Greater Wellington Water

November/December 2003

Operations Group

November/December 2003

Operations Group
Review of Operations for the Period Ended 31 December 2003

1. Items of Note

- The high numbers of algae (non-toxic) in Lake 2 remain. Fortunately the weather has been such that the need to use the lakes has been minimal.

- Don Buchanan has transferred from the Distribution Section to take up the role of Treatment Technician that was vacated by Barry Castle.

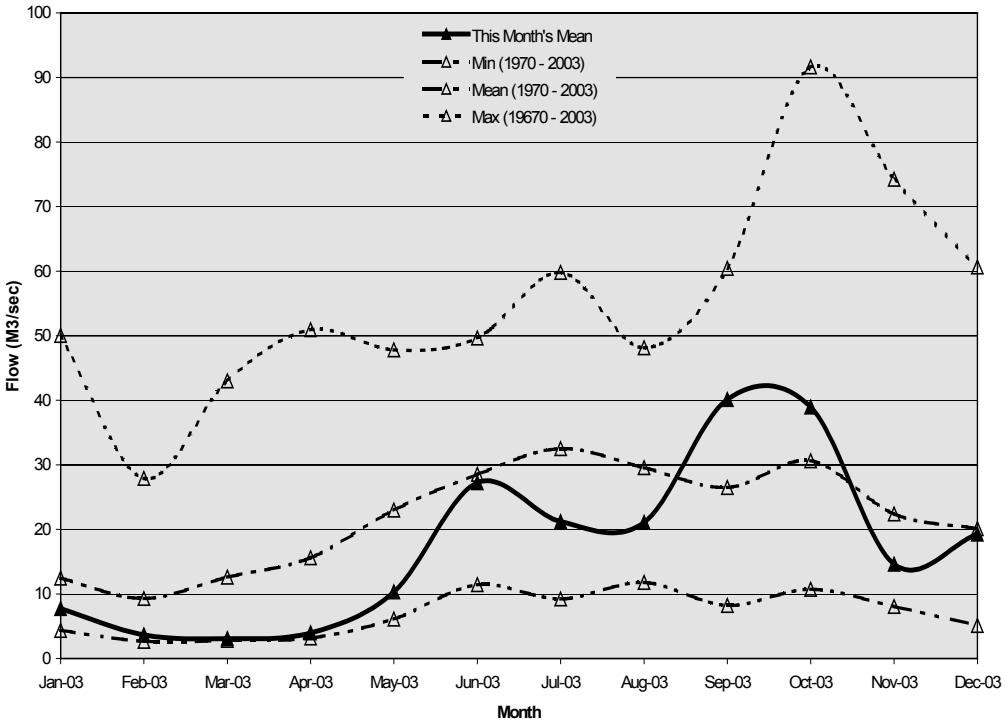
- Operations staff continue to provide support to Masterton District Council in relation to operating the Masterton treatment plant.

2. Supply Situation

The Stuart Macaskill Lakes are full. There have been no issues with supply for the period.

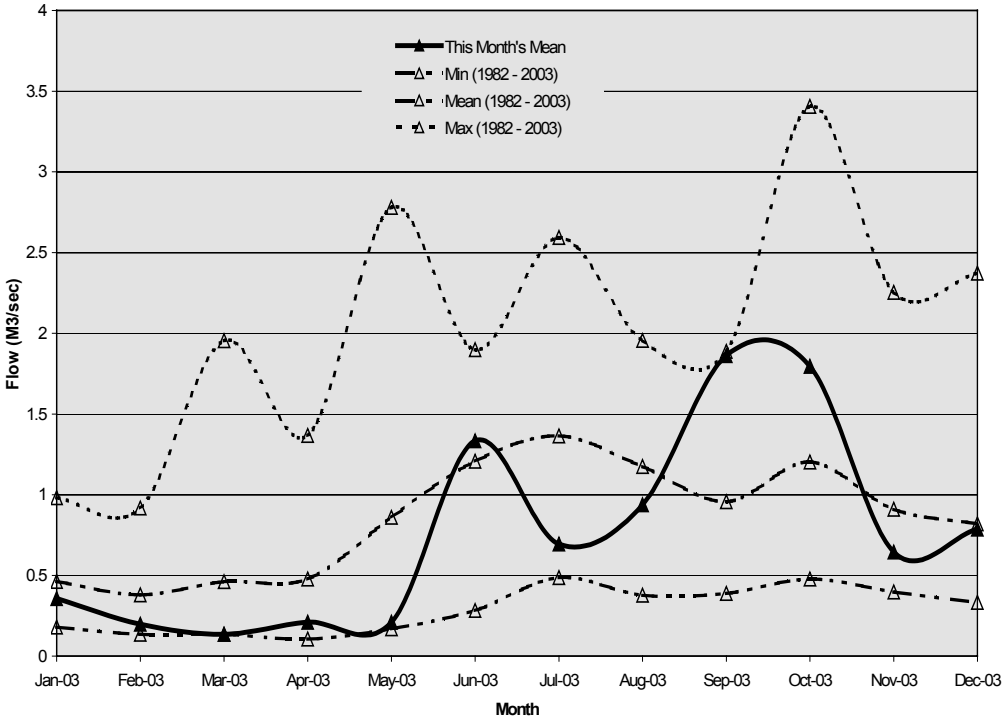
Hutt River Flows

The mean monthly flows in the Hutt River for the period were about average.



