLES GOLF COURSE	Quote number	: ----	Date Samples Received	: 27-JUL-2010
Order number	: ----			Issue Date	: 05-AUG-2010
C-O-C number	: ----			No. of samples received	: 7
Site	: ----			No. of samples analysed	: 7

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client. The completion date of analysis is: 30-JUL-2010

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1016979**

Sample(s) were collected by ALS Technichem (HK) staff on 27 July, 2010.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories

Anh Ngoc Huynh
Fung Lim Chee, Richard

Position

Senior Chemist
General Manager

Authorised results for

Organics
Inorganics

ALS Laboratory Group

Trading Name: **ALS Technichem (HK) Pty Ltd**

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong
Tel: +852 2610 1044 Fax: +852 2610 2021 www.alsenviro.com

A Campbell Brothers Limited Company



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	S2	S3	S7	S8	S10
				27-JUL-2010 08:00	27-JUL-2010 08:00	27-JUL-2010 08:00	27-JUL-2010 09:00	27-JUL-2010 08:00
				HK1016979-001	HK1016979-002	HK1016979-003	HK1016979-004	HK1016979-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	12.8	8.0	8.4	13.3	12.0
EP-067A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta- & gamma-BHC	319-85-7 58-89-9	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Cypermethrins(total)	52315-07-8	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP-067B: Organophosphate Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos (E)	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos (Z)	470-90-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: SOIL				Client sample ID		S2	S3	S7	S8	S10
Client sampling date / time				27-JUL-2010 08:00		27-JUL-2010 08:00	27-JUL-2010 08:00	27-JUL-2010 09:00	27-JUL-2010 08:00	
Compound	CAS Number	LOR	Unit	HK1016979-001	HK1016979-002	HK1016979-003	HK1016979-004	HK1016979-005		
EP-067B: Organophosphate Pesticides (OP) - Continued										
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05		
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05		
Azinphos Methyl	86-50-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2		
EP-067C: Triazine Pesticides										
Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05		
Simazine	122-34-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05		
EP-067S: Pesticide Surrogate										
Surrogate control limits listed at end of this report.										
Tetrachlorometaxylene	877-09-8	0.1	%	87.6	86.4	90.3	75.6	82.5		
Dibutylchlorodate	1770-80-5	0.1	%	69.2	73.7	69.4	60.0	65.9		



Sub-Matrix: SOIL				Client sample ID	S11	S12			
				Client sampling date / time	27-JUL-2010 08:00	27-JUL-2010 08:00			
Compound	CAS Number	LOR	Unit	HK1016979-006	HK1016979-007				
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	12.6	11.8				
EP-067A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05				
beta- & gamma-BHC	319-85-7 58-89-9	0.10	mg/kg	<0.10	<0.10				
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05				
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05				
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05				
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05				
Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	<0.05				
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05				
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05				
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05				
Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	<0.05				
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05				
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05				
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05				
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2				
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05				
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2				
Cypermethrins(total)	52315-07-8	0.2	mg/kg	<0.2	<0.2				
EP-067B: Organophosphate Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05				
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2				
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05				
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05				
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05				
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2				
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05				
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05				
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05				
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2				
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05				
Chlorfenvinphos (E)	470-90-6	0.05	mg/kg	<0.05	<0.05				
Chlorfenvinphos (Z)	470-90-8	0.05	mg/kg	<0.05	<0.05				
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05				
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05				
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05				
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05				
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05				



Sub-Matrix: SOIL				Client sample ID					
Client sampling date / time				S11	S12				
				27-JUL-2010 08:00	27-JUL-2010 08:00				
Compound	CAS Number	LOR	Unit	HK1016979-006	HK1016979-007				
EP-067B: Organophosphate Pesticides (OP) - Continued									
Azinphos Methyl	86-50-0	0.2	mg/kg	<0.2	<0.2				
EP-067C: Triazine Pesticides									
Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05				
Simazine	122-34-9	0.05	mg/kg	<0.05	<0.05				
EP-067S: Pesticide Surrogate									
						Surrogate control limits listed at end of this report.			
Tetrachlorometaxylene	877-09-8	0.1	%	88.3	88.5				
Dibutylchloredate	1770-80-5	0.1	%	71.5	70.8				



