Annex C

Environmental Test Results

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[1] https://www.cpr.cuhk.edu.hk/en/press_detail.php?id=3186&t=cuhk-releases-first-batch-of-test-results-on-campus-environment&s=Test%20Results%20on%20Campus%20Environment

[2] https://www.cpr.cuhk.edu.hk/en/press_detail.php?id=3192&t=cuhk-releases-the-second-batch-of-test-results-on-campus-environment&s=Test%20Results%20on%20Campus%20Environment

[3] https://www.cpr.cuhk.edu.hk/en/press_detail.php?id=3205&t=cuhk-releases-the-third-batch-of-test-results-on-campus-environment&s=Test%20Results%20on%20Campus%20Environment

[4] https://www.polyu.edu.hk/web/en/media/media_releases/index_id_6723.html

[5] https://www.polyu.edu.hk/web/en/media/media_releases/index_id_6724.html

[6] https://www.hkstp.org/en/about-us/press-room/hkstp-shares-test-results-of-environmental-assessment-at-hong-kong-science-park/

Press Releases

6 December 2019

CUHK Releases First Batch of Test Results on Campus Environment

To ensure campus environment safety, The Chinese University of Hong Kong (CUHK) appointed an independent accredited laboratory to collect air, water and soil samples at various locations and at different times on campus and sent them for testing. The University has just received the test results of some soil (S1-S7 & S9) and water (W1-W8) samples. Here is the summary of the results compared with the guidance notes/international standards.

For soil samples (S1-S7 & S9):

Contaminant	Test results	Reference Level	Reference Document
Dioxins	0.0038-0.0086 ng/g	1 ng/g	Risk-Based Remediation Goals (RBRGs) for Soil (Public Parks), published by Hong Kong Environmental Protection Department
Total Cyanide	< 1 mg/kg	4,900 mg/kg	
Total PCBs	< 0.2 mg/kg	0.756 mg/kg	
PAHs	< 0.500 mg/kg	3.83-10,000mg/kg	

For water samples (W1-W8):

Contaminant	Test results	Reference Level	Reference Document
Dioxins	4.6-4.8 pg/L	30 pg/L	Drinking Water Standards from USEPA
Total Cyanide	< 0.05-0.10 mg/L	0.2 mg/L	
Total PCBs	< 0.50 µg/L	0.5 µg/L	
PAHs	< 0.1 µg/L	0.1-0.4 µg/L	

Conclusion

From the test results issued by our appointed laboratory, the dioxins levels for soil samples (S1-S7 & S9) are well below the Risk-Based Remediation Goals (RBRGs) for Soil (Public Parks) as stated in *Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management* published by Hong Kong Environmental Protection Department. It reveals that the hazards or risks to human health arising from exposure to soil are minimal, and measures to protect public health, including a cleanup, would not be necessary. The values of dioxins level for

water samples (W1-W8) are not significant compared to the drinking water standards from United States Environmental Protection Agency (USEPA).

For the other testing parameters, Total Cyanide, Total Polychlorinated Biphenyls (PCBs) and Polycyclic Aromatic Hydrocarbons (PAHs) for soil (S1-S7 & S9) and water (W1-W8) samples, are well below their respective limits as required by the related reference documents. **This implies that the health hazards from these contaminants in soil and water samples are negligible.**

For the remaining soil, water and air samples, the University will release the test results immediately upon receipt.

Related information may be viewed here.

Press Releases

12 December 2019

CUHK Releases the Second Batch of Test Results on Campus Environment

The Chinese University of Hong Kong (CUHK) earlier appointed an independent accredited laboratory to collect air, water and soil samples at various locations and at different times on campus and sent them for testing. The University has just received the second batch of test results.

In addition, in response to the concerns of some University members over the level of CS (2-chlorobenzalmalononitrile) on CUHK campus, the University has arranged to conduct another round of tests. The results will be announced as soon as they are received in 2-3 weeks' time.

Here is the summary of the second batch of test results including 13 soil samples (#1-#12 & S8) and 2 water samples (W9 & W10) compared with the guidance notes/international standards.

(1) Soil samples

Table 1: For soil samples (#1 - #12)

Contaminant	Test results	Reference Level	Reference Document
Dioxins	0.0037-0.0059 ng/g	1 ng/g	Risk-Based Remediation Goals (RBRGs) for Soil – Public Parks, published by Hong Kong Environmental Protection Department
Total PCBs	< 0.2 mg/kg	0.756 mg/kg	
PAHs	< 0.500-2.05 mg/kg	3.83-10,000 mg/kg	

Table 2 : For soil sample (S8)

Contaminant	Test results	Reference Level	Reference Document
Dioxins	0.12 ng/g	1 ng/g	Risk-Based Remediation Goals (RBRGs) for Soil – Public Parks, published by Hong Kong Environmental Protection Department
Total Cyanide	< 1 mg/kg	4,900 mg/kg	
Total PCBs	< 0.200 mg/kg	0.756 mg/kg	
PAHs	< 0.500 mg/kg	3.83-10,000mg/kg	

(2) Water samples

Table 3: For water samples (W9 & W10)

Contaminant	Test results	Reference Level	Reference Document
Dioxins	4.6-4.7 pg/L	30 pg/L	Drinking Water Standards from USEPA
Total Cyanide	< 0.05 mg/L	0.2 mg/L	
Total PCBs	< 0.50 µg/L	0.5 µg/L	
PAHs	< 0.1 µg/L	0.1-0.4 µg/L	

Conclusion

(1) Soil samples

Among the 12 soil samples (#1-#12), the dioxins (I-TEQ) are well below the Risk-Based Remediation Goals (RBRGs) of dioxins in soil (I-TEQ) for public parks as quoted in the *Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management* published by Hong Kong Environmental Protection Department (HKEPD) in 2007. This indicates that the dioxins (I-TEQ) levels in these soil samples (#1 - #12) are not significant, and the results are comparable to soil samples (S1-S7 & S9) collected in the more distant locations away from No. 2 Bridge (see table 1).

Based on the test results of Total Polychlorinated Biphenyls (PCBs), all soil samples (#1 - #12) are lower than the respective limits of PCBs level (0.756 mg/kg) for public parks cited in the aforementioned *Guidance Manual* from HKEPD (see table 1).

Regarding the Polycyclic Aromatic Hydrocarbons (PAHs) levels for these soil samples (#1 - #12), all of them are below the level as required by the reference document (see table 1). For the figures of individual PAH compounds, please click here.

A soil sample with black-smoked materials (S8) was collected in the vicinity of the burned mattress in Sir Philip Haddon-Cave Sports Field. The test result of the dioxins (I-TEQ) level is relatively higher than that of other soil samples though it is only about one tenth of the reference level cited in the *Guidance Manual*. The possible reason for the elevated result may be due to the burning of rubber or plastic components of the mattress. For the other testing parameters such as Total Cyanide, Total Polychlorinated Biphenyls (PCBs) and Polycyclic Aromatic Hydrocarbons (PAHs) for the sample (S8), they are all well lower than their respective limits as required by the related reference documents (see table 2).

(2) Water samples

Two water samples (W9 & W10) had been collected from Jockey Club Postgraduate Hall 1. The test results reveal that the dioxins (I-TEQ) levels for both samples (W9 & W10) are from 4.6 to 4.7 pg/L. In accordance with drinking water standards from United States Environmental Protection Agency (USEPA), the dioxins levels for these water samples (W9 & W10) are not significant. For the other testing parameters such as Total Cyanide, Total Polychlorinated Biphenyls (PCBs) and Polycyclic Aromatic Hydrocarbons (PAHs), they are all much below their respective limits as required by the related reference documents (see table 3).

In view of the aforementioned interpretation, the health hazards of these contaminants from the soil (#1 - #12 & S8) and water (W9 & W10) samples are negligible.

Other test results will be announced as soon as they are available. Related information may be viewed here.

Press Releases

20 December 2019

CUHK Releases the Third Batch of Test Results on Campus Environment

The Chinese University of Hong Kong (CUHK) earlier appointed an independent accredited laboratory to collect air, water and soil samples at various locations and at different times on campus and sent them for testing. Further to the two batches of environmental test results released earlier, the University announced today (20 December 2019) the third batch of test results, including the total cyanide levels in soil samples (#1 – #11), contaminants in air samples (A1 – A7), and a series of tear gas residue monitorings in response to the concerns of some University members over the tear gas residue hazards on CUHK campus. An analysis of five chemical components in tear gas residue including 2-Chlorobenzalmalononitrile (CS), Alpha-Chloroacetophenone (CN), Capsaicin and dihydrocapsaicin (OC), Hydrogen cyanide (HCN), and Nickel in surface dust (Ni), in ambient air, environmental surfaces, and water was conducted.

As the three batches of campus environmental test results meet safety standards, the University has begun to clean up and rebuild the road surface of Campus Circuit East, and will reopen it for use next Monday (23 December).

The summary of the test results and the respective reference standards is as follows.

