Water Supply

August 2002

Operations Group
August 2002

Operations Group
Review of Operations for the Period Ended 31 August 2002

1. Items of Note

- A process engineer from Beca Consultants Ltd has been engaged to report on the operation of Wainuiomata Water Treatment Plant, in particular the effect that use of polymers is having on the performance of the filters. He will be here at the beginning of September, during which he will review the plant operation.

2. Water Quality

A total of 287 samples from trunk mains were tested for coliform organisms. One of these samples tested positive. This positive sample was believed to be a spurious result caused by construction activities occurring on the site of Johnsonville Pumping Station. However, to verify this assessment, samples were taken over the next three days. No coliform organisms were detected. No further action was required.

A total of 52 samples of treated water from treatment plants were tested for faecal coliforms. None of these samples tested positive.

Secchi disc water clarity in the north lake at Te Marua varied between 2.8 m and 3.2 m, and in the south lake between 3.5 m and 4.3 m. These are considered satisfactory.

The dominant phytoplankton were as follows:

- North lake: *Staurastrum, Mougeotia, Ankistrodesmum*
- South lake: *Ankistrodesmum, Cosmarium, Staurastrum,*

Cosmarium and *Staurastrum* produce a grassy smell when abundant. *Mougeotia* is also a filter clogging algae. *Ankistrodesmum* produces a grassy musty smell when abundant.

Dissolved oxygen (11.0-12.3 mg/L) was satisfactory.

pH values were satisfactory (7.4-7.8).

Giardia and *Cryptosporidium* results were as follows:

Te Marua Water Treatment Plant Intake (BW02)

6 August	)	Low *Giardia*
	)	No *Cryptosporidium*

13 August	)	No *Giardia*
	)	No *Cryptosporidium*
20 August	)	No *Giardia*
	)	No *Cryptosporidium*
27 August	)	No *Giardia*
	)	No *Cryptosporidium*

Wainuiomata Water Treatment Plant (BW21)

6 August	)	Medium *Giardia*
	)	Low *Cryptosporidium*
13 August	)	Low *Giardia*
	)	Low *Cryptosporidium*
20 August	)	Low *Giardia*
	)	Low *Cryptosporidium*
27 August	)	Low *Giardia*
	)	Low *Cryptosporidium*

Guidelines Criteria

0-10 oocysts per 100 litres = low
10-50 oocysts per 100 litres = medium
>50 oocysts per 100 litres = high

3. Supply Situation

The bi-monthly seasonal forecast for August/September 2002 issued by the Meteorological Service is as follows:

For Wellington

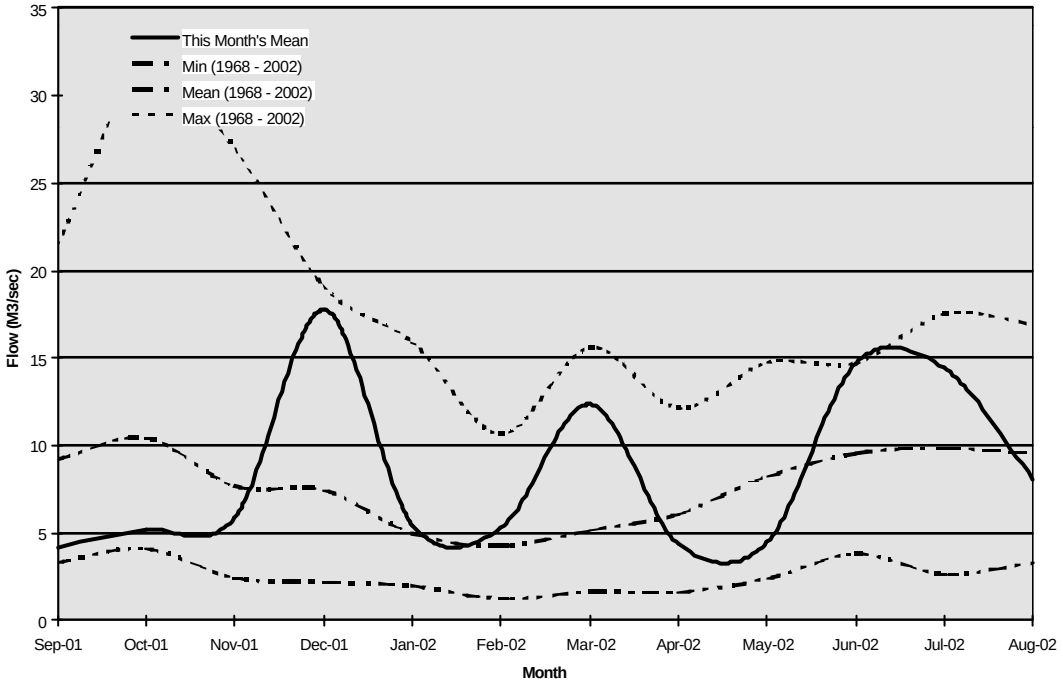
Rain:	Near normal
Wind:	More northerlies than normal
Temperature:	Continuing above normal
Sunshine:	About to below normal
Specials:	Some bursts of heavy rain
Confidence:	Moderate

The wind is expected to continue on its winter roller coaster pattern, swinging from northerly to southerly through Cook Strait and blowing mostly as a westerly across

Horowhenua. A steady procession of cold fronts should continue to bring a regular supply of showers. Between these fronts there should usually be about 2 to 3 dry days. A few of these fronts may be followed by sharp southerly changes, however the northwest winds should generally keep any cold snaps short-lived.