Laboratory Duplicate (DUP) Report

Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1432385)								
HK1016928-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.2	13.4	1.8
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1431743)								
HK1016979-001	S2	alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0
		delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0
		Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0
		Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0
		Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0
		Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0
		Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0
		4.4' -DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0
		Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0
		Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0
		4.4' -DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0
		Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0
		Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0
		Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0
		beta- & gamma-BHC	319-85-7	0.10	mg/kg	<0.10	<0.10	0.0
		4.4' -DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0
		Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0
Cypermethrins(total)	52315-07-8	0.2	mg/kg	<0.2	<0.2	0.0		
EP-067B: Organophosphate Pesticides (OP) (QC Lot: 1431743)								
HK1016979-001	S2	Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0
		Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0
		Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0
		Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0
		Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0
		Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0
		Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0
		Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0
		Chlorfenvinphos (E)	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0
		Chlorfenvinphos (Z)	470-90-8	0.05	mg/kg	<0.05	<0.05	0.0
		Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0
		Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0
		Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0
		Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0
		Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0
		Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0
		Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-067B: Organophosphate Pesticides (OP) (QC Lot: 1431743) - Continued								
HK1016979-001	S2	Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0
		Azinphos Methyl	86-50-0	0.2	mg/kg	<0.2	<0.2	0.0
EP-067C: Triazine Pesticides (QC Lot: 1431743)								
HK1016979-001	S2	Simazine	122-34-9	0.05	mg/kg	<0.05	<0.05	0.0
		Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: SOIL				Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration n	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EP-067A: Organochlorine Pesticides (OC) (QC Lot: 1431743)												
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	94.8	----	25	135	----	----	
beta- & gamma-BHC	319-85-7 58-89-9	0.1	mg/kg	<0.10	0.50 mg/kg	96.7	----	46	118	----	----	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	94.2	----	26	134	----	----	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	85.1	----	1	107	----	----	
Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	98.0	----	45	122	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	101	----	26	139	----	----	
Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	97.1	----	28	149	----	----	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	102	----	31	147	----	----	
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	100	----	43	149	----	----	
Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	90.1	----	13	125	----	----	
Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	98.9	----	30	142	----	----	
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	106	----	17	149	----	----	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	98.7	----	7	153	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	100	----	16	137	----	----	
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	82.6	----	0	151	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	106	----	15	130	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	74.8	----	1	149	----	----	
Cypermethrins(total)	52315-07-8	0.2	mg/kg	<0.2	0.25 mg/kg	74.9	----	14	122	----	----	
EP-067B: Organophosphate Pesticides (OP) (QC Lot: 1431743)												
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	88.9	----	22	132	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	74.4	----	3	119	----	----	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	85.9	----	8	128	----	----	
Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	90.6	----	18	130	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	94.5	----	31	135	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	72.6	----	2	149	----	----	
Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	90.0	----	12	141	----	----	
Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	96.2	----	38	137	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	93.7	----	37	140	----	----	
Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	78.9	----	2	175	----	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	93.8	----	41	140	----	----	