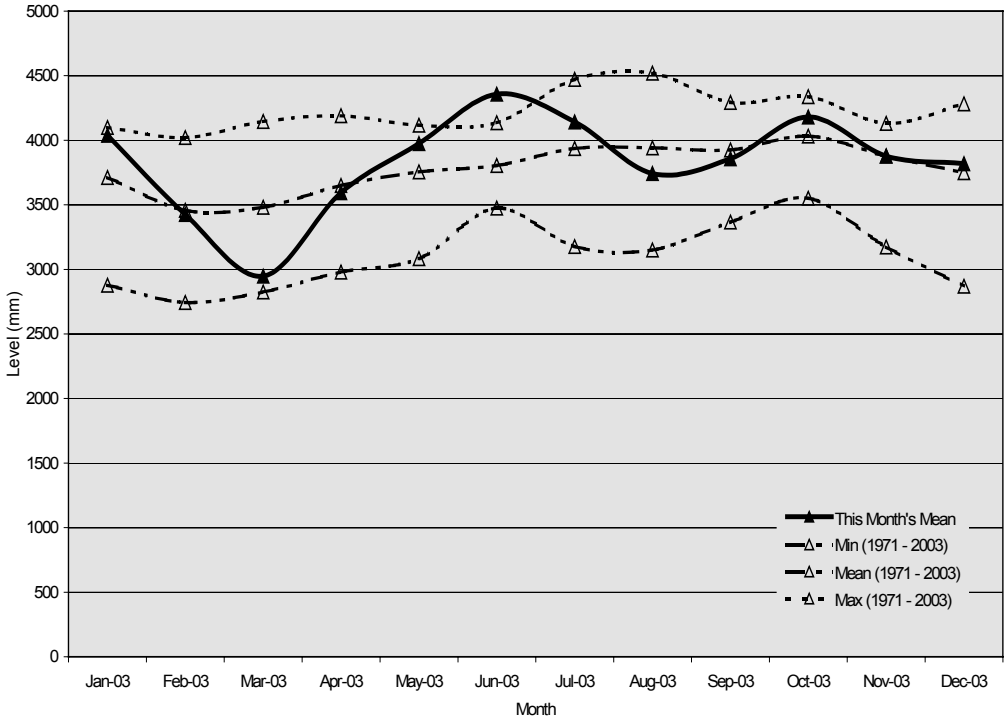
Wainuiomata River Flows

The mean monthly flows in the Wainuiomata River were about average.



Aquifer Levels

The water level in the Waiwhetu aquifer was above average.



3. Treatment Plants

3.1 Wainuiomata

3.1.1 Quality

There are no quality issues to report.

3.1.2 Health and Safety

- There was one incident reported for the period, where a treatment plant technician received a graze and minor bruising after hitting his hip on a steel pipe support on 5 November.

3.1.3 Operations and Maintenance

- Cleaning of the filter laterals commenced in an attempt to improve filter performance.
- The Manuka Track (Wainuiomata River volume) signal was lost on several occasions, resulting in the data-logger being replaced.
- The soft starters had to be replaced on recycle pumps.

3.1.4 Plant Tours

There were no tours during the period.

3.1.5 Projects

- A Contract was awarded to Horizon Technology for PLC replacement. Programming is under way.
- Upgrading the Wainuiomata River intake is planned for early 2004.
- A dechlorination rig is being installed at the gatehouse scour valve.
- Refurbishment of the Orongorongo shed has commenced.

3.2 Waterloo and Gear Island Water Treatment Plants

3.2.1 Quality

There are no quality issues to report.

3.2.2 Health and Safety

There are no accidents or incidents to report.

3.2.3 Operations and Maintenance

- Refurbishment of the emergency mobile generators is progressing well.
- The Willoughby Street variable speed pump motor burned out. The pump was removed and sent to Christchurch for repair.
- Routine vibration testing was carried out on the Wellington pumps.
- New seals have been fitted to one of the Gear Island chemical boost pumps and are being assessed for adequacy.

3.2.4 Plant Tours

There were no tours during the period.

3.2.5 Projects

- Waterloo aeration trials are in progress.
- Drawings for the refurbishment of the Waterloo fluoride panel have been prepared.
- Equipment has been ordered for the wellfield pressure monitoring project.
- The trial of a chlorine gas flow meter at Gear Island has been arranged.
- Improvements to the Gear Island Pumping Station ventilation are being carried out to improve cooling of the motor hall and also to prevent the corrosive attack of the switchboard internals.

3.3 Te Marua

3.3.1 Quality

There are no quality issues to report.

3.3.2 Health and Safety

There are no accidents or incidents to report.

3.3.3 Operations

- An initial attempt was made at achieving high flows from the plant on a sustained basis. The exercise was discontinued when the plant output reached 100 MLD because of the lack of capacity of the CO_2 dosing systems.

3.3.4 Plant Tours

- 13 November 2003 45 visitors from the Probus Club, Mt Victoria

- 27 November 2003 — 80 visitors from Maranatha Christian School
- 18 December 2003 — 8 visitors from Greater Wellington Regional Council (GWRC) (induction tour)

3.3.5 Projects

- Prices have been received for the replacement of the filter differential pressure transmitters.
- BOC Gases Ltd are assisting with the selection of a CO_2 gas flow meter.
- Beca Carter Hollings and Ferner Ltd have been engaged to prepare a preliminary report on the viability of running the plant in split stream mode, whereby lake water is treated through the clarifiers and river water is treated by direct filtration.
- Work has commenced on the preparation of an up-to-date control philosophy for the plant.

4. Distribution

4.1 Quality

There are no quality issues to report.

4.2 Health and Safety

There are no accidents or incidents to report.

4.3 Operations

- All scheduled maintenance activities were carried out as planned:
- An actuator is being fitted to the Ngauranga Reservoir bypass valve, which will allow remote operation and improve security of the supply.
- Haywards pump motors have been removed and refurbished in preparation for the high flow trial at Te Marua.
- The security upgrade of all pumping stations and reservoirs is 90 percent complete.
- There were four pipeline leaks repaired during the period 1 November to 31 December 2003.

4.4 Projects

- Replacement of all 200 mm risers on the 1,050 main has been completed.

- Contractors will be repairing damaged paint work on the main to the Te Marua Water Treatment Plant.

- The installation of pressure transmitters is ongoing.

- Remote data-loggers are being installed, which will negate the need for staff to travel to reservoir sites to record meter readings.

- The provision of safe access to valve chambers on the 1,050 is progressing.

