APPENDIX "1"

Aqwest Market Research Report
2004 Customer Survey
Prepared by SMR

April 2004

Aqwest Report Structure

1.0 Executive Summary

This report provides a clear summary of results obtained for the annual Aqwest customer survey. The 2004 survey was once again completed by market research contractor, Strategic Marketing & Research (SMR).

The 2004 customer survey followed a very similar format both in content and process as the format set by SMR for the 2002 survey. This format involved taking a random sample of telephone numbers from a Telstra database. A sample of 2000 phone numbers was sourced by Data Analysis Australia, covering areas within the 6230 postcode. Of these 2000 phone numbers a total of 1755 were utilised to contact survey respondents.

The total response rate for the 2004 customer survey was 21.06% however as a result of the removal of invalid surveys the valid response rate was slightly lower at 19.98%. This result is lower than the 38.61% response rate for the 2003 customer survey but still shows a high degree of consistency. There is no clear reason why the response rate in 2004 was significantly lower than in previous years.

The rate of refusal increased quite significantly from 2003 to 2004 from 11.51% to 27.3%. The factors contributing to this may indicate a shift in the general market place's attitude towards telephone research, timing of the research, interviewer characteristics or attitude toward Aqwest, however no conclusions can be drawn without further research.

The number of respondents is up from 362 in 2003 to 369 in 2004, once again meeting the minimum sample size target, required to be 95% confident that the true population value is within +/- 5% of the sample estimate. It is felt that removal of incompleted surveys from the sample in 2004 to the point of a 350 sample size, ensures that the results remain accurate.

The 2004 survey was conducted with a team of five market researchers and three supervisors, with a minimum of one supervisor being present at all times. The surveys were conducted between Saturday 27th March and Friday 2nd April. The team worked between 9.00am and 5.00pm on the weekends and between 5.00pm and 8.00pm during the week, with a completion rate of approximately 4 surveys per interviewer per hour which is higher than the 2003 survey rate of 3 surveys per hour.

The 2004 survey form, like surveys of previous years also contained measures regarding the following Aqwest key performance indicators (KPI's);

- Overall satisfaction with Aqwest
- Overall satisfaction with tap water services
- Customer contact (no problem with service)
- No interruption to water service
- Water safe to drink
- Water supplies are of an acceptable quality
- Aqwest charges fairly for its service
- Aqwest informs the public about its water services
- Aqwest is planning effectively for the future

These KPI measures were ordered in the same manner as 2003. The KPI's were reordered in 2003, following consultation with Aqwest, with the aim of securing an unbiased response from customers.

1.1 Methodology

The 2004 customer survey was conducted with the data analysis package, SPSS. This package enabled SMR's market research team to enter data directly into the on-screen survey, eliminating further data entry and recoding stages, therefore increasing the accuracy of all data secured.

This package also enables the survey to automatically skip questions that a respondent is ineligible to answer, once again eliminating room for error. In addition to these features, SPSS forwards all data directly into a database form that is ready for analysis. These quality assurance steps ensure a maximum accuracy is achieved and have been employed by SMR for both 2002, 2003 and 2004.

The 2004 customer survey included both open ended and multiple response questions. The inclusion of these questions ensures that the customer's response is not always limited. therefore providing a true representation of the customer's attitudes and perceptions.

All of the 350 surveys were conducted over the phone using the randomly sourced numbers within the postcode area of 6230. This method is consistent with the approach taken in the 2002 and 2003 customer survey and will ensure a consistent comparison. It also provides anonymity to the respondent, not identifying them as an Aqwest customer, therefore, often decreasing barriers to an honest response.

The phone calls undertaken were all coded as follows;

1. No answer
2. Answering machine
3. Call back
4. Refusal
5. Completed
6. Unsuitable candidate
7. Disconnected
8. Engaged
9. Fax

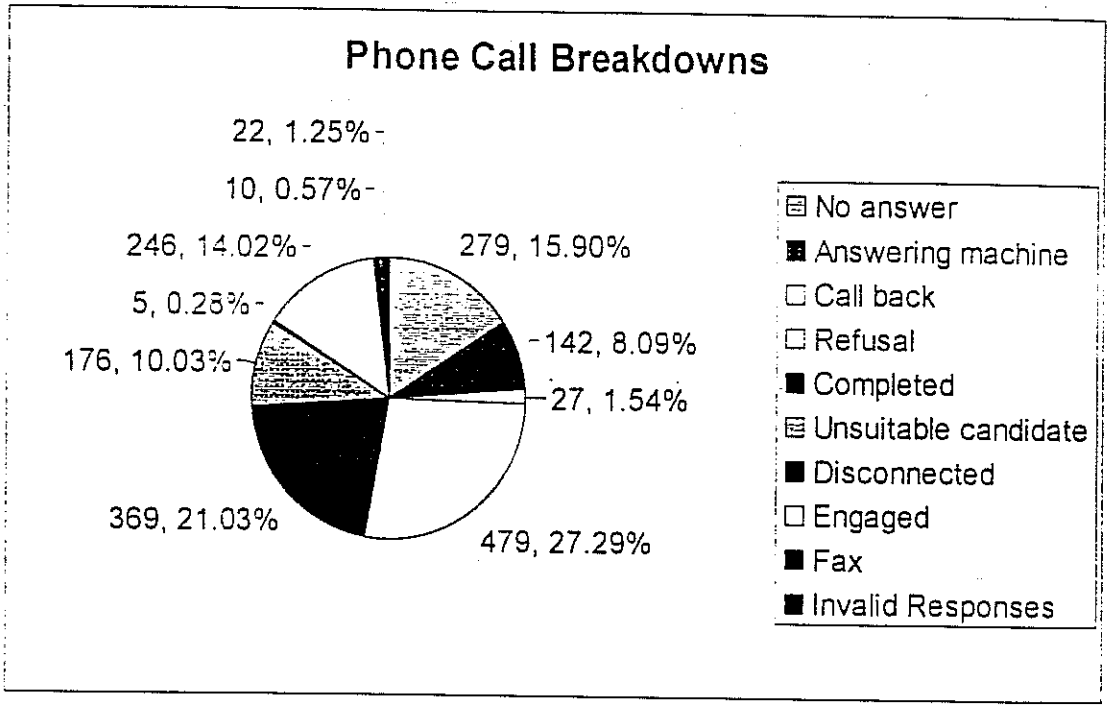
All surveys were assessed to determine validity. Any surveys not fully completed were deemed to be invalid and were removed from the sample.

Further analysis of the telephone survey response rates are as follows;

1.2 Phone Call Breakdowns

Of the **1755** phone calls that were made to potential survey participants in the Bunbury area, **279** calls were not answered, **142** calls were answered by machine only, **5** calls were made to disconnected lines, **246** were made to engaged lines and **10** resulted in facsimile dial tones, **27** of the answered calls requested that SMR call them back, **479** of the answered calls refused to completed the survey, **176** answered calls were determined to be unsuitable candidates to answer the survey and **369** answered calls agreed to answer the survey. **19** responses were deemed invalid as they were not fully completed and consequently removed from the sample.

This equates to a total response rate of **21.06%** and a valid response rate of **19.98%**.



1.3 Questionnaire

The 2003 survey was used as the basis for the 2004 survey with a number of minor alterations.

These included;

- If respondents indicated that they answered dissatisfied or very dissatisfied to any questions (apart from ratings of Telstra and Western Power) they were asked to give a reason why they gave that response.
- The exclusion of questions asking respondents how they would like to be contacted for maintenance scheduling information and how much notice they would like.
- The exclusion of questions regarding Aqwest's website.
- Respondents were not asked if they would like to participate in a focus group at a later date to further discuss services provided by Aqwest.

- When asked who respondents thought provided their water service, Aqwest and the Bunbury Water Board, were recorded as the same response.

All of these alterations were implemented following direct consultation with Aqwest.

1.4 Data analysis

All responses to the survey questions were analyzed using the SPSS statistical software package. The analysis of the data included frequency tables and the calculation of descriptive statistics (mean, mode, median and standard deviation) where rating scales have been employed.

All statistical tests were conducted at 95% level of confidence.

Considering the size of the sample group and the random means of securing the completed surveys, SMR has determined a 95% confidence with the error in calculating the average ratings no more than +/-5%.

This is within the industry standards and Aqwest's reporting requirements.

2.0 Qualifying question

Q1. Are you the person responsible for paying the water rates?		Base: All Respondents
Responses	**Total 2004** **350** **(100%)**	**Total 2003** **342** **(100%)**
(1) Yes	350 (100%)	342 (100%)
(2) No	0 (0%)	0 (0%)
Total	**350** **(100%)**	**342** **(100%)**

The qualifying question used was the same as that used in 2003:

"Are you the person responsible for paying the water rates?"

This qualifying question was used so that only rate payers were surveyed as it was determined in 2002 that information gathered from rate payers held greater significance in terms of decision making impact than that gathered from non-ratepayers, who were less informed about Aqwest and the services that it provides.

The above qualifying question allowed the interviewers to disengage the respondent if they were unsuitable to proceed.

It is essential that the questionnaire includes a qualifying question to ensure that all respondents are 'qualified' to answer the remainder of the questions. If respondents indicated a response other than Aqwest or the Bunbury Water Board they were to be informed that Aqwest is their water service provider.

Q. 3. Who provides your water services?	Base: All Respondents
Responses	**Total** **2004** **350** **(100%)**
(1) Aqwest / Bunbury Water Board	350 (100%)
(2) Water Corporation	0 (0%)
(3) Other	0 (0%)
Total	350 (100%)

This question demonstrates that 100% of respondents thought that either Aqwest or the Bunbury Water Board provided their water services.

3.0 Customer Satisfaction

3.1 Comparative service satisfaction

Q2. Comparative Satisfaction Levels Between Utilities			Base: All Respondents
	Total 2004 Aqwest **350 (100%)**	**Total 2004 Western Power** **350 (100%)**	**Total 2004 Telstra** **350 (100%)**
(1) Very Satisfied	146 (41.7%)	95 (27.1%)	80 (22.9%)
(2) Satisfied	136 (38.9%)	145 (41.4%)	121 (34.6%)
(3) Neutral	52 (14.9%)	69 (19.7%)	74 (21.1%)
(4) Dissatisfied	11 (3.1%)	28 (8.0%)	33 (9.4%)
(5) Very Dissatisfied	4 (1.1%)	11 (3.1%)	21 (6.0%)
(6) Don't know	1 (0.3%)	2 (0.6%)	21 (6.0%)
Mean (Don't know excluded)	1.83	2.18	2.37

A positive response of 80.6% was recorded for this answer.

Those 15 (4.2%) respondents that indicated that they were either dissatisfied or very dissatisfied in 2004 gave the following reasons:

- Aqwest's location makes bill paying inconvenient (2 respondents)
- Lack of credit card facilities (1 respondent)
- Too expensive (5 respondents)
- Water quality is poor (4 respondents)
- Have not resolved a customer problem (1 respondent)
- Water restrictions inconvenient (1 respondent)
- Water pressure poor (1 respondent)
- Customer service poor (1 respondent)

2003 Responses

Q2. Comparative Satisfaction Levels Between Utilities			Base: All Respondents
	Total 2003 Aqwest	**Total 2003 Western Power**	**Total 2003 Telstra**
	362 (100%)	**362 (100%)**	**362 (100%)**
(1) Very Satisfied	140 (38.7%)	96 (26.5%)	74 (20.4%)
(2) Satisfied	159 (43.9%)	166 (45.9%)	140 (38.7%)
(3) Neutral	47 (13%)	60 (16.6%)	87 (24%)
(4) Dissatisfied	12 (3.3%)	28 (7.7%)	36 (9.9%)
(5) Very Dissatisfied	4 (1.1%)	12 (3.3%)	25 (6.9%)
Mean	1.84	2.15	2.44

2002 Responses

Q 3 Comparative Satisfaction Levels Between Utilities			Base: All Respondents
	Total 2002 Aqwest	**Total 2002 Western Power**	**Total 2002 Telstra**
	342 (100%)	**342 (100%)**	**342 (100%)**
(1) Very Satisfied	197 (57.6%)	175 (51.2%)	118 (34.5%0
(2) Satisfied	99 (28.9%)	128 (37.4%)	99 (28.9%)
(3) Neutral	37 (10.8%)	28 (8.2%)	58 (17%)
(4) Dissatisfied	5 (1.5%)	9 (2.6%)	43 (12.6%)
(5) Very Dissatisfied	4 (1.2%)	2 (0.6)	24 (7%)
Mean	1.6*	1.64*	2.29*

2001 Responses

Q1. Comparative Satisfaction Levels Between Utilities

Base: All Respondents

	Total 2001 Aqwest 303 (100%)	Total 2001 Western Power 303 (100%)	Total 2001 Telstra 303 (100%)
(1) Very Satisfied	76 (25.1%)	175 (51.2%)	118 (34.5%0
(2) Satisfied	202 (66.7%)	128 (37.4%)	99 (28.9%)
(3) Neutral	18 (5.9%)	28 (8.2%)	58 (17%)
(4) Dissatisfied	5 (1.7%)	9 (2.6%)	43 (12.6%)
(5) Very Dissatisfied	1 (0.3%)	2 (0.6)	24 (7%)
Mean	4.15*	4.12*	3.85*

**The means calculated in 2001 are calculated on an inverse scale. I.e. the 2002 scale was on a scale of 1 to 5 where 1 represents very satisfied and 5 represents very dissatisfied how would you rate the tap water service provided by Aqwest? The scale in previous years represented 1 as very dissatisfied and 5 as very satisfied. To align all of the means it is necessary to calculate how far they are from the end points and reverse them.*

In 2004, Aqwest scored the 'highest' (most positive) comparative satisfaction mean of the three utilities, with a mean of **1.83** in comparison to Western Power with a mean of **2.18** and Telstra, with a mean of **2.27**. Aqwest has skewed slightly closer to very satisfied this year compared to last year (0.01 point) as has Telstra (0.17 points), however Western Power has skewed in a negative direction compared to 2003 by 0.03 points.

The percentage of respondents who were very satisfied with Aqwest in 2003 was **38.7%**; the percentage of respondents who were very satisfied with Aqwest in 2004 was **41.7%**, an increase of **3%**.

The percentage of respondents who were satisfied with Aqwest has declined from **43.9%** in 2003 to **38.9%** in 2004, a negative change of **5%**.

The levels of dissatisfaction with Aqwest have remained almost exactly the same in 2004 as they were in 2003 with **3.3%** of respondents dissatisfied and **1.1%** of respondents very dissatisfied with Aqwest in 2004.

Aqwest's overall satisfaction (the sum of the very satisfied and satisfied responses for 2004 is **80.6%** or **282** respondents. In comparison the overall satisfaction for 2003 was **82.6%**.

Western Power experienced a significant fall in overall satisfaction between 2003 and 2004 with its overall satisfaction declining by **16.1%** to **68.5%**. Telstra experienced a 2.4% increase in satisfaction to an overall satisfaction level of **57.5%**.

3.2 Tap water satisfaction

Q23. How satisfied are you with the tap water service provided by Aqwest?								Base: All Respondents
Number of responses		Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
Overall Satisfied **N=285 81.4%**	Very Satisfied	125 (35.7%)	149 (41.2%)	173 (50.6%)	95 (31.4%)	47 (20.8%)	33 (10.7%)	97 (32.2%)
	Satisfied	160 (45.7%)	148 (40.9%)	112 (32.7%)	170 (56.1%)	148 (65.5%)	242 (78.8%)	158 (52.5%)
Neither Satisfied nor Dissatisfied		53 (15.1%)	52 (14.4%)	37 (10.8%)	23 (7.6%)	17 (7.5%)	7 (2.3%)	19 (6.3%)
Overall Dissatisfied **N=12 3.5%**	Dissatisfied	9 (2.6%)	10 (2.8%)	13 (3.8%)	12 (4%)	13 (5.8%)	22 (7.2%)	19 (6.3%)
	Very Dissatisfied	3 (0.9%)	3 (0.8%)	7 (2%)	2 (0.7%)	1 (0.4%)	1 (0.3%)	3 (1.0%)
Mean (average rating)		1.87	1.81	1.74	4.14*	4.00*	3.93*	4.10*

**The means calculated in previous years are calculated on an inverse scale. I.e. the 2002 scale was on a scale of 1 to 5 where 1 represents very satisfied and 5 represents very dissatisfied how would you rate the tap water service provided by Aqwest? The scale in previous years represented 1 as very dissatisfied and 5 as very satisfied. To align all of the means it is necessary to calculate how far they are from the end points and reverse them.*

Overall satisfaction regarding the tap water service provided by Aqwest has also experienced a minor fall according to the 2003 customer survey results. Overall satisfaction has fallen from **82.1%** in 2003 to **81.4%** in 2004.

Aqwest's KPI regarding this question indicates a target of 85% satisfaction level or higher. Therefore the utility has not achieved this standard for the third consecutive year.

Overall dissatisfaction with the tap water services provided by Aqwest has also experienced a slight drop, falling from **3.6%** in 2003 to **3.5%** in 2004. The percentage of respondents who are remaining neutral has risen from **14.4%** in 2003 to **15.1%** in 2004.

100% of respondents that indicated that they were dissatisfied or very dissatisfied gave reasons that related to the bad taste, smell and poor quality of the water. They indicated that the chlorine or chemical content of the water contributed to the poor quality.

4.0 Informing the Public

Q28. B. Aqwest does a good job of informing the public about its services?
Please indicate your level of agreement with this statement where 1 equals strongly agree and 5 equals strongly disagree.

Base: All respondents

	Responses	**Total 2004** **350 (100%)**	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)
Overall Agreement **N=277 79.14%**	(1) Strongly Agree	118 (33.7%)	102 (28.2%)	156 (45.6%)	47 (15.5%)	31 (13.7%)	N/A
	(2) Agree	159 (45.4%)	154 (42.5%)	105 (30.7%)	162 (53.5%)	113 (50.0%)	248 (80.8%)
	(3) Neutral	46 (13.1%)	86 (23.8%)	61 (17.8%)	26 (8.6%)	32 (14.2%)	N/A
Overall Disagreement **N=16 4.57%**	(4) Disagree	12 (3.4%)	18 (5.0%)	16 (4.7%)	13 (4.3%)	20 (8.8%)	14 (4.6%)
	(5) Strongly Disagree	4 (1.1%)	2 (0.6%)	4 (1.2%)	1 (0.3%)	2 (0.9%)	N/A
	Don't know**	11 (3.1%)	N/A	N/A	N/A	N/A	N/A
	Mean	1.89	2.07	1.85	2.03*	2.24*	N/A

**The means calculated in previous years are calculated on an inverse scale. I.e. the 2002 scale was on a scale of 1 to 5 where 1 represents very satisfied and 5 represents very dissatisfied how would you rate the tap water service provided by Aqwest? The scale in previous years represented 1 as very dissatisfied and 5 as very satisfied. To align all of the means it is necessary to calculate how far they are from the end points and reverse them.*

***2004 was the first year where there was a 'Don't know' option added to this question. This was added as it was thought that a large component of neutral responses from previous years may have been selected as an alternative to don't know and it was felt that in 2004 it was necessary to test the distinction. The mean response for 2004 is calculated excluding the don't know responses.*

In 2004 there was a significant fall in neutral responses down from **23.8%** in 2003 to **13.1%** in 2004. Some of this decline was offset by the don't know option which accounted for **3.1%** of responses. The combined don't know and neutral responses for 2004 was **16.2%**.

This KPI measure has also experienced a significant increase in overall agreement in 2004, from **70.72%** in 2003 to **79.1%** in 2004, however this result is still below the KPI target of 85% or greater.

This increase is reflected in the mean of 1.89, a fall from 2.07 in 2003, indicating a greater skew towards the satisfied end of the scale.

There has been a fall of 1.1% in the overall disagreement with this statement from 2003 to 2004. The 15 respondents that gave a response of dissatisfied or very dissatisfied gave reasons that fell into the following categories:

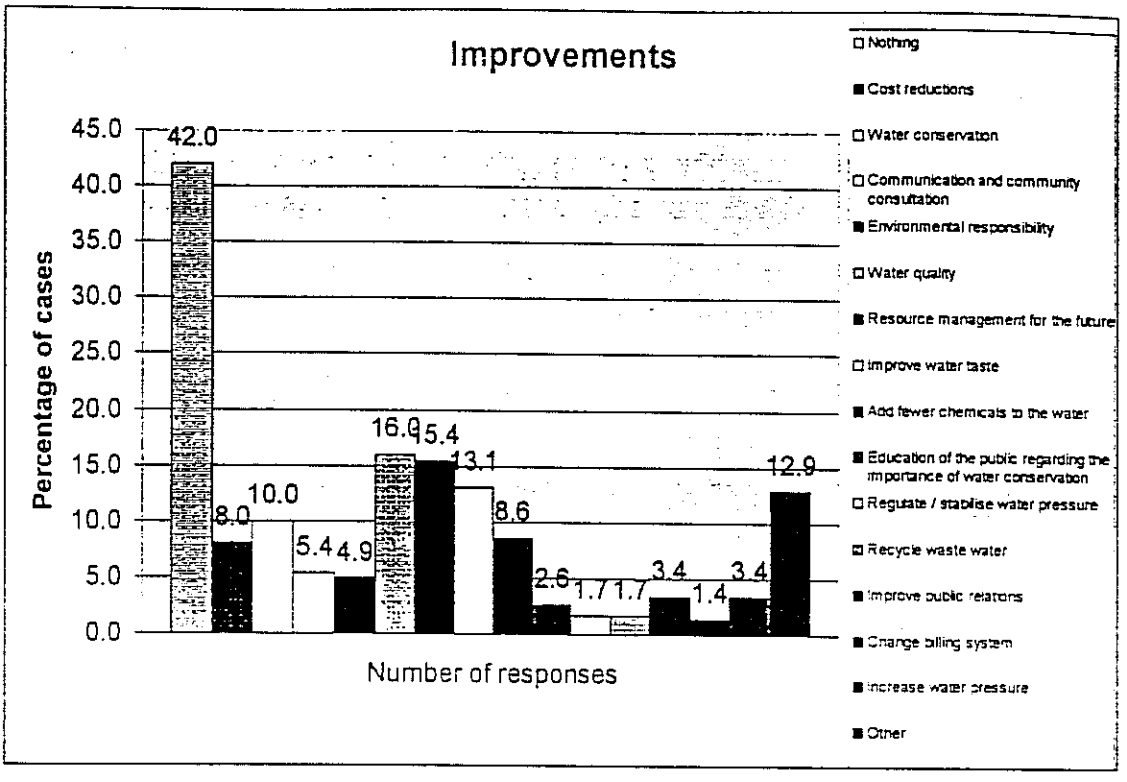
- There are too many water restrictions (4 respondents)
- Public is not provided with sufficient information (3 respondents)
- More future planning and conservation is required (4 respondents)
- Alternative solutions are required (3 respondents)
- Disagree with supplying the Perth market with locally derived water (1 respondent)

5.0 Improvements

Q29. What are the most important areas that Aqwest can improve on?
(Multiple Response Possible)

Base: All respondents

Responses	Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
(1) Nothing	147 (42.0%)	142 (39.2%)	158 (46.2%)	126 (41.6%)	97 (42.9%)	147 (47.9%)	102 (33.9%)
(2) Cost reductions for customers	28 (8.0%)	29 (8.0%)	36 (10.5)	32 (10.6%)	54 (23.9%)	34 (11.1%)	25 (8.3%)
(3) Communication and community consultation	19 (5.4%)	29 (8.0%)	15 (4.4%)	N/A	N/A	N/A	N/A
(4) Environmental Responsibility	17 (4.9%)	11 (3.0%)	15 (4.4%)	2 (0.7%)	34 (15%)	29 (9.4%)	2 (0.7%)
(5) Resource Management	54 (15.4%)	39 (10.8%)	28 (8.2%)	N/A	N/A	N/A	N/A
(6) Water Conservation	35 (10.0%)	28 (7.7%)	24 (7.0%)	3 (1%)	40 (17.7%)	33 (10.7%)	8 (2.7%)
(7) Education of the public regarding the importance of water conservation	9 (2.6%)	18 (5.0%)	16 (4.7%)	5 (1.7%)	40 (17.7%)	43 (14%)	8 (2.7%)
(8) Water Quality	56 (16.0%)	69 (19.1%)	64 (18.7%)	50 (16.5%)	68 30.1%)	61 (19.9%)	42 (14%)
(9) Improve Water Taste	46 (13.1%)	55 (15.2%)	46 (13.4%)	70 (23.1%)	69 (30.5%)	69 (22.5%)	26 (8.6%)
(10) Add Fewer Chemicals to the Water	30 (8.6%)	27 (7.5%)	25 (7.3%)	19 (6.3%)	43 (19%)	48 (15.6%)	5 (1.7%)
(11) Regulate/ Stabilize Water Pressure	6 (1.7%)	2 (0.6%)	5 (1.5%)	3 (1%)	22 (9.7%)	19 (6.2%)	0 (0%)
(12) Increase Water Pressure	12 (3.4%)	24 (6.6%)	9 (2.6%)	5 (1.7%)	18 (8%)	14 (4.6%)	7 (2.3%)
(13) Recycle Waste Water	6 (1.7%)	7 (1.9%)	4 (1.2%)	4 (1.3%)	39 (17.3%)	27 (8.8%)	3 (1%)
(14) Change Billing System	5 (1.4%)	14 (3.9%)	13 (3.8%)	12 (4%)	14 (6.2%)	33 (10.7%)	12 (4%)
(15) Improve Public Relations	12 (3.4%)	19 (5.2%)	12 (3.5%)	3 (1%)	18 (8%)	22 (7.2%)	17 (5.6%)
(16) Other	45 (12.9%)	26 (7.2%)	10 (2.9%)	N/A	N/A	N/A	N/A



This was an unprompted, multiple response question, enabling the respondents to choose more than one response. The above bar chart demonstrates the percentage of respondents that chose each option.

There was an 2.8% increase in respondents who indicated that Aqwest did not need to make improvements with **42.0%** recorded in 2004.

The following areas have experienced decreased percentages of respondents indicating areas of improvement. Most of the percentage decreases are minor: The percentage changes are shown in brackets following each response.