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-067B: Organophosphate Pesticides (OP) (QC Lot: 1431743) - Continued											
Chlorfenvinphos (E)	470-90-6	0.05	mg/kg	<0.05	0.025 mg/kg	94.0	----	19	126	----	----
Chlorfenvinphos (Z)	470-90-8	0.05	mg/kg	<0.05	0.25 mg/kg	79.6	----	23	119	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	88.4	----	32	142	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	76.0	----	5	146	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	94.0	----	38	141	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	95.0	----	16	142	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	89.8	----	10	135	----	----
Azinphos Methyl	86-50-0	0.2	mg/kg	<0.2	0.25 mg/kg	56.9	----	0	130	----	----
EP-067C: Triazine Pesticides (QC Lot: 1431743)											
Simazine	122-34-9	0.05	mg/kg	<0.05	0.25 mg/kg	86.6	----	34	127	----	----
Atrazine	1912-24-9	0.05	mg/kg	<0.05	0.25 mg/kg	96.9	----	37	139	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-067S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorodate	1770-80-5	50	130

APPENDIX 3

Post-operation Soil Sampling Results



CERTIFICATE OF ANALYSIS

Client	: SMEC ASIA LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 12
Contact	: MR ALEXI BHANJA	Contact	: Fung Lim Chee, Richard	Work Order	: HK1529679
Address	: 27/F, FORD GLORY PLAZA, 37-39 WING HONG STREET, CHEUNG SHA WAN, KOWLOON HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Alexi.bhanja@smec.com	E-mail	: Richard.Fung@alsglobal.com		
Telephone	: +852 3995 8100	Telephone	: +852 2610 1044		
Facsimile	: +852 3995 8101	Facsimile	: +852 2610 2021		
Project	: SKY CITY GOLF COURSE	Quote number	: ----	Date Samples Received	: 11-AUG-2015
Order number	: ----			Issue Date	: 20-AUG-2015
C-O-C number	: ----			No. of samples received	: 16
Site	: ----			No. of samples analysed	: 16

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 19-AUG-2015

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific comments for Work Order: **HK1529679**

Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.

Soil sample(s) analysed on an as received basis. Result(s) reported on a dry weight basis.

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the Electronic Transactions Ordinance of Hong Kong, Chapter 553, Section 6.

Signatories

Position

Authorised results for

Chan Ka Yu, Karen
Fung Lim Chee, Richard

Manager - Organics
General Manager

Organics
Inorganics



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	S1 (0.5M)	S1 (1.0M)	S1 (1.5M)	S4 (0.5M)	S4 (1.0M)
				Client sampling date / time	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]
Compound	CAS Number	LOR	Unit		HK1529679-001	HK1529679-002	HK1529679-003	HK1529679-004	HK1529679-005
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	----	0.1	%		3.6	8.1	9.3	7.2	9.1
EP-071_SR: Total Petroleum Hydrocarbons (TPH)									
C6 - C9 Fraction	----	2	mg/kg		<2	<2	<2	<2	<2
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
EP-080_SRS: TPH(Volatile)/BTEX Surrogate								Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%		89.9	92.8	92.5	90.9	94.1
Toluene-D8	2037-26-5	0.1	%		102	101	100	101	101
4-Bromofluorobenzene	460-00-4	0.1	%		96.7	96.2	97.9	96.8	96.5



Sub-Matrix: SOIL				Client sample ID	S4 (1.5M)	S2	S3	S5	S6
				Client sampling date / time	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]
Compound	CAS Number	LOR	Unit	HK1529679-006	HK1529679-007	HK1529679-008	HK1529679-009	HK1529679-010	
EA/ED: Physical and Aggregate Properties									
EA055: Moisture Content (dried @ 103°C)	---	0.1	%	8.8	13.6	10.0	8.3	8.7	
EP-071_SR: Total Petroleum Hydrocarbons (TPH)									
C6 - C9 Fraction	---	2	mg/kg	<2	---	---	---	---	
C10 - C14 Fraction	---	50	mg/kg	<50	---	---	---	---	
C15 - C28 Fraction	---	100	mg/kg	<100	---	---	---	---	
C29 - C36 Fraction	---	100	mg/kg	<100	---	---	---	---	
EP-067_SR-A: Organichlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
gamma-BHC	58-89-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
trans-Chlordane	5103-74-2	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
cis-Chlordane	5103-71-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Endosulfan 1	959-98-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
4,4'-DDE	72-55-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Endrin	72-20-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Endosulfan 2	33213-65-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
4,4'-DDD	72-54-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Endrin aldehyde	7421-93-4	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
4,4'-DDT	50-29-3	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Endrin ketone	53494-70-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Methoxychlor	72-43-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Cypermethrins(total)	52315-07-8	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
EP-067_SR-B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Monocrotophos	6923-22-4	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Dimethoate	60-51-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Parathion-methyl	298-00-0	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Malathion	121-75-5	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	---	<0.05	<0.05	<0.05	<0.05	