Utility Services Division Health and Safety Data 2003 - Total Injuries

PRODUCTION (+ 4 OPS ADMIN)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	2,574	2,202	2,449	2,140	1,941	1,968	3,516	2,380	2,520	2,336	2,287	3,434
Employee numbers	16	16	16	16	16	16	18	18	18	18	15	16
Incidents	1	0	1	2	1	0	0	1	1	0	0	0
Days lost	0	0	2	2	0	0	0	0	0	0	0	0
Incidence rate (number of incidents per 100 workers)	6	0	6	13	6	0	0	6	6	0	7	0
Frequency rate (incidents per 10,000 hours exposure)	4	0	4	9	5	0	0	4	4	0	4	0
Severity rate (days lost to injury per 10,000 hours worked)	0	0	6	9	0	0	0	0	0	0	0	0

Jan = Contractor - electric shock
Mar = Sprain
April = Back sprain
May = Cut finger
Aug = Achilles tendon/foot sprain
Sep = cut finger pulling out nail
Nov = Graze/minor bruising on hip after knocking steel pipe support

DISTRIBUTION	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,390	1,258	1,414	1,204	980	1,321	1,760	1,389	1,277	1,362	1,285	1,581
Employee numbers	9	9	9	8	8	8	8	8	8	8	9	8
Incidents	0	0	1	0	0	0	0	0	0	0	0	0
Days lost	0	0	0	0	0	0	0	0	0	0	0	0
Incidence rate (number of incidents per 100 workers)	0	0	11	0	0	0	0	0	0	0	0	0
Frequency rate (incidents per 10,000 hours exposure)	0	0	7	0	0	0	0	0	0	0	0	0
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0

Mar = Jarred lower back/inflammation of left hand fingers

ENGINEERING CONSULTANCY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,448	1,572	1,564	1,464	1,360	1,636	2,388	1,764	1,764	1,739	1,629	2,396
Employee numbers	11	11	11	11	11	12	12	12	12	12	12	12
Incidents	0	0	0	0	0	0	0	0	1	0	1	0
Days lost	0	0	0	0	0	0	0	0	0	0	0	0
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0	8	0	8	0
Frequency rate (incidents per 10,000 hours exposure)	0	0	0	0	0	0	0	0	6	0	6	0
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0

Sep = Strained knee and shoulder
Nov = Cut finger

UTILITY SERVICES SUPPORT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	912	952	1,101	996	888	992	1,572	1,012	1,060	1,072	836	1,276
Employee numbers	7	8	8	8	8	8	8	8	8	8	7	7
Incidents	0	0	0	0	0	0	0	0	0	0	0	0
Days lost	0	0	0	0	0	0	0	0	0	0	0	0
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0	0	0	0	0
Frequency rate (incidents per 10,000 hours exposure)	0	0	0	0	0	0	0	0	0	0	0	0
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0

LABORATORY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,198	1,102	1,183	993	1,001	1,055	1,558	1,138	1,149	1,040	1,003	1,523
Employee numbers	7	7	7	7	7	7	7	7	7	7	7	7
Incidents	2	0	0	0	0	0	0	0	3	1	1	0
Days lost	0	0	0	0	0	0	0	0	2	0	0	0
Incidence rate (number of incidents per 100 workers)	29	0	0	0	0	0	0	0	43	14	14	0
Frequency rate (incidents per 10,000 hours exposure)	1,7	0	0	0	0	0	0	0	26	10	10	0
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0	0	0	0	0	17	0	0	0

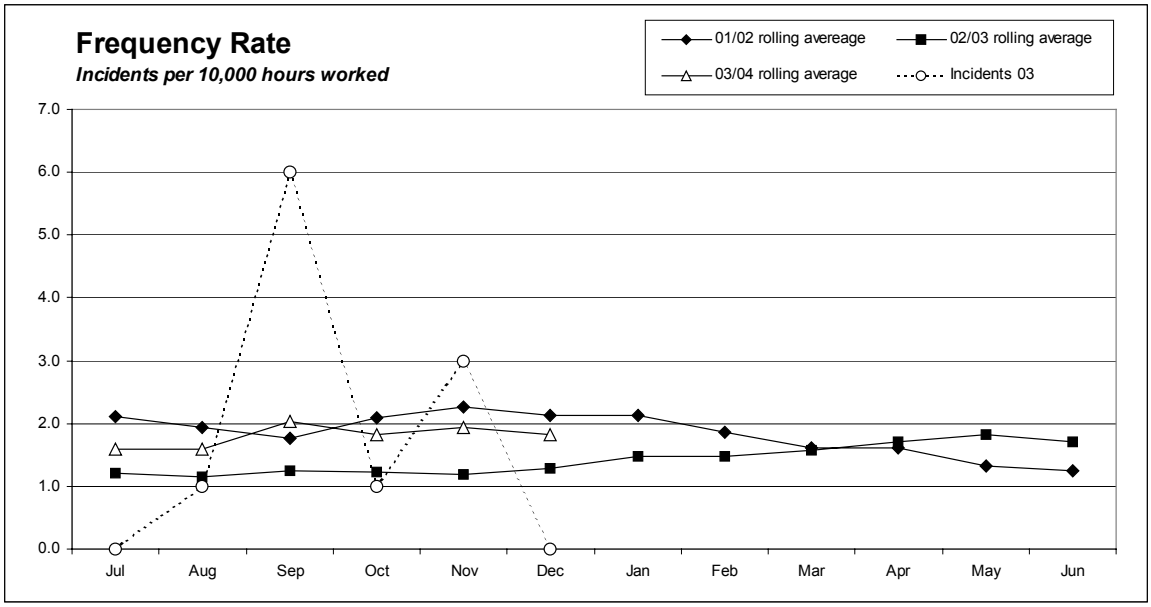
Jan = Bruised knee after fall
Jan = Strained back
Sep = Strained knee ***2 days lost***
Sep = Strained Back
Sep = Bruised knee and finger
Oct = Cut finger
Nov = Burnt hand and finger

STRATEGY AND ASSET	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	656	724	800	764	716	680	992	792	804	740	572	792
Employee numbers	5	5	5	5	5	5	5	5	5	5	5	5
Incidents	0	0	0	0	0	0	0	0	0	0	0	0
Days lost	0	0	0	0	0	0	0	0	0	0	0	0
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0	0	0	0	0
Frequency rate (incidents per 10,000 hours exposure)	0	0	0	0	0	0	0	0	0	0	0	0
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0