- Communication and community consultation (2.6%)
- Education of the public regarding the importance of water conservation (2.4%)
- Water quality (2.9%)
- Improve water taste (2.1%)
- Increase water pressure (3.2%)
- Recycle waste water (0.2%)
- Change billing system (2.5%)
- Improve public relations (1.8%)

The following areas have experienced increased percentages of respondents indicating areas of improvement. The percentage changes are shown in brackets following each response.

- Environmental responsibility (1.9%)
- Resource management (4.6%)
- Water conservation (2.3%)
- Add fewer chemicals to the water (1.1%)
- Regulate / stabilise water pressure (1.1%)
- Other (5.7%) – these were too varied to note, please see Appendix I

The following areas experienced no change in response from 2003 to 2004:

- Cost reductions for consumers

6.0 Customer contact

Q4. Other than for payment of rates have you had any other reason to contact Aqwest in the past 12 months?

Base: All Respondents

Responses	Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
(1) Yes	54 (15.4%)	51 (14.1%)	41 (12%)	43 (14.2%)	22 (9.7%)	21 (6.8%)	45 (15%)
(2) No	294 (84.0%)	310 (85.6%)	300 (87.7%)	259 (85.5%)	204 (90.3%)	286 (93.2%)	252 (83.7%)
(3) Can't Say/Don't know	2 (0.6%)	1 (0.3%)	1 (0.3%)	1 (0.3%)	0 (0%)	0 (0%)	4 (1.3%
Total	350 (100%)	362 (100%)	342 (100%)	303 (100%)	226 (100%)	307 (100%)	301 (100%)

There has been a rise of 1.3 % of people needing to contact Aqwest for reasons other than payment of rates: the incidence has risen from 14.1% in 2003 to 15.4% in 2004.

6.1 Method of customer contact

Q5. By which method/s did you make contact with Aqwest?
(Multiple Response possible)

Base: Respondents who answered yes to Q4.

Responses	Total 2004 54 (100%)	Total 2003 51 (100%)	Total 2002 41 (100%)	Total 2001 43 (100%)	Total 2000 22 (100%)	Total 1999 21 (100%)	Total 1998 45 (100%)
In Person	5 (9.3%)	11 (21.5%)	9 (21.2%)	12 (27.9%)	6 (27.3%)	5 (23.8%)	10 (21.7%)
By Mail	0 (0%)	0 (0%)	0 (0%)	2 (4.7%)	0 (0%)	0 (0%)	0 (0%)
By telephone during office hours	43 (79.6%)	36 (70.5%)	28 (68.3%)	27 (62.8%)	15 (68.2%)	11 (52.4%)	34 (73.9%)
By telephone outside of office hours	11 (20.4%)	7 (13.7%)	9 (21.2%)	2 (4.7%)	3 (13.6%)	3 (14.3%)	1 (2.2%)
Don't remember	0 (0.0%)	1 (1.9%)	0 (0%)	N/A	N/A	N/A	N/A
By Internet/ email	0 (0%)	0 (0%)	0 (0%)	N/A	N/A	N/A	N/A
Total	54 (100%)	51 (100%)	41 (100%)	43 (100%)	22 (100%)	21 (100%)	45 (100%)

As with results from previous years, the dominant method of contact was via telephone during office hours. All other modes of contact utilised were lower than in previous years.

6.2 Purpose of Contact

Q6. What were your reasons for contacting Aqwest?
(Multiple Response possible)
Base: Respondents who answered yes to Q4.

Responses	Total 2004 54 (100%)	Total 2003 51 (100%)	Total 2002 41 (100%)	Total 2001 43 (100%)	Total 2000 22 (100%)	Total 1999 21 (100%)	Total 1998 45 (100%)
Rates Query	0 (0.0%)	2 (3.9%)	3 (7.3%)	6 (14%)	3 (13.6%)	2 (9.5%)	6 (13.3%)
High Water Consumption Bill	0 (0.0%)	0 (0%)	2 (4.8%)	0 (0%)	2 (9.1%)	1 (4.5%)	2 (4.4%)
Water Consumption Query	4 (7.4%)	4 (7.8%)	3 (7.3%)	5 (11.6%)	5 (22.7%)	0 (0%)	6 (13.3%)
Water Quality	9 (16.7%)	5 (9.8%)	8 (19.5%)	8 (18.6%)	5 (22.7%)	3 (14.3%)	3 (6.7%)
New Water Services	3 (5.6%)	4 (7.8%)	3 (7.3%)	5 (11.6%)	2 (9.1%)	1 (4.8%)	0 (0%)
Leaking Pipes	12 (22.2%)	16 (31.3%)	9 (21.9%)	5 (11.6%)	0 (0%)	3 (14.3%)	2 (4.4%)
Pensioner Rebate	0 (0.0%)	2 (3.9%)	1 (2.4%)	3 (7%)	1 (4.5%)	1 (4.8%)	0 (0%)
Stopcock Problem	4 (7.4%)	6 (11.7%)	0 (0%)	0 (0%)	1 (4.5%)	1 (4.8%)	0 (0%)
Location of Pipes	0 (0.0%)	1 (1.9%)	1 (2.4%)	1 (2.3%)	1 (4.5%)	1 (4.8%)	4 (8.9%)
Low Water Pressure	1 (1.9%)	3 (5.8%)	2 (4.8%)	2 (4.7%)	1 (4.5%)	1 (4.8%)	3 (6.7%)
Water Supply Interruption	3 (5.6%)	1 (1.9%)	1 (2.4%)	2 (4.7%)	1 (4.5%)	3 (14.3%)	2 (4.4%)
Can't Say	0 (0.0%)	0 (0%)	0 (0%)	N/A	N/A	N/A	N/A
Broken Meter	17 (31.5%)	8 (15.6%)	14 (34.1%)	7 (16.3%)	4 (18.2%)	5 (23.8%)	10 (22.2%)
Other	5 (9.3%)	5 (9.8%)	3 (7.3%)	N/A	N/A	N/A	N/A

This is an unprompted multiple response question, allowing for respondents to choose more than one response.

The 2004 data has seen a fall in enquiries from the 2003 data for the following areas;

- Rates queries down from **3.9%** in 2003 to **0%** in 2004.
- Water consumption queries down from **7.8%** in 2003 to **7.4%** in 2004.

- New water services down from **7.8%** in 2003 to **5.6%** in 2004.
- Leaking pipes down from **31.3%** in 2003 to **22.2%** in 2004.
- Stopcock problem down from **11.7%** in 2003 to **7.4%** in 2004
- Location of pipes down from **1.9%** in 2003 to **0%** in 2004
- Low water pressure down from **5.8%** in 2003 to **1.9%** in 2004
- Other down from **9.8%** in 2003 to **9.3%** in 2004

The 2004 data has seen rises in contact due to the following reasons;

- Water quality up from **9.8%** in 2003 to **16.7%** in 2004
- Water supply interruption up from **1.9%** in 2003 to **5.6%** in 2004
- Broken meter queries up from **15.6%** in 2003 to **31.5%** in 2004.

6.3 Customer service issues

Q7. Did you experience any problems with the service?

Base: Respondents who answered yes to Q4.

Responses	**Total 2004** **54 (100%)**	**Total 2003** **51 (100%)**	**Total 2002** **41 (100%)**	**Total 2001** **43 (100%)**	**Total 2000** **22 (100%)**	**Total 1999** **21 (100%)**	**Total 1998** **45 (100%)**
(1) Yes	4 (7.4%)	7 (13.7%)	5 (12.2%)	4 (9.3%)	5 (22.7%)	3 (14.3%)	3 (6.7%)
(2) No	50 (92.6%)	42 (82.3%)	36 (87.8%)	37 (86%)	17 (77.3%)	17 (80.9%)	41 (91.1%)
(3) Can't Say	0 (0.0%)	3 (5.8%)	0 (0%)	2 (4.7%)	0 (0%)	1 (4.8%)	1 (2.2%)
Total	54 (100%)	51 (100%)	41 (100%)	43 (100%)	22 (100%)	21 (100%)	45 (100%)
Mean	1.93	1.92	1.88	N/C	N/C	N/C	N/C

There has been a decline in the number of people who have experienced problems with the service they received once they contacted Aqwest. The percentage of people who have experienced service problems has fallen from **13.7%** in 2003 to **7.4%** in 2004.

Subsequently there has also been a 1.7% increase in the number of people who haven't had to contact Aqwest (no problem with service), a result of **84%** in 2004.

6.4 Service problems

Q8. What service problems did you experience when you contacted Aqwest? (Multiple Response possible) Base: Respondents who answered yes to Q4 and Q7.							
Responses	**Total 2004** 4 (100%)	**Total 2003** 7 (100%)	**Total 2002** 5 (100%)	**Total 2001** 4 (100%)	**Total 2000** 5 (100%)	**Total 1999** 3 (100%)	**Total 1998** 3 (100%)
Long Delays Before Action	0 (0.0%)	2 (28.5%)	1 (20%)	2 (50%)	3 (60%)	0 (0%)	0 (0%)
Difficulty Finding the Right Person to Talk With	0 (0%)	0 (0%)	1 (20%)	1 (25%)	1 (20%)	1 (33.3%)	0 (0%)
Long Telephone Delays During Office Hours	1 (25%)	0 (0%)	0 (0%)	0 (0%	1 (20%)	0 (0%)	0 (0%)
Long Telephone Delays Outside of Office Hours	0 (0%)	0 (0%)	0 (0%)	0 (0%	1 (20%)	0 (0%)	0 (0%)
Long Queues at the Service Counter	0 (0%)	0 (0%)	0 (0%)	N/A	N/A	N/A	N/A
Employees Using Unknown Jargon	0 (0%)	0 (0%)	0 (0%)	N/A	N/A	N/A	N/A
Slow Response to Written Communication	0 (0%)	0 (0%)	0 (0%)	N/A	N/A	N/A	N/A
Lack of Courtesy	1 (25%)	0 (0%)	1 (20%)	2 (50%)	3 (60%)	0 (0%)	1 (33.3%)
Confusion with the White Pages	0 (0%)	0 (0%)	0 (0%)	0 (0%	1 (20%)	0 (0%)	0 (0%)
Hard to find the Correct Number	0 (0%)	0 (0%)	0 (0%)	0 (0%	0 (0%)	0 (0%)	0 (0%)
Aqwest Did Not Return My Call	2 (50%)	0 (0%)	0 (0%)	N/A	N/A	N/A	N/A
No Action Taken/ Problem Not Solved	3 (75%)	3 (5.8%)	1 (20%)	0 (0%)	4 (80%)	0 (0%)	2 (67.7%)
Can't Say	0 (0%)	0 (0%)	0 (0%)	N/A	N/A	N/A	N/A
Other	0 (0.0%)	2 (3.9%)	2 (40%)	N/A	N/A	N/A	N/A

**Responses unprompted from 1998 onwards.*

Of the four people who were eligible to answer this question, one of them experienced long telephone delays during office hours, one of them experienced a lack of courtesy, two noted that Aqwest did not return their call and three of them indicated their problem was not solved or no action was taken to fix the problem.

6.5 Positive aspects of service

Q9. When you contacted Aqwest, what were the positive aspects of the service that you received? (Multiple Response possible) Base: Respondents who answered yes to Q4	
Responses	**Total 2004**
	54 (100%)
Prompt action taken by Aqwest	38 (70.4%)
Easily found the right person to speak to	7 (13.0%)
Quick telephone response during office hours	5 (9.3%)
Quick telephone response outside of office hours	4 (7.4%)
Short / no waiting time at the service counter	1 (1.9%)
Employees used simple terms and language	3 (5.6%)
Courteous	20 (37.0%)
Can't say	7 (13.0%)
Other	2 (3.7%)

Respondents in 2004 found the response time taken by Aqwest to be the most positive aspect of the service that they received, with **70.4%** of respondents indicating that this was the case. **37%** of respondents indicated that the courteous service that they received was also a positive aspect.

Other elements of Aqwest's service seemed to be less significant with **13.0%** of respondents indicating that they easily found the right person to speak to and **13.0%** indicated that they could not identify positive aspects of the service.

7.0 Current water quality issues

7.1 Water quality

Q11. Have you experienced any problems with water quality supplied to your residence in the past 12 months?

Base: All Respondents

Responses	Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)
(1) Yes	85 (24.3%)	74 (20.4%)	67 (19.6%)
(2) No	265 (75.7%)	283 (78.2%)	272 (79.5%)
(3) Can't Say	0 (0.0%)	5 (1.4%)	3 (0.9%)
Mean	1.76	1.81	1.81

As these two questions were posed as one question in the 2001 survey, comparison prior to 2002 is not valid.

There has been an increase in the number of people who have experienced water quality problems, from **20.4%** in 2003 to **24.3%** in 2004.

7.2 Water Pressure

Q12. Have you experienced any problems with the water pressure supplied to your residence in the past 12 months?

Base: All Respondents

Responses	Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 338 (4 missing) (100%)
(1) Yes	49 (14.0%)	46 (12.7%)	44 (13%)
(2) No	300 (85.7%)	314 (86.7%)	293 (86.7%)
(3) Can't Say	1 (0.3%)	2 (0.6%)	1 (0.3%)
Mean	1.86*	1.88	1.87

** This mean has been calculated with the Can't Say response excluded.*

The incidence of water pressure problems has increased from **12.7%** in 2003 to **14.0%** in 2004. It is important to note that the percentage of people not experiencing water pressure problems has decreased from **86.7%** in 2003 to **85.7%** in 2004 and the percentage of can't say has decreased slightly to **0.3%** of respondents in 2004.

Cross Tabulation of Q11 and Q12 results.				
Q11. Have you experienced any problems with water quality supplied to your residence in the past 12 months?	Q12. Have You experienced any problems with water pressure supplied to your residence in the past 12 months?			**Totals**
	Yes	No	Can't Say	
Yes	18 (5.1%)	66 (18.9%)	1 (0.3%)	85 (24.3 %)
No	31 (8.9%)	234 (66.9%)	0 (0%)	265 (75.7%)
Can't Say	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Totals	49 (14.0%)	300 (85.7%)	1 (0.03%)	350 (100%)

The percentage of respondents who have experienced problems with both their water quality and pressure over the past 12 months has risen from **4.7%** in 2003 to **5.1%** in 2004. A further **8.9%** of respondents have indicated that they have experienced a water pressure problem but no water quality problem which is an increase of 1.2% from a total of **7.7%** in 2003.

Respondents who experienced water quality problems but not water pressure problems made up **18.9%** of the sample population which has increased by 3.2% on the 2003 response of **15.7%** of the sample population.

The percentage of respondents who experienced a problem with either water pressure or quality or both has increased from **28.2%** of the sample population in 2003 to **33.4%** in 2004.

The percentage of respondents who have not experienced either problem in the past 12 months has increased from **64.9%** in 2003 to **66.9%** in 2004.

Q13. Were you contacted prior to experiencing these problems? Base: All respondents who answered yes to either Q11 or Q12							
Responses	**Total 2004**	**Total 2003**	**Total 2002**	**Total 2001**	**Total 2000**	**Total 1999**	**Total 1998**
	116* (100%)	**102** (100%)	**100*** (100%)	**55** (100%)	**47** (100%)	**70** (100%)	**97** (100%)
(1) Yes	19 (16.4%)	12 (11.7%)	12 (12%)	0 (0%)	2 (4.3%)	7 (10%)	5 (5.2%)
(2) No	94 (81.0%)	77 (75.5%)	84 (84%)	52 (94.5%)	38 (80.9%)	49 (70%)	89 (91.2%)
(3) Can't Say	3 (2.6%)	13 (12.7%)	4 (4%)	3 (5.5%)	7 (14.9%)	14 (20%)	3 (3.1%)
Mean	1.83**	2.01	1.92	N/S	N/S	N/S	N/S

Please note that the sum of respondents who answered yes to Q11 or Q12 equates to 134. The total number of respondents for the above two questions is only 116, this is because 18 of the respondents had problems with both water quality and water pressure.

** *This mean has been calculated with the Can't Say response excluded.*

There has been a rise in the percentage of respondents who were contacted prior to experiencing problems as well as those that were not. Those that were contacted increased from **11.7%** in 2003 to **16.4%** in 2004. Those that were not contacted increased from **75.5%** in 2003 to **81.0%** in 2004. This has broken the downwards trend of this response over the previous two years. Subsequently the percentage of respondents who could not say declined from **12.7%** in 2003 to **2.6%** in 2004.

Q14. Have you found it necessary to report a water pressure or water quality problem to Aqwest in the past 12 months?

Base: All respondents who answered yes to either Q11 or Q12

Responses	**Total 2004**	**Total 2003**	**Total 2002**	**Total 2001**	**Total 2000**	**Total 1999**	**Total 1998**
	116 100%	**102*** 100%	**100** (100%)	**55** (100%)	**47** (100%)	**49** (100%)	**92** (100%)
(1) Yes	20 (17.2%)	16 (15.7%)	21 (21%)	14 (25.5%)	12 (25.5%)	6 (12.2%)	18 (19.6%)
(2) No	96 (82.8%)	86 (84.3%)	78 (78%)	41 (74.5%)	32 (68.1%)	42 (85.7%)	74 (80.4%)
(3) Can't Say	N/A	N/A	1 (1%)	N/A	N/A	N/A	N/A
Mean	1.83	1.84	1.80	N/S	N/S	N/S	N/S

The percentage of respondents who found it necessary to report water pressure or quality problems increased over the past 12 months from **15.7%** in 2003 to **17.2%** in 2004.

Q15. On a scale of 1-5 where 1 represents very satisfied and 5 represents very dissatisfied how pleased were you with the response given by Aqwest?

Base: All respondents who found it necessary to report a water leak to Aqwest

Responses		**Total 2004**	**Total 2003**	**Total 2002**	**Total 2001**	**Total 2000**	**Total 1999**	**Total 1998**
		20 (100%)	**16** (100%)	**21** (100%)	**14** (100%)	**12** (100%)	**8** (100%)	**18** (100%)
Overall Satisfaction N=10 50.0%	(1) Very Satisfied	5 (25.0%)	3 (18.7%)	5 (23.8%)	2 (14.3%)	3 (25%)	0 (0%)	5 (27.8%)
	(2) Satisfied	5 (25.0%)	3 (18.7%)	4 (19%)	7 (50%)	4 (33.3%)	5 (62.5%)	4 (22.2%)
(3) Neutral		4 (20.0%)	4 (25%)	3 (14.3%)	1 (7.1%)	3 (25%)	0 (0%)	1 (5.6%)
Overall Dissatisfaction N=6 30.0%	(4) Dissatisfied	3 (15.0%)	5 (31.2%)	5 (23.8%)	4 (28.6%)	2 (16.7%)	1 (12.5%)	3 (16.7%)
	(5) Very Dissatisfied	3 (15.0%)	1 (6.2%)	4 (19%)	0 (0%)	0 (0%)	2 (25%)	4 (22.2%)
Mean		2.70	2.88	2.95	3.50	3.67	3.00	3.18

*Question reworded from previous years.
~It is also important to note that the values given to the answers were inverse in previous years. For example, Very Satisfied was represented by 5. To recalculate the mean it is necessary to calculate how far it is from the relevant end point and inverse it.

50.0% of respondents indicated that they were either very satisfied or satisfied with the response that they received from Aqwest. This is an increase of 12.5% from the 2003 total satisfaction response of **37.5%**.

There has also be a decline in the percentage of respondents who were dissatisfied with the response given by Aqwest from **37.4%** in 2003 to **30.0%** in 2004. Those respondents that were dissatisfied cited the following reasons:

- The problem has not been fixed – 3 respondents
- Bad customer service, Aqwest failed to apologise – 2 respondents
- Did not receive a response – 1 respondents

There has also been a decline in the percentage of respondents who remain neutral with their response, from **25%** in 2003 to **20%** in 2004.

7.3 Service Interruptions

Q16. How many times has your water service been interrupted in the past 12 months?

Base: All respondents

Responses	Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
(1) No Interruption	242 (69.1%)	231 (63.8%)	251 (73.4%)	246 (81.2%)	147 (65%)	230 (74.9%)	215 (71.4%)
(2) Once	64 (18.3%)	48 (13.3%)	52 (15.2%)	16 (5.3%)	23 (10.2%)	32 (10.4%)	32 (10.6%)
(3) Twice	25 (7.1%)	30 (8.3%)	17 (5%)	11 (3.6%)	6 (2.7%)	11 (3.6%)	6 (2%)
(4) Three Times	10 (2.9%)	3 (0.8%)	9 (2.6%)	0 (0%)	3 (1.3%)	5 (1.6%)	5 (1.7%)
(5) More Than Three Times	2 (0.6%)	4 (1.1%)	2 (0.6%)	1 (0.3%)	3 (1.3%)	1 (0.3%)	1 (0.3%)
(6) Can't Say	7 (2.0%)	46 (12.7%)	11 (3.2%)	N/A	N/A	N/A	N/A
Mean	1.44*	2.00	1.51	N/S	N/S	N/S	N/S

* *This mean has been calculated with the Can't Say response excluded.*

The percentage of respondents who have not had their water interrupted has increased from **63.8%** in 2003 to **69.1%** in 2004. Being a KPI, this measure has a target of **85%** or higher, this target has not been reached in the last seven years.

The number of respondents who have had their water supply interrupted at least once has increased from **23.5%** in 2003 to **28.9%** in 2004.

There has been a significant decrease in the percentage of respondents who could not say from **12.7%** in 2003 to **2.0%** in 2004.

Q17. On average how long did the interruption last for?

Base: All respondents who have had their water interrupted at least once

Responses	Total 2004 101 (100%)	Total 2003 85 (100%)	Total 2002 80 (100%)	Total 2001 28 (100%)	Total 2000 38 (100%)	Total 1999 49 (100%)	Total 1998 44 (100%)
(1) Up to an hour	35 (34.7%)	27 (31.8%)	26 (32.5%)	10 (35.7%)	9 (23.7%)	30 (61.2%)	17 (38.6%)
(2) 1-5 hours	44 (43.6%)	29 (34.1%)	40 (50%)	12 (42.9%)	13 (34.2%)	15 (30.6%)	19 (43.2%)
(3) More than 5 hours	7 (6.9%)	13 (15.3%)	11 (13.7%)	1 (3.6%)	8 (21.1%)	1 (2%)	4 (9.1%)
(4) Can't Say	15 (14.9%)	16 (18.8%)	3 (3.7%)	N/A	N/A	N/A	N/A
Mean	1.67*	2.21	1.89	N/S	N/S	N/S	N/S

** This mean has been calculated with the Can't Say response excluded.*

There has been a significant increase in the number of interruptions that lasted for between 1-5 hours from **34.1%** of respondents in 2003 to **43.6%** in 2004.

The percentage of respondents that indicated that the interruption lasted for more than 5 hours has fallen from **15.3%** in 2003 to **6.9%** in 2004.

The number of interruptions that lasted for less than an hour has increased from **31.8%** in 2003 to **34.7%** in 2004.

Q18. Were you notified prior to each shut off? Base: All respondents who have had their water interrupted at least once			
Responses	**Total 2004** **101 (100%)**	**Total 2003** **85 (100%)**	**Total 2002** **80 (100%)**
(1) Yes, in all instances	72 (71.3%)	65 (76.5%)	50 (62.5%)
(2) Yes, in some instances	11 (10.9%)	2 (2.4%)	7 (8.75%)
(3) Never	17 (16.8%)	9 (10.6%)	21 (26.25%)
(4) Can't Say	1 (1.0%)	9 (10.6%)	2 (2.5%)
Mean	1.45*	1.55	1.69

** This mean has been calculated with the Can't Say response excluded.*

In 2004 there has been a decrease in the percentage of respondents who were contacted in all instances from **76.5%** in 2003 to **71.3%** in 2004. There has also been an increase in the number of respondents who indicated that they were never notified prior to each shut off from **10.6%** in 2003 to **16.8%** in 2004. The number of respondents who could not say declined from **10.6%** or respondents to **1.0%** of respondents.

The number of respondents who were notified at all, increased from **78.9%** in 2003 to **82.2%** in 2004. This indicates that in 2004 Aqwest notified residents of shut offs more than in 2003 but that this notification was not consistent and did not happen all of the time.

Q19. Was the water turned back on within the specified time frame? Base: All respondents who have had their water interrupted at least once							
Responses	**Total 2004** **83 (100%)**	**Total 2003** **85 (100%)**	**Total 2002** **80 (100%)**	**Total 2001** **20 (100%)**	**Total 2000** **23 (100%)**	**Total 1999** **36 (100%)**	**Total 1998** **27 (100%)**
(1) Yes	72 (86.7%)	63 (74.1%)	62 (77.5%)	13 (65%)	12 (52.2%)	32 (88.9%)	21 (77.7%)
(2) No	4 (4.8%)	3 (3.5%)	4 (5%)	0 (0%)	5 (21.7%)	0 (0%)	0 (0%)
(3) Can't Say	7 (8.4%)	19 (22.4%)	14 (17.5%)	7 (35%)	6 (26.1%)	6 (16.7%)	6 (22.2%)
Mean	1.05*	1.48	1.40	N/S	N/S	N/S	N/S

** This mean has been calculated with the Can't Say response excluded.*

There has been a significant increase in the percentage of respondents who had their services reinstated within the specified timeframe from **74.1%** in 2003 to **86.7%** in 2004.

The number of respondents who indicated that their water was not turned on within the specified time frame also increased slightly from **3.5%** in 2003 to **4.8%** in 2004.

The percentage of respondents who recorded a response of 'can't say' fell in 2004, from **22.4%** in 2003 to **8.4%** in 2004.

