
Water Supply

November/December 2000

Operations Group
November/December 2000

Operations Group Review of Operations for the Period Ended 31 December 2000

1. Items of Note

- It is pleasing to note that even though there has been an increase in the work activities for the Network Section the section has continued to meet the requirements of the Water Service Agreement with Wellington City.
- The optimiser continues to produce accurate demand predictions for Waterloo and Wainuiomata Water Treatment Plants, enabling a more efficient and cost effective operation. In addition, the completion of the modifications to the Wainuiomata control software has resulted in a far more reliable operation.

2. Water Quality

A total of 759 samples from trunk mains were tested for coliform organisms. None of these samples tested positive.

A total of 272 samples of treated water from treatment plants were tested for faecal coliforms. None of these samples tested positive.

Secchi disc water clarity in the Te Marua north lake varied between 4.2 m and 8.1 m, and in the south lake between 3.4 m and 6.3 m. These are considered satisfactory. The dominant phytoplankton were as follows:

- North Lake: *Oscillatoria*, *Asterionella*, *Cosmarium*
- South Lake: *Staurastrum*, *Cosmarium* and *Peridium*

Oscillatoria is a filter clogging algae when present in high concentrations. *Asterionella* and *Peridium* produce fishy odours. *Synedra* produces a musty smell and slick tongue sensation when abundant. *Cosmarium* and *Staurastrum* produces a grassy smell when abundant.

Dissolved oxygen (9.1 mg/L-11.7 mg/L) is satisfactory. pH values are satisfactory (7.2-8.1).

Giardia and *Cryptosporidium* results were as follows:

Te Marua

- Lakes) No *Giardia*
-) No *Cryptosporidium*

Intake) Low *Giardia*
) Low *Cryptosporidium*

Treated Water) No *Giardia*
) No *Cryptosporidium*

Wainuiomata

Treated Water) No *Giardia*
) No *Cryptosporidium*

Lower George Creek and) Low *Giardia*
George Creek south arm) Low *Cryptosporidium*
combined)

Orongorongo and Big Huia) Low *Giardia*
Intake combined) Low *Cryptosporidium*

Wainuiomata intake) Low *Giardia*
) Low *Cryptosporidium*

Guidelines Criteria

0-10 oocysts = low
10-50 oocysts = medium
>50 oocysts = high

3. Supply Situation

The two monthly seasonal forecast for December 2000 and January 2001 issued by the Meteorological Service is as follows:

Situation as at 10 December

For Wellington:

Rain: Above normal
Wind: Fewer southerlies
Temperature: Returning to normal after a cool November
Sunshine: Above average
Specials: More wet days than normal
Confidence: Low to moderate

Fronts arriving from the Tasman Sea are expected to get weaker and further apart as summer kicks in. However we also expect some of these fronts to stall over your region, bringing several days of mostly gentle rain. This is why we are going for above normal rainfall. We are also expecting anticyclones to cross

central or southern New Zealand, bringing extended periods of dry weather good for haymaking.

The two monthly seasonal forecast and January and February 2001 issued by the Meteorological Service is as follows:

Situation as at 10 January

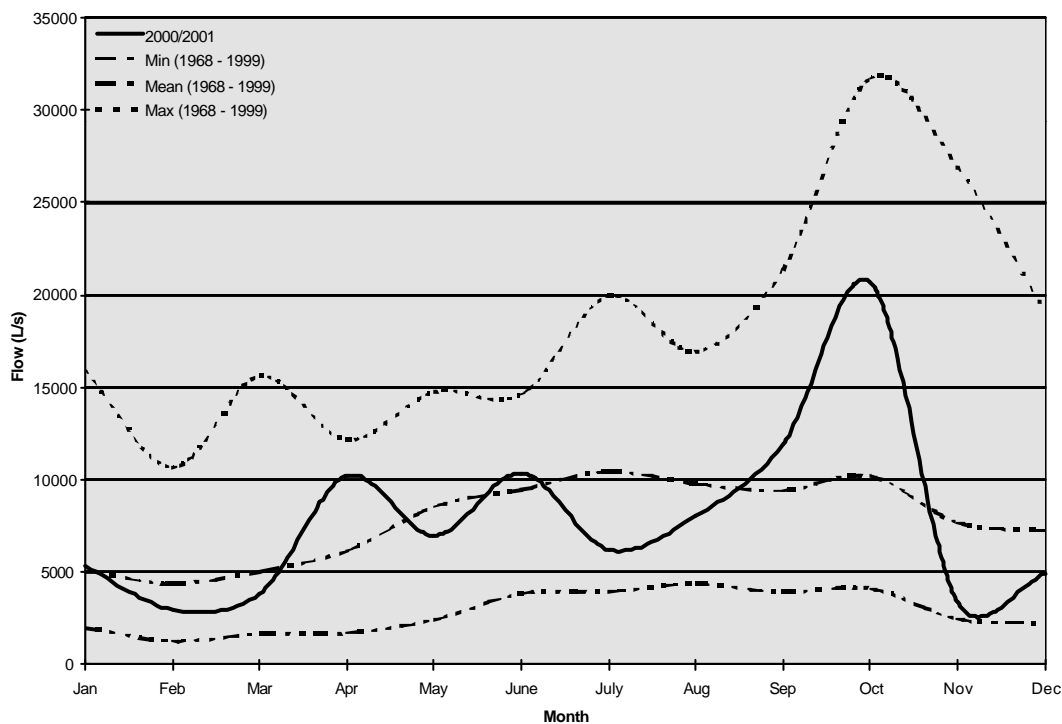
For Wellington:

- Rain:** About normal
- Wind:** Becoming less than normal
- Temperature:** Around normal
- Sunshine:** About average
- Confidence:** Low to moderate

We are expecting extended periods of dry weather and light winds as high pressure systems in the Tasman Sea extend across central New Zealand. Between high pressure systems there may be a few days with heavy afternoon showers. Fronts arriving from the Tasman Sea are expected to be weak and far between.

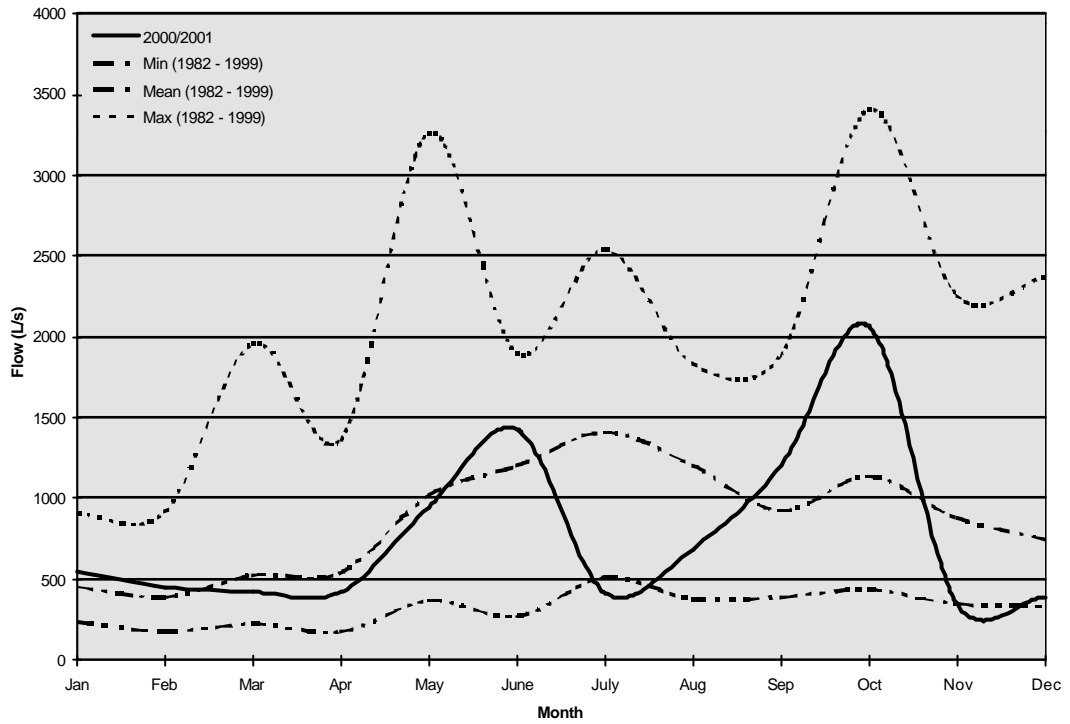
Hutt River Flows

The mean monthly river flow during both November and December was below average.