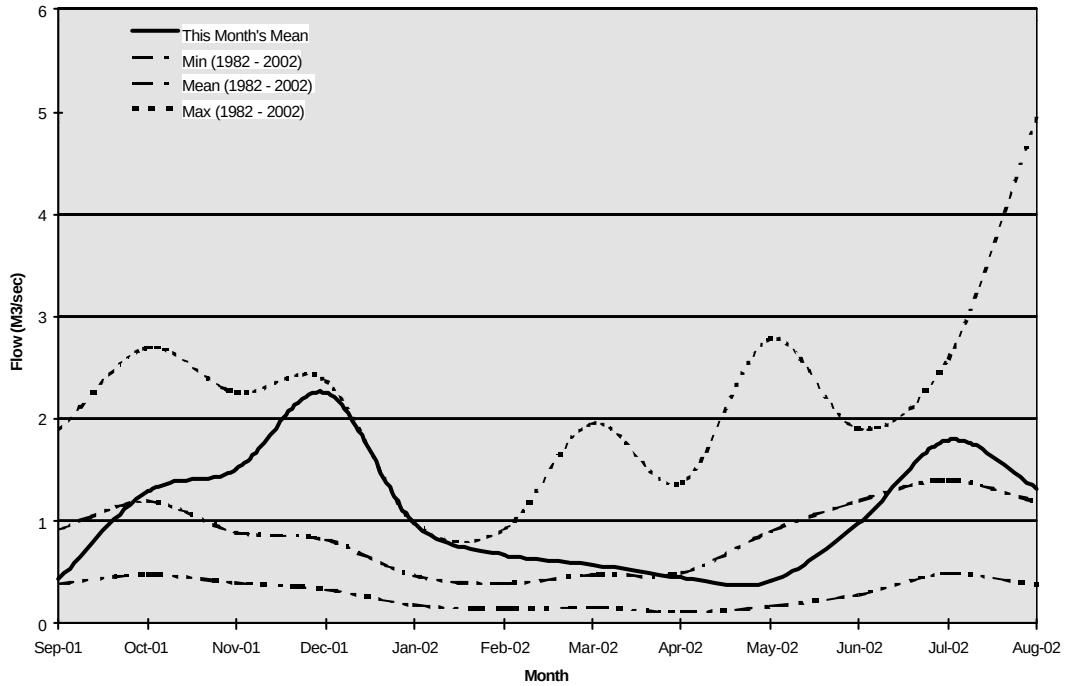
Hutt River Flows

The mean monthly flow in the Hutt River during August was just below average.



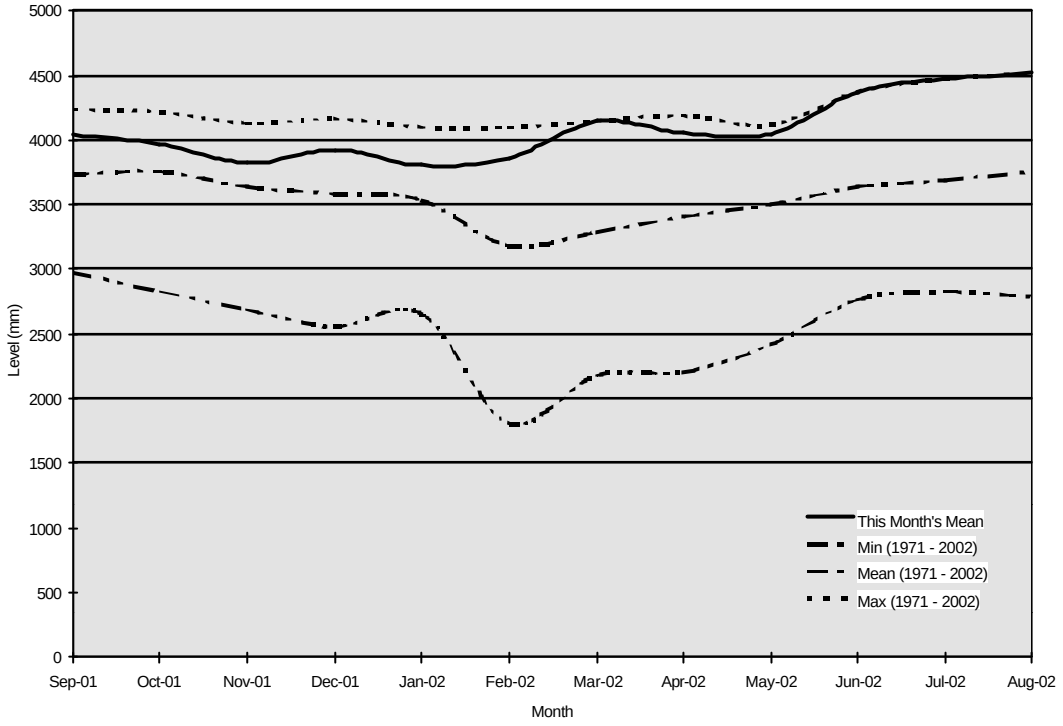
Wainuiomata River Flows

Flows in the Wainuiomata River were just above average during August.



Aquifer Levels

The water level in the Waiwhetu aquifer was at the maximum during August.



4. Production

4.1 Wainuiomata

4.1.1 Quality

There are no quality issues to report.

4.1.2 Safety

There are no accidents or incidents to report.

4.1.3 Operations

There are no significant items to report.

4.1.4 Plant Tours

6 August 2002 Probus Group

4.1.5 General

- A crew from the children's programme WNTV filmed an information segment for the show on 8 August 2002.

4.2 Waterloo Water Treatment Plant

4.2.1 Quality

There are no quality issues to report.

4.2.2 Safety

There are no accidents or incidents to report.

4.2.3 Operations

There are no significant items to report.

4.2.4 Plant Tours

There were no tours during the period.

4.3 Gear Island

4.3.1 Quality

There are no quality issues to report.

4.3.2 Safety

There are no accidents or incidents to report.

4.3.3 Operations

There are no significant items to report.

4.3.4 Plant Tours

There were no tours during the period.

4.3.5 Projects

- Capital Works
  - Seismic strengthening of the reservoir is ongoing.

4.4 Te Marua

4.4.1 Quality

Date	Transgression	Cause
1 August 2002	Filter No 2 turbidity increase greater than 0.20 in 10 minutes. Actual value (0.22)	System was reset too soon after a previous turbidity incident and during a time of increasing flow. Filter outlet valve failed to reduce flow in time.

4.4.2 Safety

There are no accidents or incidents to report.

4.4.3 Operations

There are no significant items to report.

4.4.4 Plant Tours

8 August	Opus Training "Principles and Trends" - 12
14 August	Wellington Regional Council Induction - 15
22 August	Wellington Institute of Technology - 22

5. Distribution

5.1 Health and Safety

There are no accidents or incidents to report.

5.2 Repairs/Maintenance

- A leaking lead joint on the inlet main to Bell Road Reservoir was repaired.
- A leaking double air valve on the Hutt main at Ngaio was repaired.

5.3 Paremata Bridge Project

- Mark-outs and supervision with the bridge contractors.

5.4 OK Main Refurbishment

- Ongoing work with the Contractor on the Rahui main.

