
Greater Wellington Water

September/October 2006

Water Supply

September/October 2006

Water Supply

Review of operations for the period ended 31 October 2006

1. Items of Note

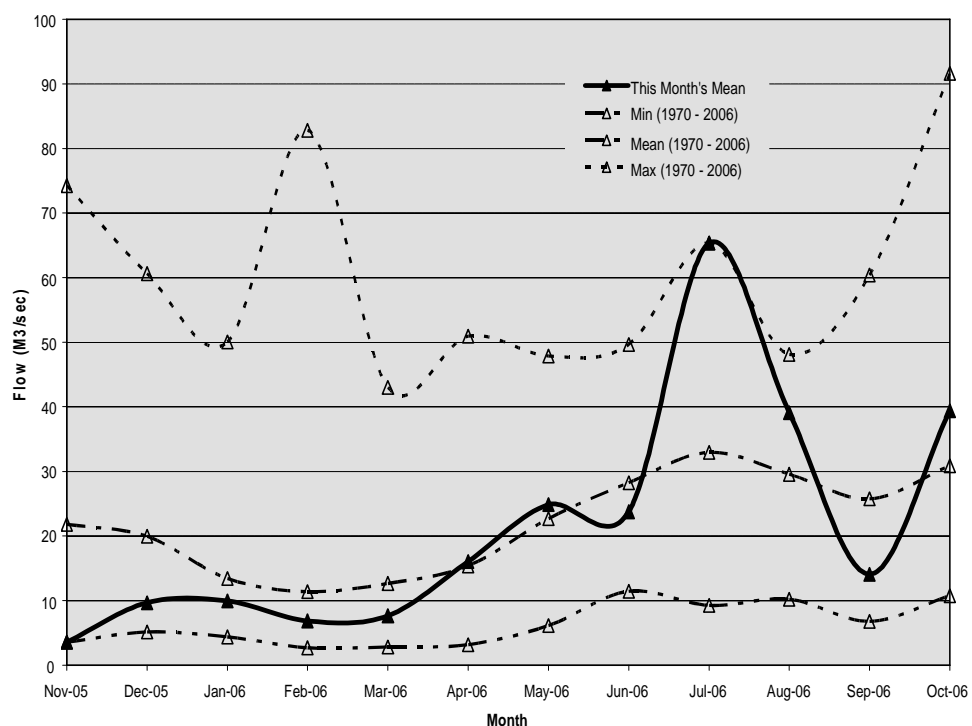
- A surveillance audit was carried out by Bureau Veritas Quality International during October.
- The slip in the Orongorongo Valley has been cleared and pipework should be repaired and back in service by mid-November.
- We have made arrangements to engage a “Cadet” through an Upper Hutt City Council scheme that is funded by the Ministries of Social Development and Youth Development. This position is subsidised for a 12 month period, after which we hope to retain the cadet in a water apprenticeship role.
- A recent reliability centre maintenance analysis of the wholesale distribution system has identified that our present planned maintenance regime is inadequate to preserve the desired level of service and functionality, and that an additional person is required in this area.

2. Supply Situation

There were no supply issues for the period.

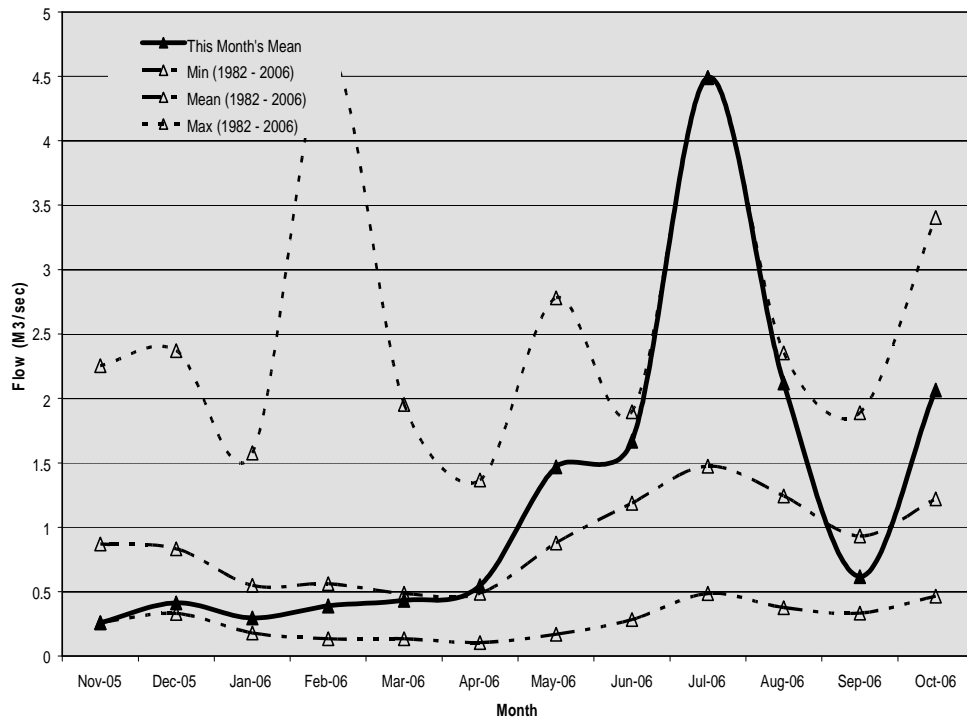
Hutt River Flows

The monthly flow in the Hutt River for September was below average. For October, the monthly flow was above average.