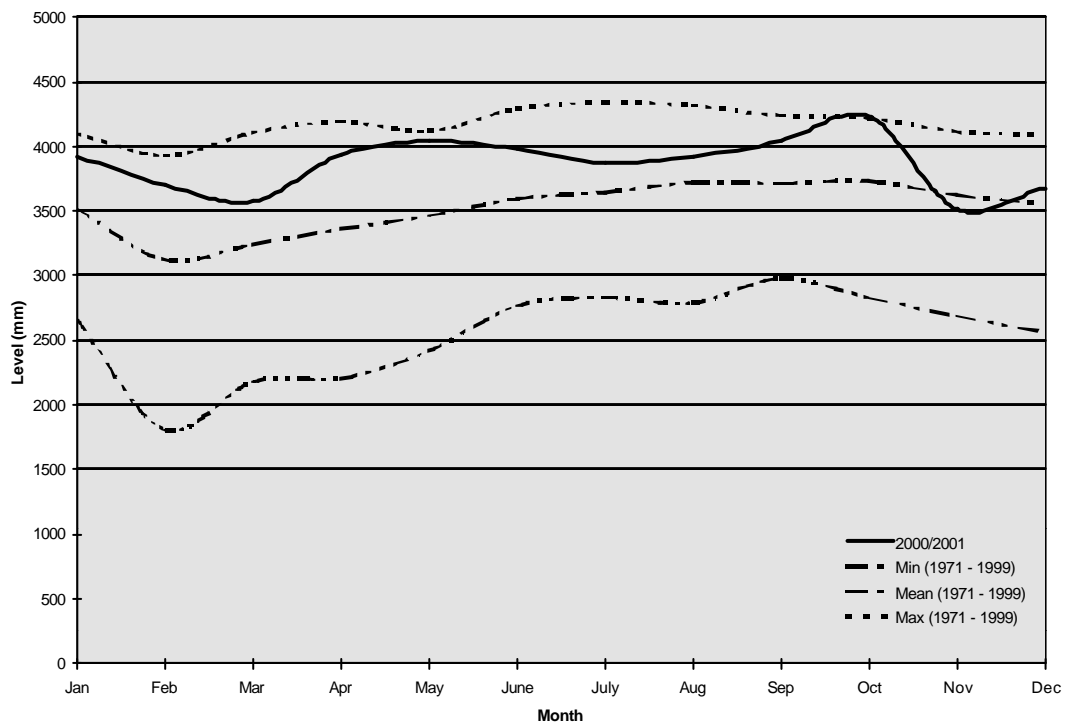
Wainuiomata River Flows

Flow in the Wainuiomata River in both November and December was well below average.



Aquifer Levels

The water aquifer level in the Waiwhetu aquifer was about average during November and above average during December.



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

13 November: In accordance with the new criteria that satisfies both the Ministry of Health and Consents Department, supernatant liquid was returned to the front of the plant for the first time in over a year.

4.1.4 Projects

- Capital Works

- ◆ The Big Huia handrails and walkway have been replaced.
- ◆ The Orongorongo road has been regraded.
- ◆ The second hydro generator has been replaced and both installations are now working satisfactorily.

- Operational Projects

- ◆ The plant control system software changes have been completed.
- ◆ Chemicals from different suppliers were trialled as part of the chemical tender process.

4.1.5 Plant Tours

15 December: For the first time the Utility Services Division barbecue and sporting events were held at Wainuiomata. It was an extremely successful afternoon.

4.1.6 General

- For the last two months we have been running Wainuiomata Water Treatment Plant at the maximum flows allowable. It has been an unusual summer so far, with the bulk of the water coming from the Orongorongo

scheme. There have been a few flash floods where the river has become untreatable. Within 24 hours the river levels are below where they were before the rain.

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

14 December: A telemetry remote was installed at Naenae Reservoir to improve system security and reliability.

4.2.4 Plant Tours

There were no tours during this two month period.

4.2.5 Projects

➤ Capital Works

- ◆ The standby PLC has been delivered. It is hoped to install this during March/April. Enough parts are now held on-site to replace the PLC should a major failure occur.
- ◆ Modifications to the fluoride plant are progressing.

➤ Operational Projects

- ◆ A report is awaited from Beca Consultants Ltd on the DOL pump starter options.
- ◆ The Hautana Street well pump control panel has been replaced.
- ◆ The last control panel (Willoughby Street fixed speed) has been built. It is not planned to take the well pump out of service until demand drops off significantly.

4.2.5 General

- There have been no problems. The plant often runs at its maximum of 115 MLD for a number of hours a day.

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 items to report on.

4.3.4 Plant Tours

There were no tours during this two month period.

4.3.5 Projects

➤ Capital Works

- ◆ The drawings for the wellfield control cabinet have been issued. Materials have been priced.
- ◆ The gas chlorine plant building design has now been given to Beca Consultants Ltd.
- ◆ The new fluoride room has now been given to contractors to fit out.

➤ Operational Projects

- ◆ Orders have been placed for the gas chlorination equipment.

4.3.6 General

- The fortnightly runs of the plant to keep the wellfield turning over have been increased to weekly as the raw water quality was nearly outside the New Zealand Drinking-Water Standards.

4.4 Te Marua

4.4.1 Quality

- There are no quality transgressions to report.

4.4.2 Safety

There are no accidents or incidents to report.

4.4.3 Operations

Date	Problem	Cause
12 November 2000	Faulty intruder alarm in chlorine building	Faulty monitoring circuit
23 November 2000	High treated water pH alarm	Sudden flow change through plant
27 November 2000	High treated water turbidity alarm causing slam-shut	Process problems resulting in poor filter performance
30 November 2000	High treated water pH alarm	Process modulation in caustic control system
6 December 2000	Low treated water pH alarm	Blockage in caustic dosing line
7 December 2000	Filter No. 4 sequence fault	North air scour valve failed to close within allotted time
15 December 2000	High treated water colour alarm	Faulty instrument giving incorrect reading
20 December 2000	High treated pH alarm	Process modulation in caustic control system
23 December 2000	Streaming current detector alarm	Blockage in CO ₂ pump

4.4.4 Plant Tours

22 November: St Joesph's School, Levin (58)

11 December: Wellington Regional Council induction tour (17)

4.4.5 General

➤ Drinking-Water Standards 2001

Work has begun modifying filter operation to enable compliance with the new Drinking-Water Standards that take effect from 1 January 2001.

➤ Lake Valves

The new automated system for controlling lake inlet and outlet valves is under way. This system will allow lake valves to operate reliably in emergency situations when services may be disrupted.

➤ Lake Storage

With high demand time quickly approaching, all efforts are being made to maintain maximum lake storage.

5. Distribution

5.1 Health and Safety

There were two accidents during the month (a tooth chipped when a spanner hit a worker's mouth and a foreign body in the eye of another worker).

5.2 Pipeline Section

5.2.1 Earthquake Couplings

Two earthquake couplings were installed into the Rahui branch line on the Hutt Estuary Bridge.

5.2.2 Maintenance

- Maintenance was carried out on the 525 mm/375 mm Waterloo to Gracefield scour tailpipes and spindles.
- Work was carried out on redundant and leaking valves on the Rahui branch line at Gear Island.
- A new scour valve/non-return valve and tailpipe was installed from the Wainuiomata No. 2 branch into the new stormwater main.
- Maintenance was carried out on the Sar Street branch/Onslow Reservoir/Ngaio Reservoir/Karori Pumping Station/Aro Street (tunnel).
- Meter readings on private supplies were taken.
- A scour valve exercise schedule for the Hutt main was carried out.
- Orifice plates, meters, dall tubes, etc., were removed from the Timberlea, Cruickshank, Trentham, Kingsley and Manor Park branch lines (as a result of electromagnetic flow meter installations in 1999/2000).

5.2.2 Chaytor Street/Waiapu Road

- A new 250 mm cross connection valve was installed from the Te Marua to Karori 750 mm pipeline into the OK main.