FORESTRY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sep = Fractured skull
Hours worked	483	493	434	644	581	648	944	637	649	509	408	647	
Employee numbers	3	3	3	3	3	3	3	3	3	3	3	3	
Incidents	0	0	0	0	0	0	0	0	1	0	0	0	
Days lost	0	0	0	0	0	0	0	0	0	0	0	0	
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0	33	0	0	0	
Frequency rate (incidents per 10,000 hours exposure)	0	0	0	0	0	0	0	0	15	0	0	0	
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0	0	0	0	0	0	0	0	0	

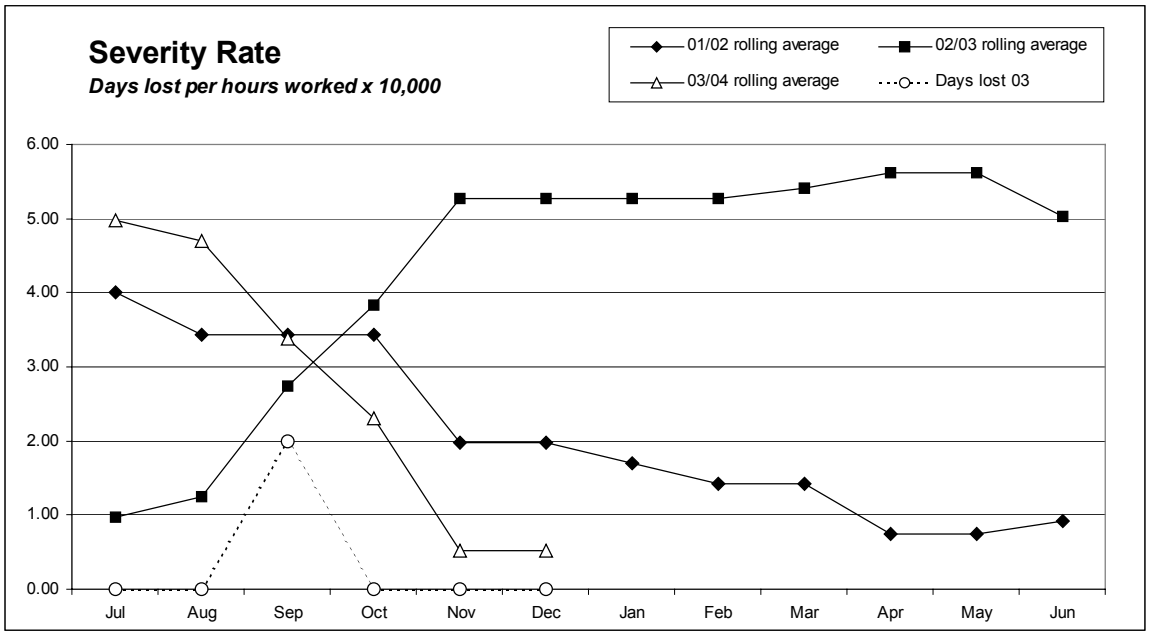
Utility Services Division Combined	Jan	12 Month Average	Feb	12 Month Average	Mar	12 Month Average	Apr	12 Month Average	May	12 Month Average	Jun	12 Month Average	Jul	12 Month Average	Aug	12 Month Average	Sep	12 Month Average	Oct	12 Month Average	Nov	12 Month Average	Dec	12 Month Average
Hours worked	8,660	9,241	8,302	9,190	8,945	9,162	8,204	9,015	7,466	8,776	8,300	8,752	12,730	8,686	9,111	8,710	9,223	8,779	8,798	8,808	8,019	8,811	11,648	9,117
Employee numbers	58	59	59	59	59	59	58	58	58	58	59	58	61	58	61	59	61	59	61	59	58	59	58	59
Injuries	3	1	0	1	2	1	2	2	1	2	0	2	0	1	1	1	6	2	1	2	3	2	0	2
Days lost	0	4	0	4	2	5	2	5	0	4	0	4	0	4	0	4	2	3	0	2	0	0	0	0
Frequency rate (incidents per 10,000 hours exposure)	3	1	0	1	2	2	2	2	1	2	0	2	0	2	1	2	7	2	1	2	4	2	0	2
Severity rate (days lost to injury per 10,000 hours worked)	0	5	0	5	2	5	2	6	0	5	0	5	0	5	0	5	2	3	0	2	0	1	0	1

Incidence rate = (number of incidents/number of employees) x 100
Frequency rate = (number of incidents/person hours worked) x 10,000
Severity rate = (days lost/person hours worked) x 10,000



Incidents

No incidents for December 2003



Lost Days

No lost days for December 2003

Strategy and Asset Group

November/December 2003

Strategy and Asset Group
Review of Operations for the Period Ended 31 December 2003

1. Items of Note

- The certificate indicating that the wholesale water supply system has achieved ISO 9001:2000 has been received. This certification replaces the earlier ISO certification achieved several years ago that has now been withdrawn.

- The Business Report for Greater Wellington Water (GWW) for the year ending 30 June 2003 was circulated and is now also on the GWRC web site.

- Investigation work into the stability of the Lower Wainuiomata Dam is proceeding and a number of pits were excavated behind the dam to check its soundness. Initial indications are reasonably positive and the Consultant is continuing with the work.

- There was a technical breach of the Drinking-Water Standards at Gear Island Water Treatment Plant during the period. Gear Island is classified as an emergency water treatment plant and therefore operates very occasionally. One of the water testing requirements is for a test every 40 days and our technical breach occurred when one of the tests was performed at just over 40 days after the previous test. To correct this, procedures have been put in place to carry out weekly testing after the pipes from the wells are scoured.

- A water conservation article was written for GWRC's *Elements* newspaper. Wellington City Council has now asked for permission to publish the article in a slightly amended form.