(1) Soil samples

Table 1: For soil samples (#1 – #11)

Contaminant	Test Results	Reference Level	Reference Document
Total Cyanide	< 1.00 mg/kg	4,900 mg/kg	Risk-Based Remediation Goals (RBRGs) for Soil – Public Parks, published by HKEPD

(2) Air samples

Table 2: For air samples (A1 – A7)

Contaminant	Test Results	Reference Level	Reference Document
Dioxins	0.036 – 0.056 pg I-TEQ/m^3	0.6 pg I-TEQ/m^3	Japan MOE, 1999 : ambient air standard (annual average)
		40 pg I-TEQ/m^3	U.S. – California, OEHHA, 2002 : Chronic inhalation exposure limit
		0.001 – 0.222 pg I-TEQ/m^3	Hong Kong ambient air monitoring (the lowerest and highest readings of Dioxins between 1999 and 2019)
Total PCBs	0.330 – 0.701 ng/m^3	1,200 ng/m^3	U.S. – California, OEHHA, 2002 : Chronic inhalation exposure limit
		83 ng/m^3	

			U.S. – North Carolina, NCDENR, 2002 : acceptable ambient air level (annual average)
		0.01 – 2.18 ng/m^3	Hong Kong ambient air monitoring (the lowerest and highest readings of Total PCBs between 1998 and 2001)
PAHs as benzo[a] pyrene (BaP)	< 0.060 – 0.147 ng/m^3	87 ng/m^3	WHO, 2000 – a cancer risk of one in a million
		33 ng/m^3	U.S. – North Carolina, NCDENR, 2002 : Acceptable ambient air level (annual average)
		0.01 – 1.68 ng/m^3	Hong Kong Toxic Air Pollutant monitoring (the lowerest and highest readings of BaP between 1997 and 2001)

(3) Test results of five chemical components in tear gas residue

Table 3: The test methods, reporting limits and the respective harmful limits of the five chemical components are tabulated below:

Chemical Name	Test Method	Reporting Limit	Harmful Limit (OSHA Standard)
2-Chlorobenzalmalononitrile (CS)	NIOSH 304	0.1 mg/m^3	0.4 mg/m^3 (skin)
Alpha-Chloroacetophenone (CN)	NIOSH 291	0.1 mg/m^3	0.3 mg/m^3
Capsaicin and dihydrocapsaicin (OC)	NIOSH 5041	0.1 mg/m^3	N/A
Hydrogen cyanide (HCN)	NIOSH 36010	0.2 mg/m^3	11.05 mg/m^3 (skin)
Nickel in surface dust (Ni)	NIOSH 7300	0.1 mg/m^3	1 mg/m^3

Conclusion

(1) Soil samples

The total cyanide levels in soil samples (#1 – #11) are all lower than their reporting limits (i.e. 1.00 mg/kg), which are well below the Risk-Based Remediation Goals (RBRGs) of total cyanide level in soil for public parks (i.e. 4,900 mg/kg) as quoted in the *Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management* published by the Hong Kong Environmental Protection Department (HKEPD) in 2007 (see table 1).

This indicates that the total cyanide levels in these soil samples are not significant and the results are comparable to other soil samples (S1 – S9) collected in the more distant locations away from No. 2 Bridge.

(2) Air samples

Seven ambient air samples (A1 – A7) were collected both in indoor and outdoor environments around the most affected areas in the vicinity of No. 2 Bridge. Since Hong Kong has no ambient air standards for dioxins, PCBs and PAHs, some previous statistical data of ambient air monitoring in Hong Kong and international guidelines as cited in the Final Report of *Assessment of Toxic Air Pollutant Measurements in Hong Kong* issued by HKEPD in 2003 are imposed for comparison.

Table 2 shows that all test results for air samples (A1 – A7) are well below their respective reference level of international guidelines or within Hong Kong ambient air monitoring data.

(3) Test results of five chemical components in tear gas residue

The first batch of tear gas residue samplings took place in the Jockey Club Postgraduate Hall 1 and covered nine air samples, nine surface swab samples, and six water samples. The results

revealed that the chemical components in these samples are well below their respective reporting limits (see table 3). Other test results of tear gas residue monitoring covering other areas such as the University Sports Centre, the University's main entrance, and New Asia College will be uploaded onto the CUHK website as soon as available.

In conclusion, the health hazards of the aforementioned contaminants in the soil (#1 – #11) and air (A1 – A7) samples, as well as the five chemical components in tear gas residue are negligible.

Related information may be viewed here (www.cuhk.edu.hk/english/whats-on/focus/campus-env-result.html).

Media Releases

2019.12.28

PolyU Announces the Test Results on Campus Environment Assessment

To ensure a healthy and safe campus for its students and staff members, and to address the concerns about the potential hazards of tear gas residue remaining on its campus, The Hong Kong Polytechnic University (PolyU) appointed independent accredited laboratories to collect environmental samples at various locations on campus (see Appendix I) in early December 2019 for testing, including air, water, soil and surface wipe samples.

The testings cover analyses of several major chemical components in tear gas residue including dioxins, total cyanide, total Polychlorinated Biphenyls (PCBs), Polycyclic Aromatic Hydrocarbons (PAHs) and 2-Chlorobenzalmalononitrile (active ingredient of CS powder) in the samples collected on the campus. The University has received the results of all the tests on water, soil and surface wipe samples, as well as the test results for CS powder of air samples, while the remaining test results for the air samples are expected to be available in January 2020.

The test results are benchmarked with the reference limits listed in the authoritative documents of relevant local or international authorities/institutions. According to the test results for soil (S1-8), tap water (WA1-4), and surface wipes (W1-22) samples, as well as the CS powder in air samples, all the aforementioned contaminants are well below their respective reference/reporting limits (see Appendix II).

In addition, the University has also carried out safety assessments of the buildings on campus, including assessment of building structural safety, testing of indoor air quality, filter cleaning and a thorough cleanup of individual buildings.

The University will do its utmost to ensure the campus meet relevant safety standards so as to offer PolyU members a healthy and safe environment for studying and working.

***** End *****

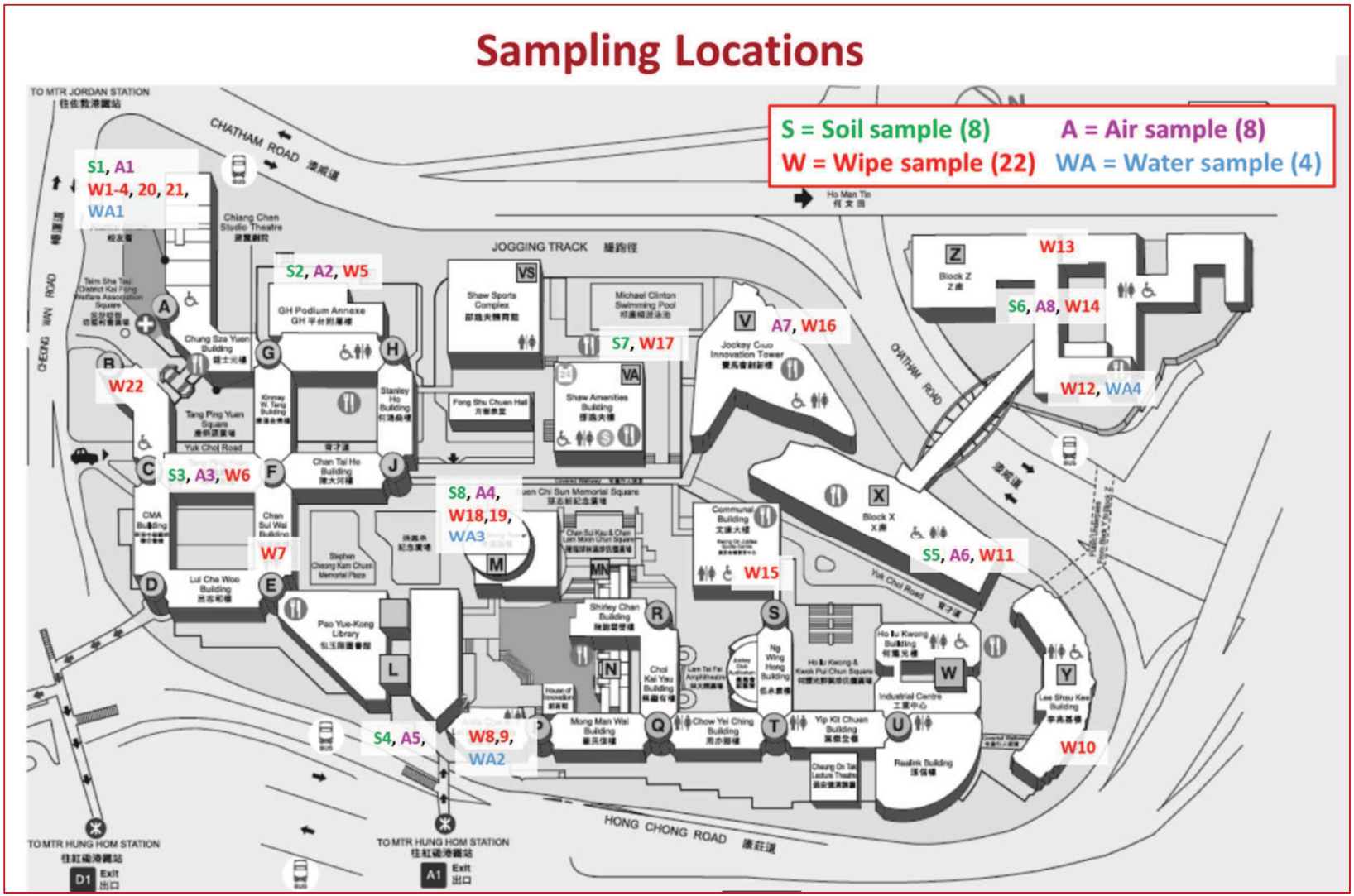
Press Contacts

Ms Eunice Cheng
Deputy Director, Communications and Public Affairs Office

(852) 2766 6377

eunice.ol.cheng@polyu.edu.hk

Appendix I



Hung Hom Kowloon Hong Kong
香港九龍紅磡
E paadmin@polyu.edu.hk **T** (852) 2766 5101 **F** (852) 2364 0246
www.polyu.edu.hk/cpa

Appendix II : First Batch of Test Results for Environmental Contamination on Campus

The following contaminants are tested:

a) Dioxins;
b) Total Polychlorinated Biphenyls (PCBs);
c) Polycyclic Aromatic Hydrocarbons (PAHs);
d) Total Cyanide; and
e) 2-Chlorobenzalmalononitrile (an active ingredient of CS powder), also called o-Chlorobenzylidene Malononitrile

Received test results for soil (S1-8), tap water (WA1-4), and surface wipes (W1-22) samples are summarized below. Results not yet received are shown as "pending" in the tables below. We expect the results will be available in Jan 2020.