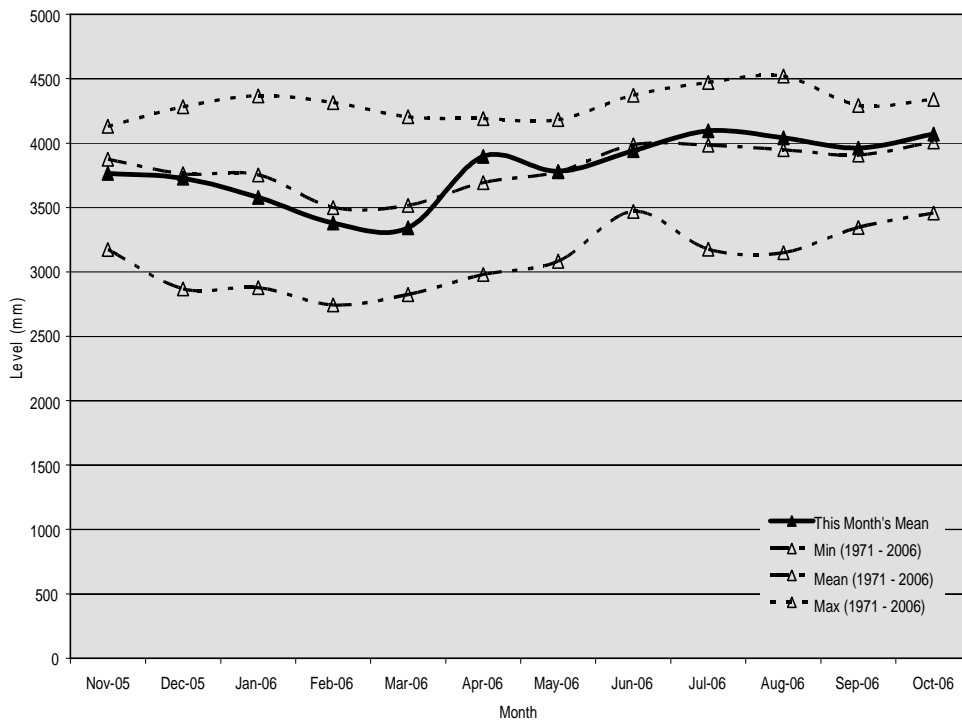
Wainuiomata River Flows

The monthly flow in the Wainuiomata River during September was below average and for October was above average.



Aquifer Levels

The water level in the Waiwhetu aquifer in September was about the mean. For October, the aquifer was just above the mean.



3. Treatment Plants

3.1 Te Marua

3.1.1 Quality

- There was one IOF during the period that involved low pH.

3.1.2 Health and Safety

- There were no accidents during the period. However, there was a security issue at the water treatment plant.

At approximately 4.30 pm on 24 October 2006 several youths were seen on-site acting in a suspicious and potentially threatening manner. As staff members drove past, one of the youths openly and aggressively displayed a hand gun. Police were called and, as a result, the youths involved face various charges, including charges under the *Firearms Act*. The hand gun was not real.

3.1.3 Environmental

- There were no chemical spills or accidental discharges during the period.

3.1.4 Operations and Maintenance

- The water treatment plant was off-line for 12 hours on 28 September, allowing work to continue on repairs to the treatment water reservoir curtain.

3.2 Wainuiomata

3.2.1 Quality

- There was one improvement opportunity form (IOF) for low fluoride transgression because of an equipment breakdown.

3.2.2 Health and Safety

- There was one minor incident during September where a staff member slipped off a piece of pipe.

3.2.3 Environmental

- There were no chemical spills or accidental discharges during the period.

3.2.4 Operations and Maintenance

- A power factor correction unit was installed.

3.3 Waterloo and Gear Island Water Treatment Plants

3.3.1 Quality

- There were no IOFs or transgressions during the period.

3.3.2 Health and Safety

- There were no accidents or incidents for the period.

3.3.3 Environmental

- There were no chemical spills or accidental discharges during the period.

3.3.4 Operations and Maintenance

- A hydraulic trial involving manually running of both streams was completed.

4. Distribution

4.1 Health and Safety

- There were no accidents or incidents during the period.

4.2 Environmental

- There were no environmental issues for the period.

4.3 Operations and Maintenance

- Work on the Haywards deviation project was completed. The concrete headwall was poured, all valve chamber lids sealed, extension spindles and ladders fitted and the area was backfilled, topsoiled and grass seeded.
- The pipe specials for stage 1 were installed on the north and south ends of the Staithes Drive deviation project. Work on the anchor blocks began on both at the northern end and one at the southern end. The pipe special for stage 2 was fabricated. The excavations for the north and south tie-ins were completed and stage 1 pipework was fabricated at both ends.
- Service locations were carried out at State Highway 1 and in the Churton Park off-ramp.
- Temporary holding down/support straps were installed either side of the expansion coupling on the Silverstream Bridge. The 900 mm pipeline was shut down and two new stainless steel tie-bolts were installed.
- Work continued on the new Point Howard Pumping Station. New pipework was fabricated and installed for the suction and delivery mains. Three new isolation valves, a fire hydrant and a scour valve were also installed. Concrete was poured for the anchor blocks. Excavations were completed on the existing rising main and all services for the new pipework. The fire hydrant connection was shut down and the scour removed. The water main was dead ended here.
- The 200 mm cast iron water main between Paremata No. 2 and Ascot

Park Reservoirs is now out of service. The scour and line valves have been removed.

- The 900 mm pipeline from Haywards to Judgeford was shut down and both access manhole cover bolts were rewashed. The non-return valve and bend for the scour were installed. The damage to the external coatings on the 900 mm pipeline from the Armco barrier installation was repaired.
- Scour valve exercising was carried out on the Hutt North, Hutt South, Wainuiomata East and Wainuiomata West pipelines.
- A washout in Judgeford was repaired and a new culvert installed.
- The fire service valve to the ranger's house at Wainuiomata was renewed and housed. The connection was blanked from the Orongorongo/Karori main.
- Both scour valves from Reservoir B were housed at Waterloo Water Treatment Plant.

4.4 Pipeline Leaks

- There were no leaks for the period.

Water Supply and Forestry Health and Safety Data from July 2006 - Total Injuries

PRODUCTION (+ 4 OPS ADMIN)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Hours worked	2473	2495	2535	2444									Sep - Slipped off pipe
Employee numbers	16	16	15	15									
Incidents	0	0	1	0									
Days lost	0	0	0	0									
Incidence rate (number of incidents per 100 workers)	0	0	7	0									
Frequency rate (incidents per 10,000 hours exposure)	0	0	4	0									
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0									
DISTRIBUTION	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul 2006 - Cut hand / Slipped and fell against ute
Hours worked	1423	1541	1573	1491									
Employee numbers	10	10	10	10									
Incidents	2	1	0	0									
Days lost	0	0	0	0									
Incidence rate (number of incidents per 100 workers)	20	10	0	0									
Frequency rate (incidents per 10,000 hours exposure)	14	6	0	0									
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0									
ENGINEERING CONSULTANCY	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Hours worked	1531	1656	1652	1624									
Employee numbers	10	12	12	12									
Incidents	0	1	0	0									
Days lost	0	0	0	0									
Incidence rate (number of incidents per 100 workers)	0	8	0	0									
Frequency rate (incidents per 10,000 hours exposure)	0	6	0	0									
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0									
SUPPORT SERVICES	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Hours worked	1035	1059	1122	1046									
Employee numbers	7	7	7	7									
Incidents	0	0	0	0									
Days lost	0	0	0	0									
Incidence rate (number of incidents per 100 workers)	0	0	0	0									
Frequency rate (incidents per 10,000 hours exposure)	0	0	0	0									
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0									

