Drinking Water Safety Advisory Committee
Eleventh Meeting

Date	**:**	30 November 2022 (Wednesday)
Time	**:**	9:30 am – 11:15 am
Venue	**:**	Conference Room 5, G/F, Central Government Offices, 2 Tim Mei Avenue, Tamar, Hong Kong / Video conferencing

Minutes of Meeting

Members Present

Ir LEUNG Kwong Ho, Edmund	Chairman
Ir Dr CHAN Hon Fai	Vice Chairman
Dr CHUI Ting Fong, May	
Ir CHUNG Chi Ming	
Dr CUNLIFFE David Anthony	(via video conferencing)
Dr HO Koon Sing, Gray	
Mr HO Kui Yip, Vincent	
Prof LEE Wing Yan, Vivian	(via video conferencing)
Dr TO Kai Wang, Kelvin	
Prof TSE Lap Ah, Shelly	
Dr WONG TAAM Chi Woon, Vivian	
Mr LO Kwok Wah, Kelvin	Director of Water Supplies
Mr CHAU Siu Hei, Francis	Deputy Secretary for Development (Works) 3
Dr HO Ka Wai, Rita	Head, Non-Communicable Disease Branch, Department of Health ("DH")
Mr KAN Yim Fai, Fedrick	Secretary Team Leader (Water Safety), Development Bureau ("DEVB")

Members Absent with Apology

Prof HO Kin Chung

Ir Prof LO Man Chi, Irene

Dr MA Yiu Wa, Anthony

Ir TANG Ming Sum, Michelle

Prof WONG Kong Chu, Chris

Dr WONG Siu Ming, Raymond

In Attendance

Ms KWAN Kai Yin, Janice	Assistant Secretary (Water Safety) 1, DEVB
Ms YEUNG Man Yan, Didi	Executive Manager (Water Safety), DEVB
Mr CHAU Sai Wai	Deputy Director of Water Supplies
Mr MA Hon Wing, Wilson	Assistant Director/Development, Water Supplies Department ("WSD")
Mr CHOY Tak Yip	Chief Chemist, WSD
Mr CHAN Chi Yuen, Stanley	Chief Engineer/Design, WSD
Ms LAM Lai Hang, Mable	Chief Engineer/Technical Support, WSD
Mr LAU Chin Hung, Edmond	Chief Electrical & Mechanical Engineer/Maintenance, WSD
Mr LIU Wan Fai, Edmond	Chief Engineer/New Territories East, WSD
Mr IP Wing Cheong	Senior Mechanical Engineer/Material Control & Testing, WSD
Mr TONG Man Kit, Max	Senior Engineer/Legislative Review (2), WSD
Mr YU Chi Wing, Albert	Senior Chemist/Water Quality (Standards and Monitoring), WSD
Ms CHAN On Yee, Anna	Chemist/Planning (2), WSD
Ms CHU Wai Man, Ramie	Engineer/Technical Support (4), WSD

Action by

1. The Secretary reported that the meeting materials including DWSAC Paper No. 2/2022 had been sent to Members before the meeting and no comments had been received.

2. The Secretary updated that regarding the establishment of a non-health-based parametric value for *Legionella* (1,000 cfu/L) in the Drinking Water Directive of the European Union reported in the eighth meeting, WSD had identified three isolated cases of depleted residual chlorine in water samples collected from some 4 700 publicly accessible consumers' taps ("PACTs") from June to August 2022, and had accordingly conducted snapshot testing of *Legionella* in water samples taken from the three PACTs concerned. For Members' information, the *Legionella* levels were far below the Electrical and Mechanical Services Department's action level of 10,000 cfu/L for cooling towers. WSD had reported the snapshot testing results to the Prevention of Legionnaires' Disease Committee, which considered no follow-up action was necessary.

Agenda Item 1: Confirmation of Minutes of the Last Meeting

3. The Secretary had circulated the draft minutes of the last meeting (i.e. the tenth meeting) to Members on 26 July 2022 and a revised version on 17 November 2022 incorporating a post-meeting note at paragraph 6. No comments had been received. There being no further comments from Members at the meeting, the minutes were confirmed.

Agenda Item 2: Matters Arising from Last Meeting

4. To address Members' suggestions (paragraph 8 of the minutes of the last meeting), WSD had reviewed the response plan for the radiological monitoring of the Tseung Kwan O Desalination Plant. Supplementary information had been provided to Members on 17 November 2022. No comments from Members were raised.

5. On Members' suggestion to conduct more trials to ensure the robustness of the refined systematic flushing protocol under the 24-hour stagnation sampling test for new plumbing installations (paragraph 15 of the minutes of the last meeting), WSD would present their follow-up under Agenda Item 3 below.