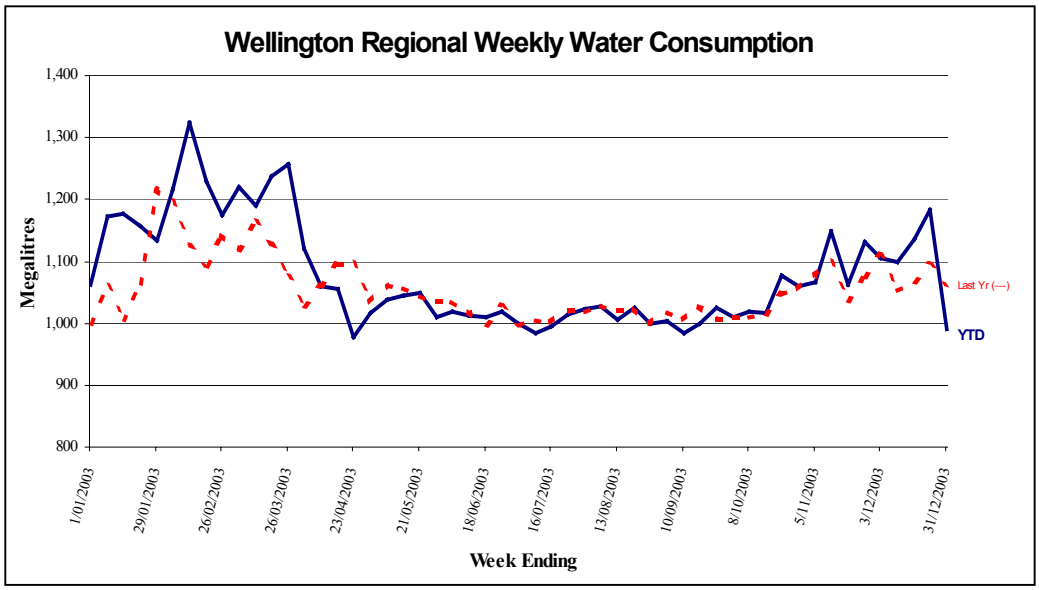
- All the key GWW signs are in place at the various facilities, apart from Kaitoke, where the signs will be constructed in conjunction with the Landcare Division. Consideration is also being given to placing a larger sign on the pumping station at Ngauranga.

- Sales volumes for the period were ahead of the previous year.

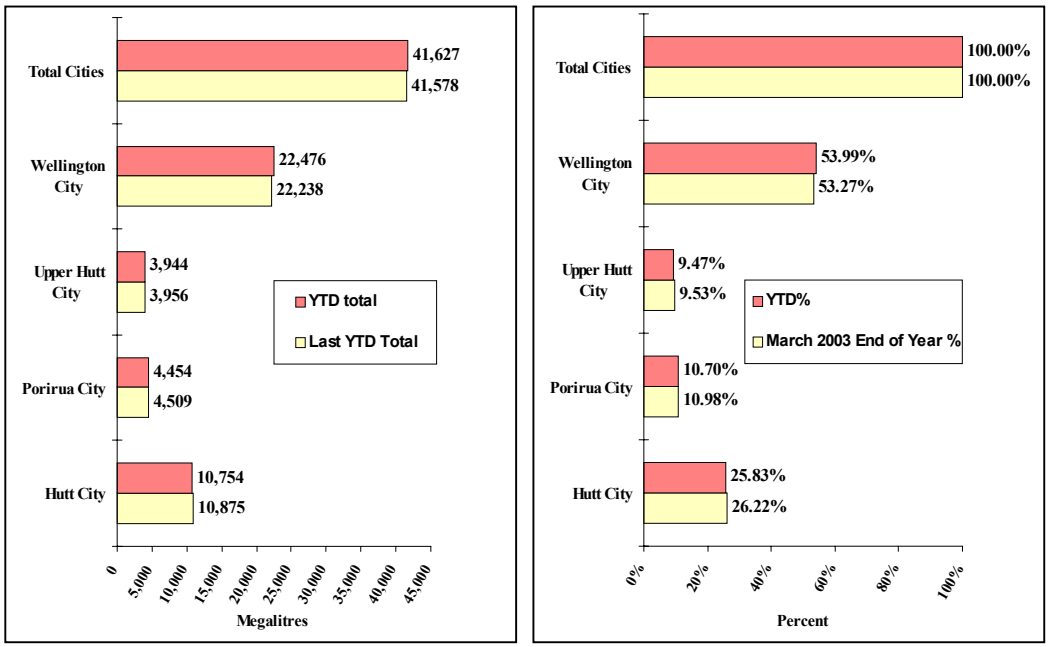
2. Sales Volume

Graphs outlining sales volumes are on page 14.

Water Sold Over the Last 12 Months



Water Sold from April to 31 December 2003



3. Asset Management

- The Capital Works budget for 2003/4 is $5.111 million. Major projects are:
  - Kaitoke weir improvements (budget $200,000). Detailed investigations have shown that minimal refurbishment work is required.
  - Stage 2 of the Wainuiomata Catchment northern boundary fence (budget $100,000). Contract Documents are being prepared.

- Modification to the Orongorongo intake (budget $55,000). The work is under way and expected to be complete by 31 January 2004.
- Replacement of equipment at the Te Marua Water Treatment Plant (budget $500,000). The scope of this work is being clarified. It is unlikely that the full amount of the funding allocation will required.
- Replacement of control equipment at Wainuiomata Water Treatment Plant (budget $100,000). A Tender has been accepted for this work. Additional funding of $84,000 is required.
- Relocation of the Pukerua Bay branch onto the new Paremata Bridge (budget $400,000). Tenders have been called for this work as a subcontract to the Transit New Zealand highway upgrade contract. Transit New Zealand has agreed to fund 35.5 percent of the cost of this work.
- Replacement of the OK pipeline between the Wainuiomata Tunnel and the water treatment plant (budget $1,250,000). Most of the pipe has been laid and completion is expected by 31 January 2004.
- Relocation of the Karori Pumping Station (budget $600,000). A Consultant has been selected and has started work. A number of possible sites are being investigated.
- Construction of a new pumping station to house the Point Howard pumps (budget $417,000). Planning and land acquisition is proceeding. It is unlikely that significant physical work can be undertaken this financial year.

- Preliminary investigations into possible off-river storage at Wainuiomata have begun. This storage would enable this plant to operate when the rivers are dirty and during periods of very low flow in the rivers.

- Discussions are taking place with NIWA consultants about a project to predict summer water demand and provide early warning of possible shortfalls.

4. Quality Assurance

- A new draft Drinking-Water Standard containing several unexpected changes and new features was released by the Ministry Health in September. A submission has been made.