5.5 New Wainuiomata Depot for Distribution Section

- Refurbishing of the existing workshop was completed.

- Metalling of the valve compound and was completed and a fence and double gates were erected around it.

- Clearing and carting in of metal for the new pipe compound commenced.

6. Health and Safety : Total Injury/Illness/Incident Record

➢ Production

There are no accidents or incidents to report.

➢ Distribution

There are no accidents or incidents to report.

Water Group Health and Safety Data 2002 - Total Injuries

PRODUCTION (+ 1 OPS ADMIN)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	2,042	2,481	2,600	2,689	3,380	2,626	3,838	2,523				
Employee numbers	15	16	16	16	17	16	16	16				
Injuries	0	0	0	0	0	1	1	1				
Days lost	0	0	0	0	0	0	0	2				
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	6.25	6.250	6.25				
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	0	0	380.8	260.55	396.3				
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	793				

Jun = fractured chemical line
Jul = scratched hand on metal support

DISTRIBUTION	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,565	1,342	1,322	1,353	1,421	1,211	1,753	1,355				
Employee numbers	9.5	9.5	8.5	8.5	8.5	8.5	8.5	8.5				
Injuries	0	0	0	1	0	0	0	0				
Days lost	0	0	0	0	0	0	0	0				
Incidence rate (number of incidents per 100 workers)	0	0	0	11.8	0	0	0	0				
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	739	0	0	0	0				
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0				

April = strained back

ENGINEERING CONSULTANCY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,576	1,632	1,744	1,772	1,908	1,568	2,423	1,652				
Employee numbers	11	11	11	11	11	11	11	11				
Injuries	0	0	1	0	0	0	1	0				
Days lost	0	0	0	0	0	0	0	0				
Incidence rate (number of incidents per 100 workers)	0	0	7.1	0	0	0	7.1	0				
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	573.3	0	0	0	412.71	0				
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0				

March = barked shin on protruding pipe
Jul = black eye (hit check on corner of car door)

UTILITY SERVICES SUPPORT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,136	1,020	1,024	1,064	1,040	876	1,396	920				
Employee numbers	9	9	8	8	8	8	8	7				
Injuries	0	0	0	0	0	0	0	0				
Days lost	0	0	0	0	0	0	0	0				
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0				
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	0	0	0	0	0				
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0				

LABORATORY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	1,207	1,242	1,335	1,364	1,124	1,097	1,641	1,102				
Employee numbers	10	10	10	10	8	7	7	7				
Injuries	1	1	0	0	0	0	0	0				
Days lost	0	3	0	0	0	6	1	1				
Incidence rate (number of incidents per 100 workers)	10	10	0	0	0	0	14.28	14.28				
Frequency rate (incidents per 1,000,000 hours exposure)	828.5	797	0	0	0	0	609.38	907.44				
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	5,471.9	0	0				

Jan = twisted knee joint whilst collecting samples
Jun = days lost due to incident occurred in January
Jul = burn to right hand

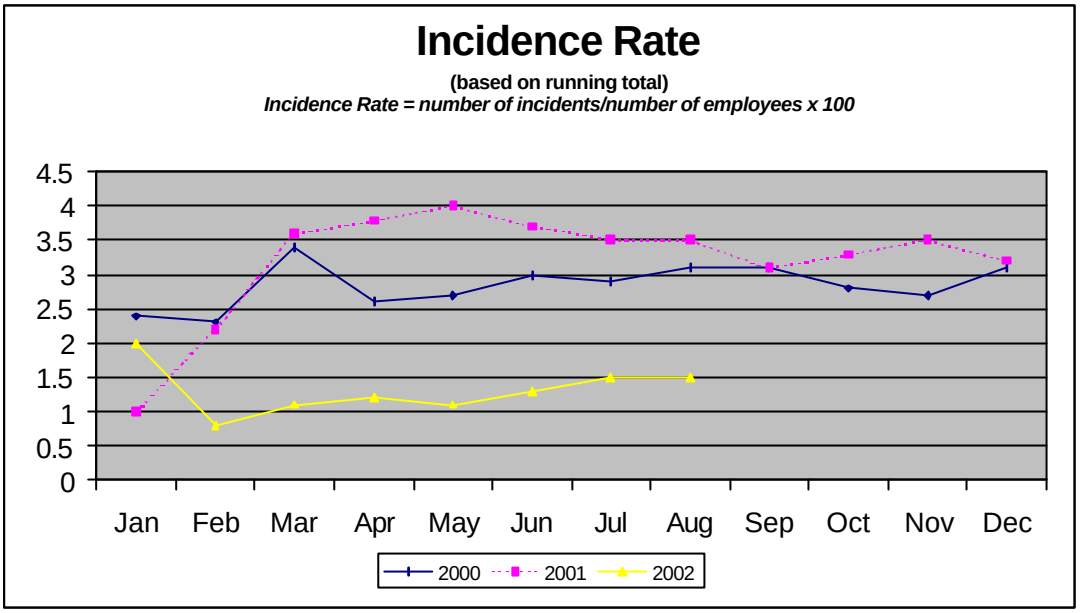
STRATEGY AND ASSET	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	632	646	552	680	774	614	982	572				
Employee numbers	5	5	5	5	5	5	5	5				
Injuries	0	0	0	0	0	0	0	0				
Days lost	0	0	0	0	0	0	0	0				
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0				
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	0	0	0	0	0				
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0				

