

保華-中國中鐵聯營體
PAUL Y.-CREC JOINT VENTURE

Contract No. DC/2019/10
Yuen Long Effluent Polishing Plant
Main Works for Stage 1

CONTRACTOR'S SUBMISSION FORM (CSF)

CSF No.: DC/2019/10/01.01/CSF/GS/0450/01	DATE: 28 May 2022
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From : Contractor's Representative, Paul Y. – CREC Joint Venture

To : Project Manager's Representative (Attn: Yeung Hon Man, Simon)

Document Title: Contamination Assessment Report for Waste Storage Area	*New Submission / Resubmission
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AECOM Ref. No.: -

Originator: Jay Zhao

Contractor's Comments:

We resubmit herewith the finalized Contamination Assessment Report (CAR) for Waste Storage Area for your review.

Attachments: Contamination Assessment Report for Waste Storage Area

Relevant Specifications or Documents No.: PS Cl. 1.145

Reviewed By: Tom Tong

 _____ Contractor's Representative	28 May 2022 _____ Date
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WT/CPL/HS/LKT/TF/ISA/SHM/JY/jz

Ref.: DSDYLSTWEM00_0_0285L.22

27 May 2022

By E-mail and By Hand

AECOM
12/F Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong.

Attention: Mr YEUNG H. M. Simon

Dear Mr YEUNG,

**Re: Contract No. SPW 08/2020
Independent Environmental Checker for
Construction of Yuen Long Effluent Polishing Plant Stage 1**

**Verification for Contamination Assessment Report for Waste Storage Area
(Version 1.2)**

Reference is made to the Contaminated Assessment Report for Waste Storage Area (Version 1.2) by CINOTECH Consultant Limited dated 25 May 2022 (the CAR) and the ET's certification ref. MCL/ED/0195/2022/C dated 26 May 2022.

We have no further comments and herewith verify that the CAR has complied with the requirements as set out in Condition 2.14 of the Environmental Permit No. EP-565/2019.

Please contact the undersigned or our Mr. Y.H. HUI should you have any questions on the matter.

Yours sincerely,



WONG Fu Nam
Independent Environmental Checker

c.c.

DSD
Fugro

Mr LAM Yu Wang
Mr YU Lap Bong

By E-mail
By E-mail



FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre

5 Lok Yi Street, Tai Lam

Tuen Mun, NT

Hong Kong

Date 26 May 2022

Our Ref. MCL/ED/0195/2022/C

Paul Y.-CREC Joint Venture,
11/F, Paul Y. Centre,
51 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong

BY E-MAIL

Attn: Mr. David LAU

Dear Sir,

Contract No. SPW 07/2020

Environmental Team for Construction of Yuen Long Effluent Polishing Plant Stage 1

Environmental Permits: EP-565/2019

Contract No. DC/2019/10 - Certification of Contamination Assessment Report for Waste Storage Area

We refer to your Contamination Assessment Report (CAR) for Waste Storage Area (Version 1.2) submitted on 25 May 2022 for the captioned project. We are pleased to certify the captioned submission pursuant to Environmental Permit No. EP-565/2019 Condition 2.14.

Thank you for your attention. Should there be any queries, please contact Mr. Cyrus LAI on 3565-4442 or the undersigned on 3565-4373.

Yours faithfully,
for and on behalf of
FUGRO TECHNICAL SERVICES LIMITED

Alvin L.B. YU
Environmental Team Leader

c.c. DSD
AECOM
Ramboll HK Limited

Engineer
ER
IEC

Attn: Mr. LAM Yu Wang (by E-mail)
Attn: Mr. Simon YEUNG (by E-mail)
Attn: Mr. FN WONG (by E-mail)

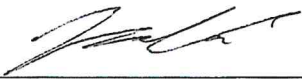
Drainage Services Department

**Contract No. DC/2019/10
Yuen Long Effluent Polishing Plant –
Main Works for Stage 1**

**Contamination Assessment Report
for
Waste Storage Area**

(Version 1.2)

May 2022

Checked By	 (Land Contamination Specialist)
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REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

CINOTECH CONSULTANTS LIMITED

Room 1710, Technology Park
18 On Lai Street
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

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1 INTRODUCTION

Background

- 1.1 The existing Yuen Long Sewage Treatment Works (YLSTW/ the Site), was commissioned in 1984 with a design capacity of 70,000 m³/d at average dry weather flow (ADWF), provides secondary level treatment to sewage collected from Yuen Long area such as Wang Chau, Yuen Long Industrial Estate, the Yuen Long Town and Kam Tin. Drainage Services Department (DSD) has proposed to upgrade the YLSTW (the Project) into the Yuen Long Effluent Polishing Plant (YLEPP), in order to cope with the forecast increase in sewage flow upon completion of sewerage under interfacing projects, extension of village sewerage in area as planned by Environmental Protection Department (EPD), as well as the proposed housing developments in the region. The Site location is attached in **Appendix A**.
- 1.2 A Project Profile (No. PP-458/2012) was submitted to the Environmental Protection Department (EPD) on 27 February 2012 for application for an Environmental Impact Assessment (EIA) Study Brief under section 5(1)(a) of the EIAO and the EIA Study Brief No. ESB-241/2012 for the Project was issued on 5 April 2012 under the EIAO. A revised Project Profile, entitled “Yuen Long Effluent Polishing Plant”, was submitted on 9 Oct 2018 (No. PP-570/2018) and a revised EIA Study Brief No. ESB-309/2018 was issued on 14 November 2018 under the EIAO. An Environmental Impact Assessment (EIA) Report was approved under EIAO in April 2019 (No.: AEIAR-220-2019) in accordance with the EIA Study Brief (No. ESB-309/2018) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).
- 1.3 According to the Contamination Assessment Plan in the EIA Report (EIA-CAP), prior to commencement of the SI works, a review of the EIA-CAP should be conducted to confirm whether the proposed SI works are still valid, and Supplementary Contamination Assessment Plan (s) (SCAPs), presenting findings of the review, the latest site conditions and any updated sampling strategy and testing protocol, should be submitted to EPD for endorsement. As stipulated in EP condition 2.14, the SCAPs shall be submitted to EPD no later than three months before the commencement of site investigation (SI) at the concerned facilities/ areas; subsequently, the SI works should be carried out according to EPD’s agreed SCAPs, with Remediation Action Plan (RAPs) if contamination is confirmed and remediation is deemed necessary, for remediation in accordance with the approved RAPs and submit Remediation Report(s) (RRs) to document the remediation programme for approval by the Director. No construction works at the concerned facilities/ area shall be commenced before the approval of respective SCAPs by the Director and the satisfactory completion of necessary decontamination works.
- 1.4 The Contract No. DC/2019/10 – Yuen Long Effluent Polishing Plant – Main Works for Stage 1 (the Contract) was commissioned by DSD on November 2020 to carry out the works for phase I of the Project for the provision of facilities, such as Inlet works building, Lamella Primary Sedimentation Tank, Bio-reactor systems, Tertiary Digesters, Biogas Holders, Administration Building, Transformer Rooms and Switch Rooms, Storage Building, etc.

- 1.5 The final version of the Supplementary Contamination Assessment Plan (SCAP) has been submitted and approved by Environment Protection Department (EPD) in April 2021. According to the agreed SCAP, SI works are required for some of the facilities in the plant, namely the Waste Storage Area, Surplus Activated Sludge (SAS) Thickener House, Wash Water Pumping Station, Transformer House ‘A’, Mechanical Workshop, Main Storeroom and Workshops, Screening Press House under this contract. However, in order to ensure that the existing sewage treatment works can operate normally, SI works for different facilities/ areas have to be conducted in separate stages and hence this Contamination Assessment Report (CAR - Part 3) shall only entail the SI results for the “Waste Storage Area”, covering 4 Boreholes, namely ENV-BH12, ENV-BH13, ENV-BH14 and ENV-BH15. SI works for other facilities/ areas shall be carried out under separate submissions. The locations of the facilities in the plant are illustrated in **Appendix A**.

Objective & Scope

- 1.6 Cinotech Consultants Limited (Cinotech) was commissioned by Paul.Y – CREC Joint Venture on behalf of the DSD to conduct Land Contamination Assessment focusing on the Contract for the partial fulfilment of the Submission Requirement as per EP condition 2.14 and Section 6 of EM&A Manual (No.: AEIAR-220-2019). CAR-Part 3 provides the findings of the SI works and present the laboratory results and their interpretation of the collected samples for “Waste Storage Area”.
- 1.7 CAR-Part 3 is prepared to present the findings of the land contamination assessments with reference of the following legislation, guidelines and standards:
- Practice Guide for Investigation and Remediation of Contaminated Land (PG);
 - Guidance Note for Contaminated Land Assessment and Remediation;
 - Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management;
 - Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C);
 - Dangerous Goods Ordinance (Cap 295).
- 1.8 The CAR-Part 3 provides a summary of the SCAP as agreed in April 2021, describing the SI and sampling works conducted in this assessment and present the laboratory results and their interpretation of the collected samples for “Waste Storage Area”. CAR(s) for other facility/ area that required SI under this contract shall be prepared under separate submissions once the corresponding SI works, laboratory results and their interpretation of the collected samples are completed.

2 SITE INVESTIGATION

Sampling Strategy

- 2.1 According to the agreed SCAP, 4 sampling locations, namely ENV-BH12, ENV-BH13, ENV-BH14 and ENV-BH15 were proposed for the concerned storage areas respectively, namely lubrication oil, Spent Oil, Chemical Waste and Waste Steel Storage Areas for the SI at “Waste Storage Area”. The sampling locations and Chemicals of Concern (CoCs) proposed in the agreed SCAP are summarised in **Table 2-1** below.

Table 2-1 Summary of Proposed Sampling Points & CoCs for “Waste Storage Area”

Potentially Contaminated Area	Sampling Location ID in this report	Sampling Location ID in SCAP	Sampling Matrix/ Depths ^{(1) (3)}		Proposed Testing Parameters ⁽³⁾
Waste Storage Area (Lubrication Oil, Spent Oil, Chemical Waste and Waste Steel Storage Areas)	ENV-BH12, ENV-BH13, ENV-BH14, ENV-BH15	ENV-BH12, ENV-BH13, ENV-BH14, ENV-BH15	Soil	(i) 0.5m bgl (ii) 1.5m bgl (iii) 3.0m bgl (iv) above GW level if present or if no GW encountered, 6m bgl	Metals: Full List VOCs: Full List SVOCs: Full List PCRs: Full List
			GW	If present	Metals: Mercury VOCs: Full List SVOCs: Full List PCRs: Full List
Notes:					
(1) m bgl = meter below ground level; GW – groundwater					
(2) - Full list refers to the parameters as shown in Table 2.1 – RBRGs for Soil and Soil Saturation Limit and Table 2.2 – RBRGs for Groundwater and Solubility Limit under VOCs, SVOCs, metals and PCRs in the Guidance Manual. - BTEX includes benzene, toluene, ethylbenzene and total xylenes - PAHs include acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, 23luorine, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene. - Since RBRG value of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, bis-(2-Ethylhexyl)phtalate, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene and Phenol were not available for groundwater, the said parameters would not be tested in groundwater sample.					
(3) Groundwater samples will only be collected if groundwater is encountered during SI works					

Sampling Methodology

- 2.2 Prior to commencement of sampling & drilling, trial pitting was conducted to inspect for subsurface utilities and obstructions that could pose a hazard or hinder the sampling works. All drilling machine and equipment were decontaminated using a non-phosphate detergent and distilled water prior to the SI.
- 2.3 A disturbed soil sample was collected at every trial pit at a nominal depth of 0.5m bgl using a hand-held sampler.
- 2.4 3 undisturbed samples were collected, as far as possible, at every borehole with U76 tube sampler (nominal 76mm diameter) at nominal depths of 1.5mbgl, 3.0mbgl and 4.5mbgl

below the excavation pit using dry borehole drilling and hammer dropping method. According to sampling plan, summarised in **Table 2-1**, the final sample proposed for each sampling location should be “above groundwater level if present or if no groundwater encountered, 6m bgl”. As high groundwater levels were recorded at all boreholes, when not enough soil was presented at sampling depths below the groundwater levels, less than 3 undisturbed samples were able to be collected.

- 2.5 When groundwater was encountered within the sampling depth, the borehole(s) was drilled to a minimum depth of 2m below the water table to allow for the installation of a groundwater monitoring well, from which a groundwater sample was collected.
- 2.6 The sampling exercise was supervised by land contamination specialist to determine the sampling depths for each sampling locations, and inspect for the presence of non-aqueous phase liquid (NAPL) or other signs of potential land contamination.
- 2.7 All collected Soil and Groundwater samples were stored and transported at a temperature of 4°C. The samples were delivered to ALS Technichem (HK) Pty Ltd, a Hong Kong Laboratory Accreditation Scheme (HOKLAS) analytical laboratory, on the same day as far as possible, for testing and analysis on the proposed the Chemicals of Concern (CoCs).

Quality Control and Quality Assurance (QA/QC)

- 2.8 A chain of custody system shall be operated as part of the QA/QC procedure. The laboratory accredited QA/QC procedures shall be followed as below:

Table 2-2 QA/QC Requirements

Samples taken under QA/QC procedures	Sampling Frequency	Testing Parameters
Duplicate samples	- 1 for every 20 Soil samples - 1 for every 20 GW samples	All parameters that are tested for the proposed soil and groundwater samples at the proposed sampling points ¹
Equipment blank	- 1 for every 20 Soil samples - 1 for every 20 GW samples	All parameters that are tested for the proposed soil and groundwater samples at the proposed sampling points ¹
Field Blank	- 1 for every 20 Soil samples - 1 for every 20 GW samples	All parameters that are tested for the proposed soil and groundwater samples at the proposed sampling points ¹
Trip Blank	1 for every trip with samples that require the analysis of VOCs	All VOCs parameters that are tested for the proposed soil and groundwater samples at the proposed sampling points ¹

Remarks:

- 1) Refer to **Table 2-1** for the proposed testing parameters at the proposed sampling points and **Table 3-2** and **Table 3-3** for the laboratory analysis schedule.

3 CONTAMINATION ASSESSMENT RESULTS

Summary of Samples Collected

- 3.1 The sampling for boreholes ENV-BH12, ENV-BH13, ENV-BH14 and ENV-BH15 within the concerned areas in “Waste Storage Area” (i.e. lubrication oil, spent soil, chemical waste, waste steel storage area) had been conducted from 24th November 2021 to 6th January 2022, and supervised by land contamination specialist from Cinotech. A total of 19 soil samples and 4 groundwater samples were taken and their findings are summarized in this CAR-Part 3. The as-built sampling locations and drillhole records are illustrated in **Figure 1** and attached in **Appendix C** respectively.
- 3.2 The list of samples taken are summarized in **Table 3-1**. The details of the samples taken at each borehole, including sampling date, depth of each soil and groundwater sample, and the field measurements taken before groundwater sampling are enclosed in **Appendix D**.

Table 3-1 Samples Inventory

Sampling Location	Sampling Depth [mbgl] of Soil Sample no. [N]					No. of GW Samples Collected
	N=1	N=2	N=3	N=4	N=5	
ENV-BH12	0.5	1.5	2.5 ^[1]	3.0	[1]	1
ENV-BH13	0.5	1.5	3.0	4.5	6.0	1
ENV-BH14	0.5	1.5	3.0	4.5	6.0	1
ENV-BH15	0.5	1.5	3.0	4.5	6.0	1

[1] A sample was initially planned to be collected at the nominal depth of 6mbgl or 4.5m (~2m below prevailing GW level), as far as possible, however referring to the lithologic description (**Appendix C**), cobble sized rock fragments were presented at the nominal depth of 3.5mbgl. Hence, no sample was collected at the sampling depth below 3.5mbgl. Nevertheless, to ensure the soil sample numbers to be collected are sufficient, an additional soil sample at the nominal depth of 2.5mbgl were collected.

* N is the ordinal number for the sample collected at each sampling location

- 3.3 According to sampling frequency shown in **Table 2-2**, 1 duplicate sample, 1 equipment blank and 1 field blank sample are collected for soil and groundwater sampling respectively; while a total of 4 trip blank samples are collected for the SI.
- 3.4 The soil and groundwater samples were sent to the ALS Technichem (HK) Pty Limited, a HOKLAS accredited laboratory for analysing the CoCs listed in **Table 2-1**. All laboratory test methods have been accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS). The reporting limit for laboratory analysis provided by the ALS Technichem (HK) Pty Limited is also listed in **Table 3-2** and **Table 3-3**.

On site Observation

- 3.5 Before drilling and during the SI for all boreholes, no abnormal smell and/ or other trace of pollutant on the ground surfaces was observed. For ENV-BH12, cobble sized rock fragments were presented at the nominal depth of 3.5mbgl. The photo records and the drillhole records for the SI works at the “Waste Storage Area” can be found in **Appendix B** and **Appendix C** respectively.

- 3.6 The boreholes at all sampling locations have been drilled to at least 2m below the final groundwater level. No exceedance was recorded in the sampling results and no traces of contamination were detected during the borehole drilling within the “Waste Storage Area”. Therefore, no additional sampling at further depths is required.
- 3.7 During the groundwater purging/ sampling processes, no abnormal smell, colour, or NAPL has been observed. Prior to sampling, the wells were purged with at least approximately five times the well volume at each sampling event to remove silt and drilling fluid residue from the wells, with reference to the SCAP. Samples were taken by using a bailer within 24 hours of the wells being purged.

Laboratory Results & Interpretation

- 3.8 All of the soil and groundwater samples (including duplicate samples, trip blank, equipment blank and field blanks) were delivered to ALS Technichem (HK) Pty Limited for laboratory analysis. The laboratory reports and chain of custody forms are enclosed in **Appendix F**.
- 3.9 According to the agreed SCAP, the RBRGs for the land use of industrial, as listed in Table 2.1 of EPD’s *Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management*, are adopted for the interpretation of SI results at the “Waste Storage Area”. The laboratory results are compared against the adopted RBRGs and soil saturation limit (C_{sat}) for soil samples and the adopted RBRGs and the solubility limits for groundwater samples. No exceedance of RBRG, soil saturation limit and solubility limits are recorded for both soil samples and groundwater samples. Therefore, no further sampling and remediation are required. The detailed laboratory testing results and the point-by-point comparison for each sample are listed in **Appendix E**.

Table 3-2 Soil Sample Concentrations and Exceedances of RBRGs and Csat

Chemical	Frequency of Detection (x/y)	Range of Detected Concentration	Range of Method Reporting Limit (mg/kg)	Analytical Method	Industrial RBRG (mg/kg)	Csat (mg/kg)	Maximum Detected Concentration Exceeds (check if applicable)	
							RBRG	Csat
Metal								
Antimony	4/19	BDL - 1.00E+0	1.00E+00	USEPA Method 6020	2.61E+02	-	FALSE	----
Arsenic	19/19	1.00E+0 - 1.70E+1	1.00E+00		1.96E+02	-	FALSE	----
Barium	19/19	1.78E+1 - 4.29E+2	1.00E+00		1.00E+04	-	FALSE	----
Cadmium	7/19	BDL - 5.00E-1	2.00E-01		6.53E+02	-	FALSE	----
Chromium (III)	19/19	2.70E+0 - 7.37E+1	1.00E+00		1.00E+04	-	FALSE	----
Chromium (VI)	5/19	BDL - 1.70E+0	1.00E+00	USEPA Method 3060 APHA Method 3500 Cr:D	1.96E+03	-	FALSE	----
Cobalt	18/19	BDL - 1.46E+2	1.00E+00	USEPA Method 6020	1.00E+04	-	FALSE	----
Copper	19/19	8.00E+0 - 8.50E+1	1.00E+00		1.00E+04	-	FALSE	----
Lead	19/19	2.10E+1 - 8.40E+1	1.00E+00		2.29E+03	-	FALSE	----
Manganese	19/19	1.67E+2 - 4.47E+3	1.00E+00		1.00E+04	-	FALSE	----
Mercury	2/19	BDL - 7.00E-2	5.00E-02	USEPA Method 3112B	3.84E+01	-	FALSE	----
Molybdenum	15/19	BDL - 1.10E+1	1.00E+00	USEPA Method 6020	3.26E+03	-	FALSE	----
Nickel	19/19	1.00E+0 - 3.00E+1	1.00E+00		1.00E+04*	-	----	----
Tin	19/19	2.60E+0 - 8.97E+1	1.00E+00		1.00E+04	-	FALSE	----
Zinc	19/19	5.30E+1 - 1.27E+2	1.00E+00		1.00E+04	-	FALSE	----
VOCs								
2-Propanone (Acetone)	0/19	BDL	5.00E+01	USEPA Method 8260	1.00E+04*	***	----	----
Benzene	0/19	BDL	2.00E-01		9.21E+00	3.36E+02	FALSE	FALSE
Bromodichloromethane	0/19	BDL	1.00E-01		2.85E+00	1.03E+03	FALSE	FALSE
2-Butanone (MEK)	0/19	BDL	5.00E+00		1.00E+04	***	FALSE	----
Chloroform	0/19	BDL	4.00E-02		1.54E+00	1.10E+03	FALSE	FALSE
Ethylbenzene	0/19	BDL	5.00E-01		8.24E+03	1.38E+02	FALSE	FALSE
Methyl tert-Butyl Ether	0/19	BDL	5.00E-01		7.01E+01	2.38E+03	FALSE	FALSE
Methylene Chloride	0/19	BDL	5.00E-01		1.39E+01	9.21E+02	FALSE	FALSE
Styrene	0/19	BDL	5.00E-01		1.00E+04*	4.97E+02	----	FALSE
Tetrachloroethene	0/19	BDL	4.00E-02		7.77E-01	9.71E+01	FALSE	FALSE
Toluene	0/19	BDL	5.00E-01		1.00E+04*	2.35E+02	----	FALSE
Trichloroethene	0/19	BDL	1.00E-01		5.68E+00	4.88E+02	FALSE	FALSE
Xylenes (Total)	0/19	BDL	2.00E+00		1.23E+03	1.50E+02	FALSE	FALSE
SVOCs								
Acenaphthene	0/19	BDL	5.00E-01	USEPA Method 8270	1.00E+04	6.02E+01	FALSE	FALSE
Acenaphthylene	0/19	BDL	5.00E-01	1.00E+04	1.98E+01	FALSE	FALSE	

Chemical	Frequency of Detection (x/y)	Range of Detected Concentration	Range of Method Reporting Limit (mg/kg)	Analytical Method	Industrial RBRG (mg/kg)	C _{sat} (mg/kg)	Maximum Detected Concentration Exceeds (check if applicable)	
							RBRG	C _{sat}
Anthracene	0/19	BDL	5.00E-01		1.00E+04	2.56E+00	FALSE	FALSE
Benzo(a)anthracene	0/19	BDL	5.00E-01		9.18E+01	-	FALSE	----
Benzo(a)pyrene	0/19	BDL	5.00E-01		9.18E+00	-	FALSE	----
Benzo(b)fluoranthene	0/19	BDL	5.00E-01		1.78E+01	-	FALSE	----
Benzo(g,h,i)perylene	0/19	BDL	5.00E-01		1.00E+04	-	FALSE	----
Benzo(k)fluoranthene	0/19	BDL	5.00E-01		9.18E+02	-	FALSE	----
bis(2-ethylhexyl)phthalate	0/19	BDL	5.00E+00		9.18E+01	-	FALSE	----
Chrysene	0/19	BDL	5.00E-01		1.14E+03	-	FALSE	----
Dibenz(a,h)anthracene	0/19	BDL	5.00E-01		9.18E+00	-	FALSE	----
Fluoranthene	0/19	BDL	5.00E-01		1.00E+04	-	FALSE	----
Fluorene	0/19	BDL	5.00E-01		1.00E+04	5.47E+01	FALSE	FALSE
Hexachlorobenzene	0/19	BDL	2.00E-01		5.82E-01	-	FALSE	----
Indeno(1.2.3.cd)pyrene	0/19	BDL	5.00E-01		9.18E+01	-	FALSE	----
Naphthalene	0/19	BDL	5.00E-01		4.53E+02	1.25E+02	FALSE	FALSE
Phenanthrene	0/19	BDL	5.00E-01		1.00E+04	2.80E+01	FALSE	FALSE
Phenol	0/19	BDL	5.00E-01		1.00E+04	7.26E+03	FALSE	FALSE
Pyrene	0/19	BDL	5.00E-01		1.00E+04*	-	----	----
PCRs								
C6 - C8 Fraction	0/19	BDL	5.00E+00	USEPA Method 8260/8015	1.00E+04	1.00E+03	FALSE	FALSE
C9 - C16 Fraction	0/19	BDL	2.00E+02		1.00E+04	3.00E+03	FALSE	FALSE
C17 - C35 Fraction	0/19	BDL	5.00E+02		1.00E+04	5.00E+03	FALSE	FALSE

Noted: All results are presented in mg/kg
BDL denotes below detection limit.
"x = number of samples in which chemical was found above the method reporting limit
y = number of samples analyzed for chemical"
* indicates a 'ceiling limit' concentration
*** indicates that the soil saturation limit exceeds the 'ceiling limit' therefore the RBRG applies.
Chromium III = Total Chromium – Chromium VI
---- = Not applicable as no soil saturation limit is given.

Table 3-3 Groundwater Sample Concentrations and Exceedances of RBRGs and Solubility Limits

Chemical	Frequency of Detection (x/y)	Range of Detected Concentration	Range of Method Reporting Limit (mg/L)	Analytical Method	Industrial (mg/L)	Solubility Limit (mg/L)	Maximum Detected Concentration Exceeds (check if applicable)	
							RBRG	Solubility
Metal								
Mercury	0/4	BDL	5.00E-04	USEPA Method 3112B	6.79E+00	-	FALSE	----
VOCs								
2-Propanone (Acetone)	0/4	BDL	5.00E-01	USEPA Method 8260	1.00E+04	***	FALSE	----
Benzene	0/4	BDL	5.00E-03		5.40E+01	1.75E+03	FALSE	FALSE
Bromodichloromethane	0/4	BDL	5.00E-03		2.62E+01	6.74E+03	FALSE	FALSE
2-Butanone (MEK)	0/4	BDL	5.00E-02		1.00E+04	***	FALSE	----
Chloroform	2/4	BDL - 6.60E-3	5.00E-03		1.13E+01	7.92E+03	FALSE	FALSE
Ethylbenzene	0/4	BDL	5.00E-03		1.00E+04	1.69E+02	FALSE	FALSE
Methyl tert-Butyl Ether	0/4	BDL	5.00E-03		1.81E+03	***	FALSE	----
Methylene Chloride	0/4	BDL	5.00E-02		2.24E+02	***	FALSE	----
Styrene	0/4	BDL	5.00E-03		1.00E+04	3.10E+02	FALSE	FALSE
Tetrachloroethene	0/4	BDL	5.00E-03		2.95E+00	2.00E+02	FALSE	FALSE
Toluene	0/4	BDL	5.00E-03		1.00E+04	5.26E+02	FALSE	FALSE
Trichloroethene	0/4	BDL	5.00E-03		1.42E+01	1.10E+03	FALSE	FALSE
Xylenes (Total)	0/4	BDL	2.00E-02		1.57E+03	1.75E+02	FALSE	FALSE
SVOCs								
Acenaphthene	0/4	BDL	2.00E-03	USEPA Method 8270	1.00E+04	4.24E+00	FALSE	FALSE
Acenaphthylene	0/4	BDL	2.00E-03		1.00E+04	3.93E+00	FALSE	FALSE
Anthracene	0/4	BDL	2.00E-03		1.00E+04	4.34E-02	FALSE	FALSE
Benzo(b)fluoranthene	0/4	BDL	1.00E-03		7.53E+00	1.50E-03	FALSE	FALSE
Chrysene	0/4	BDL	1.00E-03		8.12E+02	1.60E-03	FALSE	FALSE
Fluoranthene	0/4	BDL	2.00E-03		1.00E+04	2.06E-01	FALSE	FALSE
Fluorene	0/4	BDL	2.00E-03		1.00E+04	1.98E+00	FALSE	FALSE
Hexachlorobenzene	0/4	BDL	4.00E-03		6.95E-01	6.20E+00	FALSE	FALSE
Naphthalene	0/4	BDL	2.00E-03		8.62E+02	3.10E+01	FALSE	FALSE
Phenanthrene	0/4	BDL	2.00E-03		1.00E+04	1.00E+00	FALSE	FALSE
Pyrene	0/4	BDL	2.00E-03		1.00E+04	1.35E-01	FALSE	FALSE
PCRs								
C6 - C8 Fraction	0/4	BDL	2.00E-02	USEPA Method 8260/8015	1.15E+03	5.23E+00	FALSE	FALSE
C9 - C16 Fraction	0/4	BDL	5.00E-01		9.98E+03	2.80E+00	FALSE	FALSE
C17 - C35 Fraction	0/4	BDL	5.00E-01		1.78E+02	2.80E+00	FALSE	FALSE
Notes: All results are presented in mg/L BDL denotes below detection limit. x = number of samples in which chemical was found above the method reporting limit y = number of samples analyzed for chemical * indicates a 'ceiling limit' concentration *** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies. ---- = Not applicable as no solubility limit is given.								