Sub-Matrix: SOIL				Client sample ID	S4 (1.5M)	S2	S3	S5	S6
				Client sampling date / time	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]
Compound	CAS Number	LOR	Unit	HK1529679-006	HK1529679-007	HK1529679-008	HK1529679-009	HK1529679-010	
EP-067_SR-B: Organophosphorus Pesticides (OP) - Continued									
Parathion	56-38-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
EP-067_SR-C: Triazine Pesticides									
Simazine	122-34-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
Atrazine	1912-24-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05	<0.05
EP-080_SRS: TPH(Volatile)/BTEX Surrogate								Surrogate control limits listed at end of this report.	
Dibromofluoromethane	1868-53-7	0.1	%	92.4	----	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	102	----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	97.6	----	----	----	----	----
EP-067_SR-S: Pesticide Surrogate								Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%	----	65.4	69.0	77.4	67.8	
Dibutylchloredate	1770-80-5	0.1	%	----	71.4	55.4	72.0	54.8	



Sub-Matrix: SOIL			Client sample ID	S7	S8	S9	S10	S11
			Client sampling date / time	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]
Compound	CAS Number	LOR	Unit	HK1529679-011	HK1529679-012	HK1529679-013	HK1529679-014	HK1529679-015
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	---	0.1	%	12.5	15.5	11.3	12.3	9.4
EP-067_SR-A: Organichlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Cypermethrins(total)	52315-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP-067_SR-B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Sub-Matrix: SOIL				Client sample ID	S7	S8	S9	S10	S11
				Client sampling date / time	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]	[10-AUG-2015]
Compound	CAS Number	LOR	Unit		HK1529679-011	HK1529679-012	HK1529679-013	HK1529679-014	HK1529679-015
EP-067_SR-B: Organophosphorus Pesticides (OP) - Continued									
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP-067_SR-C: Triazine Pesticides									
Simazine	122-34-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Atrazine	1912-24-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP-067_SR-S: Pesticide Surrogate								Surrogate control limits listed at end of this report.	
Tetrachlorometaxylene	877-09-8	0.1	%		67.2	67.4	88.8	66.2	63.0
Dibutylchloredate	1770-80-5	0.1	%		59.2	52.6	80.6	54.8	59.6



Sub-Matrix: SOIL			Client sample ID	S12				
			Client sampling date / time	[10-AUG-2015]				
Compound	CAS Number	LOR	Unit	HK1529679-016				
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	11.2				
EP-067_SR-A: Organichlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05				
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05				
beta-BHC	319-85-7	0.05	mg/kg	<0.05				
gamma-BHC	58-89-9	0.05	mg/kg	<0.05				
delta-BHC	319-86-8	0.05	mg/kg	<0.05				
Heptachlor	76-44-8	0.05	mg/kg	<0.05				
Aldrin	309-00-2	0.05	mg/kg	<0.05				
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05				
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05				
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05				
Endosulfan 1	959-98-8	0.05	mg/kg	<0.05				
Dieldrin	60-57-1	0.05	mg/kg	<0.05				
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05				
Endrin	72-20-8	0.05	mg/kg	<0.05				
Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05				
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05				
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05				
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05				
4,4'-DDT	50-29-3	0.05	mg/kg	<0.05				
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05				
Methoxychlor	72-43-5	0.05	mg/kg	<0.05				
Cypermethrins(total)	52315-07-8	0.05	mg/kg	<0.05				
EP-067_SR-B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05				
Monocrotophos	6923-22-4	0.05	mg/kg	<0.05				
Dimethoate	60-51-5	0.05	mg/kg	<0.05				
Diazinon	333-41-5	0.05	mg/kg	<0.05				
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05				
Parathion-methyl	298-00-0	0.05	mg/kg	<0.05				
Malathion	121-75-5	0.05	mg/kg	<0.05				
Fenthion	55-38-9	0.05	mg/kg	<0.05				
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05				
Parathion	56-38-2	0.05	mg/kg	<0.05				
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05				
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05				
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05				
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05				



