

**Information Paper for
LegCo Panel on Environmental Affairs
Meeting on 5 May 2000**

Water Quality Control Measures in Overseas Places

Background

The LegCo Secretariat has produced a draft report from a study conducted by its Research and Library Service Division on "Water Quality Control Measures in Overseas Places". The study compares the water quality control measures in Hong Kong with New York, Singapore and Sydney. This paper summarizes the Administration's observation particularly on the findings in part 7 of the draft report.

Water Sources

2. The draft report has rightly pointed out that Dongjiang water is vulnerable to surface pollution when delivered through the open transfer channel to Hong Kong. Supported by a loan fund from Hong Kong, the Guangdong Authority will construct a closed aqueduct in three years to replace the open transfer channel and eliminate the enroute pollution.

3. Hong Kong faces a similar situation as Singapore in which we have much less flexibility than New York and Sydney in regulating the amount of water delivered to us because we purchase most of our raw water from another provincial government. Notwithstanding this, we will continue to negotiate with the Guangdong Authority for more flexibility in adjusting the annual supply quantities.

Standards of Raw Water

4. The report reveals that none of the four places have established raw water standards in legislation. Sydney has the most comprehensive specification on standard of raw water as part of an agreement between its two water supply institutions, one responsible for catchment management and the other for water treatment and supplies. For the remaining three places, reference is made to other guidelines.

5. The water supply agreement between Hong Kong and Guangdong in 1989 stipulated that Dongjiang water should comply with the 1983 standard of the Environmental Quality Standard for Surface Water. On completion of the closed aqueduct in 2003, the Guangdong Authority pledges to strive to elevate the water quality to the 1988 standard of the Environmental Quality Standard for Surface Water. Hong Kong is in a much better position than Singapore as the Singapore agreements with Malaysia do not stipulate any quality standard nor any penalty clause.

Standard of Treated Water

6. Both Hong Kong and Singapore adopt the 1993 World Health Organisation (WHO) Guidelines for Drinking Water Quality while New York and Sydney have their own national standards for treated water. The study has compared 11 health related and 4 non-health related parameters in the four places. We acknowledge the finding that the standard set by the New York State Department of Health is lower than that of the 1993 WHO standard in most of the selected parameters except for benzo(a)pyrene. The Australian Drinking Water Guidelines (1996) have similar guideline levels in most of the selected parameters except with more stringent level for manganese. The finding reinforces that the WHO standard is comparable to national standards adopted in other places like Sydney and New York.

Water Quality

7. The treated water in Hong Kong complies with the WHO standard, which ensures safe lifetime consumption. However, the aesthetic parameters mentioned in the WHO guidelines do not have health significance, unless the individual parameter has health related guideline value. The levels in the aesthetic recommendations are not precise numbers. These only indicate levels likely to give rise to consumer complaints. Problems may occur at lower or higher values under varying circumstances. The residual chlorine level of 1.0 mg/l in the treated water in Hong Kong is maintained to ensure the bacteriological quality of treated water in the distribution system after leaving the treatment plants. This level is well below the WHO health related guideline value of 5 mg/l.

8. WHO also emphasizes that "disinfection should not be

compromised in attempting to control disinfectant byproducts". Besides, our experience is that higher chlorine dosage or residual levels do not necessarily lead to higher THM levels. Furthermore, out of the four THMs, just two were classified as possibly carcinogenic when at high concentration only while the other two are not classifiable.

Measures to Ensure Water Quality

9. Among the four places, treated water in Hong Kong goes through the most comprehensive treatment process. That New York City water is only disinfected and not filtered should not be taken as an indication of its raw water requiring less treatment and by implication a benefit. The Surface Water Treatment Rule (1993) of the Safe Drinking Water Act of the United States mandates that all surface water must be filtered. New York has been slow in conforming to this rule when its new treatment works to filter water is only planned to be operational by 2007. In fact, it is against international best practice not to filter a municipal water supply.

10. The management of catchment is an effective tool to ensure quality raw water. We have put much emphasis in the negotiation with the Guangdong Authority to protect the quality of Dongjiang water at source. The Guangdong Authority is putting much effort on the implementation of environmental protection measures in Guangdong Province to protect the Dongjiang water because it sustains the Guangdong Province, not just Hong Kong. With the joint effort from both sides, initial improvements have been observed at our reception point since 1999 after the commissioning of the bio-nitrification plant in the Shenzhen Reservoir.

11. The Joint Statement made by the Governor of Guangdong Province and the Chief Executive in October 1999 has re-affirmed our commitment to protect Dongjiang for the sustainable development of the Pearl River Delta Region. It is expected that improvement will become more apparent when the Guangdong Authority continues to strengthen its effort in the implementation of the necessary improvement works and environmental protection measures in the Guangdong Province.

Reference for Hong Kong

12. A continued effort to manage water catchment should be a direction for the future. We will continue to safeguard the local catchment and at the same time, join hands with the Guangdong Authority

through various channels to work towards an effective control and abatement of pollution at source within the Dongjiang catchment, including of course areas along the raw water transfer channel. With concerted efforts of both sides, improvements in the quality of Dongjiang water will be eventually achieved.

13. Hong Kong with its large population concentrated in a rather small place adjacent to the sea is quite similar to Singapore. Turning to desalination as an alternative water source is an option worthy to be further explored. We have commissioned in end 1999 a consultancy study of alternative water resources for the future of Hong Kong. The study will be completed in June 2000. Desalination will surely be among the options to be considered.

Works Bureau
April 2000