For soil samples (S1-8):

Contaminant	Test result	Reference Level	Reference Document
Dioxins	0.0041-0.0084 ng/g	1 ng/g	Risk-Based Remediation Goals (RBRGs) for Soil (Public Parks), published by EPD, HKSAR
Total PCBs	<0.2 mg/kg *(below reporting limit)*	0.756 mg/kg	
PAHs	<0.5 mg/kg *(below reporting limit)*	3.83-10,000 mg/kg	
Total Cyanide	<1 mg/kg *(below reporting limit)*	4,900 mg/kg	
2-Chlorobenzalmalononitrile (CS)	<25 µg/kg *(below reporting limit)*	-	No applicable reference

For tap water samples (WA1-4):

Contaminant	Test result	Reference Level	Reference Document
Dioxins	<4.9 pg/L *(below reporting limit)*	30 pg/L	Maximum Contaminant Level (MCL) given in National Primary Drinking Water Regulations (NPDWR) by EPA, USA.
Total PCBs	<0.5 µg/L *(below reporting limit)*	0.5 µg/L	
PAHs	<0.1 µg/L *(below reporting limit)*	0.2 µg/L as benzo(a)pyrene (BaP)	
Total Cyanide	<0.1 mg/L *(below reporting limit)*	0.2 mg/L	
2-Chlorobenzalmalononitrile (CS)	<1 µg/L *(below reporting limit)*	-	No applicable reference

Hung Hom Kowloon Hong Kong
香港九龍紅磡
E paadmin@polyu.edu.hk T (852) 2766 5101 F (852) 2364 0246
www.polyu.edu.hk/cpa

For surface wipe samples (W1-22):

Contaminant	Test result	Reference Level	Reference Document
Dioxins	<0.19 ng/m² *(below reporting limit)*	-	No applicable reference
Total PCBs	<20 µg/m² *(below reporting limit)*	-	
PAHs	• <0.4 - 1.6µg/m² as naphthalene • <0.4 - 1.3 µg/m² as phenanthrene • <0.4 - 0.44 µg/m² as pyrene • <0.4 µg/m² for other PAHs *(below reporting limit)*	-	
Total Cyanide	< 1 µg/m² *(below reporting limit)*	-	No applicable reference
2-Chlorobenzalmalononitrile (CS)	<0.2 µg/m² *(below reporting limit)*	-	No applicable reference

For air samples (A1-8):

Contaminant	Test result	Reference Level	Reference Document
Dioxins	*pending*	0.1 pg TEQ/m³ (note 1)	24hr averaging time limit under the Ontario's Ambient Air Quality Criteria (AAQC), Canada
Total PCBs	*pending*	0.15 µg/m³	
PAHs	*pending*	0.00005 µg/m³ as benzo(a)pyrene (BaP)	
Total Cyanide	*pending*	8 µg/m³	
2-Chlorobenzalmalononitrile (CS)	< 0.1 mg/m³ *(below reporting limit)*	0.4 mg/m³ (REL-C)	Recommended Exposure Limit (REL) by NIOSH, USA.

Note 1 The reference level given by Japan Environmental Standard for Dioxins (annual) is 0.6pg TEQ/m³.

Hung Hom Kowloon Hong Kong
香港九龍紅磡
E paadmin@polyu.edu.hk T (852) 2766 5101 F (852) 2364 0246
www.polyu.edu.hk/cpa

Media Releases

2020.01.03

PolyU Releases the Remaining Test Results for Air Samples Collected on Campus

Further to the first batch of test results on water, soil and surface wipe samples as well as the test results for CS powder of air samples released on 28 December, 2019, The Hong Kong Polytechnic University (PolyU) today announced all the remaining test results for the air samples collected at various locations on campus (see **Appendix I**).

The tests cover analyses of several major contaminants including dioxins, total Polychlorinated Biphenyls (PCBs), Polycyclic Aromatic Hydrocarbons (PAHs) as benzo(a)pyrene (BaP) and 2-Chlorobenzalmalononitrile (the active ingredient of CS powder) in the air samples (see **Appendix II**).

All the test results for dioxins, PCBs, PAHs as BaP and CS powder in the air samples are below the applicable reference levelsof international organisations.

Based on the safety assessments of the buildings on the North campus, including assessment of building structural safety and checking of indoor air quality, the results met the applicable health and safety references for resumption of operations. The University also cleaned the filters of air handling systems and potable water tanks as well as conducted a thorough clean-up of the campus and individual buildings.

The University is committed to providing PolyU members with a safe and healthy environment for study and work.

***** End *****

Press Contacts

Ms Eunice Cheng
Deputy Director, Communications and Public Affairs

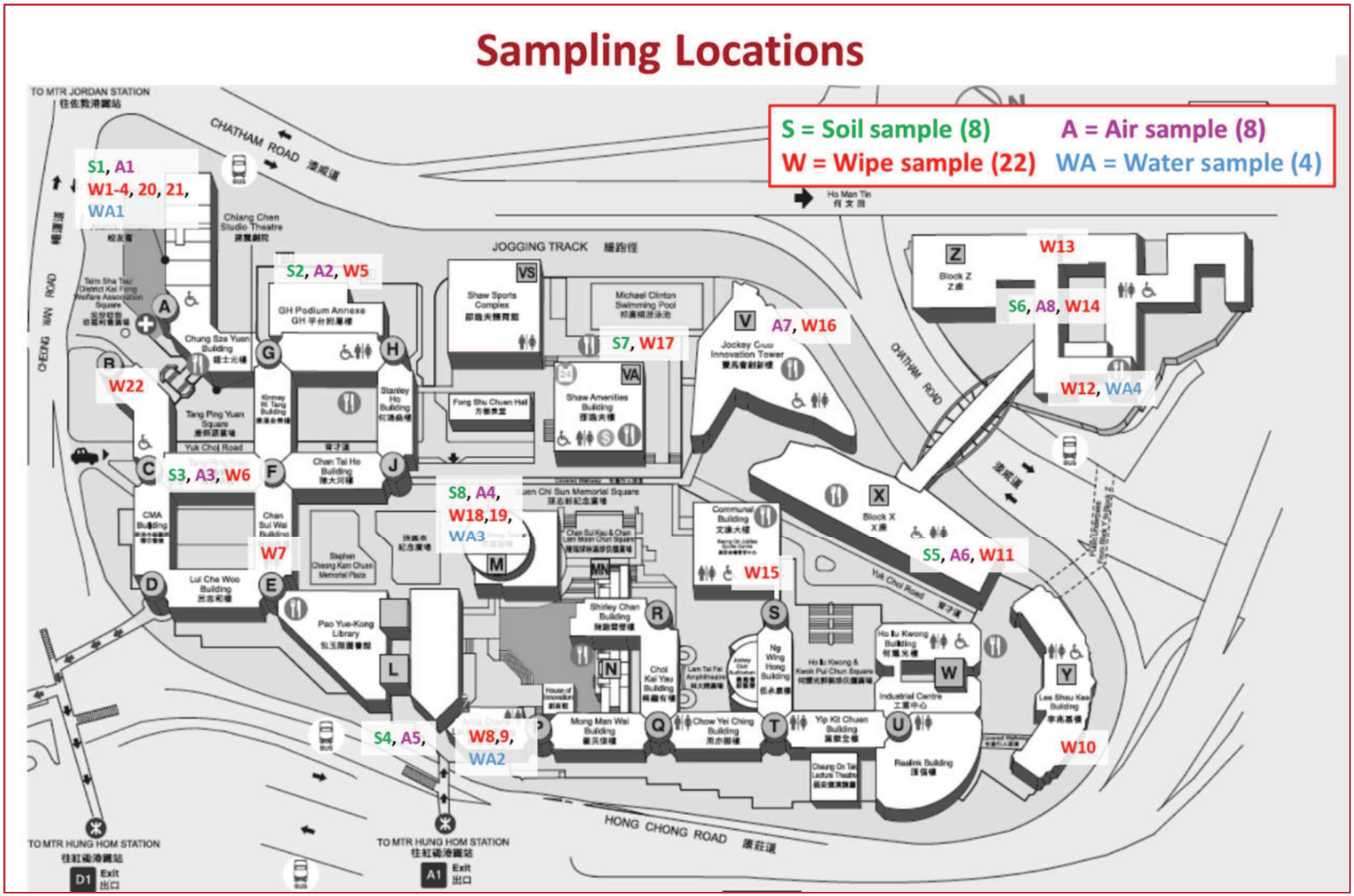
(852) 2766-6377

eunice.ol.cheng@polyu.edu.hk

Back

Appendix I

Sampling Locations



Hung Hom Kowloon Hong Kong
香港九龍紅磡
E paadmin@polyu.edu.hk **T** (852) 2766 5101 **F** (852) 2364 0246
www.polyu.edu.hk/cpa

Appendix II : Test Results on Air Samples Collected on PolyU Campus

Contaminants tested include:

a. Dioxins;

b. Total Polychlorinated Biphenyls (PCBs);

c. Polycyclic Aromatic Hydrocarbons (PAHs); and

d. 2-Chlorobenzalmalononitrile (an active ingredient of CS powder), also called o-Chlorobenzylidene Malononitrile

Air samples (A1-A8):