Q20. On a scale of 1-5 where 1 is not inconvenient and 5 is extremely inconvenient, how would you rate the level of inconvenience caused by the disruption to the water supply? Base: All respondents who have had their water interrupted at least once							
Responses	**Total 2004** **101 (100%)**	**Total 2003** **85 (100%)**	**Total 2002** **80 (100%)**	**Total 2001** **28 (100%)**	**Total 2000** **38 (100%)**	**Total 1999** **49 (100%)**	**Total 1998** **44 (100%)**
(1) Not at all inconvenient	52 (51.5%)	44 (51.8%)	42 (52.5%)	13 (46.4%)	10 (26.3%)	27 (55.1%)	13 (29.5%)
(2) Not inconvenient	21 (20.8%)	22 (25.9%)	19 (23.75%)	9 (32.1%)	8 (21.1%)	10 (20.4%)	10 (22.7%)
(3) Neither	20 (19.8%)	10 (11.8%)	8 (10%)	3 (10.7%)	10 (26.3%)	7 (14.3%)	14 (31.8%)
(4) Inconvenient	3 (3.0%)	5 (5.9%)	1 (1.25%)	0 (0%)	3 (7.9%)	0 (0%)	1 (2.3%)
(5) Extremely inconvenient	5 (5.0%)	4 (4.7%)	10 (12.5%)	1 (3.6%)	3 (7.9%)	1 (2%)	0 (0%)
Mean	1.89	1.86	1.98	4.31*	3.56*	4.38*	3.92*

**Please note that in previous years the value '3' represented "Moderately inconvenient"*

–It is also important to note that the scale was inverse in previous years; meaning that '1' represented "extremely inconvenient" and '5' represented "Not inconvenient". The scale has been reversed in the 2002 survey to ensure consistency in scales throughout the survey and minimize associated errors. To

invert the means it is necessary to calculate how far they are from the relevant end point and convert it to the current scale.
For Example, 2001 mean is '4.31', if we subtract this from 5 we see that it is '1.16' from the end point (5). Therefore the inverted mean is '1.16' this figure can be compared with the 2002 mean.

It appears that the level of inconvenience amongst the 2004 respondents has not changed from 2003 when considering the percentage of respondents who indicated the interruption was not at all inconvenient; this figure has fallen very slightly from **51.8%** in 2003 to **51.5%** in 2004.

The level of overall inconvenience has once again fallen amongst the two response categories, inconvenient and extremely inconvenient from **10.6%** in 2003 to **8.0%** in 2004.

The reasons cited by respondents who indicated that they found the interruption either inconvenient or extremely inconvenient were mainly related to the householder not being able to undertake their daily tasks, as well as the staining created by water discolouration. One respondent indicated that the fact that they were not notified was the main cause of inconvenience.

The overall percentage of respondents that rated the interruption as not at all inconvenient or not inconvenient has fallen from **77.7%** in 2003 to **72.3%** in 2004.

There was a slight increase in the mean from 1.86 to 1.89 indicating that the responses have skewed it more towards the inconvenient end of the scale. As the level of inconvenient responses has fallen this year, this skew can be largely attributed to the increase in neutral responses from **11.8%** in 2003 to **19.8%** in 2004.

7.4 Water Filtration / Tap Water Alternatives

Q21. Do you or does anyone in your household regularly use a water purifier or purchase bottled water for use in your household?

Base: All respondents

Responses	Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
(1) Yes	105 (30.0%)	111 (30.7%)	88 (25.7%)	63 (20.8%)	49 (21.7%)	60 (19.5%)	68 (22.6%)
(2) No	245 (70.0%)	249 (68.8%)	254 (74.3%)	238 (78.5%)	175 (77.4%)	243 (79.2%)	209 (69.4%)
(3) Can't Say	0 (0%)	2 (0.6%)	0 (0%)	N/A	N/A	N/A	N/A
Mean	1.70	1.70	1.74	N/S	N/S	N/S	N/S

The 2004 customer survey saw the responses to this question remained largely unchanged from 2003 with a slight decline in those respondents who use a water purifier or purchase bottled water from **30.7%** in 2003 to **30.0%** in 2004. There was a 0.2% increase in the number of householders that do not use a water purifier or purchase bottled water.

Q22. Why don't you or members of your household drink tap water?
(Multiple Response Possible)

Base: All respondents who answered yes to question 21

Responses	Total 2004 105 (100%)	Total 2003 111 (100%)	Total 2002 88 (100%)
(1) Has an unpleasant taste	50 (47.2%)	53 (47.7%)	55 (68.75%)
(2) Has an unpleasant odour	11 (10.4%)	9 (8.1%)	9 (10.23%)
(3) Not enough water pressure	1 (0.9%)	1 (0.9%)	1 (1.13%)
(4) Can smell/taste the chlorine	49 (46.2%)	35 (31.5%)	31 (35.23%)
(5) Has an unusual colour/ cloudy	11 (10.4%)	11 (9.9%)	10 (11.36%)
(6) Health Reasons	12 (11.3%)	15 (13.5%)	N/A
(7) Other – please see below	22 (20.8%)	22 (19.8%)	20 (22.7%)

The 22 respondents that indicated a response other than those offered gave the following responses:

- Because its fashionable (1 respondent)
- Convenient (11 respondents)

- Equipment supplied when purchased house (1 respondent)
- Habit (1 respondent)
- Like to keep water in the fridge (2 respondents)
- Prefer bottled water (1 respondent)
- Purchase bottled water based on advertising (1 respondent)
- See the residue on the filter (1 respondent)
- Worry about tap water contents (1 respondent)

7.5 Management of Resources

Q28 A. Aqwest manages water resources well for the long term benefit of the community. Please indicate your level of agreement with this statement where 1 equals strongly agree and 5 equals strongly disagree.

Base: All respondents

Responses		Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
Overall Agreement N=241 (68.85%)	(1) Strongly Agree	105 (30.0%)	111 (30.7%)	123 (36%)	30 (13.3%)	30 (13.3%)	8 (2.6%)	73 (24.3%)
	(2) Agree	136 (38.9%)	143 (39.5%)	115 (33.6%)	138 (45.5%)	118 (52.2%)	176 (57.3%)	100 (33.2%)
(3) Neutral		54 (15.4%)	89 (24.6%)	82 (24%)	20 (6.6%)	20 (8.8%)	8 (2.6%)	60 (19.9%)
Overall Disagreement N=15 (4.3%)	(4) Disagree	7 (2.0%)	16 (4.4%)	16 (4.7%)	4 (1.3%)	8 (3.5%)	11 (3.6%)	11 (3.7%)
	(5) Strongly Disagree	8 (2.3%)	3 (0.8%)	6 (1.8%)	3 (1%)	4 (1.8%)	0 (0%)	3 (1%)
Can't Say / Don't Know (excluded)		40 (30.7%)	N/A	N/A	108 (35.6%)	46 (20.4%)	104 (33.9%0	54 (18%)
Mean		1.96*	2.05	2.03	2.04**	2.10**	2.11**	2.07**

* *This mean has been calculated with the Can't Say response excluded.*

***It is important to note that the scale was inverse in previous years; meaning that '1' represented "extremely inconvenient" and '5' represented "Not inconvenient". The scale has been reversed in the 2002 survey to ensure consistency in scales throughout the survey and minimize associated errors. To invert the means it is necessary to calculate how far they are from the relevant end point and convert it to the current scale. For Example, 2001 mean is '4.31', if we subtract this from 5 we see that it is '1.16' from the end point (5). Therefore the inverted mean is '1.16' this figure can be compared with the 2002 mean.*

There has been a slight decline in the percentage of respondents that indicated strongly agree from **30.7%** in 2003 to **30.0%** in 2004 along with a decrease in the number of respondents that agreed from **39.5%** in 2004 to **38.9%** in 2004. Overall agreement therefore fell from **70.2%** in 2003 to **68.9%** in 2004.

Overall disagreement has also fallen from **5.2%** in 2003 to **4.3%** in 2004. Respondents who strongly disagreed however, increased from **0.8%** in 2003 to **2.3%** in 2004.

The reasons given by respondents who disagreed or strongly disagreed included the following:

- Cost (2 responses)
- Think that more planning is needed (3 respondents)
- Water restrictions (5 respondents)
- Council perceived to be wasting water (2 respondents)

- Disagree with concept of supplying local water to Perth (2 respondents)
- Water quality and pressure poor (2 respondents)
- Don't know (1 respondent)

Q28 C. Aqwest is planning effectively for the future.
Please indicate your level of agreement with this statement where 1 equals strongly agree and 5 equals strongly disagree.

Base: All respondents

Responses		Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
Overall Agreement N=184 (52.5%)	(1) Strongly Agree	73 (20.9%)	70 (19.3%)	71 (20.8%)	29 (9.6%)	19 (8.4%)	6 (2%)	47 (15.6%)
	(2) Agree	111 (31.7%)	129 (35.6%)	104 (30.4%)	112 (37%)	94 (41.6%)	163 (53.1%)	85 (28.2%)
(3) Neutral		51 (14.6%)	139 (38.4%)	138 (40.3%)	16 (5.3%)	24 (10.6%)	12 (3.9%)	55 (18.3%)
Overall Disagreement N=15 (4.3%)	(4) Disagree	8 (2.3%)	17 (4.7%)	20 (5.8%)	6 (2%)	7 (3.1%)	2 (0.7%)	8 (2.7%)
	(5) Strongly Disagree	7 (2.0%)	7 (1.9%)	9 (2.6%)	2 (0.7%)	1 (0.4%)	0 (0%)	3 (1%)
Can't Say/Don't know(excluded)		100 (28.6%)	N/A	N/A	138 (45.5%)	81 (35.8%)	124 (40.4%)	103 (34.3%)
Mean		2.06*	2.34	2.39	2.04**	2.15**	2.05**	2.17**

** This mean has been calculated with the Can't Say response excluded.*

***It is important to note that the scale was inverse in previous years; meaning that '1' represented "extremely inconvenient" and '5' represented "Not inconvenient". The scale has been reversed in the 2002 survey to ensure consistency in scales throughout the survey and minimize associated errors. To invert the means it is necessary to calculate how far they are from the relevant end point and convert it to the current scale.*

The 2003 results regarding the respondent's agreement with the statement, Aqwest is planning effectively for the future; indicates an increase in the percentage of respondents who strongly agree from **19.3%** in 2003 to **20.9%** in 2004 along with a fall in the percentage of respondents who agreed. (Down from **35.6%** in 2003 to **31.7%** in 2004).

Overall agreement fell from **54.9%** in 2003 to **52.6%** in 2004. This does not meet with Aqwest KPI target of 85%.

Overall disagreement fell from **6.6%** in 2003 to **4.3%** in 2004. Respondents who disagreed or strongly disagreed gave reasons that fell under the following broad categories:

- Lack or public awareness and information provided (3 respondents)
- Felt that more planning for the future is required (5 respondents)

- Disagree with local water being used to supply Perth (2 respondents)
- Need to look at alternative water solutions (2 respondents)
- Too many water restrictions and shortages (4 respondents)

There was a large percentage decline in neutral responses from **38.4%** in 2003 to **14.6%** in 2004. A portion of this most likely went to Don't Know which received a 28.6% response. This response was not offered in 2003. The benefit of it being included in the 2004 survey is that it distinguishes between those respondents who neither feel negative or positive in their response, and those that do not know or cannot give a response.

Q24. The water supplied by Aqwest is safe to drink.
Please indicate your level of agreement with this statement where 1 equals strongly agree and 5 equals strongly disagree.

Base: All respondents

Responses		Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
Overall Agreement N=295 (84.3%)	(1) Strongly Agree	161 (46.0%)	176 (48.6%)	190 (55.6%)	99 (32.7%)	39 (17.3%)	15 (4.9%)	99 (32.9%)
	(2) Agree	134 (38.3%)	118 (32.6%)	107 (31.3%)	146 (48.2%)	134 (59.3%)	240 (78.2%)	139 (46.2%)
(3) Neutral		27 (7.7%)	51 (14.1%)	26 (7.6%)	24 (7.9%)	17 (7.5%)	5 (1.6%)	30 (10%)
Overall Disagreement N=14 (4.0%)	(4) Disagree	10 (2.9%)	11 (3.0%)	9 (2.6%)	14 (4.6%)	13 (5.8%)	7 (2.3%)	15 (5%)
	(5) Strongly Disagree	4 (1.1%)	6 (1.7%)	10 (2.9%)	2 (0.7%)	7 (3.1%)	0 (0%)	3 (1%)
Can't Say / Don't know(excluded)		14 (4.0%)	N/A	N/A	18 (5.9%)	16 (7.1%)	40 (13%)	15 (5%)
Mean		1.70*	1.77	1.66	1.86	2.12	2.01	1.9

* *This mean has been calculated with the Can't Say response excluded.*

The percentage of respondents who either agree or strongly agree with the above statement has increased from **81.2%** in 2003 to **84.3%** in 2004 however the number of respondents who strongly agree has fallen by 2.6%. Aqwest's target KPI of 85% of respondents in agreement with this statement has fallen slightly short by 0.7%.

There has been a decline in the number of respondents who disagree by 0.1% and those that strongly disagree by 0.6%. This has resulted in the overall disagreement falling from **4.7%** in 2004 to **4.0%** in 2004.

Those respondents that did disagree or strongly disagreed gave responses that fall within the following broad categories:

- Taste (5 respondents)
- Smell (2 respondents)

- Chemicals (3 respondents)
- Colour / sediment (2 respondents)
- Poor quality (1 respondent)
- Asbestos water pipes (1 respondent)

There has been a fall in the percentage of neutral responses given from **14.1%** in 2003 to **7.7%** in 2004. Some of this decline has been partially offset by a don't know response of 4.0%. This option was not available in the 2003 survey.

7.6 Aqwest charges

Q10. C. Aqwest charges fairly for its services.
Please indicate your level of agreement with this statement where 1 equals strongly agree and 5 equals strongly disagree.

Base: All respondents

Responses		Total 2004	Total 2003	Total 2002
		350 (100%)	362 (100%)	342 (100%)
Overall Agreement N=238 (68%)	(1) Strongly Agree	90 (25.7%)	85 (23.5%)	123 (36%)
	(2) Agree	148 (42.3%)	166 (45.9%)	137 (40.1%)
(3) Neutral		61 (17.4%)	80 (22.1%)	44 (12.9%)
Overall Disagreement N=33 (9.5%)	(4) Disagree	24 (6.9%)	22 (6.1%)	27 (7.9%)
	(5) Strongly Disagree	9 (2.6%)	9 (2.5%)	11 (3.2%)
	Don't know	18 (5.1%)	N/A	N/A
Mean		2.14*	2.18	2.02

** This mean has been calculated with the 'Don't know' response excluded.*

The KPI regarding this question is to achieve an overall agreement with the statement of **85%** or higher. This target has not been achieved, with the overall agreement with the statement falling in 2003 from **69.3%** in 2003 to **68.0%** in 2004. The number of respondents who strongly agreed with the statement increased from **23.5%** in 2003 to **25.7%** in 2004.

There was a fall in the neutral response from **22.1%** in 2003 to **17.4%** in 2004. This was partially offset by an increase in those respondents who stated that they did not know **(5.1%)**. This option was not available on previous surveys.

The overall level of disagreement with this statement increased from **8.6%** in 2003 to **9.5%** in 2004. Those respondents that disagreed **(6.9%)** or strongly disagreed **(2.6%)** indicated the following reasons:

- Too expensive (6 respondents)

- System of determining charges is not fair (5 respondents)
- The price is not reflected in the quality of the water or service (2 respondents)
- Rebates should be offered to those that employ technology to save water (1 respondent)
- Have problems with the consumption reading (1 respondent)

Q10. A. The services provided by Aqwest are good value for money.
Please indicate your level of agreement with this statement where 1 equals strongly agree and 5 equals strongly disagree.

Base: All respondents

Responses		Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
Overall Agreement N=268 (74.0%)	(1) Strongly Agree	127 (36.3%)	118 (32.6%)	123 (36%)	45 (14.9%)	22 (9.7%)	3 (1%)	59 (19.6%)
	(2) Agree	137 (39.1%)	150 (41.4%)	128 (37.4%)	146 (48.2%)	117 (51.8%)	176 (57.3%)	123 (40.9%)
(3) Neutral		58 (16.6%)	82 (22.7%)	49 (14.3%)	56 (18.5%)	43 (19%)	7 (2.3%)	68 (22.6%)
Overall Disagreement N=12 (3.3%)	(4) Disagree	15 (4.3%)	7 (1.9%)	33 (9.6%)	31 (10.2%)	11 (4.9%)	19 (6.2%)	22 (7.3%)
	(5) Strongly Disagree	2 (0.6%)	5 (1.4%)	9 (2.6%)	5 (1.7%)	2 (0.9%)	2 (0.7%)	3 (1%)
Can't Say / Don't know(excluded)		11 (3.1%)	N/A	N/A	20 (6.6%)	31 (13.7%)	100 (32.6%)	26 (8.6%)
Mean			1.98	2.06	2.31	2.25	2.23	2.23

This perception question has seen a rise in the percentage of respondents who either 'agree' or 'strongly agree' with the statement, with the percentage rising from an overall agreement of **73.1%** in 2002 to **74%** in 2003.

In addition to the rise in respondents who agree with the statement, there has been a significant fall in the percentage of respondents who disagree with the statement, falling from **12.3%** in 2002 to **3.3%** in 2003.

The percentage of respondents who remain neutral with regards to the statement has risen from **14.3%** in 2002 to **22.7%** in 2003, continuing the rising trend that this response has experienced for the last three years.

Q10. B. Aqwest supplies water of an acceptable quality.
Please indicate your level of agreement with this statement where 1 equals strongly agree and 5 equals strongly disagree.

Base: All respondents

Responses		Total 2004 350 (100%)	Total 2003 362 (100%)	Total 2002 342 (100%)	Total 2001 303 (100%)	Total 2000 226 (100%)	Total 1999 307 (100%)	Total 1998 301 (100%)
Overall Agreement N=267 (75.4%)	(1) Strongly Agree	112 (32.0%)	112 (30.9%)	165 (48.2%)	112 (37%)	34 (12%)	16 (5.2%)	64 (21.3%)
	(2) Agree	152 (43.4%)	155 (42.8%)	118 (34.5%)	150 (49.5%)	137 (60.6%)	254 (82.7%)	133 (44.2%)
(3) Neutral		49 (14.0%)	56 (15.5%)	37 (10.8%)	17 (5.6%)	23 (10.2%)	2 (0.7%)	72 (23.9%)
Overall Disagreement N=36 (10.3%)	(4) Disagree	30 (8.6%)	28 (7.7%)	12 (3.5%)	17 (5.6%)	14 (6.2%)	22 (7.2%)	9 (3%)
	(5) Strongly Disagree	6 (1.7%)	11 (3.0%)	10 (2.9%)	3 (1%)	12 (5.3%)	1 (0.3%)	12 (4%)
Can't Say / Don't know (excluded)		1 (0.3%)	N/A	N/A	4 (1.3%)	6 (2.7%)	12 (3.9%)	11 (3.7%)
Mean		2.04*	2.09	1.78	1.83	2.24	2.11	2.21

** This mean has been calculated with the 'Don't know' response excluded.*

Overall agreement towards this statement has increased from **73.4%** in 2003 to **75.4%** in 2004. This however is still 9.6% short of successfully meeting the **85%** KPI. The increase in overall agreement is attributed to a 1.1% increase in the percentage of respondents that strongly agreed with this statement and a 0.8% increase in respondents who agreed with the statement.

There was a slight decrease in overall disagreement falling from **10.7%** in 2003 to **10.3%** in 2004 however the percentage of respondents of people that disagreed increased by **0.9%.**

Respondents that either disagreed or strongly disagreed did so for the following broad reasons:

- Water had a bad or chemical taste (22 respondents)
- Water had a bad smell (2 respondents)
- Water had a chlorine smell or taste (5 respondents)
- Lack of flouride in the water (4 respondents)
- Water was of poor colour or contained sediment (1 respondent)
- Water was felt to be of poor quality (1 respondent)
- Water rusted the respondent's cutlery (1 respondent)

There was a decline in the percentage of neutral responses from **15.5%** in 2003 to **14.0%** in 2004. This was partially offset by 0.3% of respondents not knowing or unable to give a response. The don't know option was not included in the 2003 survey.

8.0 Customer Service Charter

The 2004 Aqwest Customer Survey did not quantify responses regarding the Customer Service Charter or Aqwest's according behavior, at the request of Aqwest.

9.0 Communications

Q 25. Are you aware that Aqwest distributes a community newsletter, called On Tap, to all of its customers, three times a year?

Base: All respondents

Responses	**Total 2004** **350 (100%)**	**Total 2003** **362 (100%)**
(1)-Yes	251 (71.7%)	265 (73.2%)
(2) No	99 (28.3%)	97 (26.8%)
Total	350 (100%)	362 (100%)

There was a decrease in the percentage of respondents aware of the On Tap newsletter in 2004 by **1.5%**.

Q26. On a scale of 1-5, where 1 represents very informative and 5 represents not informative, how would you rate the information contained within the On Tap newsletter?

Base: Respondents that answered 'yes' to question 25.

Responses	**Total 2004** **251 (100%)**	**Total 2003** **265 (100%)**
(1) Very Informative	72 (28.7%)	96 (36.2%)
(2) Informative	87 (34.7%)	85 (32.1%)
(3) Neutral	46 (18.3%)	74 (27.9%)
(4) Not Informative	5 (2.0%)	5 (1.9%)
(5) Not At All Informative	3 (1.2%)	5 (1.9%)
(6) Don't know	38 (15.1%)	N/A
Mean	2.58	2.01

There was a fall in the percentage of respondents that rated the information within the On Tap newsletter as very informative from **36.2%** in 2003 to **28.7%** in 2004 however the percentage

of respondents who agreed with this statement increased from **32.1%** in 2003 to **34.7%** in 2004. Overall agreement with this statement fell from **68.3%** in 2003 to **63.4%** in 2004.

There was a slight decline in the number of respondents who found the newsletter not informative or not at all informative from **3.8%** in 2003 to **3.2%** in 2004. The reasons cited for these responses were as follows:

- Respondent not interested (3 respondents)
- Finds the newsletter to be irrelevant to the community (1 respondents)
- Addresses problems rather than solutions (1 respondent)
- Don't know (1 respondent)

15.1% of respondents indicated that they did not know or could not rate the information contained within On Tap newsletter. It is assumed that many of these respondents would have previously selected the neutral option in 2003 as don't know was not offered as a response. The percentage of respondents that indicated neutral in 2004 was **18.3%** a fall from **27.9%** in the previous year.

Q27. What information would you like to see contained in the On Tap newsletter? (Open ended question)

This open ended question was asked to all of the respondents who were aware of the newsletter. Some of the significant responses were as follows (a full list of responses can be seen in appendix I)

- Nothing extra – **57.7%** (202 respondents)
- Don't know – **5.7%** (20 respondents)
- Information about supply interruptions – **1.1%** (4 respondents)
- Water conservation information – **4.3%** (15 respondents)
- Analysis of water chemical content – **4.9%** (17 respondents)
- Planning for the future – **2.6%** (9 respondents)
- Changes and improvements to water quality – **2.3%** (8 respondents)
- Price and rates changes and information – **0.9%** (3 respondents)

10.0 Demographics

Q 30. Respondent's gender?		Base: All respondents
Responses	**Total 2004** **350 (100%)**	**Total 2003** **362 (100%)**
(1) Male	139 (39.7%)	143 (39.5%)
(2) Female	211 (60.3%)	213 (58.8%)
Missing	0 (0.0%)	6 (1.6%)
Total	350 (100%)	362 (100%)

11.0 Conclusions and Recommendations

The overall 2004 Aqwest customer survey results have shown mixed results with improvements in some areas and declines in other areas. Unfortunately Aqwest did not meet any of its KPI targets. Following is a comparison table outlining the KPI's, the target and the actual result achieved in the 2004 customer survey. Directly following that is a table outlining the 2003 performance results.

Whilst overall satisfaction with tap water services has remained constant, the overall satisfaction rating for Aqwest has declined.

There has been some improvement in 2004, in that there were less respondents experiencing problems and interruptions to their water service. Additionally respondents generally found water safer to drink and of a more acceptable quality in 2004 compared to 2003. The 2004 results also indicated that more respondents felt that Aqwest was better informing the public of its services, than in 2003.

On the other hand, 2004 results indicated that more respondents felt that Aqwest was not charging fairly for its services and that it is not planning effectively for the future.

2004 performance

KPI	Target	Result	Variance
Overall satisfaction with Aqwest	>85%	80.6%	-4.4%
Overall satisfaction with tap water services	>85%	81.4%	-3.0%
Customer contact (no problem with service)	>85%	84%	-1%
No interruption to water service	>85%	69.1%	-15.9%
Water safe to drink	>85%	84.3%	-0.7%
Water supplies are of an acceptable quality	>85%	75.4%	-9.6%
Aqwest charges fairly for its services	>85%	68.0%	-17.0%
Aqwest informs the public about its services	>85%	79.14%	-5.86%
Aqwest is planning effectively for the future	>85%	52.5%	-32.5.1%

2003 performance

KPI	Target	Result	Variance
Overall satisfaction with Aqwest	>85%	82.6%	-2.4%
Overall satisfaction with tap water services	>85%	82.0%	-3.0%
Customer contact (no problem with service)	>85%	82.3%	-2.7%
No interruption to water service	>85%	63.8%	-21.2%
Water safe to drink	>85%	81.2%	-3.8%
Water supplies are of an acceptable quality	>85%	73.7%	-11.3%
Aqwest charges fairly for its services	>85%	69.3%	-15.7%
Aqwest informs the public about its services	>85%	70.72%	-14.28%
Aqwest is planning effectively for the future	>85%	54.9%	-30.1%

These key performance indicators are effectiveness indicators that have been set to provide a measure of Aqwest's ability to provide sustainable, high quality water services at a minimum long term cost.

The Corporate Plan sets a customer satisfaction of 85%, the target for the KPI measures and while Aqwest did not achieve this target in 2004, the company is still achieving consistently high levels of customer satisfaction across all measures.

The KPI's are indicating that customer satisfaction with the agency is falling and it is essential that Aqwest takes action to halt the decline in customer satisfaction, while levels are still relatively high.

It is recommended that a public education campaign is developed, to provide the public with more information on water quality and additives, water charges, water conservation and sustainability and the future of water services in Western Australia.

Water quality, price and interruptions are the three key areas where Aqwest is performing its worst against its KPI's. These three areas were key areas also in 2003.

Respondents in 2004 seemed more aware of water conservation and as such the survey recorded significant increases in the percentage of respondents that would like Aqwest to improve on its resource management, water conservation and environmental responsibility. Additionally there was an increase in respondents in 2004 who felt that Aqwest needed to improve the water quality provided to residents.

