

Drinking Water Quality for the Period of October 2009 - September 2010

Part A. Microbiological quality

General Points

- Hong Kong enjoys one of the safest water supplies in the world. We monitored the quality of our drinking water according to the World Health Organization (WHO) Guidelines for Drinking-water Quality (2006). The WHO recommends a set of Guideline Values (GVs) representing the concentration of constituents in drinking water that will not result in any significant health risk to a consumer weighing 60 kg over a lifetime consumption of 2 litres per day for 70 years.
- In extreme cases of contamination, we will take concerted actions with the Department of Health. The public will be informed to take appropriate measures if necessary.
- Samples were taken at water treatment works, service reservoirs, connection points and consumer taps and analysed at site and in WSD's laboratories by WSD's qualified staff.
- During this period, over 26,000 treated water samples were taken for microbiological analyses.
- The drinking water quality for this period fully complied with the World Health Organization Guidelines for Drinking-water Quality (2006).
- Compliance is based on the annual average of monitoring data in accordance with international practice.

Parameter	Unit	Monitoring Data (10/2009 - 09/2010)			WHO 2006 Guideline Value	Compliance
		Minimum	Maximum	Average		
<i>E. coli</i>	cfu* per 100 mL	0	0	0	0	✓
Total Coliforms#	cfu* per 100 mL	0	0	0	-	-
Cryptosporidium@	no. of oocyst per L	0.00	0.00	0.00	-	-
Giardia@	no. of cyst per L	0.00	0.00	0.00	-	-

* colony forming unit (cfu)

WHO 2006 has not established health-related GV for Total Coliforms.

@ Although the WHO has not established any health-related GV for Cryptosporidium or Giardia in drinking water, we also monitor Cryptosporidium and Giardia in our drinking water. The monitoring data of 0.00 per litre represents no oocyst or cyst detected in a volume of not less than 100 litres of treated water sample.

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Part B. Chemicals of health significance as described by World Health Organization Guidelines for Drinking-water Quality 2006

General Points

- Hong Kong enjoys one of the safest water supplies in the world. We monitored the quality of our drinking water according to the World Health Organization (WHO) Guidelines for Drinking-water Quality (2006). The WHO recommends a set of Guideline Values (GVs) representing the concentration of constituents in drinking water that will not result in any significant health risk to a consumer weighing 60 kg over a lifetime consumption of 2 litres per day for 70 years.
- Some GV's are recommended by WHO as provisional GV's where available health effect information is limited.
- Occasional deviations above the WHO GV's do not mean that the water is unsuitable for consumption. Large safety margins have been allowed for in the derivation of the GV's.
- In extreme cases of contamination, we will take concerted actions with the Department of Health. The public will be informed to take appropriate measures if necessary.
- Samples were taken at water treatment works, service reservoirs, connection points and consumer taps and analysed at site and in WSD's laboratories by WSD's qualified staff.
- The drinking water quality for this period fully complied with the World Health Organization Guidelines for Drinking-water Quality (2006).
- Compliance is based on the annual average of monitoring data in accordance with international practice.

Parameter	Unit	Monitoring Data (10/2009 - 09/2010)			WHO 2006 Guideline Value	Compliance
		Minimum	Maximum	Average		
Acrylamide	µg/L	< 0.4	< 0.4	< 0.4	0.5	✓
Alachlor	µg/L	< 5.0	< 5.0	< 5.0	20	✓
Aldicarb	µg/L	< 2.5	< 2.5	< 2.5	10	✓
Aldrin and Dieldrin	µg/L	< 0.008	< 0.008	< 0.008	0.03	✓
Antimony	mg/L	< 0.001	< 0.001	< 0.001	0.02	✓
Arsenic	mg/L	< 0.001	< 0.001	< 0.001	0.01 (P)	✓
Atrazine	µg/L	< 0.50	< 0.50	< 0.50	2	✓
Barium	mg/L	0.004	0.032	0.017	0.7	✓
Benzene	µg/L	< 2.5	< 2.5	< 2.5	10	✓
Benzo(a)pyrene	µg/L	< 0.0020	< 0.0020	< 0.0020	0.7	✓

