

WATER 水質QUALITY

- 改善樓宇內部水質
 - 監察計劃
 - 網上水質資料
 - 水質事務諮詢委員會
 - 參觀東江供水系統
 - 密封式輸水管道工程進展
- Improving Quality of Water in Buildings
 - Monitoring Programmes
 - Water Quality Data on Homepage
 - Advisory Committee on the Quality of Water Supplies
 - Visit to Dongjiang Water Supply System
 - Progress of Closed Aqueduct



本署為客戶提供優質食水的承諾，一直是我們政策上的基石，將來亦不會改變。為實踐這項承諾，我們制定了解決客戶樓宇的內部供水系統食水變黃等各種問題的策略。



推廣妥善保養樓宇內部供水系統的海報。
Poster promoting proper maintenance of internal plumbing system in buildings.

改善樓宇內部水質

本署生產的食水完全符合世界衛生組織(世衛)的飲用水水質指引(一九九三年)，適合直接飲用。然而調查顯示，部分客戶因樓宇內部水管銹蝕或天台及地下貯水箱保養欠佳而面對食水變黃的問題。

為使客戶得享優質的食水，並鞏固客戶對直接飲用自來水的信心，本署正實施一項周全的策略。首階段的策略已於二零零二年初展開，需時三年完成；其重點為宣傳和公眾教育。如獲水質事務諮詢委員會通過，為鼓勵業主和管理公司承擔妥善維修樓宇內部供水系統責任而設的自願性「食水系統優質維修認可計劃」，將會成為其中的重要措施之一。本署會頒發印有優質食水標誌、有效期為一年的證書，確認有關樓宇的水質合乎標準。

此外，其他措施包括：

- 聯絡樓宇業主並鼓勵他們把修復供水系統納入樓宇維修計劃內。
 - 頒布樓宇供水系統必須使用優質防銹喉管和配件的規定。
 - 繼續藉著每年公布水質資料，讓市民知悉水質情況和與飲用水有關的健康資訊。
- 定期為業主立案法團和物業管理公司舉辦有關水質和樓宇供水系統管理的講座。
 - 透過報章、電視、電台、巡迴展覽，以及巴士、巴士站、各大行車隧道入口和地鐵站的廣告，宣揚妥善維修樓宇供水系統的信息。

上述策略能否成功，全賴市民的通力合作。如果首階段的行動未能產生預期的效果，便須考慮是否需要展開第二階段行動，立法推行強制性規定，確保樓宇業主能妥善維修內部供水系統。

監察計劃

為確保完全符合世衛的指引，本署積極實施密切監察整個供水系統及濾水過程水質的計劃，包括進行物理學、化學、細菌學、生物學及輻射學的化驗。此外，我們會到一些選點，以及從配水系統隨機選出的地點抽取水樣本，交給合資格的專業及技術人員按嚴格的品質保證控制標準，並採用先進的分析儀器進行化驗。

年內，本署在集水區、進水口、接收東江水的抽水站、水塘、濾水廠、配水庫、分配系統及客戶水龍頭抽取逾17萬個水樣本化驗。

Our commitment to supply the best quality water to our customers has been and will continue to be the keystone of our policy. In pursuit of this pledge, a strategy has been developed to deal with any problems such as discoloured water, which can occur in customers' internal plumbing systems.

IMPROVING QUALITY OF WATER IN BUILDINGS

Fresh water produced by the WSD complies fully with the World Health Organization (WHO) Guidelines for Drinking-water Quality (1993) and is fit for direct consumption. However, our surveys revealed that some of our customers are faced with problems of discoloured water due to rusting of internal service pipes in buildings or poor maintenance of roof and sump tanks.

A comprehensive strategy is being put into effect to bring the full benefits of our high quality of potable water to the customers and to reinforce customers' confidence in drinking water from their taps. The first stage of the strategy commenced in early 2002 and will take three years to complete. The main focus of this stage is on publicity and public education. Subject to the endorsement of the Advisory Committee on the Quality of Water Supplies, one of the key measures is the voluntary Fresh Water Plumbing Quality Maintenance Recognition Scheme which aims to encourage the building owners and management agents to undertake proper maintenance of their internal plumbing systems. Recognition of compliance will be in the form of certificate bearing a quality water logo with a validity period of one year.

Other measures include, among other things:

- To reach out to the building owners and encourage them to include renovation of plumbing systems in their building maintenance plans.
- To promulgate the requirement of the use of high quality corrosion resistant pipes and fittings for internal plumbing.
- To continue to publish water quality data annually to keep public informed of the water quality and of health issues relating to drinking water.
- To organize regular seminars on water quality and building management for property owners' incorporations and building management companies.
- To promote good maintenance of plumbing in buildings through newspapers, TV, radio, roving exhibitions and advertisements on buses, at bus stops and the entrances of major road tunnels and in Mass Transit Railway (MTR) stations.