Contaminant	Range of Test Results of the Samples	Reference Level	Reference Document
Dioxins	0.034 – 0.096 pg I-TEQ/m^3 (note 1)	0.1 pg TEQ/m^3	AAQCs, Canada
		0.6 pg TEQ/m^3	Ministry of the Environment, Japan
Total PCBs	0.278 – 0.419 ng/m^3	150 ng/m^3	AAQCs, Canada
PAHs as benzo(a)pyrene (BaP)	0.278 – 0.400 ng/m^3 (note 2)	87 ng/m^3 (note 3) as benzo(a)pyrene (BaP)	Guidelines for Air Quality, WHO
2-Chlorobenzalmalononitrile (CS)	< 0.1 mg/m^3 *(below reporting limit)*	0.4 mg/m^3 (REL-C)	Recommended Exposure Limit (REL) by NIOSH, USA

** For completeness, the test results for CS powder in the air samples which were announced on 28 December 2019 are also included in the above table.*

Remarks

Note 1:

- *The dioxins figures are 24-hour average concentrations in pg I-TEQ /m^3, and are expressed as toxic equivalent (I-TEQ) concentration of 2,3,7,8 - Tetrachlorodibenzodioxin (TCDD). They are calculated based on the International Toxic Equivalent Factors (I-TEF) of the North Atlantic Treaty Organization (NATO/CCMS) using 17 types of dioxin-like compound of structurally closely related chemical families and having similar chemical properties. For congener concentrations that are lower than the estimated minimum sample detectable level (EMSDL), one half of the EMSDL is used in calculating the I-TEQ concentration.*

Note 2:

- *PAHs are formed from the incomplete combustion of organic matter from either natural or manmade combustion sources (e.g. cooking, open burning, fire). PAHs are considered ubiquitous in the environment.*
- *The concentrations of PAHs previously measured at roadsides in the neighborhood areas of PolyU campus ranged from 0.05 to 1.34 ng/m^3 and had an average value of 0.49 ng/m^3.* (Lee et al., 2001)

Note 3:

- *The guideline value of PAHs (as BaP) in air given by World Health Organisation (WHO) is 87ng/m^3. The estimated increase of risk of cancer from exposure to PAHs (as BaP) at a concentration of 87ng/m^3 is 1 in 1,000,000.*

Conclusion

The concentrations of all the tested contaminants for soil (S1-S8), tap water (WA1-WA4), and surface wipes (W1-W22) samples, as announced on 28 December 2019, are well below the applicable reference levels of local or international organisations, where appropriate.

The concentrations of dioxins, total PCBs and CS powder in the air samples (A1-A8) are below the reference levels. Besides, the concentrations of the PAHs (as BaP) are well below the guideline value of the WHO, and are comparable to the background concentrations in the vicinity of PolyU campus.

HKSTP Shares Test Results of Environmental Assessment at Hong Kong Science Park

03 Jan 2020

Hong Kong, 3 January 2020 – To ensure a safe and healthy environment for the working population and visitors in the Park, Hong Kong Science and Technology Parks Corporation (HKSTP) appointed an independent accredited laboratory to conduct environmental assessment of the Hong Kong Science Park. The assessment was conducted in two phases. HKSTP has received the results from the first phase of the tests (details are appended below).

The test results for contaminants are benchmarked against the reference limits listed in the authoritative documents of relevant local or international authorities/institutions. The first phase of assessment was conducted in early December 2019 and involved the collection of air, soil and water samples from four outdoor locations in and near the Park covering the areas near the Chinese University of Hong Kong (CUHK), the areas facing Tolo Harbour Highway and Tolo Harbour, as well as the central parts of the Park (refer to Appendix). All of the results are below the level as required by the reference documents.

The test results are summarised as follows:

1) Soil samples: Building 2E, 9W, 12W and Central Lake

Contaminant	Test Result	Reference Level	Document
Dioxins	3.7-4.0 pg/g	1000pg/g	Risk-based Remediation Goals, (RBRGs) for Soil (Public Parks) published by EPD, HKSAR

2) Water samples: Building 2E, 2W, 12W and Central Lake

Contaminant	Test Result	Reference Level	Document

Dioxins	below 4.9pg/L	30pg/L	Maximum Contaminant Level (MCL) given in National Primary Drinking Water Regulations (NPDWR) by EPA, USA

3) Air samples: Building 2E , 6W, 12E and 12W

Contaminant	Test Result	Reference Level	Document
Dioxins	0.045-0.065pg TEQ/m^3	0.1pg TEQ/m^3	24hr averaging time limit under the Ontario's Ambient Air Quality Criteria, (AAQC) Canada

The second phase of assessment will cover all buildings in Science Park. The independent accredited laboratory appointed by HKSTP has already completed the collection of environmental samples around the Park in late December 2019. Results of the second phase assessment is expected to be released in March 2020.

About Hong Kong Science and Technology Parks Corporation

Comprising Science Park, InnoCentre and Industrial Estates, Hong Kong Science & Technology Parks Corporation (HKSTP) is a statutory body dedicated to building a vibrant innovation and technology ecosystem to connect stakeholders, nurture technology talents, facilitate collaboration, and catalyse innovations to deliver social and economic benefits to Hong Kong and the region.

Established in May 2001, HKSTP has been driving the development of Hong Kong into a regional hub for innovation and growth in several focused clusters including Electronics, Information & Communications Technology, Green Technology, Biomedical Technology, Materials and Precision Engineering. We enable science and technology companies to nurture ideas, innovate and grow, supported by our R&D facilities, infrastructure, and market-led laboratories and technical centres with professional support services. We also offer value added services and comprehensive incubation programmes for technology start-ups to accelerate their growth.

Technology businesses benefit from our specialised services and infrastructure at Science Park for applied research and product development; enterprises can find creative design support at InnoCentre; while skill-intensive businesses are served by our three industrial estates at Tai Po, Tseung Kwan O and Yuen Long. More information about HKSTP is available at www.hkstp.org.

土壤樣本收集已完成
Soil sample collection completed

科學園俯瞰圖
Science Park Location Map

第一階段-4組土壤樣本收集已完成
1st Phase - 4 set of Soil sample collection completed

Location	地點
Rear of 2E Building	2E 大樓後方
Rear of 9W Building near Tolo Highway	9W 大樓後方面對吐露港公路
Central Lake in front of 8W Building	8W 大樓對出園中湖
12W Building Outside Area	12W 大樓戶外對出位置

第二階段-22組土壤樣本收集已完成
2nd Phase - 22 set of Soil sample collection completed

Location	地點
Organic Farm near 20E Building	有機農圃接近20E 大樓
Organic Farm near 10W Building	有機農圃接近10W 大樓
3E Building Outside Area	3E 大樓戶外對出位置
6E Building Outside Area	6E 大樓戶外對出位置
12E Building Outside Area	12E 大樓戶外對出位置
16E Building Outside Area	16E 大樓戶外對出位置
18E Building Outside Area	18E 大樓戶外對出位置
20E Building Outside Area	20E 大樓戶外對出位置
22E Building Outside Area	22E 大樓戶外對出位置
1W and 1E Building Outside Area	1W及1E 大樓戶外對出位置
10W and 12W Building Outside Area	10W及12W 大樓戶外對出位置
16W Building Outside Area	16W 大樓戶外對出位置
2W Building Outside Area	2W 大樓戶外對出位置
6W Building Outside Area	6W 大樓戶外對出位置
8W Building Outside Area	8W 大樓戶外對出位置
9W Building Outside Area	9W 大樓戶外對出位置
11W Building Outside Area	11W 大樓戶外對出位置
12W Building Outside Area	12W 大樓戶外對出位置
15W Building Outside Area	15W 大樓戶外對出位置
17W Building Outside Area	17W 大樓戶外對出位置
19W Building Outside Area	19W 大樓戶外對出位置
Grand Plaza Outside Area	大廣場 戶外對出位置

水質樣本收集已完成
Water sample collection completed

科學園俯瞰圖
Science Park Location Map

第一階段-4組水質樣本收集已完成
1st Phase - 4 set of Water sample collection completed

Location	地點
Water Pool in front of 2E Building	2E 大樓對出水池
Water Pool in front of 2W Building	2W 大樓對出水池
Central Lake in front of 8W Building	8W 大樓對出園中湖
Water Pool in front of 12W Building	12W 大樓對出水池

第二階段-22組水質樣本收集已完成
2nd Phase - 22 set of Water Sample collection completed

Location	地點
5W Building Male Toilet - G/F	5W 大樓地下男洗手間
8W Building Female Toilet - 2/F	8W 大樓2樓女洗手間
10W Building Male Toilet - G/F	10W 大樓地下男洗手間
12W Building Female Toilet - G/F	12W 大樓地下女洗手間
1W Building Restaurant Kitchen	1W 大樓酒樓廚房
12W Restaurant Kitchen	12W 大樓酒樓廚房
3E Building Pantry - 2/F	3E 大樓2樓茶水間
12E Building Pantry - 1/F	12E 大樓1樓茶水間
22E Building Pantry - 3/F	22E 大樓3樓茶水間
3E Building Male Toilet - 2/F	3E 大樓2樓男洗手間
12E Building Female Toilet - G/F	12E 大樓地下女洗手間
22E Building Male Toilet - 3/F	22E 大樓3樓男洗手間
9W Building Pantry - 2/F	9W 大樓2樓茶水間
15W Building Pantry - 8/F	15W 大樓8樓茶水間
19W Building Pantry - 2/F	19W 大樓2樓茶水間
9W Building Female Toilet - 2/F	9W 大樓2樓女洗手間
15W Building Male Toilet - 8/F	15W 大樓8樓男洗手間
16W Building Female Toilet - 3/F	16W 大樓3樓女洗手間
18E Building Pantry - 1/F	18E 大樓1樓茶水間
16W Building Pantry - 3/F	16W 大樓3樓茶水間
ClubHouse Male Shower Room - 1/F	科學園會所1樓男淋浴室
ClubHouse Female Shower Room - 1/F	科學園會所1樓女淋浴室