Interpretation of Laboratory Results of QA/QC Samples

- 3.10 The field QA/QC samples include 1 duplicate soil sample, 1 duplicate groundwater sample, 1 equipment blank for soil sample, 1 equipment blank for groundwater sample, 1 field blank sample for soil, 1 field blank for water and 4 trip blank samples.
- 3.11 All results of the tested parameters for the field, equipment and trip blanks are below the corresponding reporting limits. The relative percentage difference (RPD) was used to measure the representativeness and/or precision of the duplicate samples. In accordance with the USEPA guideline, the acceptable limits for the RPDs are less than 50% and 30% for soil and groundwater samples respectively. The greatest RPD calculated for the duplicated soil samples collected from ENV-BH12 is 28.60% while that calculated for the duplicated groundwater samples from ENV-BH14 is 3.39% which are well within the acceptable limit. Therefore, the results of the original and duplicate samples are considered as identical samples.
- 3.12 Hence, the sampling method is consistent throughout the SI; all soil/ groundwater samples were not contaminated from the sampling handling, and that the decontamination procedures had been followed. All field QA/QC results are included in the laboratory chemical testing reports attached in **Appendix F**.

4 CONCLUSION

- 4.1 In accordance to the approved SCAP, the sampling works for boreholes ENV-BH12, ENV-BH13, ENV-BH14 and ENV-BH15 were collected and supervised by Cinotech. The soil and groundwater samples were delivered to ALS Technichem (HK) Pty Ltd for testing and analysis of the CoCs according to the SCAP.
- 4.2 RBRGs for Industrial have been adopted for the “Waste Storage Area” and the laboratory results for the sampling works show that there are no exceedances of the adopted RBRGs for the “Waste Storage Area”. As no contaminated soil and groundwater was found within the “Waste Storage Area”, no remediation actions are required for contaminated soil and groundwater for the scheduled land use of the “Waste Storage Area”.

FIGURES



Legend

Waste Storage Area



As-built Sampling Locations



Borehole ID	Easting	Northing
ENV-BH12	820747.70	836622.77
ENV-BH13	820746.02	836616.98
ENV-BH14	820744.40	836611.88
ENV-BH15	820742.80	836605.66

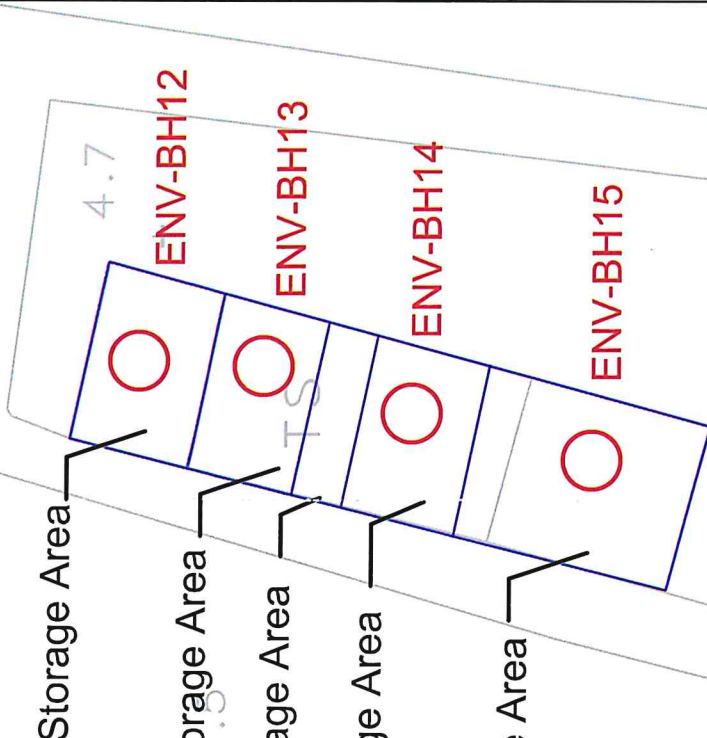
Lubrication Oil Storage Area

Spent Oil Storage Area

Waste Storage Area

Chemical Waste Storage Area

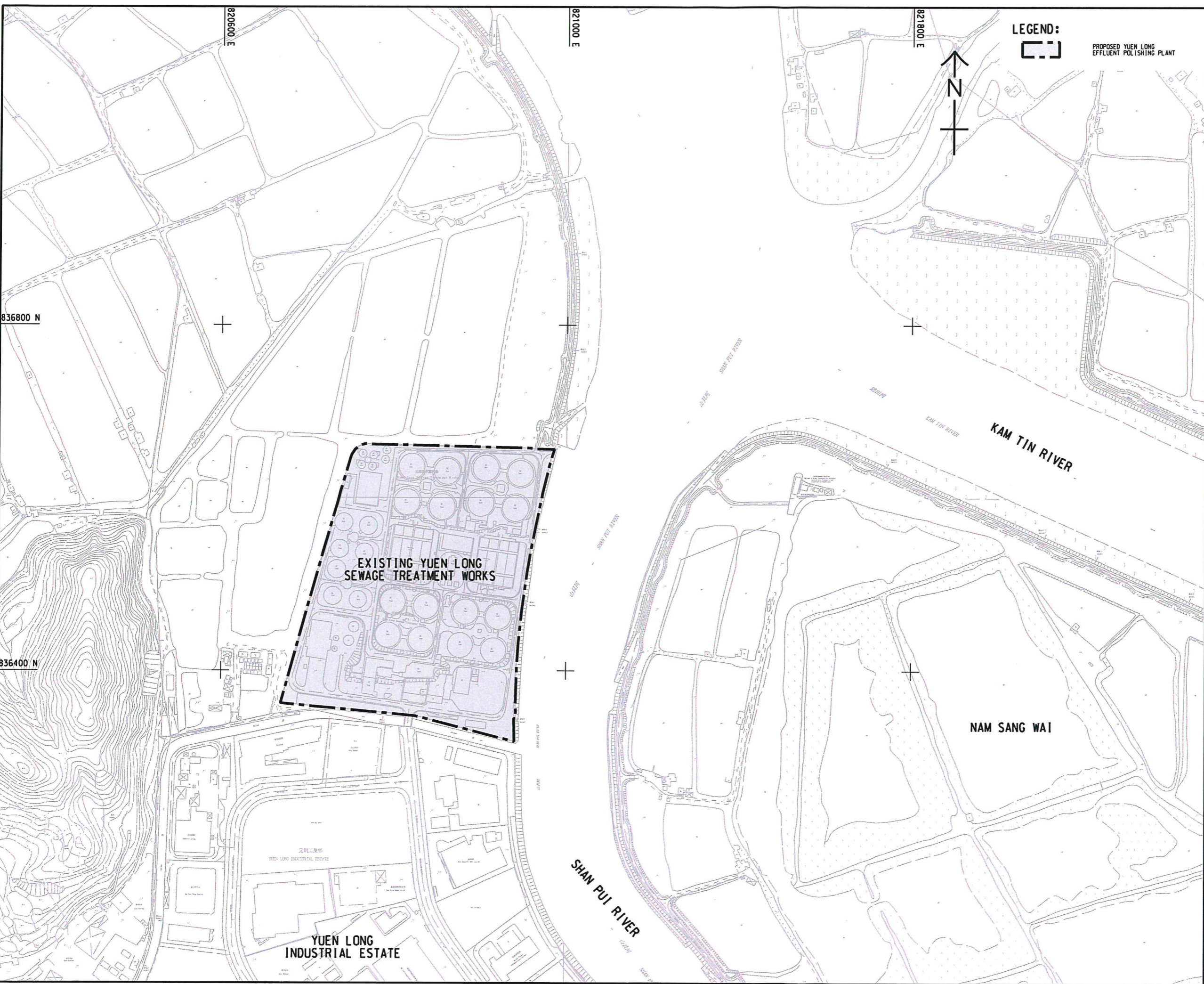
Waste Steel Storage Area



SCALE	1:250@A4	DATE	Feb 2022
CHECK	KC	DRAWN	SC
JOB No.	MA21002	FIGURE NO.	1
		REV	-

APPENDIX A
SITE LOCATIONS & LAYOUT PLANS

Plot File by: ZENGFX_2017/8/13
 PATH: P:\PROJECTS\60505476\DRAWING\REPORT\CAP\CAP_711.dgn
 Project Management Initials: Designer: Checked: Approved: ISO A1 564mm x 841mm



LEGEND:
 PROPOSED YUEN LONG EFFLUENT POLISHING PLANT

AECOM

PROJECT
YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
 渠務署
 Drainage Services Department

CONSULTANT
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 水利工程有限公司

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE **DIMENSION UNIT**
 A1 1 : 2000 METRES

KEY PLAN

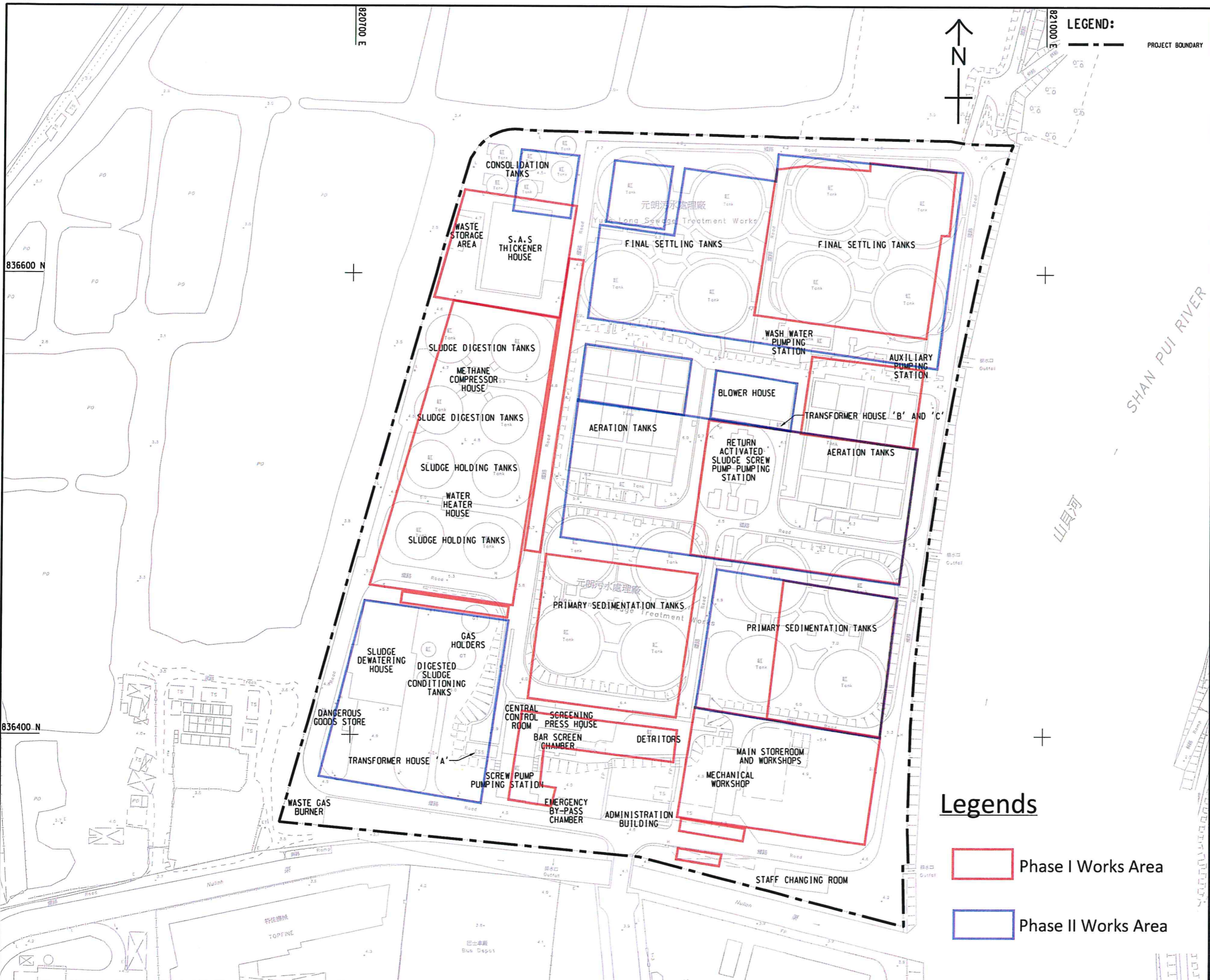
PROJECT NO. **CONTRACT NO.**
 60505476 CE 3/2015 (DS)

SHEET TITLE
 LOCATION OF PROPOSED YUEN LONG EFFLUENT POLISHING PLANT

SHEET NUMBER
 60505476/CAP/711

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Pld File by: CAOPA 2017/6/29
 PATH: p:\projects\605476\reporting\report\cap\cap_712.dgn
 Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm



LEGEND:
 - - - - - PROJECT BOUNDARY

Legends

- Phase I Works Area
- Phase II Works Area

AECOM
 PROJECT
YUEN LONG EFFLUENT POLISHING PLANT - INVESTIGATION, DESIGN AND CONSTRUCTION

CLIENT
 渠務署
Drainage Services Department

CONSULTANT
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程師有限公司

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE
 AS 1:1500
DIMENSION UNIT
 METRES

KEY PLAN

PROJECT NO.
 60505476
CONTRACT NO.
 CE 3/2015 (DS)

SHEET TITLE
 GENERAL SITE LAYOUT PLAN OF EXISTING YLSTW

SHEET NUMBER
 60505476/CAP/712

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APPENDIX B
PHOTO RECORD



lab-grade detergent



Cleaning with lab-grade detergent and distilled Water



Equipment Blanks



Collecting Equipment Blank for GW Sampling



Collecting Equipment Blank



Field Blanks



Trial Pits



Collecting Soil Samples at 0.5m bgl



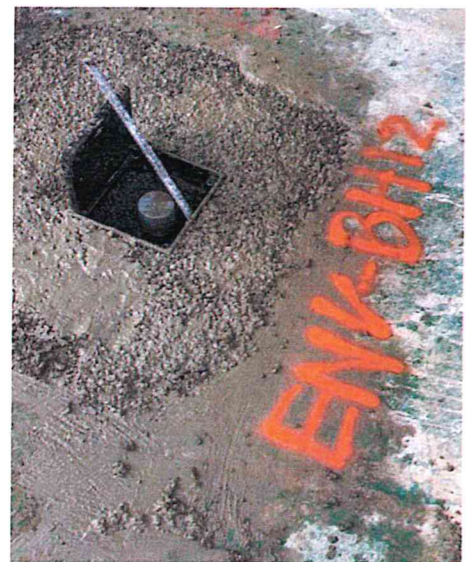
Preparation for Drilling



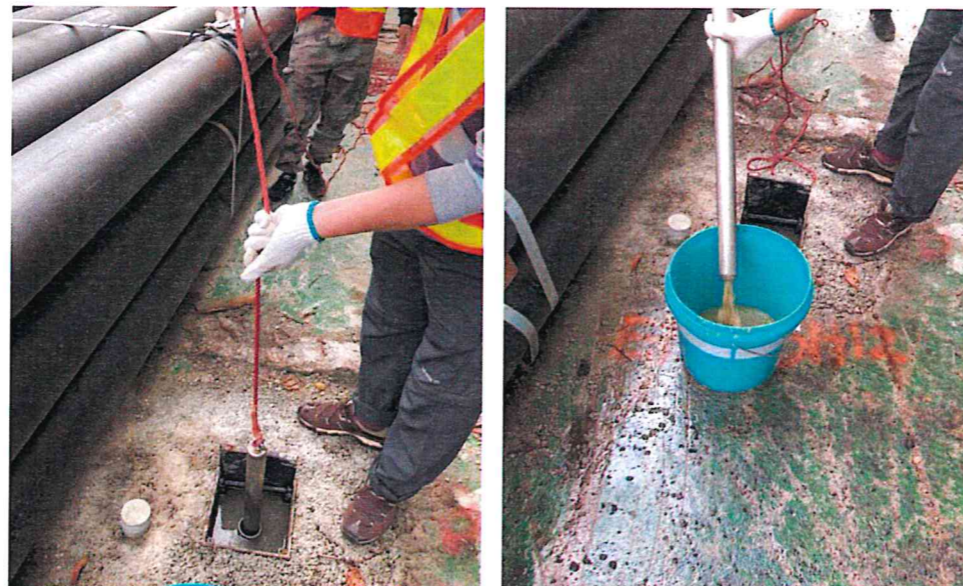
Soil Sampling



Soil Samples



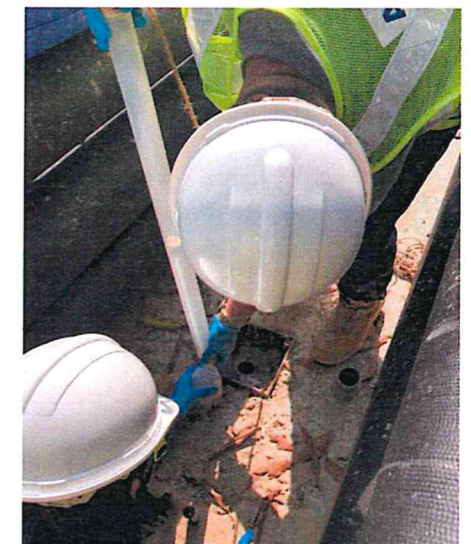
Set-up of Monitoring Well



Purging



Ground Water Samples



**APPENDIX C
DRILLHOLE RECORD**



Drillhole Record

Drillhole No. ENV-BH12

Contract No. DC/2019/10

Sheet 1 of 1

PROJECT **Yuen Long Effluent Polishing Plant - Main Works for Stage 1**

METHOD **Rotary Drilling**

CO-ORDINATES

Works Order No.

Machine & No. **MP-03**

E **820747.70**
N **836622.77**

Date 24/11/21 to 24/11/21

FLUSHING MEDIUM **DRY**

ORIENTATION **VERTICAL**

GROUND LEVEL **+4.66 mPD**

Drilling Progress (dd/mm/yyyy)	Casing depth (m) / Size (mm)	Water level (m) / Time (hh:mm)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.I. / Test Depths (m)	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
										No.	Type/Depth					
24/11/2021																CONCRETE SLAB
										1	1.50					Brown mottled light greyish brown, silty fine to medium SAND with some angular fine to coarse gravel sized rock fragments. (FILL)
				100						2	1.95					
																Brown, silty fine to medium SAND with occasional fine to medium gravel sized rock fragments. (FILL)
				100						3	2.50	+2.16	2.50			
																Light grey, COBBLE sized rock fragments. (FILL) Drillhole completed at 3.50m
	3.45 140mm	Dry at 18:00		100						4	2.95					
24/11/2021										5	3.00					
										6	3.40	+1.21	3.45			

● Small Disturbed Sample	▼ Water Level	LOGGED <u>S.W.Law</u>
○ Large Disturbed Sample	⊥ Standard Penetration Test	DATE <u>01/12/2021</u>
▨ SPT Liner Sample	⊥ Permeability Test	CHECKED <u>K.W.Yeung</u>
▨ U76 Undisturbed Sample	⊥ Piezometer Tip	DATE <u>02/12/2021</u>
▨ U100 Undisturbed Sample	⊥ Standpipe Tip	
▨ Mazier Sample	⊥ Pressuremeter Test	
▨ Piston Sample	⊥ Impression Packer Test	
▨ Water Sample	⊥ Vane Shear Test	

REMARKS
 1. An inspection pit was excavated to a depth of 0.60m by the main contractor.
 2. Groundwater monitoring well (a standpipe) was installed at depth of 3.20m.



Drillhole Record

Drillhole No. ENV-BH13

Contract No. DC/2019/10

Sheet 1 of 1

PROJECT **Yuen Long Effluent Polishing Plant - Main Works for Stage 1**

METHOD **Rotary Drilling**

CO-ORDINATES

Works Order No.

Machine & No. **MP-03**

E 820746.02

Date 28/11/21 to 28/11/21

N 836616.98

FLUSHING MEDIUM **DRY**

ORIENTATION **VERTICAL**

GROUND LEVEL **+4.66 mPD**

Drilling Progress (dd/mm/yyyy)	Casing depth (m) / Size (mm)	Water level (m) / Time (hh:mm)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.L. / Test Depths (m)	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description
										No.	Type	Depth					
28/11/2021											INSPECTION PIT	+4.16	0.50	△		CONCRETE SLAB	
1				100							1	1.50				Stiff, brown mottled orangish brown, sandy clayey SILT with occasional subangular fine to medium gravel sized rock fragments. (FILL)	
2											2	1.95					
3				100							3	2.50					
4											4	2.95					
5				100							5	3.00					
6											6	3.45					
4																	
5				100							7	4.50	+0.16	4.50		Soft to firm, dark grey, silty CLAY. (POND DEPOSIT)	
6	6.00 140mm																
6		4.90m at 18:00		100							9	6.00	-1.34	6.00		Soft to firm, greenish grey, silty CLAY with occasional shell fragments. (ESTUARINE DEPOSIT)	
28/11/2021											10	6.45	-1.84	6.50		Drillhole completed at 6.50m	

● Small Disturbed Sample	▼ Water Level	LOGGED <u>S.W.Law</u> DATE <u>01/12/2021</u> CHECKED <u>K.W.Yeung</u> DATE <u>02/12/2021</u>
○ Large Disturbed Sample	⊥ Standard Penetration Test	
▨ SPT Liner Sample	⊥ Permeability Test	
▨ U76 Undisturbed Sample	⊥ Piezometer Tip	
▨ U100 Undisturbed Sample	⊥ Standpipe Tip	
▨ Mazier Sample	⊥ Pressuremeter Test	
▨ Piston Sample	⊥ Impression Packer Test	
▨ Water Sample	⊥ Vane Shear Test	

REMARKS
 1. An inspection pit was excavated to a depth of 0.60m by the main contractor.
 2. Groundwater monitoring well (a standpipe) was installed at depth of 6.00m.



Drillhole Record

Drillhole No. ENV-BH14

Contract No. DC/2019/10

Sheet 1 of 1

PROJECT **Yuen Long Effluent Polishing Plant - Main Works for Stage 1**

METHOD **Rotary Drilling**

CO-ORDINATES

Works Order No.

Machine & No. **MP-03**

E 820744.40

Date 29/11/21 to 29/11/21

N 836611.88

FLUSHING MEDIUM **DRY**

ORIENTATION **VERTICAL**

GROUND LEVEL **+4.68 mPD**

Drilling Progress (dd/mm/yyyy)	Casing depth (m) / Size (mm)	Water level (m) / Time (hh:mm)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.I. / Test Depths (m)	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
										No.	Type Depth					
29/11/2021												+4.18	0.50	△		CONCRETE SLAB
1																Firm, orangish brown mottled black, sandy clayey SILT with some subangular fine to medium gravel sized rock fragments. (FILL)
2				100						1	1.50					
3										2	1.95					
4				100						3	3.00					
5										4	3.45					Soft, greenish grey, silty CLAY with occasional shell fragments. (ESTUARINE DEPOSIT)
6				100						5	4.50	+0.18	4.50			
7	6.00 / 140mm	4.95m at 18:00								6	4.95					Drillhole completed at 6.50m
8				100						7	6.00					
29/11/2021										8	6.45	-1.82	6.50			

<ul style="list-style-type: none"> ● Small Disturbed Sample ○ Large Disturbed Sample ▨ SPT Liner Sample ▩ U76 Undisturbed Sample ▧ U100 Undisturbed Sample ▦ Mazier Sample ▤ Piston Sample ▣ Water Sample ▼ Water Level ⊥ Standard Penetration Test ⊥ Permeability Test ⊥ Piezometer Tip ⊥ Standpipe Tip ⊥ Pressuremeter Test ⊥ Impression Packer Test ⊥ Vane Shear Test 	<p>LOGGED <u>S.W.Law</u></p> <p>DATE <u>01/12/2021</u></p> <p>CHECKED <u>K.W.Yeung</u></p> <p>DATE <u>02/12/2021</u></p>	<p>REMARKS</p> <p>1. An inspection pit was excavated to a depth of 0.60m by the main contractor.</p> <p>2. Groundwater monitoring well (a standpipe) was installed at depth of 6.00m.</p>
--	--	--



Drillhole Record

Drillhole No. ENV-BH15

Contract No. DC/2019/10

Sheet 1 of 1

PROJECT **Yuen Long Effluent Polishing Plant - Main Works for Stage 1**

METHOD **Rotary Drilling**

CO-ORDINATES

Works Order No.

Machine & No. **MP-03**

E 820742.80

Date 29/11/21 to 29/11/21

N 836605.66

FLUSHING MEDIUM **DRY**

ORIENTATION **VERTICAL**

GROUND LEVEL **+4.66 mPD**

Drilling Progress (dd/mm/yyyy)	Casing depth (m) /Size (mm)	Water level (m) /Time (hh:mm)	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D. %	Fracture Index	F.I. / Test Depths (m)	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
										No.	Type Depth					
29/11/2021																CONCRETE SLAB
																Stiff, orangish brown mottled dark orangish brown, sandy clayey SILT with occasional subangular fine to medium gravel sized rock fragments. (FILL)
				100						1	1.50					
										2	1.95					
										3	3.00					
				100						4	3.45					
										5	4.50	+0.16	4.50			Soft, greenish grey, sandy silty CLAY. (ESTUARINE DEPOSIT)
				100						6	4.95					
	6.00 140mm									7	6.00	-1.34	6.00			Soft, greenish grey, sandy silty CLAY with occasional shell and decayed wood fragments. (ESTUARINE DEPOSIT)
29/11/2021		5.00m at 18:00		100						8	6.45	-1.84	6.50			Drillhole completed at 6.50m

- Small Disturbed Sample
- Large Disturbed Sample
- ▨ SPT Liner Sample
- ▩ U76 Undisturbed Sample
- ▧ U100 Undisturbed Sample
- ▨ Mazier Sample
- Piston Sample
- △ Water Sample
- ⊥ Water Level
- ⊥ Standard Penetration Test
- ⊥ Permeability Test
- ⊥ Piezometer Tip
- ⊥ Standpipe Tip
- ⊥ Pressuremeter Test
- ⊥ Impression Packer Test
- ⊥ Vane Shear Test

LOGGED S.W.Law

DATE 01/12/2021

CHECKED K.W.Yeung

DATE 02/12/2021

REMARKS
 1. An inspection pit was excavated to a depth of 0.60m by the main contractor.
 2. Groundwater monitoring well (a standpipe) was installed at depth of 6.00m.

**APPENDIX D
LIST OF SOIL AND GROUNDWATER
SAMPLE**

List of Samples for Waste Storage Area

Borehole		ENV-BH12	ENV-BH13	ENV-BH14	ENV-BH15
		As-built Coordinate			
Easting (m)		820747.70	820746.02	820744.40	820742.80
Northing (m)		836622.77	836616.98	836611.88	836605.66
		Date and Depth of the Samples			
Soil Sample 1	Sample ID	ENV-BH12-0.5m ¹	ENV-BH13-0.5m	ENV-BH14-0.5m	ENV-BH15-0.5m
	Depth (m bgl)	0.5	0.5	0.5	0.5
	Date	24-Nov-21	25-Nov-21	25-Nov-21	29-Nov-21
Soil Sample 2	Sample ID	ENV-BH12-1.5m	ENV-BH13-1.5m	ENV-BH14-1.5m	ENV-BH15-1.5m
	Depth (m bgl)	1.5	1.5	1.5	1.5
	Date	24-Nov-21	25-Nov-21	29-Nov-21	29-Nov-21
Soil Sample 3	Sample ID	ENV-BH12-2.5m	ENV-BH13-3m	ENV-BH14-3m	ENV-BH15-3m
	Depth (m bgl)	2.5	3	3	3
	Date	24-Nov-21	25-Nov-21	29-Nov-21	29-Nov-21
Soil Sample 4	Sample ID	ENV-BH12-3m	ENV-BH13-4.5m	ENV-BH14-4.5m	ENV-BH15-4.5m
	Depth (m bgl)	3.0	4.5	4.5	4.5
	Date	24-Nov-21	25-Nov-21	29-Nov-21	29-Nov-21
Soil Sample 5	Sample ID	N/A	ENV-BH13-6m	ENV-BH14-6m	ENV-BH15-6m
	Depth (m bgl)	N/A	6	6	6
	Date	N/A	25-Nov-21	29-Nov-21	29-Nov-21
Groundwater Sample	Sample ID	ENV-BH12-GW	ENV-BH13-GW	ENV-BH14-GW ²	ENV-BH15-GW
	Date	6-Jan-22	6-Jan-22	6-Jan-22	6-Jan-22
	G.W. Level (m bgl)	1.29	1.63	1.73	1.47
	pH Value	8.6	7.2	7.2	7.1
	Temperature (°C)	23.8	24.9	25.0	23.7

Note:

[1] Duplicate Soil Sample has been taken for ENV-BH12-0.5m.