Full public cooperation will be needed for the success of the strategy. If the first stage actions do not produce the expected results, it will be necessary to consider the need to proceed to the second stage in which mandatory requirements will be set up and enforced by legislation to ensure that good practices in maintenance of internal plumbing are followed.

化驗樣本總數
No. of Samples Taken

財政年度 Financial Year	
01/02	170,309
00/01	162,802
99/00	157,673
98/99	150,264
97/98	141,256
96/97	138,174

財政年度 = 由每年四月一日起至翌年三月三十一日止 Financial Year = 1 April to 31 March

監察賈第蟲及隱孢子蟲

本署亦密切監察可在任何地面水，甚至一些地下水中發現的賈第蟲及隱孢子蟲。這兩種微型寄生原蟲能經由食用污染的食物或水感染牛、羊、野獸、家畜和人類。然而，世衛並未有就這兩種寄生蟲制定與健康有關的指引。過去一年，食水中並無發現任何賈第蟲及隱孢子蟲。

實驗所認可計劃

本署兩間化驗室獲香港實驗所認可計劃按ISO/IEC標準頒發認可證書，足證本署竭力不懈提高水質測試水平。在二零零一年六月，新界東水質化驗室成為首間獲得ISO/IEC 17025：1999新國際標準認可的實驗所，而北港水質化驗室亦於同年十月獲授相同認可資格。

網上水質資料

有關二零零一／零二年度木湖抽水站接收點的東江水和食水(包括賈第蟲及隱孢子蟲化驗結果)的水質資料，將於二零零二年七月在本署網頁向市民公布。

二零零二年四月，本署網頁公布廣東省環境保護局在其鄰近東江取水點的監測站所得的水質資料，顯示水質大致符合所定的標準。

水質事務諮詢委員會

水質事務諮詢委員會於二零零零年四月成立，旨在鼓勵市民參與監察供水水質和提高這方面的透明度。自第二屆的兩年任期由二零零二年四月開始，該會委員人數由15名增至17名，廣納更多公眾代表，包括學者、專業人士、區議員、環保團體代表以及政府人員。委員會現續由香港生產力促進局主席方鏗先生和水務署署長分別出任正副主席，而委員當中有四名非官方委員卸任，另有六名新的非官方委員加入。

在二零零一／零二年度，委員會曾舉行兩次會議及一次工作小組會議，討論樓宇水質、公布水質數據和以水塘作康樂用途的可行性等事宜。

MONITORING PROGRAMMES

To ensure full compliance with the WHO guidelines, an intensive programme is carried out to closely monitor the water quality throughout the supply system and treatment processes. The programme covers physical, chemical, bacteriological, biological and radiological analyses. Samples are taken from selected points, and at random locations throughout the distribution systems. Analyses of all samples are conducted by qualified professional and technical staff with the use of advanced analytical equipment in accordance with strict quality assurance control.

During the year, over 170 000 water samples were taken for examination from catchments, intakes, pumping stations receiving Dongjiang water, storage and service reservoirs, water treatment works, distribution systems and customers' taps.

G & C MONITORING

We also keep a close watch on Giardia and Cryptosporidium (G&C) which are microscopic parasitic protozoa. These protozoa can occur in all surface water and even some ground water. They can infect the gut of cattle, sheep and wild and domestic animals – and humans too, through ingestion of contaminated food or water. No health-related guidelines, however, have yet been established by the WHO for G & C. No G & C were detected in our treated water in 2001/02.

LABORATORY ACCREDITATION

Attesting to our continuing efforts to upgrade our water testing capability, two WSD laboratories attained the Certificate of Accreditation in accordance with ISO/IEC standards from HOKLAS. In June 2001, the Mainland East Laboratory became the first laboratory awarded the new international ISO/ICE 17025:1999 standard while the Pak Kong Laboratory was granted the same accreditation in October 2001.

WATER QUALITY DATA ON HOMEPAGE

Water quality data on Dongjiang water at Muk Wu Pumping Station reception point, as well as treated water including the test results on G & C for the year 2001/02 will be released to the public on the WSD homepage in July 2002.

Data on Dongjiang water quality at the Guangdong Environmental Protection Bureau's monitoring station near the intake point were published on the WSD website in April 2002. The data showed general compliance with required standard.