- Word has been received about a new proposal from the Ministry for the Environment to establish an Environmental Standard for raw drinking water. It is intended that this Standard will provide a link between the Resource Management Act and proposed new drinking water legislation.

- A programme of testing for aggressive water has been undertaken in consultation with the customer territorial authorities. The object is to establish whether lead is leaching from existing tap fittings and, if so, whether it represents a health risk.

5. Environmental

Consultants are preparing a safety review of the lower Wainuiomata Dam. On completion of this work the possibility of creating a wetland immediately upstream of the dam will be studied.

6. Catchment Management

- A debrief on the Hutt Water Catchment 1080 operation confirmed that the operation has proceeded to plan and the only issues were minor ones related to signage.

- Bird monitoring in the Hutt Catchment shows no significant changes to previous results. History suggests a minor fall in numbers followed by a reasonable increase as the vegetation recovers from reduced possum numbers.

- Three incidents relating to potential trespass were reported by the Wainuiomata rangers. All were dealt with without problems.

- Rodent and mustelid monitoring results in the Wainuiomata Catchment show a large increase in rat numbers, with 80 to 90 percent of track monitors showing signs. By comparison, stoat recognition was at 3 percent.

- There were four guided trips into the Wainuiomata and Orongorongo Catchments over this period. The only incident was the need to bring one visitor out by train when she showed signs of distress at the physical effort required on the tour. It is notable that numbers are falling off and the last two trips have been undersubscribed.

- Staff and a contractor have sprayed roadside weeds and treated buddleia infestations in the Wainuiomata catchment.

7. Marketing

- Progress was made towards a formal agreement covering GWRC's supply of water to the four territorial authority customers. A proposal for a maximum daily supply quantity to each reservoir under normal circumstances was supplied to the customers for comment. We are now awaiting feedback on detailed proposals for the water quality and quantity components of the agreement. This work is continuing.

- The Water Supply Annual Report for the 2002/3 financial year was

completed and published on 30 November 2003. The report has been sent to our customers, business and political contacts, and libraries. It is also available to download from GWRC's web site.

- The December 2003 issue of the GWRC Council newspaper *Elements* carried an article on the Metropolitan Wellington area's summer water use, tips on how to conserve water and a quiz about water use in our Region during summer. The watering restrictions in place in the areas served by Wellington, Porirua, Hutt, Upper Hutt City Councils, and Kapiti Coast District Council have been posted on the GWW web pages, together with water conservation advice. There is no scheduled potable water conservation advertising this summer

- Daily analysis of sunshine, rainfall and water source levels/flows was started on 1 December, with the purpose of looking for early signs of the coincidence of conditions that indicate an increased probability of our experiencing water supply difficulties. A special edition of *Water Watch* was produced on 22 December to update water supply managers about conditions "to date" prior to the Christmas/New Year holiday. A regular weekly update was planned to start in January.

- A GWW specific image strip was completed. The image strip and individual photos have been added to GWRC's image library.

- There were three treatment plant visits during the reporting period, comprising around 150 visitors. Total visitor numbers for the current financial year (2003/4) are running at around 700, compared with 1,300 for the full year 2002/3.

- Our treatment plant tours were relisted in *The Wellington Education Guide* (2004), produced by Positively Wellington Tourism, to encourage teachers to "Send their class to Wellington". Twelve thousand, five hundred copies are distributed free of charge to teachers each February.

- No media releases were made during November or December. Two articles relating to GWW appeared in local newspapers. *Water Co. Won't Meet Targets* (Cook Strait News) reported our view that we would not match the national energy saving target (10 percent by 2012) without a significant increase in chemical use and total cost. The article referred to GWW as a company, despite that error being identified to the journalist at draft copy stage. *Leaking Main No Drop in the Bucket* (Porirua News) reported on a Porirua resident who had been trying for over a year to get Porirua City Council to fix a leak in his street. He called GWW. We raised his concern with Porirua City Council and the leak was fixed.

- Four new signs for the boundary of the Wainuiomata/Orongorongo Water Collection Area were delivered. The ranger at Wainuiomata

installed two of the four signs by the end of December. Two others, for more remote locations, were still to be installed.

8. Projects Undertaken by Engineering Consultancy for Strategy and Asset

- Orongorongo River Intake

  A Contract has been awarded and work is proceeding to refurbish the Orongorongo River intake screens and valves.

- Big Huia Pipeline River Crossing

  An assessment of the Big Huia pipeline river crossing has concluded that strengthening the structure to meet current earthquake loading standards is not warranted.

- Wainuiomata/Orongorongo Catchment Fence

  Contract Documents have been prepared for erection of the second stage of a deer fence along the northern boundary of the water collection area. Fencing materials have been ordered.

- Wainuiomata Water Treatment Plant Outlet Control Valve

  Investigations into the replacement and relocation of this control valve are continuing.

- Waterloo Well Pump Control Valves

  A report has been prepared recommending replacement of the Waterloo well pump control valves.

- Refurbishment of the OK Main, Petone

  Negotiations are continuing with the Contractor to finalise the cost of the work.

- State Highway 1 Bridge at Paremata

  A pipeline has been designed for erection on the new bridge being constructed at Paremata.

  A Contract has been awarded for the fabrication of the pipe spans.

- Rerouting Te Marua to Karori Pipeline at Haywards

  The existing pipeline route from State Highway 2 to the Haywards Pumping Station is susceptible to earthquake induced landslide damage. Alternative routes for this pipeline are being assessed.

- Aotea Block Development

  The new pipeline, deviating the Porirua Low Level Reservoir branch pipeline has been commissioned.

- Orongorongo Pipeline Replacement

  The majority of the new pipeline from the tunnel to the Wainuiomata Water Treatment Plant has been installed. The Contractor is completing the stream crossings and connections prior to testing and commissioning.

- Karori Pumping Station

  Further options for the relocation of this pumping station to a more secure site are being evaluated. A Consultant has been commissioned to assist with the land use agreement preparation to obtain the resource consents and design the new pumping station.

- Point Howard Pumping Station

  Relocating the Point Howard pumps from the underground pumping station at Hutt Park is proposed.