空氣樣本收集已完成
Air sample collection completed

科學園俯瞰圖
Science Park Location Map

第一階段-4組空氣樣本收集已完成
1st Phase - 4 set of Air sample collection completed

Location	地點
In front of 6W Building	6W 大樓正門
Podium Floor of 12W Building	12W 平台花園
Rear of 12E Building near Tolo Harbour	12E 大樓後方接近吐露港
Rear of 2E Building	2E 大樓後方

第二階段-22組空氣樣本收集已完成
2nd Phase - 22 set of Air sample collection completed

Location	地點
1E Building Lobby	1E 大樓大堂
2E Building Lobby	2E 大樓大堂
3E Building Lobby	3E 大樓大堂
5E Building Lobby	5E 大樓大堂
6E Building Lobby	6E 大樓大堂
12E Building Lobby	12E 大樓大堂
16E Building Lobby	16E 大樓大堂
18E Building Lobby	18E 大樓大堂
20E Building Lobby	20E 大樓大堂
22E Building Lobby	22E 大樓大堂
Charles K. Kao Auditorium - Outside Front Door	高錕會議中心(金蛋) - 正門對出戶外位置
The SPINE - Indoor Area near 12W Building	科園廊 - 室內位置接近12W 大樓
P2 Car Park - Near 8W Building	P2 停車場 - 近8W大樓
5W Building - 1/F near Idea Lab	5W 1樓 接近 Idea Lab
9W Building Lobby	9W 大樓大堂
10W Building Lobby	10W 大樓大堂
11W Building Lobby	11W 大樓大堂
12W Building Lobby	12W 大樓大堂
15W Building Lobby	15W 大樓大堂
16W Building Lobby	16W 大樓大堂
17W-19W Building Lobby	17W-19W 大樓大堂
19W Building Podium	19W 大樓平台

附件三

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[2] https://www.cpr.cuhk.edu.hk/tc/announcements_detail.php?id=38&t=中大公布第二批校園環境檢測結果
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[4] https://www.polyu.edu.hk/web/tc/media/media_releases/index_id_6723.html
[5] https://www.polyu.edu.hk/web/tc/media/media_releases/index_id_6724.html
[6] https://www.hkstp.org/zh-hk/about-us/press-room/hkstp-shares-test-results-of-environmental-assessment-at-hong-kong-science-park/

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二零一九年十二月六日

中大公布首批校園環境檢測結果

為確保校園環境安全，香港中文大學 (中大) 早前委託獨立認可實驗室於不同時間在校園不同地點，抽取空氣、水質及泥土樣本，並送往化驗。大學已收到部分泥土（S1至S7及S9）及水質樣本（W1至W8）的化驗結果，化驗結果摘要及參考水平如下：

泥土樣本S1至S7及S9：

污染物	測試結果	參考水平	參考文件
二噁英	0.0038至0.0086 毫微克/克	1毫微克/克	香港環保署發出的「按風險釐定的土壤污染整治標準(公園)」
總氰化物	< 1 毫克/公斤	4,900毫克/公斤	
總多氯聯苯	< 0.2毫克/公斤	0.756毫克/公斤	
多環芳香烴	< 0.500毫克/公斤	3.83至10,000毫克/公斤	

水樣本W1至W8：

污染物	測試結果	參考水平	參考文件
二噁英	4.6至4.8 皮克/公升	30皮克/公升	美國國家環境保護局（USEPA)建議的飲用水標準
總氰化物	< 0.05 至0.10毫克/公升	0.2毫克/公升	
總多氯聯苯	< 0.50 微克/公升	0.5 微克/公升	
多環芳香烴	< 0.1 微克/公升	0.1 至 0.4 微克/公升	

結論

根據化驗所的檢測結果顯示，泥土樣本（S1至S7及S9）中的二噁英含量，遠低於香港環保署發出的《*按風險釐定的土地污染整治標準的使用指引*》中「按風險釐定的土壤污染整治標準(公園)」之數值，表示人體即使暴露於有關土壤，所受到的健康危害或風險極低，無須實施任何整治措施，例如進行清理。水樣本（W1至W8）中的二噁英含量相對於美國國家環境保護局（USEPA）建議的飲用水標準屬不顯著的水平。

在泥土和水樣本（S1至S7及S9、W1至W8）中，其他測試參數例如總氰化物、總多氯聯苯和多環芳香烴，它們的含量遠低於參考文件上所規定的最低數值。**這意味泥土和水樣本中污染物的含量對健康不會產生明顯影響。**

至於其餘的泥土、水和空氣樣本測試，大學收到結果後會陸續公布。

相關數據可於此處瀏覽。

宣布事項

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二零一九年十二月十二日

中大公布第二批校園環境檢測結果

香港中文大學（中大）早前委託獨立認可實驗室於不同時間在校園不同地點，抽取空氣、水質及泥土樣本，並送往化驗。大學已收到了第二批校園環境檢測結果。

因應有大學成員對校園可能殘留CS（鄰-氯代苯亞甲基丙二腈）的疑慮，校方已經進一步安排樣本檢測，預計將於二至三星期後收到結果，並盡快公布。

今日（12月12日）公布的第二批校園環境檢測結果包括13個泥土樣本（#1至#12 、S8）以及兩個水樣本（W9、W10）的化驗結果，摘要及參考水平如下：

(1) 泥土樣本

表一：泥土樣本（#1 至#12）

污染物	測試結果	參考水平	參考文件
二噁英	0.0037至0.0059 毫微克/克	1毫微克/克	香港環保署發出的「按風險釐定的土壤污染整治標準（公園）」
總多氯聯苯	< 0.2毫克/公斤	0.756毫克/公斤	
多環芳香烴	< 0.500至2.05毫克/公斤	3.83至10,000毫克/公斤	

表二：泥土樣本（S8）

污染物	測試結果	參考水平	參考文件
二噁英	0.12 毫微克/克	1毫微克/克	香港環保署發出的「按風險釐定的土壤污染整治標準（公園）」
總氰化物	< 1 毫克/公斤	4,900毫克/公斤	
總多氯聯苯	< 0.200毫克/公斤	0.756毫克/公斤	
多環芳香烴	< 0.500毫克/公斤	3.83至10,000毫克/公斤	

(2) 水樣本

表三：水樣本（W9 及 W10）

污染物	測試結果	參考水平	參考文件
二噁英	4.6至4.7 皮克/公升	30皮克/公升	美國國家環境保護局（USEPA）建議的飲用水標準
總氰化物	< 0.05毫克/公升	0.2毫克/公升	
總多氯聯苯	< 0.50 微克/公升	0.5 微克/公升	
多環芳香烴	< 0.1 微克/公升	0.1 至 0.4 微克/公升	

結論

(1) 泥土樣本

化驗結果顯示12個泥土樣本（#1至#12）的二噁英含量遠低於香港環保署在2007年發出的《*按風險釐定的土地污染整治標準的使用指引*》中「按風險釐定的土壤污染整治標準（公園）」之數值。這表示二噁英在這些泥土（#1至#12）的含量水平並不顯著，化驗結果與距離2號橋較遠位置的泥土樣本（S1至S7、S9）相若（見表一）。

至於總多氯聯苯的化驗結果，所有泥土樣本（#1 - #12）都遠低於前述由香港環保署發出的使用指引中（公園）標準之總多氯聯苯含量 (0.756毫克/公斤)。（見表一）

關於泥土樣本 (#1 - #12) 中多環芳香烴的含量，全部均低於參考文件中所規定的水平（見表一）。 至於多環芳香烴中個別的化合物含量，可於此處瀏覽。

一個含有黑色煙熏物質的泥土樣本（S8），在夏鼎基運動場裡被火燒焦的墊褥附近採集。測試結果顯示二噁英的含量相比其他泥土樣本為高，但仍相等於使用指引中的參考水平大約十分之一。這個略高的數值可能是由燃燒塑膠或墊褥的塑料部分引起。S8的其他測試參數例如總氰化物、總多氯聯苯和多環芳香烴，它們的含量遠低於在相關參考文件所規定的最低數值（見表二）。

(2) 水樣本

兩個水樣本從賽馬會研究生宿舍（一座）採集。化驗結果顯示兩個水樣本（W9 及 W10）中二噁英含量介乎4.6至4.7皮克/升。根據美國國家環境保護局建議的飲用水標準，其水樣本（W9 & W10）中二噁英含量並不顯著。其他測試參數例如總氰化物、總多氯聯苯和多環芳香烴，它們的含量遠低於在相關參考文件所規定的最低數值（見表三）。

從上述結論可見，這些污染物在泥土（#1 至 #12、S8）和水（W9 及W10）樣本的含量對健康的危害不顯著。

至於其他測試結果，大學收到後盡快公布。

相關數據可於此處瀏覽。

宣布事項

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二零一九年十二月二十日

中大公布第三批校園環境檢測結果

香港中文大學（中大）早前委託獨立認可實驗室於不同時間在校園不同地點，抽取空氣、水質及泥土樣本，並送往化驗。繼早前已公布的兩批環境檢測結果，大學今天（2019年12月20日）公布第三批校園環境檢測結果，包括：11個泥土樣本（#1 – #11）的總氰化物（俗稱：山埃）、空氣樣本（A1 – A7）的污染物，以及大學因應有成員對催淚氣體殘留物在校園所引致的健康關注而作出的一系列化學測試。5種催淚氣體殘留物包括鄰-氯代苯亞甲基丙二腈（*CS*）、α氯乙酰苯（*CN*）、辣椒素及二氫辣椒素（*OC*）、氰化氫（*HCN*）及表面灰塵中的鎳（*Ni*）進行了在環境空氣、表面擦拭和水中樣本的含量測試。