LABORATORY

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Hours worked	833	947	892	868								
Employee numbers	7	6	6	6								
Incidents	0	0	0	0								
Days lost	0	0	0	0								
Incidence rate (number of incidents per 100 workers)	0	0	0	0								
Frequency rate (incidents per 10,000 hours exposure)	0	0	0	0								
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0								

STRATEGY AND ASSET

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Hours worked	528	740	664	680								
Employee numbers	5	5	5	5								
Incidents	0	0	0	0								
Days lost	0	0	0	0								
Incidence rate (number of incidents per 100 workers)	0	0	0	0								
Frequency rate (incidents per 10,000 hours exposure)	0	0	0	0								
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0								

FORESTRY

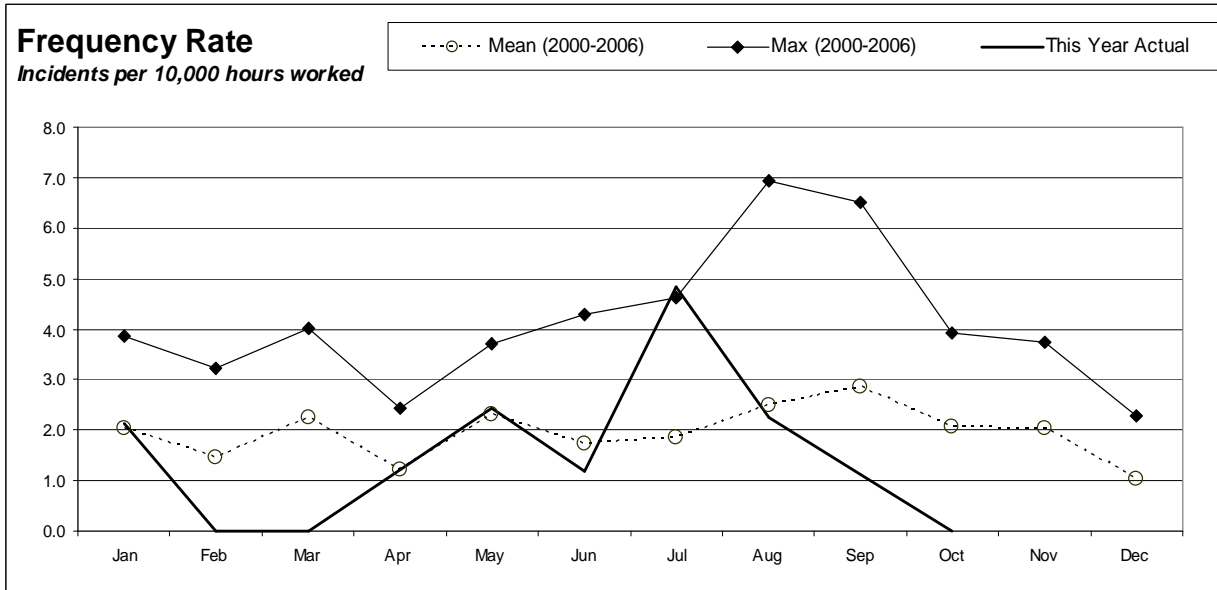
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Hours worked	466	492	421	386									Jul 2006 - Slipped and strained leg Jul 2006 - Tripped on vine and hurt knee and back
Employee numbers	3	3	3	3									
Incidents	2	0	0	0									
Days lost	0	0	0	0									
Incidence rate (number of incidents per 100 workers)	67	0	0	0									
Frequency rate (incidents per 10,000 hours exposure)	43	0	0	0									
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0									

Utility Services Division Combined	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Hours worked	8288	8929	8858	85380								
Employee numbers	58	59	58	0								
Injuries	4	2	1	0								
Days lost	0	0	0	0								
Frequency rate (incidents per 10,000 hours exposure)	5	2	1	0								
Severity rate (days lost to injury per 10,000 hours worked)	0	0	0	0								

Incidence rate = (number of incidents/number of employees) x 100

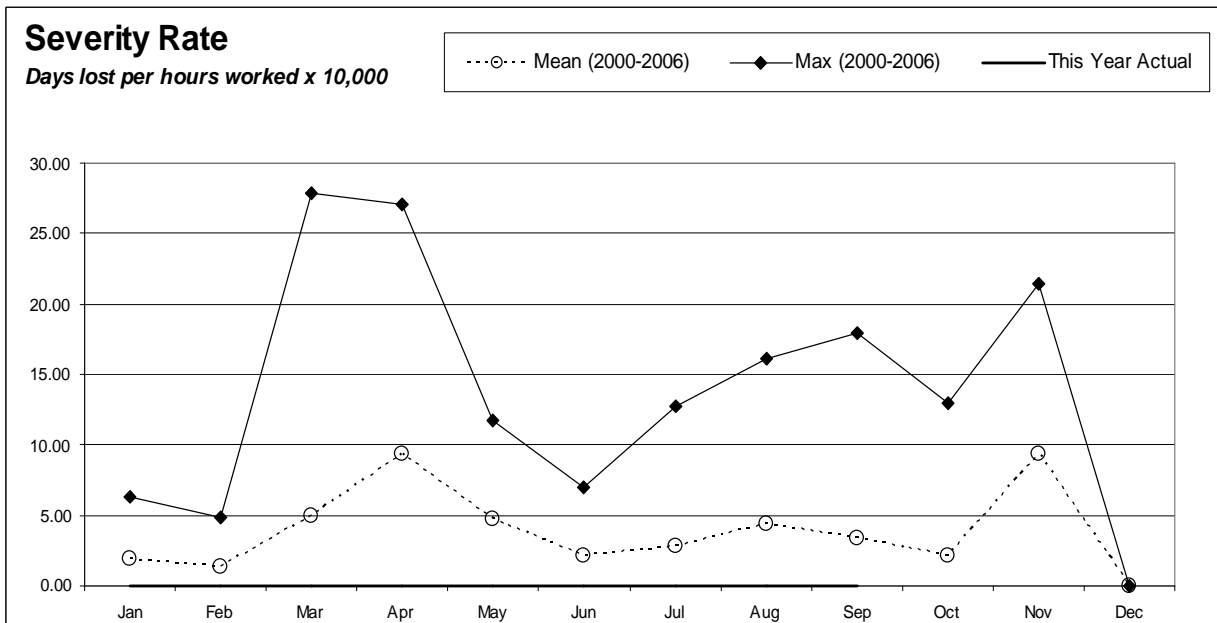
Frequency rate = (number of incidents/person hours worked) x 10,000

Severity rate = (days lost/person hours worked) x 10,000



Incidents

- One incident in January 2006
- One incident in April 2006
- Two incidents in May 2006
- One incident in June 2006
- Four incidents in July 2006
- Two incidents in August 2006
- One incident in September 2006