[2] Duplicate Groundwater Sample has been taken for ENV-BH14.

APPENDIX E
SUMMARY OF LABORATORY RESULT

DC/2019/10_Detailed Soil Sampling Analytical Results

Parameters	> Criteria	Industrial RBRG (mg/kg)	Soil Saturation Limit (Csat) (mg/kg)	Reporting Limit (mg/kg)	Maximum Value (mg/kg)	ENV-BH12				ENV-BH13					
						ENV-BH12-0.5m	ENV-BH12-1.5m	ENV-BH12-2.5m	ENV-BH12-3m	ENV-BH13-0.5m	ENV-BH13-1.5m	ENV-BH13-3m	ENV-BH13-4.5m	ENV-BH13-6m	
Metal															
Antimony	No	2.61E+02	-	1.00E+00	1.00E+00	BDL	BDL	BDL	1.00E+00	BDL	BDL	1.00E+00	BDL	BDL	BDL
Arsenic	No	1.96E+02	-	1.00E+00	1.70E+01	1.00E+00	6.00E+00	6.00E+00	8.00E+00	2.00E+00	7.00E+00	1.10E+01	1.10E+01	1.50E+01	1.50E+01
Barium	No	1.00E+04	-	1.00E+00	4.29E+02	1.82E+01	1.24E+02	1.33E+02	1.44E+02	1.78E+01	1.71E+02	1.17E+02	5.01E+01	2.60E+01	2.60E+01
Cadmium	No	6.53E+02	-	2.00E-01	5.00E-01	2.00E-01	2.00E-01	5.00E-01	2.00E-01	2.00E-01	BDL	BDL	BDL	BDL	BDL
Chromium (III)	No	1.00E+04	-	1.00E+00	7.37E+01	2.70E+00	4.11E+01	4.28E+01	3.87E+01	7.00E+00	3.68E+01	5.31E+01	2.58E+01	2.81E+01	2.81E+01
Chromium (VI)	No	1.96E+03	-	1.00E+00	1.70E+00	BDL	BDL	1.10E+00	BDL	BDL	BDL	1.10E+00	BDL	BDL	BDL
Cobalt	No	1.00E+04	-	1.00E+00	1.46E+02	BDL	2.09E+01	2.18E+01	2.57E+01	1.50E+00	2.12E+01	3.16E+01	1.17E+01	9.30E+00	9.30E+00
Copper	No	1.00E+04	-	1.00E+00	8.50E+01	8.00E+00	4.40E+01	4.50E+01	6.40E+01	1.50E+01	3.40E+01	4.30E+01	1.70E+01	1.30E+01	1.30E+01
Lead	No	2.29E+03	-	1.00E+00	8.40E+01	4.60E+01	2.80E+01	2.10E+01	3.20E+01	4.50E+01	3.80E+01	4.40E+01	3.40E+01	3.80E+01	3.80E+01
Manganese	No	1.00E+04	-	1.00E+00	4.47E+03	1.69E+02	1.87E+03	1.27E+03	1.33E+03	1.67E+02	1.26E+03	1.35E+03	3.39E+02	2.98E+02	2.98E+02
Mercury	No	3.84E+01	-	5.00E-02	7.00E-02	BDL	BDL	BDL	7.00E-02	BDL	BDL	BDL	BDL	BDL	BDL
Molybdenum	No	3.26E+03	-	1.00E+00	1.10E+01	4.00E+00	1.00E+00	BDL	BDL	6.00E+00	BDL	1.00E+00	2.00E+00	4.00E+00	4.00E+00
Nickel	No	1.00E+04*	-	1.00E+00	3.00E+01	1.00E+00	2.30E+01	2.10E+01	2.30E+01	2.00E+00	2.00E+01	1.90E+01	1.40E+01	1.60E+01	1.60E+01
Tin	No	1.00E+04	-	1.00E+00	8.97E+01	3.80E+00	5.47E+01	8.80E+00	8.30E+00	3.90E+00	8.30E+00	3.23E+01	7.90E+00	2.60E+00	2.60E+00
Zinc	No	1.00E+04	-	1.00E+00	1.27E+02	5.40E+01	1.10E+02	9.70E+01	1.27E+02	6.80E+01	7.40E+01	8.00E+01	5.30E+01	7.10E+01	7.10E+01
VOCs															
2-Propanone (Acetone)	No	1.00E+04*	***	5.00E+01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	No	9.21E+00	3.36E+02	2.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	No	2.85E+00	1.03E+03	1.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Butanone (MEK)	No	1.00E+04	***	5.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	No	1.54E+00	1.10E+03	4.00E-02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	No	8.24E+03	1.38E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl tert-Butyl Ether	No	7.01E+01	2.38E+03	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	No	1.39E+01	9.21E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Styrene	No	1.00E+04*	4.97E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	No	7.77E-01	9.71E+01	4.00E-02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	No	1.00E+04*	2.35E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	No	5.68E+00	4.88E+02	1.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (Total)	No	1.23E+03	1.50E+02	2.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SVOCs															
Acenaphthene	No	1.00E+04	6.02E+01	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Acenaphthylene	No	1.00E+04	1.98E+01	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Anthracene	No	1.00E+04	2.56E+00	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)anthracene	No	9.18E+01	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)pyrene	No	9.18E+00	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(b)fluoranthene	No	1.78E+01	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(g,h,i)perylene	No	1.00E+04	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(k)fluoranthene	No	9.18E+02	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bis(2-ethylhexyl)phthalate	No	9.18E+01	-	5.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	No	1.14E+03	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenz(a,h)anthracene	No	9.18E+00	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	No	1.00E+04	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	No	1.00E+04	5.47E+01	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hexachlorobenzene	No	5.82E-01	-	2.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Indeno(1,2,3,cd)pyrene	No	9.18E+01	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	No	4.53E+02	1.25E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenanthrene	No	1.00E+04	2.80E+01	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenol	No	1.00E+04	7.26E+03	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Pyrene	No	1.00E+04*	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hydrocarbons - PCR															
C6 - C8 Fraction	No	1.00E+04	1.00E+03	5.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C9 - C16 Fraction	No	1.00E+04	3.00E+03	2.00E+02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C17 - C35 Fraction	No	1.00E+04	5.00E+03	5.00E+02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Notes:

BDL denotes below detection limit.

The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the soil saturation limit

* indicates a 'ceiling limit' concentration

*** indicates that the soil saturation limit exceeds the 'ceiling limit' therefore the RBRG applies.

DC/2019/10_Detailed Soil Sampling Analytical Results

Parameters	> Criteria	Industrial RBRG (mg/kg)	Soil Saturation Limit (Csat) (mg/kg)	Reporting Limit (mg/kg)	Maximum Value (mg/kg)	ENV-BH14					ENV-BH15				
						ENV-BH14-0.5m	ENV-BH14-1.5m	ENV-BH14-3m	ENV-BH14-4.5m	ENV-BH14-6m	ENV-BH15-0.5m	ENV-BH15-1.5m	ENV-BH15-3m	ENV-BH15-4.5m	ENV-BH15-6m
Metal															
Antimony	No	2.61E+02	-	1.00E+00	1.00E+00	BDL	1.00E+00	1.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Arsenic	No	1.96E+02	-	1.00E+00	1.70E+01	2.00E+00	9.00E+00	9.00E+00	1.30E+01	1.70E+01	2.00E+00	8.00E+00	5.00E+00	1.40E+01	1.50E+01
Barium	No	1.00E+04	-	1.00E+00	4.29E+02	2.23E+01	1.82E+02	4.29E+02	3.45E+01	3.20E+01	1.99E+01	9.18E+01	1.01E+02	5.03E+01	3.41E+01
Cadmium	No	6.53E+02	-	2.00E-01	5.00E-01	3.00E-01	BDL	BDL	BDL	BDL	3.00E-01	BDL	BDL	BDL	BDL
Chromium (III)	No	1.00E+04	-	1.00E+00	7.37E+01	7.40E+00	5.75E+01	7.37E+01	3.18E+01	3.09E+01	5.30E+00	5.73E+01	5.04E+01	3.25E+01	2.90E+01
Chromium (VI)	No	1.96E+03	-	1.00E+00	1.70E+00	BDL	1.10E+00	1.70E+00	BDL	BDL	1.10E+00	BDL	BDL	BDL	BDL
Cobalt	No	1.00E+04	-	1.00E+00	1.46E+02	2.10E+00	1.95E+01	1.46E+02	1.02E+01	7.80E+00	2.50E+00	2.19E+01	2.02E+01	1.57E+01	9.30E+00
Copper	No	1.00E+04	-	1.00E+00	8.50E+01	2.00E+01	6.20E+01	8.50E+01	1.30E+01	1.30E+01	2.10E+01	7.10E+01	4.60E+01	2.20E+01	1.30E+01
Lead	No	2.29E+03	-	1.00E+00	8.40E+01	5.70E+01	4.20E+01	8.40E+01	3.80E+01	6.10E+01	5.50E+01	4.40E+01	4.00E+01	4.60E+01	5.00E+01
Manganese	No	1.00E+04	-	1.00E+00	4.47E+03	1.73E+02	2.46E+03	4.47E+03	6.32E+02	3.91E+02	1.93E+02	1.40E+03	3.56E+03	4.71E+02	4.23E+02
Mercury	No	3.84E+01	-	5.00E-02	7.00E-02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	5.00E-02	BDL
Molybdenum	No	3.26E+03	-	1.00E+00	1.10E+01	1.00E+01	2.00E+00	3.00E+00	5.00E+00	1.00E+00	1.10E+01	2.00E+00	BDL	3.00E+00	4.00E+00
Nickel	No	1.00E+04*	-	1.00E+00	3.00E+01	3.00E+00	2.40E+01	3.00E+01	1.90E+01	1.40E+01	3.00E+00	2.10E+01	2.20E+01	1.90E+01	1.60E+01
Tin	No	1.00E+04	-	1.00E+00	8.97E+01	4.40E+00	8.97E+01	3.17E+01	2.90E+00	5.10E+00	5.20E+00	6.81E+01	2.84E+01	5.50E+00	3.50E+00
Zinc	No	1.00E+04	-	1.00E+00	1.27E+02	8.90E+01	1.02E+02	1.26E+02	7.60E+01	7.30E+01	9.10E+01	7.10E+01	5.60E+01	6.80E+01	8.00E+01
VOCs															
2-Propanone (Acetone)	No	1.00E+04*	***	5.00E+01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	No	9.21E+00	3.36E+02	2.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	No	2.85E+00	1.03E+03	1.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Butanone (MEK)	No	1.00E+04	***	5.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	No	1.54E+00	1.10E+03	4.00E-02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	No	8.24E+03	1.38E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl tert-Butyl Ether	No	7.01E+01	2.38E+03	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	No	1.39E+01	9.21E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Styrene	No	1.00E+04*	4.97E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	No	7.77E-01	9.71E+01	4.00E-02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	No	1.00E+04*	2.35E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	No	5.68E+00	4.88E+02	1.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (Total)	No	1.23E+03	1.50E+02	2.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SVOCs															
Acenaphthene	No	1.00E+04	6.02E+01	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Acenaphthylene	No	1.00E+04	1.98E+01	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Anthracene	No	1.00E+04	2.56E+00	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)anthracene	No	9.18E+01	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)pyrene	No	9.18E+00	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(b)fluoranthene	No	1.78E+01	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(g,h,i)perylene	No	1.00E+04	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(k)fluoranthene	No	9.18E+02	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bis(2-ethylhexyl)phthalate	No	9.18E+01	-	5.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	No	1.14E+03	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenz(a,h)anthracene	No	9.18E+00	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	No	1.00E+04	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	No	1.00E+04	5.47E+01	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hexachlorobenzene	No	5.82E-01	-	2.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	No	9.18E+01	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	No	4.53E+02	1.25E+02	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenanthrene	No	1.00E+04	2.80E+01	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Phenol	No	1.00E+04	7.26E+03	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Pyrene	No	1.00E+04*	-	5.00E-01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hydrocarbons - PCRs															
C6 - C8 Fraction	No	1.00E+04	1.00E+03	5.00E+00	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C9 - C16 Fraction	No	1.00E+04	3.00E+03	2.00E+02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
C17 - C35 Fraction	No	1.00E+04	5.00E+03	5.00E+02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Notes:

BDL denotes below detection limit.

The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the soil saturation limit

* indicates a 'ceiling limit' concentration

*** indicates that the soil saturation limit exceeds the 'ceiling limit' therefore the RBRG applies.

DC/2019/10_Detailed Groundwater Sampling Analytical Results

Parameters	> Criteria	Industrial RBRG (mg/L)	Solubility Limit (mg/L)	Reporting Limit (mg/L)	Maximum Value (mg/L)	ENV-BH12	ENV-BH13	ENV-BH14	ENV-BH15
						ENV-BH12-GW	ENV-BH13-GW	ENV-BH14-GW	ENV-BH15-GW
Metal									
Mercury	No	6.79E+00	-	5.00E-04	BDL	BDL	BDL	BDL	BDL
VOCs									
2-Propanone (Acetone)	No	1.00E+04	***	5.00E-01	BDL	BDL	BDL	BDL	BDL
Benzene	No	5.40E+01	1.75E+03	5.00E-03	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	No	2.62E+01	6.74E+03	5.00E-03	BDL	BDL	BDL	BDL	BDL
2-Butanone (MEK)	No	1.00E+04	***	5.00E-02	BDL	BDL	BDL	BDL	BDL
Chloroform	No	1.13E+01	7.92E+03	5.00E-03	6.60E-03	6.60E-03	BDL	6.00E-03	BDL
Ethylbenzene	No	1.00E+04	1.69E+02	5.00E-03	BDL	BDL	BDL	BDL	BDL
Methyl tert-Butyl Ether	No	1.81E+03	***	5.00E-03	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	No	2.24E+02	***	5.00E-02	BDL	BDL	BDL	BDL	BDL
Styrene	No	1.00E+04	3.10E+02	5.00E-03	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	No	2.95E+00	2.00E+02	5.00E-03	BDL	BDL	BDL	BDL	BDL
Toluene	No	1.00E+04	5.26E+02	5.00E-03	BDL	BDL	BDL	BDL	BDL
Trichloroethene	No	1.42E+01	1.10E+03	5.00E-03	BDL	BDL	BDL	BDL	BDL
Xylenes (Total)	No	1.57E+03	1.75E+02	2.00E-02	BDL	BDL	BDL	BDL	BDL
SVOCs									
Acenaphthene	No	1.00E+04	4.24E+00	2.00E-03	BDL	BDL	BDL	BDL	BDL
Acenaphthylene	No	1.00E+04	3.93E+00	2.00E-03	BDL	BDL	BDL	BDL	BDL
Anthracene	No	1.00E+04	4.34E-02	2.00E-03	BDL	BDL	BDL	BDL	BDL
Benzo(b)fluoranthene	No	7.53E+00	1.50E-03	1.00E-03	BDL	BDL	BDL	BDL	BDL
Chrysene	No	8.12E+02	1.60E-03	1.00E-03	BDL	BDL	BDL	BDL	BDL
Fluoranthene	No	1.00E+04	2.06E-01	2.00E-03	BDL	BDL	BDL	BDL	BDL
Fluorene	No	1.00E+04	1.98E+00	2.00E-03	BDL	BDL	BDL	BDL	BDL
Hexachlorobenzene	No	6.95E-01	6.20E+00	4.00E-03	BDL	BDL	BDL	BDL	BDL
Naphthalene	No	8.62E+02	3.10E+01	2.00E-03	BDL	BDL	BDL	BDL	BDL
Phenanthrene	No	1.00E+04	1.00E+00	2.00E-03	BDL	BDL	BDL	BDL	BDL
Pyrene	No	1.00E+04	1.35E-01	2.00E-03	BDL	BDL	BDL	BDL	BDL
PCRs									
C6 - C8 Fraction	No	1.15E+03	5.23E+00	2.00E-02	BDL	BDL	BDL	BDL	BDL
C9 - C16 Fraction	No	9.98E+03	2.80E+00	5.00E-01	BDL	BDL	BDL	BDL	BDL
C17 - C35 Fraction	No	1.78E+02	2.80E+00	5.00E-01	BDL	BDL	BDL	BDL	BDL

Notes:

BDL denotes below detection limit.

The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the soil saturation limit

* indicates a 'ceiling limit' concentration

*** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

DC/2019/10_Detailed Soil Sampling Analytical Results (Duplicate)

Parameters	> Criteria	Industrial RBRG (mg/kg)	Soil Saturation Limit (Csat) (mg/kg)	Reporting Limit (mg/kg)	Maximum Value (mg/kg)	ENV-BH12	
						ENV-BH12-0.5m	ENV-BH12-0.5m (Duplicate)
Metal							
Antimony	No	2.61E+02	-	1.00E+00	BDL	BDL	BDL
Arsenic	No	1.96E+02	-	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Barium	No	1.00E+04	-	1.00E+00	1.82E+01	1.82E+01	1.72E+01
Cadmium	No	6.53E+02	-	2.00E-01	2.00E-01	2.00E-01	2.00E-01
Chromium (III)	No	1.00E+04	-	1.00E+00	2.70E+00	2.70E+00	2.70E+00
Chromium (VI)	No	1.96E+03	-	1.00E+00	BDL	BDL	BDL
Cobalt	No	1.00E+04	-	1.00E+00	BDL	BDL	BDL
Copper	No	1.00E+04	-	1.00E+00	8.00E+00	8.00E+00	8.00E+00
Lead	No	2.29E+03	-	1.00E+00	4.70E+01	4.70E+01	4.70E+01
Manganese	No	1.00E+04	-	1.00E+00	1.75E+02	1.69E+02	1.75E+02
Mercury	No	3.84E+01	-	5.00E-02	BDL	BDL	BDL
Molybdenum	No	3.26E+03	-	1.00E+00	4.00E+00	4.00E+00	3.00E+00
Nickel	No	1.00E+04*	-	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Tin	No	1.00E+04	-	1.00E+00	3.90E+00	3.80E+00	3.90E+00
Zinc	No	1.00E+04	-	1.00E+00	5.50E+01	5.40E+01	5.50E+01
VOCs							
2-Propanone (Acetone)	No	1.00E+04*	***	5.00E+01	BDL	BDL	BDL
Benzene	No	9.21E+00	3.36E+02	2.00E-01	BDL	BDL	BDL
Bromodichloromethane	No	2.85E+00	1.03E+03	1.00E-01	BDL	BDL	BDL
2-Butanone (MEK)	No	1.00E+04	***	5.00E+00	BDL	BDL	BDL
Chloroform	No	1.54E+00	1.10E+03	4.00E-02	BDL	BDL	BDL
Ethylbenzene	No	8.24E+03	1.38E+02	5.00E-01	BDL	BDL	BDL
Methyl tert-Butyl Ether	No	7.01E+01	2.38E+03	5.00E-01	BDL	BDL	BDL
Methylene Chloride	No	1.39E+01	9.21E+02	5.00E-01	BDL	BDL	BDL
Styrene	No	1.00E+04*	4.97E+02	5.00E-01	BDL	BDL	BDL
Tetrachloroethene	No	7.77E-01	9.71E+01	4.00E-02	BDL	BDL	BDL
Toluene	No	1.00E+04*	2.35E+02	5.00E-01	BDL	BDL	BDL
Trichloroethene	No	5.68E+00	4.88E+02	1.00E-01	BDL	BDL	BDL
Xylenes (Total)	No	1.23E+03	1.50E+02	2.00E+00	BDL	BDL	BDL
SVOCs							
Acenaphthene	No	1.00E+04	6.02E+01	5.00E-01	BDL	BDL	BDL
Acenaphthylene	No	1.00E+04	1.98E+01	5.00E-01	BDL	BDL	BDL
Anthracene	No	1.00E+04	2.56E+00	5.00E-01	BDL	BDL	BDL
Benzo(a)anthracene	No	9.18E+01	-	5.00E-01	BDL	BDL	BDL
Benzo(a)pyrene	No	9.18E+00	-	5.00E-01	BDL	BDL	BDL
Benzo(b)fluoranthene	No	1.78E+01	-	5.00E-01	BDL	BDL	BDL
Benzo(g,h,i)perylene	No	1.00E+04	-	5.00E-01	BDL	BDL	BDL
Benzo(k)fluoranthene	No	9.18E+02	-	5.00E-01	BDL	BDL	BDL
Bis(2-ethylhexyl)phthalate	No	9.18E+01	-	5.00E+00	BDL	BDL	BDL
Chrysene	No	1.14E+03	-	5.00E-01	BDL	BDL	BDL
Dibenz(a,h)anthracene	No	9.18E+00	-	5.00E-01	BDL	BDL	BDL
Fluoranthene	No	1.00E+04	-	5.00E-01	BDL	BDL	BDL
Fluorene	No	1.00E+04	5.47E+01	5.00E-01	BDL	BDL	BDL
Hexachlorobenzene	No	5.82E-01	-	2.00E-01	BDL	BDL	BDL
Indeno(1.2.3.cd)pyrene	No	9.18E+01	-	5.00E-01	BDL	BDL	BDL
Naphthalene	No	4.53E+02	1.25E+02	5.00E-01	BDL	BDL	BDL
Phenanthrene	No	1.00E+04	2.80E+01	5.00E-01	BDL	BDL	BDL
Phenol	No	1.00E+04	7.26E+03	5.00E-01	BDL	BDL	BDL
Pyrene	No	1.00E+04*	-	5.00E-01	BDL	BDL	BDL
Hydrocarbons - PCRs							
C6 - C8 Fraction	No	1.00E+04	1.00E+03	5.00E+00	BDL	BDL	BDL
C9 - C16 Fraction	No	1.00E+04	3.00E+03	2.00E+02	BDL	BDL	BDL
C17 - C35 Fraction	No	1.00E+04	5.00E+03	5.00E+02	BDL	BDL	BDL

Notes:

BDL denotes below detection limit.

The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the soil saturation limit

* indicates a 'ceiling limit' concentration

"-----": Not tested according to the QA/QC Requirements in Table 2-2

*** indicates that the soil saturation limit exceeds the 'ceiling limit' therefore the RBRG applies.

DC/2019/10 Detailed Groundwater Sampling Analytical Results (Duplicate)

Parameters	> Criteria	Industrial RBRG (mg/L)	Solubility Limit (mg/L)	Reporting Limit (mg/L)	Maximum Value (mg/L)	ENV-BH14	
						ENV-BH14-GW	ENV-BH14-Duplicate
Metal							
Mercury	No	6.79E+00	-	5.00E-04	BDL	BDL	BDL
VOCs							
2-Propanone (Acetone)	No	1.00E+04	***	5.00E-01	BDL	BDL	BDL
Benzene	No	5.40E+01	1.75E+03	5.00E-03	BDL	BDL	BDL
Bromodichloromethane	No	2.62E+01	6.74E+03	5.00E-03	BDL	BDL	BDL
2-Butanone (MEK)	No	1.00E+04	***	5.00E-02	BDL	BDL	BDL
Chloroform	No	1.13E+01	7.92E+03	5.00E-03	6.00E-03	6.00E-03	5.80E-03
Ethylbenzene	No	1.00E+04	1.69E+02	5.00E-03	BDL	BDL	BDL
Methyl tert-Butyl Ether	No	1.81E+03	***	5.00E-03	BDL	BDL	BDL
Methylene Chloride	No	2.24E+02	***	5.00E-02	BDL	BDL	BDL
Styrene	No	1.00E+04	3.10E+02	5.00E-03	BDL	BDL	BDL
Tetrachloroethene	No	2.95E+00	2.00E+02	5.00E-03	BDL	BDL	BDL
Toluene	No	1.00E+04	5.26E+02	5.00E-03	BDL	BDL	BDL
Trichloroethene	No	1.42E+01	1.10E+03	5.00E-03	BDL	BDL	BDL
Xylenes (Total)	No	1.57E+03	1.75E+02	2.00E-02	BDL	BDL	BDL
SVOCs							
Acenaphthene	No	1.00E+04	4.24E+00	2.00E-03	BDL	BDL	BDL
Acenaphthylene	No	1.00E+04	3.93E+00	2.00E-03	BDL	BDL	BDL
Anthracene	No	1.00E+04	4.34E-02	2.00E-03	BDL	BDL	BDL
Benzo(b)fluoranthene	No	7.53E+00	1.50E-03	1.00E-03	BDL	BDL	BDL
Chrysene	No	8.12E+02	1.60E-03	1.00E-03	BDL	BDL	BDL
Fluoranthene	No	1.00E+04	2.06E-01	2.00E-03	BDL	BDL	BDL
Fluorene	No	1.00E+04	1.98E+00	2.00E-03	BDL	BDL	BDL
Hexachlorobenzene	No	6.95E-01	6.20E+00	4.00E-03	BDL	BDL	BDL
Naphthalene	No	8.62E+02	3.10E+01	2.00E-03	BDL	BDL	BDL
Phenanthrene	No	1.00E+04	1.00E+00	2.00E-03	BDL	BDL	BDL
Pyrene	No	1.00E+04	1.35E-01	2.00E-03	BDL	BDL	BDL
PCRs							
C6 - C8 Fraction	No	1.15E+03	5.23E+00	2.00E-02	BDL	BDL	BDL
C9 - C16 Fraction	No	9.98E+03	2.80E+00	5.00E-01	BDL	BDL	BDL
C17 - C35 Fraction	No	1.78E+02	2.80E+00	5.00E-01	5.00E-01	BDL	5.00E-01

Notes:

BDL denotes below detection limit.

The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the solubility limit.

“-”: No criteria / solubility limit is provided in RBRG.

