Appendix 10.5b

Chemical Testing Results of Sediment Sub-samples Collected within/close to TRC, APM & BHS Tunnels and Airside Tunnels Footprint

Chemical Testing Results of Sediment Sub-samples Collected within/close to TRC, APM BHS Tunnels and Airside Tunnels Footprint

Sediment Quality Criteria TC(W) No.34/2002	Silver	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury	Total Polychlorinated biphenyls (PCBs)	Low M.W. PAHs	High M.W. PAHs	Tributyl Tin (TBT)
Analyte Description	Silver	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury	Total Polychlorinated biphenyls (PCBs)	Low M.W. PAHs	High M.W. PAHs	Tributyl Tin (TBT)
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	ug TBT/L
LCEL	**1**	**12**	**1.5**	**80**	**65**	**40**	**75**	**200**	**0.5**	**23**	**550**	**1700**	**0.15**
UCEL	***2***	***42***	***4***	***160***	***110***	***40***	***110***	***270***	***1***	***180***	***3160***	***9600***	***0.15***
10 x (LCEL)	**10**	**120**	**15**	**800**	**650**	**400**	**750**	**2000**	**5**	**230**	**5500**	**17000**	**1.5**

Sampling Location	Silver	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury	Total Polychlorinated biphenyls	Low M.W. PAHs	High M.W. PAHs	Tributyl Tin	Classification
Sediment Quality Result Recorded in February 2013														
AV08 0.20-0.90M	0.2	**16**	<0.2	32	28	23	43	95	0.06	<18	<550	<1700	<0.015	**M**
AV08 0.90-1.90M	0.3	**16**	<0.2	42	41	30	52	119	0.10	<18	<550	<1700	<0.015	**M**
AV08 1.90-2.90M	0.3	12	0.2	40	41	26	46	110	0.16	<18	<550	<1700	<0.015	L
AV08 2.90-5.90M	0.2	**14**	<0.2	36	34	24	42	96	0.14	<18	<550	<1700	<0.015	**M**
AV08 6.00-8.90M	1.0	6	0.3	44	**76**	24	61	146	0.45	<18	<550	<1700	<0.015	**M**
AV08 8.90-11.90M	0.1	9	<0.2	28	29	20	34	79	0.07	<18	<550	<1700	<0.015	L
AV08 12.00-14.90M	0.1	**25**	0.2	34	19	22	52	91	<0.05	<18	<550	<1700	<0.015	**M**
AV08 14.90-16.90M	<0.1	11	<0.2	22	13	4	19	10	<0.05	<18	<550	<1700	<0.015	L
AV10 0.00-0.90M	<0.1	11	<0.2	34	14	22	35	74	0.07	<18	<550	<1700	<0.015	L
AV10 0.90-1.90M	<0.1	12	<0.2	32	14	21	34	72	0.07	<18	<550	<1700	<0.015	L
AV10 1.90-2.90M	<0.1	<1	<0.2	2	<1	1	2	5	<0.05	<18	<550	<1700	<0.015	L
AV10 2.90-5.90M	0.6	5	0.3	39	64	23	49	111	0.23	<18	<550	<1700	<0.015	L
AV10 6.00-8.90M	<0.1	5	<0.2	38	15	27	28	84	0.06	<18	<550	<1700	N/A	L
AV10 8.90-10.60M	<0.1	7	<0.2	18	6	4	16	17	<0.05	<18	<550	<1700	N/A	L
RV07 0.00-0.90M	<0.1	11	<0.2	34	15	24	33	85	<0.05	<18	<550	<1700	<0.015	L
RV07 0.90-1.90M	<0.1	12	<0.2	32	15	24	32	83	<0.05	<18	<550	<1700	<0.015	L
RV07 1.90-2.90M	<0.1	11	<0.2	30	13	20	32	80	<0.05	<18	<550	<1700	<0.015	L
RV07 2.90-5.90M	<0.1	12	<0.2	34	15	23	36	85	<0.05	<18	<550	<1700	<0.015	L
RV07 6.00-8.90M	<0.1	12	<0.2	33	16	23	34	79	<0.05	<18	<550	<1700	<0.015	L
RV07 8.90-11.90M	<0.1	**13**	<0.2	35	17	25	36	84	<0.05	<18	<550	<1700	<0.015	**M**
RV07 12.00-14.90M	<0.1	**18**	<0.2	37	18	22	50	94	<0.05	<18	<550	<1700	<0.015	**M**
RV08 0.00-0.90M	<0.1	**14**	<0.2	38	16	26	33	88	<0.05	<18	<550	<1700	<0.015	**M**
RV08 0.90-1.90M	<0.1	11	<0.2	36	15	25	33	87	0.06	<18	<550	<1700	<0.015	L
RV08 1.90-2.90M	<0.1	12	<0.2	33	14	22	33	80	0.05	<18	<550	<1700	<0.015	L
RV08 2.90-5.90M	<0.1	12	<0.2	35	16	24	35	81	<0.05	<18	<550	<1700	<0.015	L
RV08 5.90-8.90M	<0.1	**25**	<0.2	35	17	26	38	81	<0.05	<18	<550	<1700	<0.015	**M**
RV08 8.90-9.70M	<0.1	10	<0.2	16	8	7	15	21	<0.05	<18	<550	<1700	N/A	L

RV09 0.00-0.90M	<0.1	**13**	<0.2	35	14	23	30	80	<0.05	<18	<550	<1700	<0.015	**M**
RV09 0.90-1.90M	<0.1	**13**	<0.2	37	14	24	33	82	<0.05	<18	<550	<1700	<0.015	**M**
RV09 1.90-2.90M	<0.1	**14**	<0.2	35	13	23	31	76	<0.05	<18	<550	<1700	<0.015	**M**
RV09 2.90-5.90M	<0.1	10	<0.2	38	15	24	32	76	<0.05	<18	<550	<1700	<0.015	L
RV09 6.00-8.90M	<0.1	**20**	<0.2	40	15	25	33	78	<0.05	<18	<550	<1700	<0.015	**M**
RV09 8.90-9.90M	<0.1	**27**	<0.2	41	17	26	41	88	<0.05	<18	<550	<1700	N/A	**M**
RV10 0.10-0.90M	<0.1	12	<0.2	36	14	23	31	77	<0.05	<18	<550	<1700	<0.015	L
RV10 0.90-1.90M	<0.1	12	<0.2	39	15	24	33	83	<0.05	<18	<550	<1700	<0.015	L
RV10 1.90-2.90M	<0.1	10	<0.2	35	14	22	32	73	<0.05	<18	<550	<1700	<0.015	L
RV10 2.90-5.90M	<0.1	**14**	<0.2	41	17	26	36	83	<0.05	<18	<550	<1700	<0.015	**M**
RV10 6.00-8.90M	<0.1	10	<0.2	40	15	26	33	79	<0.05	<18	<550	<1700	<0.015	L
RV10 8.90-11.70M	<0.1	**19**	<0.2	48	22	22	19	72	<0.05	<18	<550	<1700	N/A	**M**
RV11 0.10-0.90M	<0.1	**13**	<0.2	39	13	26	32	84	<0.05	<18	<550	<1700	<0.015	**M**
RV11 0.90-1.90M	<0.1	12	<0.2	37	14	24	32	82	<0.05	<18	<550	<1700	<0.015	L
RV11 1.90-2.90M	<0.1	10	<0.2	34	12	20	30	72	<0.05	<18	<550	<1700	<0.015	L
RV11 2.90-5.90M	<0.1	10	<0.2	38	15	23	35	78	<0.05	<18	<550	<1700	<0.015	L
RV11 6.00-8.90M	<0.1	11	<0.2	40	16	25	34	82	<0.05	<18	<550	<1700	<0.015	L
RV11 8.90-11.90M	<0.1	**19**	<0.2	42	18	25	44	82	<0.05	<18	<550	<1700	<0.015	**M**
RV11 12.00-14.90M	<0.1	3	<0.2	35	19	12	40	44	<0.05	<18	<550	<1700	<0.015	L
Sediment Quality Result Recorded in April 2011														
TC7A 0.10-0.90M	0.2	**13**	<0.2	28	18	19	32	67	<0.05	<18	<550	<1700	N/A	**M**
TC7A 0.90-1.90M	0.4	**20**	0.2	49	46	34	44	124	0.12	<18	<550	<1700	N/A	**M**
TC7A 1.90-2.90M	0.9	**14**	0.6	**89**	***121***	***52***	50	171	0.26	<18	<550	<1700	N/A	***H***
TC7A 2.90-3.90M	**1.2**	12	0.7	74	***130***	***44***	67	190	0.4	<18	<550	<1700	N/A	***H***
TC7A 6.00-6.90M	0.8	10	0.4	**81**	**100**	***45***	41	142	0.19	<18	<550	<1700	N/A	***H***
TC7A 8.90-9.90M	**1.1**	8	0.4	45	**106**	22	50	141	0.38	<18	<550	<1700	N/A	**M**
TC7A 12.00-12.90M	0.2	6	<0.2	37	21	28	41	112	0.2	<18	<550	<1700	N/A	L
TC7A 14.90-15.90M	0.1	10	<0.2	42	16	30	33	84	<0.05	<18	<550	<1700	N/A	L
TC7A 18.00-18.90M	0.6	12	0.4	45	47	24	71	163	0.43	<18	<550	<1700	N/A	L
TC7A 20.90-21.90M	<0.1	8	<0.2	27	9	8	19	26	<0.05	<18	<550	<1700	N/A	L
TC8A 0.00-0.90M	0.3	**23**	0.2	53	44	37	54	140	0.13	<18	<550	<1700	N/A	**M**
TC8A 0.90-1.90M	0.3	**23**	0.2	52	44	36	54	138	0.14	<18	<550	<1700	N/A	**M**
TC8A 1.90-2.90M	0.1	12	<0.2	40	18	27	32	84	0.06	<18	<550	<1700	N/A	L
TC8A 2.90-3.90M	0.1	10	<0.2	43	17	29	32	89	<0.05	<18	<550	<1700	N/A	L
TC8A 6.20-6.90M	0.1	12	<0.2	37	17	25	29	87	0.06	<18	<550	<1700	N/A	L
TC8A 8.90-9.90M	0.2	6	<0.2	39	22	28	38	133	0.17	<18	<550	<1700	N/A	L
TC8A 12.00-13.00M	0.8	7	0.4	49	58	30	**80**	**212**	**0.57**	<18	<550	<1700	N/A	**M**

TC9A 0.00-0.90M	0.1	**13**	<0.2	41	18	30	36	91	<0.05	<18	<550	<1700	N/A	**M**
TC9A 0.90-1.90M	0.1	11	<0.2	44	18	31	33	91	<0.05	<18	<550	<1700	N/A	L
TC9A 1.90-2.90M	0.1	**17**	<0.2	42	19	28	36	96	0.06	<18	<550	<1700	N/A	**M**
TC9A 2.90-3.90M	**1.1**	6	0.4	75	***122***	***43***	**85**	**218**	0.5	<18	<550	**2040**	N/A	***H***
TC9A 6.40-6.90M	<0.1	4	<0.2	36	14	28	19	83	<0.05	<18	<550	<1700	N/A	L
TC9A 6.90-7.90M	0.1	5	<0.2	21	13	15	20	54	0.07	<18	<550	<1700	N/A	L
TC9A 8.90-9.90M	0.3	5	<0.2	30	29	19	24	76	0.12	<18	<550	<1700	N/A	L
TC9A 12.00-12.90M	0.1	5	<0.2	27	16	17	25	94	0.09	<18	<550	<1700	N/A	L
TC9A 14.90-15.90M	0.2	**13**	0.7	38	31	***143***	25	***310***	0.07	<18	<550	<1700	N/A	***H***
TC9A 18.00-18.90M	<0.1	9	<0.2	39	25	9	52	26	0.06	<18	<550	<1700	N/A	L
TC15A 0.00-0.90M	0.3	**14**	<0.2	36	31	25	37	98	0.1	<18	<550	<1700	N/A	**M**
TC15A 0.90-1.90M	0.2	**14**	<0.2	37	29	24	38	98	0.1	<18	<550	<1700	N/A	**M**
TC15A 1.90-2.90M	0.3	**14**	0.3	35	18	20	**80**	149	***1.24***	<18	<550	<1700	N/A	***H***
TC15A 2.90-3.90M	0.7	8	0.2	33	46	19	43	101	0.12	<18	<550	<1700	N/A	L
TC15A 6.00-6.90M	0.2	5	<0.2	36	20	24	26	94	0.09	<18	<550	<1700	N/A	L
TC15A 8.90-9.90M	0.2	**17**	0.3	38	24	29	28	75	0.11	<18	<550	<1700	N/A	**M**
TC15A 9.90-10.90M	0.1	**13**	<0.2	34	16	22	29	83	0.07	<18	<550	<1700	N/A	**M**
TC16A 0.00-0.90M	0.1	10	<0.2	23	14	15	26	56	<0.05	<18	<550	<1700	N/A	L
TC16A 0.90-1.90M	0.1	10	<0.2	44	17	30	32	89	0.05	<18	<550	<1700	N/A	L
TC16A 1.90-2.90M	0.1	9	<0.2	18	10	12	21	48	<0.05	<18	<550	<1700	N/A	L
TC16A 2.90-3.90M	0.3	**16**	<0.2	42	31	27	40	102	0.09	<18	<550	<1700	N/A	**M**
TC16A 6.00-6.90M	**2**	8	0.5	77	***197***	30	64	179	**0.51**	<18	<550	<1700	N/A	***H***
TC16A 8.90-9.80M	0.1	11	<0.2	32	15	23	28	79	0.06	<18	<550	<1700	N/A	L

Remarks:

1. **Blue BOLD** value denotes exceedance in Lower Chemical Exceedance Level (LCEL)
2. **Red BOLD, Italic and Underlined** value denotes exceedance in Upper Chemical Exceedance Level (UCEL)
3. **BOLD and Underlined** value denotes exceedance in 10 x LCEL
4. N/A - Insufficient interstitial water for analysis of TBT
5. Low molecular weight PAHs include acenaphthene, acenaphthylene, anthracene, flouroene, naphthalene, and phenanthrene.
6. High molecular weight PAHs include benzo[a]anthracene, benzo[a]pyrene, chrysene, dibenzo[a,h]anthracene, floranthene, pyrene, benzo[b]fluroanthene, benzo[k]fluoranthen, indeno[1,2,3-c,d]pyrene and benzo[g,h,i]perylene.
7. Total PCBs include 2,4' diCB, 2,2',5 triCB, 2,4,4'triCB, 2,2'3,5'tetraCB, 2,2',5,5'tetraCB, 2,3',4,4'tetraCB, 3,3',4,4'tetraCB, 2,2',4,5,5'pentaCB, 2,3,3',4, 4'pentaCB, 2,3',4,4',5 pentaCB, 3,3',4,4',5 pentaCB, 2,2',3,3',4,4' hexaCB, 2,2',3,4,4',5' hexaCB, 2,2',4,4',5,5' hexaCB, 3,3',4,4',5,5' hexaCB, 2,2',3,3',4,4',5 heptaCB, 2,2',3,4,4',5,5' heptaCB, 2,2',3,4',5,5',6 heptaCB

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

HOKLAS 066 TEST

CERTIFICATE OF ANALYSIS

Client	: FUGRO GEOTECHNICAL SERVICES LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 12
Contact	: MR MARK DAVIS	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1301273
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Project	: P548 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1278a/2012	Date Samples Received	: 17-JAN-2013
Order number	: ----			Issue Date	: 02-FEB-2013
C-O-C number	: ----			No. of samples received	: 9
Site	: AV08			No. of samples analysed	: 8

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Tai Yuk Lun, Stephen	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor - Metals	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 25-JAN-2013

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: **HK1301273**

Sample(s) were received in a chilled condition.