Lost Days

0

Engineering Services

September/October 2006

Engineering Services

Review of Operations for the period ended 31 October 2006

1. Water Usage

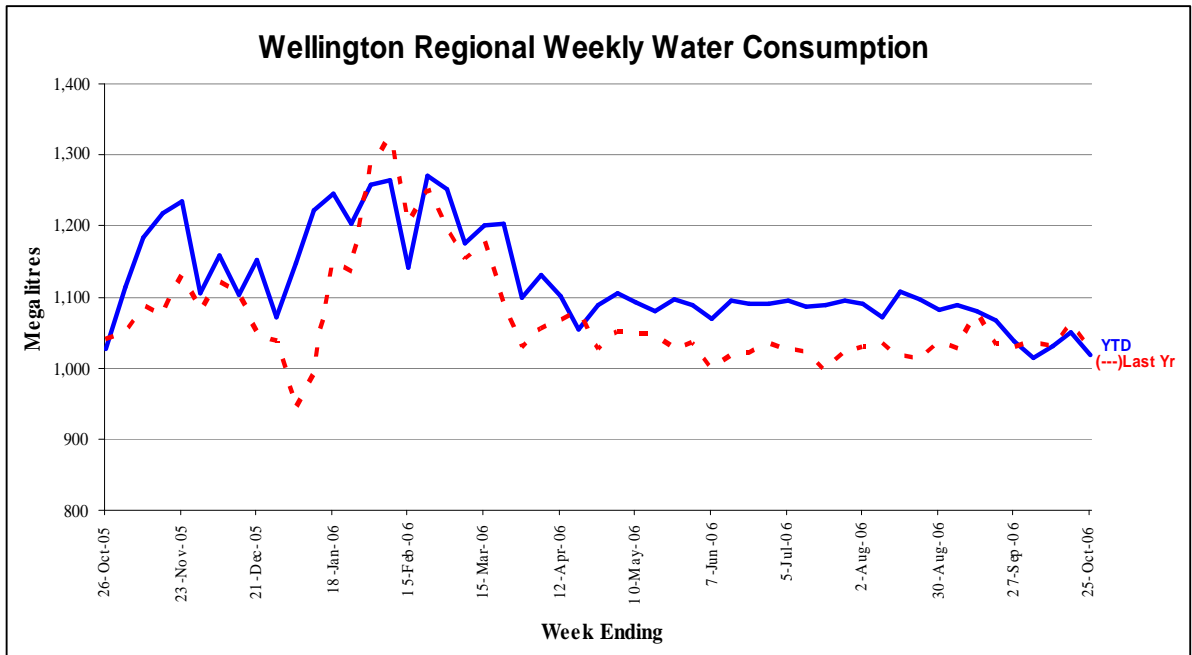
Water consumption has reduced to levels slightly below the same period last year since the leak detection and repair work by Wellington City Council in July and August. Total water consumption from 1 April to the end of October 2006 is approx. 4.4 percent higher than for the same period last year. However, this is an improvement on the 5.5 percent increase noted in the August report. Wellington City's water consumption for October was 1.8 percent lower than for October 2005.

Graphs detailing the sales volume information are on page 13.

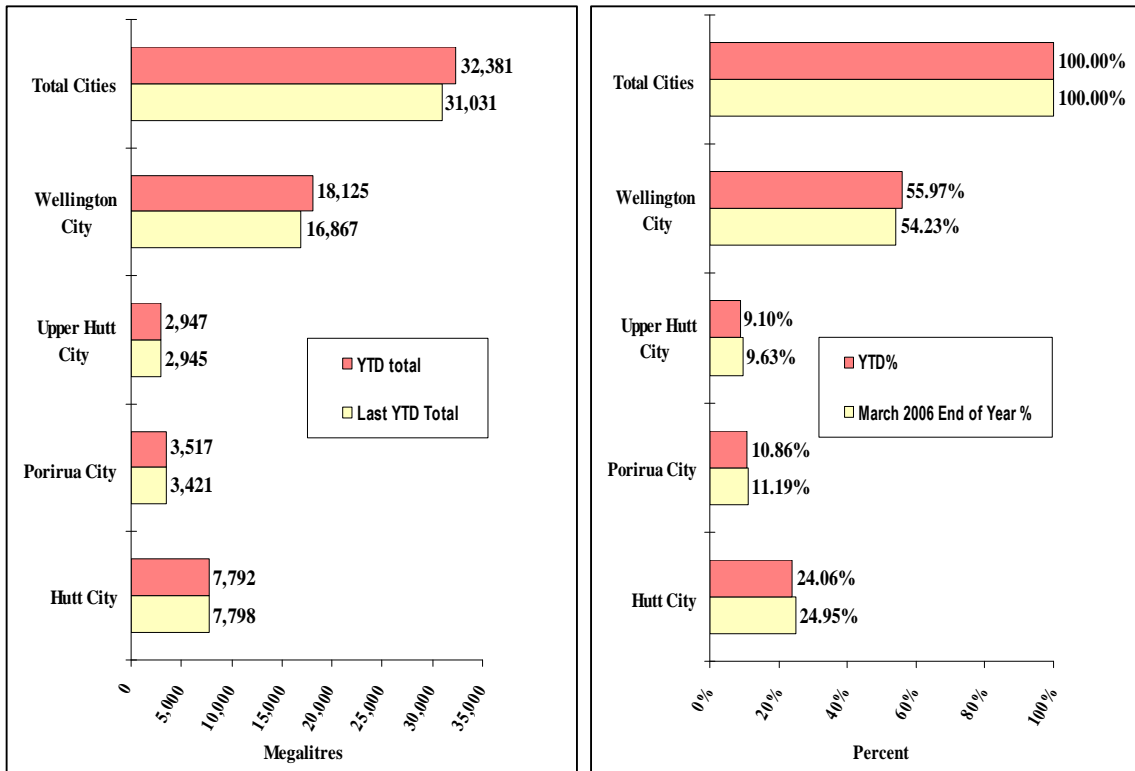
2. Asset Management

- The capital work budget for 2006/7 is \$6.23 million. Key projects and the status include:
 - A Contract has been let for improvements to the Wainuiomata Lower Dam that will enable a wetland to be created behind it.
 - Detailed planning is under way for installation of three sentinel wells on the Petone Foreshore. Additional funding for this work will be requested at the half year review in January.
 - Investigation of a range of options for replacing or refurbishing the control system at Te Marua Water Treatment Plant has been completed and a preferred upgrade path selected.
 - Equipment for a portable powdered activated carbon plant to combat taste and odour problems has been ordered.
 - Construction of a small sewer to pipe the effluent from the Wainuiomata Water Treatment Plant waste water treatment plant to the Wainuiomata sewage system is to be constructed.
 - Replacement of the water main on Silverstream Bridge is included in the capital works programme. However, the benefit of this in terms of reduced flooding risk may be small and are currently being evaluated by the Catchment Division. Work is also being done to assess the condition of the pipe and its likely remaining life.
 - Construction of the Point Howard Pumping Station is almost complete with the pumps in place.
 - New electrical equipment has been ordered for the modernisation of the Thorndon Pumping Station.
 - A budget proposal has been received for the second stage of the *Decerto* optimiser for the Te Marua system. Preparatory work reviewing instrumentation and system controls will be carried out this financial year.
 - Various improvements to the telemetry system will be made to facilitate its separation from the Wellington City Council telemetry system.