Only 68.8% of respondents agreed that Aqwest was managing water resources well for the long term benefit of the community and interestingly 30.7% of respondents did not know enough to give a positive or negative response. Additionally only 52.5% of respondents indicated they agreed that Aqwest was planning effectively for the future and 28.6% of respondents indicated that they did not know. This highlights a need to increase the level of information provided to rate payers and residents about Aqwest's conservation and future planning measures and activities.

10.0% of respondents disagreed that Aqwest supplies water of an acceptable quality. Of all of the statements tested for respondent agreement, this statement received the highest level of disagreement. Respondents who disagreed indicated a small range of common problems

including bad smell, bad taste, poor colour and a high level of chlorine related smell and taste issues. These responses have remained at the same percentage as that received in 2003.

Another alarming statistic was the number of customers who were unaware that Aqwest distributes a community newsletter. Even though it is included with the bill that they receive, more than a quarter of respondents were still unaware of the newsletter.

The newsletter is also an important communication tool for Aqwest and at a time where customers are requesting more information it is important that it is used to its best effect. Techniques such as referencing the newsletter on the account may increase readership, i.e. "Would you like to reduce your water bill? See the latest edition of the On Tap newsletter, enclosed with this account."

The newsletter also lacks a consistent appearance. By establishing a format and applying Aqwest corporate colours and standards the newsletter may be more recognizable to customers, therefore increasing the recall and possibly the readership of the publication.

With satisfaction levels declining, low levels of promotional and communication recall and customers requesting more information, it is important that Aqwest takes action to stop the continuation of this trend and ensure that all Aqwest communications channels are utilized to their maximum efficiency.

1st Quarter Report
Licensee: Aqwest

Service: Water Supply
Period: 1 July 1999 to 30 September 1999
Number of Connections Total: 12529
Number of Connections Residential: 10502
Submitted by: Paul Bendotti

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	46	46	90	100.0%
Thermotolerant Coliforms	46	46	95	100.0%
Amoeba (Thermophilic Naegleria)	45	45	95	100.0%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	0	na	Compliant
Chemical - non health related	312	100%	Compliant
Radiological	0	na	Compliant

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

									Most Recent Quarter						
No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
2	0	1	0	1	0	0	1	0	0	0	0	5	12529	>99.8	99.96%

Water Supply Service interruptions

No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
24	30	43	115	29	30	70	17	87	39	14	100	598	12529	>76	95.2%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
2	2	6	5	4	3	5	5	5	5	5	5	52	301.91	<20	17.2

Telephone answering - emergency response

Month	October	November	December	January	February	March	April	May	June	July	August	Sept	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	98	123	105	137	114	116	132	96	100	122	105	109	1357		
No. of calls receiving a response within one hour	98	121	104	137	114	116	132	96	100	122	105	109	1354	>90%	99.78%

APPENDIX

2nd Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 October 1999 to 31 December 1999
Number of Connections Total: 12597
Number of Connections Residential: 10599
Submitted by: Paul Bendotti

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	51	51	90	100%
Thermotolerant Coliforms	51	51	95	100%
Amoeba (Thermophilic Naegleria)	51	51	95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	160	100%	Compliant
Chemical - non health related	348	100%	Compliant
Radiological	10	100%	Compliant

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for October	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for November	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	1	0	0	1	0	0	0	0	0	0	0	2	12597	>99.8	99.98%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
115	29	30	70	17	87	39	14	100	100	117	42	760	12597	>75	94.0%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
5	4	3	5	5	5	5	5	5	7	12	9	70	303.369	<20	23.1

Telephone answering - emergency response

Month	January	Febraury	March	April	May	June	July	August	September	October	November	Dec	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	137	114	116	132	96	100	122	105	109	142	150	159	1482		
No. of calls receiving a response within one hour	137	114	116	132	96	100	122	105	109	142	150	159	1482	>90%	100%

3rd Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 January 2000 to 31 March 2000
Number of Connections Total: 12678
Number of Connections Residential: 10676
Submitted by: Paul Bendotti

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	51	51	90	100%
Thermotolerant Coliforms	51	51	95	100%
Amoeba (Thermophilic Naegleria)	51	51	95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	0	na	Compliant
Chemical - non health related	196	99.5%	Compliant
Radiological	0	na	Compliant

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for January	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for February	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for March	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	1	0	0	0	0	0	0	0	0	0	0	1	12678	>99.8	99.99%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
70	17	87	39	14	100	117	42	61	18	30	30	633	12678	>76	95.0%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
5	5	5	5	5	5	7	12	9	5	4	2	69	304.828	<20	22.6

Telephone answering - emergency response

Month	April	May	June	July	August	September	October	November	December	January	February	March	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	132	98	100	122	105	100	142	150	150	105	134	147	1501		
No. of calls responding a response within one hour	132	98	100	122	105	100	142	150	150	105	134	147	1501	>90%	100%

4th Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 April 2000 to 30 June 2000
Number of Connections Total: 12737
Number of Connections Residential: 10728
Submitted by: Paul Bendotti

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	49	49	90	100%
Thermotolerant Coliforms	49	49	95	100%
Amoeba (Thermophilic Naegleria)	49	49	95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	0	na	Compliant
Chemical - non health related	170	99.7%	Compliant
Radiological	0	na	Compliant

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

									Most Recent Quarter						
No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for Sept	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for Dec	No. of Confirmed Pressure and flow fault reports for Jan	No. of Confirmed Pressure and flow fault reports for Feb	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12737	>99.8	100%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for Sept	No. of Confirmed Interruptions > 1 hour for Oct	No. of Confirmed Interruptions > 1 hour for Nov	No. of Confirmed Interruptions > 1 hour for Dec	No. of Confirmed Interruptions > 1 hour for Jan	No. of Confirmed Interruptions > 1 hour for Feb	No. of Confirmed Interruptions > 1 hour for Mar	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for Jun	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
39	14	100	117	42	61	18	38	30	0	71	143	673	12737	>75	94.7%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for Sept	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for Dec	Leaks and Bursts for Jan	Leaks and Bursts for Feb	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
5	5	5	7	12	9	5	4	2	2	4	8	68	306.287	<20	22.2

Telephone answering - emergency response

Month	July	August	Sept	October	November	Dec	Jan	Feb	March	April	May	June	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	122	105	109	142	150	159	105	134	147	85	187	116	1561		
No. of calls receiving a response within one hour	122	105	109	142	150	159	105	134	147	85	187	116	1561	>90%	100%

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: 1 July 1999 to 31 December 1999
Number of Connections Total: 12597
Number of Connections Residential: 10599

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target: 90 % of customers received the service standard	Result
0	0	>90%	100%

Customer Complaint Data
All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	169
Water Continuity interruptions	0
Pressure or Flow	38
Accounts	0
Other	0

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	0
Resolved by an apology by the licensee	0
Resolved by mediation or the involvement of an independent third party	0
Resolved by monetary compensation	0
Resolved by routine business processes	207
Resolved by other means	0

Written complaints

Total number of written complaints	0
Number of written complaints resolved within 21 days	0
Number of written complaints resolved in greater than 21 days	0

Six Monthly Report

Licensee: Aqwest

Service: Water Supply
Period: **1 January 2000 to 30 June 2000**
Number of Connections Total: 12737
Number of Connections Residential: 10728

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target: 90 % of customers received the service standard	Result
1	1		100%

Customer Complaint Data

All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	114
Water Continuity interruptions	0
Pressure or Flow	36
Accounts	0
Other	0

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	0
Resolved by an apology by the licensee	0
Resolved by mediation or the involvement of an independent third party	0
Resolved by monetary compensation	2
Resolved by routine business processes	148
Resolved by other means	0

Written complaints

Total number of written complaints	1
Number of written complaints resolved within 21 days	1
Number of written complaints resolved in greater than 21 days	0

Annual Report
Licensee: Aqwest

Service: Water Supply
Period: ~~1 January~~ 2000 ~~to 30 June 2000~~
Number of Connections Total: 12737
Number of Connections Residential: 10728

Services Provided By Agreement

Number of services provided by agreement	Number of services provided by agreement with documented agreements	90 per cent of customers have documented agreements	Result
0	0	>90%	100%

1st Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 July 2000 to 30 September 2000
Number of Connections Total: 12810
Number of Connections Residential: 10793
Submitted by:

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	48	48	90	100.0%
Thermotolerant Coliforms	48	48	95	100.0%
Amoeba (Thermophilic Naegleria)	48	48	95	100.0%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	0	na	Compliance
Chemical - non health related	125	100%	Compliance
Radiological	0	na	Compliance

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

									Most Recent Quarter						
No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12810	>99.8	100.00%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
117	42	61	18	38	30	0	71	143	64	54	5	843	12810	>75	95.0%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
7	12	9	5	4	2	2	4	8	7	4	3	67	306.27	<20	21.9

Telephone answering - emergency response

Month	October	November	December	January	February	March	April	May	June	July	August	Sept	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	142	150	159	105	134	147	85	187	116	114	105	109	1553		
No. of calls receiving a response within one hour	142	150	159	105	134	147	85	187	116	114	105	109	1553	>90%	100.00%

2nd Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 October 2000 to 31 December 2000
Number of Connections Total:
Number of Connections Residential:
Submitted by: P. McCLEERY

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	49	49	90	100%
Thermotolerant Coliforms	49	49	95	100%
Amoeba (Thermophilic Naegleria)	49	49	95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	81	100%	
Chemical - non health related	349	99%	
Radiological	0	-	

Non compliance = 2 x Non health related inorganic samples (Sulphate)
Investigation in progress

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for October	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for November	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for December	Total reports for year	Number of Connections	Target: % of customers receiving the service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12852	>99.8	100.00%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
16	38	30	0	71	143	64	54	5	30	43	45	541	12852	>75	95.8%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
5	4	2	2	4	11	7	4	3	4	3	4	50	306.28	<20	16.3

Telephone answering - emergency response

Month	January	Febraury	March	April	May	June	July	August	September	October	November	Dec	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	105	134	147	85	187	116	114	105	109	172	150	109	1533		
No. of calls receiving a response within one hour	105	134	147	85	187	116	114	105	109	172	150	109	1533	>90%	100%

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: **1 July 2000 to 31 December 2000**
Number of Connections Total:
Number of Connections Residential:

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target: 90 % of customers received the service standard	Result
1	1	>90%	100%

Customer Complaint Data
All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	81
Water Continuity interruptions	0
Pressure or Flow	46
Accounts	5
Other	2

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	7
Resolved by an apology by the licensee	0
Resolved by mediation or the involvement of an independent third party	1
Resolved by monetary compensation	0
Resolved by routine business processes	126
Resolved by other means	0

Written complaints

Total number of written complaints	1
Number of written complaints resolved within 21 days	1
Number of written complaints resolved in greater than 21 days	0

3rd Quarter Report
Licensee: Aqwest

Service: Water Supply
Period: 1 January 2001 to 31 March 2001
Number of Connections Total:
Number of Connections Residential:
Submitted by: Peter McCleery

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	52	52	90	100%
Thermotolerant Coliforms (Faecal)	52	52	95	100%
Amoeba (Thermophilic Naegleria)	52	52	95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical	8	100%	
Chemical	260	100%	
Radiological	0	-	

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for January	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for February	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for March	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12897	>99.8	100.00%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	71	143	84	54	5	30	43	45	8	3	1	487	12897	>75	98.4%

Water Supply Services - Drought Response

Description of operational area, type (severity), duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
2	4	8	7	4	3	4	3	4	1	1	1	42	308.28	<20	13.7

Telephone answering - emergency response

	April	May	June	July	August	September	October	November	December	January	February	March	Totals	Target: >90%	Result
[redacted]	86	187	116	114	105	133	172	150	109	158	124	118	1671		
[redacted]	85	187	116	114	105	133	172	150	109	158	124	118	1671	>90%	100%

4th Quarter Report
Licensee: Aqwest

Service: Water Supply
Period: 1 April 2001 to 30 June 2001
Number of Connections Total: 12562
Number of Connections Residential: 12552
Submitted by: Peter McCleery

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	50	50	90	100%
Thermotolerant Coliforms	50	50	95	100%
Amoeba (Thermophilic Naegleria)	51	51	95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related			
Chemical - non health related	188	99.9%	
Radiological	0	-	

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

									Most Recent Quarter						
No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for Sept	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for Dec	No. of Confirmed Pressure and flow fault reports for Jan	No. of Confirmed Pressure and flow fault reports for Feb	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12562	>99.8	100%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for Sept	No. of Confirmed Interruptions > 1 hour for Oct	No. of Confirmed Interruptions > 1 hour for Nov	No. of Confirmed Interruptions > 1 hour for Dec	No. of Confirmed Interruptions > 1 hour for Jan	No. of Confirmed Interruptions > 1 hour for Feb	No. of Confirmed Interruptions > 1 hour for Mar	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for Jun	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
64	51	5	30	43	45	8	3	1	34	18	165	470	12562	>75	96.3%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for Sept	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for Dec	Leaks and Bursts for Jan	Leaks and Bursts for Feb	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
7	4	3	4	3	4	1	1	1	5	6	6	45	311.34	<20	14.5

Telephone answering - emergency response

Month	July	August	Sept	October	November	Dec	Jan	Feb	March	April	May	June	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	114	105	133	172	150	109	158	124	118	99	81	97	1460		
No. of calls receiving a response within one hour	114	105	133	172	150	109	158	124	118	99	81	97	1460	>90%	100%

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: **1 January 2001 to 30 June 2001**
Number of Connections Total:
Number of Connections Residential:

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target: 90 % of customers received the service standard	Result
0	0	>90%	100%

Customer Complaint Data
All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	83
Water Continuity interruptions	0
Pressure or Flow	42
Accounts	1
Other	0

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	1
Resolved by an apology by the licensee	0
Resolved by mediation or the involvement of an independent third party	0
Resolved by monetary compensation	0
Resolved by routine business processes	124
Resolved by other means	1

Written complaints

Total number of written complaints	0
Number of written complaints resolved within 21 days	0
Number of written complaints resolved in greater than 21 days	0

Annual Report
Licensee: Aqwest

Service: Water Supply
Period: 1 July 2000 to 30 June 2001
Number of Connections Total:
Number of Connections Residential:

Services Provided By Agreement

Number of services provided by agreement	Number of services provided by agreement with documented agreements	90 per cent of customers have documented agreements	Result
0	0	>90%	100%

3rd Quarter Report

Licensee: Aqwest

Service: Water Supply

Period: 1 July 2001 to 30 September 2001

Number of Connections Total: 12902

Number of Connections Residential: 11651

Submitted by: P. McCleery

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	56	56	90	100.0%
Thermotolerant Coliforms	56	56	95	100.0%
Amoeba (Thermophilic Naegleria)	56	56	95	100.0%

Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	0	na	Compliance
Chemical - non health related	142	100%	Compliance
Radiological	0	na	Compliance

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for July	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for August	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12902	>99.8	100.00%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
30	43	45	8	3	1	34	18	165	96	37	69	549	12902	>75	95.7%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
4	3	4	1	1	1	5	6	6	6	3	7	47	311.34	<20	15.1

Telephone answering - emergency response

Month	October	November	December	January	February	March	April	May	June	July	August	Sept	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	172	150	109	158	124	118	99	81	97	109	80	107	1404		
No. of calls requiring a response within one hour	172	150	109	158	124	118	99	81	97	109	80	107	1404	>90%	100.00%

2nd Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 October 2001 to 31 December 2001
Number of Connections Total: 12929
Number of Connections Residential: 11651
Submitted by: P. McCLEERY

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	66	66	≥90	100%
Thermotolerant Coliforms	66	66	≥95	100%
Amoeba (Thermophilic Naegleria)	66	66	≥95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	% of analyses within guideline values	Result
Chemical - health related	239	100%	
Chemical - non health related	70	100%	
Radiological	23	96%	

Schedule 3 (8 samples x 22 parameters) + Schedule 4 (7 samples x 9 parameters)
Schedule 5 (7 samples x 10 parameters)
Final Radiological results are not available at this time
One sample high in alpha additional testing has been undertaken and awaiting results

Note. When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non-health related quality	Included in above		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for October	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for November	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12929	>99.8	100.00%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	Most Recent Quarter: No. of Confirmed Interruptions > 1 hour for October	Most Recent Quarter: No. of Confirmed Interruptions > 1 hour for November	Most Recent Quarter: No. of Confirmed Interruptions > 1 hour for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
8	3	1	34	18	165	66	37	60	36	143	56	806	12929	≥78	84.8%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Most Recent Quarter: Leaks and Bursts for October	Most Recent Quarter: Leaks and Bursts for November	Most Recent Quarter: Leaks and Bursts for December	Total reports for Year	Number of Leaks	Target: < 20 leaks or bursts per 100 km of pipeline	Result
1	1	1	5	6	0	0	3	7	6	7	6	55	307.34	<20	17.9

Telephone answering - emergency response

Month	January	February	March	April	May	June	July	August	September	October	November	December	Total	Number of calls	Result
No. of calls requiring a response within one hour	158	124	118	99	81	97	100	80	107	143	127	89	1332		
No. of calls receiving response within one hour	158	124	118		81	97	100	80	107	143	127	89	1332		100%

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: **1 July 2001 to 31 December 2001**
Number of Connections Total: **12929**
Number of Connections Residential: **11651**

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target of written complaints successfully resolved within 21 days	Result
3	3	>90%	100%

Customer Complaint Data

All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	104
Water Continuity interruptions	
Pressure or Flow	29
Accounts	4
Other	3

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	4
Resolved by an apology by the licensee	1
Resolved by mediation or the involvement of an independent third party	
Resolved by monetary compensation	
Resolved by routine business processes	133
Resolved by other means	1

Written complaints

Total number of written complaints	6
Number of written complaints resolved within 21 days	6
Number of written complaints resolved in greater than 21 days	

3rd Quarter Report
Licensee: Aqwest

Service: Water Supply
Period: 1 January 2002 to 31 March 2002
Number of Connections Total: 12978
Number of Connections Residential: 11703
Submitted by: Peter McCleery

Health Standards: Microbiological quality

Microbiology	No of samples	Samples free of coliforms & E.coli	Target	Result
Total coliforms	66	66	100	100%
Thermotolerant coliforms	66	66	100	100%
Amoeba (Naegleria)	66	66	100	100%

Health Standards: Chemical quality

Chemical group	No. of samples	% of analyses within guideline values	Result
Chemical [illegible]	1	100%	
Chemical [illegible]	210	100%	
Radiological	2	100%	

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for January	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for February	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for March	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12978	>99.6	100.00%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
34	18	165	96	37	69	36	143	57	55	6	14	730	12978	>75	94.4%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains per annum	Result
5	6	6	0	3	7	6	7	6	8	1	7	68	311.64	<20	21.8

Telephone answering - emergency response

Month	April	May	June	July	August	September	October	November	December	January	February	March	Total for year	Target: 90%	Result
No. of calls responded within one hour	99	81	97	109	80	107	143	127	89	99	90	102	1223		
No. of calls responded within one hour	99	81	97	109	80	107	143	127	89	99	90	102	1223		100%

4th Quarter Report
Licensee: Aqwest

Service: Water Supply
Period: 1 April 2002 to 30 June 2002
Number of Connections Total: 13021
Number of Connections Residential: 11740
Submitted by: Peter McCleary

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	60	60	90	100%
Thermotolerant Coliforms	60	60	95	100%
Amoeba (Thermophilic Naegleria)	60	60	95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	% of analyses within guideline values	Result
Chemical - health related	81	100%	
Chemical - non health related	90	100.0%	
Radiological	2	100%	

Guideline Schedule	Number of parameters	No sites in Period	Total of samples
3 Organic Health	22	0	0
4 Inorganic Health	9	9	81
5 Inorganic non hea	10	9	90
6 Radiological	2	1	2

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for Sept	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for Dec	No. of Confirmed Pressure and flow fault reports for Jan	No. of Confirmed Pressure and flow fault reports for Feb	No. of Confirmed Pressure and flow fault reports for March	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for April	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for May	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for June	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13021	>99.8	100%

Water Supply Service interruptions

No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for Sept	No. of Confirmed Interruptions > 1 hour for Oct	No. of Confirmed Interruptions > 1 hour for Nov	No. of Confirmed Interruptions > 1 hour for Dec	No. of Confirmed Interruptions > 1 hour for Jan	No. of Confirmed Interruptions > 1 hour for Feb	No. of Confirmed Interruptions > 1 hour for Mar	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for Jun	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
96	37	69	36	143	57	55	6	14	181	322	34	1030	13021	>=76	92.1%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for Sept	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for Dec	Leaks and Bursts for Jan	Leaks and Bursts for Feb	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
6	3	7	6	7	6	8	1	7	7	2	4	64	315	average <20	20.3

Telephone answering - emergency response

Month	July	August	Sept	October	November	Dec	Jan	Feb	March	April	May	June	Totals	>90%	Result
No. of calls requiring a response within one hour	109	80	107	143	127	89	99	90	102	77	81	81	1185		
No. of calls receiving a response within one hour	109	80	107	143	127	89	99	90	102	77	81	81	1185		100%

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: 1 January 2002 to 30 June 2002
Number of Connections Total: 13021
Number of Connections Residential: 11740

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target: 90 % of customers received the service standard	Result
0	0	>90%	100%

Customer Complaint Data
All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	22
Water Continuity interruptions	0
Pressure or Flow	20
Accounts	
Other	65

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	7
Resolved by an apology by the licensee	0
Resolved by mediation or the involvement of an independent third party	0
Resolved by monetary compensation	0
Resolved by routine business processes	101
Resolved by other means	

Written complaints

Total number of written complaints	1
Number of written complaints resolved within 21 days	0
Number of written complaints resolved in greater than 21 days	1

Annual Report
Licensee: Aqwest

Service: Water Supply
Period: 1 July 2001 to 30 June 2002
Number of Connections Total: 13021
Number of Connections Residential: 11740

Services Provided By Agreement

Number of services provided by agreement	Number of services provided by agreement with documented agreements	90 per cent of customers have documented agreements	Result
0	0	>90%	100%

3rd Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 January 2002 to 31 March 2002
Number of Connections Total: 12978
Number of Connections Residential: 11703
Submitted by: Peter McCleery

Health Standards: Microbiological quality

Microbiological Quality	No. of samples MC	Samples free of coliforms and amoeba	Target	Result
Total Coliforms (MPN/100ml)	66	66	90	100%
Thermotolerant Coliforms (MPN/100ml)	66	66	95	100%
Amoeba (Thermophilic Naegleria)	66	66	95	100%

Health Standards: Chemical quality

Chemical Quality	No. of samples	% of analyses within guideline values	Result
Chemical health related	27	100%	
Chemical non health related	30	100%	
Radiological	4	100%	

Guideline Schedule parameters	Number of	No sites in Period	Total of samples
3 Organic Health	22	0	0
4 Inorganic Health	9	3	27
5 Inorganic non hea	10	3	30
6 Radiological	2	2	4

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	12076	>99.8	100.00%

Water Supply Service interruptions

No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
34	18	165	96	37	89	36	143	57	55	6	14	730	12078	>75	94.4%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
5	6	6	6	3	7	0	7	0	0	1	7	60	311.64	<20	21.8

Telephone answering - emergency response

Month	April	May	June	July	August	September	October	November	December	January	February	March	Total	[redacted]	Result [redacted]
No of calls [redacted] responded within one hour	99	81	97	109	80	107	143	127	89	99	90	102	1223	[redacted]	
No of calls [redacted] responded within one hour	99	81	97	109	80	107	143	127	89	99	90	102	1223	[redacted]	100%

IN255

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: 1 January 2002 to 30 June 2002
Number of Connections Total: 13021
Number of Connections Residential: 11740

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target 90 % of customers received the service standard	Result
0	0	>90%	100%

Customer Complaint Data
All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	22
Water Continuity interruptions	0
Pressure or Flow	20
Accounts	
Other	65

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	7
Resolved by an apology by the licensee	0
Resolved by mediation or the involvement of an independent third party	0
Resolved by monetary compensation	0
Resolved by routine business processes	101
Resolved by other means	

Written complaints

Total number of written complaints	1
Number of written complaints resolved within 21 days	0
Number of written complaints resolved in greater than 21 days	1

1st Quarter Report
Licensee: Aqwest

Service: Water Supply
Period: 1 July 2002 to 30 September 2002
Number of Connections Total: 13059
Number of Connections Residential: 11800
Submitted by: P. McCleery

Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	65	65	90	100.0%
Thermotolerant Coliforms	65	65	95	100.0%
Amoeba (Thermophilic Naegleria)	65	65	95	100.0%

Health Standards: Chemical quality

Chemical Quality	No. of samples	% of analyses within guideline values	Result
Chemical health related	0	na	Compliance
Chemical non health related	134	100%	Compliance
Radiological	0	na	Compliance

Note. When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non-health related quality	Included in above results		

Water Supply Service pressure and flow

									Most Recent Quarter						
No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13059	>99.0	100.00%

Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
36	141	57	53	6	14	161	318	37	52	0	2	877	13059	>75	93.3%

Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Water Supply Service Leaks and Bursts

Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Total reports for year	Length of mains (km)	Target: <20 leaks or bursts per 100 km of mains	Result
6	6	6	8	1	6	7	3	4	7	4	5	62	313	<20	19.8

Telephone answering - emergency response

Month	October	November	December	January	February	March	April	May	June	July	August	Sept	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	143	127	89	99	90	102	77	81	81	87	70	79	1125		
No. of calls receiving a response within one hour	143	127	89	99	90	102	77	81	81	87	70	79	1125	>90%	100.00%

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Licensee: Aqwest

Service: Water Supply

Period: 1 October 2002 to 31 December 2002

Number of Connections Total: 13118

Number of Connections Residential: 11858

Submitted by: P. McCLEERY

Schedule 7 section 2.1 Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	67	67	90	100%
Thermotolerant Coliforms	67	67	95	100%
Amoeba (Thermophilic Naegleria)	67	67	95	100%

Schedule 7 section 2.1 Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related (schedules 3,4)	261	100%	100%
Radiological (Schedule 6)	4	100%	100%

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Schedule 7 section 2.1 Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality (schedule 5,2 & w	313	100	100

Schedule 7 section 2.2 Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for October	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for November	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13118	>99.8	100.00%

Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
53	0	14	161	318	37	52	0	2	1	41	81	766	13118	>75	94.2%

Schedule 7 section 2.3 Planned Interruptions

January	February	March	April	May	June	July	August	September	October	November	December	Total for year
TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	

Schedule 7 section 2.3 Unplanned Interruptions

January	February	March	April	May	June	July	August	September	October	November	December	Total for year
TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	

Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
8	1	6	7	2	4	7	4	5	5	7	5	61	318	<20	19.2

Schedule 7 section 1 Telephone answering - emergency response

Month	January	Febraury	March	April	May	June	July	August	September	October	November	Dec	Totals	Target: >90%	
No. of calls requiring a response within one hour	99	90	102	77	81	81	87	70	79	111	102	96	1075		Result
No. of calls receiving a response within one hour	99	90	102	77	81	81	87	70		111	102	96	1075	>90%	100%

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: 1 July 2002 to 31 December 2002
Number of Connections Total: 13118
Number of Connections Residential: 11858

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target: 90 % of customers received the service standard	Result
1	1	>90%	100%

Schedule 2 section 2 Customer Complaint Data
All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	20
Water Continuity interruptions	0
Pressure or Flow	34
Accounts	2
Other	1

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	3
Resolved by an apology by the licensee	1
Resolved by mediation or the involvement of an independent third party	1
Resolved by monetary compensation	4
Resolved by routine business processes	46
Resolved by other means	2

Written complaints

Total number of written complaints	6
Number of written complaints resolved within 21 days	5
Number of written complaints resolved in greater than 21 days	1

3rd Quarter Report

Licen[illegible]qwest

Service: Water Supply
Period: 1 January 2003 to 31 March 2003
Number of Connections Total: 13151
Number of Connections Residential: 11891
Submitted by: Heath Bennett

Schedule 7 section 2.1 Health Standards: Microbiological quality

[redacted]	No. of samples	Samples free of coliforme and emerobs (%)	Target	Result
Total Coliforms	75	75	90	100%
Thermotolerant Coliforms	75	75	95	100%
Amoebic Encephalitis (Naegleria)	75	75	95	100%

Schedule 7 section 2.1 Health Standards: Chemical quality

[redacted]	No. of samples	within guideline values	Result
Chemical quality	0	-	compliance
Chemical quality health related	512	100%	compliance
Radiological quality	0	-	compliance

Note When non compliant samples or analyses found, provide details of non compliance and action taken to rectify the problem

Schedule 7 section 2.1 Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	[illegible]	[illegible]	[illegible]

Schedule 7 section 2.2 Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	Total reports for year	Number of Connections	Target, % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13151	>99.8	100.00%

Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	Total reports for year	Number of Connections	Target, % of customers receiving service standard	Result
161	318	37	52	0	2	1	41	81	55	2	6	756	13151	>76	94.3%

Schedule 7 section 2.3 Planned Interruptions

April	May	June	July	August	September	October	November	December	January	February	March	Total for year
TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED

Schedule 7 section 2.3 Unplanned Interruptions

April	May	June	July	August	September	October	November	December	January	February	March	Total for year
TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED	TO BE ADVISED

No of customers experiencing more than 3 unplanned interruptions exceeding 1 hour

April	May	June	July	August	September	October	November	December	January	February	March	Total for year
0	0	0	0	0	0	0	0	0	0	0	0	0

Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by supply area, type (severity) duration, start date, number of services affected	Nil

Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
7	2	4	7	4	5	5	7	5	5	4	2	57	331.78	<20	17.2

Schedule 7 section 1 Telephone answering - emergency response

[redacted]	April	May	June	July	August	September	October	November	December	January	February	March	Totals	Target >90%	Result
[redacted]	77	81	81	87	70	75	111	102	96	91	80	103	1060		
[redacted]	77	81	81	87	70	75	111	102	96	91	80	103	1060	>90%	100%

4th Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 April 2003 to 30 June 2003
Number of Connections Total: 13225
Number of Connections Residential: 11870
Submitted by: Heath Bunnett

Schedule 7 section 2.1 Health Standards: Microbiological quality

[illegible]	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms [illegible]	147	147	90	100%
Thermotolerant Coliforms	147	147	95	100%
Amoeba (Thermophilic Naegleria)	147	147	95	100%

Schedule 7 section 2.1 Health Standards: Chemical quality

[illegible]	No. of samples	% of analyses within guideline values	Result
Chemical [illegible]	6	100	Compliance
Chemical [illegible] health related	363	100	Compliance
Radiological [illegible]	0	-	Compliance

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Schedule 7 section 2.1 Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non health related quality		[illegible] of above results	

Schedule 7 section 2.2 Water Supply Service pressure and flow

Most Recent Quarter

No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for Sept	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for Dec	No. of Confirmed Pressure and flow fault reports for Jan	No. of Confirmed Pressure and flow fault reports for Feb	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	1	0	1	1	0	1	0	13225	>99.8	100%

Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for Sept	No. of Confirmed Interruptions > 1 hour for Oct	No. of Confirmed Interruptions > 1 hour for Nov	No. of Confirmed Interruptions > 1 hour for Dec	No. of Confirmed Interruptions > 1 hour for Jan	No. of Confirmed Interruptions > 1 hour for Feb	No. of Confirmed Interruptions > 1 hour for Mar	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
58	0	2	1	41	81	55	2	1	14	26	278	559	13225	>75	95.8%

Schedule 7 section 2.3 Planned Interruptions

July	August	September	October	November	December	January	February	March	April	May	June	Total for year
212	165	77	43	64	96	84	84	140	17	9	157	1151

Schedule 7 section 2.3 Unplanned Interruptions

July	August	September	October	November	December	January	February	March	April	May	June	Total for year
70	51	69	82	82	62	72	65	85	1	11	113	783

No of customers experiencing more than 3 unplanned interruptions exceeding 1 hour

July	August	September	October	November	December	January	February	March	April	May	June	Total for year
0	0	0	0	0	0	0	0	0	0	0	0	0

Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for Sept	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for Dec	Leaks and Bursts for Jan	Leaks and Bursts for Feb	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
7	4	8	5	7	5	5	4	2	6	1	7	56	331.55	<20	17.5

Schedule 7 section 1 Telephone answering - emergency response

Month	July	August	Sept	October	November	Dec	Jan	Feb	March	April	May	June	Totals	Target: >90%	Result
No. of calls receiving response within 1 one hour(A)	87	70	79	111	102	96	93	80	103	67	71	80	1039		
No. of calls receiving response within one hour	87	70	79	111	102	96	93	80	103	67	71	80	1039	>90%	100%

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: 1 January 2003 to 30 June 2003
Number of Connections Total: 13225
Number of Connections Residential: 11929

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target 90% of customers received the service standard	Result
5	5	>90%	100%

Customer Complaint Data

All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	5
Water Continuity interruptions	0
Pressure or Flow	0
Accounts	0
Other	1

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	0
Resolved by an apology by the licensee	1
Resolved by mediation or the involvement of an independent third party	0
Resolved by monetary compensation	4
Resolved by routine business processes	1
Resolved by other means	0

Written complaints

Total number of written complaints	5
Number of written complaints resolved within 21 days	5
Number of written complaints resolved in greater than 21 days	0

Number of complaints Outstanding (unresolved) 0 calculated

Annual Report
Licensee: Aqwest

Service: Water Supply
Period: 1 July 2002 to 30 June 2003
Number of Connections Total: 13225
Number of Connections Residential: 11929

Services Provided By Agreement

Number of services provided by agreement	Number of services provided by agreement with documented agreements	90 per cent of customers have documented agreements	Result
0	0	>90%	100%

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Licensee: Aqwest

Service: Water Supply
Period: 1 July 2003 to 30 September 2003
Number of Connections Total: 13307
Number of Connections Residential: 11980
Submitted by: H. Bennett

Schedule 7 section 2.1 Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms (Escherichia coli)	148	148	98	100.0%
Thermotolerant Coliforms	148	148	98	100.0%
Amoeba (Thermophilic Naegleria)	148	148	100	100.0%

Schedule 7 section 2.1 Health Standards: Chemical quality

Chemical Quality	No. of samples	% of analyses within guideline values	Result
Chemical - health related	0	na	Compliance
Chemical - non health related	159	100%	Compliance
Radiological	0	na	Compliance

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Schedule 7 section 2.1 Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non health related quality		no failed to above quality	

Schedule 7 section 2.2 Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13307	>99.8	100.00%

Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
1	41	81	55	2	6	14	20	270	59	36	188	775	13307	>75	94.2%

Schedule 7 section 2.3 Planned Interruptions

October	November	December	January	February	March	April	May	June	July	August	September	Total for year
43	64	98	84	65	148	13	9	157	83	16	22	834

Schedule 7 section 2.3 Unplanned Interruptions

October	November	December	January	February	March	April	May	June	July	August	September	Total for year
82	82	82	72	65	65	1	11	113	67	74	78	812

No of customers experiencing more than 3 unplanned interruptions exceeding 1 hour	October	November	December	January	February	March	April	May	June	July	August	September	Total for year
	0	0	0	0	0	0	0	0	0	0	0	0	0

Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
7	7	5	5	4	2	6	1	7	7	4	5	60	332.9	<20	18.0

Schedule 7 section 1 Telephone answering - emergency response

	October	November	December	January	February	March	April	May	June	July	August	Sept	Totals	Target: >90%	Result
	111	102	96	93	80	103	67	71	80	85	98	97	1083		
responded within one hour	111	102	96	93	80	103	67	71	80	85	98	97	1083	>90%	100.00%

4th Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 April 2003 to 30 June 2003
Number of Connections Total: 13225
Number of Connections Residential: 11929
Submitted by: Heath Bennett

Schedule 7 section 2.1 Health Standards: Microbiological quality

[illegible]	[illegible]	No. of samples	[illegible]	Target [illegible]	Result
[illegible]	[illegible]	147	147	[illegible]	100%
[illegible]	[illegible]	147	147	[illegible]	100%
[illegible]	[illegible]	147	147	[illegible]	100%

Schedule 7 section 2.1 Health Standards: Chemical quality

[illegible]	[illegible]	No. of samples	% of analyses within guideline values	Result
[illegible]	[illegible]	8	100	Compliance
[illegible]	[illegible]	383	100	Compliance
[illegible]	[illegible]	0	-	Compliance

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Schedule 7 section 2.1 Non-Health Related Standards water quality

[illegible]	No. of samples	% of analyses within guideline values	Result
Non-health related quality	Included in above results		

Schedule 7 section 2.2 Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow, fault reports for August	No. of Confirmed Pressure and flow fault reports for Sept	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for Dec	No. of Confirmed Pressure and flow fault reports for Jan	No. of Confirmed Pressure and flow fault reports for Feb	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April (Most Recent Quarter)	No. of Confirmed Pressure and flow fault reports for May (Most Recent Quarter)	No. of Confirmed Pressure and flow fault reports for June (Most Recent Quarter)	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13225	>99.8	100%

Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for Sept	No. of Confirmed Interruptions > 1 hour for Oct	No. of Confirmed Interruptions > 1 hour for Nov	No. of Confirmed Interruptions > 1 hour for Dec	No. of Confirmed Interruptions > 1 hour for Jan	No. of Confirmed Interruptions > 1 hour for Feb	No. of Confirmed Interruptions > 1 hour for Mar	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for Jun	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
58	6	2	1	41	61	55	2	6	14	20	270	556	13225	>75	95.8%

Schedule 7 section 2.3 Planned Interruptions

July	August	September	October	November	December	January	February	March	April	May	June	Total for year
212	165	72	43	64	99	84	85	148	13	9	157	1151

Schedule 7 section 2.3 Unplanned Interruptions

[illegible]	[illegible]	September	October	November	December	January	February	March	April	May	June	Total for year
70	51	69	82	82	82	72	65	85	1	11	113	783

No of customers experiencing more than 3 unplanned interruptions exceeding 1 hour

[illegible]	August	September	October	November	December	January	February	March	April	May	June	Total for year
0	0	0	0	0	0	0	0	0	0	0	0	0

Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by [illegible] area) type (severity) duration, start date, number of services affected	Nil

Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for Sept	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for Dec	Leaks and Bursts for Jan	Leaks and Bursts for Feb	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
7	4	5	5	7	5	5	4	2	6	1	7	58	331.55	<20	17.5

Schedule 7 section 1 Telephone answering - emergency response

[illegible]	[illegible]	August	Sept	October	November	Dec	Jan	Feb	March	April	May	June	Totals	Target >90%	Result
[illegible]	87	70	79	111	102	96	93	80	103	67	71	80	1039	[illegible]	
[illegible]	87	70	79	111	102	96	93	80	103	67	71	80	1039	90% [illegible]	100%

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Licensee: Aqwest

Service: Water Supply
Period: 1 July 2003 to 30 September 2003
Number of Connections Total: 13307
Number of Connections Residential: 11890
Submitted by: H. Bennett

Section 1 - Schedule 7 section 2.1 Health Standards: Microbiological quality

Microbiological Quality Criteria	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms (Membrane Filtration)	148	148	98	100.0%
Thermotolerant Coliforms	148	148	98	100.0%
Amoeba (Thermophilic Naegleria)	148	148	100	100.0%

Section 2 - Schedule 7 section 2.1 Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	0	na	Compliance
Chemical - non health related	159	100%	Compliance
Radiological	0	na	Compliance

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Section 3 - Schedule 7 section 2.1 Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality		Incident in above results	

Section 4 - Schedule 7 section 2.2 Water Supply Service pressure and flow

									Most Recent Quarter						
No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	Total reports for year	Number of Connections	Target % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13307	>99.8	100.00%

Section 5 - Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	Total reports for year	Number of Connections	Target, % of customers receiving service standard	Result
1	41	81	55	2	6	14	20	271	51	30	188	775	13307	>75	94.2%

Section 6 - Schedule 7 section 2.3 Planned Interruptions

October	November	December	January	February	March	April	May	June	July	August	September	Total for year
43	64	99	84	85	148	13	9	157	93	19	22	836

Section 7 - Schedule 7 section 2.3 Unplanned Interruptions

October	November	December	January	February	March	April	May	June	July	August	September	Total for year
82	82	82	72	65	65	1	11	113	67	74	78	812

Section 8 - No of customers experiencing more than 3 unplanned interruptions exceeding 1 hour

October	November	December	January	February	March	April	May	June	July	August	September	Total for year
0	0	0	0	0	0	0	0	0	0	0	0	0

Section 9 - Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Section 10 - Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Total reports for year	Length of mains (km)	Target < 20 leaks or bursts per 100 km of mains	Result
7	7	5	5	4	2	6	1	7	7	4	5	60	332.8	<20	18.0

Section 11 - Schedule 7 section 1 Telephone answering - emergency response

Month	October	November	December	January	February	March	April	May	June	July	August	Sept	Totals	Target >90%	Result
No. of calls [illegible] requiring a [illegible] response within one hour	111	102	96	93	80	103	67	71	80	85	90	97	1083		
No. of calls [illegible] responded within one hour	111	102	90	93	80	103	67	71	80	85	90	97	1083	>90%	100.00%

2nd Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 October 2003 to 31 December 2003
Number of Connections Total: 13387
Number of Connections Residential: 12071
Submitted by: H. Bennett

Section 1 - Schedule 7 section 2.1 Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	≤ 150	150	90	100%
Thermotolerant Coliforms	150	150	95	100%
Amoeba (Thermophilic Naegleria)	150	150	95	100%

Section 2 - Schedule 7 section 2.1 Health Standards: Chemical quality

Chemical Quality	No. of samples	% of analyses within guideline values	Result
Chemical - health related (schedules 3,4)	264	100%	100%
Radiological (Schedule 9)	0	100%	100%

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Section 3 - Schedule 7 section 2.1 Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non health related quality (schedule 3.2 & wa	310	100	100

Section 4 - Schedule 7 section 2.2 Water Supply Service pressure and flow

Most Recent Quarter

No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13387	>99.8	100.00%

Section 5 - Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
55	2	6	14	20	270	55	36	188	4	6	10	660	13387	>75	94.9%

Section 6 - Schedule 7 section 2.3 Planned Interruptions

January	February	March	April	May	June	July	August	September	October	November	December	Total for year
84	85	148	13	9	157	93	19	22	73	81	96	880

Section 7 - Schedule 7 section 2.3 Unplanned Interruptions

January	February	March	April	May	June	July	August	September	October	November	December	Total for year
72	85	85	1	11	113	87	74	78	98	74	86	824

Section 8 - No of customers experiencing more than 3 unplanned interruptions exceeding 1 hour

January	February	March	April	May	June	July	August	September	October	November	December	Total for year
0	0	0	0	0	0	0	0	0	0	0	0	0

Section 9 - Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Section 10 - Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
5	4	2	6	1	7	7	4	5	4	1	4	50	326	<20	15.3

Section 11 - Schedule 7 section 1 Telephone answering - emergency response

Month	January	February	March	April	May	June	July	August	September	October	November	Dec	Totals	Target: >90%	Result
No. of calls requiring a service response within one hour	93	80	103	67	71	80	85	98	97	122	92	114	1102		
No. of calls receiving a service response within one hour	93	80	103	67	71	80	85	98	97	122	92	114	1102	>90%	100%

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: **1 July 2003 to 31 December 2003**
Number of Connections Total: **13387**
Number of Connections Residential: **12071**

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target 90 % of customers received the service standard	Result
3	2	>90%	100%

Schedule 2 section 2 Customer Complaint Data
All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	18
Water Continuity interruptions	0
Pressure or Flow	20
Accounts	0
Other	2

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	3
Resolved by an apology by the licensee	0
Resolved by mediation or the involvement of an independent third party	1
Resolved by monetary compensation	2
Resolved by routine business processes	34
Resolved by other means	0

Written complaints

Total number of written complaints	3
Number of written complaints resolved within 21 days	2
Number of written complaints resolved in greater than 21 days	1

Number of complaints outstanding (unresolved)	0

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: 1 January 2003 to 30 June 2003
Number of Connections Total: 13225
Number of Connections Residential: 11929

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target: 90 % of customers received the service standard	Result
5	5	>90%	100%

Customer Complaint Data
All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	17
Water Continuity interruptions	0
Pressure or Flow	32
Accounts	0
Other	1

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	0
Resolved by an apology by the licensee	1
Resolved by mediation or the involvement of an independent third party	0
Resolved by monetary compensation	4
Resolved by routine business processes	45
Resolved by other means	0

Written complaints

Total number of written complaints	5
Number of written complaints resolved within 21 days	5
Number of written complaints resolved in greater than 21 days	0

Number of complaints Outstanding (unreolved) 0 calculated

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Licensee: Aqwest

Service: Water Supply
Period: 1 January 2004 to 31 March 2004
Number of Connections Total: 13444
Number of Connections Residential: 11947
Submitted by: Gary Hallsworth

Section 1 - Schedule 7 section 2.1 Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	149	149	90	100%
Thermotolerant Coliforms	149	149	95	100%
Amoeba (Thermophilic Naegleria)	149	149	95	100%

Section 2 - Schedule 7 section 2.1 Health Standards: Chemical quality

Chemical Quality	No. of samples	within guideline values	Result
Chemical - health related	0	-	compliance
Chemical - non health related	512	100%	compliance
Radiological	0	-	compliance

Note: When non compliant samples or analyses found, provide details of non compliance and action taken to rectify the problem

Section 3 - Schedule 7 section 2.1 Non-Health Related Standards water quality

	No. of samples	within guideline values	Result
Non-health related quality	Included in above results		

Section 4 - Schedule 7 section 2.2 Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for September	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for December	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for January	No. of Confirmed Pressure and flow fault reports for February	No. of Confirmed Pressure and flow fault reports for March	Total reports for year	Number of Connections	Target % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13444	>99.9	100.00%

Section 5 - Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for June	No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for September	No. of Confirmed Interruptions > 1 hour for October	No. of Confirmed Interruptions > 1 hour for November	No. of Confirmed Interruptions > 1 hour for December	No. of Confirmed Interruptions > 1 hour for January	No. of Confirmed Interruptions > 1 hour for February	No. of Confirmed Interruptions > 1 hour for March	Total reports for year	Number of Connections	Target % of customers receiving service standard	Result
14	20	270	59	38	188	4	6	18	71	109	34	782	13444	>75	94.2%

Section 6 - Schedule 7 section 2.3 Planned Interruptions

April	May	June	July	August	September	October	November	December	January	February	March	Total for year
13	0	157	93	19	22	73	81	90	54	55	53	706

Section 7 - Schedule 7 section 2.3 Unplanned Interruptions

April	May	June	July	August	September	October	November	December	January	February	March	Total for year
1	11	113	67	74	75	98	74	86	84	60	68	814

Section 8 - No of customers experiencing more than 3 unplanned interruptions exceeding 1 hour

April	May	June	July	August	September	October	November	December	January	February	March	Total for year
0	0	0	0	0	0	0	0	0	0	0	0	0

Section 9 - Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services effected	Nil

Section 10 - Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for September	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for December	Leaks and Bursts for January	Leaks and Bursts for February	Leaks and Bursts for March	Total reports for year	Length of mains (km)	Target, < 20 leaks or bursts per 100 km of mains	Result
6	1	7	7	4	5	4	1	4	1	2	3	45	326.5	<20	13.8

Section11 - Schedule 7 section 1 Telephone answering - emergency response

Month	April	May	June	July	August	September	October	November	December	January	February	March	Totals	Target, >90%	Result
No. of calls equiring a esponse within ne hour	67	71	80	85	98	97	122	92	114	108	72	86	1090		
No. of calls eceiving a esponse within ne hour	67	71	80	85	98	97	122	92	114	108	72	86	1090	>90%	100%

4th Quarter Report

Licensee: Aqwest

Service: Water Supply
Period: 1 April 2004 to 30 June 2004
Number of Connections Total: 13516
Number of Connections Residential: 12185
Submitted by: Duncan Sinclair

Section 1 - Schedule 7 section 2.1 Health Standards: Microbiological quality

Microbiological Quality	No. of samples	Samples free of coliforms and amoeba	Target	Result
Total Coliforms	148	148	90	100%
Thermotolerant Coliforms	148	148	95	100%
Amoeba (Thermophilic Naegleria)	148	148	95	100%

Section 2 - Schedule 7 section 2.1 Health Standards: Chemical quality

Chemical Quality	No. of samples	% of analyses within guideline values	Result
Chemical - health related	0	100	Compliance
Chemical - non health related	1061	96	Compliance
Radiological	0	-	Compliance

Note: When non compliant samples or analyses found provide details of non compliance and action taken to rectify the problem

Section 3 - Schedule 7 section 2.1 Non-Health Related Standards water quality

	No. of samples	% of analyses within guideline values	Result
Non health related quality	Included in above results		

Section 4 - Schedule 7 section 2.2 Water Supply Service pressure and flow

No. of Confirmed Pressure and flow fault reports for July	No. of Confirmed Pressure and flow fault reports for August	No. of Confirmed Pressure and flow fault reports for Sept	No. of Confirmed Pressure and flow fault reports for October	No. of Confirmed Pressure and flow fault reports for November	No. of Confirmed Pressure and flow fault reports for Dec	No. of Confirmed Pressure and flow fault reports for Jan	No. of Confirmed Pressure and flow fault reports for Feb	No. of Confirmed Pressure and flow fault reports for March	Most Recent Quarter: No. of Confirmed Pressure and flow fault reports for April	No. of Confirmed Pressure and flow fault reports for May	No. of Confirmed Pressure and flow fault reports for June	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
0	0	0	0	0	0	0	0	0	0	0	0	0	13516	>99.8	100%

Section 5 - Schedule 7 section 2.3 Water Supply Service Interruptions

No. of Confirmed Interruptions > 1 hour for July	No. of Confirmed Interruptions > 1 hour for August	No. of Confirmed Interruptions > 1 hour for Sept	No. of Confirmed Interruptions > 1 hour for Oct	No. of Confirmed Interruptions > 1 hour for Nov	No. of Confirmed Interruptions > 1 hour for Dec	No. of Confirmed Interruptions > 1 hour for Jan	No. of Confirmed Interruptions > 1 hour for Feb	No. of Confirmed Interruptions > 1 hour for Mar	No. of Confirmed Interruptions > 1 hour for April	No. of Confirmed Interruptions > 1 hour for May	No. of Confirmed Interruptions > 1 hour for Jun	Total reports for year	Number of Connections	Target: % of customers receiving service standard	Result
59	35	188	4	0	18	26	105	34	105	17	5	607	13516	>75	95.5%

Section 6 - Schedule 7 section 2.3 Planned Interruptions

July	August	September	October	November	December	January	February	March	April	May	June	Total for year
93	19	72	71	81	103	54	51	53	70	41	111	751

Section 7 - Schedule 7 section 2.3 Unplanned Interruptions

July	August	September	October	November	December	January	February	March	April	May	June	Total for year
67	74	78	99	74	93	84	80	89	67	59	84	889

Section 8 - No of customers experiencing more than 3 unplanned interruptions exceeding 1 hour

July	August	September	October	November	December	January	February	March	April	May	June	Total for year
0	0	0	0	0	0	0	0	0	0	0	0	0

Section 9 - Schedule 7 section 2.4 Water Supply Services - Drought Response

Restrictions by operating area, type (severity) duration, start date, number of services affected	Nil

Section 10 - Schedule 7 section 2.3 Water Supply Service Leaks and Bursts

Leaks and Bursts for July	Leaks and Bursts for August	Leaks and Bursts for Sept	Leaks and Bursts for October	Leaks and Bursts for November	Leaks and Bursts for Dec	Leaks and Bursts for Jan	Leaks and Bursts for Feb	Leaks and Bursts for March	Leaks and Bursts for April	Leaks and Bursts for May	Leaks and Bursts for June	Total reports for year	Length of mains (km)	Target: < 20 leaks or bursts per 100 km of mains	Result
6	5	7	4	1	4	1	2	2	4	2	1	41	331.55	<20	12.4

Section 11 - Schedule 7 section 1 Telephone answering - emergency response

Month	July	August	Sept	October	November	Dec	Jan	Feb	March	April	May	June	Totals	Target: >90%	Result
No. of calls requiring a response within one hour	67	74	78	111	102	96	93	80	103	67	71	86	1039		
No. of calls receiving a response within one hour	67	74	78	111	102	96	93	80	103	67	71	86	1039		