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

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

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

Analytical Results

Sub-Matrix: **SEDIMENT**

			Client sample ID	AV08 0.20-0.90M	AV08 0.90-1.90M	AV08 1.90-2.90M	AV08 2.90-5.90M	AV08 6.00-8.90M
			Client sampling date / time	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00
Compound	CAS Number	LOR	Unit	HK1301273-001	HK1301273-002	HK1301273-003	HK1301273-004	HK1301273-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	36.4	45.1	46.1	44.8	19.5
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	16	16	12	14	6
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.2	<0.2	0.3
EG020: Chromium	7440-47-3	1	mg/kg	32	42	40	36	44
EG020: Copper	7440-50-8	1	mg/kg	28	41	41	34	76
EG020: Lead	7439-92-1	1	mg/kg	43	52	46	42	61
EG020: Mercury	7439-97-6	0.05	mg/kg	0.06	0.10	0.16	0.14	0.45
EG020: Nickel	7440-02-0	1	mg/kg	23	30	26	24	24
EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.3	0.3	0.2	1.0
EG020: Zinc	7440-66-6	1	mg/kg	95	119	110	96	146
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50

Sub-Matrix: SEDIMENT			Client sample ID	AV08 0.20-0.90M	AV08 0.90-1.90M	AV08 1.90-2.90M	AV08 2.90-5.90M	AV08 6.00-8.90M
			Client sampling date / time	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00
Compound	CAS Number	LOR	Unit	HK1301273-001	HK1301273-002	HK1301273-003	HK1301273-004	HK1301273-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**59.2**	**54.3**	**64.7**	**53.0**	**67.1**
4-Terphenyl-d14	1718-51-0	0.1	%	**80.8**	**54.9**	**88.3**	**89.4**	**81.4**
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**78.4**	**50.2**	**69.8**	**89.5**	**79.1**

Sub-Matrix: SEDIMENT			Client sample ID	AV08 8.90-11.90M	AV08 12.00-14.90M	AV08 14.90-16.90M		
			Client sampling date / time	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00		
Compound	CAS Number	LOR	Unit	HK1301273-006	HK1301273-007	HK1301273-008		
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	17.3	37.1	16.3		
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	9	25	11		
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.2	<0.2		
EG020: Chromium	7440-47-3	1	mg/kg	28	34	22		
EG020: Copper	7440-50-8	1	mg/kg	29	19	13		
EG020: Lead	7439-92-1	1	mg/kg	34	52	19		
EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	<0.05	<0.05		
EG020: Nickel	7440-02-0	1	mg/kg	20	22	4		
EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.1	<0.1		
EG020: Zinc	7440-66-6	1	mg/kg	79	91	10		
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3		
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3		
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3		
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3		
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3		
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3		
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3		
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3		
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3		
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3		
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3		
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3		
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3		
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3		
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3		
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3		
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3		
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3		
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18		
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50		
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50		
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50		
Fluorene	86-73-7	50	µg/kg	<50	<50	<50		
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50		
Anthracene	120-12-7	50	µg/kg	<50	<50	<50		

Sub-Matrix: SEDIMENT			Client sample ID	AV08 8.90-11.90M	AV08 12.00-14.90M	AV08 14.90-16.90M		
			Client sampling date / time	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00		
Compound	CAS Number	LOR	Unit	HK1301273-006	HK1301273-007	HK1301273-008		
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150		
Pyrene	129-00-0	150	µg/kg	<150	<150	<150		
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150		
Chrysene	218-01-9	150	µg/kg	<150	<150	<150		
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150		
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150		
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150		
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150		
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150		
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150		
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550		
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700		
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**70.4**	**65.0**	**61.8**		
4-Terphenyl-d14	1718-51-0	0.1	%	**82.9**	**106**	**91.7**		
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**79.5**	**80.8**	**97.1**		

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	AV08 0.20-0.90M	AV08 0.90-1.90M	AV08 1.90-2.90M	AV08 2.90-5.90M	AV08 6.00-8.90M
			Client sampling date / time	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00
Compound	CAS Number	LOR	Unit	HK1301273-001	HK1301273-002	HK1301273-003	HK1301273-004	HK1301273-005
EP-390: Triorganotins								
Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	<0.015	<0.015

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	AV08 8.90-11.90M	AV08 12.00-14.90M	AV08 14.90-16.90M		
			Client sampling date / time	17-JAN-2013 13:00	17-JAN-2013 13:00	17-JAN-2013 13:00		
Compound	CAS Number	LOR	Unit	HK1301273-006	HK1301273-007	HK1301273-008		
EP-390: Triorganotins								
Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015		

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2701437)								
HK1301262-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	46.9	46.9	0.0
HK1301273-003	AV08 1.90-2.90M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	46.1	45.7	0.9
EG: Metals and Major Cations (QC Lot: 2697474)								
HK1301262-002	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	17	18	6.8
		EG020: Chromium	7440-47-3	1	mg/kg	32	33	0.0
		EG020: Copper	7440-50-8	1	mg/kg	15	15	0.0
		EG020: Lead	7439-92-1	1	mg/kg	32	33	3.1
		EG020: Nickel	7440-02-0	1	mg/kg	23	23	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	77	77	0.0
EP-065: PCB Single Congeners (QC Lot: 2698214)								
HK1301273-001	AV08 0.20-0.90M	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2698215)								
HK1301273-001	AV08 0.20-0.90M	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2698215) - Continued								
HK1301273-001	AV08 0.20-0.90M	Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 2697763)								
HK1301262-007	Anonymous	Tributyltin	56573-85-4	6	ngSn/L	<6	<6	0.0

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

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2697474)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	86.9	----	77	109	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	91.0	----	86	110	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	90.3	----	88	120	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	90.0	----	85	109	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	90.7	----	84	106	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	86.4	----	80	112	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	87.6	----	87	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	91.8	----	83	105	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	87.1	----	82	126	----	----
EP-065: PCB Single Congeners (QC Lot: 2698214)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	109	----	33	146	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	106	----	26	143	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	116	----	39	128	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	105	----	36	122	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	111	----	35	125	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	94.6	----	41	116	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	108	----	29	147	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	114	----	32	142	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	101	----	42	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	102	----	38	134	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	101	----	51	107	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	97.9	----	44	128	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	99.8	----	41	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	101	----	42	131	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 2698214) - Continued											
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	94.1	----	46	130	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	91.8	----	45	131	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	92.3	----	45	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	98.6	----	44	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2698215)											
Naphthalene	91-20-3	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	82.7	----	70	128	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	63.0	----	50	130	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	72.2	----	65	132	----	----
Fluorene	86-73-7	25	µg/kg	----	25 µg/kg	71.0	----	59	145	----	----
				<50	----	----	----	----	----	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	77.3	----	64	139	----	----
Anthracene	120-12-7	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	71.6	----	41	133	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	91.8	----	63	142	----	----
Pyrene	129-00-0	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	93.1	----	65	140	----	----
Benz(a)anthracene	56-55-3	25	µg/kg	----	25 µg/kg	66.3	----	65	126	----	----
				<50	----	----	----	----	----	----	----
Chrysene	218-01-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	94.4	----	73	131	----	----
Benzo(b)fluoranthene	205-99-2	25	µg/kg	----	25 µg/kg	69.3	----	64	129	----	----
				<50	----	----	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	96.2	----	62	134	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	70.4	----	41	123	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	68.2	----	54	138	----	----
Dibenz(a.h)anthracene	53-70-3	25	µg/kg	----	25 µg/kg	70.9	----	55	138	----	----
				<50	----	----	----	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	72.5	----	61	140	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-390: Triorganotins (QC Lot: 2697763)											
Tributyltin	56573-85-4	5	ngSn/L	<5	2 ngSn/L	124	----	93	133	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2697474)										
HK1301262-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	94.9	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	102	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	116	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	78.3	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	87.5	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

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

HOKLAS 066 TEST

CERTIFICATE OF ANALYSIS

Client	: FUGRO GEOTECHNICAL SERVICES LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 11
Contact	: MR MARK DAVIS	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1301860
Address	: UNITS 6, 8-11, 10/F WORLDWIDE IND. CTR., 43-47 SHAN MEI STREET, FO TAN, SHATIN, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong	Amendment	: 1
E-mail	: mdavies@fugro.com.hk	E-mail	: Godfrey.Chan@alsglobal.com		
Telephone	: +852 2697 1126	Telephone	: +852 2610 1044		
Facsimile	: +852 2694 0659	Facsimile	: +852 2610 2021		
Project	: P548 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1278a/2012	Date Samples Received	: 19-JAN-2013
Order number	: ----			Issue Date	: 18-FEB-2013
C-O-C number	: ----			No. of samples received	: 6
Site	: AV10			No. of samples analysed	: 6

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Tai Yuk Lun, Stephen	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor - Metals	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 14-FEB-2013

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: **HK1301860**

Sample(s) were received in a chilled condition.

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

Sediment sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #1 AV10 0.00-0.90M, Sample #2 AV10 0.90-1.90M, Sample #3 AV10 1.90-2.90M and Sample #4 AV10 2.90-5.90M.

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

Analytical Results

Sub-Matrix: **SEDIMENT**

			Client sample ID	AV10 0.00-0.90M	AV10 0.90-1.90M	AV10 1.90-2.90M	AV10 2.90-5.90M	AV10 6.00-8.90M
			Client sampling date / time	19-JAN-2013 09:30	19-JAN-2013 09:30	19-JAN-2013 09:30	19-JAN-2013 09:30	19-JAN-2013 09:30
Compound	CAS Number	LOR	Unit	HK1301860-001	HK1301860-002	HK1301860-003	HK1301860-004	HK1301860-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	44.0	40.6	7.2	36.2	38.2
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	11	12	<1	5	5
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	0.3	<0.2
EG020: Chromium	7440-47-3	1	mg/kg	34	32	2	39	38
EG020: Copper	7440-50-8	1	mg/kg	14	14	<1	64	15
EG020: Lead	7439-92-1	1	mg/kg	35	34	2	49	28
EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.07	<0.05	0.23	0.06
EG020: Nickel	7440-02-0	1	mg/kg	22	21	1	23	27
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	0.6	<0.1
EG020: Zinc	7440-66-6	1	mg/kg	74	72	5	111	84
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50

Sub-Matrix: SEDIMENT			Client sample ID	AV10 0.00-0.90M	AV10 0.90-1.90M	AV10 1.90-2.90M	AV10 2.90-5.90M	AV10 6.00-8.90M
			Client sampling date / time	19-JAN-2013 09:30	19-JAN-2013 09:30	19-JAN-2013 09:30	19-JAN-2013 09:30	19-JAN-2013 09:30
Compound	CAS Number	LOR	Unit	HK1301860-001	HK1301860-002	HK1301860-003	HK1301860-004	HK1301860-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**60.0**	**54.0**	**57.4**	**58.4**	**56.9**
4-Terphenyl-d14	1718-51-0	0.1	%	**82.6**	**74.7**	**87.4**	**70.9**	**78.5**
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**76.7**	**80.1**	**81.2**	**50.7**	**58.0**

Sub-Matrix: SEDIMENT			Client sample ID	AV10 8.90-10.60M				
			Client sampling date / time	19-JAN-2013 09:30				
Compound	CAS Number	LOR	Unit	HK1301860-006				
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	15.0				
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	7				
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2				
EG020: Chromium	7440-47-3	1	mg/kg	18				
EG020: Copper	7440-50-8	1	mg/kg	6				
EG020: Lead	7439-92-1	1	mg/kg	16				
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05				
EG020: Nickel	7440-02-0	1	mg/kg	4				
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1				
EG020: Zinc	7440-66-6	1	mg/kg	17				
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3				
PCB 18	37680-65-2	3	µg/kg	<3				
PCB 28	7012-37-5	3	µg/kg	<3				
PCB 44	41464-39-5	3	µg/kg	<3				
PCB 52	35693-99-3	3	µg/kg	<3				
PCB 66	32598-10-0	3	µg/kg	<3				
PCB 77	32598-13-3	3	µg/kg	<3				
PCB 101	37680-73-2	3	µg/kg	<3				
PCB 105	32598-14-4	3	µg/kg	<3				
PCB 118	31508-00-6	3	µg/kg	<3				
PCB 126	57465-28-8	3	µg/kg	<3				
PCB 128	38380-07-3	3	µg/kg	<3				
PCB 138	35065-28-2	3	µg/kg	<3				
PCB 153	35065-27-1	3	µg/kg	<3				
PCB 169	32774-16-6	3	µg/kg	<3				
PCB 170	35065-30-6	3	µg/kg	<3				
PCB 180	35065-29-3	3	µg/kg	<3				
PCB 187	52663-68-0	3	µg/kg	<3				
Total Polychlorinated biphenyls	----	18	µg/kg	<18				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50				
Acenaphthylene	208-96-8	50	µg/kg	<50				
Acenaphthene	83-32-9	50	µg/kg	<50				
Fluorene	86-73-7	50	µg/kg	<50				
Phenanthrene	85-01-8	50	µg/kg	<50				
Anthracene	120-12-7	50	µg/kg	<50				

Sub-Matrix: SEDIMENT			Client sample ID	AV10 8.90-10.60M				
			Client sampling date / time	19-JAN-2013 09:30				
Compound	CAS Number	LOR	Unit	HK1301860-006				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Fluoranthene	206-44-0	150	µg/kg	<150				
Pyrene	129-00-0	150	µg/kg	<150				
Benz(a)anthracene	56-55-3	150	µg/kg	<150				
Chrysene	218-01-9	150	µg/kg	<150				
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150				
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150				
Benzo(a)pyrene	50-32-8	150	µg/kg	<150				
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150				
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150				
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150				
Low M.W. PAHs	----	550	µg/kg	<550				
High M.W. PAHs	----	1700	µg/kg	<1700				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**53.0**				
4-Terphenyl-d14	1718-51-0	0.1	%	**78.4**				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**78.1**				

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	AV10 0.00-0.90M	AV10 0.90-1.90M	AV10 1.90-2.90M	AV10 2.90-5.90M	
			Client sampling date / time	19-JAN-2013 09:30	19-JAN-2013 09:30	19-JAN-2013 09:30	19-JAN-2013 09:30	
Compound	CAS Number	LOR	Unit	HK1301860-001	HK1301860-002	HK1301860-003	HK1301860-004	
EP-390: Triorganotins								
Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	<0.015	

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2701440)								
HK1301854-006	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	28.0	27.5	1.5
HK1301892-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	40.6	40.0	1.5
EG: Metals and Major Cations (QC Lot: 2701639)								
HK1301435-006	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.06	0.07	20.0
		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	9	9	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	40	42	5.6
		EG020: Copper	7440-50-8	1	mg/kg	15	16	0.0
		EG020: Lead	7439-92-1	1	mg/kg	34	36	3.7
		EG020: Nickel	7440-02-0	1	mg/kg	26	28	5.1
		EG020: Zinc	7440-66-6	1	mg/kg	78	85	8.0
EP-065: PCB Single Congeners (QC Lot: 2698218)								
HK1301854-005	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2698219)								
HK1301854-005	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2698219) - Continued								
HK1301854-005	Anonymous	Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 2699648)								
HK1301854-001	Anonymous	Tributyltin	56573-85-4	6	ngSn/L	<6	<6	0.0
EP-390: Triorganotins (QC Lot: 2729826)								
HK1301438-011	Anonymous	Tributyltin	56573-85-4	6	ngSn/L	<6	<6	0.0

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

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2701639)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	86.0	----	77	109	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	86.2	----	86	110	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	88.8	----	88	120	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	90.5	----	85	109	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	85.6	----	84	106	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	85.4	----	80	112	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	88.8	----	87	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	85.6	----	83	105	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	92.1	----	82	126	----	----
EP-065: PCB Single Congeners (QC Lot: 2698218)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	78.1	----	33	146	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	92.0	----	26	143	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	83.5	----	39	128	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	73.8	----	36	122	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	78.2	----	35	125	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	65.8	----	41	116	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	97.9	----	29	147	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	101	----	32	142	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	115	----	42	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	116	----	38	134	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	103	----	51	107	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	112	----	44	128	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 2698218) - Continued											
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	114	----	41	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	115	----	42	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	107	----	46	130	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	103	----	45	131	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	105	----	45	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	111	----	44	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2698219)											
Naphthalene	91-20-3	25	µg/kg	----	25 µg/kg	77.4	----	70	128	----	----
				<50	----	----	----	----	----	----	----
Acenaphthylene	208-96-8	25	µg/kg	----	25 µg/kg	70.2	----	50	130	----	----
				<50	----	----	----	----	----	----	----
Acenaphthene	83-32-9	25	µg/kg	----	25 µg/kg	83.0	----	65	132	----	----
				<50	----	----	----	----	----	----	----
Fluorene	86-73-7	25	µg/kg	----	25 µg/kg	76.0	----	59	145	----	----
				<50	----	----	----	----	----	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	76.7	----	64	139	----	----
Anthracene	120-12-7	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	90.8	----	41	133	----	----
Fluoranthene	206-44-0	25	µg/kg	----	25 µg/kg	86.2	----	63	142	----	----
				<50	----	----	----	----	----	----	----
Pyrene	129-00-0	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	86.7	----	65	140	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	69.2	----	65	126	----	----
Chrysene	218-01-9	25	µg/kg	----	25 µg/kg	90.5	----	73	131	----	----
				<50	----	----	----	----	----	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	73.1	----	64	129	----	----
Benzo(k)fluoranthene	207-08-9	25	µg/kg	----	25 µg/kg	102	----	62	134	----	----
				<50	----	----	----	----	----	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	80.8	----	41	123	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	25	µg/kg	----	25 µg/kg	88.2	----	54	138	----	----
				<50	----	----	----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	25	µg/kg	----	25 µg/kg	68.6	----	55	138	----	----
				<50	----	----	----	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	83.2	----	61	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

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-390: Triorganotins (QC Lot: 2699648)											
Tributyltin	56573-85-4	5	ngSn/L	<5	2 ngSn/L	112	----	93	133	----	----
EP-390: Triorganotins (QC Lot: 2729826)											
Tributyltin	56573-85-4	5	ngSn/L	<5	2 ngSn/L	126	----	80	131	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2701639)										
HK1301435-005	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	79.1	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	90.6	----	75	125	----	----
		EG020: Chromium	7440-47-3	50 mg/kg	79.2	----	75	125	----	----
		EG020: Copper	7440-50-8	50 mg/kg	76.6	----	75	125	----	----
		EG020: Lead	7439-92-1	50 mg/kg	79.2	----	75	125	----	----
		EG020: Mercury	7439-97-6	1 mg/kg	83.4	----	75	125	----	----
		EG020: Nickel	7440-02-0	50 mg/kg	83.8	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	88.4	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

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

HOKLAS 066 TEST

CERTIFICATE OF ANALYSIS

Client	: FUGRO GEOTECHNICAL SERVICES LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 12
Contact	: MR MARK DAVIS	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1301428
Address	: UNITS 6, 8-11, 10/F WORLDWIDE IND. CTR., 43-47 SHAN MEI STREET, FO TAN, SHATIN, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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Telephone	: +852 2697 1126	Telephone	: +852 2610 1044		
Facsimile	: +852 2694 0659	Facsimile	: +852 2610 2021		
Project	: P548 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1278a/2012	Date Samples Received	: 15-JAN-2013
Order number	: ----			Issue Date	: 29-JAN-2013
C-O-C number	: ----			No. of samples received	: 10
Site	: RV07			No. of samples analysed	: 7

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Tai Yuk Lun, Stephen	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor - Metals	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 25-JAN-2013

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: **HK1301428**

Sample(s) were received in a chilled condition.

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

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

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water excepe Sample #1 RV07 0.00-0.90M, Sample #2 RV07 0.90-1.90M, Sample #3 RV07 1.90-2.90M, Sample #4 RV07 2.90-5.90M, Sample #5 RV07 6.00-8.90M, Sample #6 RV07 8.90-11.90M and Sample #7 RV07 12.00-14.90M.