5.2.3 Timberlea Branch Line

- The control valve was relocated from the pumping station up to the reservoir.

5.2.4 Locations/Supervision

Locations and supervision for contractors were provided for the following:

- Seaview Roundabout
- Thorndon to Kaiwharawhara cable laying

- OK main - Thorndon to Karori relining contract
- Whites Line East (750n mm pipeline - cable laying)

5.3 Electrical Section

5.3.1 Timberlea

- The telemetry unit and control valve were moved from the pumping station to the reservoir TDI hut.

5.3.2 Thorndon Pumping Station

- The second pressure reducing valve at Thorndon :Pumping Station has been overhauled and returned to service.

5.3.3 Karori Pumping Station

- New bearings were fitted to the Kelburn pump and the coupling was maintained.

5.3.4 Maldive Regional Reservoir

- The valve controlling the inlet flow to the regional reservoir was automated and put on telemetry control.

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

➤ Production

There are no accidents or injuries to report.

➤ Distribution

There were two accidents during the month (a tooth chipped when a spanner hit a worker's mouth and a foreign body in the eye of another worker).

➤ Network

There were four accidents during the month (pulled/stressed back while using cobra, toe run over by trailer, back put out while removing breaker and a cut knee following fall).

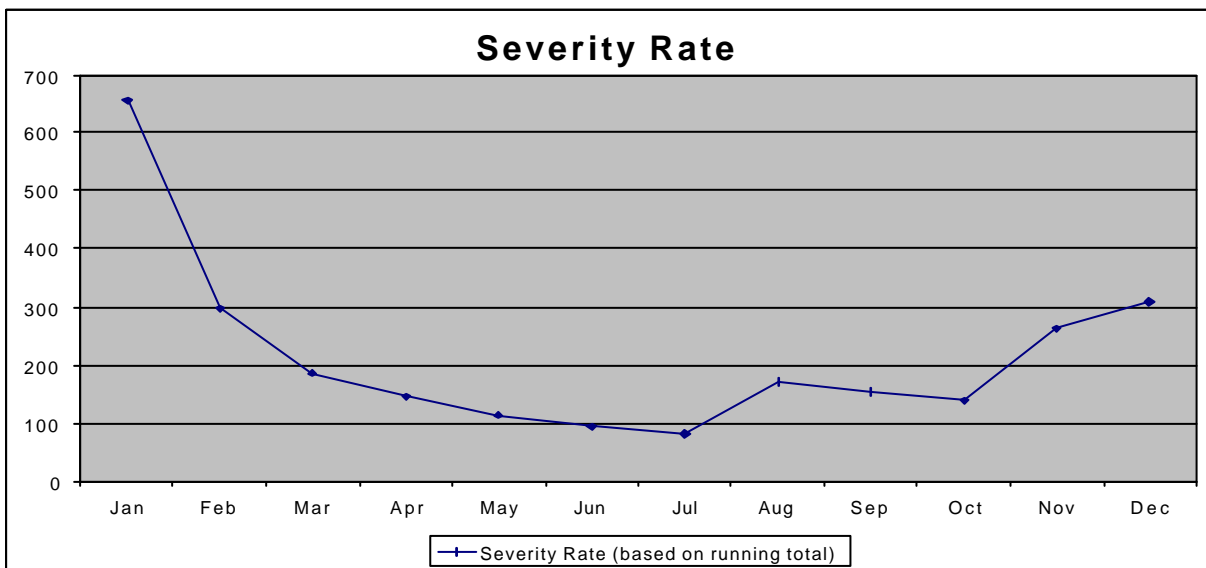
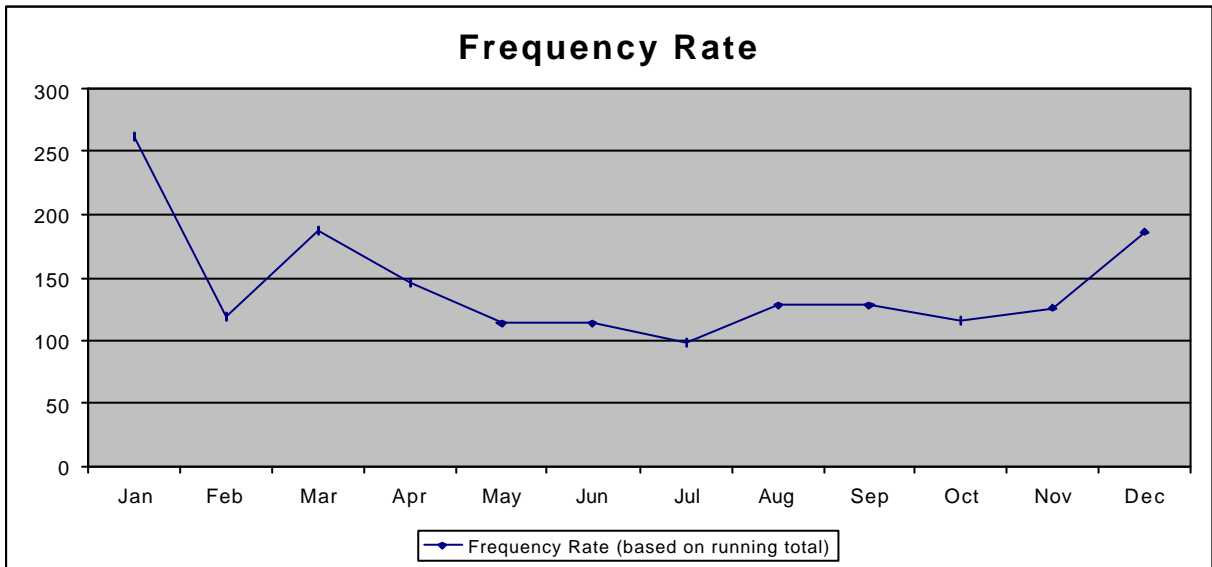
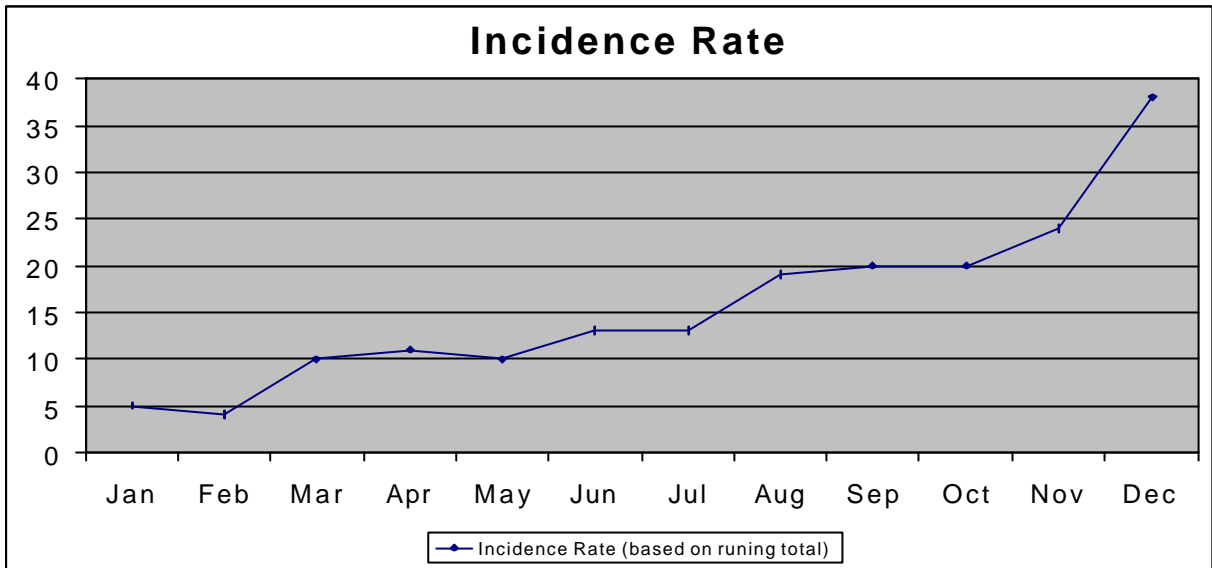
During the recent audit of divisional health and safety it was suggested that the practice of displaying health and safety statistics on a departmental basis was meaningless, as there are so few people in each department.