Sub-Matrix: SOIL				Client sample ID	S12			
				Client sampling date / time	[10-AUG-2015]			
Compound	CAS Number	LOR	Unit	HK1529679-016				
EP-067_SR-B: Organophosphorus Pesticides (OP) - Continued								
Prothiofos	34643-46-4	0.05	mg/kg	<0.05				
Ethion	563-12-2	0.05	mg/kg	<0.05				
Carbophenothion	786-19-6	0.05	mg/kg	<0.05				
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05				
EP-067_SR-C: Triazine Pesticides								
Simazine	122-34-9	0.05	mg/kg	<0.05				
Atrazine	1912-24-9	0.05	mg/kg	<0.05				
EP-067_SR-S: Pesticide Surrogate								
								Surrogate control limits listed at end of this report.
Tetrachlorometaxylene	877-09-8	0.1	%	62.4				
Dibutylchloredate	1770-80-5	0.1	%	66.4				



Laboratory Duplicate (DUP) Report

Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 4003687)								
HK1529478-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	20.6	20.3	1.4
HK1529679-010	S6	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	8.7	8.7	0.0
EP-071_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 3997938)								
HK1524333-006	Anonymous	C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0
		C15 - C28 Fraction	----	50	mg/kg	<50	<50	0.0
		C29 - C36 Fraction	----	50	mg/kg	<50	<50	0.0
EP-071_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 3997939)								
HK1524333-006	Anonymous	C6 - C9 Fraction	----	2	mg/kg	<2	<2	0.0
EP-067_SR-A: Organichlorine Pesticides (OC) (QC Lot: 4002615)								
HK1529679-007	S2	alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0
		Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0
		beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0
		gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0
		delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0
		Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0
		Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0
		Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0
		trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0
		cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0
		Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0
		Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0
		4.4' -DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0
		Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0
		Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0
		4.4' -DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0
		Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0
		Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0
		4.4' -DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.0
		Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0
		Methoxychlor	72-43-5	0.05	mg/kg	<0.05	<0.05	0.0
		Cypermethrins(total)	52315-07-8	0.05	mg/kg	<0.05	<0.05	0.0
EP-067_SR-B: Organophosphorus Pesticides (OP) (QC Lot: 4002615)								
HK1529679-007	S2	Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0
		Monocrotophos	6923-22-4	0.05	mg/kg	<0.05	<0.05	0.0
		Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0
		Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0
		Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0
		Parathion-methyl	298-00-0	0.05	mg/kg	<0.05	<0.05	0.0
		Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-067_SR-B: Organophosphorus Pesticides (OP) (QC Lot: 4002615) - Continued								
HK1529679-007	S2	Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0
		Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0
		Parathion	56-38-2	0.05	mg/kg	<0.05	<0.05	0.0
		Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0
		Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0
		Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0
		Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0
		Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0
		Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0
		Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0		
EP-067_SR-C: Triazine Pesticides (QC Lot: 4002615)								
HK1529679-007	S2	Simazine	122-34-9	0.05	mg/kg	<0.05	<0.05	0.0
		Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: SOIL				Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EP-071_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 3997938)												
C10 - C14 Fraction	----	50	mg/kg	<50	22.5 mg/kg	79.1	----	72	101	----	----	
C15 - C28 Fraction	----	100	mg/kg	<100	52.5 mg/kg	78.6	----	73	103	----	----	
C29 - C36 Fraction	----	100	mg/kg	<100	30 mg/kg	61.6	----	47	99	----	----	
EP-071_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 3997939)												
C6 - C9 Fraction	----	2	mg/kg	<2	6 mg/kg	90.7	----	84	121	----	----	
EP-067_SR-A: Organochlorine Pesticides (OC) (QC Lot: 4002615)												
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	79.0	----	59	113	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	98.0	----	57	121	----	----	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	86.6	----	54	117	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	81.8	----	57	116	----	----	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	93.4	----	65	120	----	----	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	88.8	----	55	114	----	----	
Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	99.8	----	69	111	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	85.6	----	61	113	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	97.6	----	57	114	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	89.0	----	54	119	----	----	
Endosulfan 1	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	92.6	----	67	112	----	----	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	98.2	----	60	116	----	----	
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	104	----	71	115	----	----	
Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	97.2	----	38	129	----	----	
Endosulfan 2	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	92.8	----	60	115	----	----	