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

Analytical Results

Sub-Matrix: **SEDIMENT**

			Client sample ID	RV07 0.00-0.90M	RV07 0.90-1.90M	RV07 1.90-2.90M	RV07 2.90-5.90M	RV07 6.00-8.90M
			Client sampling date / time	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30
Compound	CAS Number	LOR	Unit	HK1301428-001	HK1301428-002	HK1301428-003	HK1301428-004	HK1301428-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	46.4	48.0	45.8	44.9	45.1
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	11	12	11	12	12
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	34	32	30	34	33
EG020: Copper	7440-50-8	1	mg/kg	15	15	13	15	16
EG020: Lead	7439-92-1	1	mg/kg	33	32	32	36	34
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	24	24	20	23	23
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	85	83	80	85	79
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50

Sub-Matrix: SEDIMENT			Client sample ID	RV07 0.00-0.90M	RV07 0.90-1.90M	RV07 1.90-2.90M	RV07 2.90-5.90M	RV07 6.00-8.90M
			Client sampling date / time	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30
Compound	CAS Number	LOR	Unit	HK1301428-001	HK1301428-002	HK1301428-003	HK1301428-004	HK1301428-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**65.2**	**71.7**	**74.2**	**51.4**	**66.0**
4-Terphenyl-d14	1718-51-0	0.1	%	**86.7**	**65.2**	**104**	**56.1**	**84.5**
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**103**	**89.8**	**101**	**73.9**	**86.2**

Sub-Matrix: SEDIMENT			Client sample ID	RV07 8.90-11.90M	RV07 12.00-14.90M			
			Client sampling date / time	15-JAN-2013 09:30	15-JAN-2013 09:30			
Compound	CAS Number	LOR	Unit	HK1301428-006	HK1301428-007			
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	45.0	44.2			
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	13	18			
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2			
EG020: Chromium	7440-47-3	1	mg/kg	35	37			
EG020: Copper	7440-50-8	1	mg/kg	17	18			
EG020: Lead	7439-92-1	1	mg/kg	36	50			
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05			
EG020: Nickel	7440-02-0	1	mg/kg	25	22			
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1			
EG020: Zinc	7440-66-6	1	mg/kg	84	94			
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3			
PCB 18	37680-65-2	3	µg/kg	<3	<3			
PCB 28	7012-37-5	3	µg/kg	<3	<3			
PCB 44	41464-39-5	3	µg/kg	<3	<3			
PCB 52	35693-99-3	3	µg/kg	<3	<3			
PCB 66	32598-10-0	3	µg/kg	<3	<3			
PCB 77	32598-13-3	3	µg/kg	<3	<3			
PCB 101	37680-73-2	3	µg/kg	<3	<3			
PCB 105	32598-14-4	3	µg/kg	<3	<3			
PCB 118	31508-00-6	3	µg/kg	<3	<3			
PCB 126	57465-28-8	3	µg/kg	<3	<3			
PCB 128	38380-07-3	3	µg/kg	<3	<3			
PCB 138	35065-28-2	3	µg/kg	<3	<3			
PCB 153	35065-27-1	3	µg/kg	<3	<3			
PCB 169	32774-16-6	3	µg/kg	<3	<3			
PCB 170	35065-30-6	3	µg/kg	<3	<3			
PCB 180	35065-29-3	3	µg/kg	<3	<3			
PCB 187	52663-68-0	3	µg/kg	<3	<3			
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18			
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50			
Acenaphthylene	208-96-8	50	µg/kg	<50	<50			
Acenaphthene	83-32-9	50	µg/kg	<50	<50			
Fluorene	86-73-7	50	µg/kg	<50	<50			
Phenanthrene	85-01-8	50	µg/kg	<50	<50			
Anthracene	120-12-7	50	µg/kg	<50	<50			

Sub-Matrix: SEDIMENT			Client sample ID	RV07 8.90-11.90M	RV07 12.00-14.90M			
			Client sampling date / time	15-JAN-2013 09:30	15-JAN-2013 09:30			
Compound	CAS Number	LOR	Unit	HK1301428-006	HK1301428-007			
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Fluoranthene	206-44-0	150	µg/kg	<150	<150			
Pyrene	129-00-0	150	µg/kg	<150	<150			
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150			
Chrysene	218-01-9	150	µg/kg	<150	<150			
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150			
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150			
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150			
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150			
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150			
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150			
Low M.W. PAHs	----	550	µg/kg	<550	<550			
High M.W. PAHs	----	1700	µg/kg	<1700	<1700			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								Surrogate control limits listed at end of this report.
2-Fluorobiphenyl	321-60-8	0.1	%	**63.1**	**63.6**			
4-Terphenyl-d14	1718-51-0	0.1	%	**57.7**	**91.3**			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	**53.6**	**52.4**			

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	RV07 0.00-0.90M	RV07 0.90-1.90M	RV07 1.90-2.90M	RV07 2.90-5.90M	RV07 6.00-8.90M
			Client sampling date / time	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30	15-JAN-2013 09:30
Compound	CAS Number	LOR	Unit	HK1301428-001	HK1301428-002	HK1301428-003	HK1301428-004	HK1301428-005
EP-390: Triorganotins								
Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	<0.015	<0.015

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	RV07 8.90-11.90M	RV07 12.00-14.90M			
			Client sampling date / time	15-JAN-2013 09:30	15-JAN-2013 09:30			
Compound	CAS Number	LOR	Unit	HK1301428-006	HK1301428-007			
EP-390: Triorganotins								
Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015			

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2695172)								
HK1301426-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	48.1	49.8	3.6
HK1301428-006	RV07 8.90-11.90M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.0	43.1	4.2
EG: Metals and Major Cations (QC Lot: 2693500)								
HK1301426-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.06	0.06	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	11	11	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	36	36	0.0
		EG020: Copper	7440-50-8	1	mg/kg	15	16	0.0
		EG020: Lead	7439-92-1	1	mg/kg	33	34	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	25	25	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	87	88	0.0
EP-065: PCB Single Congeners (QC Lot: 2694145)								
HK1301428-001	RV07 0.00-0.90M	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694146)								
HK1301428-001	RV07 0.00-0.90M	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694146) - Continued								
HK1301428-001	RV07 0.00-0.90M	Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 2697754)								
HK1301428-001	RV07 0.00-0.90M	Tributyltin	56573-85-4	6	ngSn/L	<6	<6	0.0

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

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2693500)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	87.1	----	77	109	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	93.2	----	86	110	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	99.3	----	88	120	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	91.8	----	85	109	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	91.7	----	84	106	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	86.9	----	80	112	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	89.5	----	87	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	87.5	----	83	105	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	89.0	----	82	126	----	----
EP-065: PCB Single Congeners (QC Lot: 2694145)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	118	----	33	146	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	84.8	----	26	143	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	111	----	39	128	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	105	----	36	122	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	105	----	35	125	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	95.8	----	41	116	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	106	----	29	147	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	110	----	32	142	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	100	----	42	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	101	----	38	134	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	103	----	51	107	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	99.4	----	44	128	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	101	----	41	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	102	----	42	131	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 2694145) - Continued											
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	95.1	----	46	130	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	94.4	----	45	131	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	96.6	----	45	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	102	----	44	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694146)											
Naphthalene	91-20-3	25	µg/kg	----	25 µg/kg	85.7	----	70	128	----	----
				<50	----	----	----	----	----	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	50.2	----	50	130	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	88.8	----	65	132	----	----
Fluorene	86-73-7	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	83.6	----	59	145	----	----
Phenanthrene	85-01-8	25	µg/kg	----	25 µg/kg	71.2	----	64	139	----	----
				<50	----	----	----	----	----	----	----
Anthracene	120-12-7	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	93.7	----	41	133	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	90.3	----	63	142	----	----
Pyrene	129-00-0	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	90.5	----	65	140	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	75.5	----	65	126	----	----
Chrysene	218-01-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	104	----	73	131	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	76.8	----	64	129	----	----
Benzo(k)fluoranthene	207-08-9	25	µg/kg	----	25 µg/kg	81.1	----	62	134	----	----
				<50	----	----	----	----	----	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	59.9	----	41	123	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	57.6	----	54	138	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	62.9	----	55	138	----	----
Benzo(g.h.i)perylene	191-24-2	25	µg/kg	----	25 µg/kg	70.2	----	61	140	----	----
				<50	----	----	----	----	----	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-390: Triorganotins (QC Lot: 2697754)											
Tributyltin	56573-85-4	5	ngSn/L	<5	2 ngSn/L	108	----	93	133	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2693500)										
HK1301426-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	83.0	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	93.5	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	80.1	----	75	125	----	----
		EG020: Lead	7439-92-1	50 mg/kg	80.6	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	111	----	75	125	----	----
		EG020: Nickel	7440-02-0	50 mg/kg	83.3	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	92.4	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

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

HOKLAS 066 TEST

CERTIFICATE OF ANALYSIS

Client	: FUGRO GEOTECHNICAL SERVICES LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 11
Contact	: MR MARK DAVIS	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1301426
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Project	: P548 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1278a/2012	Date Samples Received	: 14-JAN-2013
Order number	: ----			Issue Date	: 30-JAN-2013
C-O-C number	: ----			No. of samples received	: 6
Site	: RV08			No. of samples analysed	: 6

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Kwok Ka Yan, Yankee	Chemist - Metals	Inorganics
Tai Yuk Lun, Stephen	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor - Metals	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 25-JAN-2013

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: **HK1301426**

Sample(s) were received in a chilled condition.

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

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

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #1 RV08 0.00-0.90M, Sample #2 RV08 0.90-1.90M, Sample #3 RV08 1.90-2.90M, Sample #4 RV08 2.90-5.90M and Sample #5 RV08 5.90-8.90M.

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

Analytical Results

Sub-Matrix: **SEDIMENT**

			Client sample ID	RV08 0.00-0.90M	RV08 0.90-1.90M	RV08 1.90-2.90M	RV08 2.90-5.90M	RV08 5.90-8.90M
			Client sampling date / time	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30
Compound	CAS Number	LOR	Unit	HK1301426-001	HK1301426-002	HK1301426-003	HK1301426-004	HK1301426-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	46.9	48.1	48.2	46.2	40.0
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	14	11	12	12	25
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	38	36	33	35	35
EG020: Copper	7440-50-8	1	mg/kg	16	15	14	16	17
EG020: Lead	7439-92-1	1	mg/kg	33	33	33	35	38
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.06	0.05	<0.05	<0.05
EG020: Nickel	7440-02-0	1	mg/kg	26	25	22	24	26
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	88	87	80	81	81
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50

Sub-Matrix: SEDIMENT			Client sample ID	RV08 0.00-0.90M	RV08 0.90-1.90M	RV08 1.90-2.90M	RV08 2.90-5.90M	RV08 5.90-8.90M
			Client sampling date / time	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30
Compound	CAS Number	LOR	Unit	HK1301426-001	HK1301426-002	HK1301426-003	HK1301426-004	HK1301426-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**69.1**	**61.2**	**61.5**	**69.0**	**55.0**
4-Terphenyl-d14	1718-51-0	0.1	%	**89.0**	**90.7**	**91.4**	**80.4**	**92.0**
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**106**	**53.3**	**91.6**	**108**	**81.7**

Sub-Matrix: SEDIMENT			Client sample ID	RV08 8.90-9.70M				
			Client sampling date / time	14-JAN-2013 13:30				
Compound	CAS Number	LOR	Unit	HK1301426-006				
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	15.8				
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	16				
EG020: Copper	7440-50-8	1	mg/kg	8				
EG020: Lead	7439-92-1	1	mg/kg	15				
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	21				
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3				
PCB 18	37680-65-2	3	µg/kg	<3				
PCB 28	7012-37-5	3	µg/kg	<3				
PCB 44	41464-39-5	3	µg/kg	<3				
PCB 52	35693-99-3	3	µg/kg	<3				
PCB 66	32598-10-0	3	µg/kg	<3				
PCB 77	32598-13-3	3	µg/kg	<3				
PCB 101	37680-73-2	3	µg/kg	<3				
PCB 105	32598-14-4	3	µg/kg	<3				
PCB 118	31508-00-6	3	µg/kg	<3				
PCB 126	57465-28-8	3	µg/kg	<3				
PCB 128	38380-07-3	3	µg/kg	<3				
PCB 138	35065-28-2	3	µg/kg	<3				
PCB 153	35065-27-1	3	µg/kg	<3				
PCB 169	32774-16-6	3	µg/kg	<3				
PCB 170	35065-30-6	3	µg/kg	<3				
PCB 180	35065-29-3	3	µg/kg	<3				
PCB 187	52663-68-0	3	µg/kg	<3				
Total Polychlorinated biphenyls	----	18	µg/kg	<18				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50				
Acenaphthylene	208-96-8	50	µg/kg	<50				
Acenaphthene	83-32-9	50	µg/kg	<50				
Fluorene	86-73-7	50	µg/kg	<50				
Phenanthrene	85-01-8	50	µg/kg	<50				
Anthracene	120-12-7	50	µg/kg	<50				

Sub-Matrix: SEDIMENT			Client sample ID	RV08 8.90-9.70M				
			Client sampling date / time	14-JAN-2013 13:30				
Compound	CAS Number	LOR	Unit	HK1301426-006				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Fluoranthene	206-44-0	150	µg/kg	<150				
Pyrene	129-00-0	150	µg/kg	<150				
Benz(a)anthracene	56-55-3	150	µg/kg	<150				
Chrysene	218-01-9	150	µg/kg	<150				
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150				
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150				
Benzo(a)pyrene	50-32-8	150	µg/kg	<150				
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150				
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150				
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150				
Low M.W. PAHs	----	550	µg/kg	<550				
High M.W. PAHs	----	1700	µg/kg	<1700				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**51.0**				
4-Terphenyl-d14	1718-51-0	0.1	%	**50.7**				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**76.9**				

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	RV08 0.00-0.90M	RV08 0.90-1.90M	RV08 1.90-2.90M	RV08 2.90-5.90M	RV08 5.90-8.90M
			Client sampling date / time	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30	14-JAN-2013 13:30
Compound	CAS Number	LOR	Unit	HK1301426-001	HK1301426-002	HK1301426-003	HK1301426-004	HK1301426-005
EP-390: Triorganotins								
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 sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2695171)								
HK1301250-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.6	46.4	1.8
HK1301259-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.3	45.5	0.3
EA/ED: Physical and Aggregate Properties (QC Lot: 2695172)								
HK1301426-002	RV08 0.90-1.90M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	48.1	49.8	3.6
HK1301428-006	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.0	43.1	4.2
EG: Metals and Major Cations (QC Lot: 2693500)								
HK1301426-002	RV08 0.90-1.90M	EG020: Mercury	7439-97-6	0.05	mg/kg	0.06	0.06	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	11	11	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	36	36	0.0
		EG020: Copper	7440-50-8	1	mg/kg	15	16	0.0
		EG020: Lead	7439-92-1	1	mg/kg	33	34	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	25	25	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	87	88	0.0
EP-065: PCB Single Congeners (QC Lot: 2694140)								
HK1301424-001	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694141)								
HK1301424-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694141) - Continued								
HK1301424-001	Anonymous	Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 2696318)								
HK1301259-001	Anonymous	Tributyltin	56573-85-4	6	ngSn/L	<6	<6	0.0

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

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2693500)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	87.1	----	77	109	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	93.2	----	86	110	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	99.3	----	88	120	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	91.8	----	85	109	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	91.7	----	84	106	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	86.9	----	80	112	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	89.5	----	87	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	87.5	----	83	105	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	89.0	----	82	126	----	----
EP-065: PCB Single Congeners (QC Lot: 2694140)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	113	----	33	146	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	111	----	26	143	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	83.0	----	39	128	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	70.9	----	36	122	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	76.1	----	35	125	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	60.9	----	41	116	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	88.0	----	29	147	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	95.0	----	32	142	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	83.0	----	42	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	85.3	----	38	134	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	81.4	----	51	107	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 2694140) - Continued											
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	81.2	----	44	128	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	84.1	----	41	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	84.6	----	42	131	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	79.1	----	46	130	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	78.2	----	45	131	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	79.5	----	45	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	83.7	----	44	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694141)											
Naphthalene	91-20-3	25	µg/kg	----	25 µg/kg	81.2	----	70	128	----	----
				<50	----	----	----	----	----	----	----
Acenaphthylene	208-96-8	25	µg/kg	----	25 µg/kg	54.0	----	50	130	----	----
				<50	----	----	----	----	----	----	----
Acenaphthene	83-32-9	25	µg/kg	----	25 µg/kg	81.2	----	65	132	----	----
				<50	----	----	----	----	----	----	----
Fluorene	86-73-7	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	78.2	----	59	145	----	----
Phenanthrene	85-01-8	25	µg/kg	----	25 µg/kg	70.2	----	64	139	----	----
				<50	----	----	----	----	----	----	----
Anthracene	120-12-7	25	µg/kg	----	25 µg/kg	89.4	----	41	133	----	----
				<50	----	----	----	----	----	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	83.1	----	63	142	----	----
Pyrene	129-00-0	25	µg/kg	----	25 µg/kg	89.3	----	65	140	----	----
				<50	----	----	----	----	----	----	----
Benz(a)anthracene	56-55-3	25	µg/kg	----	25 µg/kg	70.9	----	65	126	----	----
				<50	----	----	----	----	----	----	----
Chrysene	218-01-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	94.5	----	73	131	----	----
Benzo(b)fluoranthene	205-99-2	25	µg/kg	----	25 µg/kg	76.6	----	64	129	----	----
				<50	----	----	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	25	µg/kg	----	25 µg/kg	76.0	----	62	134	----	----
				<50	----	----	----	----	----	----	----
Benzo(a)pyrene	50-32-8	25	µg/kg	----	25 µg/kg	64.7	----	41	123	----	----
				<50	----	----	----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	25	µg/kg	----	25 µg/kg	68.7	----	54	138	----	----
				<50	----	----	----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	58.9	----	55	138	----	----
Benzo(g.h.i)perylene	191-24-2	25	µg/kg	----	25 µg/kg	69.6	----	61	140	----	----
				<50	----	----	----	----	----	----	----
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

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-390: Triorganotins (QC Lot: 2696318)											
Tributyltin	56573-85-4	5	ngSn/L	<5	2 ngSn/L	104	----	93	133	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2693500)										
HK1301426-001	RV08 0.00-0.90M	EG020: Arsenic	7440-38-2	5 mg/kg	83.0	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	93.5	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	80.1	----	75	125	----	----
		EG020: Lead	7439-92-1	50 mg/kg	80.6	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	111	----	75	125	----	----
		EG020: Nickel	7440-02-0	50 mg/kg	83.3	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	92.4	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

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

HOKLAS 066 TEST

CERTIFICATE OF ANALYSIS

Client	: FUGRO GEOTECHNICAL SERVICES LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 11
Contact	: MR MARK DAVIS	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1301424
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Project	: P548 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1278a/2012	Date Samples Received	: 14-JAN-2013
Order number	: ----			Issue Date	: 29-JAN-2013
C-O-C number	: ----			No. of samples received	: 6
Site	: RV09			No. of samples analysed	: 6

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Tai Yuk Lun, Stephen	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor - Metals	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 23-JAN-2013

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: **HK1301424**

Sample(s) were received in a chilled condition.