由於第一批至第三批的校園環境檢測結果皆符合安全標準，大學已經開始清理及重修原本圍封的環迴東路一帶路面，並將於下星期一（12月23日）開放使用。

各化驗結果的摘要及參考水平如下：

(1) 泥土樣本

表一：泥土樣本（#1 – #11）

污染物	測試結果	參考水平	參考文件
總氰化物	< 1.00 毫克/公斤	4,900毫克/公斤	香港環保署發出的「按風險釐定的土壤污染整治標準（公園）」

(2) 空氣樣本

表二：空氣樣本（A1 – A7）

污染物	測試結果	參考水平	參考文件
二噁英	0.036 – 0.056 皮克/立方米	0.6皮克/立方米	日本 MOE, 1999 ：環境空氣標準（全年平均）
		40皮克/立方米	美國 – 加洲, OEHHA, 2002：慢性吸入暴露限制
		0.001 – 0.222皮克/立方米	香港環境空氣監測（二噁英）：1999至2019年間錄得之最低及最高數值
總多氯聯苯	0.330 – 0.701 毫微克/立方米	1,200毫微克/立方米	美國 – 加洲, OEHHA, 2002：慢性吸入暴露限制
		83毫微克/立方米	美國 – 北卡羅萊納州, NCDENR, 2002：可接受環境空氣水平（全年平均）
		0.01 – 2.18 毫微克/立方米	香港環境空氣監測（總多氯聯苯）：1998至2001年間錄得之最低及最高數值
	< 0.060 – 0.147 毫微克/立方米	87毫微克/立方米	世界衛生組織（WHO）, 2000 – 每一佰萬份之一的癌症風險

多環芳香烴 <以苯並(a)芘（BaP）作比較>		33毫微克/立方米	美國 - 北卡羅萊納州, NCDENR, 2002：可接受環境空氣水平（全年平均）
		0.01 – 1.68毫微克/立方米	香港有毒空氣污染物監測（BaP）：1997至2001年間錄得之最低及最高數值

(3) 5種催淚氣體殘留物含量之檢測結果

表三：5種化學成份的測試的方法、報告限值及其有害限值如下

化學名稱	**測試方法**	**報告限值**	**有害限值** （**美國職業安全衛生署標準**）
鄰-氯代苯亞甲基丙二腈（*CS*）	美國職業安全衛生研究所（NIOSH）304	0.1 毫克/立方米	0.4 毫克/立方米（皮膚）
α氯乙酰苯（*CN*）	美國職業安全衛生研究所（NIOSH）291	0.1 毫克/立方米	0.3 毫克/立方米
辣椒素及二氫辣椒素（*OC*）	美國職業安全衛生研究所（NIOSH）5041	0.1 毫克/立方米	不適用
氰化氫（*HCN*）	美國職業安全衛生研究所（NIOSH）36010	0.2 毫克/立方米	11.05 毫克/立方米（皮膚）
表面灰塵中的鎳（*Ni*）	美國職業安全衛生研究所（NIOSH）7300	0.1 毫克/立方米	1 毫克/立方米

結論

(1) 泥土樣本

化驗結果顯示總氰化物的含量遠低於在報告上所規定的最低數值（1.00毫克/公斤），這濃度亦遠低於由香港環境保護署在2007年發出的《按風險釐定的土地污染整治標準的使用指引》中「按風險釐定的土壤污染整治標準（公園）」之總氰化物含量（4,900毫克/公斤）的參考水平（見表一）。

這表示總氰化物含量在這些泥土中所有的水平並不顯著，而結果與離2號橋較遠位置的泥土樣本（S1 – S9）相若。

(2) 空氣樣本

7個室內和室外的空氣樣本（A1 – A7）在2號橋附近較受影響的地點採集。因香港沒有環境空氣的二噁英、多氯聯苯和多環芳香烴的標準，故引用了香港環境保護署在2003年發出的《評估香港有毒空氣污染物的量度數據》最後報告內一些較早前的香港環境空氣監測統計數據和國際指引作比較。

從表二可見，所有空氣樣本（A1 – A7）的測試結果遠低於各個國際指引的參考水平，亦屬於香港環境空氣監測所錄得的數值範圍之內。

(3) 5種催淚氣體殘留物含量之檢測結果

首批測試在賽馬會研究生宿舍一進行，並收取了9個環境空氣樣本、9個環境表面擦拭樣本和6個水樣本。根據測試結果所見，所有測試參數都遠低於在報告上所規定的最低數值（見表三）。

其餘在大學體育館、大學正門和在新亞書院等遠離2號橋所取得的樣本的化驗結果，將於收到報告後盡快在中大網頁上載。

總括而言，前述的污染物在泥土（#1 – #11）和空氣（A1 – A7）樣本、以及5種催淚氣體殘留物含量之數值，對健康的危害是微不足道的。

相關數據可於此處瀏覽。

新聞稿

2019.12.28

理大公布校園環境評估檢測結果

為確保學生和教職員享有健康安全的校園環境，並釋除對校園內殘留催淚氣體有害物質的疑慮，香港理工大學（理大）於12月初委託獨立認可實驗室在校園不同地點（參見附錄一）採集了空氣、水、土壤及環境表面之擦拭樣本作檢測。

檢測涵蓋了就所採集之樣本內含屬於催淚氣體殘留物的主要化學成分，包括：二噁英、總氰化物、總多氯聯苯（PCBs）、多環芳香烴（PAHs）和鄰-氯代苯亞甲基丙二腈（CS粉末的活性成分）。校方已收到有關水質、土壤和環境表面擦拭測試樣本的所有檢測結果，以及在空氣樣本中含CS粉末的檢測報告; 至於空氣樣本的其餘檢測結果，預計將於明年1月收到。

根據測試結果，並參照本地或國際相關政府部門或機構所訂定的認可標準，有關土壤（S1-8）、自來水（WA1-4），和擦拭（W1-22）樣本內含有以上提及的污染物，以及在空氣樣本中所含的CS粉末，均遠低於相關的安全標準限值（參見附錄二）。