Parameter	Unit	Monitoring Data (10/2009 - 09/2010)			WHO 2006 Guideline Value	Compliance
		Minimum	Maximum	Average		
Boron	mg/L	< 0.02	0.03	< 0.02	0.5 (T)	✓
Bromate	µg/L	< 2.5	< 2.5	< 2.5	10 (A,T)	✓
Bromodichloromethane	µg/L	< 15	23	< 15	60	✓
Bromoform	µg/L	< 25	< 25	< 25	100	✓
Cadmium	mg/L	< 0.001	< 0.001	< 0.001	0.003	✓
Carbofuran	µg/L	< 1.2	< 1.2	< 1.2	7	✓
Carbon tetrachloride	µg/L	< 0.50	< 0.50	< 0.50	4	✓
Chlorate	µg/L	< 175	< 175	< 175	700 (D)	✓
Chlordane	µg/L	< 0.050	< 0.050	< 0.050	0.2	✓
Chlorine	mg/L	< 0.1	1.5	0.6	5 (C)	✓
Chlorite	µg/L	< 50	< 50	< 50	700 (D)	✓
Chloroform	µg/L	< 50	55	< 50	300	✓
Chlorotoluron	µg/L	< 7.5	< 7.5	< 7.5	30	✓
Chlorpyrifos	µg/L	< 7.5	< 7.5	< 7.5	30	✓
Chromium	mg/L	< 0.002	< 0.002	< 0.002	0.05 (P)	✓
Copper	mg/L	< 0.003	0.033	< 0.003	2	✓
Cyanazine	µg/L	< 0.15	< 0.15	< 0.15	0.6	✓
Cyanide	mg/L	< 0.01	< 0.01	< 0.01	0.07	✓
Cyanogen chloride (as CN)	mg/L	< 0.02	< 0.02	< 0.02	0.07	✓
2,4-D (or 2,4-dichlorophenoxyacetic acid)	µg/L	< 7.5	< 7.5	< 7.5	30	✓
2,4-DB (or 4-(2,4-dichlorophenoxy) butyric acid)	µg/L	< 22	< 22	< 22	90	✓
DDT and metabolites	µg/L	< 0.50	< 0.50	< 0.50	1	✓
Di(2-ethylhexyl)phthalate	µg/L	< 2	< 2	< 2	8	✓
Dibromoacetonitrile	µg/L	< 25	< 25	< 25	70	✓
Dibromochloromethane	µg/L	< 25	< 25	< 25	100	✓

Parameter	Unit	Monitoring Data (10/2009 - 09/2010)			WHO 2006 Guideline Value	Compliance
		Minimum	Maximum	Average		
1,2-Dibromo-3-chloropropane	µg/L	< 0.25	< 0.25	< 0.25	1	✓
1,2-Dibromoethane	µg/L	< 0.10	< 0.10	< 0.10	0.4(P)	✓
Dichloroacetate	µg/L	< 12	19	< 12	50 (T,D)	✓
Dichloroacetonitrile	µg/L	< 5.0	< 5.0	< 5.0	20 (P)	✓
1,2-Dichlorobenzene	µg/L	< 250	< 250	< 250	1000 (C)	✓
1,4-Dichlorobenzene	µg/L	< 75	< 75	< 75	300 (C)	✓
1,2-Dichloroethane	µg/L	< 7.5	< 7.5	< 7.5	30	✓
1,2-Dichloroethene	µg/L	< 12	< 12	< 12	50	✓
Dichloromethane	µg/L	< 5.0	< 5.0	< 5.0	20	✓
1,2-Dichloropropane	µg/L	< 5.0	< 5.0	< 5.0	40 (P)	✓
1,3-Dichloropropene	µg/L	< 5.0	< 5.0	< 5.0	20	✓
Dichlorprop (or 2,4-DP)	µg/L	< 25	< 25	< 25	100	✓
Dimethoate	µg/L	< 1.5	< 1.5	< 1.5	6	✓
1,4-Dioxane	µg/L	< 12.5	< 12.5	< 12.5	50	✓
Edetic acid (EDTA)	µg/L	< 50	< 50	< 50	600	✓
Endrin	µg/L	< 0.15	< 0.15	< 0.15	0.6	✓
Epichlorohydrin	µg/L	< 0.4	< 0.4	< 0.4	0.4 (P)	✓
Ethylbenzene	µg/L	< 75	< 75	< 75	300 (C)	✓
Fenoprop (or 2,4,5-TP)	µg/L	< 2.2	< 2.2	< 2.2	9	✓
Fluoride	mg/L	0.14	0.72	0.49	1.5	✓
Hexachlorobutadiene	µg/L	< 0.15	< 0.15	< 0.15	0.6	✓
Isoproturon	µg/L	< 2.2	< 2.2	< 2.2	9	✓
Lead	mg/L	< 0.003	0.006	< 0.003	0.01	✓
Lindane	µg/L	< 0.50	< 0.50	< 0.50	2	✓
Manganese	mg/L	< 0.01	0.04	< 0.01	0.4 (C)	✓
MCPA (or 4-(2-methyl-4-chlorophenoxy) acetic acid)	µg/L	< 2.0	< 2.0	< 2.0	2	✓