It is intended to amalgamate returns for all Utility Service departments and utilise the internationally accepted reporting system for the whole division.

This will display the following information:

Incident Rate = number of injuries per employee x 100
Frequency Rate = number of injuries per person hours worked x 1,000,000
Severity Rate = number of days lost per person hours worked x 1,000,000

In the meantime the attached table and charts display the relevant data for the Operations Group.



Operations Network Review of Operations for the Period Ended 31 December 2000

1. Items of Note

- During November the volume of work increased, with the result that 898 work activities were completed. During December the volume of work decreased, as expected, with the result that 682 work activities were completed.
- In addition, nine main bursts were attended to during November and 12 during December. All were attended to and repaired within the desired timeframes.

2. Water Quality

2.1 Routine Testing (A1)

The water quality was monitored and the appropriate laboratory tests were completed for November and December. There were 146 samples from the reticulation system tested for bacteriological compliance during November and 136 samples in December.

Compliance for both months is 100 percent. Compliance for the year to date is 99.86 percent.

2.2 Water Tests Initiated by Customers (A2)

	November	December	Year to Date	Compliance Year to Date (%)
Number received	10	4	40	-
Within ability of Operations Network to control	-	1	17	-
Formal response within five days	10	3	39	95%

3. Customer Services

3.1 Counter and Other Office Services (E)

Information has been provided to customers requesting information by letter, telephone and over the public counter.

A breakdown of enquiries received during the reporting period is as follows:

	November	December

Counter enquiries	95 + 15 encroachments	81 + 14 encroachments
Proposals from other utilities	7	7
Plan records : New services recorded	16	7
Response time requirement compliance	100%	100%

3.2 Performance Standards (G)

November				
	Expected Compliance	Number of Activities	Completed to Standard	Compliance Achieved
Miscellaneous				
A Quality complaints (samples)	85-95%	11	11	100%
A System Flushing (M1.4)	85-95%	159	159	100%
B Pressure and flow	85-95%	13	13	100%
B Loss of Supply (M1.5)	85-95%	16	16	100%
C Planned Shutdowns	95%	27	26	96%
C Unplanned Shutdowns	95%	46	46	100%
D Mark-outs	90-95%	38	38	100%
G Workmanship (joint audit results for October 2000)	90-95%	61	60	98%
O Meter Reading	100%	<i>Achieved</i>	<i>Achieved</i>	<i>Achieved</i>
Significant Leaks (M1.2 or o/e)				
H Burst Mains (includes 3 O&E)	85-95%	9	9	100%
H Other	85-95%	-	-	-
Non-significant Leaks				
H Mains (M1.2) : includes 6 O&E	85-95%	19	19	100%
H Valves (M1.3)	85-95%	55	53	96%
H Hydrants (M1.4)	85-95%	66	63	95%
H Domestic Services (M1.5) : includes 2 O&E	85-95%	152	148	97%
H Stopcocks (M1.6)	85-95%	399	394	98%
H Water Meters (M2.1)	85-95%	34	34	100%
L Damages (Variation)	85-95%	28	27	96%

December				
	Expected Compliance	Number of Activities	Completed to Standard	Compliance Achieved
Miscellaneous				
A Quality complaints (samples)	85-95%	4	4	100%
A System Flushing (M1.4)	85-95%	63	63	100%
B Pressure and flow	85-95%	18	18	100%
B Loss of Supply (M1.5)	85-95%	20	20	100%
C Planned Shutdowns	95%	17	16	94%
C Unplanned Shutdowns	95%	24	24	100%
D Mark-outs	90-95%	31	31	100%
G Workmanship (joint audit results for November 2000)	90-95%	63	60	95%
O Meter Reading	100%	<i>Achieved</i>	<i>Achieved</i>	<i>Achieved</i>

December				
	Expected Compliance	Number of Activities	Completed to Standard	Compliance Achieved
Significant Leaks (M1.2 or o/e)				
H Burst Mains (includes 10 O&E)	85-95%	12	12	100%
H Other	85-95%	-	-	-
Non-significant Leaks				
H Mains (M1.2) (includes 0 O&E)	85-95%	24	24	100%
H Valves (M1.3)	85-95%	32	31	96%
H Hydrants (M1.4)	85-95%	63	63	100%
H Domestic Services (M1.5) : includes 0 O&E	85-95%	142	139	98%
H Stopcocks (M1.6)	85-95%	327	326	99%
H Water Meters (M2.1)	85-95%	9	9	100%
L Damages (Variation)	85-95%	20	20	100%

Locates and Investigations (Wellington Regional Council Internal Target of Three Working Days)

	November 2000		December 2000	
Locate stopcocks	83/84	98%	63/66	95%
Leak locations	122/125	97%	89/97	92%
Flow tests	16/16	100%	16/16	100%
Seepage/investigations	-	-	3/3	100%

Failures

	Jobs Failed by 1-24 Hours		Jobs Failed by 1-5 Working Days		Jobs Failed >5 Working Days	
	November	December	November	December	November	December
Burst mains						
Stopcocks			4		1	1
Hydrants			2		1	
Valves			1	1	1	
Mains						
Domestic services	1		3	2		1
Water meters						
Damages	1	1				
Quality complaints						
System flushing						
Pressure and flow						
Loss of supply						
Mark-outs						
Workmanship						

Additional Work Carried Out

	November	December
New services	21	25
Variations (exclusive of burst mains)	7	2

Service renewals	2	3
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Burst Mains

There was a total of nine burst mains during November and 12 during December 2000. These were as follows:

226 Oriental Parade	4 November 2000
60B Oriental Parade	5 November 2000
1 Lincoln Avenue (1 st burst)	15 November 2000
1 Lincoln Avenue (2 nd burst)	15 November 2000
1 Lincoln Avenue (3 rd burst)	17 November 2000
12 Malvern Road	18 November 2000
Cnr Taranaki and Abel Smith Streets	23 November 2000
Cnr Darwin and Ranelagh Streets	27 November 2000
15 Pembroke Road	27 November 2000
Cnr Vivian Street (Dick Smith), Te Aro	2 December 2000
Cnr Abel Smith and Taranaki Streets	7 December 2000
Cuba Street (Michael Fowler Centre)	16 December 2000
9 Heparu Street	16 December 2000
73 (opposite) Broderick Road	17 December 2000
33 Torrens Terrace, Te Aro	20 December 2000
121 Nicholson Road	24 December 2000
8 Rawson Street	25 December 2000
8 Bedford Street	23 December 2000
9 Disraeli Street	29 December 2000
42 Rintoul Street	31 December 2000
3 Nathan Street	31 December 2000

All burst mains were attended to within 30 minutes and repaired within eight hours.

Overs and Extras

60b Frobisher Street	Burst main
1 Lincoln Avenue	Burst main
1 Lincoln Avenue	Burst main
1 Lincoln Avenue	Burst main
12 Malvern Road	Burst main
Cnr Darwin and Ranelagh Streets	Burst main
15 Pembroke Road	Burst main
18 Darwin Street	Major repair to rider mains
Cnr Taranaki and Abel Smith Streets	Burst main
10 Darwin Street	Major repair to rider mains
226 Oriental Parade	Burst main
Vivian Street (Dick Smith), Te Aro	Burst main
Cnr Abel Smith and Taranaki Streets	Burst main
Cuba Street (Michael Fowler Centre)	Burst main
73 (opposite) Broderick Road	Burst main
33 Torrens Terrace, Te Aro	Burst main

121 Nicholson Road	Burst main
8 Rawson Street	Burst main
8 Bedford Street	Burst main
9 Disraeli Street	Blow service off main
3 Nathan Street	Burst main

4. Health and Safety

There was one minor incident reported during November. A staff member slipped whilst checking a toby and fell on his wrist. His wrist has been fractured and is now in a cast.

There were six minor incidents reported during December. Two of the incidents resulted in staff being away on accident compensation. One is still absent.

5. Meters

A total of 1,509 suburb and high use meters were read and entered into the system by 23 November 2000.

A total of 1,443 city and high use meters read and entered into the system by 23 December 2000.

6. Pumping Stations, Reservoirs and System Control

6.1 General

Normal routine maintenance has resulted in the Wellington City system operating satisfactorily.

6.2 Control System

The control system continues to operate satisfactorily, although there were a few communications failures. A faulty RTU at Epuni Pumping Station was replaced.