“-----”: Not tested according to the QA/QC Requirements in Table 2-2

*** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

Detailed QA/QC Sampling Analytical Results

Parameters	> Criteria (RBRG)	Industrial RBRG (mg/L)	Solubility Limit (mg/L)	Reporting Limit (mg/L)	Maximum Value (mg/L)	Field Blank	Equipment Blank	Trip Blank	Trip Blank	Trip Blank
						for Soil Samples	for Soil Samples			
						24/11/2021	24/11/2021	24/11/2021	26/11/2021	30/11/2021
Metal										
Antimony	No	-	-	-	BDL	BDL	BDL	----	----	----
Arsenic	No	-	-	-	BDL	BDL	BDL	----	----	----
Barium	No	-	-	-	BDL	BDL	BDL	----	----	----
Cadmium	No	-	-	-	BDL	BDL	BDL	----	----	----
Chromium (III)	No	-	-	-	BDL	BDL	BDL	----	----	----
Chromium (VI)	No	-	-	-	BDL	BDL	BDL	----	----	----
Cobalt	No	-	-	-	BDL	BDL	BDL	----	----	----
Copper	No	-	-	-	BDL	BDL	BDL	----	----	----
Lead	No	-	-	-	BDL	BDL	BDL	----	----	----
Manganese	No	-	-	-	BDL	BDL	BDL	----	----	----
Mercury	No	6.79E+00	-	0.0005	BDL	BDL	BDL	----	----	----
Molybdenum	No	-	-	-	BDL	BDL	BDL	----	----	----
Nickel	No	-	-	-	BDL	BDL	BDL	----	----	----
Tin	No	-	-	-	BDL	BDL	BDL	----	----	----
Zinc	No	-	-	-	BDL	BDL	BDL	----	----	----
VOCs										
2-Propanone (Acetone)	No	1.00E+04	***	0.5	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	No	5.40E+01	1.75E+03	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	No	2.62E+01	6.74E+03	0.005	BDL	BDL	BDL	BDL	BDL	BDL
2-Butanone (MEK)	No	1.00E+04	***	0.05	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	No	1.13E+01	7.92E+03	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	No	1.00E+04	1.69E+02	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Methyl tert-Butyl Ether	No	1.81E+03	***	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	No	2.24E+02	***	0.05	BDL	BDL	BDL	BDL	BDL	BDL
Styrene	No	1.00E+04	3.10E+02	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	No	2.95E+00	2.00E+02	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	No	1.00E+04	5.26E+02	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	No	1.42E+01	1.10E+03	0.005	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (Total)	No	1.57E+03	1.75E+02	0.02	BDL	BDL	BDL	BDL	BDL	BDL
SVOCs										
Acenaphthene	No	1.00E+04	4.24E+00	0.002	BDL	BDL	BDL	----	----	----
Acenaphthylene	No	1.00E+04	3.93E+00	0.002	BDL	BDL	BDL	----	----	----
Anthracene	No	1.00E+04	4.34E-02	0.002	BDL	BDL	BDL	----	----	----
Benzo(b)fluoranthene	No	7.53E+00	1.50E-03	0.001	BDL	BDL	BDL	----	----	----
Chrysene	No	8.12E+02	1.60E-03	0.001	BDL	BDL	BDL	----	----	----
Fluoranthene	No	1.00E+04	2.06E-01	0.002	BDL	BDL	BDL	----	----	----
Fluorene	No	1.00E+04	1.98E+00	0.002	BDL	BDL	BDL	----	----	----
Hexachlorobenzene	No	6.95E-01	6.20E+00	0.004	BDL	BDL	BDL	----	----	----
Naphthalene	No	8.62E+02	3.10E+01	0.002	BDL	BDL	BDL	----	----	----
Phenanthrene	No	1.00E+04	1.00E+00	0.002	BDL	BDL	BDL	----	----	----
Pyrene	No	1.00E+04	1.35E-01	0.002	BDL	BDL	BDL	----	----	----
PCRs										
C6 - C8 Fraction	No	1.15E+03	5.23E+00	0.02	BDL	BDL	BDL	----	----	----
C9 - C16 Fraction	No	9.98E+03	2.80E+00	0.5	BDL	BDL	BDL	----	----	----
C17 - C35 Fraction	No	1.78E+02	2.80E+00	0.5	BDL	BDL	BDL	----	----	----

Notes:

BDL denotes below detection limit.

The highlighted value(s) in bold indicates exceedance of the adopted RBRG, while the underlined value(s) indicate exceedance of the soil saturation limit

"-": No criteria / solubility limit is provided in RBRG.

"----": Not tested according to the QA/QC Requirements in Table 2-2

*** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

Detailed QA/QC Sampling Analytical Results

Parameters	> Criteria (RBRG)	Industrial RBRG (mg/L)	Solubility Limit (mg/L)	Reporting Limit (mg/L)	Maximum Value (mg/L)	Trip Blank	Field Blank	Equipment Blank
							for GW Samples	for GW Samples
						06/01/2022	06/01/2022	06/01/2022
Metal								
Antimony	No	-	-	-	BDL	----	----	----
Arsenic	No	-	-	-	BDL	----	----	----
Barium	No	-	-	-	BDL	----	----	----
Cadmium	No	-	-	-	BDL	----	----	----
Chromium (III)	No	-	-	-	BDL	----	----	----
Chromium (VI)	No	-	-	-	BDL	----	----	----
Cobalt	No	-	-	-	BDL	----	----	----
Copper	No	-	-	-	BDL	----	----	----
Lead	No	-	-	-	BDL	----	----	----
Manganese	No	-	-	-	BDL	----	----	----
Mercury	No	6.79E+00	-	0.0005	BDL	----	BDL	BDL
Molybdenum	No	-	-	-	BDL	----	----	----
Nickel	No	-	-	-	BDL	----	----	----
Tin	No	-	-	-	BDL	----	----	----
Zinc	No	-	-	-	BDL	----	----	----
VOCs								
2-Propanone (Acetone)	No	1.00E+04	***	0.5	BDL	BDL	BDL	BDL
Benzene	No	5.40E+01	1.75E+03	0.005	BDL	BDL	BDL	BDL
Bromodichloromethane	No	2.62E+01	6.74E+03	0.005	BDL	BDL	BDL	BDL
2-Butanone (MEK)	No	1.00E+04	***	0.05	BDL	BDL	BDL	BDL
Chloroform	No	1.13E+01	7.92E+03	0.005	BDL	BDL	BDL	BDL
Ethylbenzene	No	1.00E+04	1.69E+02	0.005	BDL	BDL	BDL	BDL
Methyl tert-Butyl Ether	No	1.81E+03	***	0.005	BDL	BDL	BDL	BDL
Methylene Chloride	No	2.24E+02	***	0.05	BDL	BDL	BDL	BDL
Styrene	No	1.00E+04	3.10E+02	0.005	BDL	BDL	BDL	BDL
Tetrachloroethene	No	2.95E+00	2.00E+02	0.005	BDL	BDL	BDL	BDL
Toluene	No	1.00E+04	5.26E+02	0.005	BDL	BDL	BDL	BDL
Trichloroethene	No	1.42E+01	1.10E+03	0.005	BDL	BDL	BDL	BDL
Xylenes (Total)	No	1.57E+03	1.75E+02	0.02	BDL	BDL	BDL	BDL
SVOCs								
Acenaphthene	No	1.00E+04	4.24E+00	0.002	BDL	----	BDL	BDL
Acenaphthylene	No	1.00E+04	3.93E+00	0.002	BDL	----	BDL	BDL
Anthracene	No	1.00E+04	4.34E-02	0.002	BDL	----	BDL	BDL
Benzo(b)fluoranthene	No	7.53E+00	1.50E-03	0.001	BDL	----	BDL	BDL
Chrysene	No	8.12E+02	1.60E-03	0.001	BDL	----	BDL	BDL
Fluoranthene	No	1.00E+04	2.06E-01	0.002	BDL	----	BDL	BDL
Fluorene	No	1.00E+04	1.98E+00	0.002	BDL	----	BDL	BDL
Hexachlorobenzene	No	6.95E-01	6.20E+00	0.004	BDL	----	BDL	BDL
Naphthalene	No	8.62E+02	3.10E+01	0.002	BDL	----	BDL	BDL
Phenanthrene	No	1.00E+04	1.00E+00	0.002	BDL	----	BDL	BDL
Pyrene	No	1.00E+04	1.35E-01	0.002	BDL	----	BDL	BDL
PCRs								
C6 - C8 Fraction	No	1.15E+03	5.23E+00	0.02	BDL	----	BDL	BDL
C9 - C16 Fraction	No	9.98E+03	2.80E+00	0.5	BDL	----	BDL	BDL
C17 - C35 Fraction	No	1.78E+02	2.80E+00	0.5	BDL	----	BDL	BDL

Notes:

BDL denotes below detection limit.

The highlighted value(s) in bold indicates exceedance of the adopted RBRG,

while the underlined value(s) indicate exceedance of the soil saturation limit

“-”: No criteria / solubility limit is provided in RBRG.

“----”: Not tested according to the QA/QC Requirements in Table 2-2

*** indicates that the solubility limit exceeds the 'ceiling limit' therefore the RBRG applies.

APPENDIX F
LABORATORY TESTING REPORTS

CHAIN OF CUSTODY DOCUMENTATION

H 039602



ALS Laboratory Group

CLIENT: Paul Y - CRFC Joint Venture
 ADDRESS / OFFICE: Wang Lee St. Yuen Long Industrial Estate
 PROJECT MANAGER (PM):

SAMPLER: Justin Yu
 MOBILE: 9515 7259
 PHONE:

EMAIL REPORT TO: Peter to BS
 EMAIL INVOICE TO: (if different to report)

PROJECT ID:
 SITE:
 P.O. NO.:
 QUOTE NO.:

ALS ID	SAMPLE INFORMATION (note: S = Soil, W=Water)			CONTAINER INFORMATION		Total bottles	ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected" Extra volume for QC or trace LORs etc.
	SAMPLE ID	MATRIX	DATE	Time	Type / Code			
1	Field Blank	W	24/11/21	15:00	AG	5	Metals	
2	Equipment Blank	W	24/11/21	15:00	AG	5	Vocs	
3	Trip Blank	W	24/11/21	15:00	AG	2	Vocs	
4	ENV - BH12 - 0.5m	S	24/11/21	15:15	Glass	1	Metals	
5	ENV - BH 12 - 1.5m	S	24/11/21	15:15	Glass	1	Vocs	
6	ENV - BH13 - 0.5m	S	25/11/21	11:20	Glass	1	Vocs	
7	ENV - BH12 - 1.5m	S	24/11/21	15:30	U76	1	Vocs	
8	ENV - BH12 - 2.5m	S	24/11/21	16:00	U76	1	Vocs	
9	ENV - BH12 - 3m	S	24/11/21	16:45	U76	1	Vocs	

RESULTS REQUIRED (Date):
 FOR LABORATORY USE ONLY:
 COOLER SEAL (circle appropriate) Intact Yes No N/A
 SAMPLE TEMPERATURE:
 CHILLED: Yes No

RECEIVED BY: Name: [Signature] Date: 25-11-2021
 Of: [Signature] Time: 16:10
 Name: Date: Transport Co:
 Of: Time:

RELINQUISHED BY: Name: Karina Chan Date:
 Of: EATech Consultants Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;
 V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.






CERTIFICATE OF ANALYSIS

Client : PAUL Y - CREC JOINT VENTURE
Contact : TEDDY ORR
Address : 11/F, PAUL Y CENTRE, 51 HUNG TO ROAD, KWUN TONG, KL, HONG KONG
E-mail : Teddyorr@pyengineering.com
Telephone : —
Facsimile : +852 2621 5618
Project : DC/2019/10 - YUEN LONG EFFLUENT POLISHING PLANT - MAIN WORKS FOR STAGE 1
Order number : P5120-003
C-O-C number : H039602
Site :
Laboratory : ALS Technichem (HK) Pty Ltd
Contact : Richard Fung
Address : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong
E-mail : richard.fung@alsglobal.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HKE/1853/2021_V4
Date Samples Received : 25-Nov-2021
Issue Date : 24-Dec-2021
No. of samples received : 9
No. of samples analysed : 9
Page : 1 of 24
Work Order : HK2148614

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

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

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



Page Number : 2 of 24
Client : PAUL Y. - CREC JOINT VENTURE
Work Order : HK2148614

General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 25-Nov-2021 to 07-Dec-2021.

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

Specific Comments for Work Order: HK2148614

Sample(s) was/were picked up from client by ALS staff. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

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

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

Water sample(s) were filtered prior to dissolved metal analysis.

EP070 is the numeric code for internal use. Test method for C6-C9 Fraction of TPH is EP071.

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

Test Method - EG3060 - Sample(s) as received, digested by in-house method E-3060 prior to the determination of Hexavalent Chromium (Cr6+). The in-house method is developed based on USEPA method 3060.



Compound	CAS Number	LOR	Unit	Sample ID				ENV-BH12-2.5m
				ENV-BH12-0.5m	ENV-BH12-0.5m Duplicate	ENV-BH13-0.5m	ENV-BH12-1.5m	
Sampling date / time				24-Nov-2021 15:15	24-Nov-2021 15:15	25-Nov-2021 11:20	24-Nov-2021 15:30	24-Nov-2021 16:00
				HK2148614-004	HK2148614-005	HK2148614-006	HK2148614-007	HK2148614-008
Sub-Matrix: SOIL								
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(e)pyrene	50-32-8	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Dibenzo(a,h)anthracene	53-70-3	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate								
EP076HK: Phenol	108-95-2	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00	mg/kg	<5.00	<5.00	<5.00	<5.00	<5.00
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)								
EP070HK_SR: C6 - C8 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
EP071HK_SR: C9 - C16 Fraction	----	200	mg/kg	<200	<200	<200	<200	<200
EP071HK_SR: C17 - C35 Fraction	----	500	mg/kg	<500	<500	<500	<500	<500
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)								
EP074_SR: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP074_SR: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: meta- & para-Xylene	108-38-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
	106-42-3							
EP074_SR: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Xylenes (Total)	----	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP-074_SR-B: Oxygenated Compounds								
EP074_SR: 2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	<50	<50	<50
EP074_SR: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
EP-074_SR-E: Halogenated Aliphatics								
EP074_SR: Methylene chloride	75-09-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Trichloroethane	79-01-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1



Compound	CAS Number	Sample ID		ENV-BH12-0.5m	ENV-BH12-0.5m Duplicate	ENV-BH13-0.5m	ENV-BH12-1.5m	ENV-BH12-2.5m
		LOR	Unit					
Sub-Matrix: SOIL								
EP-074_SR-E: Halogenated Aliphatics - Continued								
EP074_SR: Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	<0.04	<0.04	<0.04	<0.04
EP-074_SR-G: Trihalomethanes (THM)								
EP074_SR: Chloroform	67-66-3	0.04	mg/kg	<0.04	<0.04	<0.04	<0.04	<0.04
EP074_SR: Bromodichloromethane	75-27-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP-074_SR-I: Methyl-tert-butyl Ether								
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	84.4	84.9	87.9	73.4	82.0
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	83.7	83.8	84.2	83.2	75.5
EP-080_SRS: TPH(Volatiles)/BTX Surrogate								
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%	90.6	92.1	89.8	93.0	91.8
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%	107	108	108	108	109
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	93.7	92.9	92.2	93.4	92.8
EP-074_SR-S: VOC Surrogates								
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%	90.6	92.1	89.8	93.0	91.8
EP074_SR: Toluene-D8	2037-26-5	0.1	%	107	108	108	108	109
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	93.7	92.9	92.2	93.4	92.8



Sub-Matrix: SOIL		Sample ID		Sample ID	
Compound	CAS Number	LOR	Unit	Sampling date / time	ENV-BH12-3m
EAVED: Physical and Aggregate Properties					
EA055: Moisture Content (dried @ 103°C)	----	0.1	%	24-Nov-2021 16:45	24.7
EG: Metals and Major Cations					
EG020: Antimony	7440-36-0	1	mg/kg	1	1
EG020: Arsenic	7440-38-2	1	mg/kg	8	8
EG020: Barium	7440-39-3	1.0	mg/kg	144	144
EG020: Cadmium	7440-43-9	0.2	mg/kg	0.2	0.2
EG020: Cobalt	7440-48-4	1.0	mg/kg	25.7	25.7
EG020: Copper	7440-50-8	1	mg/kg	64	64
EG020: Lead	7439-92-1	1	mg/kg	32	32
EG020: Manganese	7439-96-5	1.0	mg/kg	1330	1330
EG020: Mercury	7439-97-6	0.05	mg/kg	0.07	0.07
EG020: Molybdenum	7439-98-7	1	mg/kg	<1	<1
EG020: Nickel	7440-02-0	1	mg/kg	23	23
EG020: Tin	7440-31-5	1.0	mg/kg	8.3	8.3
EG020: Zinc	7440-66-6	1	mg/kg	127	127
EG049: Trivalent Chromium	16065-83-1	1.0	mg/kg	38.7	38.7
EG3060: Hexavalent Chromium	18540-29-9	1.0	mg/kg	<1.0	<1.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)					
EP076HK: Naphthalene	91-20-3	0.500	mg/kg	<0.500	<0.500
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg	<0.500	<0.500
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg	<0.500	<0.500
EP076HK: Fluorene	86-73-7	0.500	mg/kg	<0.500	<0.500
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg	<0.500	<0.500
EP076HK: Anthracene	120-12-7	0.500	mg/kg	<0.500	<0.500
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg	<0.500	<0.500
EP076HK: Pyrene	129-00-0	0.500	mg/kg	<0.500	<0.500
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg	<0.500	<0.500
EP076HK: Chrysene	218-01-9	0.500	mg/kg	<0.500	<0.500
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg	<0.500	<0.500
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg	<0.500	<0.500



Sub-Matrix: SOIL

Compound	CAS Number	LOR	Sample ID		Unit	Result	Reference
			Sample ID	Sampling date / time			
ENV-BH12-3m							
24-Nov-2021 16:45							
HK2148614-009							
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued							
EP076HK: Benzo(a)pyrene	50-32-8	0.500			mg/kg	<0.500	
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	0.500			mg/kg	<0.500	
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500			mg/kg	<0.500	
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500			mg/kg	<0.500	
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate							
EP076HK: Phenol	108-95-2	0.50			mg/kg	<0.50	
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200			mg/kg	<0.200	
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00			mg/kg	<5.00	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)							
EP070HK_SR: C6 - C8 Fraction	----	5			mg/kg	<5	
EP071HK_SR: C9 - C16 Fraction	----	200			mg/kg	<200	
EP071HK_SR: C17 - C35 Fraction	----	500			mg/kg	<500	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)							
EP074_SR: Benzene	71-43-2	0.2			mg/kg	<0.2	
EP074_SR: Toluene	108-88-3	0.5			mg/kg	<0.5	
EP074_SR: Ethylbenzene	100-41-4	0.5			mg/kg	<0.5	
EP074_SR: meta- & para-Xylene	108-38-3	1.0			mg/kg	<1.0	
	106-42-3						
EP074_SR: Styrene	100-42-5	0.5			mg/kg	<0.5	
EP074_SR: ortho-Xylene	95-47-6	0.5			mg/kg	<0.5	
EP074_SR: Xylenes (Total)	----	2.0			mg/kg	<2.0	
EP-074_SR-B: Oxygenated Compounds							
EP074_SR: 2-Propanone (Acetone)	67-64-1	50			mg/kg	<50	
EP074_SR: 2-Butanone (MEK)	78-93-3	5			mg/kg	<5	
EP-074_SR-E: Halogenated Aliphatics							
EP074_SR: Methylene chloride	75-09-2	0.5			mg/kg	<0.5	
EP074_SR: Trichloroethene	79-01-6	0.1			mg/kg	<0.1	
EP074_SR: Tetrachloroethene	127-18-4	0.04			mg/kg	<0.04	
EP-074_SR-G: Trihalomethanes (THM)							
EP074_SR: Chloroform	67-66-3	0.04			mg/kg	<0.04	



Compound	CAS Number	LOR	Sample ID		Unit	Result	Reference
			Sample ID	Sampling date / time			
Sub-Matrix: SOIL							
EP-074_SR-G: Trihalomethanes (THM) - Continued				ENV-BH12-3m			
EP074_SR: Bromodichloromethane	75-27-4	0.1	mg/kg	24-Nov-2021 16:45			
EP-074_SR-I: Methyl-tert-butyl Ether				HK2148614-009			
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	mg/kg				
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	69.9			
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	80.7			
EP-080_SRS: TPH(Volatile)/BTEX Surrogate							
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%	89.3			
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%	107			
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	91.0			
EP-074_SR-S: VOC Surrogates							
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%	89.3			
EP074_SR: Toluene-D8	2037-26-5	0.1	%	107			
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	91.0			



Compound	CAS Number	Sample ID		Field Blank	Equipment Blank	Trip Blank	Unit
		LOR	Sampling date / time				
Sub-Matrix: WATER							
EG: Metals and Major Cations - Filtered							
EG020: Antimony	7440-36-0	1		<1	<1		µg/L
EG020: Arsenic	7440-38-2	10		<10	<10		µg/L
EG020: Barium	7440-39-3	1		<1	<1		µg/L
EG020: Cadmium	7440-43-9	0.2		<0.2	<0.2		µg/L
EG020: Cobalt	7440-48-4	1		<1	<1		µg/L
EG020: Copper	7440-50-8	1		<1	<1		µg/L
EG020: Lead	7439-92-1	1		<1	<1		µg/L
EG020: Manganese	7439-96-5	1		<1	<1		µg/L
EG020: Mercury	7439-97-6	0.5		<0.5	<0.5		µg/L
EG020: Molybdenum	7439-98-7	1		<1	<1		µg/L
EG020: Nickel	7440-02-0	1		<1	<1		µg/L
EG020: Tin	7440-31-5	1		<1	<1		µg/L
EG020: Zinc	7440-66-6	10		<10	<10		µg/L
EG049: Trivalent Chromium	16065-83-1	20		<20	<20		µg/L
EG050: Hexavalent Chromium	18540-29-9	20		<20	<20		µg/L
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)							
EP076HK: Naphthalene	91-20-3	2.0		<2.0	<2.0		µg/L
EP076HK: Acenaphthylene	208-96-8	2.0		<2.0	<2.0		µg/L
EP076HK: Acenaphthene	83-32-9	2.0		<2.0	<2.0		µg/L
EP076HK: Fluorene	86-73-7	2.0		<2.0	<2.0		µg/L
EP076HK: Phenanthrene	85-01-8	2.0		<2.0	<2.0		µg/L
EP076HK: Anthracene	120-12-7	2.0		<2.0	<2.0		µg/L
EP076HK: Fluoranthene	206-44-0	2.0		<2.0	<2.0		µg/L
EP076HK: Pyrene	129-00-0	2.0		<2.0	<2.0		µg/L
EP076HK: Benz(a)anthracene	56-55-3	2.0		<2.0	<2.0		µg/L
EP076HK: Chrysene	218-01-9	1.0		<1.0	<1.0		µg/L
EP076HK: Benzo(b)fluoranthene	205-99-2	1.0		<1.0	<1.0		µg/L
EP076HK: Benzo(k)fluoranthene	207-08-9	2.0		<2.0	<2.0		µg/L
EP076HK: Benzo(a)pyrene	50-32-8	2.0		<2.0	<2.0		µg/L
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	2.0		<2.0	<2.0		µg/L



Sub-Matrix: WATER

Compound	CAS Number	LOR	Sample ID		Field Blank	Equipment Blank	Trip Blank
			Sampling date / time	Unit			
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued							
EP076HK: Dibenz(a,h)anthracene	53-70-3	2.0			<2.0	<2.0	---
EP076HK: Benzo(g,h,i)perylene	191-24-2	2.0			<2.0	<2.0	---
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate							
EP076HK: Phenol	108-95-2	2.0			<2.0	<2.0	---
EP076HK: Hexachlorobenzene (HCB)	118-74-1	4.0			<4.0	<4.0	---
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	20.0			<20.0	<20.0	---
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)							
EP070HK_SR: C6 - C8 Fraction	----	20			<20	<20	---
EP071HK_SR: C9 - C16 Fraction	----	500			<500	<500	---
EP071HK_SR: C17 - C35 Fraction	----	500			<500	<500	---
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)							
EP074_SR: Benzene	71-43-2	5.0			<5.0	<5.0	<5.0
EP074_SR: Toluene	108-88-3	5.0			<5.0	<5.0	<5.0
EP074_SR: Ethylbenzene	100-41-4	5.0			<5.0	<5.0	<5.0
EP074_SR: meta- & para-Xylene	108-38-3	10			<10	<10	<10
	106-42-3						
EP074_SR: Styrene	100-42-5	5.0			<5.0	<5.0	<5.0
EP074_SR: ortho-Xylene	95-47-6	5.0			<5.0	<5.0	<5.0
EP074_SR: Xylenes (Total)	----	20			<20	<20	<20
EP-074_SR-B: Oxygenated Compounds							
EP074_SR: 2-Propanone (Acetone)	67-64-1	500			<500	<500	<500
EP074_SR: 2-Butanone (MEK)	78-93-3	50			<50	<50	<50
EP-074_SR-E: Halogenated Aliphatics							
EP074_SR: Methylene chloride	75-09-2	50			<50	<50	<50
EP074_SR: Trichloroethene	79-01-6	5.0			<5.0	<5.0	<5.0
EP074_SR: Tetrachloroethene	127-18-4	5.0			<5.0	<5.0	<5.0
EP-074_SR-G: Trihalomethanes (THM)							
EP074_SR: Chloroform	67-66-3	5.0			<5.0	<5.0	<5.0
EP074_SR: Bromodichloromethane	75-27-4	5.0			<5.0	<5.0	<5.0
EP-074_SR-i: Methyl-tert-butyl Ether							



Page Number : 11 of 24
 Client : PAUL Y - CREC JOINT VENTURE
 Work Order : HK2148614

Compound	CAS Number	Sample ID		Unit	LOR	Field Blank	Equipment Blank	Trip Blank
		Sampling date / time	Unit					
Sub-Matrix: WATER								
EP-074_SR-I: Methyl-tert-butyl Ether - Continued								
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0	µg/L	<5.0	<5.0	<5.0	24-Nov-2021 15:00	24-Nov-2021 15:00
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	68.5	77.4			
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	83.8	81.8			
EP-080_SRS: TPH(Violatile)/BTX Surrogate								
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%	97.8	100			
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%	107	108			
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	92.6	91.5			
EP-074_SR-S: VOC Surrogates								
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%	97.8	100	96.0		
EP074_SR: Toluene-D8	2037-26-5	0.1	%	107	108	108		
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	92.6	91.5	92.5		



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				RPD (%)
				LOR	Unit	Original Result	Duplicate Result	
EAVED: Physical and Aggregate Properties (QC Lot: 4049504)								
HK2148614-008	ENV-BH12-2.5m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	21.7	21.7	0.0
HK2148873-005	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	34.6	34.5	0.0
EG: Metals and Major Cations (QC Lot: 4048043)								
HK2148605-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Barium	7440-39-3	0.5	mg/kg	10.1	10.2	0.0
		EG020: Cobalt	7440-48-4	0.5	mg/kg	<1.0	<1.0	0.0
		EG020: Manganese	7439-96-5	0.5	mg/kg	97.0	98.8	1.8
		EG020: Tin	7440-31-5	0.5	mg/kg	2.8	3.1	11.3
		EG020: Antimony	7440-36-0	1	mg/kg	1	1	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	2	2	0.0
		EG020: Copper	7440-50-8	1	mg/kg	1	1	0.0
		EG020: Lead	7439-92-1	1	mg/kg	39	42	6.6
		EG020: Molybdenum	7439-98-7	1	mg/kg	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	1	2	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	14	14	0.0
EG: Metals and Major Cations (QC Lot: 4048068)								
HK2148185-003	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<1.0	<1.0	0.0
EG: Metals and Major Cations (QC Lot: 4048069)								
HK2148614-006	ENV-BH13-0.5m	EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<1.0	<1.0	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104)								
HK2148614-004	ENV-BH12-0.5m	Naphthalene	91-20-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthene	83-32-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluorene	86-73-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Phenanthrene	85-01-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Anthracene	120-12-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluoranthene	206-44-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Pyrene	129-00-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<0.500 mg/kg	<500	0.0



Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104) - Continued								
HK2148614-004	ENV-BH12-0.5m	Chrysene	218-01-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Indeno(1.2.3-cd)pyrene	193-39-5	50	µg/kg	<0.500 mg/kg	<500	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<0.500 mg/kg	<500	0.0
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048104)								
HK2148614-004	ENV-BH12-0.5m	Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<5.00 mg/kg	<5000	0.0
		Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<0.200 mg/kg	<200	0.0
		Phenol	108-95-2	500	µg/kg	<0.50 mg/kg	<500	0.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048105)								
HK2148614-004	ENV-BH12-0.5m	C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
		C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048127)								
HK2148614-004	ENV-BH12-0.5m	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
		Benzene	71-43-2	0.1	mg/kg	<0.2	<0.2	0.0
		Toluene	108-88-3	0.2	mg/kg	<0.5	<0.5	0.0
		Ethylbenzene	100-41-4	0.2	mg/kg	<0.5	<0.5	0.0
		Styrene	100-42-5	0.2	mg/kg	<0.5	<0.5	0.0
		ortho-Xylene	95-47-6	0.2	mg/kg	<0.5	<0.5	0.0
		meta- & para-Xylene	108-38-3	0.4	mg/kg	<1.0	<1.0	0.0
		Xylenes (Total)	----	1	mg/kg	<2.0	<2.0	0.0
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048127)								
HK2148614-004	ENV-BH12-0.5m	2-Propanone (Acetone)	67-64-1	2	mg/kg	<50	<50	0.0
		2-Butanone (MEK)	78-93-3	2	mg/kg	<5	<5	0.0
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127)								
HK2148614-004	ENV-BH12-0.5m	Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	<0.04	0.0
		Trichloroethene	79-01-6	0.1	mg/kg	<0.1	<0.1	0.0



Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
Matrix: SOIL									
Laboratory Duplicate (DUP) Report									
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127) - Continued									
HK2148614-004	ENV-BH12-0.5m		Methylene chloride	75-09-2	0.5	mg/kg	<0.5	<0.5	0.0
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048127)									
HK2148614-004	ENV-BH12-0.5m		Chloroform	67-66-3	0.04	mg/kg	<0.04	<0.04	0.0
			Bromodichloromethane	75-27-4	0.1	mg/kg	<0.1	<0.1	0.0
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4048127)									
HK2148614-004	ENV-BH12-0.5m		Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.5	<0.5	0.0
Matrix: WATER									
Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	
EG: Metals and Major Cations - Filtered (QC Lot: 4053639)									
HK2148366-002	Anonymous								
		EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	<0.2	0.0
		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	<0.5	0.0
		EG020: Antimony	7440-36-0	1	µg/L	<1	<1	<1	0.0
		EG020: Arsenic	7440-38-2	1	µg/L	<10	<10	<10	0.0
		EG020: Barium	7440-39-3	1	µg/L	<1	<1	<1	0.0
		EG020: Cobalt	7440-48-4	1	µg/L	<1	<1	<1	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	0.0
		EG020: Manganese	7439-96-5	1	µg/L	<1	<1	<1	0.0
		EG020: Molybdenum	7439-98-7	1	µg/L	<1	<1	<1	0.0
		EG020: Nickel	7440-02-0	1	µg/L	<1	<1	<1	0.0
		EG020: Tin	7440-31-5	1	µg/L	<1	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	0.0
EG: Metals and Major Cations - Filtered (QC Lot: 4058435)									
HK2148614-002	Equipment Blank								
		EG050: Hexavalent Chromium	18540-29-9	20	µg/L	<20	<20	<20	0.0

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

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



Matrix: SOIL

Method Blank (MB) Report

Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)			RPD (%)	Control Limit
						LCS	DCS	Recovery Limits (%)		
						Low	High	Value		
EG: Metals and Major Cations (QC Lot: 4048043)										
EG020: Antimony	7440-36-0	1	mg/kg	<1	10 mg/kg	85.0	108	-----	-----	-----
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	87.2	110	-----	-----	-----
EG020: Barium	7440-39-3	0.5	mg/kg	<0.5	10 mg/kg	85.0	110	-----	-----	-----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	85.0	113	-----	-----	-----
EG020: Cobalt	7440-48-4	0.5	mg/kg	<0.5	10 mg/kg	89.8	110	-----	-----	-----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	92.0	115	-----	-----	-----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	86.7	115	-----	-----	-----
EG020: Manganese	7439-96-5	0.5	mg/kg	<0.5	10 mg/kg	85.8	108	-----	-----	-----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	86.6	115	-----	-----	-----
EG020: Molybdenum	7439-98-7	1	mg/kg	<1	10 mg/kg	85.2	113	-----	-----	-----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	90.6	111	-----	-----	-----
EG020: Tin	7440-31-5	0.5	mg/kg	<0.5	10 mg/kg	85.0	109	-----	-----	-----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	90.9	115	-----	-----	-----
EG: Metals and Major Cations (QC Lot: 4048068)										
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	2.5 mg/kg	85.0	1120000	-----	-----	-----
EG: Metals and Major Cations (QC Lot: 4048069)										
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	2.5 mg/kg	85.0	1120000	-----	-----	-----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104)										
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	76.0	96.0	-----	-----	-----
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	74.0	95.0	-----	-----	-----
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	78.0	97.0	-----	-----	-----
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	73.0	95.0	-----	-----	-----
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	73.0	92.0	-----	-----	-----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	77.0	100	-----	-----	-----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	77.0	98.0	-----	-----	-----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	78.0	96.0	-----	-----	-----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	68.0	96.0	-----	-----	-----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	76.0	99.0	-----	-----	-----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	66.0	98.0	-----	-----	-----



Method: Compound		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
		CAS Number	LOR	Unit	Result	Spike Concentration		Spike Recovery (%)		Recovery Limits(%)		RPD (%)
						LCS	DCS	Low	High	Value	Control Limit	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104) - Continued												
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	78.4	-----	74.0	109	-----	-----	-----	
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	67.8	-----	67.0	101	-----	-----	-----	
Indeno(1,2,3-cd)pyrene	193-39-5	50	µg/kg	<50	62.2	-----	45.0	95.0	-----	-----	-----	
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	64.0	-----	52.0	90.0	-----	-----	-----	
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	60.0	-----	51.0	94.0	-----	-----	-----	
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048104)												
Phenol	108-95-2	500	µg/kg	<500	86.6	-----	67.0	102	-----	-----	-----	
Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<50	86.9	-----	77.0	99.0	-----	-----	-----	
Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<1000	112	-----	77.0	116	-----	-----	-----	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048105)												
C9 - C16 Fraction	----	200	mg/kg	<200	76.8	-----	63.0	92.0	-----	-----	-----	
C17 - C35 Fraction	----	500	mg/kg	<500	71.4	-----	52.0	101	-----	-----	-----	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048126)												
C6 - C8 Fraction	----	5	mg/kg	<5	108	-----	80.0	119	-----	-----	-----	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048127)												
Benzene	71-43-2	0.1	mg/kg	<0.1	110	-----	78.0	118	-----	-----	-----	
Toluene	108-88-3	0.2	mg/kg	<0.2	107	-----	78.0	122	-----	-----	-----	
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	110	-----	79.0	123	-----	-----	-----	
meta- & para-Xylene	108-38-3	0.4	mg/kg	<0.4	106	-----	78.0	123	-----	-----	-----	
	106-42-3											
Styrene	100-42-5	0.2	mg/kg	<0.2	105	-----	80.0	121	-----	-----	-----	
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	106	-----	79.0	123	-----	-----	-----	
Xylenes (Total)	----	1	mg/kg	<1.0	106	-----	79.0	123	-----	-----	-----	
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048127)												
2-Propanone (Acetone)	67-64-1	2	mg/kg	<2	90.9	-----	74.0	121	-----	-----	-----	
2-Butanone (MEK)	78-93-3	2	mg/kg	<2	110	-----	76.0	120	-----	-----	-----	
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127)												
Methylene chloride	75-09-2	0.5	mg/kg	<0.5	90.4	-----	76.0	123	-----	-----	-----	
Trichloroethene	79-01-6	0.1	mg/kg	<0.1	90.7	-----	79.0	122	-----	-----	-----	



Method: Compound		Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicates (DCS) Report						
		CAS Number	LOR	Unit	Result	Spike Concentration	LCS	DCS	Low	High	Value	RPD (%)
Matrix: SOIL												
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127) - Continued												
Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	0.25 mg/kg	105	-----	79.0	122	-----	-----	-----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048127)												
Chloroform	67-66-3	0.04	mg/kg	<0.04	0.25 mg/kg	94.4	-----	80.0	117	-----	-----	-----
Bromodichloromethane	75-27-4	0.1	mg/kg	<0.1	0.25 mg/kg	90.9	-----	76.0	123	-----	-----	-----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4048127)												
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.2	0.25 mg/kg	106	-----	77.0	118	-----	-----	-----
Matrix: WATER												
Method Blank (MB) Report												
Method: Compound		CAS Number	LOR	Unit	Result	Spike Concentration		Recovery Limits(%)		RPD (%)		Control Limit
						LCS	DCS	Low	High	Value		
Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicates (DCS) Report												
EG: Metals and Major Cations - Filtered (QC Lot: 4053639)												
EG020: Antimony	7440-36-0	1	µg/L	<1	50 µg/L	95.9	-----	85.0	115	-----	-----	-----
EG020: Arsenic	7440-38-2	1	µg/L	<1	50 µg/L	103	-----	88.1	110	-----	-----	-----
EG020: Barium	7440-39-3	1	µg/L	<1	50 µg/L	97.4	-----	85.0	115	-----	-----	-----
EG020: Cadmium	7440-43-9	0.2	µg/L	<0.2	5 µg/L	92.0	-----	85.0	113	-----	-----	-----
EG020: Cobalt	7440-48-4	1	µg/L	<1	50 µg/L	105	-----	86.1	110	-----	-----	-----
EG020: Copper	7440-50-8	1	µg/L	<1	50 µg/L	105	-----	89.2	111	-----	-----	-----
EG020: Lead	7439-92-1	1	µg/L	<1	50 µg/L	102	-----	86.9	110	-----	-----	-----
EG020: Manganese	7439-96-5	1	µg/L	<1	50 µg/L	101	-----	86.9	110	-----	-----	-----
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	104	-----	85.0	115	-----	-----	-----
EG020: Molybdenum	7439-98-7	1	µg/L	<1	50 µg/L	98.1	-----	85.8	115	-----	-----	-----
EG020: Nickel	7440-02-0	1	µg/L	<1	50 µg/L	104	-----	88.4	109	-----	-----	-----
EG020: Tin	7440-31-5	1	µg/L	<1	50 µg/L	98.3	-----	85.0	115	-----	-----	-----
EG020: Zinc	7440-66-6	10	µg/L	<10	50 µg/L	103	-----	89.1	113	-----	-----	-----
EG: Metals and Major Cations - Filtered (QC Lot: 4058435)												
EG050: Hexavalent Chromium	18540-29-9	20	µg/L	<20	10 µg/L	97.0	-----	80.0	106	-----	-----	-----
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4046109)												
Naphthalene	91-20-3	0.1	µg/L	<0.1	0.5 µg/L	73.3	-----	53.0	119	-----	-----	-----



Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicates (DCS) Report					
		LOR	Unit	Result	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					LCS	DCS	Low	High	Value	Control Limit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4046109) - Continued										
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	66.9	-----	55.0	110	-----	-----
Acenaphthene	83-32-9	0.1	µg/L	<0.1	67.5	-----	55.0	104	-----	-----
Fluorene	86-73-7	0.1	µg/L	<0.1	69.0	-----	54.0	105	-----	-----
Phenanthrene	85-01-8	0.1	µg/L	<0.1	76.5	-----	56.0	115	-----	-----
Anthracene	120-12-7	0.1	µg/L	<0.1	76.2	-----	56.0	113	-----	-----
Fluoranthene	206-44-0	0.1	µg/L	<0.1	84.0	-----	73.0	116	-----	-----
Pyrene	129-00-0	0.1	µg/L	<0.1	86.9	-----	72.0	119	-----	-----
Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	80.4	-----	71.0	117	-----	-----
Chrysene	218-01-9	0.1	µg/L	<0.1	82.8	-----	73.0	121	-----	-----
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	74.3	-----	56.0	124	-----	-----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	69.4	-----	65.0	117	-----	-----
Benzo(a)pyrene	50-32-8	0.1	µg/L	<0.1	63.6	-----	62.0	118	-----	-----
Indeno(1,2,3-cd)pyrene	193-39-5	0.1	µg/L	<0.1	63.9	-----	51.0	98.0	-----	-----
Dibenz(a,h)anthracene	53-70-3	0.1	µg/L	<0.1	66.4	-----	41.0	115	-----	-----
Benzo(g,h,i)perylene	191-24-2	0.1	µg/L	<0.1	64.2	-----	41.0	113	-----	-----
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4046109)										
Phenol	108-95-2	5	µg/L	<5.0	83.7	-----	62.0	95.0	-----	-----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4.0	81.1	-----	59.0	99.0	-----	-----
Bis(2-ethylhexyl)phthalate	117-81-7	10	µg/L	<10.0	98.5	-----	83.0	120	-----	-----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4045219)										
C6 - C8 Fraction	----	0.02	mg/L	<0.02	106	-----	80.0	121	-----	-----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4046110)										
C9 - C16 Fraction	----	0.5	mg/L	<0.5	73.0	-----	61.0	89.0	-----	-----
C17 - C35 Fraction	----	0.5	mg/L	<0.5	83.9	-----	50.0	123	-----	-----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4045220)										
Benzene	71-43-2	0.5	µg/L	<0.5	109	-----	77.0	121	-----	-----
Toluene	108-88-3	0.5	µg/L	<0.5	95.2	-----	80.0	121	-----	-----
Ethylbenzene	100-41-4	0.5	µg/L	<0.5	91.1	-----	80.0	123	-----	-----



Matrix: WATER

Method/Compound	CAS Number	Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicates (DCS) Report					
		LOR	Unit	Result	Spike Concentration		Spike Recovery (%)		Recovery Limits (%)		RPD (%)
					LCS	DCS	Low	High	Value	Control Limit	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4045220) - Continued											
meta- & para-Xylene	108-38-3	1	µg/L	<1	4 µg/L	-----	79.0	123	-----	-----	-----
	106-42-3										
Styrene	100-42-5	0.5	µg/L	<0.5	2 µg/L	-----	80.0	120	-----	-----	-----
ortho-Xylene	95-47-6	0.5	µg/L	<0.5	2 µg/L	-----	78.0	125	-----	-----	-----
Xylenes (Total)	-----	2	µg/L	<2	6 µg/L	-----	79.0	123	-----	-----	-----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4045220)											
2-Propanone (Acetone)	67-64-1	5	µg/L	<5	20 µg/L	-----	76.0	122	-----	-----	-----
2-Butanone (MEK)	78-93-3	5	µg/L	<5	20 µg/L	-----	77.0	122	-----	-----	-----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4045220)											
Methylene chloride	75-09-2	5	µg/L	<5	2 µg/L	-----	78.0	122	-----	-----	-----
Trichloroethene	79-01-6	0.5	µg/L	<0.5	2 µg/L	-----	78.0	123	-----	-----	-----
Tetrachloroethene	127-18-4	0.5	µg/L	<0.5	2 µg/L	-----	78.0	124	-----	-----	-----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4045220)											
Chloroform	67-66-3	0.5	µg/L	<0.5	2 µg/L	-----	79.0	120	-----	-----	-----
Bromodichloromethane	75-27-4	0.5	µg/L	<0.5	2 µg/L	-----	80.0	122	-----	-----	-----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4045220)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	2 µg/L	-----	80.0	121	-----	-----	-----



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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report				RPD (%)		
				Spike Recovery (%)		Recovery Limits (%)				
				MS	MSD	Low	High		Value	Control Limit
Matrix: SOIL										
EG: Metals and Major Cations (QC Lot: 4048043)										
HK2148603-001	Anonymous	EG020: Antimony	7440-36-0	10 mg/kg	104	---	75.0	125	---	---
		EG020: Arsenic	7440-38-2	10 mg/kg	112	---	75.0	125	---	---
		EG020: Barium	7440-39-3	10 mg/kg	117	---	75.0	125	---	---
		EG020: Cadmium	7440-43-9	0.5 mg/kg	97.5	---	75.0	125	---	---
		EG020: Cobalt	7440-48-4	10 mg/kg	97.8	---	75.0	125	---	---
		EG020: Copper	7440-50-8	10 mg/kg	101	---	75.0	125	---	---
		EG020: Lead	7439-92-1	10 mg/kg	# Not Determined	---	75.0	125	---	---
		EG020: Manganese	7439-96-5	10 mg/kg	# Not Determined	---	75.0	125	---	---
		EG020: Mercury	7439-97-6	0.1 mg/kg	93.7	---	75.0	125	---	---
		EG020: Molybdenum	7439-98-7	10 mg/kg	114	---	75.0	125	---	---
		EG020: Nickel	7440-02-0	10 mg/kg	102	---	75.0	125	---	---
		EG020: Tin	7440-31-5	10 mg/kg	108	---	75.0	125	---	---
		EG020: Zinc	7440-66-6	10 mg/kg	80.7	---	75.0	125	---	---
EG: Metals and Major Cations (QC Lot: 4048068)										
HK2148185-002	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	2.5 mg/kg	108	---	75.0	125	---	---
EG: Metals and Major Cations (QC Lot: 4048069)										
HK2148614-005	ENV-BH12-0.5m Duplicate	EG3060: Hexavalent Chromium	18540-29-9	2.5 mg/kg	108	---	75.0	125	---	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104)										
HK2148614-006	ENV-BH13-0.5m	Naphthalene	91-20-3	250 µg/kg	79.4	---	50.0	130	---	---
		Acenaphthylene	208-96-8	250 µg/kg	80.0	---	50.0	130	---	---
		Acenaphthene	83-32-9	250 µg/kg	78.9	---	50.0	130	---	---
		Fluorene	86-73-7	250 µg/kg	76.7	---	50.0	130	---	---
		Phenanthrene	85-01-8	250 µg/kg	81.6	---	50.0	130	---	---
		Anthracene	120-12-7	250 µg/kg	82.0	---	50.0	130	---	---



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method/Compound	CAS Number	Spike Concentration	Spike Recovery (%)			Recovery Limits (%)			RPD (%)
					MS	MSD	Low	High	Value	Control Limit	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104) - Continued											
HK2148614-006	ENV-BH13-0.5m	Fluoranthene	206-44-0	250 µg/kg	83.2	-----	50.0	130	-----	-----	
		Pyrene	129-00-0	250 µg/kg	90.0	-----	50.0	130	-----	-----	
		Benz(a)anthracene	56-55-3	250 µg/kg	83.1	-----	50.0	130	-----	-----	
		Chrysene	218-01-9	250 µg/kg	73.3	-----	50.0	130	-----	-----	
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	63.4	-----	50.0	130	-----	-----	
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	63.0	-----	50.0	130	-----	-----	
		Benzo(a)pyrene	50-32-8	250 µg/kg	65.5	-----	50.0	130	-----	-----	
		Indeno(1,2,3-cd)pyrene	193-39-5	250 µg/kg	65.0	-----	50.0	130	-----	-----	
		Dibenz(a,h)anthracene	53-70-3	250 µg/kg	66.1	-----	50.0	130	-----	-----	
		Benzo(g,h,i)perylene	191-24-2	250 µg/kg	57.8	-----	50.0	130	-----	-----	
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048104)											
HK2148614-006	ENV-BH13-0.5m	Phenol	108-95-2	250 µg/kg	86.7	-----	50.0	130	-----	-----	
		Hexachlorobenzene (HCB)	118-74-1	250 µg/kg	78.3	-----	50.0	130	-----	-----	
		Bis(2-ethylhexyl)phthalate	117-81-7	250 µg/kg	97.1	-----	50.0	130	-----	-----	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048105)											
HK2148614-005	ENV-BH12-0.5m Duplicate	C9 - C16 Fraction	----	31.5 mg/kg	75.0	-----	50.0	130	-----	-----	
		C17 - C35 Fraction	----	67.5 mg/kg	67.8	-----	50.0	130	-----	-----	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048126)											
HK2148614-005	ENV-BH12-0.5m Duplicate	C6 - C8 Fraction	----	4.5 mg/kg	101	-----	50.0	130	-----	-----	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048127)											
HK2148614-006	ENV-BH13-0.5m	Benzene	71-43-2	0.25 mg/kg	109	-----	50.0	130	-----	-----	
		Toluene	108-88-3	0.25 mg/kg	106	-----	50.0	130	-----	-----	
		Ethylbenzene	100-41-4	0.25 mg/kg	93.3	-----	50.0	130	-----	-----	
		meta- & para-Xylene	108-38-3	0.5 mg/kg	97.3	-----	50.0	130	-----	-----	
		Styrene	106-42-3	0.25 mg/kg	95.1	-----	50.0	130	-----	-----	
		ortho-Xylene	95-47-6	0.25 mg/kg	96.3	-----	50.0	130	-----	-----	
		Xylenes (Total)	----	0.75 mg/kg	97.0	-----	50.0	130	-----	-----	
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048127)											



Matrix: SOIL										
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			RPD (%)		
					MS	MSD	Recovery Limits (%)	Low	High	Value
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048127) - Continued										
HK2148614-006	ENV-BH13-0.5m	2-Propanone (Acetone)	67-64-1	2.5 mg/kg	95.4	----	50.0	130	-----	-----
		2-Butanone (MEK)	78-93-3	2.5 mg/kg	102	----	50.0	130	-----	-----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127)										
HK2148614-006	ENV-BH13-0.5m	Methylene chloride	75-09-2	0.25 mg/kg	104	----	50.0	130	-----	-----
		Trichloroethene	79-01-6	0.25 mg/kg	92.4	----	50.0	130	-----	-----
		Tetrachloroethene	127-18-4	0.25 mg/kg	93.7	----	50.0	130	-----	-----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048127)										
HK2148614-006	ENV-BH13-0.5m	Chloroform	67-66-3	0.25 mg/kg	107	----	50.0	130	-----	-----
		Bromodichloromethane	75-27-4	0.25 mg/kg	102	----	50.0	130	-----	-----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4048127)										
HK2148614-006	ENV-BH13-0.5m	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.25 mg/kg	104	----	50.0	130	-----	-----
Matrix: WATER										
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			RPD (%)		
					MS	MSD	Recovery Limits (%)	Low	High	Value
EG: Metals and Major Cations - Filtered (QC Lot: 4053639)										
HK2148366-001	Anonymous	EG020: Antimony	7440-36-0	50 µg/L	95.6	----	75.0	125	-----	-----
		EG020: Arsenic	7440-38-2	50 µg/L	104	----	75.0	125	-----	-----
		EG020: Barium	7440-39-3	50 µg/L	98.4	----	75.0	125	-----	-----
		EG020: Cadmium	7440-43-9	5 µg/L	93.0	----	75.0	125	-----	-----
		EG020: Cobalt	7440-48-4	50 µg/L	108	----	75.0	125	-----	-----
		EG020: Copper	7440-50-8	50 µg/L	107	----	75.0	125	-----	-----
		EG020: Lead	7439-92-1	50 µg/L	102	----	75.0	125	-----	-----
		EG020: Manganese	7439-96-5	50 µg/L	104	----	75.0	125	-----	-----
		EG020: Mercury	7439-97-6	2 µg/L	100	----	75.0	125	-----	-----
		EG020: Molybdenum	7439-98-7	50 µg/L	98.3	----	75.0	125	-----	-----
		EG020: Nickel	7440-02-0	50 µg/L	108	----	75.0	125	-----	-----
		EG020: Tin	7440-31-5	50 µg/L	95.7	----	75.0	125	-----	-----
		EG020: Zinc	7440-66-6	50 µg/L	107	----	75.0	125	-----	-----



Matrix: WATER

Laboratory sample ID	Sample ID	Method/Compound	CAS Number	Spike Recovery (%)			Recovery Limits (%)			RPD (%)
				MS	MSD	Low	High	Value	Control Limit	
EG: Metals and Major Cations - Filtered (QC Lot: 4058435)										
HK2148614-001	Field Blank	EG050: Hexavalent Chromium	18540-29-9	95.9	---	75.0	125	---	---	---

Surrogate Control Limits

Sub-Matrix: SOIL

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-080_SRS: TPH(Volatile)/BTX Surrogate			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
EP-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121

Sub-Matrix: WATER

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-080_SRS: TPH(Volatile)/BTX Surrogate			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115
EP-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118



Page Number : 24 of 24
Client : PAUL Y. - CREC JOINT VENTURE
Work Order : HK2148614

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-074_SR-S: VOC Surrogates - Continued			
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115

CHAIN OF CUSTODY DOCUMENTATION

H 044306



ALS Laboratory Group

CLIENT: Paul Y - CREC Joint Venture
 ADDRESS/OFFICE: Wayne Ave St. Yuen Long Industrial Estate
 PROJECT MANAGER (PM):
 PROJECT ID:
 SITE: P.O. NO.:
 RESULTS REQUIRED (Date):
 FOR LABORATORY USE ONLY:
 COOLER SEAL (circle appropriate) N/A
 Intact: Yes No N/A
 SAMPLE TEMPERATURE:
 CHILLED: Yes No

SAMPLER: Jingta Yu
 MOBILE: 95157239
 PHONE:
 EMAIL REPORT TO: Refer to PSS
 EMAIL INVOICE TO: (if different to report)

ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)
 Notes: e.g. Highly contaminated samples e.g. "High PAHs expected"
 Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION		Total bottles	RECEIVED BY	METHOD OF SHIPMENT
	SAMPLE ID	MATRIX	DATE	Time			
1	Top Blank	W	26/11/21	1500	AG	2	
2	ENV-BH13-1.5m	S	25/11/21	1300	U76	1	
3	ENV-BH13-3m	S	25/11/21	1330	U76	1	
4	ENV-BH13-4.5m	S	25/11/21	1400	U76	1	
5	ENV-BH13-6m	S	25/11/21	1500	U76	1	
6	ENV-BH14-0.5m	S	25/11/21	1600	Glass	1	

RELIQUISHED BY: Name: Korina Chan Date:
 Of: GeoTech Consultants Time:
 Name: Date:
 Of: Time:

RECEIVED BY: Name: PSS Date: 26/11/2021
 Of: Time: 17:00
 Name: Ketun Lam Date: 26 NOV 2021
 Of: ALS HK Time: 18:25

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;
 V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.

ALS Laboratory Group

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : PAUL Y - CREC JOINT VENTURE
Contact : TEDDY ORR
Address : 11/F, PAUL Y CENTRE, 51 HUNG TO ROAD, KWUN TONG, KL,
HONG KONG
E-mail : Teddyorr@pyengineering.com
Telephone : —
Facsimile : +852 2621 5618
Project : DC/2019/10 - YUEN LONG EFFLUENT POLISHING PLANT - MAIN WORKS FOR STAGE 1
Order number : P5120-004
C-O-C number : H044306
Site :




Laboratory : ALS Technichem (HK) Pty Ltd
Contact : Richard Fung
Address : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing
Yip Street, Kwai Chung, N.T., Hong Kong
E-mail : richard.fung@alsglobal.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HKE/1853/2021_V4

Page : 1 of 16
Work Order : HK2148873
Amendment : 1
Date Samples Received : 26-Nov-2021
Issue Date : 24-Dec-2021
No. of samples received : 6
No. of samples analysed : 6

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

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

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



Page Number : 2 of 16
Client : PAUL Y - CREC JOINT VENTURE
Work Order : HK2148873, Amendment 1

General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 26-Nov-2021 to 06-Dec-2021.

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

Specific Comments for Work Order: HK2148873

Sample(s) was/ were picked up from client by ALS staff. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

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

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

This is an amendment of the Certificate of Analysis.

The sampling date of samples HK2148873 #002 to #006 has been amended.

EP070 is the numeric code for internal use. Test method for C6-C9 Fraction of TPH is EP071.

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

Test Method - E-G3060 - Sample(s) as received, digested by in-house method E-3060 prior to the determination of Hexavalent Chromium (Cr6+). The in-house method is developed based on USEPA method 3060.