  Land purchase negotiations are proceeding for the proposed site alongside Seaview Road. Arrangements have been made to locate an unexplained high head loss in the Point Howard pipeline.

- Pinehaven Pumping Station

  New pumpsets for Pinehaven Pumping Station have been ordered. Detailed drawings of the pumpset installation are being prepared.

- Minor Seismic Projects

  A number of minor seismic protection projects are being attended to. These include:

  - Assessment of the performance of the Mangaroa Bridge.
  - Installing a non-return function on the Gracefield Reservoir inlet control valve is being investigated.

Engineering Consultancy Group

November/December 2003

Engineering Consultancy Group
Review of Operations for the Period Ended 31 December 2003

1. Work Carried Out for the Strategy and Asset Group

The main capital projects for which the Engineering Consultancy Group has responsibility are itemised in the Strategy and Asset Group report. Support is also provided for other projects being undertaken by this group.

2. Work Carried Out for the Operations Group

The Engineering Consultancy Group has continued to provide support for smaller projects arising from the operation and maintenance of the wholesale water supply system.

3. Work Carried Out for Wellington City Council

3.1 General

The work carried out for Wellington City Council is significantly less than in previous years. Current projects under way are detailed in the following sections.

3.2 Rugby, Sussex and Cable Streets

The commission for pipelaying in these streets was received. The design report has been prepared and submitted to Wellington City Council. Because these are busy streets and partly State Highway, some construction work will need to be carried out at night.

3.3 Aramoana Reservoir, Miramar

There is a storage deficit of 10 ML in the Low Level Zone of Wellington City. Of this storage, approximately 6.5 ML is required in the Eastern Suburbs (Miramar) and 3.5 ML in the Southern Suburbs (Island Bay).

A Contract has been awarded and at the end of the reporting period the site for the underground reservoir had been excavated and pipelines laid from the reservoir to the street.

3.4 Mt Albert Reservoir

This 3.5 ML reservoir will be sited in Mount Albert Park within Berhampore Golf Course.

The resource consent, which was non-notified, was issued immediately before the end of the year. This followed a very extensive consultation period with the interested parties.

3.5 Onslow Reservoir

There are two reservoirs on the Onslow site.

The rectangular western reservoir has been demolished and a new larger reservoir of 4.5 ML capacity has been built on the same site. The structure is now complete. Filling for testing purposes was carried out. Some leaks were observed and investigations are being carried out to determine the best method to repair them.

Until the new reservoir is commissioned, the whole zone is being supplied from the very small circular reservoir. This has required close co-operation between GWW operational staff and the Wellington City Council system controllers.

3.6 Warwick Street Pumping Station

This pumping station includes pumpsets for both Wellington City Council and GWW, supplied by a common electrical and controls panel. The Engineering Consultancy Group has been commissioned by Wellington City Council to arrange for the replacement of the two Wellington City Council pumps that deliver to Wadestown Reservoir and the installation of a combined electrical control panel.

The two Wellington pumps were finally delivered just before the Christmas break. Installation of the pumps will be under way shortly.

4. Miscellaneous Projects

4.1 Hutt River at Belmont

John Morrison is the Engineer to the Contract for this project. The Contract bas been awarded and construction work is under way, with the debris fences and two of the groynes now complete.

4.2 Kapiti Water Supply- Lindale Underpass

At the request of Kapiti Coast District Council, a review of the Contractor's methodology for driving piles adjacent to the water main was carried out.

Laboratory Services

November/December 2003

Laboratory Services Department
Review of Operations for the Period Ended 31 December 2003

1. Items of Note

- The laboratory returned an operating deficit for the last two months and moved further in the red for the six months to date. Unfortunately, the negative variance between actual income and the figure budgeted for internal environmental work is not expected to improve in the short-term. The situation is now under management review to consider various options proposed and to decide on the future of the laboratory.

- We had a visit from representatives from Thermo Electron Corporation, the supplier of our Laboratory Information Management System (LIMS). Our LIMS was installed in 2000 and has not been upgraded since. The representatives extolled the virtues and innovations of the latest version, making it a "must have" and, we agree, more than "timely".

- The run up to Christmas and particularly December and the New Year period are traditionally busy periods for us as we juggle testing programmes with leave taking and statutory holidays.

- The laboratory remained open on all days, albeit only on a "work as necessary" basis, with minimal staff to cover essential tasks on the statutory days.

- We finally purchased the much vaunted and long heralded Olympus "inverted" microscope for identifying and counting algae from the Stuart Macaskill Lakes. Harnessed into production some months previous while still on trial, the recent arrival of supporting accessories means we are now fine tuning practices and procedures. Expertise and experience gained through application has restored confidence in reporting the (larger) numbers presently being recorded, particularly in the Stuart Macaskill Lake 2. On the subject of microscopes, there are a number of compelling reasons why we are seriously looking now at upgrading our existing *Giardia*/*Cryptosporidium* scope of 15-20 year vintage.

- The day of reckoning for our original autoclave has arrived, with the final nail in the coffin being the failure to pass the latest annual "warrant of fitness" test for the old boiler that it is. This essential piece of equipment is a pressure vessel used to sterilise culture media and microbiological apparatus. Replacement looks the best option, as for some time now it has only been kept operational with hope and a prayer and would require significant expenditure to prolong the inevitable.

- We have completed a three month project investigating the

aggressiveness of our water supply on the reticulation and fittings for the four cities. This Ministry of Health inspired initiative has been driven locally by GWW, with the involvement and participation of the territorial authorities. The laboratory's contribution has been the collection and analysis of samples from relevant locations in our wholesale water distribution system. We were also contracted to do the analysis part of the exercise for Porirua City Council. The Strategy and Asset Group will be producing a report of the findings in due course, based on lead being the nominated indicator for metals being leached into the water supply.

2. Business Summary

2.1 Quality

There were no requests for retesting samples analysed in-house, although several subcontracted jobs were questioned. Test reports were timely.

2.2 Health and Safety

Several injuries occurred during the period, with one employee needing a doctor's attention. However, there was no time off work required.