ADVISORY COMMITTEE ON THE QUALITY OF WATER SUPPLIES

The Advisory Committee on the Quality of Water Supplies (ACQWS) was established in April 2000 to promote transparency and to encourage public participation in the monitoring of water quality. As from the start of its second two-year term from April 2002, the Advisory Committee has been expanded from 15 to 17 members with wider public representation comprising academics, professionals, district councilors, representatives from green groups and government officers. Four non-official members retired and six new non-official members joined the Committee. Mr. Kenneth H Fang, Chairman of the Hong Kong Productivity Council, continued as Chairman, and the Director of Water Supplies as Vice-Chairman.



化驗室工作人員正測試水樣本。
Staff conducting tests of water samples in laboratory.



水質事務諮詢委員會代表團參觀位於廣東的污水處理廠。
Delegation of the Advisory Committee on the Quality of Water Supplies visiting a wastewater treatment works in Guangdong.



內地工作人員向水質事務諮詢委員會代表團簡介密封式輸水管道工程的進展。
Delegation of the Advisory Committee on the Quality of Water Supplies attending a site briefing of the progress of the closed aqueduct.

參觀東江供水系統

為回應市民近年對東江水水質的關注，委員會在二零零一年九月再次視察東江供水系統及東深供水改造工程的進展，實地了解及研究有關情況。代表團對廣東省當局為解決污染和環保所作出的努力表示讚賞。此行亦有助加深委員會對廣東省當局致力對港供應清潔安全用水的了解。

密封式輸水管道工程進展

建造密封輸水管道系統是東深供水改造工程的重要一環。現時東江供水系統把原水由東江抽取，然後分階段利用天然河道逆流泵往深圳水庫，再利用水向低流的原理輸水至香港。該密封管道將會繞過東江水輸送途中的污染源。

有關工程分兩階段進行，首階段定於二零零二年年底完成的工程將可避開供水途中約七成的污染物，而整項計劃的目標竣工日期為二零零三年八月。

提升聯機監察系統

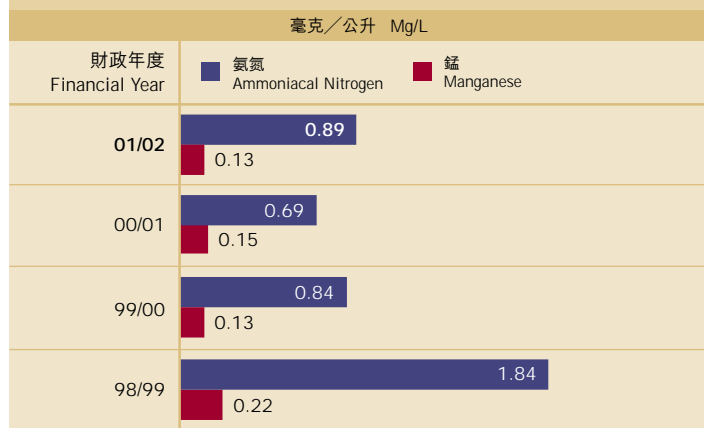
各主要濾水廠均設置聯機分析儀，持續監察主要水質參數，包括混濁度、酸鹼度、剩餘氯及氟化物，以確保運作具有效益和效率。本署現正提升這些濾水廠的聯機監察系統，以提高效率及準確度。

為監察供港東江水的水質，我們在木湖抽水站及牛潭尾濾水廠設置測量錳及氨的聯機分析儀。同時，亦成立了使用和保養濾水廠水質聯機分析儀特別工作小組，以期找出提高聯機監察系統可靠性的方法。

水塘養殖魚苗

在水塘養殖魚苗是維持水中生態平衡，以及確保水塘水質良好的一項有效措施。在二零零一／零二年度，約有26萬尾鯿魚及大頭魚苗放養於船灣淡水湖、大欖涌、城門、香港仔上塘及下塘等各水塘。

東江原水內的年均氨氮及錳水平
Average Ammonia and Manganese Levels in Dongjiang Water



財政年度 = 由每年四月一日起至翌年三月三十一日止
Financial Year = 1 April to 31 March

During the year 2001/02, two Committee meetings and one Working Group meeting were held to discuss issues such as quality of water in buildings, publication of water quality data and possible use of reservoirs for recreational activities.

VISIT TO DONGJIANG WATER SUPPLY SYSTEM

In response to the public concern about the quality of Dongjiang water in recent years, members of the Advisory Committee made a further visit to the Dongjiang Water Supply System in September 2001 to study the situation first hand. The delegation observed the progress of work on the 'Dongshen Water Supply Improvement Works' project and noted with appreciation the efforts being made by the Guangdong authorities to deal with the pollution and to protect the environment. The visit helped strengthen the understanding of the work of the Guangdong authorities in the delivery of clean and safe water to Hong Kong.