Compound	CAS Number	LOR	Sample ID		ENV-BH13-1.5m	ENV-BH13-3m	ENV-BH13-4.5m	ENV-BH13-6m	ENV-BH14-0.5m
			Sampling date / time	Unit					
Sub-Matrix: SOIL									
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued									
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500			<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(a)pyrene	50-32-8	0.500			<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	0.500			<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500			<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500			<0.500	<0.500	<0.500	<0.500	<0.500
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate									
EP076HK: Phenol	108-95-2	0.50			<0.50	<0.50	<0.50	<0.50	<0.50
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200			<0.200	<0.200	<0.200	<0.200	<0.200
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00			<5.00	<5.00	<5.00	<5.00	<5.00
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)									
EP070HK_SR: C6 - C8 Fraction	----	5			<5	<5	<5	<5	<5
EP071HK_SR: C9 - C16 Fraction	----	200			<200	<200	<200	<200	<200
EP071HK_SR: C17 - C35 Fraction	----	500			<500	<500	<500	<500	<500
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)									
EP074_SR: Benzene	71-43-2	0.2			<0.2	<0.2	<0.2	<0.2	<0.2
EP074_SR: Toluene	108-88-3	0.5			<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Ethylbenzene	100-41-4	0.5			<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: meta- & para-Xylene	108-38-3	1.0			<1.0	<1.0	<1.0	<1.0	<1.0
	106-42-3								
EP074_SR: Styrene	100-42-5	0.5			<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: ortho-Xylene	95-47-6	0.5			<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Xylenes (Total)	----	2.0			<2.0	<2.0	<2.0	<2.0	<2.0
EP-074_SR-B: Oxygenated Compounds									
EP074_SR: 2-Propanone (Acetone)	67-64-1	50			<50	<50	<50	<50	<50
EP074_SR: 2-Butanone (MEK)	78-93-3	5			<5	<5	<5	<5	<5
EP-074_SR-E: Halogenated Aliphatics									
EP074_SR: Methylene chloride	75-09-2	0.5			<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Trichloroethene	79-01-6	0.1			<0.1	<0.1	<0.1	<0.1	<0.1
EP074_SR: Tetrachloroethene	127-18-4	0.04			<0.04	<0.04	<0.04	<0.04	<0.04
EP-074_SR-G: Trihalomethanes (THM)									



Sub-Matrix: SOIL		Sample ID	ENV-BH13-1.5m	ENV-BH13-3m	ENV-BH13-4.5m	ENV-BH13-6m	ENV-BH14-0.5m
Compound	CAS Number	LOR	Sampling date / time	Unit	Sampling date / time	Sampling date / time	Sampling date / time
EP-074_SR-G: Trihalomethanes (THM) - Continued							
EP074_SR: Chloroform	67-66-3	0.04	25-Nov-2021 13:00	mg/kg	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP074_SR: Bromodichloromethane	75-27-4	0.1	25-Nov-2021 13:00	mg/kg	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP-074_SR-I: Methyl-tert-butyl Ether							
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	25-Nov-2021 13:00	mg/kg	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates							
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	25-Nov-2021 13:00	%	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	25-Nov-2021 13:00	%	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP-080_SRS: TPH(Volatile)/BTEX Surrogate							
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	25-Nov-2021 13:00	%	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP070HK_SR: Toluene-D8	2037-26-5	0.1	25-Nov-2021 13:00	%	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	25-Nov-2021 13:00	%	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP-074_SR-S: VOC Surrogates							
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	25-Nov-2021 13:00	%	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP074_SR: Toluene-D8	2037-26-5	0.1	25-Nov-2021 13:00	%	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	25-Nov-2021 13:00	%	25-Nov-2021 14:00	25-Nov-2021 15:00	25-Nov-2021 16:00



Sub-Matrix: WATER		Sample ID		Trip Blank	
Compound	CAS Number	LOR	Sampling date / time	Unit	Unit
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)					
EP074_SR: Benzene	71-43-2	5.0		µg/L	<5.0
EP074_SR: Toluene	108-88-3	5.0		µg/L	<5.0
EP074_SR: Ethylbenzene	100-41-4	5.0		µg/L	<5.0
EP074_SR: meta- & para-Xylene	108-38-3	10		µg/L	<10
	106-42-3				
EP074_SR: Styrene	100-42-5	5.0		µg/L	<5.0
EP074_SR: ortho-Xylene	95-47-6	5.0		µg/L	<5.0
EP074_SR: Xylenes (Total)	----	20		µg/L	<20
EP-074_SR-B: Oxygenated Compounds					
EP074_SR: 2-Propanone (Acetone)	67-64-1	500		µg/L	<500
EP074_SR: 2-Butanone (MEK)	78-93-3	50		µg/L	<50
EP-074_SR-E: Halogenated Aliphatics					
EP074_SR: Methylene chloride	75-09-2	50		µg/L	<50
EP074_SR: Trichloroethene	79-01-6	5.0		µg/L	<5.0
EP074_SR: Tetrachloroethene	127-18-4	5.0		µg/L	<5.0
EP-074_SR-G: Trihalomethanes (THM)					
EP074_SR: Chloroform	67-66-3	5.0		µg/L	<5.0
EP074_SR: Bromodichloromethane	75-27-4	5.0		µg/L	<5.0
EP-074_SR-I: Methyl-tert-butyl Ether					
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0		µg/L	<5.0
EP-074_SR-S: VOC Surrogates					
EP074_SR: Dibromofluoromethane	1868-53-7	0.1		%	96.4
EP074_SR: Toluene-D8	2037-26-5	0.1		%	107
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1		%	93.4



Laboratory Duplicate (DUP) Report

Matrix: SOIL

Laboratory sample ID	Sample ID	Method/Compound	CAS Number	Laboratory Duplicate (DUP) Report				RPD (%)
				LOR	Unit	Original Result	Duplicate Result	
EAED: Physical and Aggregate Properties (QC Lot: 4049504)								
HK2148614-008	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	21.7	21.7	0.0
HK2148873-005	ENV-BH13-6m	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	34.6	34.5	0.0
EG: Metals and Major Cations (QC Lot: 4048044)								
HK2148871-001	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Barium	7440-39-3	0.5	mg/kg	118	114	3.6
		EG020: Cobalt	7440-48-4	0.5	mg/kg	1.4	1.3	12.5
		EG020: Manganese	7439-96-5	0.5	mg/kg	219	252	14.0
		EG020: Tin	7440-31-5	0.5	mg/kg	2.4	2.7	10.2
		EG020: Antimony	7440-36-0	1	mg/kg	2	2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	3	3	0.0
		EG020: Copper	7440-50-8	1	mg/kg	4	4	0.0
		EG020: Lead	7439-92-1	1	mg/kg	69	65	5.6
		EG020: Molybdenum	7439-98-7	1	mg/kg	2	2	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	1	1	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	44	44	0.0
EG: Metals and Major Cations (QC Lot: 4048069)								
HK2148614-006	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<1.0	<1.0	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104)								
HK2148614-004	Anonymous	Naphthalene	91-20-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthene	83-32-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluorene	86-73-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Phenanthrene	85-01-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Anthracene	120-12-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluoranthene	206-44-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Pyrene	129-00-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Chrysene	218-01-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<0.500 mg/kg	<500	0.0



Matrix: SOIL

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104) - Continued								
HK2148614-004	Anonymous	Benzo(k)fluoranthene	207-08-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Indeno(1,2,3-cd)pyrene	193-39-5	50	µg/kg	<0.500 mg/kg	<500	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<0.500 mg/kg	<500	0.0
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048104)								
HK2148614-004	Anonymous	Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<5.00 mg/kg	<5000	0.0
		Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<0.200 mg/kg	<200	0.0
		Phenol	108-95-2	500	µg/kg	<0.50 mg/kg	<500	0.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048105)								
HK2148614-004	Anonymous	C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
		C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048126)								
HK2148614-004	Anonymous	C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048127)								
HK2148614-004	Anonymous	Benzene	71-43-2	0.1	mg/kg	<0.2	<0.2	0.0
		Toluene	108-88-3	0.2	mg/kg	<0.5	<0.5	0.0
		Ethylbenzene	100-41-4	0.2	mg/kg	<0.5	<0.5	0.0
		Styrene	100-42-5	0.2	mg/kg	<0.5	<0.5	0.0
		ortho-Xylene	95-47-6	0.2	mg/kg	<0.5	<0.5	0.0
		meta- & para-Xylene	108-38-3	0.4	mg/kg	<1.0	<1.0	0.0
		Xylenes (Total)	106-42-3	1	mg/kg	<2.0	<2.0	0.0
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048127)								
HK2148614-004	Anonymous	2-Propanone (Acetone)	67-64-1	2	mg/kg	<50	<50	0.0
		2-Butanone (MEK)	78-93-3	2	mg/kg	<5	<5	0.0
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127)								
HK2148614-004	Anonymous	Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	<0.04	0.0
		Trichloroethene	79-01-6	0.1	mg/kg	<0.1	<0.1	0.0
		Methylene chloride	75-09-2	0.5	mg/kg	<0.5	<0.5	0.0
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048127)								



Matrix: SOIL

Method Blank (MB) Report

Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)			RPD (%)	Control Limit	
						LCS	DCS	Recovery Limits (%)			
						Low	High	Value			
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104) - Continued											
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	86.1	-----	73.0	92.0	-----	-----
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	86.4	-----	77.0	100	-----	-----
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	85.7	-----	77.0	98.0	-----	-----
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	87.0	-----	78.0	96.0	-----	-----
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	82.8	-----	68.0	96.0	-----	-----
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	84.8	-----	76.0	99.0	-----	-----
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	75.2	-----	66.0	98.0	-----	-----
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	78.4	-----	74.0	109	-----	-----
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	67.8	-----	67.0	101	-----	-----
Indeno(1,2,3-cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	62.2	-----	45.0	95.0	-----	-----
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	64.0	-----	52.0	90.0	-----	-----
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	60.0	-----	51.0	94.0	-----	-----
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048104)											
Phenol	108-95-2	500	µg/kg	<500	250 µg/kg	86.6	-----	67.0	102	-----	-----
Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<50	250 µg/kg	86.9	-----	77.0	99.0	-----	-----
Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<1000	250 µg/kg	112	-----	77.0	116	-----	-----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048105)											
C9 - C16 Fraction	----	200	mg/kg	<200	31.5 mg/kg	76.8	-----	63.0	92.0	-----	-----
C17 - C35 Fraction	----	500	mg/kg	<500	67.5 mg/kg	71.4	-----	52.0	101	-----	-----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048126)											
C6 - C8 Fraction	----	5	mg/kg	<5	4.5 mg/kg	108	-----	80.0	119	-----	-----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048127)											
Benzene	71-43-2	0.1	mg/kg	<0.1	0.25 mg/kg	110	-----	78.0	118	-----	-----
Toluene	108-88-3	0.2	mg/kg	<0.2	0.25 mg/kg	107	-----	78.0	122	-----	-----
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.25 mg/kg	110	-----	79.0	123	-----	-----
meta- & para-Xylene	108-38-3	0.4	mg/kg	<0.4	0.5 mg/kg	106	-----	78.0	123	-----	-----
	106-42-3										
Styrene	100-42-5	0.2	mg/kg	<0.2	0.25 mg/kg	105	-----	80.0	121	-----	-----
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.25 mg/kg	106	-----	79.0	123	-----	-----



Method: Compound		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report				RPD (%)		
		CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)			Recovery Limits (%)	
						LCS	DCS	Low	High	Value	Control Limit
Matrix: SOIL											
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048127) - Continued											
Xylenes (Total)			1	mg/kg	<1.0	106	----	79.0	123	----	----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048127)											
2-Propanone (Acetone)	67-64-1	2		mg/kg	<2	90.9	----	74.0	121	----	----
2-Butanone (MEK)	78-93-3	2		mg/kg	<2	110	----	76.0	120	----	----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127)											
Methylene chloride	75-09-2	0.5		mg/kg	<0.5	90.4	----	76.0	123	----	----
Trichloroethene	79-01-6	0.1		mg/kg	<0.1	90.7	----	79.0	122	----	----
Tetrachloroethene	127-18-4	0.04		mg/kg	<0.04	105	----	79.0	122	----	----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048127)											
Chloroform	67-66-3	0.04		mg/kg	<0.04	94.4	----	80.0	117	----	----
Bromodichloromethane	75-27-4	0.1		mg/kg	<0.1	90.9	----	76.0	123	----	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4048127)											
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2		mg/kg	<0.2	106	----	77.0	118	----	----
Matrix: WATER											
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4045220)											
Benzene	71-43-2	0.5		µg/L	<0.5	109	----	77.0	121	----	----
Toluene	108-88-3	0.5		µg/L	<0.5	95.2	----	80.0	121	----	----
Ethylbenzene	100-41-4	0.5		µg/L	<0.5	91.1	----	80.0	123	----	----
meta- & para-Xylene	108-38-3	1		µg/L	<1	90.0	----	79.0	123	----	----
	106-42-3										
Styrene	100-42-5	0.5		µg/L	<0.5	89.4	----	80.0	120	----	----
ortho-Xylene	95-47-6	0.5		µg/L	<0.5	91.9	----	78.0	125	----	----
Xylenes (Total)		2		µg/L	<2	90.6	----	79.0	123	----	----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4045220)											
2-Propanone (Acetone)	67-64-1	5		µg/L	<5	94.8	----	76.0	122	----	----



Matrix: WATER

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

Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration			Recovery Limits (%)			RPD (%)	Control Limit
					LCS	DCS	Low	High	Value			
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4045220) - Continued												
2-Butanone (MEK)	78-93-3	5	µg/L	<5	20 µg/L	106	-----	77.0	122	-----	-----	-----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4045220)												
Methylene chloride	75-09-2	5	µg/L	<5	2 µg/L	101	-----	78.0	122	-----	-----	-----
Trichloroethene	79-01-6	0.5	µg/L	<0.5	2 µg/L	92.2	-----	78.0	123	-----	-----	-----
Tetrachloroethene	127-18-4	0.5	µg/L	<0.5	2 µg/L	91.8	-----	78.0	124	-----	-----	-----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4045220)												
Chloroform	67-66-3	0.5	µg/L	<0.5	2 µg/L	106	-----	79.0	120	-----	-----	-----
Bromodichloromethane	75-27-4	0.5	µg/L	<0.5	2 µg/L	108	-----	80.0	122	-----	-----	-----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4045220)												
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	2 µg/L	110	-----	80.0	121	-----	-----	-----



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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration		Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			RPD (%)
				MS	MSD	Recovery Limits (%)	Value	Control Limit	
Matrix: SOIL									
EG: Metals and Major Cations (QC Lot: 4048044)									
HK2148870-001	Anonymous	EG020: Antimony	7440-36-0	10 mg/kg	92.3	75.0	125	75.0	125
		EG020: Arsenic	7440-38-2	10 mg/kg	99.8	75.0	125	75.0	125
		EG020: Barium	7440-39-3	10 mg/kg	82.4	75.0	125	75.0	125
		EG020: Cadmium	7440-43-9	0.5 mg/kg	104	75.0	125	75.0	125
		EG020: Cobalt	7440-48-4	10 mg/kg	101	75.0	125	75.0	125
		EG020: Copper	7440-50-8	10 mg/kg	100	75.0	125	75.0	125
		EG020: Lead	7439-92-1	10 mg/kg	# Not Determined	75.0	125	75.0	125
		EG020: Manganese	7439-96-5	10 mg/kg	# Not Determined	75.0	125	75.0	125
		EG020: Mercury	7439-97-6	0.1 mg/kg	106	75.0	125	75.0	125
		EG020: Molybdenum	7439-98-7	10 mg/kg	104	75.0	125	75.0	125
		EG020: Nickel	7440-02-0	10 mg/kg	98.4	75.0	125	75.0	125
		EG020: Tin	7440-31-5	10 mg/kg	112	75.0	125	75.0	125
		EG020: Zinc	7440-66-6	10 mg/kg	120	75.0	125	75.0	125
EG: Metals and Major Cations (QC Lot: 4048069)									
HK2148814-005	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	2.5 mg/kg	108	75.0	125	75.0	125
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104)									
HK2148814-006	Anonymous	Naphthalene	91-20-3	250 µg/kg	79.4	50.0	130	50.0	130
		Acenaphthylene	208-96-8	250 µg/kg	80.0	50.0	130	50.0	130
		Acenaphthene	83-32-9	250 µg/kg	78.9	50.0	130	50.0	130
		Fluorene	86-73-7	250 µg/kg	76.7	50.0	130	50.0	130
		Phenanthrene	85-01-8	250 µg/kg	81.6	50.0	130	50.0	130
		Anthracene	120-12-7	250 µg/kg	82.0	50.0	130	50.0	130
		Fluoranthene	206-44-0	250 µg/kg	83.2	50.0	130	50.0	130
		Pyrene	129-00-0	250 µg/kg	90.0	50.0	130	50.0	130
		Benz(a)anthracene	56-55-3	250 µg/kg	83.1	50.0	130	50.0	130



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method/Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		Value	Control Limit
					MS	MSD	Low	High		
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048104) - Continued										
HK2148614-006	Anonymous	Chrysene	218-01-9	250 µg/kg	73.3	-----	50.0	130	-----	-----
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	63.4	-----	50.0	130	-----	-----
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	63.0	-----	50.0	130	-----	-----
		Benzo(a)pyrene	50-32-8	250 µg/kg	65.5	-----	50.0	130	-----	-----
		Indeno(1,2,3-cd)pyrene	193-39-5	250 µg/kg	65.0	-----	50.0	130	-----	-----
		Dibenz(a,h)anthracene	53-70-3	250 µg/kg	66.1	-----	50.0	130	-----	-----
		Benzo(g,h,i)perylene	191-24-2	250 µg/kg	57.8	-----	50.0	130	-----	-----
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048104)										
HK2148614-006	Anonymous	Phenol	108-95-2	250 µg/kg	86.7	-----	50.0	130	-----	-----
		Hexachlorobenzene (HCB)	118-74-1	250 µg/kg	78.3	-----	50.0	130	-----	-----
		Bis(2-ethylhexyl)phthalate	117-81-7	250 µg/kg	97.1	-----	50.0	130	-----	-----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048105)										
HK2148614-005	Anonymous	C9 - C16 Fraction	----	31.5 mg/kg	75.0	-----	50.0	130	-----	-----
		C17 - C35 Fraction	----	67.5 mg/kg	67.8	-----	50.0	130	-----	-----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048126)										
HK2148614-005	Anonymous	C6 - C8 Fraction	----	4.5 mg/kg	101	-----	50.0	130	-----	-----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048127)										
HK2148614-006	Anonymous	Benzene	71-43-2	0.25 mg/kg	109	-----	50.0	130	-----	-----
		Toluene	108-88-3	0.25 mg/kg	106	-----	50.0	130	-----	-----
		Ethylbenzene	100-41-4	0.25 mg/kg	93.3	-----	50.0	130	-----	-----
		meta- & para-Xylene	108-38-3	0.5 mg/kg	97.3	-----	50.0	130	-----	-----
		106-42-3	106-42-3	0.5 mg/kg	97.3	-----	50.0	130	-----	-----
		Styrene	100-42-5	0.25 mg/kg	95.1	-----	50.0	130	-----	-----
		ortho-Xylene	95-47-6	0.25 mg/kg	96.3	-----	50.0	130	-----	-----
		Xylenes (Total)	----	0.75 mg/kg	97.0	-----	50.0	130	-----	-----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048127)										
HK2148614-006	Anonymous	2-Propanone (Acetone)	67-64-1	2.5 mg/kg	95.4	-----	50.0	130	-----	-----
		2-Butanone (MEK)	78-93-3	2.5 mg/kg	102	-----	50.0	130	-----	-----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127)										



Matrix: SOIL
 Matrix-Spike (MS) and Matrix-Spike Duplicate (MSD) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			RPD (%)
					MS	MSD	Recovery Limits (%)	
				Low	High	Value	Control Limit	
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048127) - Continued								
HK2148614-006	Anonymous	Methylene chloride	75-09-2	0.25 mg/kg	104	-----	50.0	130
		Trichloroethene	79-01-6	0.25 mg/kg	92.4	-----	50.0	130
		Tetrachloroethene	127-18-4	0.25 mg/kg	93.7	-----	50.0	130
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048127)								
HK2148614-006	Anonymous	Chloroform	67-66-3	0.25 mg/kg	107	-----	50.0	130
		Bromodichloromethane	75-27-4	0.25 mg/kg	102	-----	50.0	130
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4048127)								
HK2148614-006	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.25 mg/kg	104	-----	50.0	130

Surrogate Control Limits

Sub-Matrix: SOIL			
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-080_SRS: TPH(Volatile)/BTEX Surrogate			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
EP-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
Sub-Matrix: WATER			
Compound	CAS Number	Recovery Limits (%)	
EP-074_SR-S: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110

Page Number : 16 of 16

Client : PAUL Y - CREC JOINT VENTURE

Work Order : HK2148873, Amendment 1



Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-074_SR-S: VOC Surrogates - Continued			
4-Bromofluorobenzene	460-00-4	86	115

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ALS Laboratory Group

CLIENT: Park Y - CREC Joint Venture
 ADDRESS/OFFICE: Wang Lee St. Yuen Long Industrial Estate
 PROJECT MANAGER (PM):

SAMPLER: Justin Xu
 MOBILE: 925157259
 PHONE:

PROJECT ID:
 SITE: P.O. NO.:

EMAIL REPORT TO: Refer to FSS
 EMAIL INVOICE TO: (if different to report)

RESULT'S REQUIRED (Date):
 FOR LABORATORY USE ONLY
 COOLER SEAL (circle appropriate) INT
 Intact: Yes No
 SAMPLE TEMPERATURE
 CHILLED: Yes No

ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)
 Notes: e.g. Highly contaminated samples
 e.g. "High PAHs expected"
 Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE INFORMATION (note: S = Soil, W = Water)			CONTAINER INFORMATION	
	SAMPLE ID	MATRIX	DATE	Time	Type / Code
1	ENV-BH15-0.5m	S	29/11/21	1000	G1055
2	ENV-BH14-1.5m	S	29/11/21	1000	u76
3	ENV-BH14-3m	S	29/11/21	1015	u76
4	ENV-BH14-4.5m	S	29/11/21	1045	u76
5	ENV-BH14-6m	S	29/11/21	1130	u76
6	ENV-BH15-1.5m	S	29/11/21	1330	u76
7	ENV-BH15-3m	S	29/11/21	1400	u76
8	ENV-BH15-4.5m	S	29/11/21	1430	u76
9	ENV-BH15-6m	S	29/11/21	1500	u76
10	Tip Blank	W	30/11/21	1000	AG

RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	NAME:	OF:	DATE:	TIME:	NAME:	OF:
	<u>Karina Chan</u>								
	<u>Limotech Consultants</u>								
				<u>Ketin Lam</u>		<u>30-Nov-2021</u>			
				<u>ALS HK</u>		<u>12:15</u>			

RECEIVED BY:
 Name: Karina Chan
 Of: Limotech Consultants
 Date: 30-Nov-2021
 Time: 12:15

RELINQUISHED BY:
 Name: Ketin Lam
 Of: ALS HK
 Date: 30-Nov-2021
 Time: 12:15

METHOD OF SHIPMENT:
 Con' Note No:
 Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;
 V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specialion Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc-Accetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.

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 YELLOW - CUSTOMER COPY
 PINK - BOOK COPY



CERTIFICATE OF ANALYSIS

Client : PAUL Y - GREC JOINT VENTURE
Contact : TEDDY ORR
Address : 11/F, PAUL Y CENTRE, 51 HUNG TO ROAD, KWUN TONG, KL,
HONG KONG
E-mail : Teddyorr@pyengineering.com
Telephone : —
Facsimile : +852 2621 5618
Project : DC/2019/10 - YUEN LONG EFFLUENT POLISHING PLANT - MAIN WORKS FOR STAGE 1
Order number : P5120-005
Laboratory : ALS Technichem (HK) Pty Ltd
Contact : Richard Fung
Address : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing
Yip Street, Kwai Chung, N.T., Hong Kong
E-mail : richard.fung@alsglobal.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HKE/1853/2021_V4
C-O-C number : H044307
Site :

Page : 1 of 22
Work Order : HIK2149090
Date Samples Received : 30-Nov-2021
Issue Date : 24-Dec-2021
No. of samples received : 10
No. of samples analysed : 10

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

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

Signatories	Position	Authorised results for
	Senior Chemist	Organics_ENV
	Manager - Inorganics	Inorganics
	Assistant Manager - Environmental	Metals_ENV



Page Number : 2 of 22
Client : PAUL Y - CREC JOINT VENTURE
Work Order HK2149090

General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 30-Nov-2021 to 09-Dec-2021.

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

Specific Comments for Work Order: HK2149090

Sample(s) was/were picked up from client by ALS staff. Sample(s) arrived laboratory in chilled condition. The result(s) related only to the item(s) tested.

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

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

EP070 is the numeric code for internal use. Test method for C6-C9 Fraction of TPH is EP071.

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

Test Method - ECG3060 - Sample(s) as received, digested by in-house method E-3060 prior to the determination of Hexavalent Chromium (Cr6+). The in-house method is developed based on USEPA method 3060.



Analytical Results

Sub-Matrix: SOIL		Sample ID		ENV-BH15-0.5m		ENV-BH14-1.5m		ENV-BH14-3m		ENV-BH14-4.5m		ENV-BH14-6m	
		Sampling date / time		29-Nov-2021 10:00		29-Nov-2021 10:00		29-Nov-2021 10:15		29-Nov-2021 10:45		29-Nov-2021 11:30	
Compound	CAS Number	LOR	Unit		8.6	23.4	28.2	38.3	32.7				
		0.1	%										
EAI/ED: Physical and Aggregate Properties													
EA055: Moisture Content (dried @ 103°C)													
EG: Metals and Major Cations													
EG020: Antimony	7440-36-0	1	mg/kg	<1		1	1						<1
EG020: Arsenic	7440-38-2	1	mg/kg	2		9	9						13
EG020: Barium	7440-39-3	1.0	mg/kg	19.9		182	429						34.5
EG020: Cadmium	7440-43-9	0.2	mg/kg	0.3		<0.2	<0.2						<0.2
EG020: Cobalt	7440-48-4	1.0	mg/kg	2.5		19.5	146						10.2
EG020: Copper	7440-50-8	1	mg/kg	21		62	85						13
EG020: Lead	7439-92-1	1	mg/kg	55		42	84						38
EG020: Manganese	7439-96-5	1.0	mg/kg	193		2460	4470						632
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05		<0.05	<0.05						<0.05
EG020: Molybdenum	7439-98-7	1	mg/kg	11		2	3						5
EG020: Nickel	7440-02-0	1	mg/kg	3		24	30						19
EG020: Tin	7440-31-5	1.0	mg/kg	5.2		89.7	31.7						2.9
EG020: Zinc	7440-66-6	1	mg/kg	91		102	126						76
EG049: Trivalent Chromium	16065-83-1	1.0	mg/kg	5.3		57.5	73.7						31.8
EG3060: Hexavalent Chromium	18540-29-9	1.0	mg/kg	1.1		1.1	1.7						<1.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)													
EP076HK: Naphthalene	91-20-3	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Acenaphthylene	208-96-8	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Acenaphthene	83-32-9	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Fluorene	86-73-7	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Phenanthrene	85-01-8	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Anthracene	120-12-7	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Fluoranthene	206-44-0	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Pyrene	129-00-0	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Benz(a)anthracene	56-55-3	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Chrysene	218-01-9	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500
EP076HK: Benzo(b)fluoranthene	205-99-2	0.500	mg/kg	<0.500		<0.500	<0.500						<0.500



Compound	CAS Number	LOR	Unit	Sample ID				
				ENV-BH15-0.5m	ENV-BH14-1.5m	ENV-BH14-3m	ENV-BH14-4.5m	ENV-BH14-6m
				29-Nov-2021 10:00	29-Nov-2021 10:00	29-Nov-2021 10:15	29-Nov-2021 10:45	29-Nov-2021 11:30
				HK2149090-001	HK2149090-002	HK2149090-003	HK2149090-004	HK2149090-005
Sub-Matrix: SOIL								
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued								
EP076HK: Benzo(k)fluoranthene	207-08-9	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(a)pyrene	50-32-8	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500	mg/kg	<0.500	<0.500	<0.500	<0.500	<0.500
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate								
EP076HK: Phenol	108-95-2	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00	mg/kg	<5.00	<5.00	<5.00	<5.00	<5.00
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)								
EP070HK_SR: C6 - C8 Fraction	----	5	mg/kg	<5	<5	<5	<5	<5
EP071HK_SR: C9 - C16 Fraction	----	200	mg/kg	<200	<200	<200	<200	<200
EP071HK_SR: C17 - C35 Fraction	----	500	mg/kg	<500	<500	<500	<500	<500
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)								
EP074_SR: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP074_SR: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: meta- & para-Xylene	108-38-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
	106-42-3							
EP074_SR: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Xylenes (Total)	----	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP-074_SR-B: Oxygenated Compounds								
EP074_SR: 2-Propanone (Acetone)	67-64-1	50	mg/kg	<50	<50	<50	<50	<50
EP074_SR: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
EP-074_SR-E: Halogenated Aliphatics								
EP074_SR: Methylene chloride	75-09-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074_SR: Trichloroethene	79-01-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP074_SR: Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	<0.04	<0.04	<0.04	<0.04
EP-074_SR-G: Trihalomethanes (THM)								



Sub-Matrix: SOIL

Compound	CAS Number	LOR	Sample ID		Unit	Sampling date / time	ENV-BH15-0.5m	ENV-BH14-1.5m	ENV-BH14-3m	ENV-BH14-4.5m	ENV-BH14-6m
			CAS Number	Unit							
EP-074_SR-G: Trihalomethanes (THM) - Continued											
EP074_SR: Chloroform	67-66-3	0.04			mg/kg	29-Nov-2021 10:00	<0.04	<0.04	<0.04	<0.04	<0.04
EP074_SR: Bromodichloromethane	75-27-4	0.1			mg/kg	29-Nov-2021 10:00	<0.1	<0.1	<0.1	<0.1	<0.1
EP-074_SR-I: Methyl-tert-butyl Ether											
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5			mg/kg	29-Nov-2021 10:00	<0.5	<0.5	<0.5	<0.5	<0.5
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates											
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1			%	29-Nov-2021 10:15	89.1	88.6	87.4	78.6	82.6
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1			%	29-Nov-2021 10:15	84.2	82.1	81.8	74.5	78.4
EP-080_SRS: TPH(Volatiles)/BTEX Surrogate											
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1			%	29-Nov-2021 10:00	92.0	93.7	91.7	90.9	90.5
EP070HK_SR: Toluene-D8	2037-26-5	0.1			%	29-Nov-2021 10:00	109	108	109	108	108
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1			%	29-Nov-2021 10:00	90.6	91.5	91.4	91.4	91.8
EP-074_SR-S: VOC Surrogates											
EP074_SR: Dibromofluoromethane	1868-53-7	0.1			%	29-Nov-2021 10:00	92.0	93.7	91.7	90.9	90.5
EP074_SR: Toluene-D8	2037-26-5	0.1			%	29-Nov-2021 10:00	109	108	109	108	108
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1			%	29-Nov-2021 10:00	90.6	91.5	91.4	91.4	91.8