Plantation Forestry

November/December 2003

Plantation Forestry Department
Review of Operations for the Period Ended 31 December 2003

1. Log Harvest Contract

The New Zealand dollar continued to climb compared to the United States dollar and ended the year in the mid to high sixties. This effectively eliminated the market for pruned logs (other than through JNL), as the finished products were sold in the United States and because of the exchange rate were overpriced compared with competitors.

Shipping costs continued to rise as well, driven by high demand for shipping capacity between the United States and China. These now appear to have stabilised at around double usual rates.

When the New Zealand dollar started to strengthen significantly and shipping costs began to escalate, the Asian log buyers resisted any increases in price and consequently inventories fell as logs were diverted to other markets. Towards the end of November the lack of product became critical and significant price increases were achieved over a short period of time. In order to take advantage of this situation, we were able to divert the Hukinga crew into some of the lower quality stands in Valley View and when the domestic mills closed for the year the main hauler crew assisted them. This helped clear up some of the stands that had been left earlier in the year.

The Hukinga crew ceased operations in the pruned stands about the first week of December after JNL at Masterton indicated that they would not accept any more pruned logs in the 2003 year. There is still about one month's harvesting remaining to complete these blocks.

Under the terms of our Contract with Rayonier, GWRC is guaranteed payment once the log is severed from the stump. Rayonier is having some difficulty in obtaining payment from a major purchaser of logs and, while GWRC is insulated, Rayonier will not continue to supply logs if payment is not forthcoming. The loss of this outlet, even for a brief period, will impact on our returns.

Production for the November and December periods were as follows.

Output by grade at Reservoir Ridge/Clarkes Creek was:

	November 2003		**December 2003**	
Grade	**Tonnes**	**%**	**Tonnes**	**%**
Pruned Domestic	0	0	0	0
Pruned Export	0	0	0	0
Partial Pruned	0	0	0	0
S/A Grade	1,140.62	40.21	533.36	23.07

	November 2003		December 2003	
Grade	**Tonnes**	**%**	**Tonnes**	**%**
L Grade	123.54	4.36	104.90	4.54
R Grade	247.24	8.72	180.94	7.83
K Sawlog	410.31	14.47	432.64	18.71
Roundwood	0	0	0	0
K Rough	327.62	11.55	634.32	27.44
Pulp	538.11	18.97	376.20	16.27
O/S Pulp	48.97	1.73	49.40	2.14
Total	2,836.41		2,311.76	

November - Total revenue $80,181.90 at an average of $26.28 per tonne.
December - Total revenue $52,160.30 at an average of $22.56 per tonne.

Output by grade at Hukinga was:

	November 2003		December 2003**	
Grade	**Tonnes**	**%**	**%**	
Pruned Domestic	333.05	18.74	121.13	17.7
Pruned Export	0	0		0
Partial Pruned	30.02	1.69		0
S/D Grade	451.51	25.40	203.19	29.69
L Grade	105.73	5.95		0
F Grade	180.29	10.14	88.26	12.90
KI Export	443.98	24.98	190.42	27.83
Douglas Fir	16.06	0.90	11.15	1.63
Export Pulp	201.38	11.32	70.14	10.25
O/S Pulp	15.48	0.87	0	0
Total	1,777.5		684.29	

November - Total revenue $66,008 at an average of $37.14 per tonne.
December - Total revenue $24,914 at an average of $36.41 per tonne.
** December 9 days only

Combined revenue $223,263 from 7,609.96 tonnes at an average of $29.34.

2. Silviculture Contracts

To date, 119.1 ha of the current silviculture programme have been completed. The total programme is 175.8 ha

3. Plantation Forestry Operations

With the markets remaining very fickle, it has not been possible to revert to the planned harvest strategy and a lot of time has been taken up with seeking out and planning access to smaller stands which contain the type of logs the market is seeking.

Staff have continued to supervise the two logging crews, as well as silvicultural contractors. The fence repairs at Puketiro have now been completed and the neighbour has been successful in returning about half the cattle to his property. We have also had a call from another neighbour who has "lost" a number of cattle. As a number of the cattle are not branded, proving ownership or otherwise may be a problem.

The weather has been reasonable, with enough rain to suit the new plantings, and probably less wind than usual.

4. Forest Access

The good weather has meant that only minimal maintenance has been necessary on the roads and they have remained open and available for use. The only new roading undertaken has been that required immediately for logging. With logging moving around the estate as the market demands alter, we have built a number of "shunt roads" and skids but, in total, still less than 1 km overall. There is further roading proposed as we move into the new year still logging in what was supposed to be a winter logging area.

There is still no acceptable access to Maungakotukutuku Forest. We have replaced the gate following requests from walking groups which had been bothered by quad riders and four wheel drive vehicles.

5. Market Trends

The future of the market is uncertain. While export prices are currently good, this is in some way because of the Asian buyers holding off when the New Zealand dollar gained against the United States dollar, and New Zealand reducing supply as returns were better elsewhere. When the Asian inventory fell, they increased prices to attract logs and may have overcompensated a little. As their inventory grows, prices are expected to soften. There are indications that China may reenter the market, which would absorb some of the supply currently going to Korea.

Demand is strong for domestic sawlogs but not strong enough to lead to price increases. While the dollar remains strong, there will be a delicate balance between demand and price.

The major problem is pruned logs - JNL are paying reasonable prices but currently will not buy off Rayonier. All other pruned log outlets are paying abysmal prices and I would not recommend selling logs at these prices.

For the future, there is about a month's further harvesting in the Hukinga and then if Rayonier still cannot sell directly into JNL I will try and direct pruned logs through Forest Asset Management, which is undertaking the Hukinga harvest. Rayonier are aware of the difficulty their inability to sell into JNL is causing and are working to overcome the problem.

In the short-term it does not appear that we will be able to return to the Puketiro stands, as even the unpruned stands have pruned logs in front of them. This being the case, it will put pressure on those stands we had identified as "winter" stands. I think we can get through this summer in Valley View but we will have to return to Puketiro next summer or risk running out of mature stands for the 2005 winter.

We are also looking for other opportunities to increase volumes and to this end we are looking at a joint harvest with a landowner in Mangaroa, whereby we upgrade his road and in return we use his access to harvest a mature stand in the back of our Mangaroa Block. The block is only 9.2 ha and would take significant new road construction to access from our land.