

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2118978
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 10-May-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	Issue Date	: 25-May-2021
C-O-C number	: ---			No. of samples received	: 2
Site	: TUEN MUN SOUTH			No. of samples analysed	: 2

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 10-May-2021 to 24-May-2021.

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: HK2118978

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH501 16.80-17.30m, 17.30-17.80m	1530-TME-EDH501 17.80-18.30m, 18.30-18.80m	---	---	---
Sampling date / time	10-May-2021 09:47	10-May-2021 13:37	---	---	---
Compound	HK2118978-001	HK2118978-002	---	---	---

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	---	0.1	%	22.6	21.1	---	---	---
-----------------------------------------	-----	-----	---	------	------	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	9	8	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	31	29	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	14	15	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	27	27	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	0.05	<0.05	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	12	12	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	82	300	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	---	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	---	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH501	1530-TME-EDH501	---	---	---
					16.80-17.30m, 17.30-17.80m	17.80-18.30m, 18.30-18.80m			
				Sampling date / time	10-May-2021 09:47	10-May-2021 13:37	----	----	----
Compound	CAS Number	LOR	Unit	HK2118978-001	HK2118978-002	-----	-----	-----	-----
EP-065: PCB Single Congeners - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	---	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(a)anthracene	56-55-3	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	83.2	79.8	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	81.5	75.4	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	53.9	59.5	---	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH501	1530-TME-EDH501	---	---	---
					16.80-17.30m, 17.30-17.80m	17.80-18.30m, 18.30-18.80m			
				Sampling date / time	10-May-2021 09:47	10-May-2021 13:37	----	----	----
Compound	CAS Number	LOR	Unit	HK2118978-001	HK2118978-002	-----	-----	-----	-----
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3683430)								
HK2118978-001	1530-TME-EDH501 16.80-17.30m, 17.30-17.80m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	22.6	21.9	2.8
EG: Metals and Major Cations (QC Lot: 3680854)								
HK2118978-002	1530-TME-EDH501 17.80-18.30m, 18.30-18.80m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	8	8	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	29	32	12.3
		EG020: Copper	7440-50-8	1	mg/kg	15	15	0.0
		EG020: Lead	7439-92-1	1	mg/kg	27	29	8.2
		EG020: Nickel	7440-02-0	1	mg/kg	12	15	21.7
EG020: Zinc	7440-66-6	1	mg/kg	300	329	9.2		
EP-065: PCB Single Congeners (QC Lot: 3689015)								
HK2118978-001	1530-TME-EDH501 16.80-17.30m, 17.30-17.80m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3689015) - Continued								
HK2118978-001	1530-TME-EDH501 16.80-17.30m, 17.30-17.80m	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)								
HK2118978-001	1530-TME-EDH501 16.80-17.30m, 17.30-17.80m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3692195)								
HK2118995-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	0.037 µg TBT /L	14	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
EG: Metals and Major Cations (QC Lot: 3680854)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	106	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.4	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	110	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	115	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	94.6	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	110	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	107	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	102	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	110	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3689015)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	69.6	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	67.8	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	80.0	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	68.8	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	70.4	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	79.2	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	63.3	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	59.3	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	67.0	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	62.5	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	66.8	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	64.1	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	59.6	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	64.3	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	66.7	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	63.6	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	63.9	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	59.6	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)											



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016) - Continued											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	95.9	----	85.0	105	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	101	----	74.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	95.7	----	81.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.4	----	79.0	104	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	90.7	----	79.0	105	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	93.1	----	60.0	115	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	95.8	----	82.0	106	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	95.1	----	80.0	106	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	94.4	----	72.0	106	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	113	----	80.0	113	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	71.0	----	48.0	111	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	77.1	----	56.0	116	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	70.6	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	70.6	----	43.0	105	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	68.4	----	34.0	109	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	66.7	----	31.0	111	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
Matrix: WATER											
Matrix: WATER		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-390: Triorganotins (QC Lot: 3692195)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	115	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3680854)										
HK2118978-001	1530-TME-EDH501 16.80-17.30m, 17.30-17.80m	EG020: Arsenic	7440-38-2	5 mg/kg	90.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	94.7	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	120	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	106	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	87.3	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	100	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3689015)										
HK2118978-002	1530-TME-EDH501 17.80-18.30m, 18.30-18.80m	PCB 8	34883-43- 7	5 µg/kg	60.4	----	50.0	130	----	----
		PCB 18	37680-65- 2	5 µg/kg	61.8	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	73.2	----	50.0	130	----	----
		PCB 44	41464-39- 5	5 µg/kg	89.8	----	50.0	130	----	----
		PCB 52	35693-99- 3	5 µg/kg	65.8	----	50.0	130	----	----
		PCB 66	32598-10- 0	5 µg/kg	73.7	----	50.0	130	----	----
		PCB 77	32598-13- 3	5 µg/kg	64.1	----	50.0	130	----	----
		PCB 101	37680-73- 2	5 µg/kg	68.1	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3689015) - Continued										
HK2118978-002	1530-TME-EDH501 17.80-18.30m, 18.30-18.80m	PCB 105	32598-14-4	5 µg/kg	70.7	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	59.1	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	65.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	59.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	59.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	68.2	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	52.9	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	50.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	55.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	55.5	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)										
HK2118978-002	1530-TME-EDH501 17.80-18.30m, 18.30-18.80m	Naphthalene	91-20-3	250 µg/kg	73.1	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	76.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	73.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	80.1	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	75.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	76.8	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	74.6	----	50.0	130	----	----
Benz(a)anthracene	56-55-3	250 µg/kg	80.0	----	50.0	130	----	----		



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016) - Continued										
HK2118978-002	1530-TME-EDH501	Chrysene	218-01-9	250 µg/kg	87.7	----	50.0	130	----	----
	17.80-18.30m, 18.30-18.80m	Benzo(b)fluoranthene	205-99-2	250 µg/kg	65.4	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	62.6	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	56.8	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	55.8	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	58.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	50.8	----	50.0	130	----	----

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3692195)										
HK2118995-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	# Not Determined	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130






CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 11
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2115711
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 20-Apr-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 04-May-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 2
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 1
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	Position	Authorised results for
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 20-Apr-2021 to 04-May-2021.

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: HK2115711

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

1530-TME-EDH502

16.5-17.0m

Sampling date / time

20-Apr-2021 13:45

Compound	CAS Number	LOR	Unit	HK2115711-001	-----	-----	-----	-----
----------	------------	-----	------	---------------	-------	-------	-------	-------

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	22.7	---	---	---	---
-----------------------------------------	------	-----	---	------	-----	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	11	---	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	---	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	36	---	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	18	---	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	36	---	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	0.08	---	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	14	---	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	0.1	---	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	80	---	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	---	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	---	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	---	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	---	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	---	---	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 170	35065-30-6	3	µg/kg	<3	---	---	---	---



Sub-Matrix: SEDIMENT			Sample ID	1530-TME-EDH502	---	---	---	---
			Sampling date / time	16.5-17.0m	---	---	---	---
			Sampling date / time	20-Apr-2021 13:45	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2115711-001	---	---	---	---
EP-065: PCB Single Congeners - Continued								
EP065: PCB 180	35065-29-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	77.0	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	80.2	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	76.0	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3639053)								
HK2116089-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	94.5	94.3	0.186
HK2115825-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.7	34.7	3.02
EG: Metals and Major Cations (QC Lot: 3636356)								
HK2115648-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.08	0.09	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	0.5	0.5	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	4	3	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	11	11	0.00
		EG020: Copper	7440-50-8	1	mg/kg	14	13	0.00
		EG020: Lead	7439-92-1	1	mg/kg	63	59	6.38
		EG020: Nickel	7440-02-0	1	mg/kg	4	4	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	74	70	5.58
EP-065: PCB Single Congeners (QC Lot: 3636559)								
HK2115425-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3636559) - Continued								
HK2115425-001	Anonymous	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560)								
HK2115425-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		

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
EG: Metals and Major Cations (QC Lot: 3636356)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	99.5	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	105	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	97.9	----	87.7	111	----	----



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3636356) - Continued											
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	107	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	98.9	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	106	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	102	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	104	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	108	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3636559)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	100	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	92.6	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	72.3	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	85.0	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	84.6	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	89.6	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	78.2	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	82.3	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	77.3	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	79.4	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	76.0	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	79.4	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	84.9	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	81.7	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	77.9	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	77.5	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	79.5	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	71.1	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	91.6	----	58.0	129	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	94.0	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	92.8	----	55.0	128	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3636356)										
HK2115646-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	89.2	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	106	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	87.4	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	112	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	102	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	79.1	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	102	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3636559)										
HK2115425-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	109	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	109	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	86.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	95.1	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	73.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	65.0	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	74.5	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	104	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	98.8	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3636559) - Continued										
HK2115425-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	103	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	93.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	63.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	106	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	105	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	67.8	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	59.6	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	60.2	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	81.4	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560)										
HK2115425-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	97.5	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	102	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	102	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	106	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	111	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	84.2	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	100	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	100	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	107	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	93.9	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.3	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560) - Continued										
HK2115425-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	75.2	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	76.9	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	69.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	63.9	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	63.0	----	50.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2114981
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 15-Apr-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 28-Apr-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 1
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 1
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 15-Apr-2021 to 28-Apr-2021.

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: HK2114981

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

1530-TME-EDH503
(P)
20.80-21.30m

Sampling date / time

15-Apr-2021 13:50

Compound	CAS Number	LOR	Unit	HK2114981-001				
----------	------------	-----	------	---------------	--	--	--	--

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	22.3	---	---	---	---
-----------------------------------------	------	-----	---	------	-----	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	5	---	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	---	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	16	---	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	39	---	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	40	---	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	---	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	10	---	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	0.2	---	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	106	---	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	---	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	---	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	---	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	---	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	---	---	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	---	---	---	---



Sub-Matrix: SEDIMENT			Sample ID	1530-TME-EDH503 (P) 20.80-21.30m	---	---	---	---
			Sampling date / time	15-Apr-2021 13:50	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2114981-001	---	---	---	---
EP-065: PCB Single Condensers - Continued								
EP065: PCB 170	35065-30-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)anthracene	56-55-3	150	µg/kg	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	---	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	92.9	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	106	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	62.6	---	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID				
				1530-TME-EDH503 (P) 20.80-21.30m	---	---	---	---
				Sampling date / time	15-Apr-2021 13:50	----	----	----
Compound	CAS Number	LOR	Unit	HK2114981-001	-----	-----	-----	-----
EP-390: Triorganotins								
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3633723)								
HK2112860-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	3.9	3.9	0.00
HK2115170-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	14.9	15.0	1.12
EG: Metals and Major Cations (QC Lot: 3628597)								
HK2114981-001	1530-TME-EDH503(P) 20.80-21.30m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.1	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	5	5	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	16	16	0.00
		EG020: Copper	7440-50-8	1	mg/kg	39	35	11.6
		EG020: Lead	7439-92-1	1	mg/kg	40	38	6.30
		EG020: Nickel	7440-02-0	1	mg/kg	10	9	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	106	83	24.0
EP-065: PCB Single Congeners (QC Lot: 3629640)								
HK2114981-001	1530-TME-EDH503(P) 20.80-21.30m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3629640) - Continued								
HK2114981-001	1530-TME-EDH503(P) 20.80-21.30m	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3629641)								
HK2114981-001	1530-TME-EDH503(P) 20.80-21.30m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benzo(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		
Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3634669)								
HK2113501-002	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3629641)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	98.0	----	58.0	129	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	96.0	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	96.1	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	96.2	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	91.8	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	100	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	97.4	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	95.9	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	90.9	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	101	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	72.4	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	92.6	----	48.0	123	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	74.1	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	73.2	----	26.0	136	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	60.6	----	24.0	137	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	61.8	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotins (QC Lot: 3634669)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	104	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3628597)										
HK2114755-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	98.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	108	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	101	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	92.0	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	80.3	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	106	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	90.8	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	103	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3629640)										
HK2115184-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	78.5	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	92.1	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	94.3	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	58.3	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	71.3	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	67.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	102	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	112	----	50.0	130	----	----
PCB 105	32598-14-4	5 µg/kg	102	----	50.0	130	----	----		



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3629640) - Continued										
HK2115184-001	Anonymous	PCB 118	31508-00-6	5 µg/kg	89.0	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	72.9	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	89.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	91.6	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	85.7	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	58.5	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	57.5	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	56.9	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	72.5	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3629641)										
HK2115184-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	97.0	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	99.0	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	94.0	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	99.7	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	98.4	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	102	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	101	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	98.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	99.7	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	88.3	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3629641) - Continued										
HK2115184-001	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	88.7	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	85.4	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	70.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	61.3	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	68.4	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3634669)										
HK2113289-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	114	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2112776
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 31-Mar-2021
Order number	: ---	Quote number	: HKE/2221/2020_V2	Issue Date	: 19-Apr-2021
C-O-C number	: ---			No. of samples received	: 3
Site	: TUEN MUN SOUTH			No. of samples analysed	: 3

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 31-Mar-2021 to 19-Apr-2021.

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: HK2112776

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #1 1530-TME-EDH504 13.40-13.90m and Sample #2 1530-TME-EDH504 13.90-14.40m, 14.40-14.90m.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH504 13.40-13.90m	1530-TME-EDH504 13.90-14.40m, 14.40-14.90m	1530-TME-EDH504 14.90-15.40m, 15.40-15.90m	---	---
Sampling date / time	31-Mar-2021 11:00	31-Mar-2021 13:50	31-Mar-2021 14:15	----	----
Compound	HK2112776-001	HK2112776-002	HK2112776-003	-----	-----

EA/ED: Physical and Aggregate Properties

EA/ED: Moisture Content (dried @ 103°C)	---	0.1	%	37.3	36.6	38.7	---	---
-----------------------------------------	-----	-----	---	------	------	------	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	11	10	12	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
EG020: Chromium	7440-47-3	1	mg/kg	28	27	28	---	---
EG020: Copper	7440-50-8	1	mg/kg	13	13	21	---	---
EG020: Lead	7439-92-1	1	mg/kg	40	37	40	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	<0.05	---	---
EG020: Nickel	7440-02-0	1	mg/kg	17	17	17	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	---	---
EG020: Zinc	7440-66-6	1	mg/kg	59	86	197	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH504 13.40-13.90m	1530-TME-EDH504 13.90-14.40m, 14.40-14.90m	1530-TME-EDH504 14.90-15.40m, 15.40-15.90m	---	---
				Sampling date / time	31-Mar-2021 11:00	31-Mar-2021 13:50	31-Mar-2021 14:15	----	----
Compound	CAS Number	LOR	Unit	HK2112776-001	HK2112776-002	HK2112776-003	-----	-----	-----
EP-065: PCB Single Condensers - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	101	84.8	78.5	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	117	112	112	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	59.0	52.9	68.8	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH504 13.40-13.90m	1530-TME-EDH504 13.90-14.40m, 14.40-14.90m	---	---	---
				Sampling date / time	31-Mar-2021 11:00	31-Mar-2021 13:50	----	----	----
Compound	CAS Number	LOR	Unit	HK2112776-001	HK2112776-002	-----	-----	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	---	---	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3605321)								
HK2112674-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.0	12.8	1.87
HK2112776-003	1530-TME-EDH504 14.90-15.40m, 15.40-15.90m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	38.7	39.3	1.73
EG: Metals and Major Cations (QC Lot: 3599575)								
HK2112764-005	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.6	0.6	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	10	11	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	22	22	0.00
		EG020: Copper	7440-50-8	1	mg/kg	14	14	0.00
		EG020: Lead	7439-92-1	1	mg/kg	20	20	0.00
		EG020: Nickel	7440-02-0	1	mg/kg	17	17	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	60	62	3.84
EP-065: PCB Single Congeners (QC Lot: 3615242)								
HK2112535-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3615242) - Continued								
HK2112535-001	Anonymous	PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)								
HK2112535-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3615078)								
HK2112240-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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
--------------	--------------------------	------------------------------------------------------------------------------------



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
EG: Metals and Major Cations (QC Lot: 3599575)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	98.2	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	101	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	104	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	112	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	111	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	103	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	107	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	104	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	108	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3615242)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	75.2	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	78.3	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	82.5	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	72.6	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	74.3	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	71.3	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	79.9	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	82.6	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	80.4	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	78.5	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	83.6	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.7	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	85.6	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	82.1	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	81.5	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	83.4	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	84.6	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	78.4	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)											



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243) - Continued											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	100	----	58.0	129	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	96.1	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	98.5	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	98.3	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	98.4	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	97.0	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	101	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	99.8	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	99.6	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	109	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	94.6	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	108	----	48.0	123	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	101	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	86.4	----	26.0	136	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	97.4	----	24.0	137	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	104	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
Matrix: WATER											
Matrix: WATER		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-390: Triorganotins (QC Lot: 3615078)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	98.4	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3599575)										
HK2112764-004	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	110	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	105	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	107	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	116	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	114	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	109	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	106	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3615242)										
HK2112535-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	80.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	78.8	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	69.4	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	61.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	64.0	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	116	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.2	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3615242) - Continued										
HK2112535-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	95.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	75.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	79.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	81.9	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	92.5	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	73.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	80.1	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	81.2	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	79.5	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)										
HK2112535-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	98.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	97.8	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.1	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	96.0	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	97.5	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	98.4	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	102	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	99.6	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	96.6	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	98.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	97.2	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243) - Continued										
HK2112535-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	93.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	98.0	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	86.5	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	91.5	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	98.6	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3615078)										
HK2112240-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	106	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2112950
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 01-Apr-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 19-Apr-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 3
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 3
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Wong Wing , Kenneth	Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 01-Apr-2021 to 19-Apr-2021.