6.3 Thorndon Pumping Station

The overhaul of the second pressure reducing valve has been completed.

6.4 Newlands Outlet Electromagnetic Flow Meter

The electromagnetic flow meter on the outlet of the Newlands Reservoir was repaired and returned to service.

6.5 Epuni Street Pumping Station

The No. 3 pump at Epuni Street Pumping Station was removed, delivered to a contractor for overhaul and a budget price obtained for the repairs. It has now

been overhauled, reinstalled and returned to service.

6.6 Pump Maintenance

The overhaul of the No. 1 pump at Greyfriars Pumping Station has been completed.

6.7 Satara Street Pumping Station

The motor on the No. 1 pumpset at the Satara Street Pumping Station was overhauled and returned to service.

6.8 Sidlaw Street Pressure Sustaining Tank

An investigation into the operation of the tank is continuing.

6.7 Maintenance Checks

Maintenance was carried out in November and December as follows:

November	
Round A	Round B
Rajkot Terrace Nassau Avenue Mark Avenue Chapman Street Burnside Road Ruskin Road	Huntington Street Warwick Street Hay Street Epuni Street Mapuia Street/Mt Crawford Sar Street
Broadmeadows High PS Satara Street Kitchener Terrace Davies Rd CV Birch Street CV Ohariu CV Glover Street CV Ironsides CV	Alexander Road Redwood Greyfriars Road Bell Road CV Prince of Wales CV Vasanta CV

December	
Round E	Round F
Johnsonville Pumping Station Ngauranga Reservoir/Pumping Station Kaiwharawhara Pumping Station Thorndon Pumping Station Karori Reservoir/Pumping Station Macalister Park Reservoir Churton Park CV Maldive Reg./Abb. CV Tawa Linden	Randwick Pumping Station Tunnel Grove Chamber Rocky Point Chamber Korokoro Valve Chamber Wainuiomata Pumping Station Moores Valley Pumping Station Mabey Road Generator Naenae Reservoir Gracefield Reservoir Rahui Reservoir

7. Development

7.1 Development Statistics (F2)

Subdivisions	November	December	Year to Date
Construction plans approved (lots/units)	1	21	104

Scheme plans approved	44	27	220
Subdivisions cleared (lots/units)	28	74	401
Total subdivisions processed	83	122	
Response time compliance	99%	97%	

7.2 Development Projects

7.2.1 Churton North Reservoir

As-built plans were received and a first inspection by an overseer, electrical technician, and engineer carried out. The reservoir was declared effectively commissioned and Wellington City Council advised. Completion of minor items is outstanding.

7.2.2 Westchester Drive Pumping Station and Rising Main

Some minor maintenance items are outstanding.

7.2.3 Subdivisions General Items

- Nothing has been heard from Wellington City Council regarding their conditions of subdivision review.
- Wellington City Council Hearings Committee meeting. A Wellington City Council Hearings Committee meeting was held to decide on conditions of subdivision for a 24 lot rural-residential subdivision off Takapu Road. At the hearing, after hearing Wellington Regional Council evidence, the subdivider withdrew their objection to the normal 25 m head minimum water pressure requirements at the point of supply.
- Avoka Trust Subdivision, Rangiora Avenue. An estimate was calculated for a 150 mm connection from the 525 mm cast iron main in Hutt Road. It was decided that an underpressure tapping by an Auckland contractor as the best option.

Payment was received on 15 December. (Note that the connection was completed on 4 January 2001).

7.2.4 Construction and As-built Plans

7.2.4.1 Construction Plans

Construction plans were considered for approval of the following subdivisions:

- Rangiora Avenue, Kaiwharawhara (11 lots). Approved 17 November 2000. A deposit was received from the subdivider on 7 November 2000, for estimating the cost of the proposed 150 mm connection to the 525 mm cast iron main in Hutt Rd. A lot of time has been spent on this, and it has progressed well. We are now moving into the detailed design of the connection.

- CAS Subdivision, Greta Point (91 units). Amended plans were received on 21 December and are currently under consideration.
- 487 Ohiro Road, Brooklyn (3 lots). Amended plans were received on 15 December and are currently under consideration.
- 83-87 Hill Street, Thorndon (Hill Street Mews, 11 lots). These plans were received on 19 December and are currently under consideration.
- Woodridge, Stage 8 (21 lots). Approved 15 December.

7.2.4.2 As-built Plans

As-built plans were considered for approval of the following subdivisions:

- Connection to Linden Reservoir outlet main. Approved 3 November.
- 252 Ohiro Road, Brooklyn (6 lots). Approved 22 November.
- 8 Atamira Close, Churton Park (6 lots). Subdivision cleared 21 December.
- 11 Duncan Street, Tawa (Stage 1, 3 lots). Stage 1 cleared 20 December.
- Lots 1, 60 and 65, Woodman Drive, Tawa (3 lots). Plans were received on 15 December and are currently under consideration.
- 29-37 Madras Street, Khandallah (9 lots). Subdivision cleared 4 December.
- 50 Kilbirnie Crescent (8 units). Subdivision cleared 6 December. A bond of \$843.75 was agreed to for as-built plans. This main is to be private.
- de Bes Subdivision, Beacon Hill (5 lots). As-built plans for the private main were previously cleared. The subdivision was finally cleared on 18 December after Logen Logeswaran advised that the Water Supply Annexure Schedule in the land transfer document was satisfactory.

7.2.5 Fire Services Recently Connected

There were no new fire services installed during November or December.

7.2.6 New Commercial Metered Services

The following new metered services were connected during November and December:

- Bunny Street Pie Car (20 mm)
- 106 Taranaki Street (20 mm)
- Bowen Street public toilets (20 mm)

7.3 Building Development Appraisals (F1)

	November		December	
	Commercial	Domestic	Commercial	Domestic
Building consents	4	45	7	25
PIMS applications	4	49	9	25
Compliance with response time requirement	100%	100%	100%	100%

7.4 Land Information Memorandum (F1)

	November	December
Applications processed	41	25
Compliance with response time requirement	100%	100%

8. Capital Works

8.1 Main Laying

8.1.1 Contracts in Maintenance Period

The following pipelaying contracts are in the maintenance period:

- Manners Street
- Cuba Street
- Bell Road Zone Improvements
- Karori South and Allington Road Zones Amalgamation

The maintenance period for the Rider Main Renewals, Owhiro Bay Parade and Helston Road Contracts have expired. The Contractors have been instructed to rectify some road surface defects before the maintenance retentions are released.

The maintenance retentions for Makara Road Rising Main and Fox Street have been released.

8.1.2 Taranaki Street

The Contract for the replacement of the 150 mm cast iron and 150 mm asbestos cement mains in Taranaki Street is progressing satisfactorily. The Contractor has installed the pipe from Manners Street to Martin Square. The Contractor stopped work for the Christmas period and is expected to restart mid-January 2001.

8.1.3 Percival Street

The Contract for the replacement of the 100 mm and 75 mm cast iron mains, and

40 mm galvanised main in Upper Dixon Street, Percival Street and Allenby Terrace is progressing satisfactorily. Approximately 50 percent of the pipeline is installed.

8.1.4 Oriental Terrace

The Contract to replace the existing 200 mm asbestos cement pipe in Oriental Terrace is out for tender. Tenders close on 23 January 2001. Work on-site is expected to start in February 2001.

8.1.5 Tirangi Road and Lyall Parade

The Contract documents for the replacement of the existing 200 mm and 150 mm asbestos cement pipes in Tirangi Road and Lyall Parade have been completed and given to Wellington City Council for approval.

8.2 Reservoirs

8.2.1 Wadestown Reservoir Replacement

The Contractor, McKee Fehl Ltd, has started on-site. The bulk earthworks for the reservoir have been completed. Preparations are being made for the foundations and pipework. Draft Contract Documents have been prepared for the scour/overflow pipeline for the reservoir.

8.2.2 Grenada North High Level Reservoir

The Contractor, Juno Civil Ltd, has started on-site. The access road has been formed and the bulk earthworks completed. Approximately 80 percent of the inlet and outlet pipework has been installed.

8.2.3 Kelburn Reservoir Replacement

Investigations are about to start to replace the two Kelburn Reservoirs. The existing reservoirs have insufficient capacity and do not comply with current building standards.