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

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

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #1 RV09 0.00-0.90M, Sample #2 RV09 0.90-1.90M, Sample #3 RV09 1.90-2.90M, Sample #4 RV09 2.90-5.90M and Sample #5 RV09 6.00-8.90M.

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

Analytical Results

Sub-Matrix: **SEDIMENT**

			Client sample ID	RV09 0.00-0.90M	RV09 0.90-1.90M	RV09 1.90-2.90M	RV09 2.90-5.90M	RV09 6.00-8.90M
			Client sampling date / time	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00
Compound	CAS Number	LOR	Unit	HK1301424-001	HK1301424-002	HK1301424-003	HK1301424-004	HK1301424-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	44.9	46.9	42.5	44.4	43.0
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	13	13	14	10	20
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	35	37	35	38	40
EG020: Copper	7440-50-8	1	mg/kg	14	14	13	15	15
EG020: Lead	7439-92-1	1	mg/kg	30	33	31	32	33
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	23	24	23	24	25
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	82	76	76	78
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50

Sub-Matrix: SEDIMENT			Client sample ID	RV09 0.00-0.90M	RV09 0.90-1.90M	RV09 1.90-2.90M	RV09 2.90-5.90M	RV09 6.00-8.90M
			Client sampling date / time	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00
Compound	CAS Number	LOR	Unit	HK1301424-001	HK1301424-002	HK1301424-003	HK1301424-004	HK1301424-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**59.0**	**52.7**	**68.6**	**70.2**	**53.6**
4-Terphenyl-d14	1718-51-0	0.1	%	**55.7**	**55.7**	**98.3**	**85.0**	**81.2**
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**81.4**	**74.4**	**110**	**97.7**	**101**

Sub-Matrix: SEDIMENT			Client sample ID	RV09 8.90-9.90M				
			Client sampling date / time	14-JAN-2013 10:00				
Compound	CAS Number	LOR	Unit	HK1301424-006				
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	23.5				
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	27				
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2				
EG020: Chromium	7440-47-3	1	mg/kg	41				
EG020: Copper	7440-50-8	1	mg/kg	17				
EG020: Lead	7439-92-1	1	mg/kg	41				
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05				
EG020: Nickel	7440-02-0	1	mg/kg	26				
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1				
EG020: Zinc	7440-66-6	1	mg/kg	88				
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3				
PCB 18	37680-65-2	3	µg/kg	<3				
PCB 28	7012-37-5	3	µg/kg	<3				
PCB 44	41464-39-5	3	µg/kg	<3				
PCB 52	35693-99-3	3	µg/kg	<3				
PCB 66	32598-10-0	3	µg/kg	<3				
PCB 77	32598-13-3	3	µg/kg	<3				
PCB 101	37680-73-2	3	µg/kg	<3				
PCB 105	32598-14-4	3	µg/kg	<3				
PCB 118	31508-00-6	3	µg/kg	<3				
PCB 126	57465-28-8	3	µg/kg	<3				
PCB 128	38380-07-3	3	µg/kg	<3				
PCB 138	35065-28-2	3	µg/kg	<3				
PCB 153	35065-27-1	3	µg/kg	<3				
PCB 169	32774-16-6	3	µg/kg	<3				
PCB 170	35065-30-6	3	µg/kg	<3				
PCB 180	35065-29-3	3	µg/kg	<3				
PCB 187	52663-68-0	3	µg/kg	<3				
Total Polychlorinated biphenyls	----	18	µg/kg	<18				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50				
Acenaphthylene	208-96-8	50	µg/kg	<50				
Acenaphthene	83-32-9	50	µg/kg	<50				
Fluorene	86-73-7	50	µg/kg	<50				
Phenanthrene	85-01-8	50	µg/kg	<50				
Anthracene	120-12-7	50	µg/kg	<50				

Sub-Matrix: SEDIMENT			Client sample ID	RV09 8.90-9.90M				
			Client sampling date / time	14-JAN-2013 10:00				
Compound	CAS Number	LOR	Unit	HK1301424-006				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Fluoranthene	206-44-0	150	µg/kg	<150				
Pyrene	129-00-0	150	µg/kg	<150				
Benz(a)anthracene	56-55-3	150	µg/kg	<150				
Chrysene	218-01-9	150	µg/kg	<150				
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150				
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150				
Benzo(a)pyrene	50-32-8	150	µg/kg	<150				
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150				
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150				
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150				
Low M.W. PAHs	----	550	µg/kg	<550				
High M.W. PAHs	----	1700	µg/kg	<1700				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**62.5**				
4-Terphenyl-d14	1718-51-0	0.1	%	**63.0**				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**75.0**				

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	RV09 0.00-0.90M	RV09 0.90-1.90M	RV09 1.90-2.90M	RV09 2.90-5.90M	RV09 6.00-8.90M
			Client sampling date / time	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00	14-JAN-2013 10:00
Compound	CAS Number	LOR	Unit	HK1301424-001	HK1301424-002	HK1301424-003	HK1301424-004	HK1301424-005
EP-390: Triorganotins								
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 sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2695171)								
HK1301250-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.6	46.4	1.8
HK1301259-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.3	45.5	0.3
EG: Metals and Major Cations (QC Lot: 2691086)								
HK1301250-002	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	12	13	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	39	38	0.0
		EG020: Copper	7440-50-8	1	mg/kg	15	15	0.0
		EG020: Lead	7439-92-1	1	mg/kg	33	33	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	24	24	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	83	81	2.3
EP-065: PCB Single Congeners (QC Lot: 2694140)								
HK1301424-001	RV09 0.00-0.90M	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694141)								
HK1301424-001	RV09 0.00-0.90M	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694141) - Continued								
HK1301424-001	RV09 0.00-0.90M	Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 2696318)								
HK1301259-001	Anonymous	Tributyltin	56573-85-4	6	ngSn/L	<6	<6	0.0

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

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2691086)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	88.1	----	77	109	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	99.9	----	86	110	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	89.6	----	88	120	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	88.0	----	85	109	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	92.6	----	84	106	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	91.0	----	80	112	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	88.0	----	87	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	92.6	----	83	105	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	86.6	----	82	126	----	----
EP-065: PCB Single Congeners (QC Lot: 2694140)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	113	----	33	146	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	111	----	26	143	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	83.0	----	39	128	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	70.9	----	36	122	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	76.1	----	35	125	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	60.9	----	41	116	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	88.0	----	29	147	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	95.0	----	32	142	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	83.0	----	42	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	85.3	----	38	134	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	81.4	----	51	107	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	81.2	----	44	128	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	84.1	----	41	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	84.6	----	42	131	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 2694140) - Continued											
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	79.1	----	46	130	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	78.2	----	45	131	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	79.5	----	45	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	83.7	----	44	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694141)											
Naphthalene	91-20-3	25	µg/kg	----	25 µg/kg	81.2	----	70	128	----	----
				<50	----	----	----	----	----	----	----
Acenaphthylene	208-96-8	25	µg/kg	----	25 µg/kg	54.0	----	50	130	----	----
				<50	----	----	----	----	----	----	----
Acenaphthene	83-32-9	25	µg/kg	----	25 µg/kg	81.2	----	65	132	----	----
				<50	----	----	----	----	----	----	----
Fluorene	86-73-7	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	78.2	----	59	145	----	----
Phenanthrene	85-01-8	25	µg/kg	----	25 µg/kg	70.2	----	64	139	----	----
				<50	----	----	----	----	----	----	----
Anthracene	120-12-7	25	µg/kg	----	25 µg/kg	89.4	----	41	133	----	----
				<50	----	----	----	----	----	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	83.1	----	63	142	----	----
Pyrene	129-00-0	25	µg/kg	----	25 µg/kg	89.3	----	65	140	----	----
				<50	----	----	----	----	----	----	----
Benz(a)anthracene	56-55-3	25	µg/kg	----	25 µg/kg	70.9	----	65	126	----	----
				<50	----	----	----	----	----	----	----
Chrysene	218-01-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	94.5	----	73	131	----	----
Benzo(b)fluoranthene	205-99-2	25	µg/kg	----	25 µg/kg	76.6	----	64	129	----	----
				<50	----	----	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	25	µg/kg	----	25 µg/kg	76.0	----	62	134	----	----
				<50	----	----	----	----	----	----	----
Benzo(a)pyrene	50-32-8	25	µg/kg	----	25 µg/kg	64.7	----	41	123	----	----
				<50	----	----	----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	25	µg/kg	----	25 µg/kg	68.7	----	54	138	----	----
				<50	----	----	----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	58.9	----	55	138	----	----
Benzo(g.h.i)perylene	191-24-2	25	µg/kg	----	25 µg/kg	69.6	----	61	140	----	----
				<50	----	----	----	----	----	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-390: Triorganotins (QC Lot: 2696318)											
Tributyltin	56573-85-4	5	ngSn/L	<5	2 ngSn/L	104	----	93	133	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2691086)										
HK1301250-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	75.4	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	98.4	----	75	125	----	----
		EG020: Chromium	7440-47-3	50 mg/kg	86.3	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	85.5	----	75	125	----	----
		EG020: Lead	7439-92-1	50 mg/kg	83.9	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	98.8	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	78.0	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	89.8	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

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

HOKLAS 066 TEST

CERTIFICATE OF ANALYSIS

Client	: FUGRO GEOTECHNICAL SERVICES LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 11
Contact	: MR MARK DAVIS	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1301250
Address	: UNITS 6, 8-11, 10/F WORLDWIDE IND. CTR., 43-47 SHAN MEI STREET, FO TAN, SHATIN, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: mdavies@fugro.com.hk	E-mail	: Godfrey.Chan@alsglobal.com		
Telephone	: +852 2697 1126	Telephone	: +852 2610 1044		
Facsimile	: +852 2694 0659	Facsimile	: +852 2610 2021		
Project	: P548 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1278a/2012	Date Samples Received	: 12-JAN-2013
Order number	: ----			Issue Date	: 28-JAN-2013
C-O-C number	: ----			No. of samples received	: 6
Site	: RV10			No. of samples analysed	: 6

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Hong Kong Accreditation Service (HKAS) has accedited this laboratory (ALS Technichem (HK) Pty Ltd) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this certificate were determined by this laboratory in accordance with its terms of accreditation.

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Tai Yuk Lun, Stephen	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor - Metals	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 23-JAN-2013

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: **HK1301250**

Sample(s) were received in a chilled condition.

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

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

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #1 RV10 0.00-0.90M, Sample #2 RV10 0.90-1.90M, Sample #3 RV10 1.90-2.90M, Sample #4 RV10 2.90-5.90M and Sample #5 RV10 6.00-8.90M.

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

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	RV10 0.10-0.90M	RV10 0.90-1.90M	RV10 1.90-2.90M	RV10 2.90-5.90M	RV10 6.00-8.90M
			Client sample ID	RV10 0.10-0.90M	RV10 0.90-1.90M	RV10 1.90-2.90M	RV10 2.90-5.90M	RV10 6.00-8.90M
			Client sampling date / time	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00
				HK1301250-001	HK1301250-002	HK1301250-003	HK1301250-004	HK1301250-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	45.6	46.8	41.3	47.0	44.3
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	12	12	10	14	10
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	36	39	35	41	40
EG020: Copper	7440-50-8	1	mg/kg	14	15	14	17	15
EG020: Lead	7439-92-1	1	mg/kg	31	33	32	36	33
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	23	24	22	26	26
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	77	83	73	83	79
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50

Sub-Matrix: SEDIMENT			Client sample ID	RV10 0.10-0.90M	RV10 0.90-1.90M	RV10 1.90-2.90M	RV10 2.90-5.90M	RV10 6.00-8.90M
			Client sampling date / time	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00
Compound	CAS Number	LOR	Unit	HK1301250-001	HK1301250-002	HK1301250-003	HK1301250-004	HK1301250-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**50.8**	**66.4**	**67.2**	**55.3**	**58.2**
4-Terphenyl-d14	1718-51-0	0.1	%	**74.9**	**81.7**	**94.6**	**55.5**	**60.5**
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**96.9**	**96.0**	**88.9**	**68.6**	**85.6**

Sub-Matrix: SEDIMENT			Client sample ID	RV10 8.90-11.70M				
			Client sampling date / time	12-JAN-2013 14:00				
Compound	CAS Number	LOR	Unit	HK1301250-006				
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	25.2				
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	19				
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2				
EG020: Chromium	7440-47-3	1	mg/kg	48				
EG020: Copper	7440-50-8	1	mg/kg	22				
EG020: Lead	7439-92-1	1	mg/kg	19				
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	72				
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3				
PCB 18	37680-65-2	3	µg/kg	<3				
PCB 28	7012-37-5	3	µg/kg	<3				
PCB 44	41464-39-5	3	µg/kg	<3				
PCB 52	35693-99-3	3	µg/kg	<3				
PCB 66	32598-10-0	3	µg/kg	<3				
PCB 77	32598-13-3	3	µg/kg	<3				
PCB 101	37680-73-2	3	µg/kg	<3				
PCB 105	32598-14-4	3	µg/kg	<3				
PCB 118	31508-00-6	3	µg/kg	<3				
PCB 126	57465-28-8	3	µg/kg	<3				
PCB 128	38380-07-3	3	µg/kg	<3				
PCB 138	35065-28-2	3	µg/kg	<3				
PCB 153	35065-27-1	3	µg/kg	<3				
PCB 169	32774-16-6	3	µg/kg	<3				
PCB 170	35065-30-6	3	µg/kg	<3				
PCB 180	35065-29-3	3	µg/kg	<3				
PCB 187	52663-68-0	3	µg/kg	<3				
Total Polychlorinated biphenyls	----	18	µg/kg	<18				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50				
Acenaphthylene	208-96-8	50	µg/kg	<50				
Acenaphthene	83-32-9	50	µg/kg	<50				
Fluorene	86-73-7	50	µg/kg	<50				
Phenanthrene	85-01-8	50	µg/kg	<50				
Anthracene	120-12-7	50	µg/kg	<50				

Sub-Matrix: SEDIMENT			Client sample ID	RV10 8.90-11.70M				
			Client sampling date / time	12-JAN-2013 14:00				
Compound	CAS Number	LOR	Unit	HK1301250-006				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Fluoranthene	206-44-0	150	µg/kg	<150				
Pyrene	129-00-0	150	µg/kg	<150				
Benz(a)anthracene	56-55-3	150	µg/kg	<150				
Chrysene	218-01-9	150	µg/kg	<150				
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150				
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150				
Benzo(a)pyrene	50-32-8	150	µg/kg	<150				
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150				
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150				
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150				
Low M.W. PAHs	----	550	µg/kg	<550				
High M.W. PAHs	----	1700	µg/kg	<1700				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**59.0**				
4-Terphenyl-d14	1718-51-0	0.1	%	**81.1**				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**97.5**				

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	RV10 0.10-0.90M	RV10 0.90-1.90M	RV10 1.90-2.90M	RV10 2.90-5.90M	RV10 6.00-8.90M
			Client sampling date / time	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00	12-JAN-2013 14:00
Compound	CAS Number	LOR	Unit	HK1301250-001	HK1301250-002	HK1301250-003	HK1301250-004	HK1301250-005
EP-390: Triorganotins								
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 sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2695171)								
HK1301250-001	RV10 0.10-0.90M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.6	46.4	1.8
HK1301259-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.3	45.5	0.3
EG: Metals and Major Cations (QC Lot: 2691086)								
HK1301250-002	RV10 0.90-1.90M	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	12	13	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	39	38	0.0
		EG020: Copper	7440-50-8	1	mg/kg	15	15	0.0
		EG020: Lead	7439-92-1	1	mg/kg	33	33	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	24	24	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	83	81	2.3
EP-065: PCB Single Congeners (QC Lot: 2694136)								
HK1301259-001	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694137)								
HK1301259-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694137) - Continued								
HK1301259-001	Anonymous	Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 2695841)								
HK1301006-003	Anonymous	Tributyltin	56573-85-4	6	ngSn/L	<6	<6	0.0

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

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2691086)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	88.1	----	77	109	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	99.9	----	86	110	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	89.6	----	88	120	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	88.0	----	85	109	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	92.6	----	84	106	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	91.0	----	80	112	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	88.0	----	87	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	92.6	----	83	105	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	86.6	----	82	126	----	----
EP-065: PCB Single Congeners (QC Lot: 2694136)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	112	----	33	146	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	112	----	26	143	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	87.6	----	39	128	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	75.6	----	36	122	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	81.5	----	35	125	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	66.3	----	41	116	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	95.8	----	29	147	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	102	----	32	142	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	89.4	----	42	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	91.8	----	38	134	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	90.7	----	51	107	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	86.9	----	44	128	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	90.4	----	41	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	91.6	----	42	131	----	----

Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Spike Recovery (%) DCS	Recovery Limits (%) Low	Recovery Limits (%) High	RPD (%) Value	RPD (%) Control Limit
		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
EP-065: PCB Single Congeners (QC Lot: 2694136) - Continued											
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	84.6	----	46	130	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	83.8	----	45	131	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	84.9	----	45	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	90.9	----	44	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694137)											
Naphthalene	91-20-3	25	µg/kg	----	25 µg/kg	81.1	----	70	128	----	----
				<50	----	----	----	----	----	----	----
Acenaphthylene	208-96-8	25	µg/kg	----	25 µg/kg	62.5	----	50	130	----	----
				<50	----	----	----	----	----	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	82.8	----	65	132	----	----
Fluorene	86-73-7	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	79.6	----	59	145	----	----
Phenanthrene	85-01-8	25	µg/kg	----	25 µg/kg	80.9	----	64	139	----	----
				<50	----	----	----	----	----	----	----
Anthracene	120-12-7	25	µg/kg	----	25 µg/kg	110	----	41	133	----	----
				<50	----	----	----	----	----	----	----
Fluoranthene	206-44-0	25	µg/kg	----	25 µg/kg	99.1	----	63	142	----	----
				<50	----	----	----	----	----	----	----
Pyrene	129-00-0	25	µg/kg	----	25 µg/kg	96.1	----	65	140	----	----
				<50	----	----	----	----	----	----	----
Benz(a)anthracene	56-55-3	25	µg/kg	----	25 µg/kg	70.3	----	65	126	----	----
				<50	----	----	----	----	----	----	----
Chrysene	218-01-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	90.1	----	73	131	----	----
Benzo(b)fluoranthene	205-99-2	25	µg/kg	----	25 µg/kg	68.3	----	64	129	----	----
				<50	----	----	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	25	µg/kg	----	25 µg/kg	86.7	----	62	134	----	----
				<50	----	----	----	----	----	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	81.6	----	41	123	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	70.2	----	54	138	----	----
Dibenz(a.h)anthracene	53-70-3	25	µg/kg	----	25 µg/kg	61.4	----	55	138	----	----
				<50	----	----	----	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	70.1	----	61	140	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Spike Recovery (%) DCS	Recovery Limits (%) Low	Recovery Limits (%) High	RPD (%) Value	RPD (%) Control Limit
		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-390: Triorganotins (QC Lot: 2695841)											
Tributyltin	56573-85-4	5	ngSn/L	<5	2 ngSn/L	103	----	93	133	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2691086)										
HK1301250-001	RV10 0.10-0.90M	EG020: Arsenic	7440-38-2	5 mg/kg	75.4	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	98.4	----	75	125	----	----
		EG020: Chromium	7440-47-3	50 mg/kg	86.3	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	85.5	----	75	125	----	----
		EG020: Lead	7439-92-1	50 mg/kg	83.9	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	98.8	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	78.0	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	89.8	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

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

HOKLAS 066 TEST

CERTIFICATE OF ANALYSIS

Client	: FUGRO GEOTECHNICAL SERVICES LTD	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 12
Contact	: MR MARK DAVIS	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1301259
Address	: UNITS 6, 8-11, 10/F WORLDWIDE IND. CTR., 43-47 SHAN MEI STREET, FO TAN, SHATIN, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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Telephone	: +852 2697 1126	Telephone	: +852 2610 1044		
Facsimile	: +852 2694 0659	Facsimile	: +852 2610 2021		
Project	: P548 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1278a/2012	Date Samples Received	: 12-JAN-2013
Order number	: ----			Issue Date	: 28-JAN-2013
C-O-C number	: ----			No. of samples received	: 10
Site	: RV11			No. of samples analysed	: 7

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Tai Yuk Lun, Stephen	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor - Metals	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 23-JAN-2013

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: **HK1301259**

Sample(s) were received in a chilled condition.