Six Monthly Report
Licensee: Aqwest

Service: Water Supply
Period: 1 January 2004 to 30 June 2004
Number of Connections Total: 13516
Number of Connections Residential: 12185

Customer Complaints

Number of written complaints due for resolution in the previous six month period	Number of written complaints successfully resolved within 21 days	Target: 90 % of customers received the service standard	Result
5	5	>90%	100%

Customer Complaint Data

All Complaints

Complaints during the preceding six month period in the following categories

Water Quality	1
Water Continuity interruptions	0
Pressure or Flow	0
Accounts	0
Other	0

Complaint Resolution: of those complaints resolved in the preceding six months

Resolved by simple explanation	0
Resolved by an apology by the licensee	0
Resolved by mediation or the involvement of an independent third party	0
Resolved by monetary compensation	1
Resolved by routine business processes	0
Resolved by other means	0

Written complaints

Total number of written complaints	0
Number of written complaints resolved within 21 days	1
Number of written complaints resolved in greater than 21 days	0

Number of complaints Outstanding (unreolved) 0 calculated

Annual Report
Licensee: Aqwest

Service: Water Supply
Period: 1 July 2003 to 30 June 2004
Number of Connections Total: 13516
Number of Connections Residential: 12185

Services Provided By Agreement

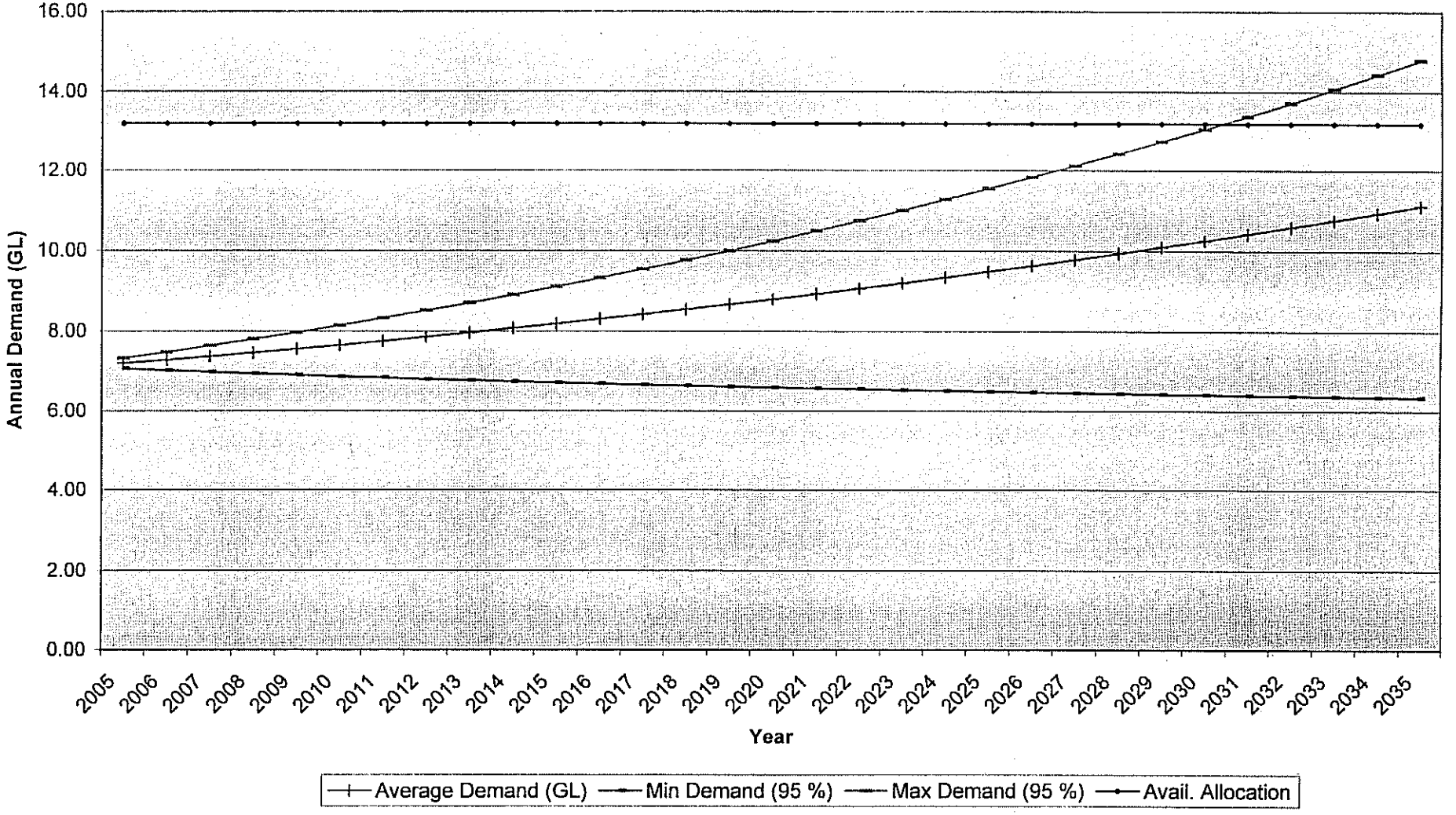
Number of services provided by agreement	Number of services provided by agreement with documented agreements	90 per cent of customers have documented agreements	Result
0	0	>90%	100%

APPENDIX "3"

AQWEST - BUNBURY WATER BOARD
Forecasted Total Services and Demand (kL) period 2005 to 2035

Year	No	Services Avg	Services Min	Services Max	Kl/ Service	Average Demand (GL)	Min Demand (95 %)	Max Demand (95 %)	Avail. Allocation	Avg PDD (ML)	Min PDD (ML)	Max PDD
2005	28	14200	13945	14455	506	7.19	7.06	7.32	13.20	35.9	35.2	36.5
2006	29	14592	14073	14987	499	7.28	7.02	7.47	13.20	36.3	35.0	37.3
2007	30	14994	14202	15538	491	7.37	6.98	7.63	13.20	36.7	34.8	38.1
2008	31	15408	14332	16110	484	7.46	6.94	7.80	13.20	37.2	34.6	38.9
2009	32	15833	14463	16703	477	7.55	6.90	7.97	13.20	37.7	34.4	39.7
2010	33	16269	14595	17317	470	7.65	6.86	8.14	13.20	38.2	34.2	40.6
2011	34	16718	14728	17955	464	7.75	6.83	8.33	13.20	38.7	34.1	41.5
2012	35	17179	14863	18615	457	7.86	6.80	8.51	13.20	39.2	33.9	42.5
2013	36	17653	14999	19300	451	7.96	6.77	8.71	13.20	39.7	33.7	43.4
2014	37	18140	15136	20010	445	8.07	6.74	8.91	13.20	40.3	33.6	44.4
2015	38	18640	15275	20747	439	8.19	6.71	9.11	13.20	40.8	33.5	45.4
2016	39	19154	15415	21510	434	8.30	6.68	9.33	13.20	41.4	33.3	46.5
2017	40	19683	15556	22302	428	8.42	6.66	9.54	13.20	42.0	33.2	47.6
2018	41	20225	15698	23122	423	8.55	6.63	9.77	13.20	42.6	33.1	48.7
2019	42	20783	15841	23973	417	8.67	6.61	10.00	13.20	43.2	33.0	49.9
2020	43	21356	15986	24855	412	8.80	6.59	10.24	13.20	43.9	32.8	51.1
2021	44	21945	16133	25770	407	8.93	6.57	10.49	13.20	44.5	32.7	52.3
2022	45	22551	16280	26718	402	9.07	6.55	10.74	13.20	45.2	32.6	53.6
2023	46	23173	16429	27701	397	9.20	6.53	11.00	13.20	45.9	32.5	54.9
2024	47	23812	16579	28721	392	9.35	6.51	11.27	13.20	46.6	32.4	56.2
2025	48	24469	16731	29778	388	9.49	6.49	11.55	13.20	47.3	32.4	57.6
2026	49	25143	16884	30873	383	9.64	6.47	11.83	13.20	48.1	32.3	59.0
2027	50	25837	17038	32009	379	9.79	6.46	12.13	13.20	48.8	32.2	60.5
2028	51	26549	17194	33187	375	9.94	6.44	12.43	13.20	49.6	32.1	62.0
2029	52	27282	17352	34408	370	10.10	6.42	12.74	13.20	50.4	32.0	63.5
2030	53	28034	17510	35674	366	10.26	6.41	13.06	13.20	51.2	32.0	65.1
2031	54	28807	17670	36987	362	10.43	6.40	13.39	13.20	52.0	31.9	66.7
2032	55	29602	17832	38348	358	10.59	6.38	13.72	13.20	52.8	31.8	68.4
2033	56	30418	17995	39759	354	10.77	6.37	14.07	13.20	53.7	31.8	70.2
2034	57	31257	18160	41222	350	10.94	6.36	14.43	13.20	54.6	31.7	71.9
2035	58	32119	18326	42739	346	11.12	6.34	14.80	13.20	55.4	31.6	73.8
2036	59	33005	18494	44312	342	11.30	6.33	15.17	13.20	56.4	31.6	75.7
2037	60	33915	18663	45942	339	11.49	6.32	15.56	13.20	57.3	31.5	77.6
2038	61	34851	18833	47633	335	11.68	6.31	15.96	13.20	58.2	31.5	79.6
2039	62	35812	19006	49386	332	11.87	6.30	16.37	13.20	59.2	31.4	81.6
2040	63	36800	19180	51203	328	12.07	6.29	16.79	13.20	60.2	31.4	83.7
2041	64	37815	19355	53087	325	12.27	6.28	17.23	13.20	61.2	31.3	85.9
2042	65	38858	19532	55040	321	12.48	6.27	17.67	13.20	62.2	31.3	88.1
2043	66	39929	19711	57066	318	12.69	6.26	18.13	13.20	63.3	31.2	90.4
2044	67	41031	19891	59166	314	12.90	6.25	18.61	13.20	64.3	31.2	92.8
2045	68	42162	20073	61343	311	13.12	6.25	19.09	13.20	65.4	31.1	95.2
2046	69	43325	20257	63600	308	13.34	6.24	19.59	13.20	66.5	31.1	97.7
2047	70	44520	20442	65940	305	13.57	6.23	20.10	13.20	67.7	31.1	100.2
2048	71	45748	20629	68367	302	13.80	6.22	20.63	13.20	68.8	31.0	102.8
2049	72	47010	20817	70882	299	14.04	6.22	21.17	13.20	70.0	31.0	105.5
2050	73	48306	21008	73491	296	14.28	6.21	21.72	13.20	71.2	31.0	108.3

Forcasted Annual Demand



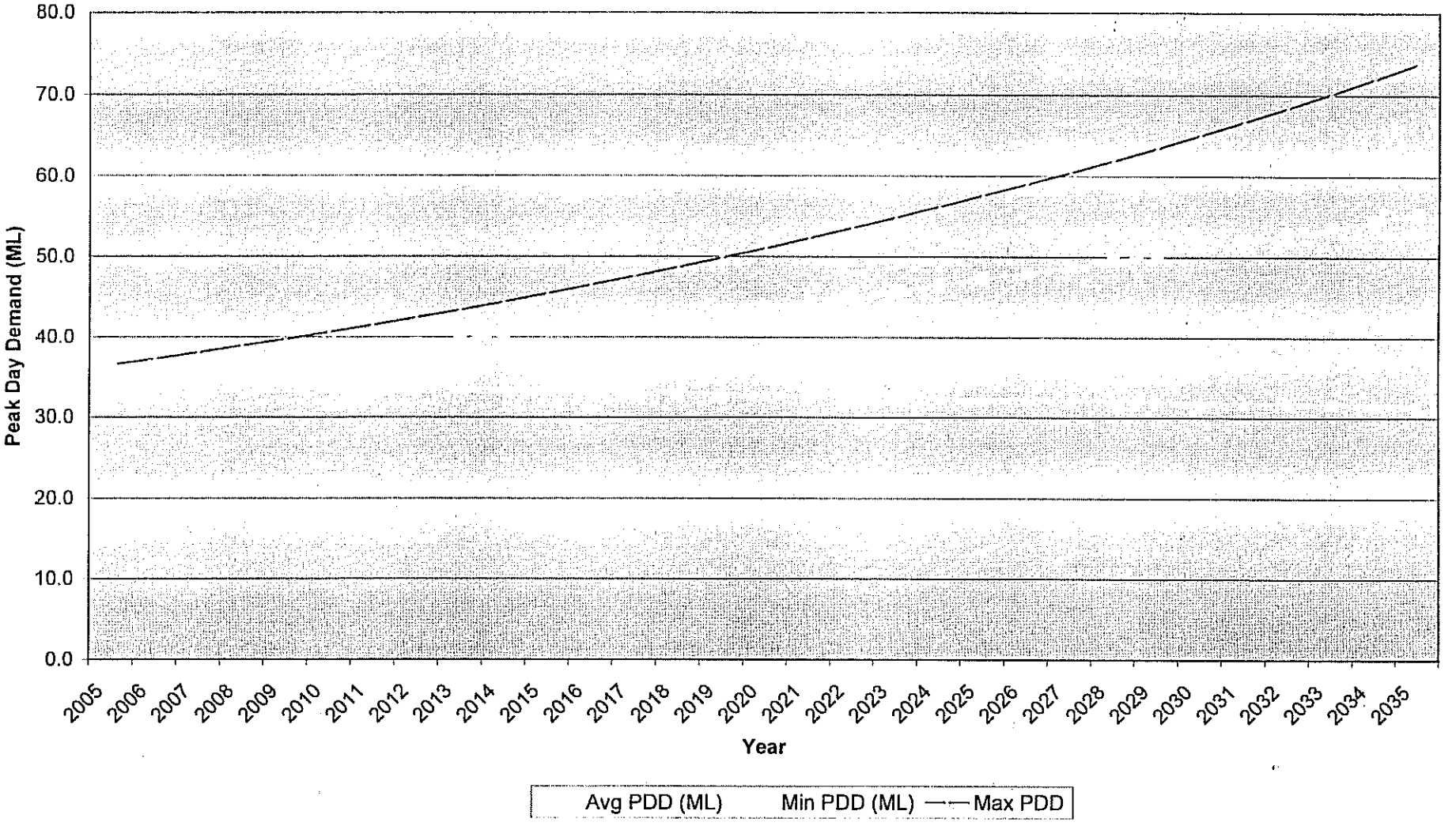
AQWEST - BUNBURY WATER BOARD

Total Services and Demand (kL) Table - period 1974/1975 to 2003/2004

Number	Year	No New Services	Total Services	Demand (KL)	Demand/ Service (kl)	Growth Sevices	Peak Day Demand	Avg Day Demand	PDD/ADD
	1974/75	219	6285						
	1975/76	335	6620			5.33%			
	1976/77	226	6846			3.41%			
1	1977/78	199	7045	6559549	931	2.91%			
2	1978/79	223	7268	6528859	898	3.17%			
3	1979/80	228	7496	5402187	721	3.14%			
4	1980/81	369	7865	6452111	820	4.92%			
5	1981/82	219	8084	6259236	774	2.78%			
6	1982/83	182	8266	6618981	801	2.25%			
7	1983/84	259	8525	6981214	819	3.13%			
8	1984/85	277	8802	6919235	786	3.25%			
9	1985/86	217	9019	6324555	701	2.47%			
10	1986/87	137	9156	6448025	704	1.52%			
11	1987/88	183	9339	5495870	588	2.00%			
12	1988/89	284	9623	6644139	690	3.04%			
13	1989/90	249	9872	5856504	593	2.59%			
14	1990/91	384	10256	6517255	635	3.89%			
15	1991/92	235	10491	5928870	565	2.29%			
16	1992/93	275	10766	6142456	571	2.62%			
17	1993/94	371	11137	6122312	550	3.45%			
18	1994/95	189	11326	6947610	613	1.70%			
19	1995/96	216	11542	6066883	526	1.91%			
20	1996/97	273	11815	6071013	514	2.37%			
21	1997/98	273	12088	6733705	557	2.31%	35824	18448.51	1.941837
22	1998/99	406	12494	6606032	529	3.36%	33265	18098.72	1.837976
23	1999/00	370	12864	6892804	536	2.96%	34277	18884.39	1.815097
24	2000/01	277	13141	7318762	557	2.15%	32200	20051.4	1.605873
25	2001/02	165	13306	6482580	487	1.26%	29271	17760.49	1.648096
26	2002/03	222	13528	6407652	474	1.67%	35049	17555.21	1.996501
27	2003/04	291	13819	6846789	495	2.15%	35731	18758.33	1.904807
	Average Growth in Services					2.76%			1.821455
	Standard Deviation					0.92%			

APPENDIX "4"

Peak Day Demand



APPENDIX "5"

AQWEST - BUNBURY WATER BOARD
5 YEAR FINANCE PLAN 2004/05 TO 2008/09

		2003-2004 BUDGET	2004-2005 PROJECTION	2005-2006 PROJECTION	2006-2007 PROJECTION	2007-2008 PROJECTION	2008-2009 PROJECTION
	CAPITAL EXPENDITURE						
3000	FURNITURE AND EQUIPMENT	42,445	14,000	10,000	10,500	10,500	10,500
0	METERING OF UNMETERED PROPERTIES/NON RESIDENTIAL METERING	9,000	6,000	6,000	6,000	6,000	6,000
1	PLANT PURCHASES	214,000	144,000	220,000	144,000	220,000	144,000
3030	METER REPLACEMENT	280,000	155,000	90,000	100,000	110,000	110,000
3060	EDP EQUIPMENT	20,050	37,500	20,000	21,000	21,000	21,000
[illegible]0	TOOLS	7,000	7,000	7,500	7,500	7,500	7,500
1	MAINS EXTENSION	5,500	5,500	5,800	5,800	5,800	6,000
1	MAINS REPLACEMENT	80,000	80,000	80,000	90,000	120,000	150,000
[illegible]1	MAINS SUBDIVISION	150,000	150,000	155,000	155,000	155,000	155,000
3437	UPDATE NETWORK MODEL	20,000	80,000	20,000	20,000	80,000	25,000
3439	UPGRADE - INCREASE PRODUCTION AT TECH SCHOOL CAPACITY TO 14 ML/DAY	750,000					
3	EXTEND BOOSTER AREA - COLLEGE GROVE	28,000					
7	ENERGY MANAGEMENT	5,000	5,000	5,000	5,000	5,000	5,000
3448	UNACCOUNTED FOR WATER - MAGFLOWS/CALIBRATION	30,000					
3449	NIGHT FLOW ANALYSIS.	30,000	55,000	20,000	25,000	25,000	25,000
3461	ALL SITES - INSTALL INTRUSION SECURITY SYSTEM	25,000					
6	CONSTRUCT AQWEST WATER SERVICES CENTRE	103,000					
7	REPLACE BUSSELL BORE (INCLUDES CAPPING OF EXISTING BORE)	15,000					
8	MANGLES RESERVOIR - REPLACE LINER - CONTINGENCY	60,000					
3473	INSPECT AND REVIEW TECH 4 BORE PUMP WATER QUALITY	20,000					
3475	INSTALL TORQUE ANCHOR TO TECH 4 BORE	15,000					
1	ROBERTSON WTP - REDRILL BORE AND REPLACE PUMPS AND SWITCHBOARDS	406,000					
4	INSTALL CHLORINE MONITORING DEVICES AT ALL RESERVOIRS	15,000	45,000				
[illegible]1	ROBERTS RESERVOIR - UPGRADE INLET PIPEWORK	40,000		30,000			
3492	INSTALL 250MM LINK MAIN EAST BUNBURY TO VITTORIA HEIGHTS	347,000					
3494	GROUNDWATER ANALYSIS	14,000	14,000	14,000	14,000	14,000	14,000
5	ALL SITES - REPLACE AIR COMPRESSORS WITH STANDARD SYSTEM	27,500	56,000				
	UN TO FAIL REPLACEMENT PROGRAM	30,000	30,000	30,000	30,000	30,000	30,000
	L SITES - LIGHTNING PROTECTION	60,000					
3498	INSTALL 500MM TRUNK MAIN FROM TECH WTP TO PARADE ROAD	10,000	120,000	500,000	500,000	520,000	1,000,000
3499	INSTALL 375 TRUNK MAIN FROM PARADE ROAD TO ROBERTS CRES.	10,000					
[illegible]00	GLEN IRIS DISTRIBUTION UPGRADE 200MM MAIN - JUBILEE ROAD	5,000	50,000				
01	INSTALL 300 MM / 375 MM DIAMETER MAIN ALONG ORCHID DRIVE AND INCE ROAD, GLEN IRIS	97,000	55,000				
02	UPGRADE SERVICE - BUNBURY HEALTH CAMPUS	12,500					
3503	HASTIE BOOSTER - UPGRADE VSD	30,000					
3504	INSTALL CUL-DE-SAC TO IRWIN ST	15,400					
5	ALL RESERVOIRS - VERMIN PROOF	10,000					
6	ROBERTS RESERVOIR - UPGRADE FENCING	11,000					
7	UPGRADE ROBERTSON WTP	140,000	112,000				
3508	SKEWES WTP - REPLACE FILTER SANDS	65,000					
3509	SKEWES WTP - REDRILL NORTH BORE AND REPLACE ELECTRICS	10,000	300,000				
3510	SKEWES WTP - REPAINT SEDIMENTATION TANK INTERNALS	24,000					
1	SPENCER WTP - REPLACE BORE HEADWORKS	20,000					
2	SPENCER WTP - REPLACE ELECTRICAL CUBICLE FOR BOTH BORES	20,000					
3	FIRE SERVICE CONTROL	50,000	50,000	50,000	55,000	55,000	55,000
3514	SYSTEM HYDRAULICS / WATER QUALITY MODELLING	19,000					
3515	INVESTIGATE AND TRIAL WATER QUALITY LOGGERS	10,000					
6	DECOMMISSION TECH 2 BORE AND ESTABLISH AS MONITORING BORE	9,000					
7	REPLACE ELECTRICAL POWER POLES AT BOTH TECH 1 & 2 BORE SITES	7,000					
[illegible]18	TECH WTP - UPGRADE NO 1 BORE CUBICLE	13,000					
3519	CONSTRUCT JARRAH BENCH/RAMP IN STORES	-					
	ALL PLANTS - AUTOMATION R&D		25,000				
	ALL PLANTS - COMPLETE ELECTRICAL PICKUP - BOOSTERS AND RESERVOIRS		25,000				
	ALL PLANTS - RESERVE MANAGEMENT PLAN		20,000				
	ALL RESERVOIRS - LEAK JOINT SEALING		25,000				
	ALL SITES - COMPILE OPERATIONS / ASSET MANAGEMENT PLANS FOR NDIVIDUAL TREATMENT PLANTS		40,000				
	ALL SITES - COMPLETE BORE CAPPING / MONITORING PROGRAM		64,000				
	ALL SITES - INSTALL CHLORINE CONTAINMENT BUNDS		50,000				
	ALL SITES - INSTALL DYNASAND FILTER SAFETY PLATFORMS		50,000				
	ALL SITES - TO INSTALL CABLE CORE MARKING FOR ELECTRICAL WIRING AT TREATMENT PLANTS / BOOSTER STATIONS		60,000				
	HASTIE WTP - LEAK REPAIR TO WASHWATER RECOVERY TANK		20,000				
	UPGRADE HASTIE WATER TREATMENT PLANT		450,000				
	UPGRADE IRWIN WTP		320,000				
	ROBERTS RESERVOIR - REPLACE ROOF VENTS		12,000				
	SKEWES WTP - INSTALL VAPOUR PROOF WALL		25,000				
	SYSTEM - DEVELOP GIS PROTOTYPE		-	-	-		
	UPGRADE TECH RESERVOIR		25,000				
	TECH WTP - CHLORINE SYSTEM ADDITIONS (IF REQUIRED)		30,000				
	TECH WTP - INSTALL CLARIFIER		50,000	250,000			
	TECH WTP - RELOCATE NO 4 AND NO 5 BORE PUMPS AND COLUMNS		55,000				
	WATER SERVICES CENTRE - INSTALL FIRE DETECTION / ALARM SYSTEM		25,000				
	RESERVOIRS - STRUCTURAL INTEGRITY ANALYSIS		50,000	50,000			
	WATER SERVICES CENTRE - ROLLER DOORS ELECTRIC MOTORS STORE		7,500				
	WATER SERVICES CENTRE - AUTOMATIC DOORS FOR RECEPTION ENTRANCE		7,500				
	HASTIE RESERVOIR - LEAK REPAIRS			15,000	250,000		
	CARRY OUT INVESTIGATIONS FOR SUITABLE GROUNDWATER SUPPLIES PRESTON AREA			5,000		250,000	
	UPGRADE ROBERTS RESERVOIR		30,000				
	UPGRADE SKEWES WTP			230,000			
	SPENCER WTP - DELIVERY PUMP UPGRADE			20,000			
	REPLACE TECH 1 BORE			15,000	440,000		
	UPGRADE MANGLES RESERVOIR				50,000		
	UPGRADE SPENCER WTP				340,000		
	UPGRADE HASTIE RESERVOIR					15,000	
	UPGRADE COMPUTER SYSTEM					200,000	
	KEN CANTWELL WTP - DESIGN AND CONSTRUCTION					300,000	
	TOTAL CAPITAL EXPENDITURE	3,436,395	3,037,000	1,848,300	2,268,800	2,149,800	1,764,000

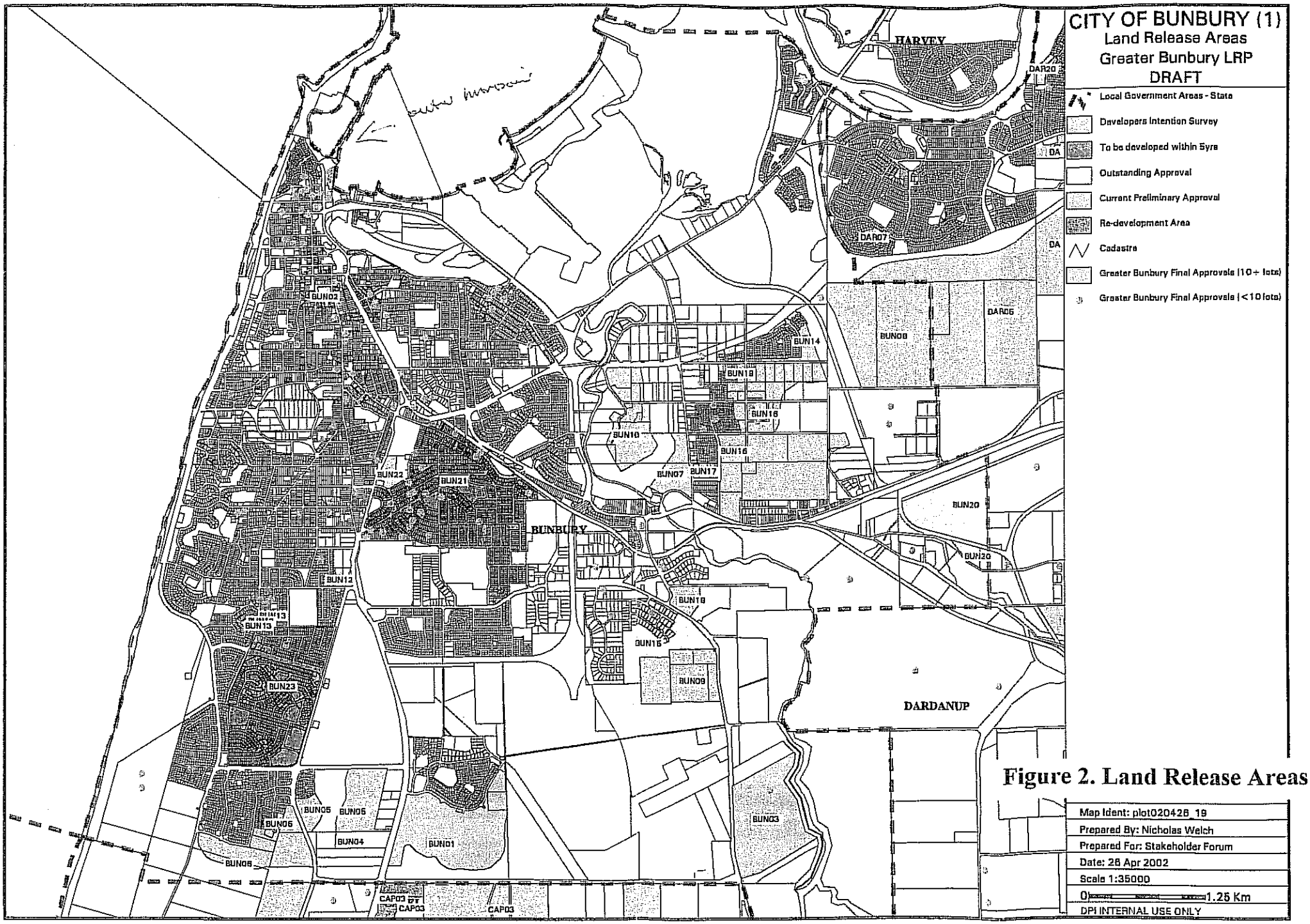


Figure 2. Land Release Areas

W525

APPENDIX "7"

AQWEST – BUNBURY WATER BOARD

UNACCOUNTED FOR WATER / NIGHT FLOW ANALYSIS REPORT

NOVEMBER 2002

By Heath Bennett

Aqwest Technical Officer (1994 – 2002)
Technical Assistant – Bristol Water Leakage Services Dept, U.K (1992 – 1994)
Member of the U.K Water Industry National Leakage Initiative (1992 – 1994)
Chairman – WSA U.K, Leakage Metering Group (1994)

AQWEST – BUNBURY WATER BOARD

UNACCOUNTED FOR WATER PROJECT

1. INTRODUCTION

The ongoing review of levels of unaccounted for water (UFW) was triggered by a review of the key performance indicators in the 1999/2000 Annual Report which highlighted a UFW figure of 19.6%.