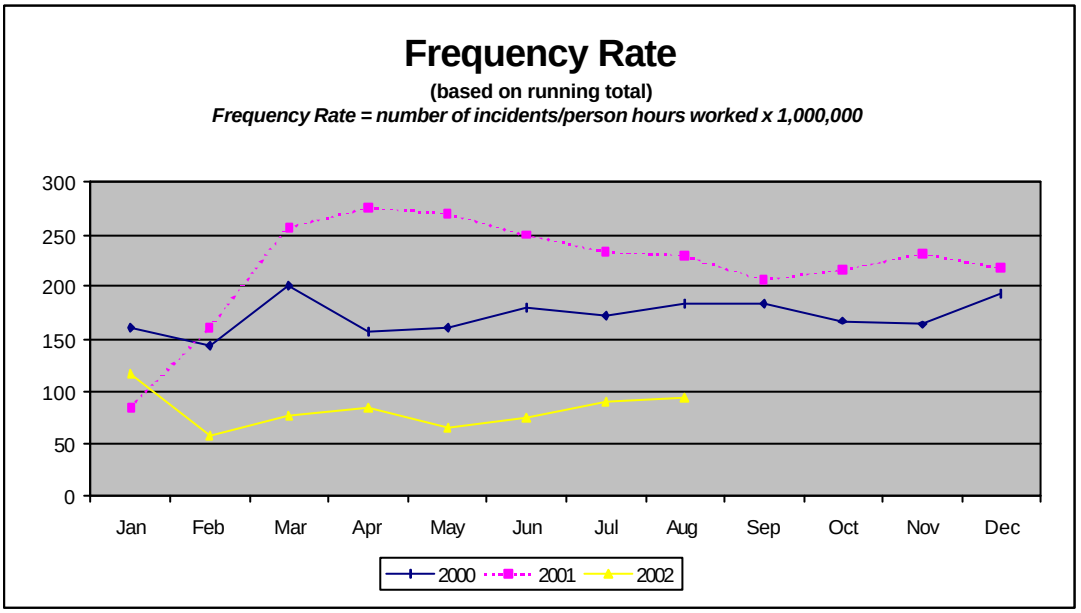
FORESTRY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours worked	404	328	497	516	476	396	673	496				
Employee numbers	3	3	3	3	3	3	3	3				
Injuries	0	0	0	0	0	0	0	0				
Days lost	0	0	0	0	0	0	0	0				
Incidence rate (number of incidents per 100 workers)	0	0	0	0	0	0	0	0				
Frequency rate (incidents per 1,000,000 hours exposure)	0	0	0	0	0	0	0	0				
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0				

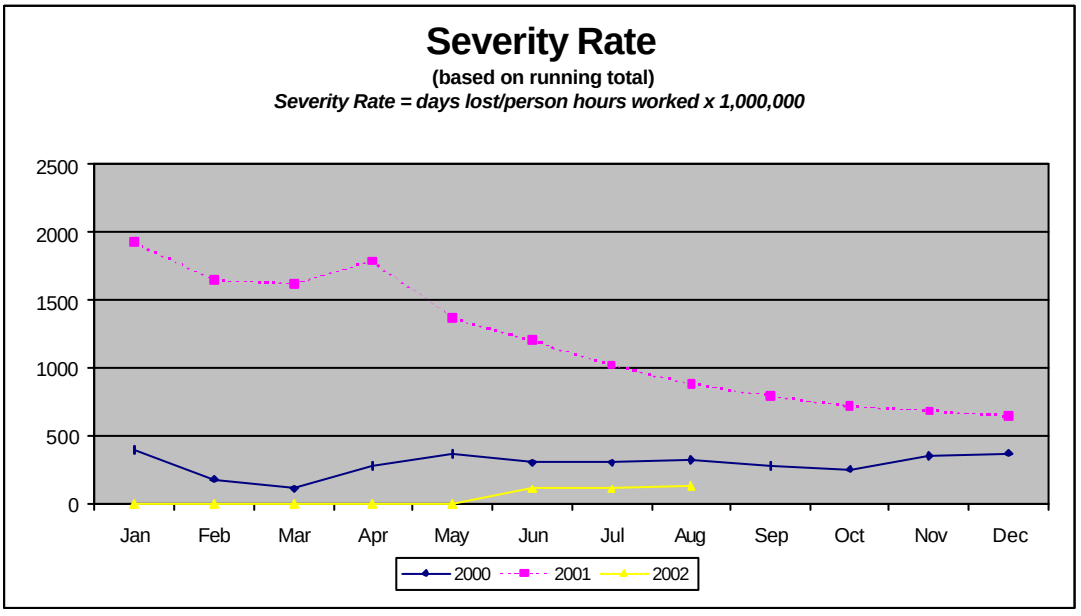
Utility Services Division Combined	Jan	Feb	Running Total from 1/1/02	Mar	Running Total from 1/1/02	Apr	Running Total from 1/1/02	May	Running Total from 1/1/02	Jun	Running Total from 1/1/02	Jul	Running Total from 1/1/02	Aug	Running Total from 1/1/02	Sep	Running Total from 1/1/02	Oct	Running Total from 1/1/02	Nov	Running Total from 1/1/02	Dec	Running 12 month Total
Hours worked	8,561	8,689	17,250	9,074	26,324	9,438	35,762	10,122	45,884	8,387	54,271	12,704	66,975	8,620	75,595								
Employee numbers	63	64	63	62	63	62	63	61	62	59	62	59	65	58	65								

Injuries	1	0	1	1	2	1	3	0	3	1	4	2	5	1	7			
Days lost	0	0	0	0	0	0	0	0	0	5	5	1	7	3	10			
Incidence rate (number of incidents per 100 workers)	2	0	0.5	1.5	1.1	2	1.7	0	1.0	2	1.1	3	1.3	2	1.3			
Frequency rate (incidents per 1,000,000 hours exposure)	117	0	56	110	78	106	84	0	65	119	74	157	96	110	93			
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0	0	0	715	111	79	105	346	132			

Incidence rate = (number of incidents/number of employees) x 100
Frequency rate = (number of incidents/person hours worked) x 1,000,000
Severity rate = (days lost/person hours worked) x 1,000,000


Incidence Rate
(based on running total)
Incidence Rate = number of incidents/number of employees x 100
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2000 2001 2002


Frequency Rate
(based on running total)
Frequency Rate = number of incidents/person hours worked x 1,000,000
300
250
200
150
100
50
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2000 2001 2002


Severity Rate
(based on running total)
Severity Rate = days lost/person hours worked x 1,000,000
2500
2000
1500
1000
500
0
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
2000 2001 2002

Strategy and Asset Group
August 2002

Strategy and Asset Group
Review of Operations for the Period Ended 31 August 2002