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: HK2112950

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH504 15.90-16.40m, 16.40-16.90m	1530-TME-EDH504 16.90-17.40m, 17.40-17.90m	1530-TME-EDH504 17.90-18.40m	---	---
Sampling date / time	01-Apr-2021 10:00	01-Apr-2021 11:25	01-Apr-2021 11:55	----	----
Compound	HK2112950-001	HK2112950-002	HK2112950-003	-----	-----

EA/ED: Physical and Aggregate Properties

EA/ED: Moisture Content (dried @ 103°C)	---	0.1	%	25.9	24.6	17.8	---	---
-----------------------------------------	-----	-----	---	------	------	------	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	16	11	11	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
EG020: Chromium	7440-47-3	1	mg/kg	15	12	12	---	---
EG020: Copper	7440-50-8	1	mg/kg	10	8	8	---	---
EG020: Lead	7439-92-1	1	mg/kg	21	16	16	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	<0.05	---	---
EG020: Nickel	7440-02-0	1	mg/kg	7	5	5	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	---	---
EG020: Zinc	7440-66-6	1	mg/kg	60	103	36	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH504	1530-TME-EDH504	1530-TME-EDH504	---	---
					15.90-16.40m, 16.40-16.90m	16.90-17.40m, 17.40-17.90m	17.90-18.40m		
				Sampling date / time	01-Apr-2021 10:00	01-Apr-2021 11:25	01-Apr-2021 11:55	----	----
Compound	CAS Number	LOR	Unit	HK2112950-001	HK2112950-002	HK2112950-003	-----	-----	-----
EP-065: PCB Single Condensers - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	80.4	74.3	80.4	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	91.8	102	98.9	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	64.7	53.1	82.8	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH504	1530-TME-EDH504	1530-TME-EDH504	---	---
				Sampling date / time	15.90-16.40m, 16.40-16.90m	16.90-17.40m, 17.40-17.90m	17.90-18.40m	---	---
Compound	CAS Number	LOR	Unit	01-Apr-2021 10:00	01-Apr-2021 11:25	01-Apr-2021 11:55	----	----	----
				HK2112950-001	HK2112950-002	HK2112950-003	-----	-----	-----
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3605322)								
HK2112926-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	12.8	12.9	0.948
EG: Metals and Major Cations (QC Lot: 3605421)								
HK2112935-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	2	2	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	4	4	0.00
		EG020: Copper	7440-50-8	1	mg/kg	6	6	0.00
		EG020: Lead	7439-92-1	1	mg/kg	20	16	23.8
		EG020: Nickel	7440-02-0	1	mg/kg	2	3	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	30	25	17.1
EP-065: PCB Single Congeners (QC Lot: 3615242)								
HK2112535-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00
PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3615242) - Continued								
HK2112535-001	Anonymous	PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)								
HK2112535-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00
		Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3615078)								
HK2112240-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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			
				Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3605421)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	103	---	87.2	110	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	94.3	---	85.0	113	---	---
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	102	---	87.7	111	---	---
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	104	---	92.0	115	---	---
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	101	---	86.7	115	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	98.0	---	86.6	115	---	---
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	102	---	90.6	111	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	104	---	85.0	109	---	---
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	112	---	90.9	115	---	---
EP-065: PCB Single Congeners (QC Lot: 3615242)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	75.2	---	49.0	128	---	---
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	78.3	---	49.0	133	---	---
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	82.5	---	52.0	130	---	---
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	72.6	---	48.0	134	---	---
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	74.3	---	50.0	135	---	---
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	71.3	---	55.0	127	---	---
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	79.9	---	56.0	127	---	---
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	82.6	---	52.0	132	---	---
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	80.4	---	53.0	128	---	---
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	78.5	---	51.0	132	---	---
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	83.6	---	55.0	126	---	---
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.7	---	49.0	130	---	---
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	85.6	---	51.0	130	---	---
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	82.1	---	51.0	131	---	---
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	81.5	---	50.0	129	---	---
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	83.4	---	48.0	133	---	---
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	84.6	---	50.0	129	---	---
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	78.4	---	52.0	129	---	---
Total Polychlorinated biphenyls	---	18	µg/kg	<18	---	---	---	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	100	---	58.0	129	---	---



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	96.1	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	98.5	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	98.3	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	98.4	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	97.0	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	101	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	99.8	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	99.6	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	109	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	94.6	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	108	----	48.0	123	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	101	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	86.4	----	26.0	136	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	97.4	----	24.0	137	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	104	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3615078)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	98.4	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3605421)										
HK2112812-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	124	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	93.6	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	121	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	95.2	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	100	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	114	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	107	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3615242)										
HK2112535-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	80.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	78.8	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	69.4	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	61.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	64.0	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	116	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.2	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3615242) - Continued										
HK2112535-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	95.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	75.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	79.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	81.9	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	92.5	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	73.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	80.1	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	81.2	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	79.5	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)										
HK2112535-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	98.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	97.8	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.1	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	96.0	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	97.5	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	98.4	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	102	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	99.6	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	96.6	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	98.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	97.2	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243) - Continued										
HK2112535-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	93.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	98.0	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	86.5	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	91.5	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	98.6	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3615078)										
HK2112240-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	106	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2110994
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 11-Mar-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	Issue Date	: 31-Mar-2021
C-O-C number	: ---			No. of samples received	: 1
Site	: TUEN MUN SOUTH			No. of samples analysed	: 1

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 11-Mar-2021 to 30-Mar-2021.

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: HK2110994

Sample "1530-TME-EDH505 9.00m-9.45m" was submitted by client. Sample(s) arrived laboratory in chilled condition at 16:15 on 11 March, 2021. The result(s) related only to the item(s) tested.

Sample "1530-TME-EDH505 9.50m-10.00m" was submitted by client. Sample(s) arrived laboratory in chilled condition at 15:40 on 12 March, 2021. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

1530-TME-EDH505	---	---	---	---
9.00m-9.45m, 9.50m-10.00m,				
11-Mar-2021 11:25	----	----	----	----
HK2110994-001	-----	-----	-----	-----

Sampling date / time

Compound	CAS Number	LOR	Unit	Value	---	---	---	---
----------	------------	-----	------	-------	-----	-----	-----	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.0	---	---	---	---
-----------------------------------------	------	-----	---	------	-----	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	6	---	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	---	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	17	---	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	16	---	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	38	---	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	---	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	10	---	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	---	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	99	---	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	---	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	---	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	---	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	---	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	---	---	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	---	---	---	---



Sub-Matrix: SEDIMENT			Sample ID	1530-TME-EDH505	---	---	---	---
				9.00m-9.45m, 9.50m-10.00m,				
			Sampling date / time	11-Mar-2021 11:25	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2110994-001	---	---	---	---
EP-065: PCB Single Condensers - Continued								
EP065: PCB 170	35065-30-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)anthracene	56-55-3	150	µg/kg	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	---	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	84.6	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	86.0	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	68.6	---	---	---	---



Sub-Matrix: INTERSTITIAL WATER

Sample ID

1530-TME-EDH505
 9.00m-9.45m,
 9.50m-10.00m,

---	---	---	---
-----	-----	-----	-----

Sampling date / time

11-Mar-2021 11:25

----	----	----	----
------	------	------	------

Compound	CAS Number	LOR	Unit
----------	------------	-----	------

HK2110994-001

-----	-----	-----	-----
-------	-------	-------	-------

EP-390: Triorganotins

EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	---	---	---	---
--------------------	------------	-------	-----------	--------	-----	-----	-----	-----



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3577836)								
HK2110604-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.8	23.8	0.00
HK2110852-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	17.9	18.6	3.89
EG: Metals and Major Cations (QC Lot: 3571389)								
HK2110604-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.2	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	3	3	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	11	12	0.00
		EG020: Copper	7440-50-8	1	mg/kg	12	13	0.00
		EG020: Lead	7439-92-1	1	mg/kg	153	152	0.00
		EG020: Nickel	7440-02-0	1	mg/kg	4	5	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	90	71	22.6
EP-065: PCB Single Congeners (QC Lot: 3580234)								
HK2110604-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3580234) - Continued								
HK2110604-001	Anonymous	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)								
HK2110604-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3594302)								
HK2110604-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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			
			Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3571389)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	103	---	87.2	110	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	102	---	85.0	113	---	---
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	98.1	---	87.7	111	---	---
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	107	---	92.0	115	---	---
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	100	---	86.7	115	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	---	86.6	115	---	---
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	104	---	90.6	111	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	105	---	85.0	109	---	---
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	107	---	90.9	115	---	---
EP-065: PCB Single Congeners (QC Lot: 3580234)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	90.4	---	49.0	128	---	---
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	79.5	---	49.0	133	---	---
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	74.8	---	52.0	130	---	---
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	96.6	---	48.0	134	---	---
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	101	---	50.0	135	---	---
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	95.9	---	55.0	127	---	---
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	81.0	---	56.0	127	---	---
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	86.4	---	52.0	132	---	---
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	83.9	---	53.0	128	---	---
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	84.0	---	51.0	132	---	---
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	81.9	---	55.0	126	---	---
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	88.8	---	49.0	130	---	---
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	---	51.0	130	---	---
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	90.9	---	51.0	131	---	---
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	79.2	---	50.0	129	---	---
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	76.6	---	48.0	133	---	---
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	90.8	---	50.0	129	---	---
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	88.6	---	52.0	129	---	---
Total Polychlorinated biphenyls	---	18	µg/kg	<18	---	---	---	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	85.7	---	75.0	134	---	---



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	75.2	----	68.0	135	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	82.5	----	72.0	133	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	81.3	----	70.0	135	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	83.8	----	73.0	137	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	68.0	----	64.0	145	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	84.0	----	70.0	138	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	81.7	----	71.0	136	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	73.0	----	65.0	137	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	83.8	----	76.0	137	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	76.7	----	59.0	138	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	79.5	----	65.0	144	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	66.3	----	47.0	145	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	69.0	----	33.0	137	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	73.9	----	31.0	144	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	70.8	----	32.0	140	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3594302)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	96.7	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3571389)										
HK2110480-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	98.1	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	110	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	95.5	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	118	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	115	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	97.1	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	104	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3580234)										
HK2110604-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	60.5	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	91.2	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	98.9	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	79.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	91.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	109	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	89.3	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3580234) - Continued										
HK2110604-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	94.8	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	74.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	91.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	85.2	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.5	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	72.6	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	75.8	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	78.4	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	89.4	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)										
HK2110604-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	85.5	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	75.0	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	81.2	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	80.0	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	83.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	58.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	83.6	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	81.2	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.3	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	84.1	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	77.0	----	50.0	130	----	----



Matrix: SOIL

				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233) - Continued										
HK2110604-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	79.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	58.8	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	68.5	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	68.2	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	71.0	----	50.0	130	----	----

Matrix: WATER

				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3594302)										
HK2110604-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	81.7	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT

<i>Compound</i>	<i>CAS Number</i>	<i>Recovery Limits (%)</i>	
		<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2110604
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 12-Mar-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	Issue Date	: 31-Mar-2021
C-O-C number	: ---			No. of samples received	: 2
Site	: TUEN MUN SOUTH			No. of samples analysed	: 2

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 12-Mar-2021 to 30-Mar-2021.

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: HK2110604

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

1530-TME-EDH505 10.00m-10.50m, 10.50m-11.00m	1530-TME-EDH505 11.00m-11.50m, 11.50m-12.00m	---	---	---
12-Mar-2021 10:20	12-Mar-2021 11:50	----	----	----
HK2110604-001	HK2110604-002	-----	-----	-----

Sampling date / time

Compound	CAS Number	LOR	Unit	HK2110604-001	HK2110604-002	---	---	---
----------	------------	-----	------	---------------	---------------	-----	-----	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.8	32.1	---	---	---
-----------------------------------------	------	-----	---	------	------	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	3	13	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.2	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	11	52	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	12	64	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	153	70	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.10	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	4	22	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.6	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	90	138	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	---	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	---	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH505	1530-TME-EDH505	---	---	---
					10.00m-10.50m, 10.50m-11.00m	11.00m-11.50m, 11.50m-12.00m			
				Sampling date / time	12-Mar-2021 10:20	12-Mar-2021 11:50	----	----	----
Compound	CAS Number	LOR	Unit	HK2110604-001	HK2110604-002	-----	-----	-----	-----
EP-065: PCB Single Congeners - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	---	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	76.3	79.1	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	75.3	78.6	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	67.7	72.6	---	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH505	1530-TME-EDH505	---	---	---
					10.00m-10.50m, 10.50m-11.00m	11.00m-11.50m, 11.50m-12.00m			
				Sampling date / time	12-Mar-2021 10:20	12-Mar-2021 11:50	----	----	----
Compound	CAS Number	LOR	Unit	HK2110604-001	HK2110604-002	-----	-----	-----	-----
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3577836)								
HK2110604-001	1530-TME-EDH505 10.00m-10.50m, 10.50m-11.00m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.8	23.8	0.00
HK2110852-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	17.9	18.6	3.89
EG: Metals and Major Cations (QC Lot: 3571389)								
HK2110604-001	1530-TME-EDH505 10.00m-10.50m, 10.50m-11.00m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.2	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	3	3	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	11	12	0.00
		EG020: Copper	7440-50-8	1	mg/kg	12	13	0.00
		EG020: Lead	7439-92-1	1	mg/kg	153	152	0.00
		EG020: Nickel	7440-02-0	1	mg/kg	4	5	0.00
EG020: Zinc	7440-66-6	1	mg/kg	90	71	22.6		
EP-065: PCB Single Congeners (QC Lot: 3580234)								
HK2110604-001	1530-TME-EDH505 10.00m-10.50m, 10.50m-11.00m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3580234) - Continued								
HK2110604-001	1530-TME-EDH505 10.00m-10.50m, 10.50m-11.00m	PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)								
HK2110604-001	1530-TME-EDH505 10.00m-10.50m, 10.50m-11.00m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		



Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3594302)								
HK2110604-001	1530-TME-EDH505 10.00m-10.50m, 10.50m-11.00m	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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	
EG: Metals and Major Cations (QC Lot: 3571389)												
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	103	----	87.2	110	----	----	
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	102	----	85.0	113	----	----	
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	98.1	----	87.7	111	----	----	
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	107	----	92.0	115	----	----	
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	100	----	86.7	115	----	----	
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	----	86.6	115	----	----	
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	104	----	90.6	111	----	----	
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	105	----	85.0	109	----	----	
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	107	----	90.9	115	----	----	
EP-065: PCB Single Congeners (QC Lot: 3580234)												
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	90.4	----	49.0	128	----	----	
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	79.5	----	49.0	133	----	----	
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	74.8	----	52.0	130	----	----	
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	96.6	----	48.0	134	----	----	
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	101	----	50.0	135	----	----	
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	95.9	----	55.0	127	----	----	
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	81.0	----	56.0	127	----	----	
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	86.4	----	52.0	132	----	----	
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	83.9	----	53.0	128	----	----	
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	84.0	----	51.0	132	----	----	
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	81.9	----	55.0	126	----	----	



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-065: PCB Single Congeners (QC Lot: 3580234) - Continued											
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	88.8	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	90.9	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	79.2	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	76.6	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	90.8	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	88.6	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	85.7	----	75.0	134	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	75.2	----	68.0	135	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	82.5	----	72.0	133	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	81.3	----	70.0	135	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	83.8	----	73.0	137	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	68.0	----	64.0	145	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	84.0	----	70.0	138	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	81.7	----	71.0	136	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	73.0	----	65.0	137	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	83.8	----	76.0	137	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	76.7	----	59.0	138	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	79.5	----	65.0	144	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	66.3	----	47.0	145	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	69.0	----	33.0	137	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	73.9	----	31.0	144	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	70.8	----	32.0	140	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EP-390: Triorganotins (QC Lot: 3594302)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	96.7	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3571389)										
HK2110480-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	98.1	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	110	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	95.5	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	118	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	115	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	97.1	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	104	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3580234)										
HK2110604-002	1530-TME-EDH505 11.00m-11.50m, 11.50m-12.00m	PCB 8	34883-43-7	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	60.5	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	91.2	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	98.9	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	79.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	91.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	109	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	89.3	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3580234) - Continued										
HK2110604-002	1530-TME-EDH505 11.00m-11.50m, 11.50m-12.00m	PCB 118	31508-00-6	5 µg/kg	94.8	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	74.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	91.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	85.2	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.5	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	72.6	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	75.8	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	78.4	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	89.4	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)										
HK2110604-002	1530-TME-EDH505 11.00m-11.50m, 11.50m-12.00m	Naphthalene	91-20-3	250 µg/kg	85.5	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	75.0	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	81.2	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	80.0	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	83.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	58.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	83.6	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	81.2	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.3	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	84.1	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	77.0	----	50.0	130	----	----



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233) - Continued										
HK2110604-002	1530-TME-EDH505	Benzo(k)fluoranthene	207-08-9	250 µg/kg	79.8	----	50.0	130	----	----
	11.00m-11.50m,	Benzo(a)pyrene	50-32-8	250 µg/kg	58.8	----	50.0	130	----	----
	11.50m-12.00m	Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	68.5	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	68.2	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	71.0	----	50.0	130	----	----

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3594302)										
HK2110604-002	1530-TME-EDH505	Tributyltin	56573-85-4	5 ngSn/L	81.7	----	70.0	130	----	----
	11.00m-11.50m,									
	11.50m-12.00m									

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2110995
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 17-Mar-2021
Order number	: J2009SF23	Quote	: HKE/2221/2020_V2	Issue Date	: 31-Mar-2021
		number			
C-O-C number	: ---			No. of samples received	: 4
Site	: TUEN MUN SOUTH			No. of samples analysed	: 3

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 17-Mar-2021 to 30-Mar-2021.

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: HK2110995

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH507 17.10m-17.60m, 17.60m-18.10m	1530-TME-EDH507 18.10m-18.60m	1530-TME-EDH507 19.10m-19.60m, 19.60m-20.10m	---	---
Sampling date / time	17-Mar-2021 09:50	17-Mar-2021 11:10	17-Mar-2021 13:30	----	----
Compound	HK2110995-001	HK2110995-002	HK2110995-004	-----	-----

EA/ED: Physical and Aggregate Properties

EA/ED: Physical and Aggregate Properties	CAS Number	LOR	Unit	1530-TME-EDH507	1530-TME-EDH507	1530-TME-EDH507	---	---
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.5	13.5	24.5	---	---

EG: Metals and Major Cations

EG: Metals and Major Cations	CAS Number	LOR	Unit	1530-TME-EDH507	1530-TME-EDH507	1530-TME-EDH507	---	---
EG020: Arsenic	7440-38-2	1	mg/kg	5	6	5	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
EG020: Chromium	7440-47-3	1	mg/kg	18	14	19	---	---
EG020: Copper	7440-50-8	1	mg/kg	17	13	18	---	---
EG020: Lead	7439-92-1	1	mg/kg	84	55	100	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	<0.05	---	---
EG020: Nickel	7440-02-0	1	mg/kg	8	6	8	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.1	0.2	---	---
EG020: Zinc	7440-66-6	1	mg/kg	75	37	186	---	---

EP-065: PCB Single Congeners

EP-065: PCB Single Congeners	CAS Number	LOR	Unit	1530-TME-EDH507	1530-TME-EDH507	1530-TME-EDH507	---	---
EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH507 17.10m-17.60m, 17.60m-18.10m	1530-TME-EDH507 18.10m-18.60m	1530-TME-EDH507 19.10m-19.60m, 19.60m-20.10m	---	---
				Sampling date / time	17-Mar-2021 09:50	17-Mar-2021 11:10	17-Mar-2021 13:30	----	----
Compound	CAS Number	LOR	Unit	HK2110995-001	HK2110995-002	HK2110995-004	-----	-----	
EP-065: PCB Single Condensers - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	---	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	---	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	---	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	---	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	89.3	85.3	87.1	---	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	92.9	93.3	95.2	---	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	62.0	62.8	75.6	---	---	



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH507	1530-TME-EDH507	1530-TME-EDH507	---	---
				Sampling date / time	17.10m-17.60m, 17.60m-18.10m	18.10m-18.60m	19.10m-19.60m, 19.60m-20.10m	----	----
Compound	CAS Number	LOR	Unit	17-Mar-2021 09:50	17-Mar-2021 11:10	17-Mar-2021 13:30	-----	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	---	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3588197)								
HK2110783-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	32.8	32.6	0.490
HK2111302-004	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	34.0	34.3	1.09
EG: Metals and Major Cations (QC Lot: 3571389)								
HK2110604-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.2	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	3	3	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	11	12	0.00
		EG020: Copper	7440-50-8	1	mg/kg	12	13	0.00
		EG020: Lead	7439-92-1	1	mg/kg	153	152	0.00
		EG020: Nickel	7440-02-0	1	mg/kg	4	5	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	90	71	22.6
EP-065: PCB Single Congeners (QC Lot: 3580234)								
HK2110604-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3580234) - Continued								
HK2110604-001	Anonymous	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)								
HK2110604-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3594302)								
HK2110604-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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			
			Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3571389)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	103	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	102	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	98.1	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	107	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	100	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	104	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	105	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	107	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3580234)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	90.4	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	79.5	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	74.8	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	96.6	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	101	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	95.9	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	81.0	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	86.4	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	83.9	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	84.0	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	81.9	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	88.8	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.2	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	90.9	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	79.2	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	76.6	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	90.8	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	88.6	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	85.7	----	75.0	134	----	----



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	75.2	----	68.0	135	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	82.5	----	72.0	133	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	81.3	----	70.0	135	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	83.8	----	73.0	137	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	68.0	----	64.0	145	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	84.0	----	70.0	138	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	81.7	----	71.0	136	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	73.0	----	65.0	137	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	83.8	----	76.0	137	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	76.7	----	59.0	138	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	79.5	----	65.0	144	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	66.3	----	47.0	145	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	69.0	----	33.0	137	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	73.9	----	31.0	144	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	70.8	----	32.0	140	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3594302)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	96.7	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3571389)										
HK2110480-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	98.1	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	110	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	95.5	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	118	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	115	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	97.1	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	104	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3580234)										
HK2110604-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	60.5	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	91.2	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	98.9	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	79.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	91.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	109	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	89.3	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3580234) - Continued										
HK2110604-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	94.8	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	74.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	91.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	85.2	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.5	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	72.6	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	75.8	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	78.4	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	89.4	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233)										
HK2110604-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	85.5	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	75.0	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	81.2	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	80.0	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	83.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	58.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	83.6	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	81.2	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	73.3	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	84.1	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	77.0	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3580233) - Continued										
HK2110604-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	79.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	58.8	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	68.5	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	68.2	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	71.0	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3594302)										
HK2110604-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	81.7	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2115907
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 21-Apr-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	Issue Date	: 10-May-2021
C-O-C number	: ---			No. of samples received	: 1
Site	: TUEN MUN SOUTH			No. of samples analysed	: 1

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 21-Apr-2021 to 07-May-2021.