此外，校方亦已對各大樓進行安全檢測工作，包括評估建築物的結構安全、進行室內空氣檢測、清洗空調濾隔，並就個別建築物進行了徹底清潔消毒。

理大將竭盡所能確保校園符合相關的安全標準，為理大師生和員工提供健康安全的學習和工作環境。

完

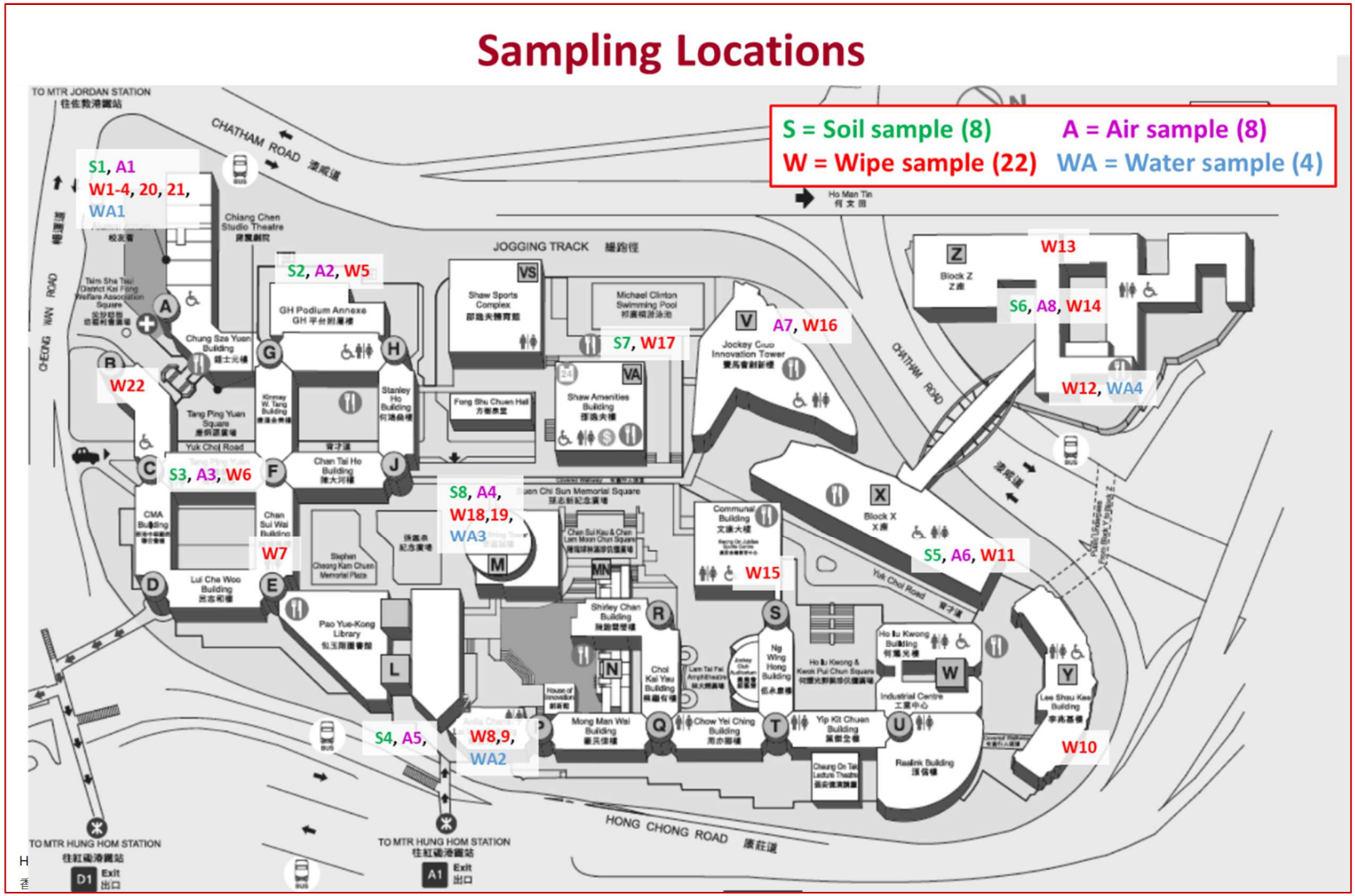
詳情查詢

鄭靄玲
傳訊及公共事務副總監

(852) 2766 6377

eunice.ol.cheng@polyu.edu.hk

（附錄一）


Sampling Locations
S = Soil sample (8)
A = Air sample (8)
W = Wipe sample (22)
WA = Water sample (4)
S1, A1
W1-4, 20, 21,
WA1
S2, A2, W5
S3, A3, W6
W22
S4, A5,
W8,9,
WA2
S8, A4,
W18,19,
WA3
W7
S7, W17
A7, W16
W13
S6, A8, W14
W12, WA4
S5, A6, W11
W15
W10
TO MTR JORDAN STATION
CHATHAM ROAD
JOGGING TRACK
Chiang Chen Studio Theatre
GH Podium Annexe
Shaw Sports Complex
Michael Clinton Swimming Pool
Jockey Club Innovation Tower
Block Z
Block X
Shaw Amenities Building
Chung Sze Yuen Building
Tang Ping Yuan Square
Yuk Choi Road
Chan Tai Ho Building
Stanley Ho Building
Fong Shu Chuen Hall
Sun Chi Sun Memorial Square
Communal Building
CMA Building
Lui Che Woo Building
Chan Sui Wai Building
Stephen Cheong Kam Chuen Memorial Plaza
Pao Yue-Kong Library
Shirley Chan Building
Chui Kai Yau Building
Ng Wing Hong Building
Ho Tim Building
Ho Iu Kwong Building
Industrial Centre
Lee Shau Kee Building
Mong Man Wai Building
Chow Yei Ching Building
Yip Kit Chuan Building
Realink Building
Cheung On Tat Lecture Theatre
HONG CHONG ROAD
TO MTR HUNG HOM STATION
D1 Exit
A1 Exit

（附錄二：首批校園環境污染測試結果）

測試包括以下污染物：

a) 二噁英
b) 總多氯聯苯
c) 多環芳香烴
d) 總氰化物
e) 鄰-氯代苯亞甲基丙二腈（CS）

以下總結了土壤（S1-8）、自來水（WA1-4）和表面擦拭（W1-22）樣本的測試結果。尚未收到的結果在下列中顯示為「檢測中」，我們預計結果將於 2020 年 1 月發布。

泥土樣本(S1-8)

污染物	測試結果	參考水平	參考標準
二噁英	0.0041-0.0084 毫微克/克	1 毫微克/克	香港環保署發出的「按風險釐定的土壤污染整治標準（公園）」
總多氯聯苯	<0.2 毫克/公斤（低於報告限值）	0.756 毫克/公斤	
多環芳香烴	<0.5 毫克/公斤（低於報告限值）	3.83-10,000 毫克/公斤	
總氰化物	<1 毫克/公斤（低於報告限值）	4,900 毫克/公斤	
鄰-氯代苯亞甲基丙二腈（CS）	<25 微克/公斤（低於報告限值）	-	無適用參考

水樣本(WA1-4)

污染物	測試結果	參考水平	參考標準
二噁英	<4.9 皮克/公升（低於報告限值）	30 皮克/公升	美國國家環境保護局發出的國家飲用水主要規定(NPDWR)內的污染物最高水平(MCL)
總多氯聯苯	<0.5 微克/公升（低於報告限值）	0.5 微克/公升	
多環芳香烴	<0.1 微克/公升（低於報告限值）	0.2 微克/公升[以苯並(a)芘（BaP）作比較]	

總氰化物	<0.1 毫克/公升（低於報告限值）	0.2 毫克/公升	
鄰-氯代苯亞甲基丙二腈（CS）	<1 微克/公升（低於報告限值）	-	無適用參考

擦拭測試(W1-22)

污染物	測試結果	參考水平	參考標準
二噁英	<0.19 毫微克/平方米（低於報告限值）	-	無適用參考
總多氯聯苯	<20 微克/平方米（低於報告限值）	-	
多環芳香烴	• <0.4 - 1.6 微克/平方米（萘） • <0.4 - 1.3 微克/平方米（菲） • <0.4 - 0.44 微克/平方米（芘） • <0.4 微克/平方米（其他多環芳香烴)(低於報告限值）	-	
總氰化物	< 1 微克/平方米（低於報告限值）	-	無適用參考
鄰-氯代苯亞甲基丙二腈（CS）	< 2 微克/平方米（低於報告限值）	-	無適用參考

空氣樣本(A1-8)

污染物	測試結果	參考水平	參考標準
二噁英	檢測中	0.1 皮克 TEQ/立方米（註一）	加拿大安大略省環境空氣質量標準(AAQC) 的 24 小時平均限值
總多氯聯苯	檢測中	0.15 微克/立方米	
多環芳香烴	檢測中	0.00005 微克/立方米 [以苯並(a)芘（BaP）作比較]	
總氰化物	檢測中	8 微克/立方米	
鄰-氯代苯亞甲基丙二腈（CS）	< 0.1 毫克/立方米（低於報告限值）	0.4 毫克/立方米(REL-C)	美國國家職業安全健康研究所的建議暴露限值(REL)

註一: 日本二噁英環境標準規定的參考水平（年度）為 0.6 皮克 TEQ/立方米

新聞稿

2020.01.03

理大公布空氣樣本的其餘檢測結果

香港理工大學（理大）今日公布在校園內不同地點所採集的空氣樣本的其餘檢測結果（參見**附錄一**）。有關首批校園環境樣本，包括水、土壤和表面擦拭樣本，以及空氣樣本內含CS粉末的檢測結果，校方已於2019年12月28日發布。

是次檢測涵蓋空氣樣本內所含的多種主要污染物，包括：二噁英、總多氯聯苯（PCBs）、多環芳香烴（PAHs，以苯並(a)芘計）和鄰-氯代苯亞甲基丙二腈（CS粉末的活性成分）樣本（參見**附錄二**）。

所有檢測結果顯示，二噁英、總多氯聯苯、多環芳香烴濃度（以苯並(a)芘計）和CS粉末在空氣樣本中的含量均低於國際機構所訂定的參考限值。

校方已完成校園北區各大樓進行安全檢測工作，包括評估建築物的結構安全及進行室內空氣檢測。有關的檢測符合適用的健康及安全參考數據; 因此，校園可恢復正常運作。校方亦已清洗空氣處理系統的濾隔及食水水箱，並就校園及個別建築物進行了徹底清潔消毒。

理大致力為師生及員工提供健康安全的校園環境，讓他們安心在其中學習和工作。

完

詳情查詢

鄭靄玲
傳訊及公共事務副總監

（852）2766-6377

eunice.ol.cheng@polyu.edu.hk

附錄 I


採集樣本地點
S= 泥土樣本(8) A=空氣樣本(8)
W=擦拭樣本(22) WA= 水樣本(4)
S1, A1
W1-4, 20, 21,
WA1
S2, A2, W5
S3, A3, W6
S4, A5,
W8,9,
WA2
S5, A6, W11
S6, A8, W14
S7, W17
S8, A4,
W18,19,
WA3
W7
W10
W12, WA4
W13
W15
A7, W16
W22
TO MTR JORDAN STATION
CHATHAM ROAD
JOGGING TRACK
OKTHAM ROAD
HONG CHONG ROAD
TO MTR HUNG HOM STATION
TO MTR HUNG HOM STATION

附錄 II：理大校園空氣樣本的檢測結果

檢測包括以下污染物：

a. 二噁英
b. 總多氯聯苯
c. 多環芳香烴
d. 鄰-氯代苯亞甲基丙二腈（CS）

空氣樣本(A1-A8):

污染物	樣本的檢測結果範圍	參考限值	參考標準
二噁英	0.034 – 0.096 皮克 I-TEQ/立方米[註一]	0.1 皮克 TEQ/立方米	加拿大安大略環境空氣質量標準(AAQC)
		0.6 皮克 TEQ/立方米	日本環境省
總多氯聯苯	0.278 – 0.419 毫微克/立方米	150 毫微克/立方米	加拿大安大略省環境空氣質量標準(AAQC)
多環芳香烴	0.278 – 0.400 毫微克/立方米[註二]	87 毫微克/立方米[註三][以苯並(a)芘（BaP）作比較]	世界衛生組織(WHO)空氣質素指引
鄰-氯代苯亞甲基丙二腈（CS）	< 0.1 毫克/立方米 *(低於報告限值)*	0.4 毫克/立方米(REL-C)	美國國家職業安全健康研究所的建議暴露限值(REL)

** 為提供完整數據，上表包含 2019 年 12 月 28 日公布的空氣樣本中 CS 粉末的檢測結果。*

備註

註一：

- *二噁英數字是以採集樣本當日的 24 小時平均毒性當量(pgI-TEQ) 濃度(皮克/ 立方米)計算，並以 2,3,7,8 - 四氯二苯並二噁英（TCDD）的毒性當量（I-TEQ）濃度來表示。其計算方法是以北大西洋公約組織(NATO/CCMS)所定立的國際毒性當量因數(I-TEF)為依據，使用結構上密切關聯的化學家族且具有相似化學特性的 17 種二噁英類化合物計算。對於同屬污染物的濃度低於其 EMSDL (估計樣本最低測定水平) 時，以一半的 EMSDL 作計算 I-TEQ 濃度。*

註二：

- *多環芳香烴由自然或人為不完全燃燒有機物所產生（例如:煮食、露天燃燒、火災）。一般認為多環芳香烴在環境中無處不在。*
- *理大校園附近路旁測得的多環芳烴濃度為 0.05 至 1.34 毫微克/立方米，平均值為 0.49 毫微克/立方米。*(Lee et al., 2001)