8.2.4 Eastern Suburbs Reservoir

A proposal for confirming the proposed site of this reservoir was presented to Wellington City Council.

8.2.5 Southern Suburbs Reservoir

A proposal for further investigations into the site of this proposed reservoir was presented to Wellington City Council.

Strategy and Asset Group
November/December 2000

Strategy and Asset Group Review of Operations for the Period Ended 31 December 2000

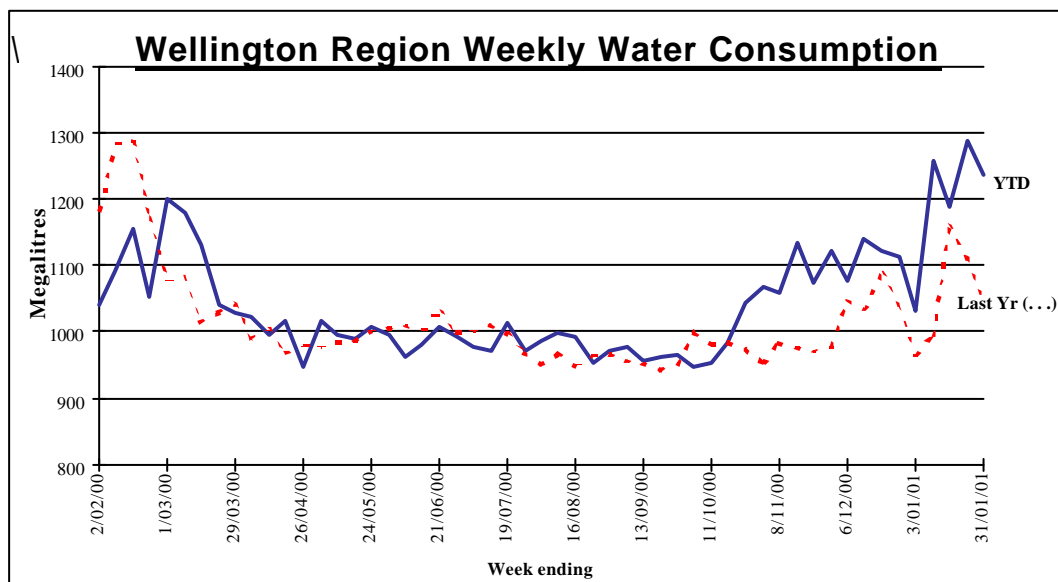
1. Items of Note

- Water integration issues have been the prime area of focus over the period.
- Agreement has been reached with the Hutt City Council for it to use the Wainuiomata Tunnel for a sewer pipe. This replaces an earlier agreement for the inferior Waiwhetu Tunnel. A separate report to the Committee outlines the details.
- An approach has come from a communications provider to use The Water Group's communication duct between Wellington and the Hutt Valley. Discussions are at a preliminary stage. This is an illustration of the growing convergence of various utility providers.
- Professional animal culling in the Wainuiomata and Orongorongo Catchments has shown good results. Further work is to be carried out in February.
- The Ministry of Health has published draft public health risk management plans for water supply. Public consultation concludes at the end of February 2001. In due course regulations are proposed requiring the plans. The draft plans are in a technical format and prescriptive. A response will be made to the Ministry.

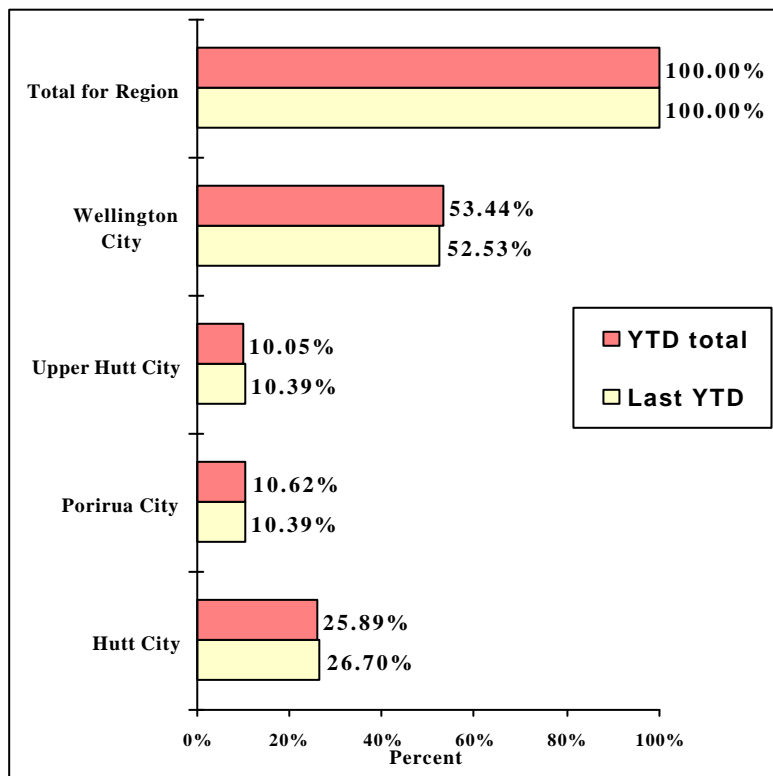
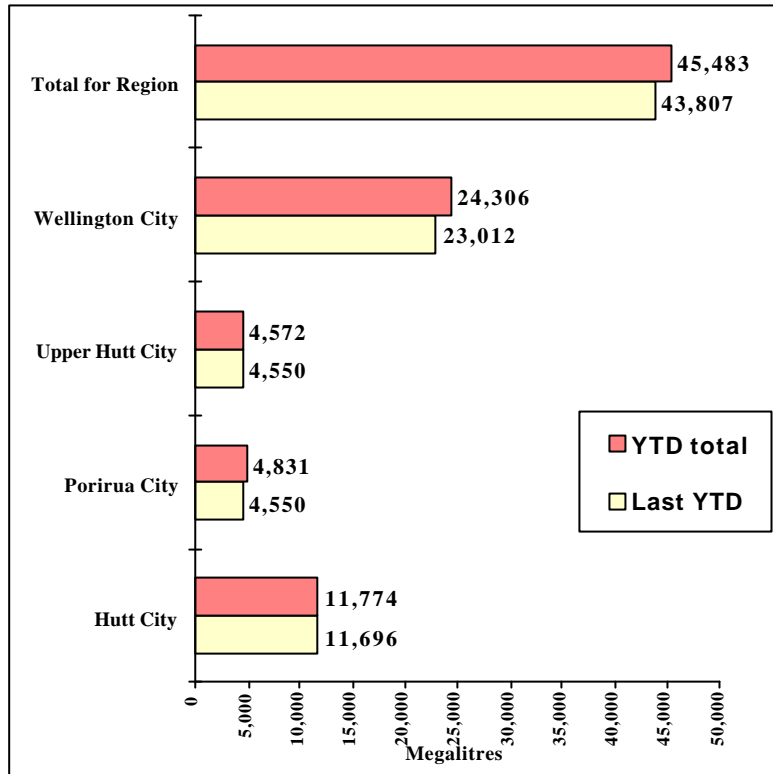
2. Sales Volume

Water Sold Over the Last 12 Months

Charts outlining sales volumes are shown on pages 28 and 29. Volumes have risen at the end of October/early November as a result of only minor rainfall compared with the previous year.