1. Items of Note

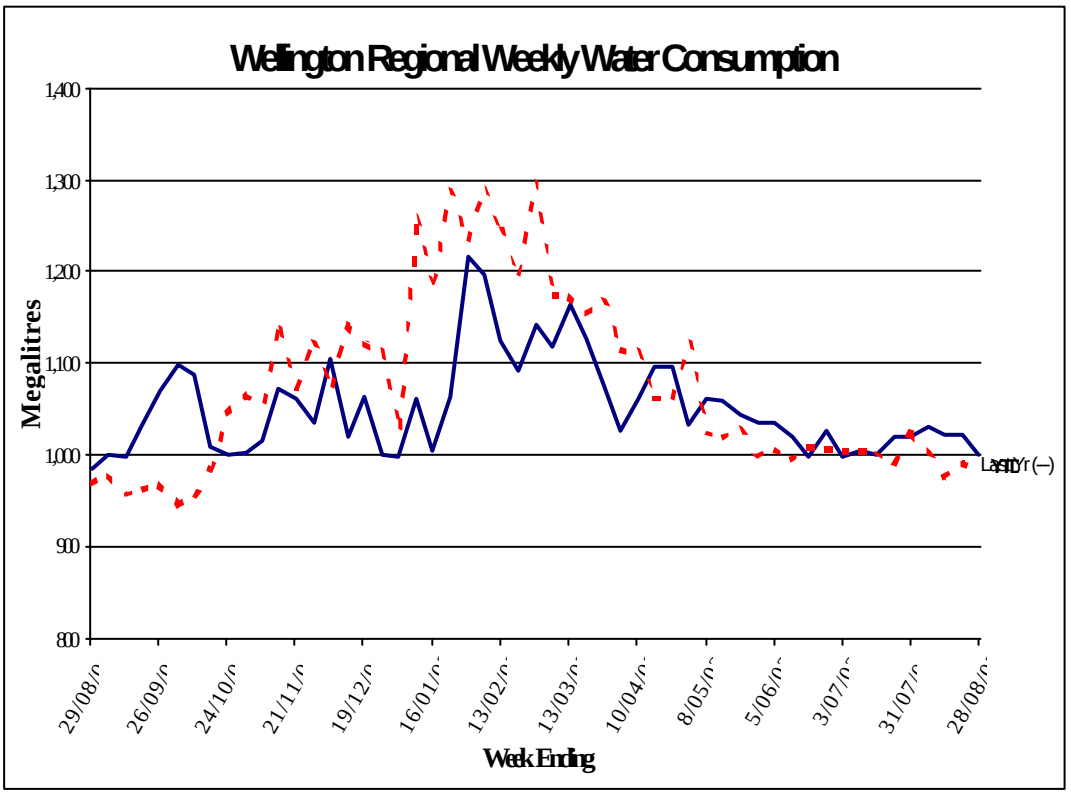
- A highly commended award was received from the Energy Efficiency and Conservation Authority for the System Optimiser. It was entered to the Innovation Category of this year's Energy Efficiency and Conservation Authority awards.

- A number of seismic review projects are being carried out as part of an overall insurance review. A separate Committee report considers the pipeline at the Silverstream Bridge and the nearby Wellington Fault crossing.

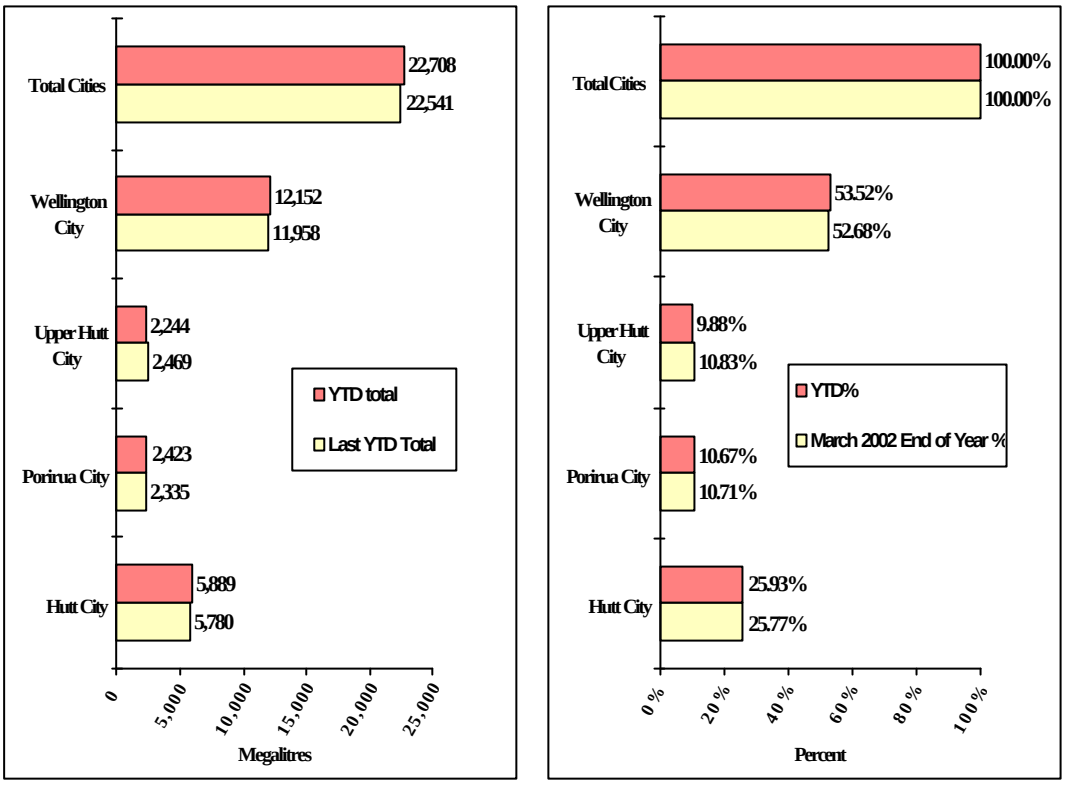
- Good progress has been made on restyling The Water Group's business activity report. The draft report is included in a separate Committee report.

2. Sales Volume

Water Sold Over the Last 12 Months



Water Sold from 1 April 2002 to 28 August 2002



Each year the consumption over the late autumn and winter period has been reviewed to obtain an indication of baseline consumption trends. A number of factors influence consumption over the period, so it is not possible to draw explicit conclusions.

The table below provides a comparison over the last three years. All the readings are for a period of 18 weeks ending with the last weekly reading in August.