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

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

Analysis of Tributyltin in interstitial water was cancelled due to insufficient volume of interstitial water except Sample #1 RV11 0.00-0.90M, Sample #2 RV11 0.90-1.90M, Sample #3 RV11 1.90-2.90M, Sample #4 RV11 2.90-5.90M, Sample #5 RV11 6.00-8.90M, Sample #6 RV11 8.90-11.90M and Sample #7 RV11 12.00-14.90M.

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

Analytical Results

Sub-Matrix: **SEDIMENT**

			Client sample ID	RV11 0.10-0.90M	RV11 0.90-1.90M	RV11 1.90-2.90M	RV11 2.90-5.90M	RV11 6.00-8.90M
			Client sampling date / time	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30
Compound	CAS Number	LOR	Unit	HK1301259-001	HK1301259-002	HK1301259-003	HK1301259-004	HK1301259-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	43.8	45.1	43.3	46.5	45.3
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	13	12	10	10	11
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	39	37	34	38	40
EG020: Copper	7440-50-8	1	mg/kg	13	14	12	15	16
EG020: Lead	7439-92-1	1	mg/kg	32	32	30	35	34
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	26	24	20	23	25
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	84	82	72	78	82
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50

Sub-Matrix: SEDIMENT			Client sample ID	RV11 0.10-0.90M	RV11 0.90-1.90M	RV11 1.90-2.90M	RV11 2.90-5.90M	RV11 6.00-8.90M
			Client sampling date / time	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30
Compound	CAS Number	LOR	Unit	HK1301259-001	HK1301259-002	HK1301259-003	HK1301259-004	HK1301259-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	**63.9**	**69.4**	**63.2**	**55.6**	**50.5**
4-Terphenyl-d14	1718-51-0	0.1	%	**83.2**	**90.6**	**80.0**	**76.0**	**66.6**
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	**71.8**	**90.3**	**97.0**	**80.3**	**73.0**

Sub-Matrix: SEDIMENT			Client sample ID	RV11 8.90-11.90M	RV11 12.00-14.90M			
			Client sampling date / time	12-JAN-2013 09:30	12-JAN-2013 09:30			
Compound	CAS Number	LOR	Unit	HK1301259-006	HK1301259-007			
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	41.3	27.6			
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	19	3			
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2			
EG020: Chromium	7440-47-3	1	mg/kg	42	35			
EG020: Copper	7440-50-8	1	mg/kg	18	19			
EG020: Lead	7439-92-1	1	mg/kg	44	40			
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05			
EG020: Nickel	7440-02-0	1	mg/kg	25	12			
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1			
EG020: Zinc	7440-66-6	1	mg/kg	82	44			
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3			
PCB 18	37680-65-2	3	µg/kg	<3	<3			
PCB 28	7012-37-5	3	µg/kg	<3	<3			
PCB 44	41464-39-5	3	µg/kg	<3	<3			
PCB 52	35693-99-3	3	µg/kg	<3	<3			
PCB 66	32598-10-0	3	µg/kg	<3	<3			
PCB 77	32598-13-3	3	µg/kg	<3	<3			
PCB 101	37680-73-2	3	µg/kg	<3	<3			
PCB 105	32598-14-4	3	µg/kg	<3	<3			
PCB 118	31508-00-6	3	µg/kg	<3	<3			
PCB 126	57465-28-8	3	µg/kg	<3	<3			
PCB 128	38380-07-3	3	µg/kg	<3	<3			
PCB 138	35065-28-2	3	µg/kg	<3	<3			
PCB 153	35065-27-1	3	µg/kg	<3	<3			
PCB 169	32774-16-6	3	µg/kg	<3	<3			
PCB 170	35065-30-6	3	µg/kg	<3	<3			
PCB 180	35065-29-3	3	µg/kg	<3	<3			
PCB 187	52663-68-0	3	µg/kg	<3	<3			
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18			
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50			
Acenaphthylene	208-96-8	50	µg/kg	<50	<50			
Acenaphthene	83-32-9	50	µg/kg	<50	<50			
Fluorene	86-73-7	50	µg/kg	<50	<50			
Phenanthrene	85-01-8	50	µg/kg	<50	<50			
Anthracene	120-12-7	50	µg/kg	<50	<50			

Sub-Matrix: SEDIMENT			Client sample ID	RV11 8.90-11.90M	RV11 12.00-14.90M			
			Client sampling date / time	12-JAN-2013 09:30	12-JAN-2013 09:30			
Compound	CAS Number	LOR	Unit	HK1301259-006	HK1301259-007			
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Fluoranthene	206-44-0	150	µg/kg	<150	<150			
Pyrene	129-00-0	150	µg/kg	<150	<150			
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150			
Chrysene	218-01-9	150	µg/kg	<150	<150			
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150			
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150			
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150			
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150			
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150			
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150			
Low M.W. PAHs	----	550	µg/kg	<550	<550			
High M.W. PAHs	----	1700	µg/kg	<1700	<1700			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								Surrogate control limits listed at end of this report.
2-Fluorobiphenyl	321-60-8	0.1	%	**63.0**	**63.5**			
4-Terphenyl-d14	1718-51-0	0.1	%	**71.1**	**84.4**			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	**94.9**	**110**			

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	RV11 0.10-0.90M	RV11 0.90-1.90M	RV11 1.90-2.90M	RV11 2.90-5.90M	RV11 6.00-8.90M
			Client sampling date / time	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30	12-JAN-2013 09:30
Compound	CAS Number	LOR	Unit	HK1301259-001	HK1301259-002	HK1301259-003	HK1301259-004	HK1301259-005
EP-390: Triorganotins								
Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015	<0.015	<0.015	<0.015

Sub-Matrix: INTERSTITIAL WATER			Client sample ID	RV11 8.90-11.90M	RV11 12.00-14.90M			
			Client sampling date / time	12-JAN-2013 09:30	12-JAN-2013 09:30			
Compound	CAS Number	LOR	Unit	HK1301259-006	HK1301259-007			
EP-390: Triorganotins								
Tributyltin	56573-85-4	0.015	µg TBT /L	<0.015	<0.015			

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 2695171)								
HK1301250-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.6	46.4	1.8
HK1301259-005	RV11 6.00-8.90M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	45.3	45.5	0.3
EG: Metals and Major Cations (QC Lot: 2691086)								
HK1301250-002	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	12	13	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	39	38	0.0
		EG020: Copper	7440-50-8	1	mg/kg	15	15	0.0
		EG020: Lead	7439-92-1	1	mg/kg	33	33	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	24	24	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	83	81	2.3
EP-065: PCB Single Congeners (QC Lot: 2694136)								
HK1301259-001	RV11 0.10-0.90M	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694137)								
HK1301259-001	RV11 0.10-0.90M	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694137) - Continued								
HK1301259-001	RV11 0.10-0.90M	Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0

Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-390: Triorganotins (QC Lot: 2696318)								
HK1301259-001	RV11 0.10-0.90M	Tributyltin	56573-85-4	6	ngSn/L	<6	<6	0.0

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

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2691086)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	88.1	----	77	109	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	99.9	----	86	110	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	89.6	----	88	120	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	88.0	----	85	109	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	92.6	----	84	106	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	91.0	----	80	112	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	88.0	----	87	111	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	92.6	----	83	105	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	86.6	----	82	126	----	----
EP-065: PCB Single Congeners (QC Lot: 2694136)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	112	----	33	146	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	112	----	26	143	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	87.6	----	39	128	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	75.6	----	36	122	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	81.5	----	35	125	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	66.3	----	41	116	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	95.8	----	29	147	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	102	----	32	142	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	89.4	----	42	130	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	91.8	----	38	134	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	90.7	----	51	107	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	86.9	----	44	128	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	90.4	----	41	130	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	91.6	----	42	131	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 2694136) - Continued											
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	84.6	----	46	130	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	83.8	----	45	131	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	84.9	----	45	129	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	90.9	----	44	129	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 2694137)											
Naphthalene	91-20-3	25	µg/kg	----	25 µg/kg	81.1	----	70	128	----	----
				<50	----	----	----	----	----	----	----
Acenaphthylene	208-96-8	25	µg/kg	----	25 µg/kg	62.5	----	50	130	----	----
				<50	----	----	----	----	----	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	82.8	----	65	132	----	----
Fluorene	86-73-7	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	79.6	----	59	145	----	----
Phenanthrene	85-01-8	25	µg/kg	----	25 µg/kg	80.9	----	64	139	----	----
				<50	----	----	----	----	----	----	----
Anthracene	120-12-7	25	µg/kg	----	25 µg/kg	110	----	41	133	----	----
				<50	----	----	----	----	----	----	----
Fluoranthene	206-44-0	25	µg/kg	----	25 µg/kg	99.1	----	63	142	----	----
				<50	----	----	----	----	----	----	----
Pyrene	129-00-0	25	µg/kg	----	25 µg/kg	96.1	----	65	140	----	----
				<50	----	----	----	----	----	----	----
Benz(a)anthracene	56-55-3	25	µg/kg	----	25 µg/kg	70.3	----	65	126	----	----
				<50	----	----	----	----	----	----	----
Chrysene	218-01-9	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	90.1	----	73	131	----	----
Benzo(b)fluoranthene	205-99-2	25	µg/kg	----	25 µg/kg	68.3	----	64	129	----	----
				<50	----	----	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	25	µg/kg	----	25 µg/kg	86.7	----	62	134	----	----
				<50	----	----	----	----	----	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	81.6	----	41	123	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	70.2	----	54	138	----	----
Dibenz(a.h)anthracene	53-70-3	25	µg/kg	----	25 µg/kg	61.4	----	55	138	----	----
				<50	----	----	----	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	----	----	----	----	----	----	----
				----	25 µg/kg	70.1	----	61	140	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

Matrix: WATER

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-390: Triorganotins (QC Lot: 2696318)											
Tributyltin	56573-85-4	5	ngSn/L	<5	2 ngSn/L	104	----	93	133	----	----

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

Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 2691086)										
HK1301250-001	Anonymous	**EG020: Arsenic**	7440-38-2	5 mg/kg	75.4	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	98.4	----	75	125	----	----
		EG020: Chromium	7440-47-3	50 mg/kg	86.3	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	85.5	----	75	125	----	----
		EG020: Lead	7439-92-1	50 mg/kg	83.9	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	98.8	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	78.0	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	89.8	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

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

HOKLAS 066

CERTIFICATE OF ANALYSIS

Client	: AIRPORT AUTHORITY HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 11
Contact	: --	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1102359
Address	: HKIA TOWER, 1 SKY PLAZA ROAD, HONG KONG INTERNATIONAL AIRPORT, LANTAU, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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Telephone	: +852 2188 7111	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: HONG KONG INTERNATIONAL AIRPORT CONTRACT P541 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1314/2010	Date Samples Received	: 27-JAN-2011
Order number	: ----			Issue Date	: 17-FEB-2011
C-O-C number	: H019927			No. of samples received	: 10
Site	: TC7A			No. of samples analysed	: 10

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 31-JAN-2011

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: **HK1102359**

Sample(s) were received in a chilled condition.

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

Sediment sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

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

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

Analytical Results

Sub-Matrix: SEDIMENT

Compound	CAS Number	LOR	Unit	TC7A 0.1-0.9M	TC7A 0.9-1.9M	TC7A 1.9-2.9M	TC7A 2.9-3.9M	TC7A 6.0-6.9M
			Client sample ID	TC7A 0.1-0.9M	TC7A 0.9-1.9M	TC7A 1.9-2.9M	TC7A 2.9-3.9M	TC7A 6.0-6.9M
			Client sampling date / time	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00
				HK1102359-001	HK1102359-002	HK1102359-003	HK1102359-004	HK1102359-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	31.4	46.1	42.8	41.9	34.4
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	13	20	14	12	10
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.2	0.6	0.7	0.4
EG020: Chromium	7440-47-3	1	mg/kg	28	49	89	74	81
EG020: Copper	7440-50-8	1	mg/kg	18	46	121	130	100
EG020: Lead	7439-92-1	1	mg/kg	32	44	50	67	41
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.12	0.26	0.40	0.19
EG020: Nickel	7440-02-0	1	mg/kg	19	34	52	44	45
EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.4	0.9	1.2	0.8
EG020: Zinc	7440-66-6	1	mg/kg	67	124	171	190	142
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	3	<3	4
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	4
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150

Sub-Matrix: SEDIMENT			Client sample ID	TC7A 0.1-0.9M	TC7A 0.9-1.9M	TC7A 1.9-2.9M	TC7A 2.9-3.9M	TC7A 6.0-6.9M
			Client sampling date / time	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00
Compound	CAS Number	LOR	Unit	HK1102359-001	HK1102359-002	HK1102359-003	HK1102359-004	HK1102359-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	---	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	---	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	77.0	69.9	72.7	89.9	82.3
4-Terphenyl-d14	1718-51-0	0.1	%	77.6	67.7	63.9	82.8	75.4
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	63.3	66.2	107	126	116

Sub-Matrix: SEDIMENT			Client sample ID	TC7A 8.9-9.9M	TC7A 12.0-12.9M	TC7A 14.9-15.9M	TC7A 18.0-18.9M	TC7A 20.9-21.9M
			Client sampling date / time	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00
Compound	CAS Number	LOR	Unit	HK1102359-006	HK1102359-007	HK1102359-008	HK1102359-009	HK1102359-010
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	31.0	36.1	43.4	36.0	18.9
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	8	6	10	12	8
EG020: Cadmium	7440-43-9	0.2	mg/kg	0.4	<0.2	<0.2	0.4	<0.2
EG020: Chromium	7440-47-3	1	mg/kg	45	37	42	45	27
EG020: Copper	7440-50-8	1	mg/kg	106	21	16	47	9
EG020: Lead	7439-92-1	1	mg/kg	50	41	33	71	19
EG020: Mercury	7439-97-6	0.05	mg/kg	0.38	0.20	<0.05	0.43	<0.05
EG020: Nickel	7440-02-0	1	mg/kg	22	28	30	24	8
EG020: Silver	7440-22-4	0.1	mg/kg	1.1	0.2	0.1	0.6	<0.1
EG020: Zinc	7440-66-6	1	mg/kg	141	112	84	163	26
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	4	<3	5	<3
PCB 153	35065-27-1	3	µg/kg	<3	4	<3	5	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	53	<50
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	172	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	195	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150

Sub-Matrix: SEDIMENT			Client sample ID	TC7A 8.9-9.9M	TC7A 12.0-12.9M	TC7A 14.9-15.9M	TC7A 18.0-18.9M	TC7A 20.9-21.9M
			Client sampling date / time	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00	27-JAN-2011 14:00
Compound	CAS Number	LOR	Unit	HK1102359-006	HK1102359-007	HK1102359-008	HK1102359-009	HK1102359-010
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	174	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	---	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	68.4	90.0	88.2	53.3	92.5
4-Terphenyl-d14	1718-51-0	0.1	%	68.1	85.8	91.0	55.2	94.4
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	115	88.2	122	82.9	86.3

