

## **Water Treatment and Quality Control in Hong Kong**

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### **Advisory Committee on the Quality of Water Supplies**

The Advisory Committee on the Quality of Water Supplies, founded on 1st April 2000, is an independent body aiming at promoting transparency and encouraging public participation in the monitoring of the quality of water supplies in Hong Kong. It comprises members of the public including academics, district councillors, green advocates, professionals, and officials from related government departments and bureaus. Their responsibilities are to review and to advise the Government of the Hong Kong Special Administrative Region through the Director of Water Supplies on matters relating to the quality of water supplies. For details, please visit the WSD's website.

### **Drinking Water Quality**

Hong Kong enjoys one of the safest water supplies in the world. With proper treatment and stringent quality monitoring and control, the quality of the treated water conforms both chemically and bacteriologically to the Guidelines for Drinking-water Quality recommended by the World Health Organization (WHO). Water Supplies Department is committed to supplying the public with water that is clear, wholesome and free from pathogenic bacteria.

The treatment process and the water quality throughout the supply system is continuously monitored by professionally qualified chemists under the Water Science Division of Water Supplies Department through a series of physical, chemical, bacteriological, biological and radiological examinations.

Samples are regularly taken at catchment intakes, the pumping station receiving Guangdong water, storage reservoirs, water treatment works, service reservoirs,

distribution systems and consumers' taps. About 170 000 water samples are taken and tested by the Water Supplies Department annually.

With proper treatment and stringent quality monitoring and control, Hong Kong is assured of a safe and wholesome water supply which meets WHO standards.

Dongjiang water and Rain water from 17 local reservoirs is  
Untreated raw water

Raw water with Treatment is Drinking water

Drinking water

Drinking water has been treated by the water treatment works of the Water Supplies Department of Hong Kong

### **The Water Treatment Process Diagram**

(Picture)

Raw water

Alum

Lime

Chlorine

Polyelectrolyte

Fluoride

Rapid Mix Chamber

Flocculation Tank

Clarifier

Filter

Clean Water Tank

Treated Water Pumping Station

To Distribution System (To Consumers)

Supernatant

Sludge

Sludge Thickening Tank

Sludge Pumping Station

Washwater Recovery Tank

Filter Press

Sludge Disposal

### **The Water Treatment Process**

Hong Kong's water comes from two sources: from rainfall collected in local catchments and from the Dongjiang in Guangdong, China. For the raw water to become drinking water, it has to undergo a series of treatment processes to ensure that the treated water is in full compliance with international quality standards for drinking water. There are now 21 water treatment works in Hong Kong with a total output capacity of 4.8 million cubic metres per day.

In the water treatment process, raw water (untreated water) is mixed with chemicals and passes to the clarifiers where coagulation and flocculation of the impurities in the water will take place. Clarified water then flows into filters of sand and anthracite for removal of the more finely divided suspensions.

The filtered water passes into contact tanks where chlorine and lime are added to disinfect it and to control the alkalinity of the final treated water. Fluoride is also added to minimise the risk of dental decay. A small amount of residual chlorine is maintained in the water to keep it free from bacteria on its journey to the consumers. The treated water is pumped into a system of watermains, stored in service reservoirs and then supplied to the public.

### **Dongjiang raw water transferred to Hong Kong**

According to the agreement reached between HKSAR Government and Guangdong Authorities, the Dongjiang water should conform to the environmental quality standards of surface water set by the Chinese Authorities. The raw water after purification by Hong Kong's water treatment works is suitable for drinking. Guangdong Authorities have carried out the following measures in recent years so as to assure the quality of Dongjiang raw water transferred to Hong Kong:

- Sewage treatment plants have been built along the riverside of Dongjiang to treat sewage before discharging into the river
- Factories which may pollute Dongjiang have been moved out and forbidden to be set up near the riverside through enactment of legislation.
- Intake of Dongjiang water has been moved upstream where the water quality is better.
- With the commissioning of the Biological Nitrification Plant in Shenzhen in early 1999, the quality of Dongjiang water has greatly improved.
- The dedicated aqueduct between the Dongjiang intake and Shenzhen Reservoir has been in full commission since 28 June 2003.

Water supplied to Hang Kong is delivered through the closed aqueduct, separated from the source of pollution. Hence the public's worry about the pollution of Dongjiang water can be removed.

In fact, for the sake of their products' interest, some commercial concerns often exaggerate via the media that our water quality has been threatened by heavily-polluted Dongjiang water. This is not the case. With the system for analyzing Dongjiang water received at the Muk Wu Pumping Stations, WSD monitors the water quality round the clock to ensure compliance with the quality standards. There is nothing to worry about.

For quality data about the Dongjiang water, please refer to the WSD's website.