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
EP-067_SR-A: Organichlorine Pesticides (OC) (QC Lot: 4002615) - Continued											
4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	92.4	----	62	126	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	96.4	----	56	117	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	92.6	----	61	119	----	----
4.4'-DDT	50-29-3	0.05	mg/kg	<0.05	0.25 mg/kg	92.6	----	30	128	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	86.8	----	58	117	----	----
Methoxychlor	72-43-5	0.05	mg/kg	<0.05	0.25 mg/kg	101	----	8	139	----	----
Cypermethrins(total)	52315-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	86.2	----	60	129	----	----
EP-067_SR-B: Organophosphorus Pesticides (OP) (QC Lot: 4002615)											
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	75.0	----	45	114	----	----
Monocrotophos	6923-22-4	0.05	mg/kg	<0.05	0.25 mg/kg	72.0	----	24	129	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	79.2	----	37	125	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	90.4	----	59	120	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	93.2	----	70	117	----	----
Parathion-methyl	298-00-0	0.05	mg/kg	<0.05	0.25 mg/kg	89.8	----	53	134	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	89.6	----	71	121	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	93.8	----	71	115	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	85.0	----	73	112	----	----
Parathion	56-38-2	0.05	mg/kg	<0.05	0.25 mg/kg	84.8	----	57	130	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	96.4	----	71	117	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	85.0	----	65	111	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	48.8	----	43	130	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	93.4	----	73	112	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	89.2	----	63	117	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	96.4	----	61	120	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	78.4	----	28	135	----	----
EP-067_SR-C: Triazine Pesticides (QC Lot: 4002615)											
Simazine	122-34-9	0.05	mg/kg	<0.05	0.25 mg/kg	88.0	----	50	127	----	----
Atrazine	1912-24-9	0.05	mg/kg	<0.05	0.25 mg/kg	91.8	----	57	124	----	----



Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-071_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 3997938)										
HK1524333-007	Anonymous	C10 - C14 Fraction	----	22.5 mg/kg	83.7	----	50	130	----	----
		C15 - C28 Fraction	----	52.5 mg/kg	90.9	----	50	130	----	----
		C29 - C36 Fraction	----	30 mg/kg	65.6	----	50	130	----	----
EP-071_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 3997939)										
HK1524333-007	Anonymous	C6 - C9 Fraction	----	6 mg/kg	98.1	----	50	130	----	----

Surrogate Control Limits

Sub-Matrix: SOIL

Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP-080_SRS: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
EP-067_SR-S: Pesticide Surrogate			
Tetrachlorometaxylene	877-09-8	50	130
Dibutylchlorendate	1770-80-5	50	130