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
				Laboratory Duplicate (DUP) Report				
EA/ED: Physical and Aggregate Properties (QC Lot: 1650906)								
HK1102312-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	11.0	9.8	12.1
HK1102349-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	18.9	19.0	0.0
EA/ED: Physical and Aggregate Properties (QC Lot: 1650907)								
HK1102359-007	TC7A 12.0-12.9M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	36.1	35.2	2.4
HK1102360-007	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	42.8	43.6	1.8
EG: Metals and Major Cations (QC Lot: 1650816)								
HK1102312-002	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	<1	<1	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	<1	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	2	2	0.0
		EG020: Lead	7439-92-1	1	mg/kg	114	128	11.3
		EG020: Nickel	7440-02-0	1	mg/kg	<1	<1	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	17	17	0.0
HK1102359-005	TC7A 6.0-6.9M	EG020: Mercury	7439-97-6	0.05	mg/kg	0.19	0.18	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.8	0.6	16.4
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.4	0.4	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	10	9	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	81	73	10.7
		EG020: Copper	7440-50-8	1	mg/kg	100	89	11.5
		EG020: Lead	7439-92-1	1	mg/kg	41	41	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	45	40	12.3
		EG020: Zinc	7440-66-6	1	mg/kg	142	122	15.6
EP-065: PCB Single Congeners (QC Lot: 1650207)								
HK1102359-001	TC7A 0.1-0.9M	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 sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
				Laboratory Duplicate (DUP) Report				
EP-065: PCB Single Congeners (QC Lot: 1650207) - Continued								
HK1102359-001	TC7A 0.1-0.9M	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-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1650206)								
HK1102418-003	Anonymous	High M.W. PAHs	---	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	500	µg/kg	<500	<500	0.0
		Acenaphthylene	208-96-8	500	µg/kg	<500	<500	0.0
		Acenaphthene	83-32-9	500	µg/kg	<500	<500	0.0
		Fluorene	86-73-7	500	µg/kg	<500	<500	0.0
		Phenanthrene	85-01-8	500	µg/kg	<500	<500	0.0
		Anthracene	120-12-7	500	µg/kg	<500	<500	0.0
		Fluoranthene	206-44-0	500	µg/kg	<500	<500	0.0
		Pyrene	129-00-0	500	µg/kg	<500	<500	0.0
		Benz(a)anthracene	56-55-3	500	µg/kg	<500	<500	0.0
		Chrysene	218-01-9	500	µg/kg	<500	<500	0.0
		Benzo(b)fluoranthene	205-99-2	500	µg/kg	<500	<500	0.0
		Benzo(k)fluoranthene	207-08-9	500	µg/kg	<500	<500	0.0
		Benzo(a)pyrene	50-32-8	500	µg/kg	<500	<500	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	500	µg/kg	<500	<500	0.0
		Dibenz(a.h)anthracene	53-70-3	500	µg/kg	<500	<500	0.0
		Benzo(g.h.i)perylene	191-24-2	500	µg/kg	<500	<500	0.0
		Low M.W. PAHs	---	550	µg/kg	<550	<550	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1650208)								
HK1102359-001	TC7A 0.1-0.9M	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		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

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1650816)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	92.7	----	85	115	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	89.0	----	85	115	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	98.8	----	85	115	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	98.2	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	97.5	----	85	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	101	----	85	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	98.8	----	85	115	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	94.0	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	92.9	----	85	115	----	----
EP-065: PCB Single Congeners (QC Lot: 1650207)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	106	----	36	118	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	73.7	----	36	120	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	84.8	----	34	133	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	87.4	----	19	143	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	86.3	----	25	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	95.6	----	18	140	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	83.4	----	42	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	80.0	----	35	136	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	89.0	----	40	136	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	87.1	----	39	136	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	86.2	----	37	143	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	81.8	----	36	143	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	89.0	----	40	138	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	90.6	----	38	138	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	99.6	----	44	138	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	98.7	----	42	144	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	92.0	----	37	148	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	94.9	----	35	142	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1650206)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	82.0	----	50	118	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	76.4	----	46	113	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	85.8	----	49	118	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	90.8	----	49	118	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	87.5	----	53	117	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	86.5	----	47	118	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	97.4	----	59	122	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	94.0	----	58	122	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	97.9	----	53	119	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	100	----	66	120	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	100	----	50	125	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	97.2	----	66	125	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	77.2	----	60	109	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1650206) - Continued											
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	95.7	----	50	124	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	87.6	----	53	120	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	86.8	----	57	123	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1650208)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	76.3	----	50	118	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	65.1	----	46	113	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	77.0	----	49	118	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	80.4	----	49	118	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	78.8	----	53	117	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	74.0	----	47	118	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	89.1	----	59	122	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	86.3	----	58	122	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	92.6	----	53	119	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	98.9	----	66	120	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	96.8	----	50	125	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	92.7	----	66	125	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	72.2	----	60	109	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	98.4	----	50	124	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	84.3	----	53	120	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	84.7	----	57	123	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1650816)										
HK1102312-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	93.5	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	87.8	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	98.8	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	90.7	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	95.4	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	96.5	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	86.5	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	78.5	----	75	125	----	----

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

HOKLAS 066

CERTIFICATE OF ANALYSIS

Client	: AIRPORT AUTHORITY HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 10
Contact	: --	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1104052
Address	: HKIA TOWER, 1 SKY PLAZA ROAD, HONG KONG INTERNATIONAL AIRPORT, LANTAU, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: ----	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2188 7111	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: HONG KONG INTERNATIONAL AIRPORT CONTRACT P541 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1314/2010	Date Samples Received	: 18-FEB-2011
Order number	: ----			Issue Date	: 03-MAR-2011
C-O-C number	: H019932			No. of samples received	: 7
Site	: TC8A			No. of samples analysed	: 7

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Hong Kong Accreditation Service (HKAS) has accedited this laboratory (ALS Technichem (HK) Pty Ltd) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this certificate were determined by this laboratory in accordance with its terms of accreditation.

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 28-FEB-2011

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: **HK1104052**

Sample(s) were received in a chilled condition.

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

Sediment sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

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

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

Analytical Results

Sub-Matrix: **SEDIMENT**

Compound	CAS Number	LOR	Unit	TC8A 0.0-0.9M	TC8A 0.9-1.9M	TC8A 1.9-2.9M	TC8A 2.9-3.9M	TC8A 6.2-6.9M
			Client sample ID	TC8A 0.0-0.9M	TC8A 0.9-1.9M	TC8A 1.9-2.9M	TC8A 2.9-3.9M	TC8A 6.2-6.9M
			Client sampling date / time	18-FEB-2011 12:00	18-FEB-2011 12:00	18-FEB-2011 12:00	18-FEB-2011 12:00	18-FEB-2011 12:00
				HK1104052-001	HK1104052-002	HK1104052-003	HK1104052-004	HK1104052-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	---	0.1	%	47.6	47.9	44.6	43.9	38.9
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	23	23	12	10	12
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	53	52	40	43	37
EG020: Copper	7440-50-8	1	mg/kg	44	44	18	17	17
EG020: Lead	7439-92-1	1	mg/kg	54	54	32	32	29
EG020: Mercury	7439-97-6	0.05	mg/kg	0.13	0.14	0.06	<0.05	0.06
EG020: Nickel	7440-02-0	1	mg/kg	37	36	27	29	25
EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.3	0.1	0.1	0.1
EG020: Zinc	7440-66-6	1	mg/kg	140	138	84	89	87
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	---	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150

Sub-Matrix: SEDIMENT			Client sample ID	TC8A 0.0-0.9M	TC8A 0.9-1.9M	TC8A 1.9-2.9M	TC8A 2.9-3.9M	TC8A 6.2-6.9M
			Client sampling date / time	18-FEB-2011 12:00	18-FEB-2011 12:00	18-FEB-2011 12:00	18-FEB-2011 12:00	18-FEB-2011 12:00
Compound	CAS Number	LOR	Unit	HK1104052-001	HK1104052-002	HK1104052-003	HK1104052-004	HK1104052-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	---	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	---	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	81.3	88.2	71.1	85.4	75.2
4-Terphenyl-d14	1718-51-0	0.1	%	83.0	88.6	73.3	88.5	78.2
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	71.9	79.2	73.0	82.6	71.2

Sub-Matrix: SEDIMENT			Client sample ID	TC8A 8.9-9.9M	TC8A 12.0-13.0M			
			Client sampling date / time	18-FEB-2011 12:00	18-FEB-2011 12:00			
Compound	CAS Number	LOR	Unit	HK1104052-006	HK1104052-007			
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	36.5	35.5			
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	6	7			
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.4			
EG020: Chromium	7440-47-3	1	mg/kg	39	49			
EG020: Copper	7440-50-8	1	mg/kg	22	58			
EG020: Lead	7439-92-1	1	mg/kg	38	80			
EG020: Mercury	7439-97-6	0.05	mg/kg	0.17	0.57			
EG020: Nickel	7440-02-0	1	mg/kg	28	30			
EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.8			
EG020: Zinc	7440-66-6	1	mg/kg	133	212			
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3			
PCB 18	37680-65-2	3	µg/kg	<3	<3			
PCB 28	7012-37-5	3	µg/kg	<3	<3			
PCB 44	41464-39-5	3	µg/kg	<3	<3			
PCB 52	35693-99-3	3	µg/kg	<3	<3			
PCB 66	32598-10-0	3	µg/kg	<3	<3			
PCB 77	32598-13-3	3	µg/kg	<3	<3			
PCB 101	37680-73-2	3	µg/kg	<3	<3			
PCB 105	32598-14-4	3	µg/kg	<3	<3			
PCB 118	31508-00-6	3	µg/kg	<3	<3			
PCB 126	57465-28-8	3	µg/kg	<3	<3			
PCB 128	38380-07-3	3	µg/kg	<3	<3			
PCB 138	35065-28-2	3	µg/kg	<3	<3			
PCB 153	35065-27-1	3	µg/kg	<3	<3			
PCB 169	32774-16-6	3	µg/kg	<3	<3			
PCB 170	35065-30-6	3	µg/kg	<3	<3			
PCB 180	35065-29-3	3	µg/kg	<3	<3			
PCB 187	52663-68-0	3	µg/kg	<3	<3			
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18			
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50			
Acenaphthylene	208-96-8	50	µg/kg	<50	<50			
Acenaphthene	83-32-9	50	µg/kg	<50	<50			
Fluorene	86-73-7	50	µg/kg	<50	<50			
Phenanthrene	85-01-8	50	µg/kg	<50	70			
Anthracene	120-12-7	50	µg/kg	<50	<50			
Fluoranthene	206-44-0	150	µg/kg	<150	195			
Pyrene	129-00-0	150	µg/kg	161	244			
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150			

Sub-Matrix: SEDIMENT			Client sample ID	TC8A 8.9-9.9M	TC8A 12.0-13.0M			
			Client sampling date / time	18-FEB-2011 12:00	18-FEB-2011 12:00			
Compound	CAS Number	LOR	Unit	HK1104052-006	HK1104052-007			
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Chrysene	218-01-9	150	µg/kg	<150	<150			
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	180			
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150			
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150			
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150			
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150			
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150			
Low M.W. PAHs	----	550	µg/kg	<550	<550			
High M.W. PAHs	----	1700	µg/kg	<1700	<1700			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								Surrogate control limits listed at end of this report.
2-Fluorobiphenyl	321-60-8	0.1	%	63.8	76.8			
4-Terphenyl-d14	1718-51-0	0.1	%	69.2	81.0			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	59.8	71.5			

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1680734)								
HK1104050-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	26.9	27.6	2.5
HK1104052-005	TC8A 6.2-6.9M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	38.9	39.0	0.0
EG: Metals and Major Cations (QC Lot: 1680682)								
HK1104050-002	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	10	9	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	44	42	5.6
		EG020: Copper	7440-50-8	1	mg/kg	17	17	0.0
		EG020: Lead	7439-92-1	1	mg/kg	32	30	7.6
		EG020: Nickel	7440-02-0	1	mg/kg	30	30	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	89	87	2.1
HK1104052-005	TC8A 6.2-6.9M	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	0.2	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	12	11	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	37	38	0.0
		EG020: Copper	7440-50-8	1	mg/kg	17	21	17.0
		EG020: Lead	7439-92-1	1	mg/kg	29	29	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	25	25	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	87	85	1.6
EP-065: PCB Single Congeners (QC Lot: 1679600)								
HK1104050-001	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1679198)								

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1679198) - Continued								
HK1104050-001	Anonymous	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		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: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1680682)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	87.5	----	85	115	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	93.1	----	85	115	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	89.3	----	85	115	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	92.7	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	94.0	----	85	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	85.0	----	85	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	92.4	----	85	115	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	86.9	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	96.8	----	85	115	----	----
EP-065: PCB Single Congeners (QC Lot: 1679600)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	57.3	----	36	118	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	50.5	----	36	120	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	43.2	----	34	133	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	41.0	----	19	143	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	41.4	----	25	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	42.9	----	18	140	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	56.9	----	42	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	56.1	----	35	136	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	58.9	----	40	136	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	58.9	----	39	136	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 1679600) - Continued											
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	58.5	----	37	143	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	59.8	----	36	143	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	58.7	----	40	138	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	58.9	----	38	138	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	60.5	----	44	138	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	59.6	----	42	144	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	58.8	----	37	148	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	56.6	----	35	142	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1679198)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	75.0	----	50	118	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	67.2	----	46	113	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	72.0	----	49	118	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	74.0	----	49	118	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	74.1	----	53	117	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	73.2	----	47	118	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	79.1	----	59	122	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	78.4	----	58	122	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	85.0	----	53	119	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	90.4	----	66	120	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	87.7	----	50	125	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	97.6	----	66	125	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	71.0	----	60	109	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	87.3	----	50	124	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	90.2	----	53	120	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	97.6	----	57	123	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1680682)										
HK1104050-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	79.6	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	90.6	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	78.9	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	75.5	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	85.7	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	121	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	79.0	----	75	125	----	----

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	Spike Recovery (%) MSD	Recovery Limits (%) Low	Recovery Limits (%) High	RPD (%) Value	RPD (%) Control Limit
EG: Metals and Major Cations (QC Lot: 1680682) - Continued										
HK1104050-001	Anonymous	EG020: Silver	7440-22-4	5 mg/kg	78.7	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) 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

HOKLAS 066

CERTIFICATE OF ANALYSIS

Client	: AIRPORT AUTHORITY HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 12
Contact	: --	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1102515
Address	: HKIA TOWER, 1 SKY PLAZA ROAD, HONG KONG INTERNATIONAL AIRPORT, LANTAU, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: ----	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2188 7111	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: HONG KONG INTERNATIONAL AIRPORT CONTRACT P541 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1314/2010	Date Samples Received	: 31-JAN-2011
Order number	: ----			Issue Date	: 21-FEB-2011
C-O-C number	: H019905			No. of samples received	: 10
Site	: TC9A			No. of samples analysed	: 10

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Hong Kong Accreditation Service (HKAS) has accedited this laboratory (ALS Technichem (HK) Pty Ltd) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this certificate were determined by this laboratory in accordance with its terms of accreditation.

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Chan Ka Yu, Karen	Assistant Manager - Organics	Organics
Chan Siu Ming, Vico	Manager - Inorganics	Inorganics
Wong Wing, Kenneth	Assistant Supervisor	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 20-FEB-2011

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: **HK1102515**

Sample(s) were received in a chilled condition.

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

Sediment sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

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

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

Analytical Results

Sub-Matrix: SEDIMENT

			Client sample ID	TC9A 0.0-0.9M	TC9A 0.9-1.9M	TC9A 1.9-2.9M	TC9A 2.9-3.9M	TC9A 6.4-6.9M
			Client sampling date / time	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00
Compound	CAS Number	LOR	Unit	HK1102515-001	HK1102515-002	HK1102515-003	HK1102515-004	HK1102515-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	45.8	45.4	45.6	34.2	32.6
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	13	11	17	6	4
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	0.4	<0.2
EG020: Chromium	7440-47-3	1	mg/kg	41	44	42	75	36
EG020: Copper	7440-50-8	1	mg/kg	18	18	19	122	14
EG020: Lead	7439-92-1	1	mg/kg	36	33	36	85	19
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.06	0.50	<0.05
EG020: Nickel	7440-02-0	1	mg/kg	30	31	28	43	28
EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.1	0.1	1.1	<0.1
EG020: Zinc	7440-66-6	1	mg/kg	91	91	96	218	83
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	4
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	5	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	4	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	—	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	136	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	183	<50
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	64	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	276	<150

Sub-Matrix: SEDIMENT			Client sample ID	TC9A 0.0-0.9M	TC9A 0.9-1.9M	TC9A 1.9-2.9M	TC9A 2.9-3.9M	TC9A 6.4-6.9M
			Client sampling date / time	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00
Compound	CAS Number	LOR	Unit	HK1102515-001	HK1102515-002	HK1102515-003	HK1102515-004	HK1102515-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	351	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	203	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	177	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	277	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	224	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	253	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	169	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	2040	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	80.9	83.4	85.9	82.8	86.1
4-Terphenyl-d14	1718-51-0	0.1	%	82.1	80.0	84.0	74.9	83.7
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	67.0	66.0	55.8	105	55.5

Sub-Matrix: SEDIMENT			Client sample ID	TC9A 6.9-7.9M	TC9A 8.9-9.9M	TC9A 12.0-12.9M	TC9A 14.9-15.9M	TC9A 18.0-18.9M
			Client sampling date / time	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00
Compound	CAS Number	LOR	Unit	HK1102515-006	HK1102515-007	HK1102515-008	HK1102515-009	HK1102515-010
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	---	0.1	%	28.3	27.8	31.6	28.9	23.8
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	5	5	5	13	9
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	0.7	<0.2
EG020: Chromium	7440-47-3	1	mg/kg	21	30	27	38	39
EG020: Copper	7440-50-8	1	mg/kg	13	29	16	31	25
EG020: Lead	7439-92-1	1	mg/kg	20	24	25	25	52
EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.12	0.09	0.07	0.06
EG020: Nickel	7440-02-0	1	mg/kg	15	19	17	143	9
EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.3	0.1	0.2	<0.1
EG020: Zinc	7440-66-6	1	mg/kg	54	76	94	310	26
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	---	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150

Sub-Matrix: SEDIMENT			Client sample ID	TC9A 6.9-7.9M	TC9A 8.9-9.9M	TC9A 12.0-12.9M	TC9A 14.9-15.9M	TC9A 18.0-18.9M
			Client sampling date / time	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00	31-JAN-2011 13:00
Compound	CAS Number	LOR	Unit	HK1102515-006	HK1102515-007	HK1102515-008	HK1102515-009	HK1102515-010
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								Surrogate control limits listed at end of this report.
2-Fluorobiphenyl	321-60-8	0.1	%	56.8	89.7	74.8	89.0	72.0
4-Terphenyl-d14	1718-51-0	0.1	%	52.1	84.7	76.6	88.2	71.8
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	53.5	56.4	50.7	51.3	52.5