Water Sold Over the Last 12 Months



Water Sold from 30 March 2005 to 31 October 2006



- Construction of a new pumping station building at Grenada being undertaken by Wellington City Council is complete and pipework and pumps have been installed. Electrical work is to be completed over the next few weeks. A connection to the Kaitoke-Karori wholesale water main will be made before Christmas to enable testing to be undertaken. This pumping station will pump to two new reservoirs yet to be constructed and is part of the Wellington City Council Northern Suburbs Development Plan. The pumping station and inlet pipe will be taken over by Greater Wellington Regional Council on completion. Therefore, staff members are working very closely with the consultant employed by Wellington City Council to ensure the completed project meets Greater Wellington Water's requirements.

3. New Water Sources

- Stage 2 studies of the potential to take water from the Upper Hutt aquifer are progressing. Stage 2 includes the installation of two exploratory wells to confirm the availability of water, a computer model to study the potential impact on flows in the Hutt River and the impacts on other aquifer users, investigation of water quality and contamination risks, and environmental studies of streams fed from the aquifer. Consent applications have been lodged and tenders called for drilling the exploratory bores. Neighbouring property owners have been notified about the work.
- Phase 2 studies of possible water storage dams are also under way. The studies include work on environmental, ecological, heritage and botanic impacts, detailed aerial photography, more detailed geologic and engineering studies, and costing work. The aerial photography, using a new laser technique to combat the thick bush canopy has been completed.
- A multi-criteria analysis workshop is planned to follow the Utility Services Committee meeting on 29 November. The objective of this workshop is to decide what attributes should be considered when comparing the relative merits of the three dam sites, and what their relative weighting should be. Similar preparatory workshops will be held with senior Greater Wellington Regional Council staff and with customer territorial authority representatives early in November.
- Investigations and discussions on how best to evaluate the low flow requirements in the Hutt River with a view to reducing the minimum residual flow at Kaitoke so that more water can be abstracted in low flow conditions.

4. Quality Assurance

- A surveillance audit carried out by Bureau Veritas Quality International confirmed that the Greater Wellington Water Quality Management System still meets the requirements of ISO 9001 but raised a few minor improvement opportunities and recommendations.

- Compliance with the new Drinking-Water Standards for the 2005 calendar year has been confirmed by the Hutt Valley District Health Board. However, mechanisms for formal reporting against the new *Drinking-Water Standards for New Zealand 2005* have not yet been put in place by the Ministry of Health and, although we are confident our plants are complying with the new Standards, formal confirmation of this is not yet available. The Hutt Valley District Health Board has requested the installation of an additional chlorine monitoring station at Pukerua Bay and this is being arranged.
- A revised proposal by the Ministry for the Environment to establish a National Environmental Standard for drinking water sources provides an enhanced role for water suppliers in the consideration of resource consent applications and permitted use rules which may impact on source water. The Ministry is presently finalising this Standard in the light of submissions received.
- Preliminary information has been received from the Hutt Valley District Health Board that the Te Marua Water Treatment Plant has been awarded an A1 grading, subject to a peer review of the assessment. It is understood that Hutt Valley District Health Board employees are working on the grading of the Waterloo and Gear Island Water Treatment Plants.
- The Health (Drinking Water) Amendment Bill is being considered by the Health Select Committee. A submission on the Bill has been made and Greater Wellington Regional Council representatives led by Councillor Kirton appeared before the Committee on 25 October.

5. Environmental

- A surveillance audit carried out by Bureau Veritas Quality International confirmed that the Greater Wellington Water Environmental Management System still meets the requirements of ISO 14001 but raised a few minor improvement opportunities and recommendations.
- A Contract has been let for the rehabilitation and lowering of the Wainuiomata Lower Dam spillway, which will provide an opportunity for the development of a wetland upstream.
- Design work is under way on a larger culvert for Sinclair Creek, just upstream of the Wainuiomata intake. The existing culvert is regularly overtopped, making the road impassable, and acts as a barrier to fish. It is to be replaced with a much larger culvert that will allow fish to move up Sinclair Creek. Construction is planned for early 2007.
- Power factor correction equipment has been purchased and is being installed at the Gear Island and Wainuiomata Water Treatment Plants and the Ngauranga Pumping Station. This equipment will improve electrical efficiency and reduce energy use.

- Three sentinel wells are to be drilled along the Petone Foreshore and equipped with instruments that will provide early warning of saline intrusion into the Waiwhetu aquifer. This work is being undertaken jointly with the Environmental Monitoring and Investigations Department. Investigation and design work has begun and consents applied for.

6. Catchment Management

- The restoration of the pipeline feed from the Orongorongo Valley back to the treatment plant is still not completed, so no maintenance on the access road has been carried out as yet. Although there has been unprecedented rain, the road has held up well, with only some scouring from water and more slipping at the Orongorongo end. The rain has produced good vegetation growth, so water tables will have to be cleaned to keep water off the running surfaces before the road can be graded.
- Minor slips on the walking tracks continue to be cleared with the Parks' digger.
- September rainfall was 44.5 mm at Wainuiomata and 100.5 at Orongorongo. This can be compared with the October totals of 409 mm and 502.5 mm respectively.
- Rangers have been assisting the consultants assessing the Skull Gully Dam site.
- Hunters culled 17 goats, 8 pigs and 1 deer during a recent culling operation.
- There was one school visit and one catchment trip during this period. Both trips were completed without any problems.
- Problems with vandalism appear to have increased following the onset of daylight saving. The rangers deal with these as they occur. They do take up time that could be more fruitfully used elsewhere.

7. Projects

7.1 Engineering Services

- **Wainuiomata Lower Dam**
The Contract to lower the dam spillway has been awarded to Juno Civil Ltd. Work is expected to start on-site in December 2006.
- **Petone Foreshore Sentinel Wells**
The siting of three sentinel wells along the Petone Foreshore is being investigated and affected parties consulted. Resource consent applications are being prepared.