Water industry data for distribution system losses indicates levels of loss of between 5% and 25% (Source: UK Environmental Agency). The lowest figure reported is that of Singapore which employs pro active leakage detection and pressure reduction programs, and reports a UFW figure of 4.9% (1999).

Suggestions for the Aqwest figure of 19.6% were as follows:

1) Inaccurate data (delivery vs consumption) – due to inaccurate meters.
2) Unrecorded consumption – eg fire brigade use, hydrant standpipe use, theft of water.
3) System losses – leaks from trunk and distribution mains, and water services; water used for system maintenance (eg flushing, scouring, link in's).

It was expected that all three factors were contributing to Aqwest's UFW figure.

In March 2001, a report was completed to determine the cost of the 19.6% UFW figure, and to determine methods of reducing the figure.

The report determined that the 19.6% figure was derived as follows:

Total metered consumption (from Authority system) = 5,540,615 kilolitres

Total metered delivery (from WTP and reservoir meters) = 6,892,804 kilolitres

Variance = 6,892,804 – 5,540,615 = 1,352,189 kilolitres = 19.6%

It was also determined that this was the equivalent of the average domestic consumption of 4,265 residential properties, and based on a unit cost of 34c / kilolitre, equates to a value of $459,744, enough to justify research into the cause of the loss.

The report recommended the following actions be undertaken to establish the accuracy of the UFW data, and to reduce the figure if it were found to be accurate:

1) Review consumption metering

- Are all properties metered ?
- Is all consumption recorded ?
- Effect of out of commission meters ?
- How accurate are consumption meters ?

2) Review delivery metering

- Review accuracy of WTP and reservoir meters
- Review calibration procedures for delivery meters

3) Review other sources of Unaccounted for Water

- Fire brigade / fire service use
- Hydrant standpipe use
- Theft of water

4) Review system losses

- Review mains leakage
- Review reservoir leakage
- Review service leakage
- Review burst mains and services
- Review system maintenance use eg flushing

5) Conduct system audit (water balance)

It was determined that the key performance indicator for UFW should be determined by conducting a system audit, an example of which is shown on Page 3. An important aspect of conducting the audit is to improve the quality of information used in the audit by ensuring that as much data is proven (eg metered), so that accurate UFW data is obtained.

BENCHMARKING OF WATER LOSSES IN AUSTRALIA: CALCULATED WATER BALANCE COMPONENTS

Version 1a

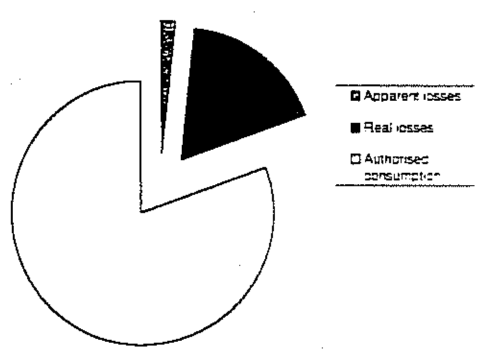
Aqwest - Bunbury Water Board	1-Jul-99	to	30-Jun-00	WSAA - 1a 0028

W1. ANNUAL WATER BALANCE DATA

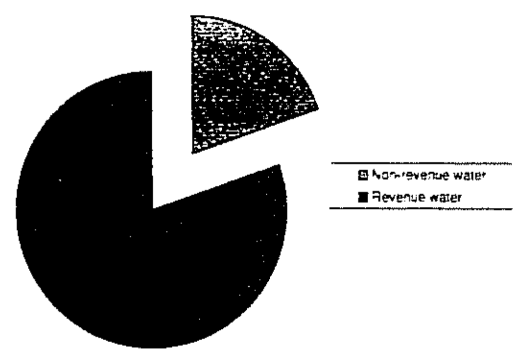
All system

Own Sources 6892.0 Ml	System Input 6892.0 Ml	Water Exported 0.0 Ml	Authorised Consumption 5552.0 Ml	Billed Authorised Consumption 5540.0 Ml	Revenue Water 5540.0 Ml	Billed Water Exported 0.0 Ml
		Supplied Water 6892.0 Ml				Billed Metered Consumption 5540.0 Ml
Water Imported 0.0 Ml						Billed Unmetered Consumption 0.0 Ml
				Unbilled Authorised Consumption [illegible] Ml		Unbilled Metered Consumption 12.0 Ml
						Unbilled Unmetered Consumption [illegible] Ml
			Water Losses [illegible] Ml	Apparent Losses [illegible] Ml	Non-Revenue Water [illegible] Ml	Unauthorised Consumption [illegible] Ml
						Customer Metering Inaccuracies [illegible] Ml
				Real Losses [illegible] Ml		Real Losses of Storage Reservoirs, on Mains and on service connections [illegible] to customer meter [illegible] Ml

Basic Components of System Input in Ml/year



Revenue Water and Non-Revenue Water in Ml/year



The report was reviewed by staff, and the following recommendations were determined for action:

1. Confirm accuracy of delivery meters
2. Replace inaccurate delivery meters
3. Confirm that all properties are metered
4. Confirm accuracy of consumption meters
5. Focus on identification and replacement of out of commission consumption meters
6. Obtain and regularly analyse night flow data for supply system (night flow analysis / leakage metering)
7. Record system maintenance use where possible.
8. Rectify leakage at reservoirs
9. Calculate future UFW data using system audit (water balance) information

In summary the report highlighted that the following matters must be considered with regard to Unaccounted for Water:

- Unaccounted for water causes significant loss of revenue
- Economic savings from reduction in lost water eg treatment and distribution costs
- There will always be a certain volume of water that cannot be accounted for
- Long term deferment of capital expenditure due to reduction in UFW
- Improvements to customer services – due to less interruptions to supply from burst mains / poor pressure / dirty water
- Effects of maintenance programs (short term increase in works, but should reduce in the long term as leaks are located and repaired)

2. ACTIONS TO DATE

Since the initial report was published, the following actions have been completed:

a) Confirm delivery meter accuracy

In September 2001, following a review of WTP / reservoir delivery meters, it was determined that the following meters were inaccurate and would require replacement:

- Tech Reservoir – Underwood Avenue (600mm)
- Tech Reservoir – Washington Ave (450mm)
- Hastie Reservoir (450mm)
- Mangles Reservoir (300mm)
- Roberts Reservoir (300mm)
- Skewes WTP (250mm)

b) Replace inaccurate delivery meters

In January 2002, reservoir delivery meters identified as being inaccurate were replaced with Danfoss magflow meters in a Capital Works plan funded program. The Skewes WTP delivery meter was replaced in October 2002, again utilising Capital Works Plan funds.

c) Confirm that all properties are metered

A review of the Authority database and discussion with Finance and Rates staff determined that all known services were metered (all unmetered services were corrected during the 1999 Metering of Non Residential services program).

d) Confirm accuracy of consumption meters

All water meters are subject to wear, and with this a decrease in accuracy will occur due to wear in the metering chamber. As a result, meters will under record, small flows may not register, and high flows could result in meter slippage.

A review and bench test of meter accuracy carried out in September 2001 provided the following data:

Reading range (kl)	No of meters tested	Average error at 1.6 l/min (%)	Average error at 10 l/min (%)	Average error at 25 l/min (%)
3001 – 4000	5	-57.4	-7.3	-4.8
4001 – 5000	6	-58.7	-3.5	-4.1
5001 – 6000	3	-69.95	-7.8	-3.2
6001 – 7000	7	-73.6	-13.6	-11.7
7001 – 8000	2	-47.8	-9.8	-11.1
8001 – 9000	1	-33.1	-1.5	-3.1
9001 - 10000	6	-81.1	-38.3	-6.5

It can therefore be seen that meter accuracy at normal operating flows is between 1.5 and 38% (under recording). While this may indicate that the unaccounted for water is not as high at it seems, it is difficult to adjust the total metered consumption by an accurate figure to counter for this meter inaccuracy.

If a figure of 5% was chosen, then a revised UFW figure would be as follows:

Delivery = 6,892,804 kl
Consumption = 5,835,000 kl

Variance (UFW) = 15.4 %

However, this overlooks the fact that if the delivery meters are under recording, then the UFW figure could be higher.

e) Obtain night flow data for supply system (leakage metering)

Night flow analysis is used as a means of quantifying leakage levels in water mains networks.

Since 1986, no dedicated leak detection work has been carried out since a leak noise survey was carried out in small, selected areas of the mains network.

The assessment of leakage can assist in a number of important areas:

- Assists in planning leakage monitoring, control and repair programs
- Management of system operating pressures at optimum levels
- Allows the completion of water audits and assessment of economic levels of unaccounted for water
- Assists in the planning and development of mains rehabilitation and replacement programs, and planning for future headworks

The assessment of leakage can be undertaken in the following system areas:

- Reservoirs (drop tests and reservoir inspections)
- Trunk mains
- Distribution / reticulation mains
- Aqwest's services (main to meter)
- Customers services (meter to internal) – customers responsibility, although leakage assessment may identify leaks which could lead to a reduction in the number / size of ex gratia claims.

The majority of programs used to assess leakage in mains systems catagorise losses as follows:

- Bursts- reported and unreported – individual events with a rate of losses greater than $0.5m^3/hr$ at 50m pressure.
- Background leaks – individual events with a rate of losses less than $0.5m^3/hr$ at 50m pressure.

Commercial software such as BABE (Bursts And Background Estimates) – Water Research Council, UK, and SANFLOW (South African Night Flow Analysis) also assess bursts as follows:

- Reported bursts are those which are identified by the public or by operational staff, usually as a result of water rising to the surface.

- Unreported bursts are those which are located by active leakage detection methods, and which would normally go undetected with passive leakage control.

- Hidden losses are those small bursts and leaks that remain undetected for extended periods of time, even with some forms of active leakage control.

It should be noted that passive leakage control consists of responding to leaks and bursts as they arise by notification of bursts by the public or staff as water is visible at the surface. Active leakage control is the process of using leak detection techniques such as night flow analysis, leak noise correlation, step testing, sounding etc, to proactively identify leaks.

With reported bursts (and accidental damage eg contractors damaging main) the effect on unaccounted for water data is usually established by determining the time taken to repair the burst after notification.

With unreported bursts, the effects are usually greater, as the following has to be established:

- Awareness – time taken from leak first occurring until the time that Aqwest becomes aware that the leak exists.
- Location – time taken from awareness to the time taken to physically locate the leak
- Repair – time from location to repair of the leak

From the above it is easy to see that usually, reported bursts have shorter combined awareness, location and repair times, and thus water loss may be lower, while unreported bursts can run for much longer periods of time, and thus water losses may be extremely high. For example if sounding were employed as the only method of leak location, and this is carried out once a year, then the average duration that an unreported burst will run for is approx 6 months. If no active leak detection is carried out, leaks and bursts may run for years without any indication at the surface.

Thus the identification of unreported bursts can have a great effect on levels of unaccounted for water.

An important consideration when considering the effort expended to identify these leaks is economic ie what will it cost to monitor / locate the leak verses what will be saved (both directly and indirectly). The point is made so that economically justifiable decisions can be made in this area, in line with Aqwest's Asset Management principles.

A number of methods can be employed to identify unreported bursts, as follows:

- Night flow analysis
- Sounding
- Step testing
- Leak noise correlation
- Leak noise loggers

Sounding is a popular technique using simple and inexpensive equipment, but is wholly dependant on operator skill, and can be time consuming. Even with small supply systems or zones, the cost of sounding the entire system may not be justified in terms of overall savings from identified leaks. Large areas may have no leaks occurring, or leak noise levels may be low due to ground conditions, mains materials, surrounding noise etc. Sounding also has the disadvantages that it is sometimes difficult to determine the precise position of the loudest sound, and the position of the highest sound intensity does not always coincide with the position of the leak.

Step testing methodology is described in Appendix 1.

Leak noise correlation has been employed by Aqwest in 1986, and while it is an accurate method of determining leaks, it can suffer from the same disadvantage as steptesting in that large areas may have no leaks occurring at all, and thus time spent in these areas is unproductive (although confirmation that no leaks are occurring is also a positive). Details are included in Appendix 3.

Leak noise loggers are a recently introduced device which are placed at strategic locations in the mains system and are used to identify the characteristic noise of leakage.

The most economic method of leakage management is to identify areas which show the potential for leaks to be occurring, and then check those areas with more detailed leak detection techniques (refer to Appendix 4 for an industry example).

This can be established by the analysis of night flow data which can be gathered by dividing the supply system into individual temporary or permanent zones, with a flow meter installed at the inlet to each zone (a system known as leakage metering). Once each zone is isolated by closing zone valves, minimum flows are recorded (ie at night). Any zones where night flows indicate leakage, can be further examined by step testing (closing of branches of the zone back towards the meter) or leak noise correlation.

The recommendation from the leakage report carried out in 1986 was that no further leakage work be carried out until minimum flows (night flows) are recorded in each area. As stated in the report (and as supported by industry sources), the minimum night flow in a system with no leaks should be zero, but is generally acceptable up to 4 litres / hour /service (this can account for significant volume over time). The establishment of night flows is important as a first step in determining if leakage is a) occurring in other parts of the system and b) if leakage levels have risen since the 1986 review. As stated in the review, the analysis of night flow data can highlight the general deterioration of the mains system, and leak detection surveys can be used to pinpoint leaks in areas that show evidence of deterioration. The first step in analysing night flows is the establishment of a leakage metering system.

In August 2002, valving operations were completed to allow isolation of the system into two zones based on a Tech Reservoir zone, and the remainder of the system (refer Figure 1).

Based on leakage industry standards, it was determined that the following acceptable background leakage level would be determined:

Acceptable leakage level = 4 litres / property / hour

- Tech zone – approx 5,500 properties x 4 l/p/h = 22,000 l/p/h = 22 m^3/h
- Remainder of system - approx 7,500 properties x 4 l/p/h = 30,000 l/p/h = 30 m^3/h

During the isolation period, the SCADA system was used to accurately monitor nightflow data from the two zones. Minimum night flows in the zones were recorded as follows:

- Tech = 87m^3/h
- Remainder = 106m^3/h
- Total system = 193 m^3/h

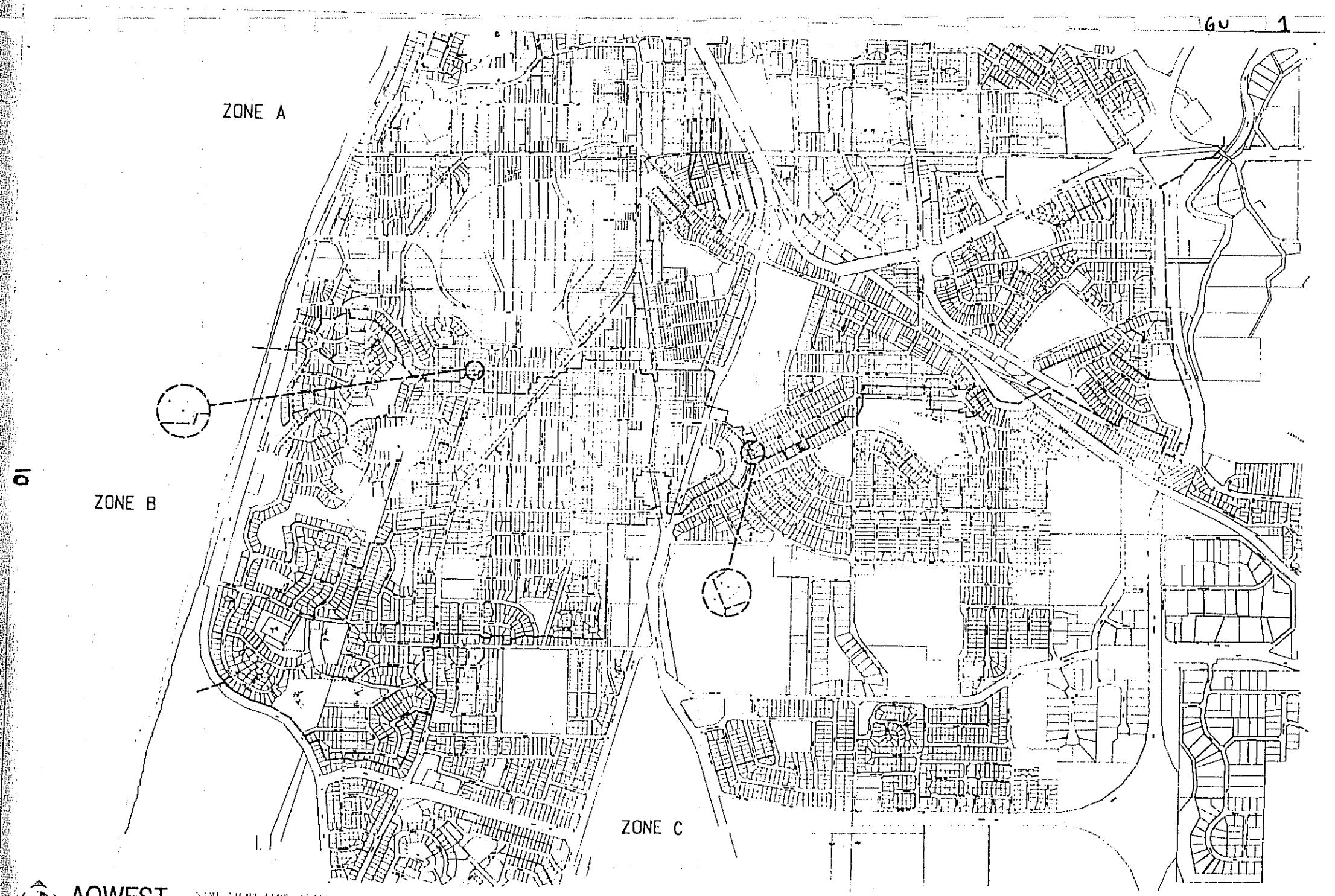
It had been noted even prior to the test, that total system nightflows were in the region of 200m^3/h. Based on the number of properties served (13,042), an acceptable background level would be 52m^3/h. It would seem from this data alone, that further investigation is warranted.

f) Record system maintenance use

Since 2001, all water used for flushing and scouring has been recorded through metered standpipes.

g) Rectify reservoir leakage

In 2002, repairs were made to the leaking liners at Tech and Roberts Reservoirs.



AQWEST
Bunbury Water Board

FIGURE 1

SCALE 1:7500

3. FUTURE ACTIONS

The proposed future actions for UFW are as follows:

1) On going night flow analysis (leakage metering system)

Design works to establish a leakage metering system is currently in progress, with assistance being provided by Gugich and Associates. It is proposed to set up approximately 10 – 12 metering zones of 1000 to 1500 properties each, as well as using the existing high level (booster) areas as metering zones (these zones are particularly attractive, as isolation valves are already in place and should be well maintained, and the savings associated with any identified leaks are greater as water supplied in a booster zone has a greater production cost than in non boosted areas due to the additional costs associated with the booster pumps ie electricity, pump maintenance etc). It is also proposed to conduct leakage tests on trunk mains by isolating all branches and recording the flow into the trunk mains (flow should be nil with no leakage present).

Night flow analysis could be carried out in these zones using one portable magflow meter installed in spool pieces cut into existing mains at predetermined locations. Another alternative is to use existing reservoir outlet magflow meters and zone off smaller areas using a combination of valving and back feeding.

The advantage of the first alternative is that the magflow meter could be used as a step test device for the location of leaks in zones identified as having high nightflows.

It is expected that the zone design work will help to ascertain which option is more suitable and most cost effective.

The factor which must be considered with setting up the zones is the requirement to check and test valves for tightness. This is essential for night flow testing, but is surely a requirement for daily operations anyway (a valve that does not shut off is no use when repairing a burst main !). Thus it must be made clear that valve maintenance is a key component of the program, and will be one of the major costs of night flow analysis. However the benefit of this is that these valves will be inspected regularly to ensure that they are in good operational order.

The zones are being designed on the assumption that night flow analysis will be an ongoing exercise, completed annually. Even if no leaks are found now (unlikely), it is obvious that leakage levels will increase in the future if no active leakage detection program takes place. Passive leakage control (ie waiting for leaks to occur and then fixing them) will eventually lead to an increase in the number of leaks and bursts as reported to the Office of Water Regulation, increases the inconvenience to customers when a leak or burst occurs, and increases overall operational costs, as well as the obvious problem, that of the loss of water.

If the current figures are correct, annual losses of approx $450,000 of production water revenue ($205,000 production costs) justifies an ongoing investment in active leakage / unaccounted for water control measures.

It should also be noted that in other countries, the ongoing issue of abstraction and operating licences is conditional on water service providers demonstrating efficient management of leakage and unaccounted for water. In light of the present situation regarding water resources in Western Australia it is important for utilities like AQWEST to demonstrate a proactive approach to UFW.

It is estimated that if the Board wishes to commit to ongoing leakage management, then a full leakage metering system could be set up within 1-4 years, as follows:

- Confirm zone designs
- Check / test valves
- Install portable meter spool pieces
- Test zones annually for 1-2 nights per year
- Review zonal nightlines and report
- Steptest zones with high nightlines using portable meter.
- Locate leaks and repair as required

The following are estimates of costs to setup a complete leakage metering program:

- Check and test valves (est 200) - S 75,000 (based on cost of $15,000 to check 41 valves for August 2002 test)
- Install spool pieces / test sites - $10,000

Total set up costs = $85,000

- Annual testing costs – valving off zones / monitoring - $7,000 (assumes 2 staff x 6 hours (night valving) x 10 days – 1 day / zone)
- Analysis by staff . location planning (eg potential step test / leak location sites) - $3,000 (1 week x 2 supervisory / technical staff)

Annual night flow analysis = $10,000

- Conduct a step test on 1000 -1500 properties = $3,800 (includes valve checks @ $300/valve)

Step test leak location costs = $38,000 (10 zones / annum)

- Locate leaks using leak noise correlator or alternative = quotation required

Leak location costs = to be determined (dependant on the number of leaks identified

These figures will be confirmed once zone design is complete and accurate valve numbers are known.

2) Night flow testing June 2003

It is proposed to complete analysis of trunk main leakage in April / May 2003, dependant on system operation, and to conduct night flow analysis of booster zones (x 7) in May / June 2003.

It is then proposed to test the Roberts, Mangles and Hastie Reservoir zones in isolation in June 2003. This will require the checking of approximately 9 valves in April / May 2003 (to be funded from existing project funds GL 3449).