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: HK2115907

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

1530-TME-EDH509

10.50-11.0m

Sampling date / time

21-Apr-2021 13:45

Compound	CAS Number	LOR	Unit	HK2115907-001	-----	-----	-----	-----
----------	------------	-----	------	---------------	-------	-------	-------	-------

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.3	---	---	---	---
-----------------------------------------	------	-----	---	------	-----	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	10	---	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	---	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	32	---	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	12	---	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	32	---	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	---	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	22	---	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	---	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	121	---	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	---	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	---	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	---	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	---	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	---	---	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 170	35065-30-6	3	µg/kg	<3	---	---	---	---



Sub-Matrix: SEDIMENT			Sample ID	1530-TME-EDH509	---	---	---	---
			10.50-11.0m					
			Sampling date / time	21-Apr-2021 13:45	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2115907-001	---	---	---	---
EP-065: PCB Single Congeners - Continued								
EP065: PCB 180	35065-29-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	86.2	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	89.2	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	78.9	---	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH509	---	---	---	---
				10.50-11.0m					
				Sampling date / time	21-Apr-2021 13:45	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2115907-001	---	---	---	---	---
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	---	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3649157)								
HK2115907-001	1530-TME-EDH509 10.50-11.0m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.3	33.8	1.64
HK2116828-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	22.0	22.5	1.99
EG: Metals and Major Cations (QC Lot: 3646559)								
HK2116657-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.16	0.17	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	1.0	1.0	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	1.5	1.4	12.2
		EG020: Arsenic	7440-38-2	1	mg/kg	16	16	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	34	35	0.00
		EG020: Copper	7440-50-8	1	mg/kg	93	96	3.44
		EG020: Lead	7439-92-1	1	mg/kg	118	114	2.63
		EG020: Nickel	7440-02-0	1	mg/kg	22	23	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	492	496	0.840
EP-065: PCB Single Congeners (QC Lot: 3649659)								
HK2115907-001	1530-TME-EDH509 10.50-11.0m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00		



Matrix: SOIL

				<i>Laboratory Duplicate (DUP) Report</i>				
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD (%)</i>
EP-065: PCB Single Congeners (QC Lot: 3649659) - Continued								
HK2115907-001	1530-TME-EDH509 10.50-11.0m	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3649660)								
HK2115907-001	1530-TME-EDH509 10.50-11.0m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benzo(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		

Matrix: WATER

				<i>Laboratory Duplicate (DUP) Report</i>				
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD (%)</i>
EP-390: Triorganotins (QC Lot: 3653102)								
HK2115184-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3649660)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	99.4	----	85.0	105	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	91.5	----	74.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	95.2	----	81.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	91.4	----	79.0	104	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	95.2	----	79.0	105	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	94.2	----	60.0	115	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	96.7	----	82.0	106	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	98.2	----	80.0	106	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	101	----	72.0	106	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	104	----	80.0	113	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	69.3	----	48.0	111	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	84.2	----	56.0	116	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	66.0	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	68.0	----	43.0	105	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	59.0	----	34.0	109	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	59.1	----	31.0	111	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotins (QC Lot: 3653102)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	110	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3646559)										
HK2115907-001	1530-TME-EDH509 10.50-11.0m	EG020: Arsenic	7440-38-2	5 mg/kg	96.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	103	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	105	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	114	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	124	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	100	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3649659)										
HK2116839-001	Anonymous	PCB 8	34883-43-7	5 µg/kg	89.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	80.1	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	65.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	51.6	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	55.3	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	54.2	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	61.2	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	79.7	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3649659) - Continued										
HK2116839-001	Anonymous	PCB 105	32598-14-4	5 µg/kg	69.0	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	66.5	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	78.1	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	82.3	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	85.8	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	75.2	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	61.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	69.4	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	83.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	86.3	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3649660)										
HK2116839-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	91.9	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	87.6	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.1	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	90.6	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	89.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	86.8	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	86.2	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	87.3	----	50.0	130	----	----
Benz(a)anthracene	56-55-3	250 µg/kg	95.0	----	50.0	130	----	----		



Matrix: SOIL

				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3649660) - Continued										
HK2116839-001	Anonymous	Chrysene	218-01-9	250 µg/kg	96.1	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	62.2	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	69.7	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	57.9	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	62.8	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	53.6	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	52.3	----	50.0	130	----	----

Matrix: WATER

				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3653102)										
HK2115425-001	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	91.7	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2124418
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 17-Jun-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 02-Jul-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 3
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V3	No. of samples analysed	: 3
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 17-Jun-2021 to 02-Jul-2021.

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: HK2124418

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH111 9-9.5m, 9.5-10m	1530-TME-EDH111 10-10.5m, 10.5-11m	1530-TME-EDH111 11-11.5m, 11.5-12m	---	---
Sampling date / time	17-Jun-2021 10:01	17-Jun-2021 10:41	17-Jun-2021 11:16	----	----
Compound	HK2124418-001	HK2124418-002	HK2124418-003	-----	-----

EA/ED: Physical and Aggregate Properties

EA/ED: Physical and Aggregate Properties	CAS Number	LOR	Unit	23.8	30.0	31.5	---	---
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	23.8	30.0	31.5	---	---

EG: Metals and Major Cations

EG: Metals and Major Cations	CAS Number	LOR	Unit	6	7	8	---	---
EG020: Arsenic	7440-38-2	1	mg/kg	6	7	8	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
EG020: Chromium	7440-47-3	1	mg/kg	15	21	27	---	---
EG020: Copper	7440-50-8	1	mg/kg	5	8	10	---	---
EG020: Lead	7439-92-1	1	mg/kg	17	22	27	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	<0.05	---	---
EG020: Nickel	7440-02-0	1	mg/kg	9	14	17	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	---	---
EG020: Zinc	7440-66-6	1	mg/kg	110	73	70	---	---

EP-065: PCB Single Congeners

EP-065: PCB Single Congeners	CAS Number	LOR	Unit	<3	<3	<3	---	---
EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH111 9-9.5m, 9.5-10m	1530-TME-EDH111 10-10.5m, 10.5-11m	1530-TME-EDH111 11-11.5m, 11.5-12m	---	---
				Sampling date / time	17-Jun-2021 10:01	17-Jun-2021 10:41	17-Jun-2021 11:16	----	----
Compound	CAS Number	LOR	Unit	HK2124418-001	HK2124418-002	HK2124418-003	-----	-----	
EP-065: PCB Single Condensers - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	---	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	---	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	---	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	---	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	103	95.5	106	---	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	95.9	86.4	91.8	---	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	79.0	71.7	75.8	---	---	



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH111 9-9.5m, 9.5-10m	1530-TME-EDH111 10-10.5m, 10.5-11m	1530-TME-EDH111 11-11.5m, 11.5-12m	---	---
				Sampling date / time	17-Jun-2021 10:01	17-Jun-2021 10:41	17-Jun-2021 11:16	----	----
Compound	CAS Number	LOR	Unit	HK2124418-001	HK2124418-002	HK2124418-003	-----	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	---	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method/Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3743755)								
HK2124311-038	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	20.2	20.2	0.0
EG: Metals and Major Cations (QC Lot: 3743862)								
HK2124058-014	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.05	0.06	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.2	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	1	1	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	26	23	9.6
		EG020: Copper	7440-50-8	1	mg/kg	16	14	12.1
		EG020: Lead	7439-92-1	1	mg/kg	45	50	8.7
		EG020: Nickel	7440-02-0	1	mg/kg	9	8	14.6
		EG020: Zinc	7440-66-6	1	mg/kg	47	50	6.4
EP-065: PCB Single Congeners (QC Lot: 3750413)								
HK2124418-001	1530-TME-EDH111 9-9.5m, 9.5-10m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3750413) - Continued								
HK2124418-001	1530-TME-EDH111 9-9.5m, 9.5-10m	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412)								
HK2124418-001	1530-TME-EDH111 9-9.5m, 9.5-10m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3763839)								
HK2124418-001	1530-TME-EDH111 9-9.5m, 9.5-10m	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	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
EG: Metals and Major Cations (QC Lot: 3743862)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	103	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	98.4	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	103	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	106	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	101	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	106	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	104	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	99.9	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	113	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3750413)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	83.0	----	58.0	109	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	83.8	----	50.0	111	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	102	----	50.0	118	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	103	----	44.0	120	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	102	----	25.0	130	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	119	----	46.0	122	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	89.6	----	50.0	120	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	71.7	----	53.0	115	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	91.1	----	58.0	112	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	91.6	----	56.0	114	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	95.2	----	59.0	109	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	95.3	----	58.0	113	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	93.1	----	55.0	113	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	92.8	----	56.0	114	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	99.1	----	58.0	109	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	98.4	----	55.0	116	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	97.2	----	55.0	113	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	93.3	----	53.0	118	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412)											



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412) - Continued											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	97.3	----	85.0	106	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	96.9	----	79.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	95.9	----	82.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	94.3	----	77.0	105	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	95.3	----	77.0	110	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	97.6	----	76.0	108	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	96.3	----	81.0	109	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	94.6	----	82.0	111	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	98.5	----	81.0	107	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	97.3	----	83.0	121	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	70.9	----	48.0	118	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	71.6	----	64.0	129	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	68.4	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	65.5	----	55.0	97.0	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	64.0	----	34.0	120	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	62.7	----	34.0	119	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
Matrix: WATER											
Matrix: WATER		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-390: Triorganotins (QC Lot: 3763839)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	120	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3743862)										
HK2124058-013	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	98.8	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	94.9	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	121	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	97.4	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	80.2	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	99.1	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3750413)										
HK2124418-002	1530-TME-EDH111 10-10.5m, 10.5-11m	PCB 8	34883-43-7	5 µg/kg	99.1	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	99.9	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	110	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	117	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	114	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	122	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	96.1	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	79.4	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3750413) - Continued										
HK2124418-002	1530-TME-EDH111 10-10.5m, 10.5-11m	PCB 105	32598-14-4	5 µg/kg	96.3	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	97.5	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	99.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	99.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	98.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	104	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	102	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	101	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	98.8	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412)										
HK2124418-002	1530-TME-EDH111 10-10.5m, 10.5-11m	Naphthalene	91-20-3	250 µg/kg	98.2	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	96.9	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	95.5	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	94.1	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	94.8	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	91.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	94.0	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	92.7	----	50.0	130	----	----
Benz(a)anthracene	56-55-3	250 µg/kg	97.7	----	50.0	130	----	----		



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412) - Continued										
HK2124418-002	1530-TME-EDH111	Chrysene	218-01-9	250 µg/kg	96.3	----	50.0	130	----	----
	10-10.5m, 10.5-11m	Benzo(b)fluoranthene	205-99-2	250 µg/kg	71.0	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	73.6	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	60.4	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	62.5	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	56.2	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	59.6	----	50.0	130	----	----

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3763839)										
HK2124931-001	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	99.5	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2120239
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 17-May-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 02-Jun-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 4
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 4
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 17-May-2021 to 28-May-2021.

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: HK2120239

Sample(s) 1530-TME-EDH510(P) 8.50-9.00m, 9.00-9.50m, 9.50-10.00m, 10.00-10.50m, 10.50-11.00 and 11.00-11.50m were submitted by client. Sample(s) arrived laboratory in chilled condition at 17:15 on 17 May, 2021. The result(s) related only to the item(s) tested.

Sample(s) 1530-TME-EDH510(P) 11.50-12.00m was submitted by client. Sample(s) arrived laboratory in chilled condition at 15:10 on 18 May, 2021. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH510 (P) 8.50-9.00m	1530-TME-EDH510 (P) 9.00-9.50m, 9.50-10.00m	1530-TME-EDH510 (P) 10.00-10.50m, 10.50-11.00m	1530-TME-EDH510 (P) 11.00-11.50m, 11.50-12.00m	---			
Sampling date / time	17-May-2021 13:37	17-May-2021 13:37	17-May-2021 14:20	17-May-2021 15:05	----			
Compound	CAS Number	LOR	Unit	HK2120239-001	HK2120239-002	HK2120239-003	HK2120239-004	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	20.4	28.0	27.5	37.1	---
-----------------------------------------	------	-----	---	------	------	------	------	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	5	7	8	8	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	---
EG020: Chromium	7440-47-3	1	mg/kg	10	22	25	29	---
EG020: Copper	7440-50-8	1	mg/kg	4	10	10	12	---
EG020: Lead	7439-92-1	1	mg/kg	13	26	28	33	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	---
EG020: Nickel	7440-02-0	1	mg/kg	7	16	17	20	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	---
EG020: Zinc	7440-66-6	1	mg/kg	34	67	70	76	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH510 (P) 8.50-9.00m	1530-TME-EDH510 (P) 9.00-9.50m, 9.50-10.00m	1530-TME-EDH510 (P) 10.00-10.50m, 10.50-11.00m	1530-TME-EDH510 (P) 11.00-11.50m, 11.50-12.00m	---
				Sampling date / time	17-May-2021 13:37	17-May-2021 13:37	17-May-2021 14:20	17-May-2021 15:05	----
Compound	CAS Number	LOR	Unit	HK2120239-001	HK2120239-002	HK2120239-003	HK2120239-004	-----	
EP-065: PCB Sinalc Conaeners - Continued									
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	78.2	78.3	77.4	88.9	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	81.6	87.6	79.5	88.5	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH510 (P) 8.50-9.00m	1530-TME-EDH510 (P) 9.00-9.50m, 9.50-10.00m	1530-TME-EDH510 (P) 10.00-10.50m, 10.50-11.00m	1530-TME-EDH510 (P) 11.00-11.50m, 11.50-12.00m	---
				Sampling date / time	17-May-2021 13:37	17-May-2021 13:37	17-May-2021 14:20	17-May-2021 15:05	----
Compound	CAS Number	LOR	Unit	HK2120239-001	HK2120239-002	HK2120239-003	HK2120239-004	-----	
EP-065S: PCB Conaeners and Oraanochlorine Pesticides Surroate - Continued									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	53.4	58.8	64.0	61.6	---	



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH510 (P) 8.50-9.00m	1530-TME-EDH510 (P) 9.00-9.50m, 9.50-10.00m	1530-TME-EDH510 (P) 10.00-10.50m, 10.50-11.00m	1530-TME-EDH510 (P) 11.00-11.50m, 11.50-12.00m	---
				Sampling date / time	17-May-2021 13:37	17-May-2021 13:37	17-May-2021 14:20	17-May-2021 15:05	----
Compound	CAS Number	LOR	Unit	HK2120239-001	HK2120239-002	HK2120239-003	HK2120239-004	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	<0.015	<0.015	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3688352)								
HK2120239-001	1530-TME-EDH510(P) 8.50-9.00m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	20.4	20.2	1.0
EG: Metals and Major Cations (QC Lot: 3690923)								
HK2120239-002	1530-TME-EDH510(P) 9.00-9.50m, 9.50-10.00m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	7	7	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	22	26	15.4
		EG020: Copper	7440-50-8	1	mg/kg	10	11	14.4
		EG020: Lead	7439-92-1	1	mg/kg	26	26	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	16	18	12.7
EG020: Zinc	7440-66-6	1	mg/kg	67	70	5.2		
EP-065: PCB Single Congeners (QC Lot: 3689015)								
HK2118978-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3689015) - Continued								
HK2118978-001	Anonymous	PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)								
HK2118978-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3692195)								
HK2118995-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	0.037 µg TBT /L	14	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			
				Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCS Spike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3690923)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	97.8	---	87.2	110	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	107	---	85.0	113	---	---
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	91.1	---	87.7	111	---	---
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	94.8	---	92.0	115	---	---
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	99.1	---	86.7	115	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	112	---	86.6	115	---	---
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	109	---	90.6	111	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	103	---	85.0	109	---	---
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	98.0	---	90.9	115	---	---
EP-065: PCB Single Congeners (QC Lot: 3689015)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	69.6	---	49.0	128	---	---
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	67.8	---	49.0	133	---	---
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	80.0	---	52.0	130	---	---
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	68.8	---	48.0	134	---	---
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	70.4	---	50.0	135	---	---
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	79.2	---	55.0	127	---	---
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	63.3	---	56.0	127	---	---
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	59.3	---	52.0	132	---	---
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	67.0	---	53.0	128	---	---
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	62.5	---	51.0	132	---	---
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	66.8	---	55.0	126	---	---
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	64.1	---	49.0	130	---	---
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	59.6	---	51.0	130	---	---
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	64.3	---	51.0	131	---	---
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	66.7	---	50.0	129	---	---
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	63.6	---	48.0	133	---	---
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	63.9	---	50.0	129	---	---
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	59.6	---	52.0	129	---	---
Total Polychlorinated biphenyls	---	18	µg/kg	<18	---	---	---	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	95.9	---	85.0	105	---	---



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	101	----	74.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	95.7	----	81.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.4	----	79.0	104	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	90.7	----	79.0	105	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	93.1	----	60.0	115	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	95.8	----	82.0	106	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	95.1	----	80.0	106	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	94.4	----	72.0	106	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	113	----	80.0	113	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	71.0	----	48.0	111	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	77.1	----	56.0	116	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	70.6	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	70.6	----	43.0	105	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	68.4	----	34.0	109	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	66.7	----	31.0	111	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3692195)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	115	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3690923)										
HK2120239-001	1530-TME-EDH510(P) 8.50-9.00m	EG020: Arsenic	7440-38-2	5 mg/kg	97.1	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	104	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	94.4	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	79.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	108	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	114	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	95.2	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	102	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3689015)										
HK2118978-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	60.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	61.8	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	73.2	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	89.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	65.8	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	73.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	64.1	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	68.1	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	70.7	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3689015) - Continued										
HK2118978-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	59.1	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	65.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	59.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	59.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	68.2	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	52.9	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	50.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	55.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	55.5	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)										
HK2118978-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	73.1	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	76.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	73.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	80.1	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	75.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	76.8	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	74.6	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	80.0	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	87.7	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	65.4	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016) - Continued										
HK2118978-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	62.6	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	56.8	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	55.8	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	58.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	50.8	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3692195)										
HK2118995-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	# Not Determined	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 12
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2120380
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 18-May-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 02-Jun-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 1
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 1
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 18-May-2021 to 28-May-2021.