City Council	ML May-August 2000	ML May August 2001	ML May-August 2002	ML Charge Over 2 Years	Percentage Change Over 2 Years
Hutt	4,584	4,686	4,796	212	4.6
Porirua	1,835	1,874	1,958	123	6.7
Upper Hutt	1,773	2,002	1,805	32	1.8
Wellington	9,603	9,623	9,870	267	2.8
Total	17,795	18,190	18,429	634	3.6

This suggests a slight upward trend in base consumption. During the last year Upper Hutt has been attending to a number of leak issues and this probably accounts for Upper Hutt City's reduction in base volume over the last year.

In commenting last year, the annual change was given as 1 percent if Upper Hutt figures were excluded.

Excluding Upper Hutt this year gives an annual rate of change in base consumption of between 1.5 and 2 percent. Previously the annual increase was evaluated as being about 1 percent.

3. Asset Management

- Depreciation of Wholesale Water infrastructure assets has been completed up to 30 June 2002 and monthly depreciation calculations are now being run and reported to the Finance Division for inclusion in the monthly accounts. Depreciation for 2001/2 was $4.987 million. An additional $1.577 million of completed work was capitalised and $307,000 written off against assets that have been replaced or demolished, giving a current book value at 30 June 2002 of $242.663 million.

- A review of the June 1998 Asset Management Plan has commenced, with a target date for completing a new draft by 30 June 2003.

- The Capital Works budget for 2002/3 is $2.752 million. The largest item is $420,000 for reequipping the Karori Pumping Station. However, a review of the seismic vulnerability of the site suggests that relocation of the pumping station may be a better option. Other projects include upgrading the Orongorongo intake, making a start on the Wainuiomata/Orongorongo Catchment boundary fence, installing a larger standby generator at Waterloo, replacing the control system at Wainuiomata and replacing equipment at the Warwick Street Pumping Station. In addition, $300,000 is budgeted for further seismic improvements and investigations.

- The most substantial project in the 2001/2 year, lining of the Rahui Reservoir supply main (part of the old Orongorongo/Karori pipeline), is substantially complete. However, testing and commissioning difficulties have continued, and it is not expected that the pipe will be recommissioned until late September.

- The new pumps and switchboard at Johnsonville Pumping Station are partially commissioned.

- Final plans for the transfer of Karori Reservoir land to the Wellington City Council have been received and approved. Following final administrative clearance, the land will be formally transferred to Wellington City Council.

- Issues associated with the Council's application to take water from the Moera aquifer are being worked through with IBM, whose fire protection system may be affected by the proposal.

- Tenders for the relocation of the branch main to the Plimmerton Reservoir, which will be affected by new State Highway 1 roading work at Plimmerton, will be called late in September. The pipe is to be moved in preparation for the highway improvements. Transit New Zealand has agreed to pay 100 percent of the cost of this work.
- Duplication of the Paremata Bridge, which has recently started, may require a temporary diversion of the Pukerua Bay main in the early stages of the

construction. Transit New Zealand consultants are presently trying to adjust the proposed new structures to avoid the need for this temporary relocation. On completion of the new bridge, the main will be transferred to it, providing enhanced seismic security for the Paremata Harbour crossing. The normal 50/50 cost sharing arrangement will apply to this work.

- A major development of the area of land above Porirua City known as the Aotea Block is in the planning stages. The proposal will have a significant effect on the branch main to the Porirua Reservoir. The developer will meet all costs of relocation or protection work.

- Transit New Zealand has received funding and called tenders for the upgrading of State Highway 2 near Te Marua. This work will require relocation of some drainage works adjacent to the Stuart Macaskill Lakes, at Transit New Zealand's cost.

- A consultant has been commissioned to carry out a damage analysis of currently insured assets under a Wellington Fault earthquake, as an input to the review of insurance policies and strategies.

- A consultant's report assessing the risk and recovery time associated with seismically induced failure of the Kaitoke/Karori pipeline where it traverses the side of a steep potentially unstable gully at Haywards indicates that relocating this main may be warranted. The relocation would ideally be closely linked with the proposed realignment of State Highway 58 and the likely timing of this work is currently being established. A detailed report on these investigations will be presented to the November Committee meeting.

4. Catchment Management

- The current pig hunting programme in the Wainuiomata/Orongorongo Catchment has been completed. Twenty pigs were shot. Professional goat hunters using Judas goats will operate again in September.

- During August flowering and fruiting counts and bird counts were completed in the Wainuiomata/Orongorongo Catchment. Bird counts will also be undertaken in the Hutt Catchment this year.

5. Quality Assurance

- Detailed plant performance data regarding compliance with the Drinking-Water Standards is being assembled and collated for the first two quarters of 2002. The performance of the Wainuiomata Water Treatment Plant has been improved by changes to the control system and the use of dry polymer flocculant to reduce turbidity "spikes". Both surface water treatment plants are now programmed to shut down if a "spike" is detected on any one of the filters. Twelve months of fully compliant records for Wainuiomata Water Treatment Plant are required to support the regrading application made to the Hutt Valley District Health Board.

- Work has begun on drafting Public Health Risk Management Plans required by the Ministry of Health. New health legislation, expected to come into force in April 2004, will make the provision and implementation of such plans mandatory. Good risk management procedures are already in place, so that significant changes to the way the plants and system are operated are not expected.

- New grading rules have been received from the Ministry of Health. Significant changes are that wholesale distribution systems such as ours will now be formally graded. Non-compliance with the *Drinking-Water Standards for New Zealand* microbiological standards will mean a D grading rather than a C as at present. It is proposed to target achievement of an "A1" grading for the wholesale distribution network. This requires compliance with aesthetic guidelines (taste, odour and colour) and ISO 9001 accreditation.

- Further review of the sampling regime in the distribution network has been undertaken following receipt of comments from Hutt Valley District Health Board. A much more detailed proposal has now been submitted

- An additional detailed submission has been made to the Hutt Valley District Health Board regarding the security of the Hutt Valley aquifer. The aquifer has been shown to meet the requirements of the *Drinking-Water Standards for New Zealand* for security but only just. A further programme of tritium dating and chemical testing has been initiated to provide additional information. Security of the groundwater is essential to achieving compliance with the protozoa rule at Waterloo and Gear Island. A response from the Hutt Valley District Health Board is awaited.

5. Environmental

- A wheel wash at the entrance to the Wainuiomata/Orongorongo Catchment is to be constructed at a cost of $28,000. The purpose of the wheel wash is to minimise infestation of the catchment by exotic weeds.