Water Sold from 1 April to 31 January 3001



3. Asset Management

- Production of financial report templates that will extract financial information from the Hansen AMS has been delayed by restructuring of the program support company in Melbourne. In the meantime, the Finance Division is using estimates of depreciation for the monthly financial reports.
- A review of the June 1998 Asset Management Plan has been commenced but no significant changes will be made until the 2001/2 year.
- At 31 December the forecast expenditure on capital works is \$3.765 million, including two proposed new projects at Waterloo Water Treatment Plant reported elsewhere. The approved budget is \$4.047 million. Refurbishment of the Orongorongo/Karori main between Thorndon and Karori is well advanced, installation of the new fluoridation equipment at Gear Island is on programme and work on developing a computer model of the distribution network is about to commence. Progress on the new branch main to the Plateau Reservoir has been slowed by technical problems.
- Survey work and subdivision plans for Karori Reservoir land have been completed and submitted to the Wellington City Council for subdivision approval. Wholesale water mains under land to be transferred to Wellington City Council will be protected by easements.
- IBM Ltd has objected to our application for a resource consent to take water from the Moera aquifer during peak demand times. Their objection raises complex technical and legal issues.
- A three way agreement to investigate the reasons for a reduction in the quality of the Hutt River fishery involving Fish and Game New Zealand, the Resource Investigations Department and Utility Services Division has been finalised. Consents Department staff members are now drafting conditions for the resource consents based on discussions with the objectors. It is expected that the new consents will be issued well before the expiry of the existing use rights on 1 October 2001.
- An application has been lodged with Consents Department staff to delay indefinitely the pump test of the Waiwhetu aquifer. The cost of this test is very high and the additional water it might make available is not currently required.
- Professional hunters recently completed a very successful cull in the Wainuiomata and Orongorongo Catchments. They shot 101 goats, 15 deer and 24 pigs. Another cull is planned in February.

4. Quality Assurance

- Statistical analyses of turbidity readings to demonstrate compliance with

the Drinking-Water Standards for New Zealand rule that requires turbidity to be less than 0.5 NTU for 95 percent of the time have been carried out. The results for November and December are set out below. The percentage of the time turbidity is less than 0.1 NTU has also been calculated.

Percentage Compliance Plant	Turbidity < 0.5 NTU		Turbidity < 0.1 NTU	
	November	December	November	December
Te Marua	100%	100%	99.82%	100%
Wainuiomata	99.99%	100%	99.0%	99.16%

The >0.2 NTU change within 10 minutes rule has been tested for both plants. This rule identifies “spikes” in the turbidity results, which have the potential to carry protozoa into the treated water. The results are as follows:

No. of Exceedances	November	December
Te Marua	0	0
Wainuiomata	2	0

These rules are intended to reduce the risk of *Giardia* and *Cryptosporidium* passing through the plant. The plants incorporate “slam shut” valves so that any water that does not comply with the Drinking-Water Standards for New Zealand is not normally delivered to the customers.

- The Ministry of Health has published a new Drinking Water Standard. The new Standard contains a number of significant changes and comes into effect on 1 January 2001. Further more demanding changes come into effect on 1 January 2005. The full implications of the new Standard are being studied.

5. Marketing

5.1 Report of Business Activity

- The content and design was finalised, and proof reading and checking of colour laser copies completed and signed off. The report was printed and delivered to Wellington Regional Council for distribution on 28 November.
- A preliminary television advertising schedule was booked. The schedule was reviewed on a weekly basis during November and December to take advantage, where appropriate, of the Wellington Regional Council newspaper, *Elements*.
- *Water Watch* updates of the water supply situation have been produced on the weekly basis from the beginning of December for our customers, Councillors and Wellington Regional Council water supply staff.

5.2 Other Activities

- Further work has been carried out on a review of external signage at main Wellington Regional Council water treatment plants and pumping stations.
- There has been ongoing involvement with the Environment Division to ensure that Environment's *Learnwell* programme, being developed for water conservation, will address Utility Services' objectives for educational material, as well as Environment's.
- There has been a review of the water supply content of the Wellington Regional Council Internet site. New content covering water quality, environmental issues and the development history of Wellington's water supply is being written. A copy of The Water Group *Report of Business Activity* has been attached to the Wellington Regional Council Internet site.

6. Economics

In November 2000 Statistics New Zealand published their population estimates as at 30 June 2000. Details for the urban areas of the four cities are:

Estimated Population at 30 June			
City	1999	2000	Change
Lower Hutt	97,600	97,300	-300
Porirua	47,500	47,200	-100
Upper Hutt	35,600	35,400	-200
Wellington	166,000	166,700	700
Total	346,600	346,500	-100

Water consumption for the five months from April to 30 August 2000 and for the previous year was as follows:

Water Consumption (Million Litres)			
City	1999	2000	Change
Lower Hutt	5,757	5,587	-170
Porirua	2,205	2,244	39
Upper Hutt	2,258	2,190	-68
Wellington	11,496	11,746	250
Total	21,716	21,767	51

Using the five months from April to August removes the garden watering variability over the spring and summer periods.

A change in population is only one of the factors affecting a change in water consumption. At present the Regional Council has adopted a high population growth scenario. It assumes an urban population in the four cities of 375,000 by 2020. At that time investment would be needed in water collection facilities.

Given the lack of growth over the last two years, it will be appropriate to review the consumption projections after the March 2001 Census results are available.

7. Projects Undertaken by Engineering Consultancy for the Strategy and Asset Group

➤ Waiwhetu Aquifer Pump Test

Preparation for the pump test was suspended, as negotiations are proceeding to allow the test to be postponed.

➤ Leaf Screens for Wainuiomata and Orongorongo Intakes

The report has been completed assessing the performance of the existing leaf screens. Some minor improvements are proposed.

➤ *Te Marua Lakes Surveillance Manual*

The second revision of the *Te Marua Lakes Surveillance Manual* has been completed. The proposed amendments to the *Te Marua Lakes Emergency Action Plan* are being reviewed.

➤ Orongorongo Catchment Access

Safety barriers are being erected on the walking track from the end of the Orongorongo road to the Big Huia Pipe Bridge.

➤ Wainuiomata Water Treatment Plant Slam-shut Scour

A drawing is being prepared for the installation of an automated scour immediately upstream of the slam-shut valve.

➤ Waterloo and Gear Island Fluoride Dosing

Equipment is being supplied for the installation of new fluoride dosing systems at Waterloo and Gear Island.

Plinths for the pumps and tanks have been built at Gear Island. The room has been prepared for painting. The storage tank and bund have been lined at Waterloo. Dosing pipework is being installed at Waterloo.

➤ Waterloo Water Treatment Plant Vibration and Noise

Sinclair Knight Merz has been commissioned to investigate the cause of vibration and noise within the plant.

➤ Silverstream Scour on Kaitoke Main

The Distribution Section will install the new scour on the Stokes Valley branch line and a new branch on the Kaitoke main in January to March 2001.

➤ Refurbishment of the OK Main, Thorndon/Karori

The Contractor has lined the OK main from the entrance to the Botanic Gardens on Glenmore Street to the Karori Pumping Station in Waiapu Road.

➤ Plateau Reservoir Inlet Main

The Contract for installation of a new inlet main to Upper Hutt City Council's Plateau Reservoir was awarded to Regan Brothers Ltd.

➤ Pumping Stations Power Factor Investigation

A report has been prepared on the power factor of each pumping station. The report recommends installation of power factor correction equipment in three pumping stations.

➤ Kaitoke Pipeline Either Side of Strainer Building

The Contract for refurbishing the concrete pipeline between the Kaitoke Flume Bridge and the No. 2 Tunnel entrance was awarded to Specialist Services Ltd.

➤ Kaitoke Pipeline on Haywards Hill

A report on the ground stability of alternative pipe routes has been received from Opus International Consultants Ltd. This report is being reviewed.

➤ Hutt Estuary Bridge Pipelines

The flexible couplings for the Hutt Estuary Bridge pipelines have been delivered. One set of couplings has been installed. The second set will be installed during a period of low demand in early 2001.

➤ Wainuiomata Main Valve Chambers

Proposals are being prepared to rationalise the pipework within the valve chambers on the Wainuiomata main. This will remove unused pipe, reducing the risk of contamination.

➤ Te Marua Towers Valve Shut-off

Equipment has been ordered for the installation of pneumatic cylinder actuators on the lake inlet and outlet valves.

➤ Flow Meters

A review of what flow meters are to be installed this financial year is being undertaken.

➤ Sealing Hutt Aquifer Wells

A Contract has been let to seal a disused well at Gear Island and Naenae.

Engineering Consultancy Group
November/December 2000

Engineering Consultancy Group Review of Operations for the Period Ended 31 December 2000

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 Taranaki Street Pipeline

A Contract has been awarded and excellent progress made for the laying of a replacement main in Taranaki Street from Courtenay Place to Webb Street. Because of the extensive underground services, the old main has been removed and the new main laid in its place.

3.3 Percival Street Pipeline

Tenders were received and assessed for a Contract for replacement of the 100 mm cast iron main and 40 mm galvanised iron main in Percival Street, Upper Dixon Street and Allenby Terrace. This latter pipeline has had a continuing history of failures. Work has commenced and good progress made before the Christmas break.