PROGRESS OF CLOSED AQUEDUCT

The key component of the Dongshen Water Supply Improvement Works Project is the construction of a closed aqueduct system to bypass pollution sources encountered in the delivery of Dongjiang water by successive pumping from the river uphill via a natural watercourse to Shenzhen Reservoir and then delivered by gravity to Hong Kong.

The work is being carried out in two stages. The first stage is due for completion by the end of 2002, and will bypass some 70 per cent of pollutants on the supply route. The target completion date for the entire project is August 2003.



牛潭尾濾水廠。
Ngau Tam Mei Water Treatment Works.

UPGRADING OF ONLINE MONITORING SYSTEM

The major water treatment works are fitted with on-line analysers for continuous monitoring of the key water quality parameters, including turbidity, pH, chlorine residual and fluoride to ensure effective and efficient operation. Upgrading work is being carried out on the on-line water monitoring systems in these treatment works to improve their efficiency and accuracy.

At Muk Wu Pumping Stations and Ngau Tam Mei Water Treatment Works, on-line manganese and ammonia analysers have been used to monitor the quality of incoming Dongjiang water. Meanwhile, a special sub-group on the use and maintenance of water quality online analysers in water treatment works has been formed to identify ways to improve the reliability of the on-line monitoring systems.



署長高贊覺先生於「優質食水 優質生活」講座上致歡迎詞。
Mr. C G KO making a welcoming speech at the seminar on "Quality Life Needs Quality Water".

「優質食水 優質生活」講座

二零零一年十月在香港城市大學舉辦「優質食水 優質生活」講座，吸引了約500人參加，當中討論的課題涵蓋食水處理、水質控制，以及清洗和保養樓宇內部供水系統的重要性。此外，還就客戶所遇到的一般供水問題進行討論。

海水水質

從海旁海水抽水站抽取的海水，會先予以過濾，把粗粒移除，再加以氯氣，才泵往配水庫輸送至各區作沖廁之用。我們一直監察抽水站和分配系統的海水水質，務求使之符合本署所定的水質指標。

海水配水庫加設上蓋

為避免海藻的滋生及防止孩童擅自闖入，所有現存露天的海水配水庫正分期加設上蓋，當中3個配水庫的上蓋工程已經完成，其餘10個則仍在施工中。

統籌維修

本署按照政府所推行的「屋宇維修統籌計劃」，聯同其他政府部門開始視察列入第二期的200幢樓宇，並就修補水管滲漏等可能需要進行的修葺工程提供意見。凡未能遵照緊急維修工程通知書的規定的樓宇，會遭截斷供水。這項計劃第二期所選定的目標樓宇大部分為市區樓宇，小部分則位於屯門、元朗及粉嶺。第一期計劃於二零零零年九月開始推行，旨在減低日久失修的樓宇對公眾所構成的危險，並已選定150幢建築物進行修補工程。

STOCKING OF FISH FRY IN RESERVOIRS

Fish stocking in impounding reservoirs is an effective tool for maintaining an ecological balance of the water bodies and ensuring good water quality in reservoirs. In 2001/02, about 260 000 fish fry of Silver Carp and Big Head were released into the Plover Cove, Tai Lam Chung, Jubilee and Aberdeen Upper and Lower Reservoirs.

SEMINAR ON "QUALITY LIFE NEEDS QUALITY WATER"

The seminar on 'Quality Life Needs Quality Water' drew some 500 participants at the City University of Hong Kong. Topics discussed at the seminar held in October 2001 included water treatment, water quality control and the importance of cleansing and maintaining internal plumbing systems in buildings. There was also a discussion on the common water supply problems encountered by customers.

SEA WATER QUALITY

Sea water drawn at the seafront sea water pumping stations is first screened to remove coarse particles and then chlorinated before being pumped to service reservoirs for distribution for flushing toilets. Water quality at pumping stations and distribution systems is continuously monitored to comply with WSD quality objective.

COVERS FOR SEA WATER SERVICE RESERVOIRS

To avoid algae growth and prevent unauthorized access by children, all existing open sea water service reservoirs are to be provided with covers in phases. Covers for three reservoirs have been completed while those for another ten reservoirs are under construction.

CO-ORDINATED MAINTENANCE

Working in coordination with other departments under the government's Coordinated Maintenance of Building Scheme, we began inspections of another 200 buildings included in the second phase to advise on the possible need for remedial work such as repairs of leakages. Failure to comply with notice for urgent repair work would result in disconnection of the water supply. Most of the buildings targeted in the second phase of the scheme are in the urban areas with a few in Tuen Mun, Yuen Long and Fanling. The first phase began in September 2000 with the aim of mitigating the risk to the public by poorly maintained buildings, and 150 structures were identified for remedial work.



正進行海水配水庫的上蓋安裝工程。
Cover for a sea water service reservoir being installed.