- Massey University Institute of Natural Resources' staff have completed a study of native fish above the Orongorongo intake. Their report concludes that there are opportunities to attract other migratory species above the intake, or to introduce non-migratory species. Construction of a fish ladder will be investigated but it is likely to be a substantial structure.

- Massey University Institute of Natural Resources' staff are also working on a desktop study of factors affecting fish numbers in the Hutt River. Their report is expected in December.

6. Marketing

- Results of focus group research into attitudes and knowledge about water conservation have been received. The research shows that awareness of our television advertising from the last three summers is fairly high but there is less evidence of people taking action. Apparently this is because of a combination of factors, including widely held perceptions that:

  - Wellington has plenty of water
  - Gardening does not use much water
  - Water used on the garden is never wasted

  Time pressure and a fear of killing plants by underwatering, together with the perceived lack of an immediate water problem, have resulted in many gardeners sticking to methods that have worked for them in the past. Results indicate that our strategy of targeting keen gardeners who believe that conservation is important remains valid. A communication programme for the coming summer will be developed to address the knowledge gaps identified.

- Television airtime has been prebooked for the coming summer, so that television can be used for conservation advertising if required. This reservation can be cancelled prior to 23 October without penalty.

- Compilation of both "highlights" and "detailed" versions of The Water Group Report of Business Activity for 2001/2 is progressing. Elements of triple bottom line reporting will be incorporated into both versions. The reports, with sustainability as their theme, are scheduled for publication on 31 October.

- Further work was undertaken regarding the private initiative to paint a smiley face image on the top of our Ngauranga water reservoir. Wellington City Council confirmed its initial advice that resource consent would not be required for the project to proceed. A view on the City Council's support for the project had not been received by 31 August. A public consultation process was designed with input from research consultants and Wellington Regional Council's resource consents manager. The citizen who proposed the mural has been kept abreast of developments.

- Work is progressing with an educational resources consultant on a review of water treatment plant tour content and handouts for a primary and intermediate school audience. The consultant is currently writing the resource, the first draft of which is expected in late September. Our aim is to attract more school groups to visit a water treatment plant by making it easier for teachers to recognise how the visits contribute to meeting the learning targets set out in the school curriculum. The tour content and handouts will promote learning regarding water quality, water use and conservation. Better understanding of these issues in the community will contribute to meeting our water supply goals.

- The design of a mimic board for the reception area at Wainuiomata Water

Treatment Plant is at a final review stage.

- Arrangements were made for four visits to water treatment plants involving 35 visitors.

7. Projects Undertaken by Engineering Consultancy for Strategy and Asset

Orongorongo River Intake

The extent of the proposed remedial works on Orongorongo River intake has been confirmed. Preparation of detailed drawings of the work will proceed in October 2002.

Wainuiomata/Orongorongo Catchment Wheel Wash

The resource consent application for construction of a vehicle wheel wash at the entrance to the catchment area has been prepared.

Fire Protection at Wainuiomata Water Treatment Plant

Alternative fire protection systems are being investigated to avoid having to regularly gain access to the sensors located on the ceiling in the filter gallery.

Waterloo Water Treatment Plant Vibration and Noise

An assessment is being made to determine whether further work is required to ensure that a fatigue failure of the motor hall floor does not occur.

Gear Island Water Treatment Plant Roof Fixings

Additional securing fittings have been installed on the chemical building roof trusses and the control reservoir roof.

Refurbishment of the OK Main, Petone

Slip lining of the OK main between Hutt Park and Korokoro is complete. Testing of the pipeline identified loss of water from two sections of the pipeline. The Contractor is repairing the leaks.

Paremata Bridge, State Highway 1

The construction of the new bridge at Paremata is proceeding. The 300 mm pipeline supplying water to Plimmerton and Pukerua Bay will be relocated onto this new bridge. Arrangements have been made to retain the existing water supply pipelines while the bridge is being built.

- ### Stream Crossing and Fault Crossings

  The seismic performance of the distribution pipelines at stream crossings and fault crossings is being assessed.

- ### Non-return Function at Reservoir Inlets

  The installation of backflow restriction devices at the inlet to all the service reservoirs is being confirmed. The devices prevent the reservoir draining out the inlet pipe if the pipeline fails.

- ### Plimmerton No. 2 Reservoir Branch

  Contract Documents have been prepared for relocating the 200 mm ductile iron branch pipeline at Plimmerton Drive. This relocation is required to facilitate the realignment of State Highway 1. Transit New Zealand will be funding this work.

- ### Johnsonville Pumping Station Switchboard and Pumpsets

  Replacement of the Johnsonville Pumping Station switchboard and pumpsets is progressing. The new switchboard has been installed. The first of the two new pumpsets has been installed and run.

- ### Warwick Street Pumping Station

  A report on the condition of the Warwick Street Pumping Station switchboard and pumpsets is being finalised. Replacement of the switchboard is proposed.

- ### Karori Pumping Station

  A report on the condition of the Karori Pumping Station switchboard and pumpsets is being finalised. Replacement of the switchboard and the pumpsets is proposed.

  As assessment has been made of the performance of the pumping station structure in a major seismic event.

  Options for the replacement of this pumping station are being considered.

- ### Pipe Holding Down Straps in Tunnels and Tunnel Access

  The construction of concrete access chambers to provide safe access into the tunnels is complete. The pipe securing straps for Kaitoke No. 3 and 4 Tunnels have been redesigned. The modified straps are being installed.

Engineering Consultancy Group
August 2002

Engineering Consultancy Group
Review of Operations for the Period Ended 31 August 2002

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

Current projects underway are detailed in the following sections.

3.2 Wakefield Street

A Contract was awarded to replace a water main in Wakefield Street from Courtenay Place to Cuba Street. Replacement of the pipeline along this busy city street will be another challenging Contract. The Contractor has made excellent progress.

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). The Consultant has completed the design report for siting the reservoir in Carter Park and is preparing for the public consultation phase of the commission. This has required extensive discussions with the Wellington City Council Parks and Gardens Business Unit.

3.4 Southern Suburbs Reservoir

Wellington City Council has confirmed a preference for the site in Mount Albert Park. This site would have a lower overall cost than the Southgate Park site. Investigations have continued into siting and operational matters. A draft brief to consultants for the design of the reservoir has been submitted.

3.5 Kelburn Reservoir

This reservoir will replace two existing reservoirs that are adjacent to the Karori Wildlife Sanctuary. The south chamber of the reservoir is complete and has been filled, tested and disinfected. This chamber will be brought into service shortly, which will allow the north reservoir to be demolished and the north chamber constructed.