Sub-Matrix: SOIL		Sample ID	ENV-BH15-1.5m	ENV-BH15-3m	ENV-BH15-4.5m	ENV-BH15-6m
Compound	CAS Number	LOR	Sampling date / time	Unit	Sampling date / time	Unit
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) - Continued						
EP076HK: Benzo(a)pyrene	50-32-8	0.500		mg/kg	<0.500	<0.500
EP076HK: Indeno(1,2,3-cd)pyrene	193-39-5	0.500		mg/kg	<0.500	<0.500
EP076HK: Dibenz(a,h)anthracene	53-70-3	0.500		mg/kg	<0.500	<0.500
EP076HK: Benzo(g,h,i)perylene	191-24-2	0.500		mg/kg	<0.500	<0.500
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate						
EP076HK: Phenol	108-95-2	0.50		mg/kg	<0.50	<0.50
EP076HK: Hexachlorobenzene (HCB)	118-74-1	0.200		mg/kg	<0.200	<0.200
EP076HK: Bis(2-ethylhexyl)phthalate	117-81-7	5.00		mg/kg	<5.00	<5.00
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)						
EP070HK_SR: C6 - C8 Fraction	----	5		mg/kg	<5	<5
EP071HK_SR: C9 - C16 Fraction	----	200		mg/kg	<200	<200
EP071HK_SR: C17 - C35 Fraction	----	500		mg/kg	<500	<500
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)						
EP074_SR: Benzene	71-43-2	0.2		mg/kg	<0.2	<0.2
EP074_SR: Toluene	108-88-3	0.5		mg/kg	<0.5	<0.5
EP074_SR: Ethylbenzene	100-41-4	0.5		mg/kg	<0.5	<0.5
EP074_SR: meta- & para-Xylene	108-38-3	1.0		mg/kg	<1.0	<1.0
	106-42-3					
EP074_SR: Styrene	100-42-5	0.5		mg/kg	<0.5	<0.5
EP074_SR: ortho-Xylene	95-47-6	0.5		mg/kg	<0.5	<0.5
EP074_SR: Xylenes (Total)	----	2.0		mg/kg	<2.0	<2.0
EP-074_SR-B: Oxygenated Compounds						
EP074_SR: 2-Propanone (Acetone)	67-64-1	50		mg/kg	<50	<50
EP074_SR: 2-Butanone (MEK)	78-93-3	5		mg/kg	<5	<5
EP-074_SR-E: Halogenated Aliphatics						
EP074_SR: Methylene chloride	75-09-2	0.5		mg/kg	<0.5	<0.5
EP074_SR: Trichloroethene	79-01-6	0.1		mg/kg	<0.1	<0.1
EP074_SR: Tetrachloroethene	127-18-4	0.04		mg/kg	<0.04	<0.04
EP-074_SR-G: Trihalomethanes (THM)						
EP074_SR: Chloroform	67-66-3	0.04		mg/kg	<0.04	<0.04



Sub-Matrix: SOIL		Sample ID	ENV-BH15-1.5m	ENV-BH15-3m	ENV-BH15-4.5m	ENV-BH15-6m
Compound	CAS Number	LOR	Sampling date / time	Unit	Sampling date / time	Unit
EP-074 SR-G: Trihalomethanes (THM) - Continued						
EP074_SR: Bromodichloromethane	75-27-4	0.1	<0.1	mg/kg	<0.1	<0.1
EP-074_SR-I: Methyl-tert-butyl Ether	1634-04-4	0.5	<0.5	mg/kg	<0.5	<0.5
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates						
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	65.7	%	80.9	72.6
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	63.9	%	82.0	76.4
EP-080_SRS: TPH(Volatile)/BTEX Surrogate						
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	95.9	%	91.9	95.3
EP070HK_SR: Toluene-D8	2037-26-5	0.1	109	%	110	107
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	92.0	%	91.4	92.4
EP-074_SR-S: VOC Surrogates						
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	95.9	%	91.9	95.3
EP074_SR: Toluene-D8	2037-26-5	0.1	109	%	110	107
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	92.0	%	91.4	92.4



Compound	CAS Number	Sample ID		Trip Blank	Unit
		LOR	Sampling date / time		
Sub-Matrix: WATER					
EP-074_S-R-A: Monocyclic Aromatic Hydrocarbons (MAH)					
EP074_SR: Benzene	71-43-2	5.0		<5.0	µg/L
EP074_SR: Toluene	108-88-3	5.0		<5.0	µg/L
EP074_SR: Ethylbenzene	100-41-4	5.0		<5.0	µg/L
EP074_SR: meta- & para-Xylene	108-38-3	10		<10	µg/L
	106-42-3				
EP074_SR: Styrene	100-42-5	5.0		<5.0	µg/L
EP074_SR: ortho-Xylene	95-47-6	5.0		<5.0	µg/L
EP074_SR: Xylenes (Total)	----	20		<20	µg/L
EP-074_S-R-B: Oxygenated Compounds					
EP074_SR: 2-Propanone (Acetone)	67-64-1	500		<500	µg/L
EP074_SR: 2-Butanone (MEK)	78-93-3	50		<50	µg/L
EP-074_S-R-E: Halogenated Aliphatics					
EP074_SR: Methylene chloride	75-09-2	50		<50	µg/L
EP074_SR: Trichloroethene	79-01-6	5.0		<5.0	µg/L
EP074_SR: Tetrachloroethene	127-18-4	5.0		<5.0	µg/L
EP-074_S-R-G: Trihalomethanes (THM)					
EP074_SR: Chloroform	67-66-3	5.0		<5.0	µg/L
EP074_SR: Bromodichloromethane	75-27-4	5.0		<5.0	µg/L
EP-074_S-R-I: Methyl-tert-butyl Ether					
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0		<5.0	µg/L
EP-074_S-R-S: VOC Surrogates					
EP074_SR: Dibromofluoromethane	1868-53-7	0.1		100	%
EP074_SR: Toluene-D8	2037-26-5	0.1		109	%
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1		92.4	%



Laboratory Duplicate (DUP) Report

Laboratory sample ID	Sample ID	Method/Compound	CAS Number	Laboratory Duplicate (DUP) Report				RPD (%)
				LOR	Unit	Original Result	Duplicate Result	
EAED: Physical and Aggregate Properties (QC Lot: 4049505)								
HK2149027-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	19.0	19.1	0.6
HK2149039-001	Anonymous	EA055: Moisture Content (dried @ 103°C)	----	0.1	%	10.0	9.9	1.5
EG: Metals and Major Cations (QC Lot: 4048048)								
HK2148597-002	Anonymous	EG020: Mercury	7439-97-6	0.05	mg/kg	0.08	0.06	16.3
		EG020: Cadmium	7440-43-9	0.2	mg/kg	0.2	0.2	0.0
		EG020: Barium	7440-39-3	0.5	mg/kg	35.3	33.7	4.4
		EG020: Cobalt	7440-48-4	0.5	mg/kg	2.9	2.7	9.1
		EG020: Manganese	7439-96-5	0.5	mg/kg	188	179	4.8
		EG020: Tin	7440-31-5	0.5	mg/kg	16.0	15.2	5.2
		EG020: Antimony	7440-36-0	1	mg/kg	2	2	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	7	6	0.0
		EG020: Copper	7440-50-8	1	mg/kg	58	52	11.5
		EG020: Lead	7439-92-1	1	mg/kg	52	53	0.0
		EG020: Molybdenum	7439-98-7	1	mg/kg	5	5	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	6	6	0.0
		EG020: Zinc	7440-66-6	1	mg/kg	166	148	11.4
EG: Metals and Major Cations (QC Lot: 4048049)								
HK2149090-005	ENV-BH14-6m	EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	<0.05	0.0
		EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	<0.2	0.0
		EG020: Barium	7440-39-3	0.5	mg/kg	32.0	28.6	11.3
		EG020: Cobalt	7440-48-4	0.5	mg/kg	7.8	7.4	5.1
		EG020: Manganese	7439-96-5	0.5	mg/kg	391	391	0.0
		EG020: Tin	7440-31-5	0.5	mg/kg	5.1	4.8	7.1
		EG020: Antimony	7440-36-0	1	mg/kg	<1	<1	0.0
		EG020: Arsenic	7440-38-2	1	mg/kg	17	16	0.0
		EG020: Copper	7440-50-8	1	mg/kg	13	12	0.0
		EG020: Lead	7439-92-1	1	mg/kg	61	58	4.4
		EG020: Molybdenum	7439-98-7	1	mg/kg	1	1	0.0
		EG020: Nickel	7440-02-0	1	mg/kg	14	12	7.7
		EG020: Zinc	7440-66-6	1	mg/kg	73	68	7.0

Matrix: SOIL



Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report			RPD (%)	
				LOR	Unit	Original Result		Duplicate Result
EG: Metals and Major Cations (QC Lot: 4048072)								
HK2149028-001	Anonymous	EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<1.0	<1.0	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048722)								
HK2149023-001	Anonymous	Naphthalene	91-20-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthene	83-32-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluorene	86-73-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Phenanthrene	85-01-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Anthracene	120-12-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluoranthene	206-44-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Pyrene	129-00-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Chrysene	218-01-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(a)pyrene	50-32-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Indeno(1,2,3-cd)pyrene	193-39-5	50	µg/kg	<0.500 mg/kg	<500	0.0
		Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<0.500 mg/kg	<500	0.0
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048724)								
HK2148828-001	Anonymous	Naphthalene	91-20-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthylene	208-96-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Acenaphthene	83-32-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluorene	86-73-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Phenanthrene	85-01-8	50	µg/kg	<0.500 mg/kg	<500	0.0
		Anthracene	120-12-7	50	µg/kg	<0.500 mg/kg	<500	0.0
		Fluoranthene	206-44-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Pyrene	129-00-0	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benz(a)anthracene	56-55-3	50	µg/kg	<0.500 mg/kg	<500	0.0
		Chrysene	218-01-9	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(b)fluoranthene	205-99-2	50	µg/kg	<0.500 mg/kg	<500	0.0
		Benzo(k)fluoranthene	207-08-9	50	µg/kg	<0.500 mg/kg	<500	0.0



Matrix: SOIL

Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048724) - Continued									
HK2148828-001	Anonymous		Benzo(e)pyrene	50-32-8	50	µg/kg	<0.500 mg/kg	<500	0.0
			Indeno(1,2,3-cd)pyrene	193-39-5	50	µg/kg	<0.500 mg/kg	<500	0.0
			Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<0.500 mg/kg	<500	0.0
			Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<0.500 mg/kg	<500	0.0
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048722)									
HK2149023-001	Anonymous		Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<5.00 mg/kg	<5000	0.0
			Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<0.200 mg/kg	<200	0.0
			Phenol	108-95-2	500	µg/kg	<0.50 mg/kg	<500	0.0
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048724)									
HK2148828-001	Anonymous		Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<5.00 mg/kg	<5000	0.0
			Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<0.200 mg/kg	<200	0.0
			Phenol	108-95-2	500	µg/kg	<0.50 mg/kg	<500	0.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048622)									
HK2149025-001	Anonymous		C6 - C8 Fraction	----	5	mg/kg	<5	<5	0.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048721)									
HK2149023-001	Anonymous		C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
			C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048725)									
HK2148828-001	Anonymous		C9 - C16 Fraction	----	200	mg/kg	<200	<200	0.0
			C17 - C35 Fraction	----	500	mg/kg	<500	<500	0.0
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048623)									
HK2149025-001	Anonymous		Benzene	71-43-2	0.1	mg/kg	<0.2	<0.2	0.0
			Toluene	108-88-3	0.2	mg/kg	<0.5	<0.5	0.0
			Ethylbenzene	100-41-4	0.2	mg/kg	<0.5	<0.5	0.0
			Styrene	100-42-5	0.2	mg/kg	<0.5	<0.5	0.0
			ortho-Xylene	95-47-6	0.2	mg/kg	<0.5	<0.5	0.0
			meta- & para-Xylene	108-38-3	0.4	mg/kg	<1.0	<1.0	0.0
			Xylenes (Total)	106-42-3	1	mg/kg	<2.0	<2.0	0.0
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048623)									
HK2149025-001	Anonymous		2-Propanone (Acetone)	67-64-1	2	mg/kg	<50	<50	0.0



Matrix: SOIL

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report		RPD (%)
						Original Result	Duplicate Result	
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048623) - Continued								
HK2149025-001	Anonymous	2-Butanone (MEK)	78-93-3	2	mg/kg	<5	<5	0.0
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048623)								
HK2149025-001	Anonymous	Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	<0.04	0.0
		Trichloroethene	79-01-6	0.1	mg/kg	<0.1	<0.1	0.0
		Methylene chloride	75-09-2	0.5	mg/kg	<0.5	<0.5	0.0
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048623)								
HK2149025-001	Anonymous	Chloroform	67-66-3	0.04	mg/kg	<0.04	<0.04	0.0
		Bromodichloromethane	75-27-4	0.1	mg/kg	<0.1	<0.1	0.0
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4048623)								
HK2149025-001	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.5	<0.5	0.0

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

Matrix: SOIL

Method: Compound	Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
	CAS Number	LOR	Unit	Result	Spike Concentration	LCS	DCS	Recovery Limits (%)	Value	Control Limit
EG: Metals and Major Cations (QC Lot: 4048048)										
EG020: Antimony	7440-36-0	1	mg/kg	<1	10 mg/kg	106	108	85.0	108	-----
EG020: Arsenic	7440-38-2	1	mg/kg	<1	10 mg/kg	108	110	87.2	110	-----
EG020: Barium	7440-39-3	0.5	mg/kg	<0.5	10 mg/kg	100	110	85.0	110	-----
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	0.5 mg/kg	99.0	113	85.0	113	-----
EG020: Cobalt	7440-48-4	0.5	mg/kg	<0.5	10 mg/kg	108	110	89.8	110	-----
EG020: Copper	7440-50-8	1	mg/kg	<1	10 mg/kg	110	115	92.0	115	-----
EG020: Lead	7439-92-1	1	mg/kg	<1	10 mg/kg	100	115	86.7	115	-----
EG020: Manganese	7439-96-5	0.5	mg/kg	<0.5	10 mg/kg	104	108	85.8	108	-----
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	0.1 mg/kg	111	115	86.6	115	-----
EG020: Molybdenum	7439-98-7	1	mg/kg	<1	10 mg/kg	112	113	85.2	113	-----
EG020: Nickel	7440-02-0	1	mg/kg	<1	10 mg/kg	108	111	90.6	111	-----
EG020: Tin	7440-31-5	0.5	mg/kg	<0.5	10 mg/kg	105	109	85.0	109	-----
EG020: Zinc	7440-66-6	1	mg/kg	<1	10 mg/kg	109	115	90.9	115	-----

EG: Metals and Major Cations (QC Lot: 4048049)



Matrix: SOIL

Method Blank (MB) Report

Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Method/Compound	CAS Number	LOR	Unit	Result	Spike Recovery (%)			Recovery Limits(%)			RPD (%)	Control Limit
					LCS	DCS	Low	High	Value			
EG: Metals and Major Cations (QC Lot: 4048049) - Continued												
EG020: Antimony	7440-36-0	1	mg/kg	<1	106	---	85.0	108	---	---	---	
EG020: Arsenic	7440-38-2	1	mg/kg	<1	109	---	87.2	110	---	---	---	
EG020: Barium	7440-39-3	0.5	mg/kg	<0.5	97.2	---	85.0	110	---	---	---	
EG020: Cadmium	7440-43-9	0.2	mg/kg	<0.2	101	---	85.0	113	---	---	---	
EG020: Cobalt	7440-48-4	0.5	mg/kg	<0.5	103	---	89.8	110	---	---	---	
EG020: Copper	7440-50-8	1	mg/kg	<1	114	---	92.0	115	---	---	---	
EG020: Lead	7439-92-1	1	mg/kg	<1	99.1	---	86.7	115	---	---	---	
EG020: Manganese	7439-96-5	0.5	mg/kg	<0.5	100	---	85.8	108	---	---	---	
EG020: Mercury	7439-97-6	0.05	mg/kg	<0.05	111	---	86.6	115	---	---	---	
EG020: Molybdenum	7439-98-7	1	mg/kg	<1	102	---	85.2	113	---	---	---	
EG020: Nickel	7440-02-0	1	mg/kg	<1	102	---	90.6	111	---	---	---	
EG020: Tin	7440-31-5	0.5	mg/kg	<0.5	104	---	85.0	109	---	---	---	
EG020: Zinc	7440-66-6	1	mg/kg	<1	112	---	90.9	115	---	---	---	
EG: Metals and Major Cations (QC Lot: 4048072)												
EG3060: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	115	---	85.0	1120000	---	---	---	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048722)												
Naphthalene	91-20-3	50	µg/kg	<50	92.4	---	76.0	96.0	---	---	---	
Acenaphthylene	208-96-8	50	µg/kg	<50	84.3	---	74.0	95.0	---	---	---	
Acenaphthene	83-32-9	50	µg/kg	<50	95.6	---	78.0	97.0	---	---	---	
Fluorene	86-73-7	50	µg/kg	<50	86.8	---	73.0	95.0	---	---	---	
Phenanthrene	85-01-8	50	µg/kg	<50	88.2	---	73.0	92.0	---	---	---	
Anthracene	120-12-7	50	µg/kg	<50	84.2	---	77.0	100	---	---	---	
Fluoranthene	206-44-0	50	µg/kg	<50	96.9	---	77.0	98.0	---	---	---	
Pyrene	129-00-0	50	µg/kg	<50	90.6	---	78.0	96.0	---	---	---	
Benz(a)anthracene	56-55-3	50	µg/kg	<50	83.8	---	68.0	96.0	---	---	---	
Chrysene	218-01-9	50	µg/kg	<50	89.1	---	76.0	99.0	---	---	---	
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	77.0	---	66.0	98.0	---	---	---	
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	80.5	---	74.0	109	---	---	---	
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	73.2	---	67.0	101	---	---	---	



Matrix: SOIL

Method Blank (MB) Report

Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)			RPD (%)	
						LCS	DCS	Recovery Limits(%)		
						Low	High	Value	Control Limit	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048722) - Continued										
Indeno(1,2,3-cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	62.2	---	45.0	95.0	---
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	66.0	---	52.0	90.0	---
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	60.8	---	51.0	94.0	---
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048724)										
Naphthalene	91-20-3	50	µg/kg	<50	250 µg/kg	90.3	---	76.0	96.0	---
Acenaphthylene	208-96-8	50	µg/kg	<50	250 µg/kg	82.3	---	74.0	95.0	---
Acenaphthene	83-32-9	50	µg/kg	<50	250 µg/kg	94.8	---	78.0	97.0	---
Fluorene	86-73-7	50	µg/kg	<50	250 µg/kg	93.1	---	73.0	95.0	---
Phenanthrene	85-01-8	50	µg/kg	<50	250 µg/kg	91.6	---	73.0	92.0	---
Anthracene	120-12-7	50	µg/kg	<50	250 µg/kg	87.2	---	77.0	100	---
Fluoranthene	206-44-0	50	µg/kg	<50	250 µg/kg	91.0	---	77.0	98.0	---
Pyrene	129-00-0	50	µg/kg	<50	250 µg/kg	93.4	---	78.0	96.0	---
Benz(a)anthracene	56-55-3	50	µg/kg	<50	250 µg/kg	86.6	---	68.0	96.0	---
Chrysene	218-01-9	50	µg/kg	<50	250 µg/kg	89.2	---	76.0	99.0	---
Benzo(b)fluoranthene	205-99-2	50	µg/kg	<50	250 µg/kg	87.3	---	66.0	98.0	---
Benzo(k)fluoranthene	207-08-9	50	µg/kg	<50	250 µg/kg	94.2	---	74.0	109	---
Benzo(a)pyrene	50-32-8	50	µg/kg	<50	250 µg/kg	87.7	---	67.0	101	---
Indeno(1,2,3-cd)pyrene	193-39-5	50	µg/kg	<50	250 µg/kg	78.6	---	45.0	95.0	---
Dibenz(a,h)anthracene	53-70-3	50	µg/kg	<50	250 µg/kg	86.6	---	52.0	90.0	---
Benzo(g,h,i)perylene	191-24-2	50	µg/kg	<50	250 µg/kg	89.9	---	51.0	94.0	---
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048722)										
Phenol	108-95-2	500	µg/kg	<500	250 µg/kg	79.7	---	67.0	102	---
Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<50	250 µg/kg	88.8	---	77.0	99.0	---
Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<1000	250 µg/kg	111	---	77.0	116	---
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048724)										
Phenol	108-95-2	500	µg/kg	<500	250 µg/kg	84.8	---	67.0	102	---
Hexachlorobenzene (HCB)	118-74-1	50	µg/kg	<50	250 µg/kg	97.3	---	77.0	99.0	---
Bis(2-ethylhexyl)phthalate	117-81-7	1000	µg/kg	<1000	250 µg/kg	110	---	77.0	116	---
EP-071HK_SRF: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048622)										



Matrix: SOIL

Method Blank (MB) Report

Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)			Recovery Limits(%)	RPD (%)
						LCS	DCS	High		
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048622) - Continued										
C6 - C8 Fraction	----	5	mg/kg	<5	4.5 mg/kg	107	----	80.0	119	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048721)										
C9 - C16 Fraction	----	200	mg/kg	<200	31.5 mg/kg	77.3	----	63.0	92.0	----
C17 - C35 Fraction	----	500	mg/kg	<500	67.5 mg/kg	70.2	----	52.0	101	----
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048725)										
C9 - C16 Fraction	----	200	mg/kg	<200	31.5 mg/kg	72.5	----	63.0	92.0	----
C17 - C35 Fraction	----	500	mg/kg	<500	67.5 mg/kg	69.3	----	52.0	101	----
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048623)										
Benzene	71-43-2	0.1	mg/kg	<0.1	0.25 mg/kg	93.6	----	78.0	118	----
Toluene	108-88-3	0.2	mg/kg	<0.2	0.25 mg/kg	91.5	----	78.0	122	----
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	0.25 mg/kg	90.3	----	79.0	123	----
meta- & para-Xylene	108-38-3	0.4	mg/kg	<0.4	0.5 mg/kg	96.8	----	78.0	123	----
	106-42-3									
Styrene	100-42-5	0.2	mg/kg	<0.2	0.25 mg/kg	91.6	----	80.0	121	----
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	0.25 mg/kg	93.2	----	79.0	123	----
Xylenes (Total)	----	1	mg/kg	<1.0	0.75 mg/kg	95.6	----	79.0	123	----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048623)										
2-Propanone (Acetone)	67-64-1	2	mg/kg	<2	2.5 mg/kg	92.5	----	74.0	121	----
2-Butanone (MEK)	78-93-3	2	mg/kg	<2	2.5 mg/kg	108	----	76.0	120	----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048623)										
Methylene chloride	75-09-2	0.5	mg/kg	<0.5	0.25 mg/kg	103	----	76.0	123	----
Trichloroethene	79-01-6	0.1	mg/kg	<0.1	0.25 mg/kg	107	----	79.0	122	----
Tetrachloroethene	127-18-4	0.04	mg/kg	<0.04	0.25 mg/kg	90.0	----	79.0	122	----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048623)										
Chloroform	67-66-3	0.04	mg/kg	<0.04	0.25 mg/kg	110	----	80.0	117	----
Bromodichloromethane	75-27-4	0.1	mg/kg	<0.1	0.25 mg/kg	108	----	76.0	123	----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4048623)										
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.2	mg/kg	<0.2	0.25 mg/kg	108	----	77.0	118	----



Matrix: WATER

Method Blank (MB) Report

Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)			Recovery Limits(%)			RPD (%)	Control Limit	
						LCS	DCS	Low	High	Value				
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4053377)														
Benzene	71-43-2	0.5	µg/L	<0.5	2 µg/L	108	-----	77.0	121	-----	-----	-----	-----	-----
Toluene	108-88-3	0.5	µg/L	<0.5	2 µg/L	101	-----	80.0	121	-----	-----	-----	-----	-----
Ethylbenzene	100-41-4	0.5	µg/L	<0.5	2 µg/L	89.8	-----	80.0	123	-----	-----	-----	-----	-----
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	4 µg/L	96.0	-----	79.0	123	-----	-----	-----	-----	-----
Styrene	100-42-5	0.5	µg/L	<0.5	2 µg/L	94.4	-----	80.0	120	-----	-----	-----	-----	-----
ortho-Xylene	95-47-6	0.5	µg/L	<0.5	2 µg/L	93.5	-----	78.0	125	-----	-----	-----	-----	-----
Xylenes (Total)	-----	2	µg/L	<2	6 µg/L	95.2	-----	79.0	123	-----	-----	-----	-----	-----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4053377)														
2-Propanone (Acetone)	67-64-1	5	µg/L	<5	20 µg/L	107	-----	76.0	122	-----	-----	-----	-----	-----
2-Butanone (MEK)	78-93-3	5	µg/L	<5	20 µg/L	98.3	-----	77.0	122	-----	-----	-----	-----	-----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4053377)														
Methylene chloride	75-09-2	5	µg/L	<5	2 µg/L	106	-----	78.0	122	-----	-----	-----	-----	-----
Trichloroethene	79-01-6	0.5	µg/L	<0.5	2 µg/L	90.8	-----	78.0	123	-----	-----	-----	-----	-----
Tetrachloroethene	127-18-4	0.5	µg/L	<0.5	2 µg/L	93.3	-----	78.0	124	-----	-----	-----	-----	-----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4053377)														
Chloroform	67-66-3	0.5	µg/L	<0.5	2 µg/L	95.7	-----	79.0	120	-----	-----	-----	-----	-----
Bromodichloromethane	75-27-4	0.5	µg/L	<0.5	2 µg/L	94.2	-----	80.0	122	-----	-----	-----	-----	-----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4053377)														
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	2 µg/L	94.5	-----	80.0	121	-----	-----	-----	-----	-----



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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration		Spike Recovery (%)		Recovery Limits (%)		RPD (%)	Control Limit
				MS	MSD	Low	High	Value			
EG: Metals and Major Cations (QC Lot: 4048048)											
HK2148597-001	Anonymous										
		EG020: Antimony	7440-36-0	10 mg/kg	80.1	75.0	125	75.0	125	-----	-----
		EG020: Arsenic	7440-38-2	10 mg/kg	98.7	75.0	125	75.0	125	-----	-----
		EG020: Barium	7440-39-3	10 mg/kg	# Not Determined	75.0	125	75.0	125	-----	-----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	87.7	75.0	125	75.0	125	-----	-----
		EG020: Cobalt	7440-48-4	10 mg/kg	88.4	75.0	125	75.0	125	-----	-----
		EG020: Copper	7440-50-8	10 mg/kg	# Not Determined	75.0	125	75.0	125	-----	-----
		EG020: Lead	7439-92-1	10 mg/kg	# Not Determined	75.0	125	75.0	125	-----	-----
		EG020: Manganese	7439-96-5	10 mg/kg	# Not Determined	75.0	125	75.0	125	-----	-----
		EG020: Mercury	7439-97-6	0.1 mg/kg	106	75.0	125	75.0	125	-----	-----
		EG020: Molybdenum	7439-98-7	10 mg/kg	97.2	75.0	125	75.0	125	-----	-----
		EG020: Nickel	7440-02-0	10 mg/kg	84.6	75.0	125	75.0	125	-----	-----
		EG020: Tin	7440-31-5	10 mg/kg	78.5	75.0	125	75.0	125	-----	-----
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	75.0	125	75.0	125	-----	-----
EG: Metals and Major Cations (QC Lot: 4048049)											
HK2149090-004	ENV-BH14-4.5m										
		EG020: Antimony	7440-36-0	10 mg/kg	108	75.0	125	75.0	125	-----	-----
		EG020: Arsenic	7440-38-2	10 mg/kg	111	75.0	125	75.0	125	-----	-----
		EG020: Barium	7440-39-3	10 mg/kg	91.4	75.0	125	75.0	125	-----	-----
		EG020: Cadmium	7440-43-9	0.5 mg/kg	98.9	75.0	125	75.0	125	-----	-----
		EG020: Cobalt	7440-48-4	10 mg/kg	109	75.0	125	75.0	125	-----	-----
		EG020: Copper	7440-50-8	10 mg/kg	114	75.0	125	75.0	125	-----	-----
		EG020: Lead	7439-92-1	10 mg/kg	120	75.0	125	75.0	125	-----	-----
		EG020: Manganese	7439-96-5	10 mg/kg	# Not Determined	75.0	125	75.0	125	-----	-----
		EG020: Mercury	7439-97-6	0.1 mg/kg	105	75.0	125	75.0	125	-----	-----