- **Future Water Source Pipelines**
A report on the route of a possible pipeline from the Whakatikei water treatment plant site to the Te Marua to Karori pipeline is being finalised.

A report on the preliminary design and cost estimates for the construction of boost pumping stations on the distribution pipelines is being finalised.
- **Wainuiomata Water Treatment Plant Outlet Control Valve**
Installation of a new control valve in the Tunnel Grove valve chamber is programmed for December 2006. The Contract for the electrical installation has been awarded. Replacement of air valves on the Wainuiomata pipeline is being investigated to reduce the effects of air slam.
- **Power Factor Correction Equipment**
Installation of power factor correction equipment at Wainuiomata Water Treatment Plant, Gear Island Water Treatment and Ngauranga Pumping Station has been completed.
- **Silverstream Bridge**
Three tie-bolts holding the Te Marua to Karori pipeline on to the Silverstream Bridge have been replaced in association with the bridge strengthening work that has been arranged by Upper Hutt City Council.
- **Rerouting Paremata Main at Staithes Drive**
A developer is replacing a length of the Paremata main. The pipe has been installed and tested. Connections are being installed between the new and existing pipelines.
- **Pukerua Bay Bypass Pipeline**
Installation of a bypass pipeline around the Pukerua Bay Reservoir has been reprogrammed to March 2007.
- **Karori Pumping Station Replacement**
The Kelburn pumps have been commissioned at low flow. The pump supplier has arranged to replace the motor stools to correct the excessive vibration.
- **Existing Karori Pumping Station Decommissioning**
Planning is under way for the decommissioning of the existing Karori Pumping Station. Arrangements are being made to relocate the electrical transformer currently housed in the pumping station. This work will proceed after the full commissioning of the new pumping station.
- **Point Howard Pumping Station**
The pumpsets and pipework are being installed in the pumping station. The electrical switchboard is being fabricated in preparation for installation late November.

- **Lincolnshire Pumping Station and Reservoir**
Installation of a pipeline and construction of a pumping station and reservoir are being financed and managed by Wellington City Council as part of its northern growth strategy. The first stage of the pipeline has been installed and the pumps and pipework installed in the pumping station.
- **Proposed Greater Wellington Regional Council/Wellington City Council/Capital and Coast District Health Board Reservoir**
Capital and Coast District Health Board is investigating ways to reduce their consumption and to be more self-sufficient for water supply in an emergency.
- **Stuart Macaskill Lakes Tower Strengthening**
The strength of the towers has been reanalysed using the measured compressive strength of the concrete. The Consultant has advised us verbally that the towers do not require strengthening. Their written report is still to be received.
- **Seismic Protection**
An initial assessment has been carried out of the effect of a Wellington Fault movement lowering the Petone Foreshore. Installation of a small (approximately 300 mm) diameter pipe crossing the Wellington Fault at Te Marua is being considered. This pipe would run parallel with the existing pipe. It could be repaired a lot quicker than the existing 1,050 mm diameter pipeline.

7.2 Work carried out for Water Supply

- Engineering Consultancy has continued to provide support for smaller projects arising from the operation and maintenance of the water supply system.
- The slip material has been cleared away from the pipeline in the Orongorongo Valley. Replacement of the 24 m of damaged pipe is proceeding.

7.3 Work carried out for Flood Protection

- The Engineering Consultancy Group is providing most of the draughting services for Flood Protection.

7.4 Corporate Projects

- **Pandemic Preparation**
The draft corporate pandemic plan is being finalised prior to submission to the Executive Management Team.

7.5 Work carried out for Wellington City Council

Engineering Consultancy is undertaking the following projects for Capacity:

- Northern Water Main Renewals
Detailed design of the pipeline installation in Churton Drive is being finalised.
- Ngaio and Wadestown Water Main Renewals
The Contract for the replacement of water mains in seven roads in Ngaio and Wadestown is being supervised.
- Ruskin Road Water Main Replacements
A design report and drawings for the replacement of the water main in Ruskin Road, Newlands have been prepared.
- Rajkot Terrace Pumping Station
Design work is proceeding for replacement of the Rajkot Terrace pumpsets. Quotations for the supply of the pumpsets have been received and are being analysed. Quotations have been invited for the supply of the switchboard.
- Alexandra Road Zone
An assessment for the replacement of the Alexandra Road zone rising main is being undertaken.

Marketing and Design

September/October 2006

Marketing

Review of operations for the period ended 31 October 2006

1. Items of Note

- Draft Wellington Water Management Plan. We provided the customers with the draft Technical Report and associated peer review report in mid September. We then met with the customers to discuss the issues raised, in early October. The outcomes of the peer review and customer meeting are covered in more detail beneath this summary of activity.
- Water History Update. Booklet design and photo selection were delayed slightly, to allow John Morrison, our former Engineering Consultancy Manager, to review the final draft text. This has been completed. Design and photo selection has been rescheduled for November.
- Water Supply Service Level Agreement. Engineering Consultancy has compiled the schedules to the agreement, which cover specific levels of service for water supply quantity and quality. These have been jointly reviewed by representatives of Water Supply, Engineering Services and Marketing. Minor changes are required. The changes are expected to be complete in early November. The draft agreement and schedules will then be returned to Capacity for wider discussion with all four customers.
- Increased Water Supply to Wellington. By 30 September a concerted programme of leak detection and repair in Wellington's Central Business District and low level zone had seen supply to Wellington City cut back to the same level as September 2005. This was maintained during October. Officers attended regular progress review meetings with Wellington City Council's service provider (Capacity) during September. We contributed to their investigations, particularly in the area of data analysis and interpretation.
- The Water Supply Annual Report for 2005/6 was drafted and circulated to our senior Greater Wellington Water managers for their review and comment. Further work was done to collect and check data from various internal and external sources. The near final document is attached as a separate report to the Committee, for approval.
- Summer Water Conservation Campaign. Clemenger BBDO was briefed about our requirements for the coming summer's campaign. The strategy followed in recent years is being continued, with a slight shift in emphasis. We will again use our media budget to outline the local summer water supply situation and the benefits of conserving water used for garden irrigation, as well as providing four basic tips. However, more emphasis will be given to the "why conserve" message, with greater reliance on Greater Wellington Regional Council and Council publications and the web site to provide more detail about specific conservation actions. The main target audience remains unchanged from

recent years. Creative concepts designed by Clemenger BBDO and presented to us in October are being refined and a media schedule is being worked on. The creative material will be available to show at the Committee meeting on 29 November.