3.6 Onslow Reservoir

There are two reservoirs on the Onslow site. The proposal is that the rectangular western reservoir be demolished and replaced with a larger reservoir, so that the water storage deficiency in the zone can be rectified. The design consultant has prepared and submitted the resource consent application. This is currently being assessed and more information on landscaping has been supplied. The design report has also been completed. Good progress has been made on the design of modifications to the external pipework and the details of the pipework in the valve chamber.

4. Miscellaneous Projects

4.1 Emergency Water Supply

The consultant engaged for this project has had detailed discussions with water supply staff of the five councils and has prepared a draft report. Wellington Regional Council staff members are providing technical input to the project. The final report from *Operation Phoenix*, will be taken into account in the preparation of the final report.

Laboratory Services
August 2002

Laboratory Services Department
Review of Operations for the Period Ended 31 August 2002

1. Items of Note

- The laboratory returned an operating surplus better than budget for the combined July/August months. Revenue was enhanced with a significant increase in demand for *Giardia*/*Cryptosporidium* testing from external clients.

- The Ministry of Health has amended the terms and conditions whereby the traditional coliform tests by membrane filtration continue as legitimate alternative to the *Drinking-Water Standards for New Zealand 2000* referee methods. Nevertheless, in anticipation of the 2 September compulsory inception date, we had gained Ministry of Health approval to adopt the *E. coli* referee method. We are registered on the WINZ database for 30 chemical and microbiological parameters.

- Final tender documents have been signed and progress is now under way with the laboratory fit-out at the new Oxford Terrace premises. The fume cupboard and joinery units are being constructed off-site and will be ready for fitting once the internal structure and decorating are complete. The anticipated completion date looks to be November.

2. Business Summary

2.1 Quality

There were no requests for retesting samples. We have had some delays in some instance with the reporting of results. We currently have a backlog we are working our way through. This backlog has arisen through an increase in workload and a decrease in staff, partly as a result of staff taking leave.

2.2 Health and Safety

There were a couple of minor incidents with superficial injuries to report. These incidents incurred no loss of work time.

Plantation Forestry

August 2002

Plantation Forestry Department
Review of Operations for the Period Ended 31 August 2002

1. Log Harvest Contract

Volumes for August have again fallen behind budget. The reason was a combination of weather, small settings for the hauler, the amount of wind thrown logs to be recovered off one setting and road lining by the ground based crew. A total of 3,004 tonnes were produced and this returned $72,162 at an average of $24.18 per tonne. The reduction in the average return is a result of the road lining operation and the unpruned settings in both Harris South and Harris North.

The ground based crew has been working in the more accessible parts of the Harris North block, concentrating on the area on either side of the main track. Once this area has been cleared to at least two tree lengths from the track, we will be able to reopen access for recreational visitors. We are on target to have this route reopened before the school holidays.

The proposal for an alternative access through the Tse Family Trust land to Paekakariki Hill Road has been declined by the Trust on the basis that the return is insufficient to warrant them advancing the construction of the new access onto Paekakariki Hill Road. Without this access the proposal would be unworkable. It is intended to revisit the proposal to see whether a more attractive proposal can be worked up.

The two potential routes have been identified for the Blow Fly and Kaika Mako blocks have not been assessed as yet because of ongoing roading problems as a result of the wet weather. It is hoped to make this assessment a priority in the next month.

There has still been no progress on the matter of permanent communications in the area.

The by-grade output for August was:

Grade	Tonnes	%
Pruned Domestic	293.73	9.78
Pruned Export	0	0
Partial Pruned	31.42	1.05
S/A Grade	256.73	8.54
L Grade	251.99	8.39
R Grade	153.19	5.10
K Sawlog	154.38	5.14
K Rough	904.68	30.11
Pulp	462.53	15.39
O/S Pulp	496.31	16.52
Xport Pulp	0	0
Other	0	0

Grade	Tonnes	%
Total	3,004.86	

2. Silviculture Contracts

Although we have continued to use our Silviculture Contractor to assist with road maintenance and "daylighting", he has still managed to reduce the backlog of pruning down to 9 hectares. This remaining area will be completed before the end of September.

The successful contractor for the 2002/3 silviculture contract has assigned a number of their blocks to Green and Gold Contractors. This more even distribution of work will ensure all silviculture is completed within the specified time.

3. Plantation Forestry Operations

Planting is continuing at Puketiro as the loggers move from each setting.

As in previous years, planting will continue while the weather is suitable and seedlings are available.

The Fire Plan has been finalised and will be distributed prior to the commencement of the fire season, which commences 1 October.

There has been no further progress with the Spicer joint venture as yet, although Wellington City Council has now nominated a representative to negotiate on its behalf.

4. Forest Access

There is still no acceptable access to Maungakotukutuku Forest.

The rain kept coming and every time it stopped the trucks had traction problems in the period between totally wet and totally dry. It was most frustrating to see trucks stalling on a road that was as hard as concrete but with a thin layer of mud which caused the loss of traction. A number of other sections broke down following consistent use in the wet where the wheel ruts prevented water run-off and the movement of the trucks through the water created a "pumping" effect, which breached the road base and caused large holes to develop.

A number of drivers paid the price of losing concentration and drifting off the formed section of the road. The roadsides were so soft there was no escape!
The advent of warmer weather and longer days gives us the confidence to think we may be winning.

5. Market Trends

The markets appear to have remained stable, with only minor changes in export prices driven by the combination of changes in the United States dollar price, United States dollar shipping costs, Forex changes, and conversion factor changes. Generally the net effect has been a minor increase in our return.

Rayonier has identified a number of additional players in the domestic market, which has put pressure on local prices. To date this pressure has been resisted.

Eurocell closed their mill to deliveries for the last week of the month in order to reduce inventories. While this was inconvenient, we were able to hold the stocks in the forest for delivery in the new month.

Both JNL and Eurocell appear reluctant to purchase pruned logs at this time. We still have a considerable area of pruned trees to fell and it would be unfortunate if this could not be sold to the "local" mills. In the past this type of "no buy" policy has not lasted for any length of time, so we have to wait and see. We retain the option to sell to Kiwi at Dannevirke or to encourage Rayonier to export a pruned grade log.