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: HK2120380

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

1530-TME-EDH510 (P) 12.00-12.50m	---	---	---	---
18-May-2021 09:48	----	----	----	----
HK2120380-001	-----	-----	-----	-----

Sampling date / time

Compound	CAS Number	LOR	Unit	Result	LOD	LOQ	Method	Notes
----------	------------	-----	------	--------	-----	-----	--------	-------

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	36.1	---	---	---	---
-----------------------------------------	------	-----	---	------	-----	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	8	---	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	---	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	31	---	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	12	---	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	35	---	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	0.05	---	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	21	---	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	---	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	74	---	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	---	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	---	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	---	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	---	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	---	---	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	---	---	---	---



Sub-Matrix: SEDIMENT			Sample ID	1530-TME-EDH510 (P) 12.00-12.50m	---	---	---	---
			Sampling date / time	18-May-2021 09:48	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2120380-001	---	---	---	---
EP-065: PCB Single Condensers - Continued								
EP065: PCB 170	35065-30-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)anthracene	56-55-3	150	µg/kg	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	---	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	61.4	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	62.8	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	50.4	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3688352)								
HK2120239-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	20.4	20.2	1.0
EG: Metals and Major Cations (QC Lot: 3690923)								
HK2120239-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	7	7	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	22	26	15.4
		EG020: Copper	7440-50-8	1	mg/kg	10	11	14.4
		EG020: Lead	7439-92-1	1	mg/kg	26	26	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	16	18	12.7
		EG020: Zinc	7440-66-6	1	mg/kg	67	70	5.2
EP-065: PCB Single Congeners (QC Lot: 3689015)								
HK2118978-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3689015) - Continued								
HK2118978-001	Anonymous	PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)								
HK2118978-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0
		Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	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
EG: Metals and Major Cations (QC Lot: 3690923)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	97.8	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	107	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	91.1	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	94.8	----	92.0	115	----	----



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3690923) - Continued											
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	99.1	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	112	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	109	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	103	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	98.0	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3689015)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	69.6	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	67.8	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	80.0	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	68.8	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	70.4	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	79.2	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	63.3	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	59.3	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	67.0	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	62.5	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	66.8	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	64.1	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	59.6	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	64.3	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	66.7	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	63.6	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	63.9	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	59.6	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	95.9	----	85.0	105	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	101	----	74.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	95.7	----	81.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.4	----	79.0	104	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3690923)										
HK2120239-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	97.1	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	104	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	94.4	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	79.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	108	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	114	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	95.2	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	102	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3689015)										
HK2118978-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	60.4	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	61.8	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	73.2	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	89.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	65.8	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	73.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	64.1	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	68.1	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	70.7	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3689015) - Continued										
HK2118978-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	59.1	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	65.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	59.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	59.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	68.2	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	52.9	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	50.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	55.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	55.5	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016)										
HK2118978-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	73.1	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	76.4	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	73.9	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	80.1	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	75.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	75.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	76.8	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	74.6	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	80.0	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	87.7	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	65.4	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3689016) - Continued										
HK2118978-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	62.6	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	56.8	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	55.8	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	58.4	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	50.8	----	50.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT

Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2122177
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 03-Jun-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	Issue Date	: 18-Jun-2021
C-O-C number	: ---			No. of samples received	: 3
Site	: TUEN MUN SOUTH			No. of samples analysed	: 3

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 03-Jun-2021 to 18-Jun-2021.

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: HK2122177

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH511 10.5m-11.0m	1530-TME-EDH511 11.00m-11.50m, 11.50m-12.00m	1530-TME-EDH511 12.00m-12.50m, 12.50m-13.00m	---	---
Sampling date / time	03-Jun-2021 09:40	03-Jun-2021 09:40	03-Jun-2021 10:20	----	----
Compound	HK2122177-001	HK2122177-002	HK2122177-003	-----	-----

EA/ED: Physical and Aggregate Properties

EA/ED: Physical and Aggregate Properties	CAS Number	LOR	Unit	1530-TME-EDH511 10.5m-11.0m	1530-TME-EDH511 11.00m-11.50m, 11.50m-12.00m	1530-TME-EDH511 12.00m-12.50m, 12.50m-13.00m	---	---
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	17.7	32.0	34.9	---	---

EG: Metals and Major Cations

EG: Metals and Major Cations	CAS Number	LOR	Unit	1530-TME-EDH511 10.5m-11.0m	1530-TME-EDH511 11.00m-11.50m, 11.50m-12.00m	1530-TME-EDH511 12.00m-12.50m, 12.50m-13.00m	---	---
EG020: Arsenic	7440-38-2	1	mg/kg	3	7	7	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
EG020: Chromium	7440-47-3	1	mg/kg	7	25	24	---	---
EG020: Copper	7440-50-8	1	mg/kg	4	10	9	---	---
EG020: Lead	7439-92-1	1	mg/kg	11	33	32	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	<0.05	---	---
EG020: Nickel	7440-02-0	1	mg/kg	4	15	15	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	---	---
EG020: Zinc	7440-66-6	1	mg/kg	25	65	79	---	---

EP-065: PCB Single Congeners

EP-065: PCB Single Congeners	CAS Number	LOR	Unit	1530-TME-EDH511 10.5m-11.0m	1530-TME-EDH511 11.00m-11.50m, 11.50m-12.00m	1530-TME-EDH511 12.00m-12.50m, 12.50m-13.00m	---	---
EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH511 10.5m-11.0m	1530-TME-EDH511 11.00m-11.50m, 11.50m-12.00m	1530-TME-EDH511 12.00m-12.50m, 12.50m-13.00m	---	---
				Sampling date / time	03-Jun-2021 09:40	03-Jun-2021 09:40	03-Jun-2021 10:20	----	----
Compound	CAS Number	LOR	Unit	HK2122177-001	HK2122177-002	HK2122177-003	-----	-----	
EP-065: PCB Single Condensers - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	---	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	---	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	---	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	---	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	89.2	96.3	67.8	---	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	86.7	105	73.0	---	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	62.1	60.0	52.0	---	---	



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH511 10.5m-11.0m	1530-TME-EDH511 11.00m-11.50m, 11.50m-12.00m	1530-TME-EDH511 12.00m-12.50m, 12.50m-13.00m	---	---
				Sampling date / time	03-Jun-2021 09:40	03-Jun-2021 09:40	03-Jun-2021 10:20	----	----
Compound	CAS Number	LOR	Unit	HK2122177-001	HK2122177-002	HK2122177-003	-----	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	---	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3718082)								
HK2122193-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	6.3	6.1	3.1
HK2122307-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	24.9	25.1	0.6
EG: Metals and Major Cations (QC Lot: 3721059)								
HK2122177-002	1530-TME-EDH511 11.00m-11.50m, 11.50m-12.00m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	7	8	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	25	28	9.2
		EG020: Copper	7440-50-8	1	mg/kg	10	9	0.0
		EG020: Lead	7439-92-1	1	mg/kg	33	32	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	15	17	11.9
EG020: Zinc	7440-66-6	1	mg/kg	65	65	0.0		
EP-065: PCB Single Congeners (QC Lot: 3718431)								
HK2121979-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3718431) - Continued								
HK2121979-001	Anonymous	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3718432)								
HK2121979-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3742551)								
HK2122177-001	1530-TME-EDH511 10.5m-11.0m	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	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
EG: Metals and Major Cations (QC Lot: 3721059)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	98.1	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	104	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	99.6	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	103	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	97.1	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	114	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	99.8	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	100	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	108	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3718431)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	108	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	102	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	107	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	110	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	101	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	104	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	106	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	97.7	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	103	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	102	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	107	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	102	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	101	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	101	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	110	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	105	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	102	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	97.9	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3718432)											



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3718432) - Continued											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	98.1	----	85.0	105	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	96.2	----	74.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	101	----	81.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	101	----	79.0	104	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	90.6	----	79.0	105	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	102	----	60.0	115	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	100	----	82.0	106	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	101	----	80.0	106	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	82.9	----	72.0	106	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	101	----	80.0	113	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	69.6	----	48.0	111	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	98.2	----	56.0	116	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	80.2	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	74.6	----	43.0	105	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	70.0	----	34.0	109	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	67.0	----	31.0	111	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
Matrix: WATER											
Matrix: WATER		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-390: Triorganotins (QC Lot: 3742551)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	106	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3721059)										
HK2122177-001	1530-TME-EDH511 10.5m-11.0m	EG020: Arsenic	7440-38-2	5 mg/kg	95.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	104	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	112	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	87.5	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	98.1	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	113	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	103	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	98.5	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3718431)										
HK2121979-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	70.3	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	70.9	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	80.0	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	80.3	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	86.4	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	84.7	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	69.7	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	62.9	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	68.3	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3718431) - Continued										
HK2121979-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	67.4	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	71.4	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	67.8	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	66.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	66.9	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	70.6	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	67.8	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	65.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	63.6	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3718432)										
HK2121979-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	91.0	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	94.1	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.3	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	105	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	92.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	96.1	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	91.6	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	88.0	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	89.4	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	92.0	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	70.0	----	50.0	130	----	----



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3718432) - Continued										
HK2121979-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	99.4	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	77.0	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	70.7	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	65.1	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	66.9	----	50.0	130	----	----

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3742551)										
HK2122177-002	1530-TME-EDH511 11.00m-11.50m, 11.50m-12.00m	Tributyltin	56573-85-4	5 ngSn/L	97.4	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2124621
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 18-Jun-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 05-Jul-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 4
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V3	No. of samples analysed	: 4
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 18-Jun-2021 to 02-Jul-2021.

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: HK2124621

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #2 1530-TME-EDH114 10.00-10.50m, 10.50-11.00m and Sample #4 1530-TME-EDH114 12.00-12.50m, 12.50-13.00m.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH114 9.00-9.50m, 9.50-10.00m	1530-TME-EDH114 10.00-10.50m, 10.50-11.00m	1530-TME-EDH114 11.00-11.50m, 11.50-12.00m	1530-TME-EDH114 12.00-12.50m, 12.50-13.00m	---
Sampling date / time	18-Jun-2021 09:50	18-Jun-2021 10:25	18-Jun-2021 13:10	18-Jun-2021 13:45	----
Compound	HK2124621-001	HK2124621-002	HK2124621-003	HK2124621-004	-----

EA/ED: Physical and Aggregate Properties

EA/ED: Physical and Aggregate Properties	CAS Number	LOR	Unit	1530-TME-EDH114 9.00-9.50m, 9.50-10.00m	1530-TME-EDH114 10.00-10.50m, 10.50-11.00m	1530-TME-EDH114 11.00-11.50m, 11.50-12.00m	1530-TME-EDH114 12.00-12.50m, 12.50-13.00m	---
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	14.0	37.6	36.8	37.0	---

EG: Metals and Major Cations

EG: Metals and Major Cations	CAS Number	LOR	Unit	1530-TME-EDH114 9.00-9.50m, 9.50-10.00m	1530-TME-EDH114 10.00-10.50m, 10.50-11.00m	1530-TME-EDH114 11.00-11.50m, 11.50-12.00m	1530-TME-EDH114 12.00-12.50m, 12.50-13.00m	---
EG020: Arsenic	7440-38-2	1	mg/kg	3	11	9	8	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	---
EG020: Chromium	7440-47-3	1	mg/kg	5	33	33	34	---
EG020: Copper	7440-50-8	1	mg/kg	3	12	12	13	---
EG020: Lead	7439-92-1	1	mg/kg	8	30	30	32	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	---
EG020: Nickel	7440-02-0	1	mg/kg	3	21	21	22	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	---
EG020: Zinc	7440-66-6	1	mg/kg	49	80	77	550	---

EP-065: PCB Single Congeners

EP-065: PCB Single Congeners	CAS Number	LOR	Unit	1530-TME-EDH114 9.00-9.50m, 9.50-10.00m	1530-TME-EDH114 10.00-10.50m, 10.50-11.00m	1530-TME-EDH114 11.00-11.50m, 11.50-12.00m	1530-TME-EDH114 12.00-12.50m, 12.50-13.00m	---
EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH114	1530-TME-EDH114	1530-TME-EDH114	1530-TME-EDH114	---
				Sampling date / time	9.00-9.50m, 9.50-10.00m	10.00-10.50m, 10.50-11.00m	11.00-11.50m, 11.50-12.00m	12.00-12.50m, 12.50-13.00m	---
				18-Jun-2021 09:50	18-Jun-2021 10:25	18-Jun-2021 13:10	18-Jun-2021 13:45	----	---
Compound	CAS Number	LOR	Unit	HK2124621-001	HK2124621-002	HK2124621-003	HK2124621-004	-----	---
EP-065: PCB Single Congeners - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	95.6	96.2	96.5	90.6	90.6	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	92.2	88.8	89.4	88.4	88.4	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	77.7	78.9	66.6	71.5	71.5	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH114	1530-TME-EDH114	---	---	---
					10.00-10.50m, 10.50-11.00m	12.00-12.50m, 12.50-13.00m			
				Sampling date / time	18-Jun-2021 10:25	18-Jun-2021 13:45	----	----	----
Compound	CAS Number	LOR	Unit	HK2124621-002	HK2124621-004	-----	-----	-----	-----
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3754750)								
HK2124082-009	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	14.5	14.4	0.8
HK2124878-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	16.0	15.8	1.3
EG: Metals and Major Cations (QC Lot: 3747006)								
HK2124251-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	5	6	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	20	20	0.0
		EG020: Copper	7440-50-8	1	mg/kg	12	12	0.0
		EG020: Lead	7439-92-1	1	mg/kg	44	42	4.9
		EG020: Nickel	7440-02-0	1	mg/kg	9	9	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	69	64	7.3
EP-065: PCB Single Congeners (QC Lot: 3750413)								
HK2124418-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3750413) - Continued								
HK2124418-001	Anonymous	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412)								
HK2124418-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotin (QC Lot: 3763839)								
HK2124418-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	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			
			Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3747006)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	100	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	98.0	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	106	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	111	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	104	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	107	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	108	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	100	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	114	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3750413)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	83.0	----	58.0	109	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	83.8	----	50.0	111	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	102	----	50.0	118	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	103	----	44.0	120	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	102	----	25.0	130	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	119	----	46.0	122	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	89.6	----	50.0	120	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	71.7	----	53.0	115	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	91.1	----	58.0	112	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	91.6	----	56.0	114	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	95.2	----	59.0	109	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	95.3	----	58.0	113	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	93.1	----	55.0	113	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	92.8	----	56.0	114	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	99.1	----	58.0	109	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	98.4	----	55.0	116	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	97.2	----	55.0	113	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	93.3	----	53.0	118	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	97.3	----	85.0	106	----	----



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	96.9	----	79.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	95.9	----	82.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	94.3	----	77.0	105	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	95.3	----	77.0	110	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	97.6	----	76.0	108	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	96.3	----	81.0	109	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	94.6	----	82.0	111	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	98.5	----	81.0	107	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	97.3	----	83.0	121	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	70.9	----	48.0	118	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	71.6	----	64.0	129	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	68.4	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	65.5	----	55.0	97.0	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	64.0	----	34.0	120	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	62.7	----	34.0	119	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3763839)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	120	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3747006)										
HK2124251-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	108	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	89.4	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	106	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	89.0	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	103	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	122	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	99.8	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3750413)										
HK2124418-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	99.1	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	99.9	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	110	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	117	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	114	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	122	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	96.1	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	79.4	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	96.3	----	50.0	130	----	----



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3750413) - Continued										
HK2124418-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	97.5	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	101	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	99.7	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	99.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	98.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	104	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	102	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	101	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	98.8	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412)										
HK2124418-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	98.2	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	96.9	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	95.5	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	94.1	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	94.8	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	91.7	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	94.0	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	92.7	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	97.7	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	96.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	71.0	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3750412) - Continued										
HK2124418-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	73.6	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	60.4	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	62.5	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	56.2	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	59.6	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3763839)										
HK2124931-001	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	99.5	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 15
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2121047
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 24-May-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 08-Jun-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 5
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 5
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 24-May-2021 to 08-Jun-2021.

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: HK2121047

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #2 1530-TME-EDH512 12.00-12.50m, 12.50-13.00m, Sample #3 1530-TME-EDH512 13.00-13.50m, 13.50-14.00m, Sample #4 1530-TME-EDH512 14.00-14.50m, 14.50-15.00m and Sample #5 1530-TME-EDH512 15.00-15.50m, 15.50-16.00m.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-EDH512 11.00-11.50m, 11.50-12.00m	1530-TME-EDH512 12.00-12.50m, 12.50-13.00m	1530-TME-EDH512 13.00-13.50m, 13.50-14.00m	1530-TME-EDH512 14.00-14.50m, 14.50-15.00m	1530-TME-EDH512 15.00-15.50m, 15.50-16.00m
Sampling date / time	24-May-2021 09:30	24-May-2021 10:20	24-May-2021 11:40	24-May-2021 14:00	24-May-2021 15:50
Compound	HK2121047-001	HK2121047-002	HK2121047-003	HK2121047-004	HK2121047-005

Compound	CAS Number	LOR	Unit	HK2121047-001	HK2121047-002	HK2121047-003	HK2121047-004	HK2121047-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	34.5	37.5	38.5	23.7	17.1
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	9	9	8	6	4
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EG020: Chromium	7440-47-3	1	mg/kg	33	35	28	18	9
EG020: Copper	7440-50-8	1	mg/kg	12	13	11	6	3
EG020: Lead	7439-92-1	1	mg/kg	32	35	27	21	14
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.05	<0.05	<0.05	<0.05
EG020: Nickel	7440-02-0	1	mg/kg	22	23	19	10	4
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG020: Zinc	7440-66-6	1	mg/kg	80	120	148	81	14
EP-065: PCB Single Congeners								
EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-EDH512	1530-TME-EDH512	1530-TME-EDH512	1530-TME-EDH512	1530-TME-EDH512
					11.00-11.50m, 11.50-12.00m	12.00-12.50m, 12.50-13.00m	13.00-13.50m, 13.50-14.00m	14.00-14.50m, 14.50-15.00m	15.00-15.50m, 15.50-16.00m
				Sampling date / time	24-May-2021 09:30	24-May-2021 10:20	24-May-2021 11:40	24-May-2021 14:00	24-May-2021 15:50
Compound	CAS Number	LOR	Unit	HK2121047-001	HK2121047-002	HK2121047-003	HK2121047-004	HK2121047-004	HK2121047-005
EP-065: PCB Single Congeners - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3	<3
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3	<3
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3	<3
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18	<18
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50	<50
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50	<50
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50	<50
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50	<50
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50	<50
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50	<50
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150	<150
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550	<550
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	88.9	84.4	86.2	87.0	87.0	91.2
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	91.4	88.4	89.0	93.5	93.5	85.8
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	59.0	61.3	60.8	59.0	59.0	64.2



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-EDH512	1530-TME-EDH512	1530-TME-EDH512	1530-TME-EDH512	---
				Sampling date / time	12.00-12.50m, 12.50-13.00m	13.00-13.50m, 13.50-14.00m	14.00-14.50m, 14.50-15.00m	15.00-15.50m, 15.50-16.00m	----
Compound	CAS Number	LOR	Unit		HK2121047-002	HK2121047-003	HK2121047-004	HK2121047-005	-----
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L		<0.015	<0.015	<0.015	<0.015	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method/Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3704536)								
HK2120788-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	9.9	10.1	1.8
HK2121047-001	1530-TME-EDH512 11.00-11.50m, 11.50-12.00m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	34.5	34.8	0.8
EG: Metals and Major Cations (QC Lot: 3696590)								
HK2121032-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.06	0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	14	14	0.0
		EG020: Copper	7440-50-8	1	mg/kg	17	17	0.0
		EG020: Lead	7439-92-1	1	mg/kg	18	17	6.0
		EG020: Nickel	7440-02-0	1	mg/kg	5	6	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	35	35	0.0
EG: Metals and Major Cations (QC Lot: 3701841)								
HK2121047-005	1530-TME-EDH512 15.00-15.50m, 15.50-16.00m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	4	5	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	9	10	0.0
		EG020: Copper	7440-50-8	1	mg/kg	3	3	0.0
		EG020: Lead	7439-92-1	1	mg/kg	14	17	20.8
		EG020: Nickel	7440-02-0	1	mg/kg	4	4	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	14	14	0.0
EP-065: PCB Single Congeners (QC Lot: 3702982)								
HK2121047-001	1530-TME-EDH512 11.00-11.50m, 11.50-12.00m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0



Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3702982) - Continued								
HK2121047-001	1530-TME-EDH512 11.00-11.50m, 11.50-12.00m	PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	0.0	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3702981)								
HK2121047-001	1530-TME-EDH512 11.00-11.50m, 11.50-12.00m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	<150



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3702981) - Continued								
HK2121047-001	1530-TME-EDH512 11.00-11.50m, 11.50-12.00m	Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0
		Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3723266)								
HK2121047-004	1530-TME-EDH512 14.00-14.50m, 14.50-15.00m	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	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
EG: Metals and Major Cations (QC Lot: 3696590)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	103	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	96.7	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	97.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	105	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	99.6	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	106	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	103	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	103	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	108	----	90.9	115	----	----
EG: Metals and Major Cations (QC Lot: 3701841)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	103	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	97.5	----	85.0	113	----	----



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3701841) - Continued											
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	97.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	106	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	99.8	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	110	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	103	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	103	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	110	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3702982)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	97.3	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	101	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	110	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	109	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	108	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	116	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	86.6	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	82.4	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	85.6	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	85.2	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	94.8	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	91.7	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	91.9	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	84.6	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	95.4	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	96.4	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	94.9	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	91.7	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3702981)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	96.1	----	85.0	105	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	92.2	----	74.0	108	----	----



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3702981) - Continued											
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	93.1	----	81.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	92.5	----	79.0	104	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	86.7	----	79.0	105	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	90.0	----	60.0	115	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	90.2	----	82.0	106	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	92.4	----	80.0	106	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	96.5	----	72.0	106	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	104	----	80.0	113	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	105	----	48.0	111	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	104	----	56.0	116	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	105	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	76.0	----	43.0	105	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	90.3	----	34.0	109	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	91.4	----	31.0	111	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotins (QC Lot: 3723266)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	117	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3696590)										
HK2120997-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	115	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	101	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	114	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	125	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	90.0	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	102	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EG: Metals and Major Cations (QC Lot: 3701841)										
HK2121047-004	1530-TME-EDH512 14.00-14.50m, 14.50-15.00m	EG020: Arsenic	7440-38-2	5 mg/kg	120	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	99.3	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	119	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	112	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	103	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	106	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	104	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	101	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3702982)										
HK2121047-002	1530-TME-EDH512 12.00-12.50m, 12.50-13.00m	PCB 8	34883-43-7	5 µg/kg	85.3	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	88.6	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	96.1	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3702982) - Continued										
HK2121047-002	1530-TME-EDH512 12.00-12.50m, 12.50-13.00m	PCB 44	41464-39-5	5 µg/kg	92.9	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	94.0	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	97.1	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	79.0	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	75.8	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	79.5	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	77.7	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	81.9	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	79.0	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	78.8	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	77.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	81.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	81.8	----	50.0	130	----	----
PCB 180	35065-29-3	5 µg/kg	81.6	----	50.0	130	----	----		
PCB 187	52663-68-0	5 µg/kg	78.5	----	50.0	130	----	----		



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3702981)										
HK2121047-002	1530-TME-EDH512 12.00-12.50m, 12.50-13.00m	Naphthalene	91-20-3	250 µg/kg	86.4	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	87.7	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	85.1	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	85.7	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	82.0	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	80.3	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	87.1	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	89.9	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	84.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	93.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.7	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	98.0	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	93.6	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	75.5	----	50.0	130	----	----
Dibenz(a,h)anthracene	53-70-3	250 µg/kg	81.2	----	50.0	130	----	----		
Benzo(g,h,i)perylene	191-24-2	250 µg/kg	85.2	----	50.0	130	----	----		

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3723266)										
HK2121047-005	1530-TME-EDH512 15.00-15.50m, 15.50-16.00m	Tributyltin	56573-85-4	5 ngSn/L	94.5	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130



Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates - Continued			
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2112351
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 25-Mar-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	Issue Date	: 14-Apr-2021
C-O-C number	: ---			No. of samples received	: 3
Site	: TUEN MUN SOUTH			No. of samples analysed	: 3

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 25-Mar-2021 to 14-Apr-2021.

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: HK2112351

Sample "1530-TME-MEDH602 9.00m-9.50m" was submitted by client. Sample(s) arrived laboratory in chilled condition at 16:35 on 25 March, 2021. The result(s) related only to the item(s) tested.

Sample "1530-TME-MEDH602 9.50m-10.00m" was submitted by client. Sample(s) arrived laboratory in chilled condition at 17:00 on 26 March, 2021. The result(s) related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #2 1530-TME-MEDH602 10.00m-10.50m, 10.50m-11.00m.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-MEDH6 02 9.00m-9.50m, 9.50m-10.00m	1530-TME-MEDH6 02 10.00m-10.50m, 10.50m-11.00m	1530-TME-MEDH6 02 11.00m-11.50m	---	---
Sampling date / time	25-Mar-2021 14:10	26-Mar-2021 09:40	26-Mar-2021 11:00	----	----
Compound	HK2112351-001	HK2112351-002	HK2112351-003	-----	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	30.0	21.0	15.8	---	---
-----------------------------------------	------	-----	---	------	------	------	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	9	8	6	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
EG020: Chromium	7440-47-3	1	mg/kg	21	20	11	---	---
EG020: Copper	7440-50-8	1	mg/kg	11	10	5	---	---
EG020: Lead	7439-92-1	1	mg/kg	38	32	14	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	<0.05	---	---
EG020: Nickel	7440-02-0	1	mg/kg	13	10	4	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	---	---
EG020: Zinc	7440-66-6	1	mg/kg	54	58	35	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 02 9.00m-9.50m, 9.50m-10.00m	1530-TME-MEDH6 02 10.00m-10.50m, 10.50m-11.00m	1530-TME-MEDH6 02 11.00m-11.50m	---	---
Sampling date / time				25-Mar-2021 14:10	26-Mar-2021 09:40	26-Mar-2021 11:00	----	----	
Compound	CAS Number	LOR	Unit	HK2112351-001	HK2112351-002	HK2112351-003	---	---	
EP-065: PCB Single Congeners - Continued									
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	---	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	---	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	---	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	---	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	79.7	71.1	75.3	---	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	90.0	73.8	81.0	---	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 02 9.00m-9.50m, 9.50m-10.00m	1530-TME-MEDH6 02 10.00m-10.50m, 10.50m-11.00m	1530-TME-MEDH6 02 11.00m-11.50m	---	---
				Sampling date / time	25-Mar-2021 14:10	26-Mar-2021 09:40	26-Mar-2021 11:00	----	----
Compound	CAS Number	LOR	Unit	HK2112351-001	HK2112351-002	HK2112351-003	-----	-----	
EP-065S: PCB Conaeners and Oraanochlorine Pesticides Surroate - Continued									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	54.1	59.7	56.4	---	---	



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-MEDH6 02 10.00m-10.50m, 10.50m-11.00m	---	---	---	---
				Sampling date / time	26-Mar-2021 09:40	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2112351-002	---	---	---	---	---
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT / L	<0.015	---	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3595496)								
HK2112179-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	12.1	12.1	0.00
HK2112324-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.6	13.6	0.00
EG: Metals and Major Cations (QC Lot: 3608092)								
HK2112264-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	<1	<1	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	1	1	0.00
		EG020: Copper	7440-50-8	1	mg/kg	5	6	0.00
		EG020: Lead	7439-92-1	1	mg/kg	7	7	0.00
		EG020: Nickel	7440-02-0	1	mg/kg	<1	<1	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	13	13	0.00
EP-065: PCB Single Congeners (QC Lot: 3605476)								
HK2112060-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3605476) - Continued								
HK2112060-001	Anonymous	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3605475)								
HK2112060-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotin (QC Lot: 3615078)								
HK2112240-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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			
				Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3608092)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	102	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	102	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	107	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	102	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	100	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	95.0	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	109	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	103	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	100	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3605476)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	82.6	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	74.7	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	77.2	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	73.4	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	76.3	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	71.4	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	72.1	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	78.6	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	72.2	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	66.2	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	70.7	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	78.2	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	72.0	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	70.1	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	73.0	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	73.9	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	76.6	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	72.9	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3605475)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	92.1	----	58.0	129	----	----



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3605475) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	86.5	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	90.0	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	88.9	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	92.0	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	82.2	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	93.2	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	91.6	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	88.6	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	93.8	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	87.3	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	86.8	----	48.0	123	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	75.0	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	89.3	----	26.0	136	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	73.7	----	24.0	137	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	67.9	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3615078)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	98.4	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3608092)										
HK2112262-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	102	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	106	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	91.3	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	96.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	84.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	98.1	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	94.6	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	104	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3605476)										
HK2112060-003	Anonymous	PCB 8	34883-43-7	5 µg/kg	65.3	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	71.3	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	63.2	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	62.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	55.0	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	62.9	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	96.7	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	96.9	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	91.1	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3605476) - Continued										
HK2112060-003	Anonymous	PCB 118	31508-00-6	5 µg/kg	93.0	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	85.0	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	83.1	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	80.6	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	93.1	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	65.2	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	69.7	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	76.3	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	83.9	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3605475)										
HK2112060-003	Anonymous	Naphthalene	91-20-3	250 µg/kg	85.4	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	84.3	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	82.7	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	85.9	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	85.1	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	85.8	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	88.7	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	87.6	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	84.6	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	89.0	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	77.1	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3605475) - Continued										
HK2112060-003	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	88.7	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	81.3	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	69.2	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	66.8	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	64.5	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3615078)										
HK2112240-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	106	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130






CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 12
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2129182
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 19-Jul-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V3	Issue Date	: 27-Jul-2021
C-O-C number	: ---			No. of samples received	: 1
Site	: TUEN MUN SOUTH			No. of samples analysed	: 1

This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	Position	Authorised results for
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 19-Jul-2021 to 24-Jul-2021.

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: HK2129182

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

1530-TME-MEDH6
 03
 13.50-14.00m
 14.00-14.50m

Sampling date / time

19-Jul-2021 10:40

Compound	CAS Number	LOR	Unit	HK2129182-001	-----	-----	-----	-----
----------	------------	-----	------	---------------	-------	-------	-------	-------

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	25.6	---	---	---	---
-----------------------------------------	------	-----	---	------	-----	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	9	---	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	---	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	25	---	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	10	---	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	29	---	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	---	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	16	---	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	---	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	75	---	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	---	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	---	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	---	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	---	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	---	---	---	---



Sub-Matrix: SEDIMENT			Sample ID	1530-TME-MEDH6 03 13.50-14.00m 14.00-14.50m	---	---	---	---
			Sampling date / time	19-Jul-2021 10:40	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2129182-001	---	---	---	---
EP-065: PCB Single Congeners - Continued								
EP065: PCB 169	32774-16-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 170	35065-30-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	106	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	98.1	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								



Sub-Matrix: SEDIMENT			Sample ID	1530-TME-MEDH6 03 13.50-14.00m 14.00-14.50m	---	---	---	---
			Sampling date / time	19-Jul-2021 10:40	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2129182-001	---	---	---	---
EP-065S: PCB Conaeners and Oraanochlorine Pesticides Surroate - Continued								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	81.9	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3801170)								
HK2128641-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	16.3	16.8	3.1
HK2128938-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	4.6	4.7	3.0
EG: Metals and Major Cations (QC Lot: 3801262)								
HK2129014-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	1.6	1.9	16.1
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.6	0.7	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	2	2	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	9	9	0.0
		EG020: Copper	7440-50-8	1	mg/kg	18	16	7.3
		EG020: Lead	7439-92-1	1	mg/kg	23	21	11.5
		EG020: Nickel	7440-02-0	1	mg/kg	8	8	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	82	82	0.0
EP-065: PCB Single Congeners (QC Lot: 3801581)								
HK2128144-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3801581) - Continued								
HK2128144-001	Anonymous	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3801580)								
HK2128144-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
Low M.W. PAHs	----	550	µg/kg	<550	<550	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				
EG: Metals and Major Cations (QC Lot: 3801262)															
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	100	----	87.2	110	----	----				
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	100	----	85.0	113	----	----				
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	98.8	----	87.7	111	----	----				



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3801262) - Continued											
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	105	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	98.0	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	108	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	101	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	104	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	107	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3801581)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	85.7	----	58.0	109	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	101	----	50.0	111	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	103	----	50.0	118	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	106	----	44.0	120	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	106	----	25.0	130	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	111	----	46.0	122	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	85.1	----	50.0	120	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	85.2	----	53.0	115	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	85.8	----	58.0	112	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	85.8	----	56.0	114	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	88.9	----	59.0	109	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	87.6	----	58.0	113	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	87.9	----	55.0	113	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	86.5	----	56.0	114	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	92.4	----	58.0	109	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	91.6	----	55.0	116	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	90.2	----	55.0	113	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	88.6	----	53.0	118	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3801580)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	98.6	----	85.0	106	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	97.3	----	79.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	98.1	----	82.0	104	----	----



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

Matrix: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3801262)										
HK2129014-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	92.4	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	100	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	77.8	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	89.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	95.6	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	81.0	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	98.7	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3801581)										
HK2128144-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	80.1	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	96.7	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	80.5	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	84.0	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	93.8	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	81.6	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	78.8	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	86.0	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	83.1	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3801581) - Continued										
HK2128144-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	84.0	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	87.8	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	87.6	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	88.5	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	87.2	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	89.1	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	90.9	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	89.6	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	87.5	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3801580)										
HK2128144-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	96.1	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	95.2	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	91.4	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	91.2	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	94.7	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	93.0	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	96.3	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	95.5	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	90.2	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	99.8	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	94.9	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3801580) - Continued										
HK2128144-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	96.1	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	94.7	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	87.8	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	84.3	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	89.8	----	50.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT

Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130



CERTIFICATE OF ANALYSIS





Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2126350
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 02-Jul-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V3	Issue Date	: 16-Jul-2021
C-O-C number	: ---			No. of samples received	: 3
Site	: TUEN MUN SOUTH			No. of samples analysed	: 3



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 02-Jul-2021 to 16-Jul-2021.

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: HK2126350

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-MEDH6 04 14.00-14.50m 14.50-15.00m	1530-TME-MEDH6 04 15.00-15.50m, 15.50-16.00m	1530-TME-MEDH6 04 Surface	---	---			
Sampling date / time	02-Jul-2021 10:00	02-Jul-2021 10:45	02-Jul-2021 13:30	----	----			
Compound	CAS Number	LOR	Unit	HK2126350-001	HK2126350-002	HK2126350-003	-----	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	16.4	18.9	51.4	---	---
-----------------------------------------	------	-----	---	------	------	------	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	5	5	6	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.6	---	---
EG020: Chromium	7440-47-3	1	mg/kg	17	18	28	---	---
EG020: Copper	7440-50-8	1	mg/kg	8	8	83	---	---
EG020: Lead	7439-92-1	1	mg/kg	18	18	67	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.08	---	---
EG020: Nickel	7440-02-0	1	mg/kg	7	6	14	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	1.0	---	---
EG020: Zinc	7440-66-6	1	mg/kg	43	78	283	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 04 14.00-14.50m 14.50-15.00m	1530-TME-MEDH6 04 15.00-15.50m, 15.50-16.00m	1530-TME-MEDH6 04 Surface	---	---
Sampling date / time				02-Jul-2021 10:00	02-Jul-2021 10:45	02-Jul-2021 13:30	----	----	
Compound	CAS Number	LOR	Unit	HK2126350-001	HK2126350-002	HK2126350-003	-----	-----	
EP-065: PCB Single Congeners - Continued									
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	---	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	---	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	---	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	---	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	---	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	---	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	---	---	<1700	---	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	---	---	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	104	98.8	104	---	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	94.7	88.5	89.8	---	---	



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 04 14.00-14.50m 14.50-15.00m	1530-TME-MEDH6 04 15.00-15.50m, 15.50-16.00m	1530-TME-MEDH6 04 Surface	---	---
				Sampling date / time	02-Jul-2021 10:00	02-Jul-2021 10:45	02-Jul-2021 13:30	----	----
Compound	CAS Number	LOR	Unit	HK2126350-001	HK2126350-002	HK2126350-003	-----	-----	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	70.2	67.4	57.9	---	---	



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-MEDH6 04 14.00-14.50m 14.50-15.00m	1530-TME-MEDH6 04 15.00-15.50m, 15.50-16.00m	1530-TME-MEDH6 04 Surface	---	---
				Sampling date / time	02-Jul-2021 10:00	02-Jul-2021 10:45	02-Jul-2021 13:30	----	----
Compound	CAS Number	LOR	Unit	HK2126350-001	HK2126350-002	HK2126350-003	-----	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	0.027	---	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3775922)								
HK2126210-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	13.0	12.8	1.0
HK2126370-006	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	39.8	39.3	1.3
EG: Metals and Major Cations (QC Lot: 3773658)								
HK2126350-002	1530-TME-MEDH604 15.00-15.50m, 15.50-16.00m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	5	5	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	18	18	0.0
		EG020: Copper	7440-50-8	1	mg/kg	8	8	0.0
		EG020: Lead	7439-92-1	1	mg/kg	18	18	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	6	6	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	78	77	1.4
EP-065: PCB Single Congeners (QC Lot: 3774094)								
HK2126350-001	1530-TME-MEDH604 14.00-14.50m 14.50-15.00m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3774094) - Continued								
HK2126350-001	1530-TME-MEDH604 14.00-14.50m 14.50-15.00m	PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3774093)								
HK2126350-001	1530-TME-MEDH604 14.00-14.50m 14.50-15.00m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benzo(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0		
Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3784790)								
HK2125721-002	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.0



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3774093)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	99.5	----	85.0	106	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	98.9	----	79.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	98.2	----	82.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	95.7	----	77.0	105	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	95.4	----	77.0	110	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	91.1	----	76.0	108	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	97.0	----	81.0	109	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	96.3	----	82.0	111	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	92.6	----	81.0	107	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	101	----	83.0	121	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	101	----	48.0	118	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	99.8	----	64.0	129	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	98.0	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	84.8	----	55.0	97.0	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	94.2	----	34.0	120	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	99.3	----	34.0	119	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotins (QC Lot: 3784790)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	89.7	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3773658)										
HK2126350-001	1530-TME-MEDH604 14.00-14.50m 14.50-15.00m	EG020: Arsenic	7440-38-2	5 mg/kg	94.0	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	97.8	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	75.2	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	98.3	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	84.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	106	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	99.6	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	102	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3774094)										
HK2126350-002	1530-TME-MEDH604 15.00-15.50m, 15.50-16.00m	PCB 8	34883-43-7	5 µg/kg	76.7	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	86.1	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	89.0	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	91.9	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	116	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	103	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	92.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	85.2	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	82.7	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3774094) - Continued										
HK2126350-002	1530-TME-MEDH604 15.00-15.50m, 15.50-16.00m	PCB 118	31508-00-6	5 µg/kg	84.9	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	97.4	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	86.5	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	84.9	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	87.6	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	88.8	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	87.2	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	88.6	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	85.7	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3774093)										
HK2126350-002	1530-TME-MEDH604 15.00-15.50m, 15.50-16.00m	Naphthalene	91-20-3	250 µg/kg	93.4	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	96.6	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.4	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	91.3	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	94.2	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	93.1	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	95.6	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	95.5	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	95.8	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	94.8	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	93.1	----	50.0	130	----	----



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3774093) - Continued										
HK2126350-002	1530-TME-MEDH604 15.00-15.50m, 15.50-16.00m	Benzo(k)fluoranthene	207-08-9	250 µg/kg	107	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	99.6	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	93.2	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	86.9	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	100	----	50.0	130	----	----

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3784790)										
HK2126350-001	1530-TME-MEDH604 14.00-14.50m 14.50-15.00m	Tributyltin	56573-85-4	5 ngSn/L	102	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2122955
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 07-Jun-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	Issue Date	: 21-Jun-2021
C-O-C number	: ---			No. of samples received	: 1
Site	: TUEN MUN SOUTH			No. of samples analysed	: 1

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 07-Jun-2021 to 18-Jun-2021.