- Treatment Plant Visits. Seven visits were hosted, involving some 120 visitors.

2. Wellington Water Management Plan progress report

2.1 Background

Auckland's water supply organisations adopted a collective water management plan in 2004. Wellington faces similar supply challenges to Auckland. While we have enough source water, the cost of harnessing additional quantities to meet increasing use is high. There is growing emphasis on sustainable development and infrastructure projects are increasingly challenged.

After consulting with our customers, the Utility Services Committee and Watercare, we undertook to adapt Auckland's plan for the Greater Wellington urban area.

2.2 Comparison - Auckland to Wellington

There are several key differences between Auckland and Wellington. Auckland has many months of water supply in storage, so savings at any time of the year have equal value. We have a maximum of three weeks' supply in the Stuart Macaskill Lakes. Our system is most vulnerable to a shortage in late summer and autumn, so savings during summer have greatest value.

Auckland already has universal water metering and "user-pays" pricing. This provides a valuable source of data and a means and incentive for households to measure their water savings.

Auckland also has more time for demand management to work before its security of supply standard is challenged. Based on current modelling, we have about seven years before the next major supply augmentation is needed.

2.3 Delaying a New Source

We have looked at the level of water saving needed to defer a major new water source by 5, 10, 15 and 20 years. Modelling indicates that an all-year reduction of 15 litres/head/day (4 percent) would achieve a 5 year deferral, rising to 55 litres/head/day (14 percent) for a 20 year deferral. Savings are relative to and would be measured against a demand of 400 litres/head/day (average demand for June to August, when demand is little affected by climate variation).

2.4 Demand Management Toolkit Saving Expectations

Although not yet complete (see *Next steps* below), the working draft of the

Wellington Water Management Plan Technical Report identifies a 15 percent saving in water use as realistic within 10 years of introducing metering and user pays pricing. The broad estimate of costs is \$50 million for installation of meters across Wellington's four cities, with operating costs of \$13/property/year.

The next three most effective measures, in terms of potential demand saving, were regulation requiring:

- (1) Dual-flush toilets
- (2) Efficient washing machines
- (3) Low volume showerheads

Each is currently assessed as able to deliver 1.9 percent to 3.8 percent savings within 10 years (although each would probably have significant impacts on related industry organisations, which could be expected to at least delay the introduction of any of these measures).

Leakage reduction (saving 1.7 percent), subsidy of efficient washing machines (0.9 percent) and pressure management (0.9 percent) are the only other measures assessed as able to deliver savings of near 1 percent or better.

2.5 Peer Review

Opus International Consultants Ltd has carried out a review of the costs/benefit analysis for us. It concluded the estimated costs and water savings outlined for metering and "user pays" pricing are reasonable and noted metering has proved an important enabler for voluntary water saving in other cities, if adopted as part of an integrated demand management programme.

For all other toolkit measures, it noted a shortage of robust local data to support high confidence in "water use by sector" and saving potential estimates. Opus suggested options to improve the confidence of analysis, including desk research, social research and "in-home" water use surveys.

2.6 Next Steps

Following our meeting with customers in October, several actions have been agreed to move the project forward.

The peer review's specific recommendations and suggestions have been circulated to each customer for feedback about the options each thinks worth pursuing. The customers also requested that some data be updated and that we include some broad "net present value" analysis in the draft technical report. We have started work on their list of requests and are awaiting responses to the list of possible further work. Once these are received we can map out the steps needed to complete the technical report.

Laboratory

September/October 2006

Laboratory Review of operations for the period ended 31 October 2006

1. Items of Note

- Laboratory finances finished in the black, with a small but improving surplus for the September/October period.
- We have now been IANZ approved to include protozoa (*Giardia* and *Cryptosporidium*) analysis by the EPA Method 1623 (Modified) within the scope of our laboratory accreditation. We consider this a significant achievement and join a select club of very few New Zealand laboratories capable of meeting the requirements of the *Drinking-Water Standards for New Zealand 2005* for this specific test.
- The future of the laboratory is under review.

2. Business Summary

2.1 Quality

There were no requests for retesting samples and most test reports were timely.

2.2 Health and Safety

There were no accidents or incidents during the period.

Forests Department

September/October 2006

Forests Department Review of Operations for the period ended 31 October 2006

1. Metro Forests

1.1 Log Harvest Contract

Despite the rain easing in August, it has returned and remained for the past two months. We have been fortunate that it has not affected the two main harvest crews. Log 4, the crew that was logging out of Hukinga, was forced to leave block 2.01 partially completed when it became too wet to safely operate the machinery. They moved into block 9.03 where grades were less steep and it was assumed they would be able to remain there until the weather improved. Access to this block was by an existing road which had to be widened to allow current logging trucks to use it. The initial widening took place without drama but shortly thereafter we got the first of about 15 slips which have occurred since. The end result is that we have ceased logging this block also and are seeking a break in the weather to allow the 20 plus loads on the skid to be removed.

The Harvest Contract has quarterly escalation clauses related to fuel prices and it was a pleasant surprise in September when both cartage and harvesting rates declined in response to lower fuel prices.

Log 36, the hauler crew, has continued to log Dick's Yard in Puketiro without any problems other than those caused by a lack of trucks. This causes the skids to become congested and long delays loading out when trucks finally arrive. Because of off-road distance (19 km) this crew is not popular with the truck drivers who would divert to Longspur (only 8 km) at any excuse. This issue has been taken up with Rayonier and through them with the prime haulage contractor, Rotorua Forest Haulage. The core of the problem arises from a local subcontractor not committing vehicles to the operation and withdrawing them for other work without prior advice. Despite this, Log 36 has had two reasonable months producing 3,670 tonnes in September and 3,363 tonnes in October (excluding 16 loads carried over)

Log 4 completed Maire Creek and commenced harvesting at Hukinga until the weather intervened as indicated above. In September they harvested 260 tonnes from Maire Creek and 650 tonnes from Hukinga. October's production was a further 204 tonnes from Hukinga, with about 10 loads on the skids in block 9.03 unable to be trucked out because of slips on the access road.

Log 6 continued harvesting block 5.03 in Valley View and was fortunate to be able to continue through the wet weather. They have now completed this block and moved to block 2.01. Production for September was 2,550 tonnes and for October 1,897 tonnes.

Production for September is detailed in tables 1 to 4.

Table 1 – Log 4 Pakuratahi East, Maire Creek- Output by Grade

Grade	September 2006	
	Tonnes	%
S Grade		
L Grade	58.92	22.74
R Grade	38.43	14.83
Run of Bush	54.90	21.19
K Sawlog	51.52	19.88
K Rough	8.78	3.39
Dom Rough	0	0
Pulp	46.58	17.98
Export Pulp	0	0
Total	259.13	

Revenue for September was \$4,590.08 at an average of \$8.06 per tonne.