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1653103)								
HK1102511-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	36.8	38.6	4.6
HK1102511-011	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	27.3	29.1	6.3
EA/ED: Physical and Aggregate Properties (QC Lot: 1653104)								
HK1102515-008	TC9A 12.0-12.9M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	31.6	33.4	5.6
HK1102543-014	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	9.0	9.9	9.3
EG: Metals and Major Cations (QC Lot: 1654195)								
HK1102511-002	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	39	36	7.2
		EG020: Copper	7440-50-8	1	mg/kg	14	13	0.0
		EG020: Lead	7439-92-1	1	mg/kg	26	26	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	30	27	7.7
		EG020: Zinc	7440-66-6	1	mg/kg	93	88	6.3
HK1102511-011	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.11	0.11	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	25	23	10.5
		EG020: Chromium	7440-47-3	1	mg/kg	35	39	10.6
		EG020: Copper	7440-50-8	1	mg/kg	22	23	0.0
		EG020: Lead	7439-92-1	1	mg/kg	30	34	9.1
		EG020: Nickel	7440-02-0	1	mg/kg	24	26	10.0
		EG020: Zinc	7440-66-6	1	mg/kg	72	81	11.1
EG: Metals and Major Cations (QC Lot: 1654196)								
HK1102515-009	TC9A 14.9-15.9M	EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.07	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	0.7	0.8	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	13	14	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	38	35	6.8
		EG020: Copper	7440-50-8	1	mg/kg	31	29	7.4
		EG020: Lead	7439-92-1	1	mg/kg	25	24	4.2
		EG020: Nickel	7440-02-0	1	mg/kg	143	157	9.4
		EG020: Zinc	7440-66-6	1	mg/kg	310	334	7.2
EP-065: PCB Single Congeners (QC Lot: 1653034)								
HK1102515-007	TC9A 8.9-9.9M	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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report Original Result	Duplicate Result	RPD (%)
EP-065: PCB Single Congeners (QC Lot: 1653034) - Continued								
HK1102515-007	TC9A 8.9-9.9M	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	0.0
EP-065: PCB Single Congeners (QC Lot: 1653036)								
HK1102515-008	TC9A 12.0-12.9M	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1651732)								
HK1102480-005	Anonymous	High M.W. PAHs	----	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	500	µg/kg	<500	<500	0.0
		Acenaphthylene	208-96-8	500	µg/kg	<500	<500	0.0
		Acenaphthene	83-32-9	500	µg/kg	<500	<500	0.0
		Fluorene	86-73-7	500	µg/kg	<500	<500	0.0
		Phenanthrene	85-01-8	500	µg/kg	<500	<500	0.0
		Anthracene	120-12-7	500	µg/kg	<500	<500	0.0
		Fluoranthene	206-44-0	500	µg/kg	<500	<500	0.0
		Pyrene	129-00-0	500	µg/kg	<500	<500	0.0
		Benz(a)anthracene	56-55-3	500	µg/kg	<500	<500	0.0
		Chrysene	218-01-9	500	µg/kg	<500	<500	0.0

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1651732) - Continued								
HK1102480-005	Anonymous	Benzo(b)fluoranthene	205-99-2	500	µg/kg	<500	<500	0.0
		Benzo(k)fluoranthene	207-08-9	500	µg/kg	<500	<500	0.0
		Benzo(a)pyrene	50-32-8	500	µg/kg	<500	<500	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	500	µg/kg	<500	<500	0.0
		Dibenz(a.h)anthracene	53-70-3	500	µg/kg	<500	<500	0.0
		Benzo(g.h.i)perylene	191-24-2	500	µg/kg	<500	<500	0.0
		Low M.W. PAHs	----	550	µg/kg	<550	<550	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1653035)								
HK1102515-007	TC9A 8.9-9.9M	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		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: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1654195)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	93.5	----	85	115	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	95.2	----	85	115	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	95.2	----	85	115	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	99.2	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	96.8	----	85	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	87.8	----	85	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	104	----	85	115	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	92.6	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	98.2	----	85	115	----	----
EG: Metals and Major Cations (QC Lot: 1654196)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	92.0	----	85	115	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1654196) - Continued											
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	97.8	----	85	115	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	95.2	----	85	115	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	97.6	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	93.6	----	85	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	89.0	----	85	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	101	----	85	115	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	92.0	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	91.4	----	85	115	----	----
EP-065: PCB Single Congeners (QC Lot: 1653034)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	60.7	----	36	118	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	74.9	----	36	120	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	77.1	----	34	133	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	79.2	----	19	143	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	77.5	----	25	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	81.5	----	18	140	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	78.9	----	42	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	77.2	----	35	136	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	82.5	----	40	136	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	82.1	----	39	136	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	63.8	----	37	143	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	79.6	----	36	143	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	82.1	----	40	138	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	81.1	----	38	138	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	91.2	----	44	138	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	87.8	----	42	144	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	81.3	----	37	148	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	79.0	----	35	142	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-065: PCB Single Congeners (QC Lot: 1653036)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	100	----	36	118	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	92.8	----	36	120	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	93.5	----	34	133	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	89.9	----	19	143	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	90.2	----	25	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	87.8	----	18	140	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	95.3	----	42	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	93.8	----	35	136	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	93.7	----	40	136	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	93.3	----	39	136	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	93.2	----	37	143	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	88.2	----	36	143	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	89.6	----	40	138	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	91.7	----	38	138	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 1653036) - Continued											
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	92.8	----	44	138	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	92.5	----	42	144	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	90.0	----	37	148	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	88.4	----	35	142	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1651732)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	87.1	----	50	118	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	77.5	----	46	113	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	84.7	----	49	118	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	86.4	----	49	118	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	80.7	----	53	117	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	87.1	----	47	118	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	92.3	----	59	122	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	89.7	----	58	122	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	92.0	----	53	119	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	99.0	----	66	120	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	97.4	----	50	125	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	97.0	----	66	125	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	80.4	----	60	109	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	93.8	----	50	124	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	99.5	----	53	120	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	95.8	----	57	123	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1653035)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	85.8	----	50	118	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	76.0	----	46	113	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	84.2	----	49	118	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	87.3	----	49	118	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	81.7	----	53	117	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	82.2	----	47	118	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	91.3	----	59	122	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	88.7	----	58	122	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	91.7	----	53	119	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	98.6	----	66	120	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	94.5	----	50	125	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	97.2	----	66	125	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	78.5	----	60	109	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	102	----	50	124	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	98.7	----	53	120	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	98.1	----	57	123	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Spike Recovery (%) MSD	Recovery Limits (%) Low	Recovery Limits (%) High	RPD (%) Value	RPD (%) Control Limit
EG: Metals and Major Cations (QC Lot: 1654195)										
HK1102511-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	79.1	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	99.1	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	84.8	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	78.1	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	88.9	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	88.0	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----
EG: Metals and Major Cations (QC Lot: 1654196)										
HK1102515-008	TC9A 12.0-12.9M	EG020: Arsenic	7440-38-2	5 mg/kg	96.5	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	96.9	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	80.2	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	90.8	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	96.0	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	75.4	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	92.4	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	91.6	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) 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

HOKLAS 066

CERTIFICATE OF ANALYSIS

Client	: AIRPORT AUTHORITY HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 10
Contact	: --	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1103669
Address	: HKIA TOWER, 1 SKY PLAZA ROAD, HONG KONG INTERNATIONAL AIRPORT, LANTAU, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: ----	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2188 7111	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: HONG KONG INTERNATIONAL AIRPORT CONTRACT P541 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1314/2010	Date Samples Received	: 16-FEB-2011
Order number	: ----			Issue Date	: 03-MAR-2011
C-O-C number	: H019914			No. of samples received	: 7
Site	: TC15A			No. of samples analysed	: 7

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Hong Kong Accreditation Service (HKAS) has accedited this laboratory (ALS Technichem (HK) Pty Ltd) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this certificate were determined by this laboratory in accordance with its terms of accreditation.

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Chan Siu Ming, Vico	Manager - Inorganics	Inorganics
Wong Wing, Kenneth	Assistant Supervisor	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 25-FEB-2011

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: **HK1103669**

Sample(s) were received in a chilled condition.

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

Sediment sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

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

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

Analytical Results

Sub-Matrix: SEDIMENT

			Client sample ID	TC15A 0.0-0.9M	TC15A 0.9-1.9M	TC15A 1.9-2.9M	TC15A 2.9-3.9M	TC15A 6.0-6.9M
			Client sampling date / time	16-FEB-2011 09:50	16-FEB-2011 09:50	16-FEB-2011 09:50	16-FEB-2011 09:50	16-FEB-2011 11:30
Compound	CAS Number	LOR	Unit	HK1103669-001	HK1103669-002	HK1103669-003	HK1103669-004	HK1103669-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	38.1	36.6	50.4	33.7	33.4
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	14	14	14	8	5
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.3	0.2	<0.2
EG020: Chromium	7440-47-3	1	mg/kg	36	37	35	33	36
EG020: Copper	7440-50-8	1	mg/kg	31	29	18	46	20
EG020: Lead	7439-92-1	1	mg/kg	37	38	80	43	26
EG020: Mercury	7439-97-6	0.05	mg/kg	0.10	0.10	1.24	0.12	0.09
EG020: Nickel	7440-02-0	1	mg/kg	25	24	20	19	24
EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.2	0.3	0.7	0.2
EG020: Zinc	7440-66-6	1	mg/kg	98	98	149	101	94
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150

Sub-Matrix: SEDIMENT			Client sample ID	TC15A 0.0-0.9M	TC15A 0.9-1.9M	TC15A 1.9-2.9M	TC15A 2.9-3.9M	TC15A 6.0-6.9M
			Client sampling date / time	16-FEB-2011 09:50	16-FEB-2011 09:50	16-FEB-2011 09:50	16-FEB-2011 09:50	16-FEB-2011 11:30
Compound	CAS Number	LOR	Unit	HK1103669-001	HK1103669-002	HK1103669-003	HK1103669-004	HK1103669-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	---	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	---	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	86.0	82.7	85.1	77.3	74.5
4-Terphenyl-d14	1718-51-0	0.1	%	86.4	84.3	84.9	79.0	75.8
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	70.2	78.9	81.5	57.6	78.4

Sub-Matrix: SEDIMENT			Client sample ID	TC15A 8.9-9.9M	TC15A 9.9-10.9M			
			Client sampling date / time	16-FEB-2011 11:30	16-FEB-2011 11:30			
Compound	CAS Number	LOR	Unit	HK1103669-006	HK1103669-007			
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	29.2	35.1			
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	17	13			
EG020: Cadmium	7440-43-9	0.2	mg/kg	0.3	<0.2			
EG020: Chromium	7440-47-3	1	mg/kg	38	34			
EG020: Copper	7440-50-8	1	mg/kg	24	16			
EG020: Lead	7439-92-1	1	mg/kg	28	29			
EG020: Mercury	7439-97-6	0.05	mg/kg	0.11	0.07			
EG020: Nickel	7440-02-0	1	mg/kg	29	22			
EG020: Silver	7440-22-4	0.1	mg/kg	0.2	0.1			
EG020: Zinc	7440-66-6	1	mg/kg	75	83			
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3			
PCB 18	37680-65-2	3	µg/kg	<3	<3			
PCB 28	7012-37-5	3	µg/kg	<3	<3			
PCB 44	41464-39-5	3	µg/kg	<3	<3			
PCB 52	35693-99-3	3	µg/kg	<3	<3			
PCB 66	32598-10-0	3	µg/kg	<3	<3			
PCB 77	32598-13-3	3	µg/kg	<3	<3			
PCB 101	37680-73-2	3	µg/kg	<3	<3			
PCB 105	32598-14-4	3	µg/kg	<3	<3			
PCB 118	31508-00-6	3	µg/kg	<3	<3			
PCB 126	57465-28-8	3	µg/kg	<3	<3			
PCB 128	38380-07-3	3	µg/kg	<3	<3			
PCB 138	35065-28-2	3	µg/kg	<3	<3			
PCB 153	35065-27-1	3	µg/kg	<3	<3			
PCB 169	32774-16-6	3	µg/kg	<3	<3			
PCB 170	35065-30-6	3	µg/kg	<3	<3			
PCB 180	35065-29-3	3	µg/kg	<3	<3			
PCB 187	52663-68-0	3	µg/kg	<3	<3			
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18			
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50			
Acenaphthylene	208-96-8	50	µg/kg	<50	<50			
Acenaphthene	83-32-9	50	µg/kg	<50	<50			
Fluorene	86-73-7	50	µg/kg	<50	<50			
Phenanthrene	85-01-8	50	µg/kg	<50	<50			
Anthracene	120-12-7	50	µg/kg	<50	<50			
Fluoranthene	206-44-0	150	µg/kg	<150	<150			
Pyrene	129-00-0	150	µg/kg	<150	<150			
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150			

Sub-Matrix: SEDIMENT			Client sample ID	TC15A 8.9-9.9M	TC15A 9.9-10.9M			
			Client sampling date / time	16-FEB-2011 11:30	16-FEB-2011 11:30			
Compound	CAS Number	LOR	Unit	HK1103669-006	HK1103669-007			
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Chrysene	218-01-9	150	µg/kg	<150	<150			
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150			
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150			
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150			
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150			
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150			
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150			
Low M.W. PAHs	----	550	µg/kg	<550	<550			
High M.W. PAHs	----	1700	µg/kg	<1700	<1700			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								Surrogate control limits listed at end of this report.
2-Fluorobiphenyl	321-60-8	0.1	%	69.8	81.1			
4-Terphenyl-d14	1718-51-0	0.1	%	78.2	83.0			
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate								Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%	78.5	96.3			

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1674163)								
HK1103657-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	21.6	21.2	2.0
HK1103665-003	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	44.6	46.0	3.0
EA/ED: Physical and Aggregate Properties (QC Lot: 1674164)								
HK1103669-005	TC15A 6.0-6.9M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	33.4	34.1	1.9
HK1103657-002	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	15.7	14.0	11.1
EG: Metals and Major Cations (QC Lot: 1680663)								
HK1103665-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.14	0.12	0.0
		EG020: Silver	7440-22-4	0.1	mg/kg	0.3	0.3	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	21	22	6.2
		EG020: Chromium	7440-47-3	1	mg/kg	49	48	2.4
		EG020: Copper	7440-50-8	1	mg/kg	42	40	5.8
		EG020: Lead	7439-92-1	1	mg/kg	53	51	5.0
		EG020: Nickel	7440-02-0	1	mg/kg	35	33	5.1
		EG020: Zinc	7440-66-6	1	mg/kg	138	132	3.9
HK1103795-001	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	13	13	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	27	29	6.8
		EG020: Copper	7440-50-8	1	mg/kg	73	75	2.5
		EG020: Lead	7439-92-1	1	mg/kg	10	10	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	19	21	8.5
		EG020: Zinc	7440-66-6	1	mg/kg	128	127	1.1
EP-065: PCB Single Congeners (QC Lot: 1675554)								
HK1103665-001	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 sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
				Laboratory Duplicate (DUP) Report				
EP-065: PCB Single Congeners (QC Lot: 1675554) - Continued								
HK1103665-001	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-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1675550)								
HK1103822-003	Anonymous	High M.W. PAHs	—	1700	µg/kg	<1700	<1700	0.0
		Naphthalene	91-20-3	500	µg/kg	<500	<500	0.0
		Acenaphthylene	208-96-8	500	µg/kg	<500	<500	0.0
		Acenaphthene	83-32-9	500	µg/kg	<500	<500	0.0
		Fluorene	86-73-7	500	µg/kg	<500	<500	0.0
		Phenanthrene	85-01-8	500	µg/kg	<500	<500	0.0
		Anthracene	120-12-7	500	µg/kg	<500	<500	0.0
		Fluoranthene	206-44-0	500	µg/kg	<500	<500	0.0
		Pyrene	129-00-0	500	µg/kg	<500	<500	0.0
		Benz(a)anthracene	56-55-3	500	µg/kg	<500	<500	0.0
		Chrysene	218-01-9	500	µg/kg	<500	<500	0.0
		Benzo(b)fluoranthene	205-99-2	500	µg/kg	<500	<500	0.0
		Benzo(k)fluoranthene	207-08-9	500	µg/kg	<500	<500	0.0
		Benzo(a)pyrene	50-32-8	500	µg/kg	<500	<500	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	500	µg/kg	<500	<500	0.0
		Dibenz(a.h)anthracene	53-70-3	500	µg/kg	<500	<500	0.0
		Benzo(g.h.i)perylene	191-24-2	500	µg/kg	<500	<500	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: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1680663)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	87.7	----	85	115	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	85.5	----	85	115	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	87.3	----	85	115	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	92.3	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	89.0	----	85	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	102	----	85	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	86.6	----	85	115	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	104	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	95.4	----	85	115	----	----
EP-065: PCB Single Congeners (QC Lot: 1675554)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	84.2	----	36	118	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	99.5	----	36	120	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	98.6	----	34	133	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	57.5	----	19	143	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	66.8	----	25	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	48.6	----	18	140	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 1675554) - Continued											
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	83.8	----	42	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	88.8	----	35	136	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	84.0	----	40	136	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	86.8	----	39	136	----	----
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	84.4	----	37	143	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	83.9	----	36	143	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	86.4	----	40	138	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	88.3	----	38	138	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	84.0	----	44	138	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	86.4	----	42	144	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	88.5	----	37	148	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	87.6	----	35	142	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1675550)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	80.1	----	50	118	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	76.1	----	46	113	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	82.2	----	49	118	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	84.7	----	49	118	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	84.2	----	53	117	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	82.9	----	47	118	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	90.3	----	59	122	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	88.7	----	58	122	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	86.2	----	53	119	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	91.3	----	66	120	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	92.3	----	50	125	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	88.1	----	66	125	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	68.9	----	60	109	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	83.9	----	50	124	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	86.9	----	53	120	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	94.5	----	57	123	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1680663)										
HK1103665-001	Anonymous	EG020: Arsenic	7440-38-2	5 mg/kg	88.4	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	92.2	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	87.0	----	75	125	----	----

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	Spike Recovery (%) MSD	Recovery Limits (%) Low	Recovery Limits (%) High	RPD (%) Value	RPD (%) Control Limit
EG: Metals and Major Cations (QC Lot: 1680663) - Continued										
HK1103665-001	Anonymous	EG020: Copper	7440-50-8	5 mg/kg	85.6	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	# Not Determined	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	75.2	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	84.7	----	75	125	----	----
		EG020: Silver	7440-22-4	5 mg/kg	83.4	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) 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

HOKLAS 066

CERTIFICATE OF ANALYSIS

Client	: AIRPORT AUTHORITY HONG KONG	Laboratory	: ALS Technichem HK Pty Ltd	Page	: 1 of 10
Contact	: --	Contact	: Chan Kwok Fai, Godfrey	Work Order	: HK1104050
Address	: HKIA TOWER, 1 SKY PLAZA ROAD, HONG KONG INTERNATIONAL AIRPORT, LANTAU, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: ----	E-mail	: Godfrey.Chan@alsenviro.com		
Telephone	: +852 2188 7111	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: HONG KONG INTERNATIONAL AIRPORT CONTRACT P541 - MARINE SITE INVESTIGATION WORKS	Quote number	: HK/1314/2010	Date Samples Received	: 17-FEB-2011
Order number	: ----			Issue Date	: 03-MAR-2011
C-O-C number	: H019915			No. of samples received	: 6
Site	: TC16A			No. of samples analysed	: 6

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Hong Kong Accreditation Service (HKAS) has accedited this laboratory (ALS Technichem (HK) Pty Ltd) under Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this certificate were determined by this laboratory in accordance with its terms of accreditation.