3.4 Grenada North High Level Reservoir

This permanent reservoir, 160 m³ capacity, will replace the Grenada North temporary tanks. The site is at a higher level to the east of Nassau Avenue on land that has recently been transferred from TransPower to Wellington City Council. The intention of this reservoir and associated pipework is the second stage in the upgrade of the Grenada North water supply following the contamination incident in early 1998.

The Contractor has carried out earthworks for the construction of a long access road from Caribbean Avenue and for the reservoir site. The pipelines from Nassau Avenue have been laid almost to the reservoir site.

3.5 Wadestown Reservoir

Montgomery Watson Ltd was engaged for the design of a replacement reservoir, capacity 1,800 m³, along with the obtaining of resource consents necessary for the completion of the reservoir on the Town Belt, as well as for access across the Town Belt.

The Contractor has excavated the reservoir site and made preparations for site concrete. The access across the Town Belt from Northland has minimised impacts on Wadestown residents.

The assessment of the old rising main that will be used as an overflow revealed that its condition is worse than expected and will require rehabilitation. Design of an in insertion pipeline is now under way.

3.6 Eastern Suburbs Storage

There is a storage deficit in the Low Level Zone of 10 ML. This was identified and reported on at the time of approval of the Macalister Park 20 ML Reservoir. Of this storage, approximately 7 ML is required in the Eastern Suburbs (Miramar) and 3 ML in the Southern Suburbs (Island Bay).

A preliminary analysis of the three potential sites has been made, which has indicated that one site has significant advantages. A report has been prepared and submitted to Wellington City Council. Approval has been given for further investigations.

3.7 Other Wellington City Council Capex Projects

Tenders have been invited for the installation of replacement mains in Tirangi Road, Lyall Parade, Oriental Parade and Oriental Terrace.

3.8 Kelburn Reservoir

A brief has been prepared and submissions invited from consultants for the design of a new reservoir to replace two older reservoirs.

3.9 Water Services Agreement

Under the new agreement, which came into effect on 1 July, the group is carrying out similar functions as were required under the Facilities Management Contract. These are as follows:

- Building consents

- Subdivisions
- System records
- Counter service
- New services and fire services

The scope of work relating to the maintenance of the system records may alter during the year, as Wellington City Council moves away from paper based record keeping.

The new agreement also contains a performance related bonus and penalty system related to response times.

4. Other Projects

4.1 Puketiro Bridge

Design is under way for this small bridge to replace an existing ford on a forestry access road.

4.2 Karori Wildlife Sanctuary

The replacement of the scour valve on the Upper Dam has been delayed because of an extended manufacturing time. The valve has arrived but requires modification before it can be installed. Wellington City Council is funding this project.

Laboratory Services
November/December 2000

Laboratory Services Department Review of Operations for the Period Ended 31 December 2000

1. Items of Note

- The Laboratory survived the usual round of Christmas festivities and remained open across the end of year period. Staff members were rostered to attend to essential services and, as no emergencies arose, it was rather uneventful.
- Laboratory information management systems training allotted under the Sample Manager purchase contract was completed this period. Personal contact with the supplier's implementation analyst and laboratory management proved fruitful. Immediate benefits were the improvement of existing applications and the development of new time saving programming. Longer-term prospects are improved communication with intra- and interdivisional clients.
- Internal work fluctuations caused by project rationalisations were generally offset with additional new work.
- External work trended downward, with the termination of some fixed contract work. Again, this was counterbalanced somewhat by spot market work.
- A tender submitted for Kapiti Coast District Council sewage analysis work proved unsuccessful. Consultants for the short-term project informed us that based on price we were runners-up. Lack of resources in the sample collection department was significant and proved to be our Achilles' heel.
- A review of Laboratory techniques has revealed potential efficiencies may be realised in the area of anion analysis. A case for the timely upgrade of our ageing ion chromatograph is being prepared. Newer technology and improved application in a proven instrumental technique will be a decisive factor in this case.

2. Business Summary

2.1 Quality

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

2.2 Health and Safety

There were no accidents or incidents during the two month period. One staff member did have time off because of illness.

Plantation Forestry
November/December 2000

Plantation Forestry Department Review of Operations for the Period Ended 31 December 2000

1. Log Harvest Contract

Harvesting has continued at less than the desired rate because of a combination of too few crews and difficult terrain. Towards the end of this period a new hauler was set up and will operate for 10 or so weeks. This hauler is larger than any other we have had in the forest and will certainly increase the output of logs. Another advantage is that it has an extended reach and thus reduces the roading and tracking required. Being as sophisticated and large as it is, it represents a significant investment by its owners and we are required to ensure a continuous supply of wood.

The grade outputs for the November and December were:

Grade	November		December	
	Tonnes	%	Tonnes	%
Pruned Domestic	0	0	0	0
Pruned Export	0	0	0	0
Partial Pruned	0	0	0	0
S/A Grade	929.12	24.35	489.21	20.53
L Grade	377.86	9.9	156.09	6.55
R Grade (Renalls)	923.96	16.35	485.04	20.36
Roundwood	0		0	0
K Sawlog	304.98	7.99	129.99	5.46
K Rough	491.05	12.87	337.57	14.17
Pulp	785.62	20.59	638.32	26.79
O/S Pulp	227.74	5.97	146.48	6.15
Other (Corsican)	75.07	1.97		
	3,815.39		2,382.68	

Felling effectively ended on 14 December, with only loading out on the Friday and the following Monday. The crews were to return to the forest on 3 January and commence loading out on 8 January 2001.

The above demonstrate the value of the new grade taken by Renalls. This product would have previously been split between export K and pulp. The value is enhanced given the recent “softening” of the Korean market.

The Australian market for sawn timber has all but dried up following the Olympics but the North American market is holding and the domestic mills are still taking all the in-grade logs we can produce.

With the “crossing of the Incline” set for 7 February, we can expect both an increase in volume and an increase in grade as the better trees on the river flats are harvested and the output of the new hauler is included.

2. Silviculture Contracts

Of the 515.8 hectares put out to contract for the current financial year 181.6 hectares has been completed to the end of January

3. Plantation Forestry Operations

With the need to supervise three silviculture crews and three logging crews, there has not too much time for other activities.

Some spraying of major tracks has been carried to assess the effectiveness of this against the traditional hydra-mowing. Costs are significantly less and initial indications are that spraying is an acceptable alternative.

Planning for the harvesting of the area to the west of the Incline Walkway has taken up some time as the road construction and allocation of crews had to be arranged for start on Wednesday, 7 February. Although the original plan called for the early closure of the above Ladle Bend while the trees adjacent to the walkway were felled, it has now been decided to leave these until the end of these stands, which will result in the closure being in autumn when fewer visitors will be affected. While road lining takes place, the logging crew will provide a "stop/go" man to protect the work site.

4. Forest Access

The majority of the final work required by Upper Hutt City Council before it would issue a completion certificate has been done, with only a short length of fence outstanding.

The hydra-seeding has struck well, despite the dry season and the rest of the site looks good.

We have undertaken maintenance on the Cook Road, McGhie's, Perhams Road and Maungakotukutuku Bridges. Cook Road we undertook ourselves and the other three were contracted out. It is fair to say there was an element of deferred maintenance but the bridges should not need this level of maintenance again for 15 or so years. One disappointing aspect was the need to completely replace the deck on the Maungakotukutuku Bridge and spot repair the deck on the Perhams Road Bridge, as both were decked with untreated timber.

We have now upgraded the full length of Puketiro Road and have draft drawings for a low bridge over the Wainui Stream on Cook Road. Still left to do for the next harvest contract due to commence on 1 July 2001, is the upgrade of short section of Cook Road and the upgrade of the road from the Rallywood Bridge to Valley View Road.

5. Market Trends

The Korean market has gone “soft” and is now a market of “last resort”. As stated earlier, the majority of these grades have been diverted to Renalls at Masterton.

The Australian sawn timber market has temporally disappeared with the lull in construction following the Olympics but the North American market appears to be picking up the slack. From our perspective the domestic mills supplying these markets continue to actively seek logs.

It is expected that the Australian demand will recover over the next few months.