Table 2 – Log 4 Hukinga 2.01- Output by Grade

Grade	September 2006		October 2006	
	Tonnes	%	Tonnes	%
S Grade	292.69	45.27	61.10	29.94
L Grade	112.41	17.39	69.79	34.20
R Grade	87.73	13.57	14.24	6.98
K Sawlog	96.70	14.96	46.88	22.97
K Rough	0	0	0	0
Dom Rough	0	0	0	0
Pulp	57.06	8.82	12.04	5.90
Export Pulp	0	0	0	0
Total	646.59		240.05	

Revenue for September was \$16,971.02 at an average of \$26.25 per tonne

Revenue for October was \$5,161.13 at an average of \$25.29 per tonne

Table 3 –Log 36 - Puketiro- Output by Grade - Dick's Yard

Grade	September 2006		October 2006	
	Tonnes	%	Tonnes	%
Pruned	686.23	18.69	449.01	13.35
Part pruned	140.52	3.83	116.73	3.47
S Grade	1,184.96	32.28	585.73	17.42
L Grade	569.48	15.51	232.54	6.91
R Grade	388.66	10.59	277.14	8.24
K Sawlog	69.45	1.89	615.34	18.30
Roundwood	0	0	0	0
K Rough	305.00	8.31	738.47	21.96
Dom Rough	0	0	0	0
Pulp	169.15	4.61	155.49	4.62
O/S Pulp	0	0	0	0
Export pulp	157.37	4.29	192.48	5.72
Total	3,670.82		3,362.93	

Revenue for September totalled \$116,696.00 at an average of \$31.70 per tonne.

Revenue for October totalled \$91,476.32 at an average of \$25.95 per tonne.

Table 4- Log 6 –Valley View - Output by Grade - Long Spur

Grade	September 2006		October 2006	
	Tonnes	%	Tonnes	%
Pruned			25.31	1.33
S Grade	355.32	13.94	396.81	20.92
L Grade	422.59	16.57	55.70	2.94
R Grade	320.60	12.57	251.27	13.25
K Sawlog	709.68	27.83	589.43	31.08
Roundwood	0	0	0	0
K Rough	398.11	15.61	216.41	11.41
Dom Rough	0	0	99.59	5.25
Pulp	86.34	3.39	235.54	12.42
O/S Pulp	0	0	0	0
Export pulp	257.15	10.09	26.98	1.42
Firewood	0	0	0	0
Total	2,549.79		1,896.64	

Revenue for September was \$71,062.03 at an average of \$27.87 per tonne.
Revenue for October was \$54,759.23 at an average of \$28.89 per tonne.

Total revenue for September - \$209,532 for 7,126.42 tonnes at an average of \$29.36 per tonne
Total revenue for October - \$151,395.87 for 5,463.62 tonnes at an average of \$26.94 per tonne

1.2 Silviculture Contract

During September 10 ha of pruning was completed at a cost of \$4,445, a further 2 ha of thinning carried over from last years at a cost of \$680 and 4 ha of pruning at a cost of \$1,778 in October.

Pruning is currently under way within the safety template for the Kaitoke Rifle Range. Consequently the range is closed on weekdays until the pruning is completed or Christmas Eve.

1.3 Plantation Forestry Operations

There have been ongoing consultants' visits relating to the new water source project but only those involving the upstream Whakatikei site require active co-ordination to avoid conflict with logging trucks. This co-ordination has been made easier with the release of radios from the wind farm tender process.

Although the weather has been unseasonably wet, the only significant issues have been related to access to the Hukinga block.

There was one day when trucks were unable to access Puketiro because of a slippery road surface on the main hill at the entrance to Puketiro. We have been requested by the truck drivers to hydra mow parts of the route where the prolific spring growth has resulted in vegetation reducing vision.

1.4 Forest Access

Maungakotukutuku access remains the only significant problem, with the only access requiring two crossings of the Maungakotukutuku Stream. All main routes are accessible but, with the continuing wet weather, many of the tracks outside the “logging road” network remain impassable. We have commenced some pothole elimination using Correction Department guests and propose to lay more millings as soon as the weather improves. We have planned to grade the main route after the trucks knock off for the year in mid-December.

1.5 Market Trends

Domestic prices are now showing signs of easing in response to the high dollar again forcing pruned prices down to the point where the ongoing supply of this grade will have to be reconsidered.

Despite the strong dollar and fuel prices easing, shipping costs remain in the mid to high \$40s. This is undermining the very good prices being paid for export grades at destination.

2. Reserve Forests

This information is added for completeness. Formal reporting is through the Wairarapa and Rural Services Committee.

2.1 Tauanui Logging

The logging Contractor is now committed to working on rates that reflect variation in fuel prices since that Contract was agreed. As a result, a further 1,300 tonnes were harvested during October for a year to date total of 5,200 tonnes.

Despite wet conditions, we are on target for the year’s production and are netting in excess of \$30.00 per tonne.

A second logging Contractor is now on-site with a small hauler (Ecologger) and will be harvesting some of the steeper settings and boosting production over the next few months.

2.2 Silviculture

Steady progress, with pruning and thinning of the second rotation stands in Hiwinui is being achieved. Totals of 17 ha of pruning and 11 ha of thinning were completed in October. The rate of completion is anticipated to accelerate now that winter is over and new Contractors are in the process of being engaged.

A very successful trial of thinning heavy regeneration in Tauanui, with scrub saws showed positive results at a reasonable cost.

Good form of the second rotation stands, along with high stocking, is limiting branch size so that, as long as timing of treatment is managed carefully, high quality timber will be produced.

2.3 Staff Training

A one day National Rural Fire Authority training course for Safety Advisor at Vegetation Fires was successfully completed.

Table 5- Tauanui - Output by Grade

Grade	September 2006		October 2006	
	Tonnes	%	Tonnes	%
S Grade	403.68	47.05	714.09	53.68
A Grade	118.01	13.75	146.98	11.04
FGrade	142.76	16.64	199.43	14.99
Postwood	29.43	3.43	29.66	2.23
K Sawlog	110.92	12.93	137.52	10.34
Dom Rough	53.16	6.20	102.65	7.72
K Rough	0	0	0	0
Pulp	0	0	0	0
Export Pulp	0	0	0	0
Total	857.96		1,330.33	

Revenue for September was \$23,872.51 at an average of \$27.50 per tonne.

Revenue for October was \$38,571.48 at an average of \$28.60 per tonne.