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			Recovery Limits (%)			RPD (%)
					MS	MSD	Low	High	Value	Control Limit	
EG: Metals and Major Cations (QC Lot: 4048049) - Continued											
HK2149090-004	ENV-BH14-4.5m	EG020: Molybdenum	7439-98-7	10 mg/kg	111	-----	75.0	125	-----	-----	
		EG020: Nickel	7440-02-0	10 mg/kg	91.5	-----	75.0	125	-----	-----	
		EG020: Tin	7440-31-5	10 mg/kg	110	-----	75.0	125	-----	-----	
		EG020: Zinc	7440-66-6	10 mg/kg	# Not Determined	-----	75.0	125	-----	-----	
EG: Metals and Major Cations (QC Lot: 4048072)											
HK2149027-001	Anonymous	EG3080: Hexavalent Chromium	18540-29-9	2.5 mg/kg	118	-----	75.0	125	-----	-----	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048722)											
HK2149090-001	ENV-BH15-0.5m	Naphthalene	91-20-3	250 µg/kg	90.9	-----	50.0	130	-----	-----	
		Acenaphthylene	208-96-8	250 µg/kg	88.7	-----	50.0	130	-----	-----	
		Acenaphthene	83-32-9	250 µg/kg	79.1	-----	50.0	130	-----	-----	
		Fluorene	86-73-7	250 µg/kg	75.2	-----	50.0	130	-----	-----	
		Phenanthrene	85-01-8	250 µg/kg	86.9	-----	50.0	130	-----	-----	
		Anthracene	120-12-7	250 µg/kg	87.6	-----	50.0	130	-----	-----	
		Fluoranthene	206-44-0	250 µg/kg	86.7	-----	50.0	130	-----	-----	
		Pyrene	129-00-0	250 µg/kg	87.7	-----	50.0	130	-----	-----	
		Benz(a)anthracene	56-55-3	250 µg/kg	86.3	-----	50.0	130	-----	-----	
		Chrysene	218-01-9	250 µg/kg	89.4	-----	50.0	130	-----	-----	
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	64.0	-----	50.0	130	-----	-----	
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	67.5	-----	50.0	130	-----	-----	
		Benzo(a)pyrene	50-32-8	250 µg/kg	62.8	-----	50.0	130	-----	-----	
		Indeno(1,2,3-cd)pyrene	193-39-5	250 µg/kg	72.9	-----	50.0	130	-----	-----	
		Dibenz(a,h)anthracene	53-70-3	250 µg/kg	71.2	-----	50.0	130	-----	-----	
		Benzo(g,h,i)perylene	191-24-2	250 µg/kg	68.7	-----	50.0	130	-----	-----	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048724)											
HK2149187-001	Anonymous	Naphthalene	91-20-3	250 µg/kg	87.2	-----	50.0	130	-----	-----	
		Acenaphthylene	208-96-8	250 µg/kg	78.8	-----	50.0	130	-----	-----	
		Acenaphthene	83-32-9	250 µg/kg	82.2	-----	50.0	130	-----	-----	
		Fluorene	86-73-7	250 µg/kg	79.5	-----	50.0	130	-----	-----	



Matrix: SOIL
 Method: Compound
 Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			Recovery Limits (%)			RPD (%)
					MS	MSD	Low	High	Value	Control Limit	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4048724) - Continued											
HK2149187-001	Anonymous	Phenanthrene	85-01-8	250 µg/kg	83.2	----	50.0	130	-----	-----	
		Anthracene	120-12-7	250 µg/kg	81.4	----	50.0	130	-----	-----	
		Fluoranthene	206-44-0	250 µg/kg	75.5	----	50.0	130	-----	-----	
		Pyrene	129-00-0	250 µg/kg	75.4	----	50.0	130	-----	-----	
		Benz(a)anthracene	56-55-3	250 µg/kg	83.5	----	50.0	130	-----	-----	
		Chrysene	218-01-9	250 µg/kg	88.2	----	50.0	130	-----	-----	
		Benzo(b)fluoranthene	205-99-2	250 µg/kg	97.6	----	50.0	130	-----	-----	
		Benzo(k)fluoranthene	207-08-9	250 µg/kg	89.0	----	50.0	130	-----	-----	
		Benzo(a)pyrene	50-32-8	250 µg/kg	77.4	----	50.0	130	-----	-----	
		Indeno(1,2,3-cd)pyrene	193-39-5	250 µg/kg	70.4	----	50.0	130	-----	-----	
		Dibenz(a,h)anthracene	53-70-3	250 µg/kg	80.3	----	50.0	130	-----	-----	
		Benzo(g,h,i)perylene	191-24-2	250 µg/kg	62.1	----	50.0	130	-----	-----	
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048722)											
HK2149090-001	ENV-BH15-0.5m	Phenol	108-95-2	250 µg/kg	98.6	----	50.0	130	-----	-----	
		Hexachlorobenzene (HCB)	118-74-1	250 µg/kg	77.4	----	50.0	130	-----	-----	
		Bis(2-ethylhexyl)phthalate	117-81-7	250 µg/kg	94.7	----	50.0	130	-----	-----	
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4048724)											
HK2149187-001	Anonymous	Phenol	108-95-2	250 µg/kg	74.6	----	50.0	130	-----	-----	
		Hexachlorobenzene (HCB)	118-74-1	250 µg/kg	83.4	----	50.0	130	-----	-----	
		Bis(2-ethylhexyl)phthalate	117-81-7	250 µg/kg	112	----	50.0	130	-----	-----	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048622)											
HK2149027-001	Anonymous	C6 - C8 Fraction	----	4.5 mg/kg	106	----	50.0	130	-----	-----	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048721)											
HK2149027-001	Anonymous	C9 - C16 Fraction	----	31.5 mg/kg	74.3	----	50.0	130	-----	-----	
		C17 - C35 Fraction	----	67.5 mg/kg	64.1	----	50.0	130	-----	-----	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4048725)											
HK2149177-001	Anonymous	C9 - C16 Fraction	----	31.5 mg/kg	66.4	----	50.0	130	-----	-----	
		C17 - C35 Fraction	----	67.5 mg/kg	57.0	----	50.0	130	-----	-----	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048623)											



Matrix: SOIL

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

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			Recovery Limits (%)			RPD (%)
					MS	MSD	Low	High	Value	Control Limit	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4048623) - Continued											
HK2149028-001	Anonymous	Benzene	71-43-2	0.25 mg/kg	100	----	50.0	130	----	----	
		Toluene	108-88-3	0.25 mg/kg	107	----	50.0	130	----	----	
		Ethylbenzene	100-41-4	0.25 mg/kg	92.7	----	50.0	130	----	----	
		meta- & para-Xylene	108-38-3 106-42-3	0.5 mg/kg	98.1	----	50.0	130	----	----	
		Styrene	100-42-5	0.25 mg/kg	94.6	----	50.0	130	----	----	
		ortho-Xylene	95-47-6	0.25 mg/kg	93.9	----	50.0	130	----	----	
		Xylenes (Total)	----	0.75 mg/kg	96.7	----	50.0	130	----	----	
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4048623)											
HK2149028-001	Anonymous	2-Propanone (Acetone)	67-64-1	2.5 mg/kg	96.4	----	50.0	130	----	----	
		2-Butanone (MEK)	78-93-3	2.5 mg/kg	106	----	50.0	130	----	----	
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4048623)											
HK2149028-001	Anonymous	Methylene chloride	75-09-2	0.25 mg/kg	99.0	----	50.0	130	----	----	
		Trichloroethene	79-01-6	0.25 mg/kg	94.6	----	50.0	130	----	----	
		Tetrachloroethene	127-18-4	0.25 mg/kg	95.6	----	50.0	130	----	----	
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4048623)											
HK2149028-001	Anonymous	Chloroform	67-66-3	0.25 mg/kg	100	----	50.0	130	----	----	
		Bromodichloromethane	75-27-4	0.25 mg/kg	103	----	50.0	130	----	----	
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4048623)											
HK2149028-001	Anonymous	Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.25 mg/kg	109	----	50.0	130	----	----	

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)		
Compound	CAS Number	Low	High	
EP-076S: Polycyclic Aromatic Hydrocarbons (PAHs) Surrogates				
2-Fluorobiphenyl	321-60-8	50	130	
4-Terphenyl-d14	1718-51-0	50	130	
EP-080_SRS: TPH(Volatile)/BTEX Surrogate				
Dibromofluoromethane	1868-53-7	80	120	



Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-080_SRS: TPH(Volatile)/BTX Surrogate - Continued			
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
EP-074_SRS: VOC Surrogates			
Dibromofluoromethane	1868-53-7	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP-074_SRS: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115

CHAIN OF CUSTODY DOCUMENTATION

H 039729



ALS Laboratory Group

CLIENT: PX-CREC-3V
 ADDRESS/OFFICE: Along Lee St. New Long Judicial Bldg
 PROJECT MANAGER (PM):
 PROJECT ID:
 SITE: YLS1W P.O. NO.:
 RESULTS REQUIRED (Date):
 QUOTE NO.:

SAMPLER: Justin Yu
 MOBILE: 953 7284
 PHONE:
 EMAIL REPORT TO: Refer to FSS
 EMAIL INVOICE TO: (if different to report)

ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)

Notes: e.g. Highly contaminated samples
 e.g. "High PAHs expected"
 Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	SAMPLE INFORMATION (Incl. S = Soil, W=Water)			CONTAINER INFORMATION		
		MATRIX	DATE	Time	Type / Code	Total bottles	
1	Trip Blank	W	6/1/21	1030	AG	2	
2	Field Blank	W	"	1052	AG	5	
3	Equipment Blank	W	"	1055	AG	5	
4	ENV-BH12 - Gw	W	"	1200	AG	5	
5	ENV - BH13 - Gw	W	"	1145	AG	5	
6	ENV - BH14 - Gw	W	"	1140	AG	5	
7	ENV - BH15 - Gw	W	"	1115	AG	5	
8	ENV - BH14 - Spike	W	"	1130	AG	5	

RELINQUISHED BY: Justin Yu Date: 6-1-2022
 Name: Justin Yu Of: ALS
 RECEIVED BY: ALS Date: 6-1-2022
 Name: ALS Of: ALS
 Date: 14:15 Time: 14:15
 Date: Time:
 Date: Time:

METHOD OF SHIPMENT:
 Con' Note No:
 Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;
 V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soil; B = Unpreserved Bag.

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



CERTIFICATE OF ANALYSIS

Client : PAUL Y - CREC JOINT VENTURE
Contact : TEDDY ORR
Address : 11/F, PAUL Y CENTRE, 51 HUNG TO ROAD, KWUN TONG, KL,
HONG KONG
E-mail : Teddyorr@pyengineering.com
Telephone : —
Facsimile : +852 2621 5618
Project : DC/2019/10 - YUEN LONG EFFLUENT POLISHING PLANT - MAIN WORKS FOR STAGE 1
Order number : —
Laboratory : ALS Technichem (HK) Pty Ltd
Contact : Richard Fung
Address : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing
Yip Street, Kwai Chung, N.T., Hong Kong
E-mail : richard.fung@alsglobal.com
Telephone : +852 2610 1044
Facsimile : +852 2610 2021
Quote number : HKE/1853/2021_V5
Date Samples Received : 06-Jan-2022
Issue Date : 17-Jan-2022
C-O-C number : H039729
Site : —
Page : 1 of 9
Work Order : HK2200915
No. of samples received : 8
No. of samples analysed : 8

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

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

Signatories	Position	Authorised results for
	Senior Chemist	Organics_ENV
	Assistant Manager - Environmental	Metals_ENV

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

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



Page Number : 2 of 9
Client : PAUL Y - CREC JOINT VENTURE
Work Order : HK2200915

General Comments

This report supersedes any previous report(s) with this reference. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 06-Jan-2022 to 14-Jan-2022.

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: HK2200915

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

ALS Technichem (HK) Pty Ltd is HOKLAS accredited for the testing provided in this report. The sampling activity involved is not covered under HOKLAS accreditation.

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

Water sample(s) were filtered prior to dissolved metal analysis.

EP070 is the numeric code for internal use. Test method for C6-C9 Fraction of TPH is EP071.



Analytical Results

Sub-Matrix: WATER

Compound	CAS Number	LOR	Unit	Sample ID					ENV-BH13-GW
				Trip Blank	Field Blank	Equipment Blank	ENV-BH12-GW	06-Jan-2022 11:45	
EG: Metals and Major Cations - Filtered				06-Jan-2022 10:50	06-Jan-2022 10:52	06-Jan-2022 10:55	06-Jan-2022 12:00	06-Jan-2022 11:45	
Sampling date / time				HK2200915-001	HK2200915-002	HK2200915-003	HK2200915-004	HK2200915-005	
EG020: Mercury	7439-97-6	0.5	µg/L	---	<0.5	<0.5	<0.5	<0.5	
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)									
EP076HK: Naphthalene	91-20-3	2.0	µg/L	---	<2.0	<2.0	<2.0	<2.0	
EP076HK: Acenaphthylene	208-96-8	2.0	µg/L	---	<2.0	<2.0	<2.0	<2.0	
EP076HK: Acenaphthene	83-32-9	2.0	µg/L	---	<2.0	<2.0	<2.0	<2.0	
EP076HK: Fluorene	86-73-7	2.0	µg/L	---	<2.0	<2.0	<2.0	<2.0	
EP076HK: Phenanthrene	85-01-8	2.0	µg/L	---	<2.0	<2.0	<2.0	<2.0	
EP076HK: Anthracene	120-12-7	2.0	µg/L	---	<2.0	<2.0	<2.0	<2.0	
EP076HK: Fluoranthene	206-44-0	2.0	µg/L	---	<2.0	<2.0	<2.0	<2.0	
EP076HK: Pyrene	129-00-0	2.0	µg/L	---	<2.0	<2.0	<2.0	<2.0	
EP076HK: Chrysene	218-91-9	1.0	µg/L	---	<1.0	<1.0	<1.0	<1.0	
EP076HK: Benzo(b)fluoranthene	205-99-2	1.0	µg/L	---	<1.0	<1.0	<1.0	<1.0	
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate									
EP076HK: Hexachlorobenzene (HCB)	118-74-1	4.0	µg/L	---	<4.0	<4.0	<4.0	<4.0	
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)									
EP070HK_SR: C6 - C8 Fraction	----	20	µg/L	---	<20	<20	<20	<20	
EP071HK_SR: C9 - C16 Fraction	----	500	µg/L	---	<500	<500	<500	<500	
EP071HK_SR: C17 - C35 Fraction	----	500	µg/L	---	<500	<500	<500	<500	
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)									
EP074_SR: Benzene	71-43-2	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
EP074_SR: Toluene	108-88-3	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
EP074_SR: Ethylbenzene	100-41-4	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
EP074_SR: meta- & para-Xylene	108-38-3	10	µg/L	<10	<10	<10	<10	<10	
	106-42-3								
EP074_SR: Styrene	100-42-5	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
EP074_SR: ortho-Xylene	95-47-6	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	
EP074_SR: Xylenes (Total)	----	20	µg/L	<20	<20	<20	<20	<20	
EP-074_SR-B: Oxygenated Compounds									
EP074_SR: 2-Propanone (Acetone)	67-64-1	500	µg/L	<500	<500	<500	<500	<500	



Sub-Matrix: WATER		Sample ID		Sampling date / time		Trip Blank		Field Blank		Equipment Blank		ENV-BH12-GW		ENV-BH13-GW	
Compound	CAS Number	LOR	Unit	06-Jan-2022 10:50	06-Jan-2022 10:52	06-Jan-2022 10:55	06-Jan-2022 12:00	06-Jan-2022 11:45	HK2200915-001	HK2200915-002	HK2200915-003	HK2200915-004	HK2200915-005		
EP-074_SR-B: Oxvaenated Compounds - Continued															
EP074_SR: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50		
EP-074_SR-E: Halogenated Aliphatics															
EP074_SR: Methylene chloride	75-09-2	50	µg/L	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50		
EP074_SR: Trichloroethene	79-01-6	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
EP074_SR: Tetrachloroethene	127-18-4	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
EP-074_SR-G: Trihalomethanes (THM)															
EP074_SR: Chloroform	67-66-3	5.0	µg/L	<5.0	<5.0	<5.0	6.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
EP074_SR: Bromodichloromethane	75-27-4	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
EP-074_SR-I: Methyl-tert-butyl Ether															
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates															
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1	%	---	98.5	93.9	76.5	87.6	---	---	---	---	---		
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1	%	---	115	110	84.9	102	---	---	---	---	---		
EP-080_SRS: TPH(Volatile)/BTEX Surrogate															
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1	%	---	94.6	93.6	97.3	98.2	---	---	---	---	---		
EP070HK_SR: Toluene-D8	2037-26-5	0.1	%	---	97.6	97.6	97.8	97.1	---	---	---	---	---		
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	---	90.2	91.2	90.9	90.2	---	---	---	---	---		
EP-074_SR-S: VOC Surrogates															
EP074_SR: Dibromofluoromethane	1868-53-7	0.1	%	93.5	94.6	93.6	97.3	98.2	---	---	---	---	---		
EP074_SR: Toluene-D8	2037-26-5	0.1	%	97.9	97.6	97.6	97.8	97.1	---	---	---	---	---		
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1	%	91.5	90.2	91.2	90.9	90.2	---	---	---	---	---		



Compound	CAS Number	LOR	Sample ID		Unit	ENV-BH14-GW	ENV-BH15-GW	ENV-BH14-Duplicate
			Sampling date / time	te				
Sub-Matrix: WATER								
EG: Metals and Major Cations - Filtered								
EG020: Mercury	7439-97-6	0.5		06-Jan-2022 11:40	µg/L	<0.5	<0.5	<0.5
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs)								
EP076HK: Naphthalene	91-20-3	2.0		06-Jan-2022 11:15	µg/L	<2.0	<2.0	<2.0
EP076HK: Acenaphthylene	208-96-8	2.0			µg/L	<2.0	<2.0	<2.0
EP076HK: Acenaphthene	83-32-9	2.0			µg/L	<2.0	<2.0	<2.0
EP076HK: Fluorene	86-73-7	2.0			µg/L	<2.0	<2.0	<2.0
EP076HK: Phenanthrene	85-01-8	2.0			µg/L	<2.0	<2.0	<2.0
EP076HK: Anthracene	120-12-7	2.0			µg/L	<2.0	<2.0	<2.0
EP076HK: Fluoranthene	206-44-0	2.0			µg/L	<2.0	<2.0	<2.0
EP076HK: Pyrene	129-00-0	2.0			µg/L	<2.0	<2.0	<2.0
EP076HK: Chrysene	218-01-9	1.0			µg/L	<1.0	<1.0	<1.0
EP076HK: Benzo(b)fluoranthene	205-99-2	1.0			µg/L	<1.0	<1.0	<1.0
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate								
EP076HK: Hexachlorobenzene (HCB)	118-74-1	4.0			µg/L	<4.0	<4.0	<4.0
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH)								
EP070HK_SR: C6 - C8 Fraction	----	20			µg/L	<20	<20	<20
EP071HK_SR: C9 - C16 Fraction	----	500			µg/L	<500	<500	<500
EP071HK_SR: C17 - C35 Fraction	----	500			µg/L	<500	500	500
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH)								
EP074_SR: Benzene	71-43-2	5.0			µg/L	<5.0	<5.0	<5.0
EP074_SR: Toluene	108-88-3	5.0			µg/L	<5.0	<5.0	<5.0
EP074_SR: Ethylbenzene	100-41-4	5.0			µg/L	<5.0	<5.0	<5.0
EP074_SR: meta- & para-Xylene	108-38-3	10			µg/L	<10	<10	<10
	106-42-3							
EP074_SR: Styrene	100-42-5	5.0			µg/L	<5.0	<5.0	<5.0
EP074_SR: ortho-Xylene	95-47-6	5.0			µg/L	<5.0	<5.0	<5.0
EP074_SR: Xylenes (Total)	----	20			µg/L	<20	<20	<20
EP-074_SR-B: Oxygenated Compounds								
EP074_SR: 2-Propanone (Acetone)	67-64-1	500			µg/L	<500	<500	<500



Compound	CAS Number	LOR	Sample ID		ENV-BH14-GW	ENV-BH15-GW	ENV-BH14-Duplicate	Unit
			CAS Number	Sampling date / time				
Sub-Matrix: WATER								
Sub-B: Oxvaenated Compounds - Continued								
EP074_SR-B: 2-Butanone (MEK)	78-93-3	50			<5.0	<5.0	<5.0	µg/L
Sub-E: Halogenated Aliphatics								
EP074_SR: Methylene chloride	75-09-2	50			<5.0	<5.0	<5.0	µg/L
EP074_SR: Trichloroethene	79-01-6	5.0			<5.0	<5.0	<5.0	µg/L
EP074_SR: Tetrachloroethene	127-18-4	5.0			<5.0	<5.0	<5.0	µg/L
Sub-G: Trihalomethanes (THM)								
EP074_SR: Chloroform	67-66-3	5.0			6.0	<5.0	5.8	µg/L
EP074_SR: Bromodichloromethane	75-27-4	5.0			<5.0	<5.0	<5.0	µg/L
Sub-I: Methyl-tert-butyl Ether								
EP074_SR: Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.0			<5.0	<5.0	<5.0	µg/L
Sub-S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates								
EP076HK: 2-Fluorobiphenyl	321-60-8	0.1			59.6	71.1	79.7	%
EP076HK: 4-Terphenyl-d14	1718-51-0	0.1			75.8	78.9	95.0	%
Sub-S: TPH(Volatlie)/BTEX Surrogate								
EP070HK_SR: Dibromofluoromethane	1868-53-7	0.1			98.2	100	96.5	%
EP070HK_SR: Toluene-D8	2037-26-5	0.1			96.2	96.2	96.9	%
EP070HK_SR: 4-Bromofluorobenzene	460-00-4	0.1			90.4	92.1	91.1	%
Sub-S: VOC Surrogates								
EP074_SR: Dibromofluoromethane	1868-53-7	0.1			98.2	100	96.5	%
EP074_SR: Toluene-D8	2037-26-5	0.1			96.2	96.2	96.9	%
EP074_SR: 4-Bromofluorobenzene	460-00-4	0.1			90.4	92.1	91.1	%



Laboratory Duplicate (DUP) Report

Laboratory sample ID		Method Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EG: Metals and Major Cations - Filtered (QC Lot: 4112632)		EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	<0.5	0.0
HK2200915-003		Equipment Blank						

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

Method Compound	Method Blank (MB) Report				Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)			Control Limit	
						LCS	DCS	High		
EG: Metals and Major Cations - Filtered (QC Lot: 4112632)										
EG020: Mercury	7439-97-6	0.5	µg/L	<0.5	2 µg/L	104	85.0	115		
EP-076HK: Polycyclic Aromatic Hydrocarbons (PAHs) (QC Lot: 4112909)										
Naphthalene	91-20-3	0.1	µg/L	<0.1	0.5 µg/L	82.4	53.0	119		
Acenaphthylene	208-96-8	0.1	µg/L	<0.1	0.5 µg/L	90.6	55.0	110		
Acenaphthene	83-32-9	0.1	µg/L	<0.1	0.5 µg/L	83.8	55.0	104		
Fluorene	86-73-7	0.1	µg/L	<0.1	0.5 µg/L	79.5	54.0	105		
Phenanthrene	85-01-8	0.1	µg/L	<0.1	0.5 µg/L	94.4	56.0	115		
Anthracene	120-12-7	0.1	µg/L	<0.1	0.5 µg/L	84.1	56.0	113		
Fluoranthene	206-44-0	0.1	µg/L	<0.1	0.5 µg/L	96.2	73.0	116		
Pyrene	129-00-0	0.1	µg/L	<0.1	0.5 µg/L	91.7	72.0	119		
Chrysene	218-01-9	0.1	µg/L	<0.1	0.5 µg/L	96.9	73.0	121		
Benzo(b)fluoranthene	205-99-2	0.1	µg/L	<0.1	0.5 µg/L	78.4	56.0	124		
EP-076HK: Phenol, Hexachlorobenzene and Bis(2-ethylhexyl) Phthalate (QC Lot: 4112909)										
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4.0	0.5 µg/L	77.1	59.0	99.0		
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4112910)										
C9 - C16 Fraction		0.5	mg/L	<0.5	0.21 mg/L	65.3	55.0	98.0		
C17 - C35 Fraction		0.5	mg/L	<0.5	0.45 mg/L	76.5	64.0	99.0		
EP-071HK_SR: Total Petroleum Hydrocarbons (TPH) (QC Lot: 4114248)										
C6 - C8 Fraction		0.02	mg/L	<0.02	0.03 mg/L	108	80.0	121		
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4114244)										
Benzene	71-43-2	0.5	µg/L	<0.5	2 µg/L	93.8	79.0	120		



Method: Compound		Method Blank (MB) Report				Laboratory Control Spikes (LCS) and Laboratory Control Spike Duplicates (DCS) Report				
		CAS Number	LOR	Unit	Result	Spike Concentration	LCS	DCS	Recovery Limits (%)	RPD (%)
Matrix: WATER										
EP-074_SR-A: Monocyclic Aromatic Hydrocarbons (MAH) (QC Lot: 4114244) - Continued										
Toluene	108-88-3	0.5	µg/L	<0.5	2 µg/L	92.0	-----	80.0	124	-----
Ethylbenzene	100-41-4	0.5	µg/L	<0.5	2 µg/L	92.1	-----	77.0	125	-----
meta- & para-Xylene	108-38-3	1	µg/L	<1	4 µg/L	90.7	-----	78.0	125	-----
	106-42-3									
Styrene	100-42-5	0.5	µg/L	<0.5	2 µg/L	93.9	-----	78.0	123	-----
ortho-Xylene	95-47-6	0.5	µg/L	<0.5	2 µg/L	93.8	-----	78.0	125	-----
Xylenes (Total)	----	2	µg/L	<2	6 µg/L	91.8	-----	78.0	125	-----
EP-074_SR-B: Oxygenated Compounds (QC Lot: 4114244)										
2-Propanone (Acetone)	67-64-1	5	µg/L	<5	20 µg/L	90.1	-----	75.0	122	-----
2-Butanone (MEK)	78-93-3	5	µg/L	<5	20 µg/L	105	-----	79.0	120	-----
EP-074_SR-E: Halogenated Aliphatics (QC Lot: 4114244)										
Methylene chloride	75-09-2	5	µg/L	<5	2 µg/L	106	-----	78.0	124	-----
Trichloroethene	79-01-6	0.5	µg/L	<0.5	2 µg/L	90.9	-----	79.0	122	-----
Tetrachloroethene	127-18-4	0.5	µg/L	<0.5	2 µg/L	90.2	-----	78.0	124	-----
EP-074_SR-G: Trihalomethanes (THM) (QC Lot: 4114244)										
Chloroform	67-66-3	0.5	µg/L	<0.5	2 µg/L	91.8	-----	78.0	120	-----
Bromodichloromethane	75-27-4	0.5	µg/L	<0.5	2 µg/L	92.1	-----	76.0	123	-----
EP-074_SR-I: Methyl-tert-butyl Ether (QC Lot: 4114244)										
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	µg/L	<0.5	2 µg/L	91.1	-----	78.0	121	-----

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

Laboratory sample ID		Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			Recovery Limits (%)			RPD (%)
						MS	MSD	High	Low	High	Value	
Matrix: WATER												
EG: Metals and Major Cations - Filtered (QC Lot: 4112632)												
HK2200915-002	Field Blank		EG020: Mercury	7439-97-6	2 µg/L	99.8	-----	75.0	125	-----	-----	-----

Surrogate Control Limits



Compound	CAS Number	Recovery Limits (%)	
		Low	High
Sub-Matrix: WATER			
EP-076S: Polycyclic Aromatics Hydrocarbons (PAHs) Surrogates			
2-Fluorobiphenyl	321-60-8	50	130
4-Terphenyl-d14	1718-51-0	50	130
EP-080_SRS: TPH(Volatile)/BTX Surrogate			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115
EP-074_SRS: VOC Surrogates			
Dibromofluoromethane	1868-53-7	86	118
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115