6. On Members' request for more information about the systematic flushing as well as the sampling and testing protocols for commissioning test for new plumbing installations (paragraph 16 of the minutes of the last meeting), supplementary information had been provided to Members on 17 November 2022. No enquiries from Members were raised.

Agenda Item 3: Updates on Implementation of Action Plan for Enhancing Drinking Water Safety in Hong Kong ("Action Plan")

7. Ms Anna CHAN, Chemist/Planning (2), Ms Ramie CHU, Engineer/Technical Support (4) and Mr Max TONG, Senior Engineer/Legislative Review (2) of WSD, updated Members on the implementation of the Action Plan. In particular, Members were briefed about the lead exceedance case found under the Enhanced Water Quality Monitoring Programme in June 2022 and WSD's upcoming study on conducting more trials for the refined flushing protocol. Members were also consulted on the proposed mandatory labelling scheme for water using apparatus ("WUA") to be put forth through the amendment of the Waterworks Ordinance ("WWO").

8. For the lead exceedance case, a Member enquired how the improper installation of water dispenser had caused the problem and whether there was any control and/or guidelines in place in respect of the installation of WUA. Mr Stanley CHAN, Chief Engineer/Design of WSD, responded that the water dispenser concerned had not been installed with a backflow prevention device. In fact, WSD had promulgated in its "Technical Requirements for Plumbing Works in Buildings" the need to install a backflow prevention device for WUAs for compliance by licensed plumbers or competent persons, which should be included in their submissions on construction of new plumbing installations for WSD's approval. In future, the proposed WUA labelling scheme would help enhance drinking water safety even if the WUA was to be installed by laypersons. Mr TY CHOY, Chief Chemist of WSD, supplemented that the Waterworks Regulations ("WWR") required installation of WUA directly connected to internal plumbing system to be undertaken by a licensed plumber and such installations should be approved by WSD. He also illustrated in detail how contamination took place in the inside service concerned in which the water dispenser had not been installed with a backflow prevention device and the replacement of the filter cartridge had been overdue for a long time.

9. The Member went on suggesting that WSD should prepare publicity material to raise public awareness on (i) the proper installation of WUA and (ii) the importance of engaging licensed plumbers to install WUA directly connected to internal plumbing system. Mr Francis CHAU, Deputy Secretary for Development (Works) 3 of DEVB, remarked that DEVB and WSD were working on a press release through which the public would be appealed to observe the relevant regulation in installing WUA and the need to engage licensed plumbers for such works. In the meantime, WSD would continue with the promotional work. Mr TY CHOY supplemented that WSD had already produced a leaflet on how to use, install and maintain water filters and water dispensers, for distribution to premises found with these WUA installed during the sampling visits under the Enhanced Programme. Also, the proposed labelling scheme for WUA would facilitate the public in identifying the products that complied with relevant standards in respect of drinking water safety.

10. A Member suggested WSD stress in the publicity materials that the drinking water supplied by WSD was safe and there was no need to install any filters. Another Member commented that WSD should emphasise the importance of having proper maintenance for the filters because the lead accumulated in the filters was likely in the form of particulate. Mr TY CHOY concurred with the two Members' views and pointed out that the leaflet mentioned in paragraph 9 above had already stressed in its first paragraph that the water supplied by WSD complied with the Hong Kong Drinking Water Standards. Mr Kelvin LO, Director of Water Supplies, added that the leaflet had conveyed that users of filters should follow the manufacturers' instructions such as replacing the filter cartridges according to the specified frequency. In the proposed amendments of WWO and WWR, WSD would incorporate, among others, the technical requirements of WUA in respect of provision of backflow prevention device, etc.

11. The discussion was kept in strict confidence.

Agenda Item 4: Update on Drinking Water Standards in Other Jurisdictions

12. Mr Albert YU, Senior Chemist/Water Quality (Standards and Monitoring) of WSD, briefed Members on the updates made by other jurisdictions on drinking water standards during the period from October 2021 to September 2022 as laid down in DWSAC Paper No. 2/2022.

13. The Chairman noted that the interim health advisory levels for perfluorooctanoic acid ("PFOA") and perfluorooctane sulfonic acid ("PFOS") established by the Environmental Protection Agency of the United States ("USEPA") were beyond the capability of the testing methods currently available. He solicited support from Members in the relevant fields to share with the Committee in future any news on the testing of per- and polyfluoroalkyl substances ("PFAS") chemicals.