註三：

- *世界衛生組織（WHO）發出的空氣中多環芳香烴（以苯並(a)芘計）的指引限值為87毫微克/立方米。暴露於濃度為87毫微克/立方米的多環芳烴(以苯並(a)芘計），估計所增加的致癌風險為百萬分之一。*

總結

2019年12月28日公布的土壤（S1-S8）、自來水（WA1-WA4）和表面擦拭（W1-W22）樣本的結果顯示，所有檢測污染物的濃度均低於本地或國際機構所訂定的參考限值(如適用)。

空氣樣本（A1-A8）中的二噁英、總多氯聯苯和CS粉末的濃度均低於參考限值。另外，空氣樣本中的多環芳香烴的濃度（以苯 並（a）芘計）亦遠低於世界衛生組織建議的的指引限值，並與理大校園附近地區的環境濃度相若。

香港科學園環境評估檢測結果公布

香港科學園環境評估檢測結果公布

2020年01月3日

（香港，2020年1月3日）為確保園區環境安全及園內工作人士和訪客之健康，香港科技園公司（科技園公司）早前委託了獨立認可實驗室，分兩階段於園區內進行環境評估。科技園公司今天公布首階段香港科學園區的環境評估檢測結果 (結果見以下列表)。

科技園公司委託獨立認可實驗室，在2019年12月初於園區內四個主要室外地點收集之空氣、水質及泥土樣本，包括最接近中文大學附近範圍、面向吐露港公路範圍、面向吐露港海域範圍及科學園內圍之中心部分(見附件)，進行第一階段的環境評估。所有檢測結果，參照本地或國際相關政府部門或機構所訂定的認可標準，均低於相關的安全標準限值。

首階段檢測結果總結如下：

1) 泥土樣本：2E大樓、9W大樓、12W大樓和園中湖

污染物	檢測結果	參考水平	參考文件
二噁英	3.7-4.0 皮克/克	1000皮克/克	香港特區政府環保署發出的「按風險釐定的土壤污染整治標準（公園）」

2) 水質樣本：2E大樓、2W大樓、12W大樓和園中湖

污染物	檢測結果	參考水平	參考文件
二噁英	低於 4.9皮克/公升	30皮克/公升	美國國家環境保護局發出的國家飲用水主要規定(NPDWR)內的污染物最高水平(MCL)

3) 空氣樣本：2E大樓、6W大樓、12E大樓和12W大樓

污染物	檢測結果	參考水平	參考文件
二噁英	0.045-0.065皮克TEQ/立方米	0.1皮克 TEQ/立方米	加拿大安大略省環境空氣質量標準(AAQC)的24小時平均限值

至於第二階段的環境評估，將包括科學園內所有大樓。科技園公司委託的獨立認可實驗室，已於2019年12月底完成在園區各處收集各種環境樣本。我們預計可於2020年3月公布相關檢測結果。

關於香港科技園公司

香港科技園公司乃於2001年5月成立之法定機構，負責規劃及管理科學園、創新中心及工業邨，致力營造富有活力的創新及科技生態圈，積極連繫各持份者，培育科技人才及促進交流協作，帶動創新發展，為香港以至整個區域締造社會及經濟效益。

自成立以來，我們透過發展重點科技領域，包括生物醫藥、電子、綠色科技、資訊及通訊科技、物料與精密工程，帶領香港成為地區的創新及科技樞紐。為協助科技公司孕育意念、創新及發展，我們提供科研設施及基礎建設，設置市場主導的實驗室及技術中心，並附設技術支援服務。我們亦提供多項增值服務及專為新創科技企業而設的創業培育計劃，支援全面，協助他們加快發展業務。

進駐於科學園的科技企業能夠透過我們的專業服務及科研設施，進行應用研究及產品開發；從事設計的企業可以於創新中心獲得設計相關的支援；而技術密集型的企業則可受惠於大埔、將軍澳及元朗三個工業邨所提供的服務。更多詳情，請瀏覽www.hkstp.org。

土壤樣本收集已完成
Soil sample collection completed

科學園俯瞰圖
Science Park Location Map

第一階段-4組土壤樣本收集已完成
1st Phase - 4 set of Soil sample collection completed

Location	地點
Rear of 2E Building	2E 大樓後方
Rear of 9W Building near Tolo Highway	9W 大樓後方面對吐露港公路
Central Lake in front of 8W Building	8W 大樓對出圓中湖
12W Building Outside Area	12W 大樓戶外對出位置

第二階段-22組土壤樣本收集已完成
2nd Phase - 22 set of Soil sample collection completed

Location	地點
Organic Farm near 20E Building	有機農圃接近20E 大樓
Organic Farm near 10W Building	有機農圃接近10W 大樓
3E Building Outside Area	3E 大樓戶外對出位置
6E Building Outside Area	6E 大樓戶外對出位置
12E Building Outside Area	12E 大樓戶外對出位置
16E Building Outside Area	16E 大樓戶外對出位置
18E Building Outside Area	18E 大樓戶外對出位置
20E Building Outside Area	20E 大樓戶外對出位置
22E Building Outside Area	22E 大樓戶外對出位置
1W and 1E Building Outside Area	1W及1E 大樓戶外對出位置
10W and 12W Building Outside Area	10W及12W 大樓戶外對出位置
16W Building Outside Area	16W 大樓戶外對出位置
2W Building Outside Area	2W 大樓戶外對出位置
6W Building Outside Area	6W 大樓戶外對出位置
8W Building Outside Area	8W 大樓戶外對出位置
9W Building Outside Area	9W 大樓戶外對出位置
11W Building Outside Area	11W 大樓戶外對出位置
12W Building Outside Area	12W 大樓戶外對出位置
15W Building Outside Area	15W 大樓戶外對出位置
17W Building Outside Area	17W 大樓戶外對出位置
19W Building Outside Area	19W 大樓戶外對出位置
Grand Plaza Outside Area	大廣場 戶外對出位置

水質樣本收集已完成
Water sample collection completed

科學園俯瞰圖
Science Park Location Map

第一階段-4組水質樣本收集已完成
1st Phase - 4 set of Water sample collection completed

Location	地點
Water Pool in front of 2E Building	2E 大樓對出水池
Water Pool in front of 2W Building	2W 大樓對出水池
Central Lake in front of 8W Building	8W 大樓對出圓中湖
Water Pool in front of 12W Building	12W 大樓對出水池

第二階段-22組水質樣本收集已完成
2nd Phase - 22 set of Water Sample collection completed

Location	地點
5W Building Male Toilet - G/F	5W 大樓地下男洗手間
8W Building Female Toilet - 2/F	8W 大樓2樓女洗手間
10W Building Male Toilet - G/F	10W 大樓地下男洗手間
12W Building Female Toilet - G/F	12W 大樓地下女洗手間
1W Building Restaurant Kitchen	1W 大樓酒樓廚房
12W Restaurant Kitchen	12W 大樓酒樓廚房
3E Building Pantry - 2/F	3E 大樓2樓茶水間
12E Building Pantry - 1/F	12E 大樓1樓茶水間
22E Building Pantry - 3/F	22E 大樓3樓茶水間
3E Building Male Toilet - 2/F	3E 大樓2樓男洗手間
12E Building Female Toilet - G/F	12E 大樓地下女洗手間
22E Building Male Toilet - 3/F	22E 大樓3樓男洗手間
9W Building Pantry - 2/F	9W 大樓2樓茶水間
15W Building Pantry - 8/F	15W 大樓8樓茶水間
19W Building Pantry - 2/F	19W 大樓2樓茶水間
9W Building Female Toilet - 2/F	9W 大樓2樓女洗手間
15W Building Male Toilet - 8/F	15W 大樓8樓男洗手間
16W Building Female Toilet - 3/F	16W 大樓3樓女洗手間
18E Building Pantry - 1/F	18E 大樓1樓茶水間
16W Building Pantry - 3/F	16W 大樓3樓茶水間
ClubHouse Male Shower Room - 1/F	科學園會所1樓男淋浴室
ClubHouse Female Shower Room - 1/F	科學園會所1樓女淋浴室

空氣樣本收集已完成
Air sample collection completed

科學園俯瞰圖
Science Park Location Map

第一階段-4組空氣樣本收集已完成
1st Phase - 4 set of Air sample collection completed

Location	地點
In front of 6W Building	6W 大樓正門
Podium Floor of 12W Building	12W 平台花園
Rear of 12E Building near Tolo Harbour	12E 大樓後方接近吐露港
Rear of 2E Building	2E 大樓後方

第二階段-22組空氣樣本收集已完成
2nd Phase - 22 set of Air sample collection completed

Location	地點
1E Building Lobby	1E 大樓大堂
2E Building Lobby	2E 大樓大堂
3E Building Lobby	3E 大樓大堂
5E Building Lobby	5E 大樓大堂
6E Building Lobby	6E 大樓大堂
12E Building Lobby	12E 大樓大堂
16E Building Lobby	16E 大樓大堂
18E Building Lobby	18E 大樓大堂
20E Building Lobby	20E 大樓大堂
22E Building Lobby	22E 大樓大堂
Charles K. Kao Auditorium - Outside Front Door	高錕會議中心(金蛋) - 正門對出戶外位置
The SPINE - Indoor Area near 12W Building	科園廊 - 室內位置接近12W 大樓
P2 Car Park - Near 8W Building	P2 停車場 - 近8W大樓
5W Building - 1/F near Idea Lab	5W 1樓 接近 Idea Lab
9W Building Lobby	9W 大樓大堂
10W Building Lobby	10W 大樓大堂
11W Building Lobby	11W 大樓大堂
12W Building Lobby	12W 大樓大堂
15W Building Lobby	15W 大樓大堂
16W Building Lobby	16W 大樓大堂
17W-19W Building Lobby	17W-19W 大樓大堂
19W Building Podium	19W 大樓平台