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: HK2122955

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by in-house method E-ASTM D3974-09 prior to determination of metals. The in-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

1530-TME-MEDH6
05
17.50m-18.00m,
18.00m-18.50m

Sampling date / time

07-Jun-2021 10:00

Compound	CAS Number	LOR	Unit	HK2122955-001	-----	-----	-----	-----
----------	------------	-----	------	---------------	-------	-------	-------	-------

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	21.8	---	---	---	---
-----------------------------------------	------	-----	---	------	-----	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	5	---	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	---	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	14	---	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	11	---	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	21	---	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	---	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	7	---	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	---	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	66	---	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	---	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	---	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	---	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	---	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	---	---	---	---



Sub-Matrix: SEDIMENT			Sample ID	1530-TME-MEDH6 05 17.50m-18.00m, 18.00m-18.50m	---	---	---	---
			Sampling date / time	07-Jun-2021 10:00	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2122955-001	---	---	---	---
EP-065: PCB Single Congeners - Continued								
EP065: PCB 169	32774-16-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 170	35065-30-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	97.1	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	91.7	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								



Sub-Matrix: SEDIMENT				Sample ID				
				1530-TME-MEDH6 05 17.50m-18.00m, 18.00m-18.50m	---	---	---	---
				Sampling date / time	07-Jun-2021 10:00	---	---	---
Compound	CAS Number	LOR	Unit	HK2122955-001	---	---	---	---
EP-065S: PCB Conaeners and Oraanochlorine Pesticides Surroate - Continued								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	60.6	---	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-MEDH6 05 17.50m-18.00m, 18.00m-18.50m	---	---	---	---
				Sampling date / time	07-Jun-2021 10:00	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2122955-001	---	---	---	---	---
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT / L	<0.015	---	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3725872)								
HK2122491-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	40.0	40.1	0.0
HK2122960-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	28.3	28.0	1.2
EG: Metals and Major Cations (QC Lot: 3728493)								
HK2122933-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	1	<1	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	5	5	0.0
		EG020: Copper	7440-50-8	1	mg/kg	2	1	0.0
		EG020: Lead	7439-92-1	1	mg/kg	16	15	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	2	3	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	85	89	5.2
EP-065: PCB Single Congeners (QC Lot: 3726288)								
HK2122758-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3726288) - Continued								
HK2122758-001	Anonymous	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3726287)								
HK2122758-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotin (QC Lot: 3742551)								
HK2122177-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	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			
			Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3728493)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	99.6	---	87.2	110	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	101	---	85.0	113	---	---
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	104	---	87.7	111	---	---
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	107	---	92.0	115	---	---
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	105	---	86.7	115	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	110	---	86.6	115	---	---
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	104	---	90.6	111	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	102	---	85.0	109	---	---
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	108	---	90.9	115	---	---
EP-065: PCB Single Congeners (QC Lot: 3726288)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	79.5	---	58.0	109	---	---
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	90.0	---	50.0	111	---	---
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	114	---	50.0	118	---	---
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	115	---	44.0	120	---	---
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	112	---	25.0	130	---	---
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	121	---	46.0	122	---	---
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	70.6	---	50.0	120	---	---
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	67.7	---	53.0	115	---	---
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	70.1	---	58.0	112	---	---
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	69.5	---	56.0	114	---	---
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	73.1	---	59.0	109	---	---
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	69.9	---	58.0	113	---	---
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	68.8	---	55.0	113	---	---
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	68.4	---	56.0	114	---	---
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	73.9	---	58.0	109	---	---
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	70.6	---	55.0	116	---	---
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	69.3	---	55.0	113	---	---
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	67.3	---	53.0	118	---	---
Total Polychlorinated biphenyls	---	18	µg/kg	<18	---	---	---	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3726287)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	103	---	85.0	106	---	---



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3726287) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	96.1	----	79.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	102	----	82.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	105	----	77.0	105	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	108	----	77.0	110	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	108	----	76.0	108	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	108	----	81.0	109	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	111	----	82.0	111	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	100	----	81.0	107	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	112	----	83.0	121	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	106	----	48.0	118	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	103	----	64.0	129	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	106	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	95.9	----	55.0	97.0	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	90.6	----	34.0	120	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	96.6	----	34.0	119	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3742551)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	106	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3728493)										
HK2122883-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	82.8	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	104	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	91.2	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	92.7	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	108	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	86.2	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	102	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3726288)										
HK2122758-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	69.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	78.2	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	94.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	95.2	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	94.1	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	100	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	62.3	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	58.3	----	50.0	130	----	----
PCB 105	32598-14-4	5 µg/kg	60.9	----	50.0	130	----	----		



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3726288) - Continued										
HK2122758-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	60.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	63.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	60.4	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	59.2	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	59.2	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	63.3	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	60.3	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	59.3	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	57.5	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3726287)										
HK2122758-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	90.8	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	90.6	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	88.0	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	85.8	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	89.3	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	86.2	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	88.5	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	88.3	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	86.6	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	89.2	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	85.3	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3726287) - Continued										
HK2122758-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	92.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	86.8	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	77.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	75.7	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	75.4	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3742551)										
HK2122177-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	97.4	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2118995
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044		
Facsimile	: ---	Facsimile	: +852 2610 2021		
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			Date Samples Received	: 10-May-2021
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	Issue Date	: 25-May-2021
C-O-C number	: ---			No. of samples received	: 4
Site	: TUEN MUN SOUTH			No. of samples analysed	: 4

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Ka Yu , Karen	Manager - Organics	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Leung Chak Cheong , Mike	Assistant Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 10-May-2021 to 24-May-2021.

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: HK2118995

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #1 1530-TME-MEDH608 Surface, Sample #2 1530-TME-MEDH608 0.00-0.45m and Sample #4 1530-TME-MEDH608 9.60-10.05m, 10.10-10.5m.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene; High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-MEDH6 08 Surface	1530-TME-MEDH6 08 0.00-0.45m	1530-TME-MEDH6 08 8.60-9.05m, 9.10-9.55m	1530-TME-MEDH6 08 9.60-10.05m, 10.10-10.55m	---			
Sampling date / time	10-May-2021 09:00	10-May-2021 09:20	10-May-2021 13:05	10-May-2021 13:30	----			
Compound	CAS Number	LOR	Unit	HK2118995-001	HK2118995-002	HK2118995-003	HK2118995-004	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	70.9	58.9	29.6	29.6	---
-----------------------------------------	------	-----	---	------	------	------	------	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	13	9	7	7	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	1.4	1.3	<0.2	<0.2	---
EG020: Chromium	7440-47-3	1	mg/kg	38	154	26	22	---
EG020: Copper	7440-50-8	1	mg/kg	103	380	11	9	---
EG020: Lead	7439-92-1	1	mg/kg	120	129	28	27	---
EG020: Mercury	7439-97-6	0.05	mg/kg	0.16	0.20	<0.05	<0.05	---
EG020: Nickel	7440-02-0	1	mg/kg	24	54	18	16	---
EG020: Silver	7440-22-4	0.1	mg/kg	1.1	2.8	<0.1	<0.1	---
EG020: Zinc	7440-66-6	1	mg/kg	567	543	68	89	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 08 Surface	1530-TME-MEDH6 08 0.00-0.45m	1530-TME-MEDH6 08 8.60-9.05m, 9.10-9.55m	1530-TME-MEDH6 08 9.60-10.05m, 10.10-10.55m	---
Sampling date / time				10-May-2021 09:00	10-May-2021 09:20	10-May-2021 13:05	10-May-2021 13:30	----	
Compound	CAS Number	LOR	Unit	HK2118995-001	HK2118995-002	HK2118995-003	HK2118995-004	-----	
EP-065: PCB Sinalc Conaeners - Continued									
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	397	<150	<150	---	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	77.4	90.6	85.6	90.4	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	78.6	84.8	90.5	89.4	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 08 Surface	1530-TME-MEDH6 08 0.00-0.45m	1530-TME-MEDH6 08 8.60-9.05m, 9.10-9.55m	1530-TME-MEDH6 08 9.60-10.05m, 10.10-10.55m	---
Sampling date / time				10-May-2021 09:00	10-May-2021 09:20	10-May-2021 13:05	10-May-2021 13:30	----	
Compound	CAS Number	LOR	Unit	HK2118995-001	HK2118995-002	HK2118995-003	HK2118995-004	-----	
EP-065S: PCB Conaeners and Oraanochlorine Pesticides Surroate - Continued									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	53.5	59.4	66.9	61.0	---	



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-MEDH6 08 Surface	1530-TME-MEDH6 08 0.00-0.45m	1530-TME-MEDH6 08 9.60-10.05m, 10.10-10.55m	---	---
				Sampling date / time	10-May-2021 09:00	10-May-2021 09:20	10-May-2021 13:30	----	----
Compound	CAS Number	LOR	Unit	HK2118995-001	HK2118995-002	HK2118995-004	-----	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	0.037	0.220	<0.015	---	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3670964)								
HK2118894-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	43.8	44.5	1.7
HK2118995-002	1530-TME-MEDH608 0.00-0.45m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	58.9	57.1	3.1
EG: Metals and Major Cations (QC Lot: 3670569)								
HK2118240-003	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	3.67	3.02	19.4
		EG020: Silver	7440-22-4	0.1	mg/kg	2.6	2.3	12.8
		EG020: Cadmium	7440-43-9	0.2	mg/kg	1.8	1.7	6.5
		EG020: Arsenic	7440-38-2	1	mg/kg	12	12	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	93	89	4.3
		EG020: Copper	7440-50-8	1	mg/kg	718	647	10.4
		EG020: Lead	7439-92-1	1	mg/kg	75	71	5.3
		EG020: Nickel	7440-02-0	1	mg/kg	46	45	2.8
		EG020: Zinc	7440-66-6	1	mg/kg	6090	6470	6.0
EP-065: PCB Single Congeners (QC Lot: 3673071)								
HK2118569-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.0
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.0
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.0
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.0
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.0
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.0
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.0
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.0
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.0
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.0
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.0
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.0
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.0
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.0
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.0
PCB 169	32774-16-6	3	µg/kg	<3	<3	0.0		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3673071) - Continued								
HK2118569-001	Anonymous	PCB 170	35065-30-6	3	µg/kg	<3	<3	0.0
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.0
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3673070)								
HK2118569-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.0
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.0
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.0
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.0
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.0
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.0
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.0		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3692195)								
HK2118995-001	1530-TME-MEDH608 Surface	Tributyltin	56573-85-4	5	ngSn/L	0.037 µg TBT /L	14	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			
			Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3670569)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	101	---	87.2	110	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	95.2	---	85.0	113	---	---
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	96.9	---	87.7	111	---	---
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	107	---	92.0	115	---	---
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	107	---	86.7	115	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	100	---	86.6	115	---	---
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	100	---	90.6	111	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	102	---	85.0	109	---	---
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	108	---	90.9	115	---	---
EP-065: PCB Single Congeners (QC Lot: 3673071)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	69.9	---	49.0	128	---	---
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	71.2	---	49.0	133	---	---
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	89.6	---	52.0	130	---	---
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	82.2	---	48.0	134	---	---
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	81.4	---	50.0	135	---	---
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	88.4	---	55.0	127	---	---
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	77.0	---	56.0	127	---	---
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	78.1	---	52.0	132	---	---
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	81.6	---	53.0	128	---	---
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	81.9	---	51.0	132	---	---
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	84.9	---	55.0	126	---	---
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	85.8	---	49.0	130	---	---
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	80.5	---	51.0	130	---	---
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	82.6	---	51.0	131	---	---
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	83.1	---	50.0	129	---	---
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	83.9	---	48.0	133	---	---
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	86.2	---	50.0	129	---	---
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	88.1	---	52.0	129	---	---
Total Polychlorinated biphenyls	---	18	µg/kg	<18	---	---	---	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3673070)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	95.2	---	85.0	105	---	---



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3673070) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	95.3	----	74.0	108	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	91.3	----	81.0	104	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	91.0	----	79.0	104	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	87.1	----	79.0	105	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	89.8	----	60.0	115	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	92.3	----	82.0	106	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	94.8	----	80.0	106	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	93.4	----	72.0	106	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	110	----	80.0	113	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	71.5	----	48.0	111	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	104	----	56.0	116	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	78.7	----	47.0	107	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	72.2	----	43.0	105	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	60.7	----	34.0	109	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	60.6	----	31.0	111	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3692195)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	115	----	70.0	130	----	----



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

Matrix: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3670569)										
HK2118240-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	98.6	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3673071)										
HK2118569-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	73.2	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	78.8	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	95.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	89.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	87.4	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	95.0	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3673071) - Continued										
HK2118569-002	Anonymous	PCB 77	32598-13-3	5 µg/kg	82.4	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	80.8	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	89.7	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	84.9	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	109	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	89.6	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	83.7	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	79.0	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	83.2	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	82.9	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	84.6	----	50.0	130	----	----
PCB 187	52663-68-0	5 µg/kg	86.6	----	50.0	130	----	----		
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3673070)										
HK2118569-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	106	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	98.0	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	106	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	104	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	98.2	----	50.0	130	----	----



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3673070) - Continued										
HK2118569-002	Anonymous	Anthracene	120-12-7	250 µg/kg	98.4	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	105	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	111	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	104	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	114	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	88.5	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	109	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	82.5	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	76.9	----	50.0	130	----	----
		Dibenz(a,h)anthracene	53-70-3	250 µg/kg	69.3	----	50.0	130	----	----
		Benzo(g,h,i)perylene	191-24-2	250 µg/kg	62.9	----	50.0	130	----	----

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3692195)										
HK2118995-002	1530-TME-MEDH608 0.00-0.45m	Tributyltin	56573-85-4	5 ngSn/L	# Not Determined	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2115425
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 19-Apr-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 04-May-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 4
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 4
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 19-Apr-2021 to 04-May-2021.

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: HK2115425

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-MEDH6 09 Surface	1530-TME-MEDH6 09 0.00-0.45m, 0.50-0.95m	1530-TME-MEDH6 09 1.00-1.45m	1530-TME-MEDH6 09 2.00-2.45m, 2.50-2.95m	---			
Sampling date / time	19-Apr-2021 10:45	19-Apr-2021 11:17	19-Apr-2021 11:50	19-Apr-2021 12:30	----			
Compound	CAS Number	LOR	Unit	HK2115425-001	HK2115425-002	HK2115425-003	HK2115425-004	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	77.2	48.1	41.8	37.2	---
-----------------------------------------	------	-----	---	------	------	------	------	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	11	8	6	9	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	1.4	1.4	0.6	<0.2	---
EG020: Chromium	7440-47-3	1	mg/kg	32	311	97	31	---
EG020: Copper	7440-50-8	1	mg/kg	92	329	167	20	---
EG020: Lead	7439-92-1	1	mg/kg	82	110	86	31	---
EG020: Mercury	7439-97-6	0.05	mg/kg	0.19	0.26	0.10	<0.05	---
EG020: Nickel	7440-02-0	1	mg/kg	18	51	28	16	---
EG020: Silver	7440-22-4	0.1	mg/kg	0.8	2.3	1.0	0.2	---
EG020: Zinc	7440-66-6	1	mg/kg	570	500	296	91	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 09 Surface	1530-TME-MEDH6 09 0.00-0.45m, 0.50-0.95m	1530-TME-MEDH6 09 1.00-1.45m	1530-TME-MEDH6 09 2.00-2.45m, 2.50-2.95m	---
Sampling date / time				19-Apr-2021 10:45	19-Apr-2021 11:17	19-Apr-2021 11:50	19-Apr-2021 12:30	----	
Compound	CAS Number	LOR	Unit	HK2115425-001	HK2115425-002	HK2115425-003	HK2115425-004	-----	
EP-065: PCB Sinalc Conaeners - Continued									
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	493	<50	<50	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	83	<50	<50	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	150	<150	<150	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	245	<150	<150	---	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	576	<550	<550	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	74.0	79.3	79.1	81.3	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	70.7	76.3	80.4	82.1	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 09 Surface	1530-TME-MEDH6 09 0.00-0.45m, 0.50-0.95m	1530-TME-MEDH6 09 1.00-1.45m	1530-TME-MEDH6 09 2.00-2.45m, 2.50-2.95m	---
				Sampling date / time	19-Apr-2021 10:45	19-Apr-2021 11:17	19-Apr-2021 11:50	19-Apr-2021 12:30	----
Compound	CAS Number	LOR	Unit		HK2115425-001	HK2115425-002	HK2115425-003	HK2115425-004	-----
EP-065S: PCB Conaeners and Oraanochlorine Pesticides Surroate - Continued									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		76.5	81.0	62.3	54.7	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-MEDH6 09 Surface	1530-TME-MEDH6 09 0.00-0.45m, 0.50-0.95m	1530-TME-MEDH6 09 1.00-1.45m	1530-TME-MEDH6 09 2.00-2.45m, 2.50-2.95m	---
				Sampling date / time	19-Apr-2021 10:45	19-Apr-2021 11:17	19-Apr-2021 11:50	19-Apr-2021 12:30	----
Compound	CAS Number	LOR	Unit	HK2115425-001	HK2115425-002	HK2115425-003	HK2115425-004	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	0.022	<0.015	<0.015	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3633724)								
HK2115279-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	21.1	20.6	2.22
HK2115425-001	1530-TME-MEDH609 Surface	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	77.2	77.0	0.201
EG: Metals and Major Cations (QC Lot: 3631103)								
HK2115279-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	4	4	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	19	19	0.00
		EG020: Copper	7440-50-8	1	mg/kg	4	5	0.00
		EG020: Lead	7439-92-1	1	mg/kg	14	15	7.49
		EG020: Nickel	7440-02-0	1	mg/kg	12	13	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	33	35	5.61
EP-065: PCB Single Congeners (QC Lot: 3636559)								
HK2115425-001	1530-TME-MEDH609 Surface	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3636559) - Continued								
HK2115425-001	1530-TME-MEDH609 Surface	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560)								
HK2115425-001	1530-TME-MEDH609 Surface	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotin (QC Lot: 3653102)								
HK2115184-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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			
			Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



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	LCSSpike Recovery (%)	DCS	Recovery Limit (%)	Value	RPD (%)	Control Limit
EG: Metals and Major Cations (QC Lot: 3631103)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	102	---	87.2	110	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	101	---	85.0	113	---	---
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	102	---	87.7	111	---	---
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	104	---	92.0	115	---	---
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	101	---	86.7	115	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	109	---	86.6	115	---	---
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	102	---	90.6	111	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	98.4	---	85.0	109	---	---
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	105	---	90.9	115	---	---
EP-065: PCB Single Congeners (QC Lot: 3636559)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	100	---	49.0	128	---	---
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	92.6	---	49.0	133	---	---
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	72.3	---	52.0	130	---	---
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	85.0	---	48.0	134	---	---
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	84.6	---	50.0	135	---	---
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	89.6	---	55.0	127	---	---
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	78.2	---	56.0	127	---	---
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	82.3	---	52.0	132	---	---
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	77.3	---	53.0	128	---	---
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	79.4	---	51.0	132	---	---
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	76.0	---	55.0	126	---	---
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	79.4	---	49.0	130	---	---
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	84.9	---	51.0	130	---	---
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	81.7	---	51.0	131	---	---
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	77.9	---	50.0	129	---	---
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	77.5	---	48.0	133	---	---
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	79.5	---	50.0	129	---	---
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	71.1	---	52.0	129	---	---
Total Polychlorinated biphenyls	---	18	µg/kg	<18	---	---	---	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	91.6	---	58.0	129	---	---



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	94.0	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	92.8	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	96.5	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	88.3	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	88.3	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	90.7	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	92.2	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	91.9	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	99.7	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	66.7	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	87.6	----	48.0	123	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	67.0	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	67.8	----	26.0	136	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	59.5	----	24.0	137	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	57.6	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3653102)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	110	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3631103)										
HK2115279-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	113	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	103	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	78.9	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	99.9	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	83.2	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	109	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	118	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	99.9	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3636559)										
HK2115425-002	1530-TME-MEDH609 0.00-0.45m, 0.50-0.95m	PCB 8	34883-43-7	5 µg/kg	109	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	109	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	86.1	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	95.1	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	73.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	65.0	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	74.5	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	104	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	98.8	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3636559) - Continued										
HK2115425-002	1530-TME-MEDH609 0.00-0.45m, 0.50-0.95m	PCB 118	31508-00-6	5 µg/kg	103	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	93.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	63.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	106	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	105	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	67.8	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	59.6	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	60.2	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	81.4	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560)										
HK2115425-002	1530-TME-MEDH609 0.00-0.45m, 0.50-0.95m	Naphthalene	91-20-3	250 µg/kg	97.5	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	102	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	102	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	106	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	111	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	84.2	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	100	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	100	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	107	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	93.9	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	84.3	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3636560) - Continued										
HK2115425-002	1530-TME-MEDH609 0.00-0.45m, 0.50-0.95m	Benzo(k)fluoranthene	207-08-9	250 µg/kg	75.2	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	76.9	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	69.1	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	63.9	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	63.0	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3653102)										
HK2115425-001	1530-TME-MEDH609 Surface	Tributyltin	56573-85-4	5 ngSn/L	91.7	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2113501
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 08-Apr-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 22-Apr-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 3
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 2
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 08-Apr-2021 to 22-Apr-2021.