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

Signatories	*Position*	*Authorised results for*
Anh Ngoc Huynh	Senior Chemist - Organics	Organics
Wong Wing, Kenneth	Assistant Supervisor	Inorganics

General Comments

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. The completion date of analysis is: 28-FEB-2011

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: **HK1104050**

Sample(s) were received in a chilled condition.

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

Sediment sample(s) as received, digested by In-house method E-ASTM D3974-81 based on ASTM D3974-81, prior to the determination of metals.

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

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

Analytical Results

Sub-Matrix: SEDIMENT

Compound	CAS Number	LOR	Unit	TC16A 0.0-0.9M	TC16A 0.9-1.9M	TC16A 1.9-2.9M	TC16A 2.9-3.9M	TC16A 6.0-6.9M
Client sampling date / time				17-FEB-2011 11:30	17-FEB-2011 11:30	17-FEB-2011 11:30	17-FEB-2011 11:30	17-FEB-2011 14:00
				HK1104050-001	HK1104050-002	HK1104050-003	HK1104050-004	HK1104050-005
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	26.9	44.3	25.0	35.0	37.9
EG: Metals and Major Cations								
EG020: Arsenic	7440-38-2	1	mg/kg	10	10	9	16	8
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	0.5
EG020: Chromium	7440-47-3	1	mg/kg	23	44	18	42	77
EG020: Copper	7440-50-8	1	mg/kg	14	17	10	31	197
EG020: Lead	7439-92-1	1	mg/kg	26	32	21	40	64
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.05	<0.05	0.09	0.51
EG020: Nickel	7440-02-0	1	mg/kg	15	30	12	27	30
EG020: Silver	7440-22-4	0.1	mg/kg	0.1	0.1	0.1	0.3	2.0
EG020: Zinc	7440-66-6	1	mg/kg	56	89	48	102	179
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3	<3	<3	<3	<3
PCB 18	37680-65-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 28	7012-37-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 44	41464-39-5	3	µg/kg	<3	<3	<3	<3	<3
PCB 52	35693-99-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 66	32598-10-0	3	µg/kg	<3	<3	<3	<3	<3
PCB 77	32598-13-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 101	37680-73-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 105	32598-14-4	3	µg/kg	<3	<3	<3	<3	<3
PCB 118	31508-00-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 126	57465-28-8	3	µg/kg	<3	<3	<3	<3	<3
PCB 128	38380-07-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 138	35065-28-2	3	µg/kg	<3	<3	<3	<3	<3
PCB 153	35065-27-1	3	µg/kg	<3	<3	<3	<3	<3
PCB 169	32774-16-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 170	35065-30-6	3	µg/kg	<3	<3	<3	<3	<3
PCB 180	35065-29-3	3	µg/kg	<3	<3	<3	<3	<3
PCB 187	52663-68-0	3	µg/kg	<3	<3	<3	<3	<3
Total Polychlorinated biphenyls	----	18	µg/kg	<18	<18	<18	<18	<18
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthylene	208-96-8	50	µg/kg	<50	<50	<50	<50	<50
Acenaphthene	83-32-9	50	µg/kg	<50	<50	<50	<50	<50
Fluorene	86-73-7	50	µg/kg	<50	<50	<50	<50	<50
Phenanthrene	85-01-8	50	µg/kg	<50	<50	<50	<50	<50
Anthracene	120-12-7	50	µg/kg	<50	<50	<50	<50	<50
Fluoranthene	206-44-0	150	µg/kg	<150	<150	<150	<150	<150

Sub-Matrix: SEDIMENT			Client sample ID	TC16A 0.0-0.9M	TC16A 0.9-1.9M	TC16A 1.9-2.9M	TC16A 2.9-3.9M	TC16A 6.0-6.9M
			Client sampling date / time	17-FEB-2011 11:30	17-FEB-2011 11:30	17-FEB-2011 11:30	17-FEB-2011 11:30	17-FEB-2011 14:00
Compound	CAS Number	LOR	Unit	HK1104050-001	HK1104050-002	HK1104050-003	HK1104050-004	HK1104050-005
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
Pyrene	129-00-0	150	µg/kg	<150	<150	<150	<150	<150
Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	<150	<150	<150
Chrysene	218-01-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	<150	<150	<150
Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	<150	<150	<150
Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	<150	<150	<150
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	<150	<150	<150
Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	<150	<150	<150
Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	<150	<150	<150
Low M.W. PAHs	----	550	µg/kg	<550	<550	<550	<550	<550
High M.W. PAHs	----	1700	µg/kg	<1700	<1700	<1700	<1700	<1700
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							Surrogate control limits listed at end of this report.	
2-Fluorobiphenyl	321-60-8	0.1	%	51.7	75.5	73.5	85.7	89.9
4-Terphenyl-d14	1718-51-0	0.1	%	52.9	79.1	77.5	88.0	92.5
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate							Surrogate control limits listed at end of this report.	
Decachlorobiphenyl	2051-24-3	0.1	%	64.3	89.2	71.5	53.1	52.2

Sub-Matrix: SEDIMENT			Client sample ID	TC16A 8.9-9.8M				
			Client sampling date / time	17-FEB-2011 14:00				
Compound	CAS Number	LOR	Unit	HK1104050-006				
EA/ED: Physical and Aggregate Properties								
EA055: Moisture Content (dried @ 103° C)	----	0.1	%	30.9				
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	32				
EG020: Copper	7440-50-8	1	mg/kg	15				
EG020: Lead	7439-92-1	1	mg/kg	28				
EG020: Mercury	7439-97-6	0.05	mg/kg	0.06				
EG020: Nickel	7440-02-0	1	mg/kg	23				
EG020: Silver	7440-22-4	0.1	mg/kg	0.1				
EG020: Zinc	7440-66-6	1	mg/kg	79				
EP-065: PCB Single Congeners								
PCB 8	34883-43-7	3	µg/kg	<3				
PCB 18	37680-65-2	3	µg/kg	<3				
PCB 28	7012-37-5	3	µg/kg	<3				
PCB 44	41464-39-5	3	µg/kg	<3				
PCB 52	35693-99-3	3	µg/kg	<3				
PCB 66	32598-10-0	3	µg/kg	<3				
PCB 77	32598-13-3	3	µg/kg	<3				
PCB 101	37680-73-2	3	µg/kg	<3				
PCB 105	32598-14-4	3	µg/kg	<3				
PCB 118	31508-00-6	3	µg/kg	<3				
PCB 126	57465-28-8	3	µg/kg	<3				
PCB 128	38380-07-3	3	µg/kg	<3				
PCB 138	35065-28-2	3	µg/kg	<3				
PCB 153	35065-27-1	3	µg/kg	<3				
PCB 169	32774-16-6	3	µg/kg	<3				
PCB 170	35065-30-6	3	µg/kg	<3				
PCB 180	35065-29-3	3	µg/kg	<3				
PCB 187	52663-68-0	3	µg/kg	<3				
Total Polychlorinated biphenyls	----	18	µg/kg	<18				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs)								
Naphthalene	91-20-3	50	µg/kg	<50				
Acenaphthylene	208-96-8	50	µg/kg	<50				
Acenaphthene	83-32-9	50	µg/kg	<50				
Fluorene	86-73-7	50	µg/kg	<50				
Phenanthrene	85-01-8	50	µg/kg	<50				
Anthracene	120-12-7	50	µg/kg	<50				
Fluoranthene	206-44-0	150	µg/kg	<150				
Pyrene	129-00-0	150	µg/kg	<150				
Benz(a)anthracene	56-55-3	150	µg/kg	<150				

Sub-Matrix: SEDIMENT				Client sample ID	TC16A 8.9-9.8M				
				Client sampling date / time	17-FEB-2011 14:00				
Compound	CAS Number	LOR	Unit		HK1104050-006				
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued									
Chrysene	218-01-9	150	µg/kg		<150				
Benzo(b)fluoranthene	205-99-2	150	µg/kg		<150				
Benzo(k)fluoranthene	207-08-9	150	µg/kg		<150				
Benzo(a)pyrene	50-32-8	150	µg/kg		<150				
Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg		<150				
Dibenz(a.h)anthracene	53-70-3	150	µg/kg		<150				
Benzo(g.h.i)perylene	191-24-2	150	µg/kg		<150				
Low M.W. PAHs	---	550	µg/kg		<550				
High M.W. PAHs	---	1700	µg/kg		<1700				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates									Surrogate control limits listed at end of this report.
2-Fluorobiphenyl	321-60-8	0.1	%		84.7				
4-Terphenyl-d14	1718-51-0	0.1	%		85.5				
EP-065S: PCB Congeners and Organochlorine Pesticides Surrogate									Surrogate control limits listed at end of this report.
Decachlorobiphenyl	2051-24-3	0.1	%		57.7				

Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
				Laboratory Duplicate (DUP) Report				
EA/ED: Physical and Aggregate Properties (QC Lot: 1680734)								
HK1104050-001	TC16A 0.0-0.9M	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	26.9	27.6	2.5
HK1104052-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	38.9	39.0	0.0
EG: Metals and Major Cations (QC Lot: 1680682)								
HK1104050-002	TC16A 0.9-1.9M	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	10	9	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	44	42	5.6
		EG020: Copper	7440-50-8	1	mg/kg	17	17	0.0
		EG020: Lead	7439-92-1	1	mg/kg	32	30	7.6
		EG020: Nickel	7440-02-0	1	mg/kg	30	30	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	89	87	2.1
HK1104052-005	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	0.2	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	12	11	0.0
		EG020: Chromium	7440-47-3	1	mg/kg	37	38	0.0
		EG020: Copper	7440-50-8	1	mg/kg	17	21	17.0
		EG020: Lead	7439-92-1	1	mg/kg	29	29	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	25	25	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	87	85	1.6
EP-065: PCB Single Congeners (QC Lot: 1679600)								
HK1104050-001	TC16A 0.0-0.9M	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
		PCB 187	52663-68-0	3	µg/kg	<3	<3	0.0
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1679198)								

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1679198) - Continued								
HK1104050-001	TC16A 0.0-0.9M	Fluoranthene	206-44-0	150	µg/kg	<150	<150	0.0
		Pyrene	129-00-0	150	µg/kg	<150	<150	0.0
		Benz(a)anthracene	56-55-3	150	µg/kg	<150	<150	0.0
		Chrysene	218-01-9	150	µg/kg	<150	<150	0.0
		Benzo(b)fluoranthene	205-99-2	150	µg/kg	<150	<150	0.0
		Benzo(k)fluoranthene	207-08-9	150	µg/kg	<150	<150	0.0
		Benzo(a)pyrene	50-32-8	150	µg/kg	<150	<150	0.0
		Indeno(1.2.3.cd)pyrene	193-39-5	150	µg/kg	<150	<150	0.0
		Dibenz(a.h)anthracene	53-70-3	150	µg/kg	<150	<150	0.0
		Benzo(g.h.i)perylene	191-24-2	150	µg/kg	<150	<150	0.0
		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
		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: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1680682)											
EG020: Arsenic	7440-38-2	1	mg/kg	<1	5 mg/kg	87.5	----	85	115	----	----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	5 mg/kg	93.1	----	85	115	----	----
EG020: Chromium	7440-47-3	1	mg/kg	<1	5 mg/kg	89.3	----	85	115	----	----
EG020: Copper	7440-50-8	1	mg/kg	<1	5 mg/kg	92.7	----	85	115	----	----
EG020: Lead	7439-92-1	1	mg/kg	<1	5 mg/kg	94.0	----	85	115	----	----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	85.0	----	85	115	----	----
EG020: Nickel	7440-02-0	1	mg/kg	<1	5 mg/kg	92.4	----	85	115	----	----
EG020: Silver	7440-22-4	0.1	mg/kg	<0.1	5 mg/kg	86.9	----	85	115	----	----
EG020: Zinc	7440-66-6	1	mg/kg	<1	5 mg/kg	96.8	----	85	115	----	----
EP-065: PCB Single Congeners (QC Lot: 1679600)											
PCB 8	34883-43-7	3	µg/kg	<3	5 µg/kg	57.3	----	36	118	----	----
PCB 18	37680-65-2	3	µg/kg	<3	5 µg/kg	50.5	----	36	120	----	----
PCB 28	7012-37-5	3	µg/kg	<3	5 µg/kg	43.2	----	34	133	----	----
PCB 44	41464-39-5	3	µg/kg	<3	5 µg/kg	41.0	----	19	143	----	----
PCB 52	35693-99-3	3	µg/kg	<3	5 µg/kg	41.4	----	25	136	----	----
PCB 66	32598-10-0	3	µg/kg	<3	5 µg/kg	42.9	----	18	140	----	----
PCB 77	32598-13-3	3	µg/kg	<3	5 µg/kg	56.9	----	42	127	----	----
PCB 101	37680-73-2	3	µg/kg	<3	5 µg/kg	56.1	----	35	136	----	----
PCB 105	32598-14-4	3	µg/kg	<3	5 µg/kg	58.9	----	40	136	----	----
PCB 118	31508-00-6	3	µg/kg	<3	5 µg/kg	58.9	----	39	136	----	----

Matrix: SOIL

Method: Compound	CAS Number	Method Blank (MB) Report LOR	Unit	Result	Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report: Spike Concentration	Spike Recovery (%) LCS	DCS	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EP-065: PCB Single Congeners (QC Lot: 1679600) - Continued											
PCB 126	57465-28-8	3	µg/kg	<3	5 µg/kg	58.5	----	37	143	----	----
PCB 128	38380-07-3	3	µg/kg	<3	5 µg/kg	59.8	----	36	143	----	----
PCB 138	35065-28-2	3	µg/kg	<3	5 µg/kg	58.7	----	40	138	----	----
PCB 153	35065-27-1	3	µg/kg	<3	5 µg/kg	58.9	----	38	138	----	----
PCB 169	32774-16-6	3	µg/kg	<3	5 µg/kg	60.5	----	44	138	----	----
PCB 170	35065-30-6	3	µg/kg	<3	5 µg/kg	59.6	----	42	144	----	----
PCB 180	35065-29-3	3	µg/kg	<3	5 µg/kg	58.8	----	37	148	----	----
PCB 187	52663-68-0	3	µg/kg	<3	5 µg/kg	56.6	----	35	142	----	----
Total Polychlorinated biphenyls	----	18	µg/kg	<18	----	----	----	----	----	----	----
EP-076A: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 1679198)											
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	75.0	----	50	118	----	----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	67.2	----	46	113	----	----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	72.0	----	49	118	----	----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	74.0	----	49	118	----	----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	74.1	----	53	117	----	----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	73.2	----	47	118	----	----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	79.1	----	59	122	----	----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	78.4	----	58	122	----	----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	85.0	----	53	119	----	----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	90.4	----	66	120	----	----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	87.7	----	50	125	----	----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	97.6	----	66	125	----	----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	71.0	----	60	109	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	87.3	----	50	124	----	----
Dibenz(a.h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	90.2	----	53	120	----	----
Benzo(g.h.i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	97.6	----	57	123	----	----
Low M.W. PAHs	----	550	µg/kg	<550	----	----	----	----	----	----	----
High M.W. PAHs	----	1700	µg/kg	<1700	----	----	----	----	----	----	----

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

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low	High	RPD (%) Value	Control Limit
EG: Metals and Major Cations (QC Lot: 1680682)										
HK1104050-001	TC16A 0.0-0.9M	EG020: Arsenic	7440-38-2	5 mg/kg	79.6	----	75	125	----	----
		EG020: Cadmium	7440-43-9	5 mg/kg	90.6	----	75	125	----	----
		EG020: Chromium	7440-47-3	5 mg/kg	78.9	----	75	125	----	----
		EG020: Copper	7440-50-8	5 mg/kg	75.5	----	75	125	----	----
		EG020: Lead	7439-92-1	5 mg/kg	85.7	----	75	125	----	----
		EG020: Mercury	7439-97-6	0.1 mg/kg	121	----	75	125	----	----
		EG020: Nickel	7440-02-0	5 mg/kg	79.0	----	75	125	----	----

Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	Spike Recovery (%) MSD	Recovery Limits (%) Low	Recovery Limits (%) High	RPD (%) Value	RPD (%) Control Limit
EG: Metals and Major Cations (QC Lot: 1680682) - Continued										
HK1104050-001	TC16A 0.0-0.9M	EG020: Silver	7440-22-4	5 mg/kg	78.7	----	75	125	----	----
		EG020: Zinc	7440-66-6	5 mg/kg	# Not Determined	----	75	125	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) 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