14. A Member envisaged that the establishment of the guideline values for PFAS would be subject to a long debate given the divergent views amongst different organizations and jurisdictions. He pointed out that in the World Health Organization ("WHO")'s draft background document for PFOA and PFOS in drinking water, it was considered that the level of evidence was not strong enough to set health-based guideline values and hence only provisional guideline values ("PGVs") were proposed. In connection with this, there had been criticisms that WHO's proposed PGVs were too lenient, and WHO would have to address a number of comments before the final background document could be worked out. On USEPA's advisory levels, the Member opined that regulatory levels to be set by USEPA in the future would likely be less stringent due to the limitation in the current analytical method. He also remarked that while countries like Australia and Japan were going to review their standard values for PFAS, it might take years of discussion for WHO to come up with any conclusive guideline values. Another Member shared the same view that due to the lack of sufficient data on (i) human health to establish the dose-response relationship and (ii) the exposures from drinking water and other intake channels, it would be unlikely to have consensus on the guideline values reached in the near future.

15. A Member enquired on WSD's capability on testing PFOA and PFOS at lower detection limit. Mr TY CHOY responded that PFOA, PFOS, sum of 20 PFAS and PFAS-Total were on the Watch List and their snapshot testing had been conducted with the engagement of overseas testing services. Currently there was no testing method capable of detecting such chemicals at USEPA advisory levels which were very low. Given WHO had just released the relevant draft chemical document in September 2022 with PGVs much higher than the USEPA advisory levels, WSD would closely monitor the development of the issue and review the testing technologies that were most suitable for adoption/development in Hong Kong.

Agenda Item 5: Summary on International and Local Water Quality Incidents

16. Ms Anna CHAN gave a brief account of WSD's review on major international water quality incidents for the period from October 2021 to June 2022. Of the three incidents more relevant to Hong Kong, Ms Anna CHAN deliberated the situation in Hong Kong. She also briefed Members about the water discolouration incident in the Ma On Shan area happened in July 2022. Members raised no specific comments.

Agenda Item 6: Any Other Business

17. Mr TY CHOY gave a brief account of the melioidosis cluster in Sham Shui Po area which had triggered relevant investigations at the fresh water service reservoirs ("FWSRs") therein. He also reported that based on the investigation results, the Centre for Health Protection ("CHP") of DH and medical experts considered that there was no evidence to suggest the infection cases were related to the tap water supplied by the FWSRs concerned. Although the drinking water supplied by WSD was safe, WSD had been prudent and implemented additional measures to alleviate the public's concern, including increasing residual chlorine level in drinking water, enhancing water quality monitoring and installing high efficiency particulate air filters at the ventilators of all FWSRs in the territory in stages.

18. A Member shared that melioidosis was endemic in Australia and its linkage with drinking water supplies was uncommon. There had only been two clusters in Australia associated with small water supply systems with inadequate or no disinfection, while a cluster in Thailand associated with a water supply system that had not been well-maintained. Transmission was commonly through skin contact followed by inhalation, and far less through ingestion. He pointed out that good, clean and well-maintained drinking water supply systems with adequate residual chlorine were not linked with melioidosis. He considered a range of evidence had supported that drinking water in Hong Kong was not involved in the clusters concerned, and it was noteworthy that (i) culturable *Burkholderia Pseudomallei* had not been found in the drinking water and (ii) the infection cluster would not display a seasonal pattern if drinking water had been the cause. He therefore opined that the additional measures carried out by WSD as mentioned in paragraph 17 above had been more than prudent. Finally, he shared that there was no routine monitoring on *Burkholderia Pseudomallei* in drinking water in Australia and it was more appropriate to ensure the good management and

maintenance of water supply system. Another Member echoed that there was absence of evidence that drinking water in WSD's system had caused the melioidosis infection and such should be made clear to the public.

[Dr David CUNLIFFE left at this juncture.]

19. Dr Rita HO, Head, Non-Communicable Disease Branch of DH, expressed that the investigations conducted so far had showed no evidence that drinking water was the source of melioidosis infection. She shared that melioidosis was endemic in many Southeast Asia countries with contaminated soil as the infection source. Therefore, the investigation findings in Hong Kong with the DNA of *Burkholderia Pseudomallei* found in soil samples was compatible with those in our neighbouring countries. Health authorities and other infection diseases experts in these countries had advised the importance of maintaining good personal hygiene and wearing personal protective equipment, in particular for people with immunocompromised conditions, for preventing melioidosis. She alerted that since melioidosis had been included as a statutorily notifiable infectious disease recently, the number of reported cases might increase in the future. Mr TY CHOY supplemented that according to the information from CHP, a previous study reported that there had been 96 out of 1 400 soil samples collected in Hong Kong, i.e. about 6.8%, tested positive for *Burkholderia pseudomallei*. Among those samples tested positive, *Burkholderia pseudomallei* had been cultured in nine soil samples, i.e. about 0.6%.

20. There being no other business, the meeting adjourned at 11:15 a.m.