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: HK2113501

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-MEDH6 12 5.30-5.75m, 5.80-6.25m	1530-TME-MEDH6 12 6.30-6.75m	---	---	---			
Sampling date / time	08-Apr-2021 11:10	08-Apr-2021 11:35	----	----	----			
Compound	CAS Number	LOR	Unit	HK2113501-001	HK2113501-002	-----	-----	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	31.1	30.8	---	---	---
-----------------------------------------	------	-----	---	------	------	-----	-----	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	9	8	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	21	17	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	11	10	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	36	27	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	12	10	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	109	63	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	---	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 12 5.30-5.75m, 5.80-6.25m	1530-TME-MEDH6 12 6.30-6.75m	---	---	---
				Sampling date / time	08-Apr-2021 11:10	08-Apr-2021 11:35	---	---	---
Compound	CAS Number	LOR	Unit	HK2113501-001	HK2113501-002	---	---	---	
EP-065: PCB Single Congeners - Continued									
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	---	---	---	
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	---	---	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	---	---	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	---	---	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	---	---	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	---	---	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	---	---	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	---	---	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	---	---	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	---	---	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	---	---	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	---	---	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	---	---	---	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	---	---	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	---	---	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	---	---	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	---	---	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	---	---	---	
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	---	---	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	---	---	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	---	---	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	---	---	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	---	---	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	80.4	83.9	---	---	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	80.6	93.8	---	---	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6	1530-TME-MEDH6	---	---	---
					12	12			
					5.30-5.75m, 5.80-6.25m	6.30-6.75m			
				Sampling date / time	08-Apr-2021 11:10	08-Apr-2021 11:35	---	---	---
Compound	CAS Number	LOR	Unit	HK2113501-001	HK2113501-002	---	---	---	
EP-065S: PCB Conaeners and Oraanochlorine Pesticides Surroate - Continued									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	60.7	53.3	---	---	---	



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-MEDH6 12 5.30-5.75m, 5.80-6.25m	1530-TME-MEDH6 12 6.30-6.75m	---	---	---
				Sampling date / time	08-Apr-2021 11:10	08-Apr-2021 11:35	---	---	---
Compound	CAS Number	LOR	Unit	HK2113501-001	HK2113501-002	---	---	---	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	---	---	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3621046)								
HK2112935-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	14.8	14.2	4.12
HK2113412-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	60.7	60.6	0.182
EG: Metals and Major Cations (QC Lot: 3610876)								
HK2113289-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.16	0.18	7.08
		EG020: Silver	7440-22-4	0.1	mg/kg	1.1	1.0	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	1.4	1.4	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	15	14	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	36	34	7.13
		EG020: Copper	7440-50-8	1	mg/kg	90	87	3.74
		EG020: Lead	7439-92-1	1	mg/kg	125	128	2.12
		EG020: Nickel	7440-02-0	1	mg/kg	20	19	6.59
		EG020: Zinc	7440-66-6	1	mg/kg	660	727	9.66
EP-065: PCB Single Congeners (QC Lot: 3623160)								
HK2113501-001	1530-TME-MEDH612 5.30-5.75m, 5.80-6.25m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3623160) - Continued								
HK2113501-001	1530-TME-MEDH612 5.30-5.75m, 5.80-6.25m	PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159)								
HK2113501-001	1530-TME-MEDH612 5.30-5.75m, 5.80-6.25m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benzo(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		
Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3634669)								
HK2113501-002	1530-TME-MEDH612 6.30-6.75m	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
						LCS	DCS	Low	High	Value	Control Limit
Method: Compound	CAS Number										
EG: Metals and Major Cations (QC Lot: 3610876)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	102	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	103	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	91.7	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	103	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	98.5	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	102	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	98.7	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	103	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	104	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3623160)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	106	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	93.9	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	73.3	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	78.2	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	81.3	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	73.2	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	86.6	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	91.6	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	85.4	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	84.6	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	85.6	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	84.4	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	84.5	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	84.1	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	84.4	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	84.2	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	84.0	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	78.6	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159)											



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159) - Continued											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	93.5	----	58.0	129	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	92.0	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	89.3	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	87.2	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	84.3	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	89.5	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	88.7	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	90.1	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	83.5	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	92.8	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	70.6	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	83.8	----	48.0	123	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	75.9	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	61.1	----	26.0	136	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	62.8	----	24.0	137	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	64.5	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
Matrix: WATER											
Matrix: WATER		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-390: Triorganotins (QC Lot: 3634669)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	104	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3610876)										
HK2113289-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	84.7	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	107	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	78.5	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	92.4	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	88.3	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	100	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3623160)										
HK2113501-002	1530-TME-MEDH612 6.30-6.75m	PCB 8	34883-43-7	5 µg/kg	88.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	86.2	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	68.5	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	64.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	60.1	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	55.2	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	87.0	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	91.4	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3623160) - Continued										
HK2113501-002	1530-TME-MEDH612 6.30-6.75m	PCB 105	32598-14-4	5 µg/kg	86.2	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	83.3	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	86.4	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	85.0	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	84.1	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	85.8	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	78.3	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	81.4	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	82.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	79.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159)										
HK2113501-002	1530-TME-MEDH612 6.30-6.75m	Naphthalene	91-20-3	250 µg/kg	90.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	84.7	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	87.8	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	88.2	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	86.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	87.4	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	90.4	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	89.8	----	50.0	130	----	----
Benz(a)anthracene	56-55-3	250 µg/kg	85.7	----	50.0	130	----	----		



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159) - Continued										
HK2113501-002	1530-TME-MEDH612 6.30-6.75m	Chrysene	218-01-9	250 µg/kg	92.0	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	79.6	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	89.7	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	83.0	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	64.7	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	67.0	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	62.4	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3634669)										
HK2113289-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	114	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 16
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2112655
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 30-Mar-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 19-Apr-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 4
Order number	: ---	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 4
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Lin Wai Yu , Iris	Assistant Manager - Inorganics	Inorganics
 Wong Wing , Kenneth	Manager - Metals	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 30-Mar-2021 to 19-Apr-2021.

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: HK2112655

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-MEDH6 13 Surface	1530-TME-MEDH6 13 0.00-0.45m, 0.50-0.95m	1530-TME-MEDH6 13 1.00-1.45m, 1.50-1.95m	1530-TME-MEDH6 13 2.00-2.45m	---			
Sampling date / time	30-Mar-2021 08:38	30-Mar-2021 09:05	30-Mar-2021 09:20	30-Mar-2021 09:50	----			
Compound	CAS Number	LOR	Unit	HK2112655-001	HK2112655-002	HK2112655-003	HK2112655-004	-----

EA/ED: Physical and Aggregate Properties

EA055: Moisture Content (dried @ 103°C)	----	0.1	%	69.9	39.3	39.2	19.8	---
-----------------------------------------	------	-----	---	------	------	------	------	-----

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	11	3	4	4	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	1.0	<0.2	0.2	<0.2	---
EG020: Chromium	7440-47-3	1	mg/kg	32	15	37	25	---
EG020: Copper	7440-50-8	1	mg/kg	80	16	57	42	---
EG020: Lead	7439-92-1	1	mg/kg	86	20	34	23	---
EG020: Mercury	7439-97-6	0.05	mg/kg	0.15	<0.05	0.05	<0.05	---
EG020: Nickel	7440-02-0	1	mg/kg	18	7	16	11	---
EG020: Silver	7440-22-4	0.1	mg/kg	1.5	0.4	0.4	0.2	---
EG020: Zinc	7440-66-6	1	mg/kg	401	118	124	97	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 13 Surface	1530-TME-MEDH6 13 0.00-0.45m, 0.50-0.95m	1530-TME-MEDH6 13 1.00-1.45m, 1.50-1.95m	1530-TME-MEDH6 13 2.00-2.45m	---
Sampling date / time				30-Mar-2021 08:38	30-Mar-2021 09:05	30-Mar-2021 09:20	30-Mar-2021 09:50	---	
Compound	CAS Number	LOR	Unit	HK2112655-001	HK2112655-002	HK2112655-003	HK2112655-004	---	
EP-065: PCB Single Congeners - Continued									
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	---	
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	---	
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	---	
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	550	98	---	
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	62	<50	---	
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	240	<150	---	
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	---	
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	612	<550	---	
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	---	
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	76.8	74.6	67.0	87.6	---	
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	66.3	82.2	72.1	89.0	---	
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6	1530-TME-MEDH6	1530-TME-MEDH6	1530-TME-MEDH6	---
					13	13	13	13	
					Surface	0.00-0.45m, 0.50-0.95m	1.00-1.45m, 1.50-1.95m	2.00-2.45m	
				Sampling date / time	30-Mar-2021 08:38	30-Mar-2021 09:05	30-Mar-2021 09:20	30-Mar-2021 09:50	---
Compound	CAS Number	LOR	Unit		HK2112655-001	HK2112655-002	HK2112655-003	HK2112655-004	---
EP-065S: PCB Conaeners and Oraanochlorine Pesticides Surroate - Continued									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%		58.6	65.4	64.5	64.3	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-MEDH6 13 Surface	1530-TME-MEDH6 13 0.00-0.45m, 0.50-0.95m	1530-TME-MEDH6 13 1.00-1.45m, 1.50-1.95m	1530-TME-MEDH6 13 2.00-2.45m	---
				Sampling date / time	30-Mar-2021 08:38	30-Mar-2021 09:05	30-Mar-2021 09:20	30-Mar-2021 09:50	---
Compound	CAS Number	LOR	Unit	HK2112655-001	HK2112655-002	HK2112655-003	HK2112655-004	---	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	0.073	0.051	0.017	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3605320)								
HK2112262-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	18.7	18.3	2.18
HK2112535-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	39.7	40.3	1.62
EG: Metals and Major Cations (QC Lot: 3599572)								
HK2112401-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	2	2	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	3	3	0.00
		EG020: Copper	7440-50-8	1	mg/kg	6	7	0.00
		EG020: Lead	7439-92-1	1	mg/kg	16	15	6.54
		EG020: Nickel	7440-02-0	1	mg/kg	2	2	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	35	31	11.3
EG: Metals and Major Cations (QC Lot: 3605419)								
HK2112535-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.11	0.11	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	0.5	0.4	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	14	14	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	37	38	0.00
		EG020: Copper	7440-50-8	1	mg/kg	30	31	0.00
		EG020: Lead	7439-92-1	1	mg/kg	82	70	14.6
		EG020: Nickel	7440-02-0	1	mg/kg	24	24	0.00
				EG020: Zinc	7440-66-6	1	mg/kg	101
EP-065: PCB Single Congeners (QC Lot: 3615242)								
HK2112535-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00



Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3615242) - Continued								
HK2112535-001	Anonymous	PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)								
HK2112535-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00



Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3615078)								
HK2112240-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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
EG: Metals and Major Cations (QC Lot: 3599572)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	102	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	97.8	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	102	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	108	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	110	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	107	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	105	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	106	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	108	----	90.9	115	----	----
EG: Metals and Major Cations (QC Lot: 3605419)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	105	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	108	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	94.8	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	106	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	102	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	99.7	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	107	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	104	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3615242)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	75.2	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	78.3	----	49.0	133	----	----



Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3615242) - Continued											
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	82.5	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	72.6	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	74.3	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	71.3	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	79.9	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	82.6	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	80.4	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	78.5	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	83.6	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.7	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	85.6	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	82.1	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	81.5	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	83.4	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	84.6	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	78.4	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	100	----	58.0	129	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	96.1	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	98.5	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	98.3	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	98.4	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	97.0	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	101	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	99.8	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	99.6	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	109	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	94.6	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	108	----	48.0	123	----	----



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243) - Continued											
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	101	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	86.4	----	26.0	136	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	97.4	----	24.0	137	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	104	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
Matrix: WATER											
Matrix: WATER		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-390: Triorganotins (QC Lot: 3615078)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	98.4	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3599572)										
HK2112390-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	97.0	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	100	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	98.6	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	92.7	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	81.6	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	90.4	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	105	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EG: Metals and Major Cations (QC Lot: 3605419)										
HK2112535-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	101	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	108	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	120	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	115	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	85.8	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	111	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	104	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3615242)										
HK2112535-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	80.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	78.8	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	76.1	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3615242) - Continued										
HK2112535-002	Anonymous	PCB 44	41464-39-5	5 µg/kg	69.4	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	61.6	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	64.0	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	104	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	116	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.2	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	95.2	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	75.5	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	79.2	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	81.9	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	92.5	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	73.0	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	80.1	----	50.0	130	----	----
PCB 180	35065-29-3	5 µg/kg	81.2	----	50.0	130	----	----		
PCB 187	52663-68-0	5 µg/kg	79.5	----	50.0	130	----	----		



Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3615243)										
HK2112535-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	98.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	97.8	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	92.1	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	96.0	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	97.5	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	98.4	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	102	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	99.6	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	96.6	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	98.3	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	97.2	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	93.8	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	98.0	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	86.5	----	50.0	130	----	----
Dibenz(a,h)anthracene	53-70-3	250 µg/kg	91.5	----	50.0	130	----	----		
Benzo(g,h,i)perylene	191-24-2	250 µg/kg	98.6	----	50.0	130	----	----		

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3615078)										
HK2112240-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	106	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130



Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates -			
Continued			
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 14
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2111494
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ---	Telephone	: +852 2610 1044	Date Samples Received	: 20-Mar-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	Issue Date	: 07-Apr-2021
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION			No. of samples received	: 4
Order number	: J2009SF23	Quote number	: HKE/2221/2020_V2	No. of samples analysed	: 3
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 20-Mar-2021 to 07-Apr-2021.

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: HK2111494

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene,

Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sample ID	1530-TME-MEDH6 14 0.50-0.95m	1530-TME-MEDH6 14 1.00-1.45m	1530-TME-MEDH6 14 Surface	---	---
Sampling date / time	20-Mar-2021 09:10	20-Mar-2021 09:30	20-Mar-2021 08:58	----	----
Compound	HK2111494-001	HK2111494-002	HK2111494-004	-----	-----

EA/ED: Physical and Aggregate Properties

Compound	CAS Number	LOR	Unit	HK2111494-001	HK2111494-002	HK2111494-004	---	---
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	34.1	32.1	69.3	---	---

EG: Metals and Major Cations

Compound	CAS Number	LOR	Unit	HK2111494-001	HK2111494-002	HK2111494-004	---	---
EG020: Arsenic	7440-38-2	1	mg/kg	6	6	11	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.9	---	---
EG020: Chromium	7440-47-3	1	mg/kg	25	25	39	---	---
EG020: Copper	7440-50-8	1	mg/kg	71	63	100	---	---
EG020: Lead	7439-92-1	1	mg/kg	40	36	82	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.13	---	---
EG020: Nickel	7440-02-0	1	mg/kg	13	12	21	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.3	0.9	---	---
EG020: Zinc	7440-66-6	1	mg/kg	119	113	387	---	---

EP-065: PCB Single Congeners

Compound	CAS Number	LOR	Unit	HK2111494-001	HK2111494-002	HK2111494-004	---	---
EP065: PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	---	---



Sub-Matrix: SEDIMENT				Sample ID	1530-TME-MEDH6 14 0.50-0.95m	1530-TME-MEDH6 14 1.00-1.45m	1530-TME-MEDH6 14 Surface	---	---
				Sampling date / time	20-Mar-2021 09:10	20-Mar-2021 09:30	20-Mar-2021 08:58	----	----
Compound	CAS Number	LOR	Unit	HK2111494-001	HK2111494-002	HK2111494-004	-----	-----	-----
EP-065: PCB Single Condensers - Continued									
EP065: PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	---	---	---
EP065: PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	<50	<50	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	<150	<150	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	99.9	72.9	85.6	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	102	76.8	86.6	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	67.0	57.9	89.8	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Sample ID	1530-TME-MEDH6	1530-TME-MEDH6	1530-TME-MEDH6	---	---
					14	14	14		
					0.50-0.95m	1.00-1.45m	Surface		
				Sampling date / time	20-Mar-2021 09:10	20-Mar-2021 09:30	20-Mar-2021 08:58	----	----
Compound	CAS Number	LOR	Unit	HK2111494-001	HK2111494-002	HK2111494-004	-----	-----	
EP-390: Triorganotins									
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	0.039	<0.015	<0.015	---	---	



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3588197)								
HK2110783-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	32.8	32.6	0.490
HK2111302-004	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	34.0	34.3	1.09
EA/ED: Physical and Aggregate Properties (QC Lot: 3588198)								
HK2111494-004	1530-TME-MEDH614 Surface	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	69.3	69.1	0.225
EG: Metals and Major Cations (QC Lot: 3592069)								
HK2111403-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.13	0.12	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	0.8	0.7	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	1.1	1.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	10	9	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	76	78	2.93
		EG020: Copper	7440-50-8	1	mg/kg	125	122	2.29
		EG020: Lead	7439-92-1	1	mg/kg	189	195	3.06
		EG020: Nickel	7440-02-0	1	mg/kg	32	35	8.79
		EG020: Zinc	7440-66-6	1	mg/kg	1080	918	16.1
EP-065: PCB Single Congeners (QC Lot: 3590166)								
HK2111494-001	1530-TME-MEDH614 0.50-0.95m	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3590166) - Continued								
HK2111494-001	1530-TME-MEDH614 0.50-0.95m	PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
		PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00
		PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3590165)								
HK2111494-001	1530-TME-MEDH614 0.50-0.95m	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		
Matrix: WATER								
Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3594302)								



Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 3594302) - Continued								
HK2110604-001	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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	
EG: Metals and Major Cations (QC Lot: 3592069)												
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	105	----	87.2	110	----	----	
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	110	----	85.0	113	----	----	
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	99.0	----	87.7	111	----	----	
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	106	----	92.0	115	----	----	
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	107	----	86.7	115	----	----	
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	112	----	86.6	115	----	----	
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	103	----	90.6	111	----	----	
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	104	----	85.0	109	----	----	
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	109	----	90.9	115	----	----	
EP-065: PCB Single Congeners (QC Lot: 3590166)												
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	87.8	----	49.0	128	----	----	
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	71.2	----	49.0	133	----	----	
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	84.0	----	52.0	130	----	----	
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	73.0	----	48.0	134	----	----	
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	73.8	----	50.0	135	----	----	
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	72.9	----	55.0	127	----	----	
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	83.0	----	56.0	127	----	----	
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	71.1	----	52.0	132	----	----	
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	81.6	----	53.0	128	----	----	
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	79.8	----	51.0	132	----	----	
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	82.3	----	55.0	126	----	----	
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	82.5	----	49.0	130	----	----	
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	81.9	----	51.0	130	----	----	



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-065: PCB Single Congeners (QC Lot: 3590166) - Continued											
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	80.5	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	79.6	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	80.2	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	80.4	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	80.9	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3590165)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	95.5	----	58.0	129	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	90.9	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	91.2	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	89.1	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	91.2	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	84.5	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	93.1	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	91.4	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	87.5	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	92.8	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	66.3	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	72.0	----	48.0	123	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	63.6	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	63.1	----	26.0	136	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	61.0	----	24.0	137	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	64.4	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
Matrix: WATER											
Matrix: WATER		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-390: Triorganotins (QC Lot: 3594302)											



Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
Method: Compound	CAS Number					LCS	DCS	Low	High	Value	Control Limit
EP-390: Triorganotins (QC Lot: 3594302) - Continued											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	96.7	----	70.0	130	----	----



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

Matrix: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EG: Metals and Major Cations (QC Lot: 3592069)										
HK2111403-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	97.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	106	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	85.1	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	115	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	96.6	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	102	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3590166)										
HK2111494-002	1530-TME-MEDH614 1.00-1.45m	PCB 8	34883-43-7	5 µg/kg	88.7	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	92.3	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	60.4	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	89.2	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	74.5	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	90.3	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	93.7	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	118	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3590166) - Continued										
HK2111494-002	1530-TME-MEDH614 1.00-1.45m	PCB 105	32598-14-4	5 µg/kg	84.1	----	50.0	130	----	----
		PCB 118	31508-00-6	5 µg/kg	84.9	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	85.2	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	82.8	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	86.3	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	86.3	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	79.2	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	79.4	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	78.5	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	84.3	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3590165)										
HK2111494-002	1530-TME-MEDH614 1.00-1.45m	Naphthalene	91-20-3	250 µg/kg	90.3	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	93.6	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	87.7	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	89.6	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	91.7	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	92.2	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	92.9	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	93.9	----	50.0	130	----	----
Benz(a)anthracene	56-55-3	250 µg/kg	91.5	----	50.0	130	----	----		



Matrix: SOIL

				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3590165) - Continued										
HK2111494-002	1530-TME-MEDH614 1.00-1.45m	Chrysene	218-01-9	250 µg/kg	91.2	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	70.6	----	50.0	130	----	----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	71.4	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	67.2	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	64.6	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	61.9	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	62.8	----	50.0	130	----	----

Matrix: WATER

				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3594302)										
HK2110604-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	81.7	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client	: TYSAN FOUNDATION LTD	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 13
Contact	: DESMOND CHEUNG	Contact	: Richard Fung	Work Order	: HK2114755
Address	: UNIT 19, 12/F LEADER INDUSTRIAL CENTRE, NOS. 57-59 AU PUI WAN STREET, SHATIN, N.T. HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Desmondcheung.si@tysan.com	E-mail	: richard.fung@alsglobal.com	Date Samples Received	: 14-Apr-2021
Telephone	: ---	Telephone	: +852 2610 1044	Issue Date	: 26-Apr-2021
Facsimile	: ---	Facsimile	: +852 2610 2021	No. of samples received	: 1
Project	: GROUND INVESTIGATION AND UTILITIES SURVEY FOR TUEN MA EXTENSION	Quote	: HKE/2221/2020_V2	No. of samples analysed	: 1
Order number	: J2009SF23	number			
C-O-C number	: ---				
Site	: TUEN MUN SOUTH				

ALS Technichem (HK) Pty Ltd
Part of the ALS Laboratory Group





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.alsglobal.com



This report may not be reproduced except with prior written approval from the testing laboratory.

Hong Kong Accreditation Service (HKAS) has accredited this laboratory, ALS Technichem (HK) Pty Ltd (Reg. No. HOKLAS 066) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories.

This document has been signed by those names that appear on this report and are the authorised signatories.

<i>Signatories</i>	<i>Position</i>	<i>Authorised results for</i>
 Anh Ngoc Huynh .	Senior Chemist	Organics_ENV
 Chan Siu Ming , Vico	Manager - Inorganics	Inorganics
 Cheng Pui Sze , Cora	Senior Chemist	Organics_ENV
 Leung Chak Cheong , Mike	Senior Chemist	Metals_ENV



General Comments

This report supersedes any previous report(s) with this reference. 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. Testing period is from 14-Apr-2021 to 23-Apr-2021.

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: HK2114755

Sample(s) was/ were sampled by ALS staff. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered by the laboratory HOKLAS accreditation.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of soil/sediment sample(s) was / were reported on dry weight basis.

Low and High M.W. PAHs results (Method: EP076HK) are not HOKLAS accredited. Low M.W. PAHs is sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene;

High M.W. PAHs is sum of Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1.2.3.cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene.

Total PCBs results (Method: EP065) are not HOKLAS accredited. The values are calculated from summation of the 18PCB congeners, based on Limit of Detection (LOD) of 1 ug/kg.

Sample(s) as received, digested by In-house method E-ASTM D3974-09 prior to determination of metals. The In-house method is developed based on ASTM D3974-09 method.



Analytical Results

Sub-Matrix: SEDIMENT

Sample ID

Sampling date / time

Reference Sediment	---	---	---	---
14-Apr-2021	----	----	----	----
HK2114755-001	-----	-----	-----	-----

EA/ED: Physical and Aggregate Properties

Compound	CAS Number	LOR	Unit	Value	---	---	---	---
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	53.2	---	---	---	---

EG: Metals and Major Cations

EG020: Arsenic	7440-38-2	1	mg/kg	8	---	---	---	---
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	---	---	---	---
EG020: Chromium	7440-47-3	1	mg/kg	36	---	---	---	---
EG020: Copper	7440-50-8	1	mg/kg	16	---	---	---	---
EG020: Lead	7439-92-1	1	mg/kg	38	---	---	---	---
EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	---	---	---	---
EG020: Nickel	7440-02-0	1	mg/kg	24	---	---	---	---
EG020: Silver	7440-22-4	0.1	mg/kg	0.1	---	---	---	---
EG020: Zinc	7440-66-6	1	mg/kg	87	---	---	---	---

EP-065: PCB Single Congeners

EP065: PCB 8	34883-43-7	3	µg/kg	<3	---	---	---	---
EP065: PCB 18	37680-65-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 28	7012-37-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 44	41464-39-5	3	µg/kg	<3	---	---	---	---
EP065: PCB 52	35693-99-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 66	32598-10-0	3	µg/kg	<3	---	---	---	---
EP065: PCB 77	32598-13-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 101	37680-73-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 105	32598-14-4	3	µg/kg	<3	---	---	---	---
EP065: PCB 118	31508-00-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 126	57465-28-8	3	µg/kg	<3	---	---	---	---
EP065: PCB 128	38380-07-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 138	35065-28-2	3	µg/kg	<3	---	---	---	---
EP065: PCB 153	35065-27-1	3	µg/kg	<3	---	---	---	---
EP065: PCB 169	32774-16-6	3	µg/kg	<3	---	---	---	---
EP065: PCB 170	35065-30-6	3	µg/kg	<3	---	---	---	---



Sub-Matrix: SEDIMENT				Reference	---	---	---	---
Sample ID				Sediment	---	---	---	---
Sampling date / time				14-Apr-2021	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2114755-001	---	---	---	---
EP-065: PCB Single Congeners - Continued								
EP065: PCB 180	35065-29-3	3	µg/kg	<3	---	---	---	---
EP065: PCB 187	52663-68-0	3	µg/kg	<3	---	---	---	---
EP065: Total Polychlorinated biphenyls	----	18	µg/kg	<18	---	---	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthylene	208-96-8	50	µg/kg	<50	---	---	---	---
EP076HK: Acenaphthene	83-32-9	50	µg/kg	<50	---	---	---	---
EP076HK: Fluorene	86-73-7	50	µg/kg	<50	---	---	---	---
EP076HK: Phenanthrene	85-01-8	50	µg/kg	<50	---	---	---	---
EP076HK: Anthracene	120-12-7	50	µg/kg	<50	---	---	---	---
EP076HK: Fluoranthene	206-44-0	150	µg/kg	<150	---	---	---	---
EP076HK: Pyrene	129-00-0	150	µg/kg	<150	---	---	---	---
EP076HK: Benz(a)anthracene	56-55-3	150	µg/kg	<150	---	---	---	---
EP076HK: Chrysene	218-01-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(a)pyrene	50-32-8	150	µg/kg	<150	---	---	---	---
EP076HK: Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	---	---	---	---
EP076HK: Dibenz(a,h)anthracene	53-70-3	150	µg/kg	<150	---	---	---	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	150	µg/kg	<150	---	---	---	---
EP076HK: Low M.W. PAHs	----	550	µg/kg	<550	---	---	---	---
EP076HK: High M.W. PAHs	----	1700	µg/kg	<1700	---	---	---	---
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	87.8	---	---	---	---
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	88.6	---	---	---	---
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								
EP065: Decachlorobiphenyl	2051-24-3	0.1	%	63.9	---	---	---	---



Sub-Matrix: INTERSTITIAL WATER				Reference Sediment	---	---	---	---
				14-Apr-2021	---	---	---	---
Compound	CAS Number	LOR	Unit	HK2114755-001	---	---	---	---
EP-390: Triorganotins								
EP390: Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	---	---	---	---



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 3621048)								
HK2113829-006	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	35.9	35.5	1.08
HK2114755-001	Reference Sediment	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	53.2	53.2	0.00
EG: Metals and Major Cations (QC Lot: 3628597)								
HK2114981-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.00
		EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.1	0.00
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.00
		EG020: Arsenic	7440-38-2	1	mg/kg	5	5	0.00
		EG020: Chromium	7440-47-3	1	mg/kg	16	16	0.00
		EG020: Copper	7440-50-8	1	mg/kg	39	35	11.6
		EG020: Lead	7439-92-1	1	mg/kg	40	38	6.30
		EG020: Nickel	7440-02-0	1	mg/kg	10	9	0.00
		EG020: Zinc	7440-66-6	1	mg/kg	106	83	24.0
EP-065: PCB Single Congeners (QC Lot: 3623160)								
HK2113501-001	Anonymous	Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	0.00
		PCB 8	34883-43-7	3	µg/kg	<3	<3	0.00
		PCB 18	37680-65-2	3	µg/kg	<3	<3	0.00
		PCB 28	7012-37-5	3	µg/kg	<3	<3	0.00
		PCB 44	41464-39-5	3	µg/kg	<3	<3	0.00
		PCB 52	35693-99-3	3	µg/kg	<3	<3	0.00
		PCB 66	32598-10-0	3	µg/kg	<3	<3	0.00
		PCB 77	32598-13-3	3	µg/kg	<3	<3	0.00
		PCB 101	37680-73-2	3	µg/kg	<3	<3	0.00
		PCB 105	32598-14-4	3	µg/kg	<3	<3	0.00
		PCB 118	31508-00-6	3	µg/kg	<3	<3	0.00
		PCB 126	57465-28-8	3	µg/kg	<3	<3	0.00
		PCB 128	38380-07-3	3	µg/kg	<3	<3	0.00
		PCB 138	35065-28-2	3	µg/kg	<3	<3	0.00
		PCB 153	35065-27-1	3	µg/kg	<3	<3	0.00
		PCB 169	32774-16-6	3	µg/kg	<3	<3	0.00
PCB 170	35065-30-6	3	µg/kg	<3	<3	0.00		



Matrix: SOIL				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 3623160) - Continued								
HK2113501-001	Anonymous	PCB 180	35065-29-3	3	µg/kg	<3	<3	0.00
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.00
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159)								
HK2113501-001	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.00
		Naphthalene	91-20-3	50	µg/kg	<50	<50	0.00
		Acenaphthylene	208-96-8	50	µg/kg	<50	<50	0.00
		Acenaphthene	83-32-9	50	µg/kg	<50	<50	0.00
		Fluorene	86-73-7	50	µg/kg	<50	<50	0.00
		Phenanthrene	85-01-8	50	µg/kg	<50	<50	0.00
		Anthracene	120-12-7	50	µg/kg	<50	<50	0.00
		Fluoranthene	206-44-0	50	µg/kg	<150	<150	0.00
		Pyrene	129-00-0	50	µg/kg	<150	<150	0.00
		Benz(a)anthracene	56-55-3	50	µg/kg	<150	<150	0.00
		Chrysene	218-01-9	50	µg/kg	<150	<150	0.00
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<150	<150	0.00
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<150	<150	0.00
		Benzo(a)pyrene	50-32-8	50	µg/kg	<150	<150	0.00
		Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<150	<150	0.00
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<150	<150	0.00		
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<150	<150	0.00		
Low M.W. PAHs	----	550	µg/kg	<550	<550	0.00		

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotin (QC Lot: 3634669)								
HK2113501-002	Anonymous	Tributyltin	56573-85-4	5	ngSn/L	<0.015 µg TBT /L	<6	0.00

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			
				Spike Concentration	Spike Recovery (%)	Recovery Limits(%)	RPD (%)



Matrix: SOIL Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		LOR	Unit	Result	Spike Concentration	LCSSpike Recovery (%)	DCS Recovery Limit (%)	Value	RPD (%)	Control Limit	
EG: Metals and Major Cations (QC Lot: 3628597)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	107	----	87.2	110	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	105	----	85.0	113	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	110	----	87.7	111	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	111	----	92.0	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	101	----	86.7	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	108	----	86.6	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	107	----	90.6	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	108	----	85.0	109	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	112	----	90.9	115	----	----
EP-065: PCB Single Congeners (QC Lot: 3623160)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	106	----	49.0	128	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	93.9	----	49.0	133	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	73.3	----	52.0	130	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	78.2	----	48.0	134	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	81.3	----	50.0	135	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	73.2	----	55.0	127	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	86.6	----	56.0	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	91.6	----	52.0	132	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	85.4	----	53.0	128	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	84.6	----	51.0	132	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	85.6	----	55.0	126	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	84.4	----	49.0	130	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	84.5	----	51.0	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	84.1	----	51.0	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	84.4	----	50.0	129	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	84.2	----	48.0	133	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	84.0	----	50.0	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	78.6	----	52.0	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	93.5	----	58.0	129	----	----



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-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159) - Continued											
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	92.0	----	44.0	128	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	89.3	----	55.0	128	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	87.2	----	50.0	129	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	84.3	----	55.0	131	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	89.5	----	33.0	137	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	88.7	----	57.0	133	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	90.1	----	58.0	130	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	83.5	----	50.0	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	92.8	----	63.0	128	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	70.6	----	43.0	131	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	83.8	----	48.0	123	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	75.9	----	30.0	129	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	61.1	----	26.0	136	----	----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	62.8	----	24.0	137	----	----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	64.5	----	25.0	141	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER		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-390: Triorganotin (QC Lot: 3634669)											
Tributyltin	56573-85-4	5	ngSn/L	<5	5 ngSn/L	104	----	70.0	130	----	----



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

Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 3628597)										
HK2114755-001	Reference Sediment	EG020: Arsenic	7440-38-2	5 mg/kg	98.3	----	75.0	125	----	----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	108	----	75.0	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	101	----	75.0	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	92.0	----	75.0	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	80.3	----	75.0	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	106	----	75.0	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	90.8	----	75.0	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	103	----	75.0	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75.0	125	----	----
EP-065: PCB Single Congeners (QC Lot: 3623160)										
HK2113501-002	Anonymous	PCB 8	34883-43-7	5 µg/kg	88.9	----	50.0	130	----	----
		PCB 18	37680-65-2	5 µg/kg	86.2	----	50.0	130	----	----
		PCB 28	7012-37-5	5 µg/kg	68.5	----	50.0	130	----	----
		PCB 44	41464-39-5	5 µg/kg	64.8	----	50.0	130	----	----
		PCB 52	35693-99-3	5 µg/kg	60.1	----	50.0	130	----	----
		PCB 66	32598-10-0	5 µg/kg	55.2	----	50.0	130	----	----
		PCB 77	32598-13-3	5 µg/kg	87.0	----	50.0	130	----	----
		PCB 101	37680-73-2	5 µg/kg	91.4	----	50.0	130	----	----
		PCB 105	32598-14-4	5 µg/kg	86.2	----	50.0	130	----	----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 3623160) - Continued										
HK2113501-002	Anonymous	PCB 118	31508-00-6	5 µg/kg	83.3	----	50.0	130	----	----
		PCB 126	57465-28-8	5 µg/kg	86.4	----	50.0	130	----	----
		PCB 128	38380-07-3	5 µg/kg	85.0	----	50.0	130	----	----
		PCB 138	35065-28-2	5 µg/kg	84.1	----	50.0	130	----	----
		PCB 153	35065-27-1	5 µg/kg	85.8	----	50.0	130	----	----
		PCB 169	32774-16-6	5 µg/kg	78.3	----	50.0	130	----	----
		PCB 170	35065-30-6	5 µg/kg	81.4	----	50.0	130	----	----
		PCB 180	35065-29-3	5 µg/kg	82.8	----	50.0	130	----	----
		PCB 187	52663-68-0	5 µg/kg	79.1	----	50.0	130	----	----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159)										
HK2113501-002	Anonymous	Naphthalene	91-20-3	250 µg/kg	90.6	----	50.0	130	----	----
		Acenaphthylene	208-96-8	250 µg/kg	84.7	----	50.0	130	----	----
		Acenaphthene	83-32-9	250 µg/kg	87.8	----	50.0	130	----	----
		Fluorene	86-73-7	250 µg/kg	88.2	----	50.0	130	----	----
		Phenanthrene	85-01-8	250 µg/kg	86.4	----	50.0	130	----	----
		Anthracene	120-12-7	250 µg/kg	87.4	----	50.0	130	----	----
		Fluoranthene	206-44-0	250 µg/kg	90.4	----	50.0	130	----	----
		Pyrene	129-00-0	250 µg/kg	89.8	----	50.0	130	----	----
		Benz(a)anthracene	56-55-3	250 µg/kg	85.7	----	50.0	130	----	----
		Chrysene	218-01-9	250 µg/kg	92.0	----	50.0	130	----	----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	79.6	----	50.0	130	----	----



Matrix: SOIL				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 3623159) - Continued										
HK2113501-002	Anonymous	Benzo(k)fluoranthene	207-08-9	250 µg/kg	89.7	----	50.0	130	----	----
		Benzo(a)pyrene	50-32-8	250 µg/kg	83.0	----	50.0	130	----	----
		Indeno(1.2.3.cd)pyrene	193-39-5	250 µg/kg	64.7	----	50.0	130	----	----
		Dibenz(a.h)anthracene	53-70-3	250 µg/kg	67.0	----	50.0	130	----	----
		Benzo(g.h.i)perylene	191-24-2	250 µg/kg	62.4	----	50.0	130	----	----

Matrix: WATER				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike Concentration</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPD (%)</i>	
					<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
EP-390: Triorganotins (QC Lot: 3634669)										
HK2113289-002	Anonymous	Tributyltin	56573-85-4	5 ngSn/L	114	----	70.0	130	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		<i>Recovery Limits (%)</i>	
<i>Compound</i>	<i>CAS Number</i>	<i>Low</i>	<i>High</i>
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate			
Decachlorobiphenyl	2051-24-3	50	130