Parameter	Unit	Monitoring Data (10/2009 - 09/2010)			WHO 2006 Guideline Value	Compliance
		Minimum	Maximum	Average		
Mecoprop (or MCP)	µg/L	< 2.5	< 2.5	< 2.5	10	✓
Mercury	mg/L	< 0.00005	< 0.00005	< 0.00005	0.006	✓
Methoxychlor	µg/L	< 5.0	< 5.0	< 5.0	20	✓
Metolachlor	µg/L	< 2.5	< 2.5	< 2.5	10	✓
Microcystin-LR (total)	µg/L	< 0.5	< 0.5	< 0.5	1 (P)	✓
Molinate	µg/L	< 1.5	< 1.5	< 1.5	6	✓
Molybdenum	mg/L	< 0.0004	0.0014	0.0006	0.07	✓
Monochloramine	mg/L	< 1.0	< 1.0	< 1.0	3	✓
Monochloroacetate	µg/L	< 10	< 10	< 10	20	✓
Nickel	mg/L	< 0.001	0.012	0.003	0.07	✓
Nitrate (as NO ₃ ⁻)	mg/L	< 2.5	17	5.7	50	✓
Nitrioltriacetic acid	µg/L	< 50	< 50	< 50	200	✓
Nitrite (as NO ₂ ⁻)	mg/L	< 0.004	0.006	< 0.004	3	✓
Pendimethalin	µg/L	< 5.0	< 5.0	< 5.0	20	✓
Pentachlorophenol	µg/L	< 2.2	< 2.2	< 2.2	9 (P)	✓
Permethrin	µg/L	< 5.0	< 5.0	< 5.0	300	✓
Pyriproxyfen	µg/L	< 75	< 75	< 75	300	✓
Selenium	mg/L	< 0.003	< 0.003	< 0.003	0.01	✓
Simazine	µg/L	< 0.50	< 0.50	< 0.50	2	✓
Styrene	µg/L	< 5.0	< 5.0	< 5.0	20 (C)	✓
2,4,5-T (or 2,4,5-trichlorophenoxy acetic acid)	µg/L	< 2.2	< 2.2	< 2.2	9	✓
Terbutylazine	µg/L	< 1.8	< 1.8	< 1.8	7	✓
Tetrachloroethene	µg/L	< 10	< 10	< 10	40	✓
Toluene	µg/L	< 175	< 175	< 175	700 (C)	✓
Trichloroacetate	µg/L	< 25	< 25	< 25	200	✓
Trichloroethene	µg/L	< 18	< 18	< 18	20 (P)	✓

Parameter	Unit	Monitoring Data (10/2009 - 09/2010)			WHO 2006 Guideline Value	Compliance
		Minimum	Maximum	Average		
2,4,6-Trichlorophenol	µg/L	< 50	< 50	< 50	200 (C)	✓
Trifluralin	µg/L	< 5.0	< 5.0	< 5.0	20	✓
Uranium	mg/L	< 0.0002	0.0005	< 0.0002	0.015 (P,T)	✓
Vinyl chloride	µg/L	< 0.2	< 0.2	< 0.2	0.3	✓
Xylenes	µg/L	< 125	< 125	< 125	500 (C)	✓

Note:

- (1) This is a summary report on drinking water quality.
- (2) All values are compiled in accordance with requirements stipulated by the current quality assurance protocol of the Water Science Division of WSD.
- (3) For heavy metals and trace organics, 100-300 samples per parameter have been analysed.
- (4) According to WHO 2006:
 - P = provisional guideline value, the available information on health effects is limited.
 - T = provisional guideline value as calculated guideline value is below the level that can be achieved through practical treatment methods, source protection, etc.
 - A = provisional guideline value as calculated guideline value is below the achievable quantification level.
 - D = provisional guideline value as disinfection may result in the guideline value being exceeded.
 - C = concentrations of the substance at or below the health-based guideline value may affect the appearance, taste or odour of the water, leading to consumer complaints.

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Part C. Other parameters

Parameter	Unit	Monitoring Data (10/2009 - 09/2010)		
		Minimum	Maximum	Average
pH at 25 °C	pH	6.7	9.4	8.5
Colour	Hazen unit	< 3	< 3	< 3
Turbidity	NTU	< 0.1	3.0	0.3
Conductivity at 25 °C	µS/cm	53	200	141
Temperature	°C	11.5	33.4	24.1
Total alkalinity (as CaCO ₃)	mg/L	5	36	22
Total hardness (as CaCO ₃)	mg/L	6	68	35
Calcium	mg/L	1.3	19	12
Magnesium	mg/L	0.31	2.3	1.4
Chloride	mg/L	< 5	22	10
Sulphate	mg/L	4	24	14
Ortho-phosphates (as PO ₄)	mg/L	< 0.01	0.04	< 0.01
Iron	mg/L	< 0.01	0.18	< 0.01
Aluminium	mg/L	< 0.01	0.32	0.02
Silica (as SiO ₂)	mg/L	5.3	15	11

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