In early July 2003, the Unaccounted for Water calculation can be completed for 2002/03, with the confidence that both production and consumption data is accurate (ie the first full year since the reservoir magflow meters were replaced). A water balance should also be underaken to incorporate other UFW factors and this incorporated in the UFW calculation.

This data, combined with the night flow analysis undertaken in June, should provide the necessary guidance on what level of unaccounted for water program is required for the next twelve months (ie if the UFW calculation is 4 – 8 % then it may be uneconomical to undertake analysis of the smaller zones, and it may be more appropriate to just test the three reservoir zones).

3) Ongoing analysis

As stated earlier, the economic level of leakage must be determined in order to estimate what UFW measures should be undertaken. As a minimum though, the three existing reservoir zones (Tech, Mangles and Roberts Reservoirs) should be tested annually, with analysis of smaller zones / step testing incorporated as required (ie where high night flows are recorded).

Once the leakage metering zones have been designed, there is no additional cost associated with them, save for regular checking of valves.

4) Other Unaccounted for Water Initiatives

In order to achieve more accurate unaccounted for water data, the following matters may be addressed:

- Metering of fire services – report in progress
- Recording of other system maintenance use

5) Reservoir Leakage Tests

Drop tests should be conducted annually at all reservoir to monitor leakage.

4. RECOMMENDATIONS

If further night flow analysis / UFW calculations confirm the suspected high UFW levels it may be appropriate to setup a full system commencing with zones showing high nightlines (from night flow analysis completed upto June 2003) first, and moving to all zones by 2004 – 2006.

A guide program is as follows:

- Conduct trunk main analysis – April / May 2003
- Conduct high level zone night flow analysis – May / June 2003
- Conduct Roberts / Hastie night flow analysis – June 2003 (check valves in May 2003)
- Confirm UFW calculation – July 2003
- Conduct system audit (water balance)

If UFW calculation confirms suspected UFW levels:

- Check and test reduced size zone valves (identified / historic leakage zones) – July 2003
- Install flow meter spool pieces / test sites (identified / historic leakage zones) – July 2003
- Conduct night flow analysis (identified / historic leakage zones) and step tests / leakage detection as required – August 2003

- Conduct night flow analysis – Tech / Hastie / Roberts zones – annually commencing July 2004
- Check and test reduced size zone valves (remainder of zones) – July 2004 onwards
- Install flow meter spool pieces / test sites (remainder of zones) – July 2004
- Conduct night flow analysis (identified / historic leakage zones) and step tests / leakage detection as required – August 2004 ongoing

5. AREAS FOR LONG TERM CONSIDERATION

The following longer term ideas should also be considered:

- Review of consumer leaks – a proactive approach to assisting customers to reduce leakage in their plumbing systems (eg leak repair notices, incentives to repair leaks) – these are broad, industry based ideas, and link to Water Conservation ideals.

- Review of production vs delivery (ie WTP losses).

Proposed funding for leakage metering program

Item	2002/03	2003/04	2004/05	2005/06
5 year plan funds	$60,000	$20,000	$20,000	$20,000
Conduct initial night flow tests (complete)	$17,000			
Design night flow zones	$6,000			
Check and confirm trunk main / high level zone valves	$28,000			
Conduct trunk main flow tests	$2,000			
Conduct high level zone night flow tests	$0	$500	$500	$500
Conduct reservoir zone night flow tests	$1,000			
Check and confirm reduced size zone valves		$10,000	$10,000	$10,000
Install flow meter test sites	$6,000	$5,000	$5,000	
Conduct reduced size zone night flow tests		$4,500	$4,500	$9,500
Step testing (if / as required) *		$38,000	$38,000	$38,000
Leakage location *		As required	As required	As required

* Subject to confirmation of the UFW figure and the detection of high night flow, 5 Year Plan funds from 2003/2004 onwards may need to be increased to cover step testing and leak location activities.

6. SUMMARY

- Strenuous efforts need to be made to confirm / reduce the unaccounted for water figure.
- The replacement of delivery meters project that was completed in 2002 will enable an accurate UFW figure to be determined on 1/7/2003.
- It is apparent from initial night flow data, and current system maintenance data that leaks are occurring in the mains system.
- Searching for leaks in a mains system is akin to looking for a needle in a haystack!
- The most efficient and effective method of leak detection is to measure system flow at night in small isolated zones.
- Zones identified as exhibiting higher than expected night flows can then be checked using conventional leak location methods.

APPENDIX 1

ESTABLISHMENT OF A LEAKAGE METERING SYSTEM

Leakage metering involves the zoning of a supply system into small areas ie typically between 500 and 3000 properties, by closing appropriate isolation valves and feeding each zone by a single metered main. Data loggers are attached to each meter to record flow into the zone for analysis.

Zones can be set up to be permanent isolated zones, or temporary, where the zone is isolated only for the purposes of leak detection. Flow meters can be left in the feed mains permanently, or temporary metering positions can be established where the flow meter is replaced by a spool piece after each waste metering test has been completed. In this way, only a small number of meters (or even one) need to be purchased to conduct waste metering.

An extension of leakage metering involving a permanently isolated system is known as 'continual night flow monitoring' where permanently stationed loggers linked by PSTN or a telemetry system is used to analyse data from zone flow meters continuously. A typical zone is then divided into a number of waste meter zones for more isolated testing. A typical continual monitoring zone may contain from 1000 – 5000 properties.

Once leakage meter zones have been established, they can be tested to verify if flow rates are greater than prescribed limits. If the minimum flow at night, when water usage is usually at its lowest (eg 11.00pm – 4.00am) is greater than the limits, then this is an indication that leakage may be occurring in the zone. and thus further leak detection work can be carried out eg step testing, sounding, leak noise correlation etc.

The advantage of leakage metering is that all sizes of leaks from small to large can be identified in a specific area. and thus the further detection work can be narrowed down to a small area of the mains system. The disadvantage is that work completed in areas where there are no leaks is unproductive if carried out too frequently. However this must be analysed in comparison to the cost of water saved overall.

Figure 2 shows the flow graph obtained from a typical leakage meter zone for an eighteen hour period. It can be seen that the flow into the zone decreases at night (approx between 10.30pm and 4.00am) and this is when a great deal of leakage detection work can be carried out. Sounding or leak noise correlation is easier due to the lower level of background noise. and leak noise is amplified due to greater system pressures. Disruption to consumers is also minimised as most are asleep.

If a zone is identified as having potential leakage, a technique known as step testing can be used to isolate the leak to a particular section of the waste zone. Step testing is a method of closing specified valves in a leakage zone in a predetermined order, so as to gradually reduce the effective size of the zone fed by the leakage zone meter. As each valve is closed there should be a reduction in the flow recorded on the leakage zone meter, as any legitimate night consumption and leakage is cut off from supply. If the flow rate falls by a larger amount than expected for the amount of properties on a particular area of the zone, then this is indicative of leakage occurring in that particular area that has been shut off. It is then possible to isolate the leak to a particular section or main in that area.

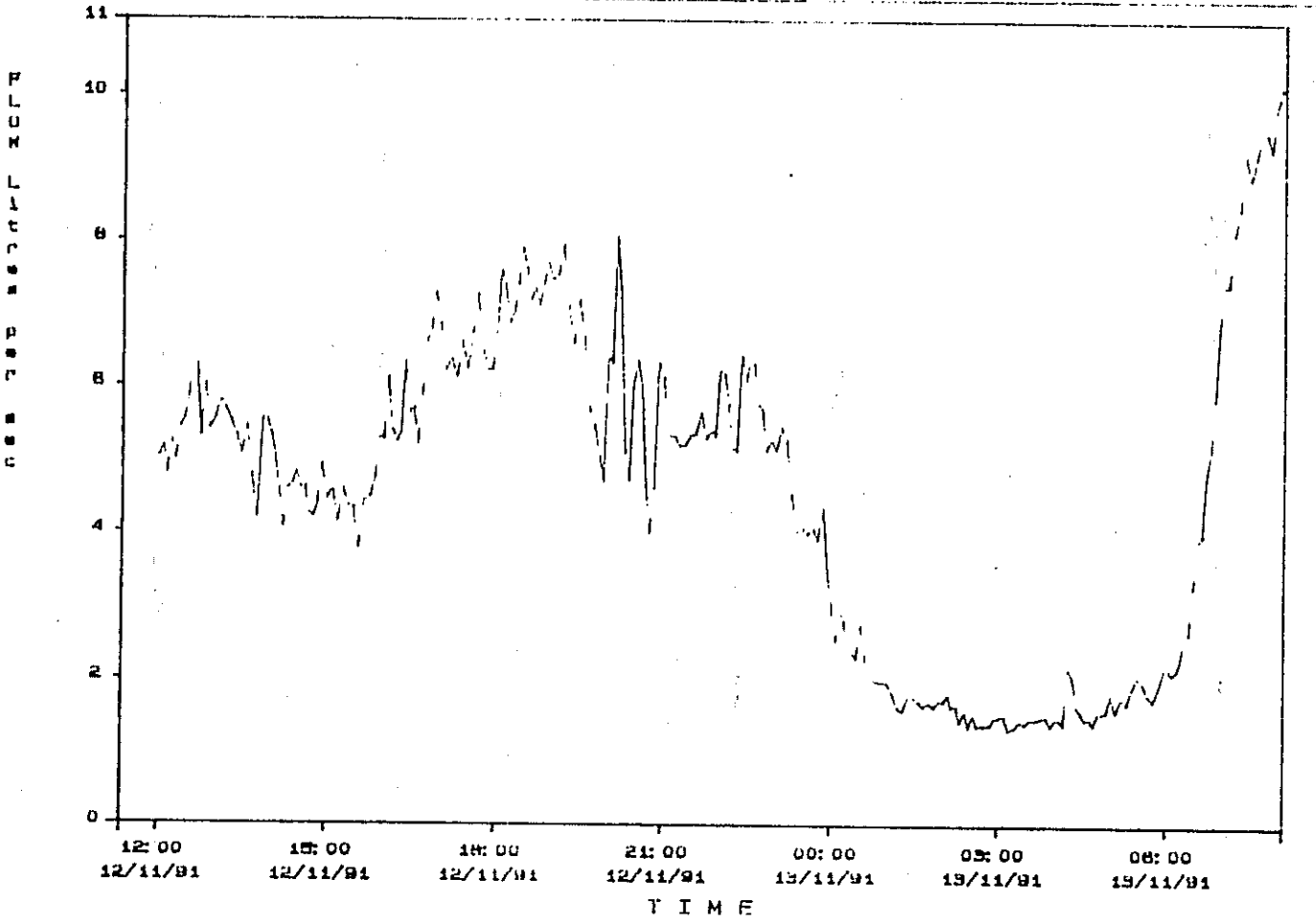
Depending on the type of logging / recording device used, flows can be recorded on a data logger which is returned to the office and analysed against the valve closing sequence (the time that each valve is shut is recorded during the test), or the logger screen (if fitted) can be analysed at the meter during the test, or permanently fitted loggers connected to PSTN or telemetry can be analysed on line from a remote location. Specialised step test devices can also be used which can link to PSTN lines or radio receivers to transmit data to a central location.

The advantages of steptesting are that it can isolate a leak to a small area of the waste zone, and can quantify the size of the leak by the analysis of the reduction in flow rate as the leak is shut off. The disadvantages are that a) the supply to properties is shut off, so testing can only be completed at night, and b) dirty water can be caused due to the closing / opening of valves. However these problems can be overcome by a) shutting a valve for only a few minutes at time before opening, or opening a zone isolation valve behind the shut valve to create an alternate feed, and b) flushing / maintenance of supply systems.

It is an important factor for leakage metering and step testing techniques that all isolation valves close tightly and do not let water by. An example of a step test is shown in Figure 3, with the subsequent flow chart shown in Figure 4.

SPECTRA-LOG GRAPH

SPECTRALOG GRAPH
printed at 10:41 on 05/02/94

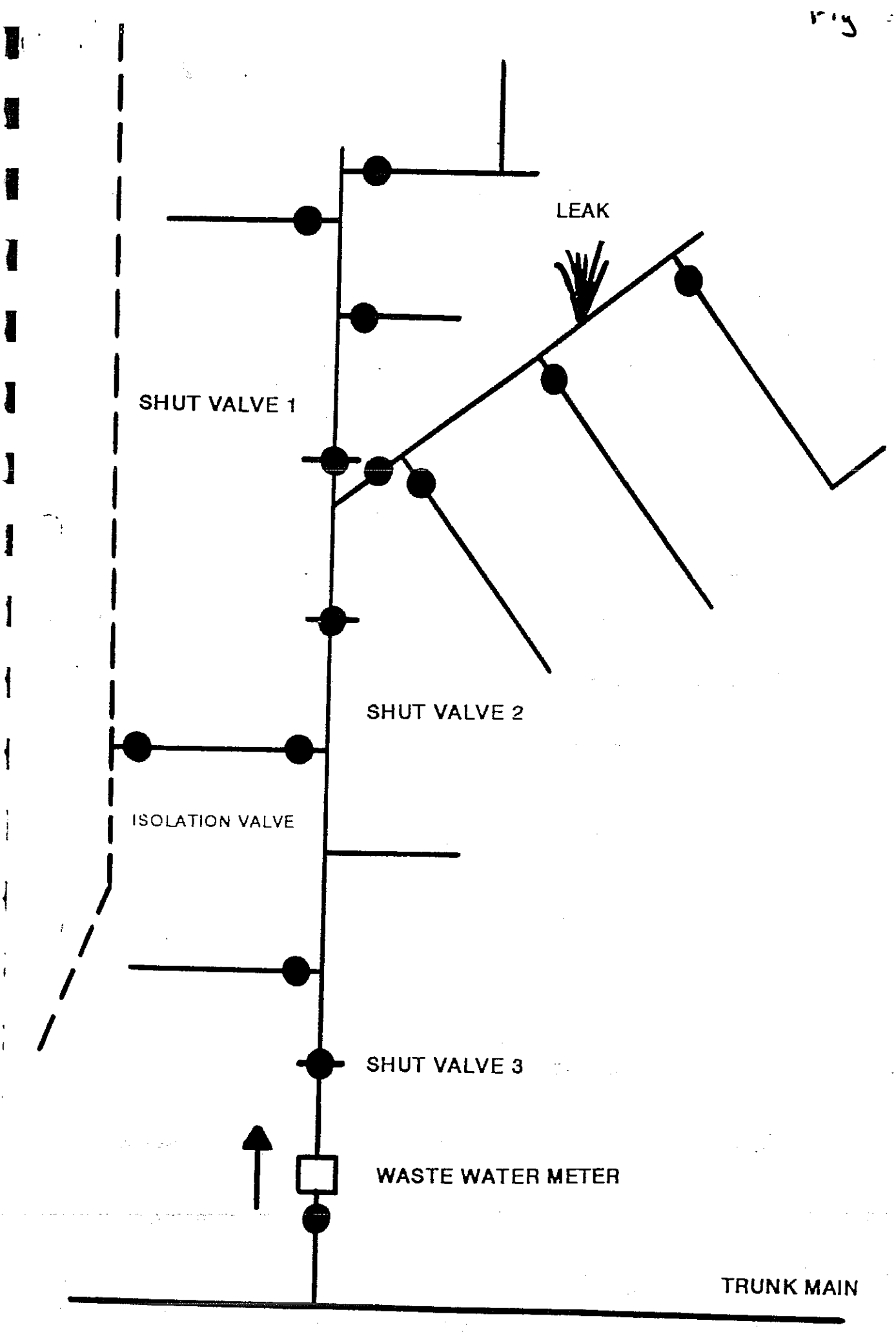


GRAPH SUMMARY INFORMATION	FLOW (in Litres per sec)	
SITE IDENTIFICATION DATA FILE DATA TYPE	MINIMUM MAXIMUM TOTAL	

1e: Typical waste water meter flow profile

20

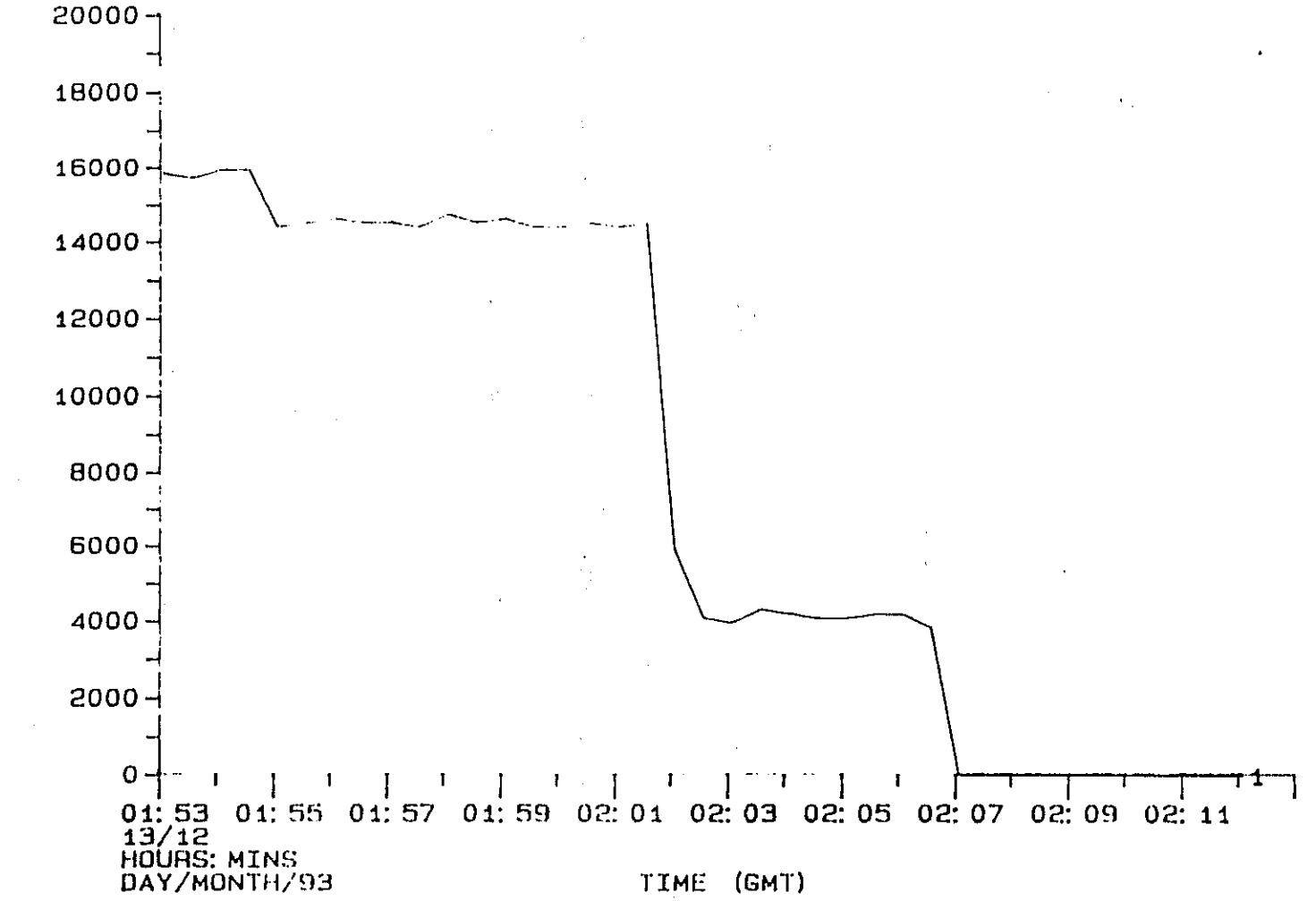
Fig 2



1m: Plan of typical steptest

GRAPH OF 1 DATA PLOT AGAINST TIME IN GMT WITH AN AVERAGING FACTOR OF 1

1. PLOT 1 (LTR/HR)
Date - 13/12/93 ,
STEPTEST/STEPTEST/00664; 9999
, 3391



PLOT 1 (LTR/HR)	CONSUMPTION	COST
MAX=15960	PROPTS=1	£/M3 =1
MIN=0	MNCONS=0	£/WDW=2.513
AVG=7935.39	MXLEAK=0	£/DAY=195.607

1n: Steptest flow profile

Fig. 4

APPENDIX 2

ASSESSMENT OF COST SAVINGS

The following items are identified as possible savings resulting from a reduction in leakage identified by the analysis of night flows:

- Operating costs – reduction in lost water ie production costs, chemical costs, pumping costs etc
- Maintenance costs – costs associated with repair of reported bursts
- Capital costs – deferred capital costs of additional treatment plants / storage etc

The overall assessment of the level of leakage management must also be considered with the following areas:

- Speed and quality of repairs – what is the current standards for levels of location and repair of bursts ?
- Mains renewal / upgrade / rehabilitation programs - it may be uneconomical to conduct active leakage control in an areas that is scheduled for mains upgrade / rehabilitation / replacement in the near future
- Pressure controls – pressure control as a direct effect on leakage levels

The costs of physically locating potential unreported bursts identified by night flow analysis must also be considered eg costs of sounding, step testing, leak noise correlation once areas have been monitored, as well as the cost of any flushing / rectification of dirty water.

APPENDIX 3

1.2.2 LEAK NOISE CORRELATION

As previously discussed, water leaking from a main creates a characteristic 'noise' which travels along the main in both directions at the same velocity. A leak noise correlator is a device which uses sensative transducers to detect the sound from the main on either side of the leak. The correlator consists of a transmitter and an analyser , and two sensors. The sensors are placed either side of the suspected leak position, usually on valves, and the characteristics of the main such as diameter, material, velocity of water, and distance between the sensors, is entered into the correlator. A typical correlator is shown in Figure 1.o.

The principle of leak noise correlation is as follows and reference can be made to Fig 1.p. If the leak was midway between the two sensors then the noise pattern at each sensor would be identical at any moment in time. If the leak is nearer to one sensor than the other, then the noise generated by the leak will reach that sensor first. The transmitter initially sends a signal to sensor B. This signal is automatically amplified and transmitted by radio telemetry or internal connections to the correlator unit. The correlator analyser measures the time delay between the leak noise reaching the two sensors A and B by matching the pattern of leak noise detected at each sensor. By using the values of time delay, leak noise velocity (from tables or measurement) and the pipe length between the sensors, the correlator can compute the leak position using the following equation

$$L = D - \frac{(V \times td)}{2}$$

where

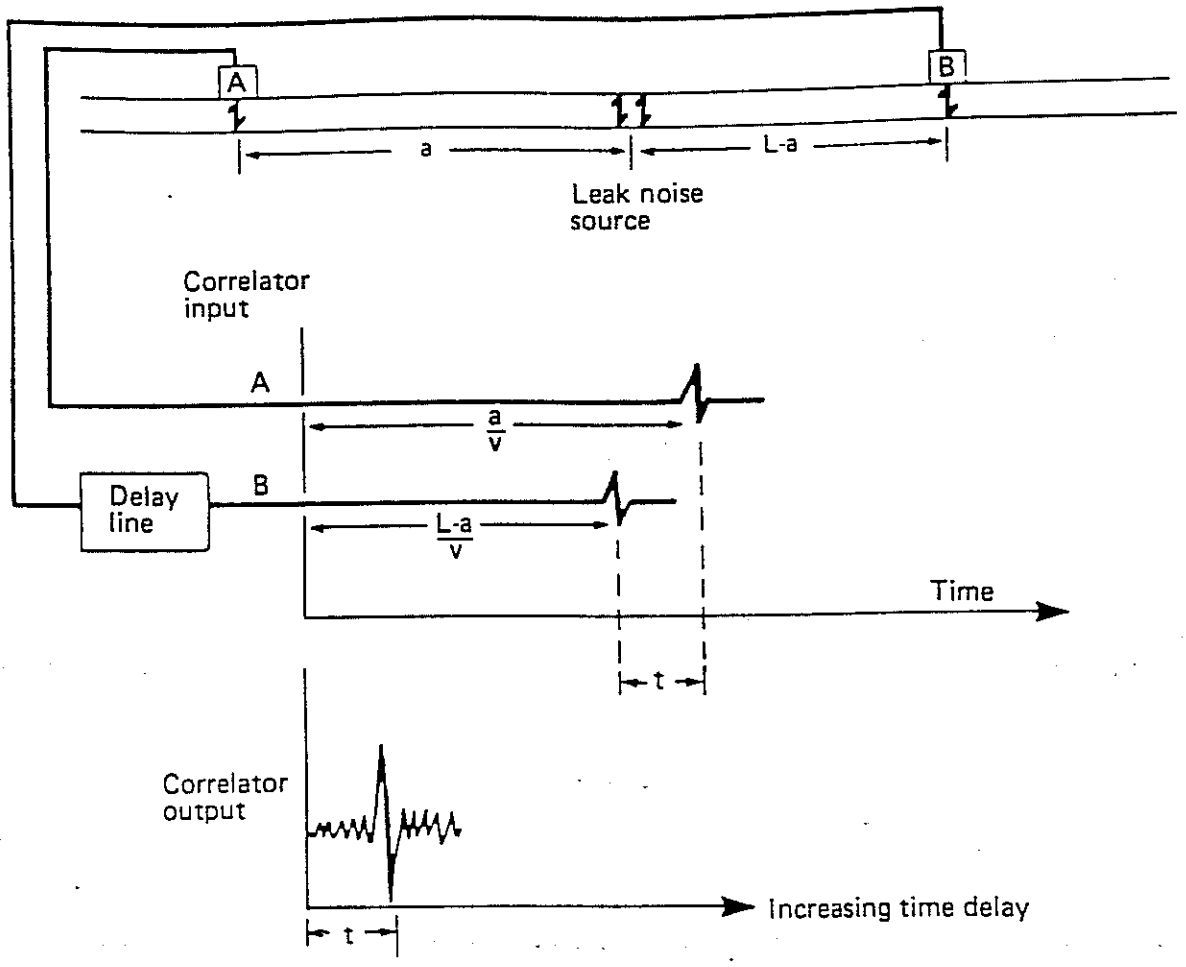
L = leak position
D = distance between sensors
V = velocity of sound for pipe under investigation
td = time delay

The position of the leak is then shown on the correlator screen and a typical output is shown in Figure 1.q. Once the leak location has been computed, the exact position can be measured out on the ground using a measuring wheel. Figure 1.r shows the use of a correlator in the field.

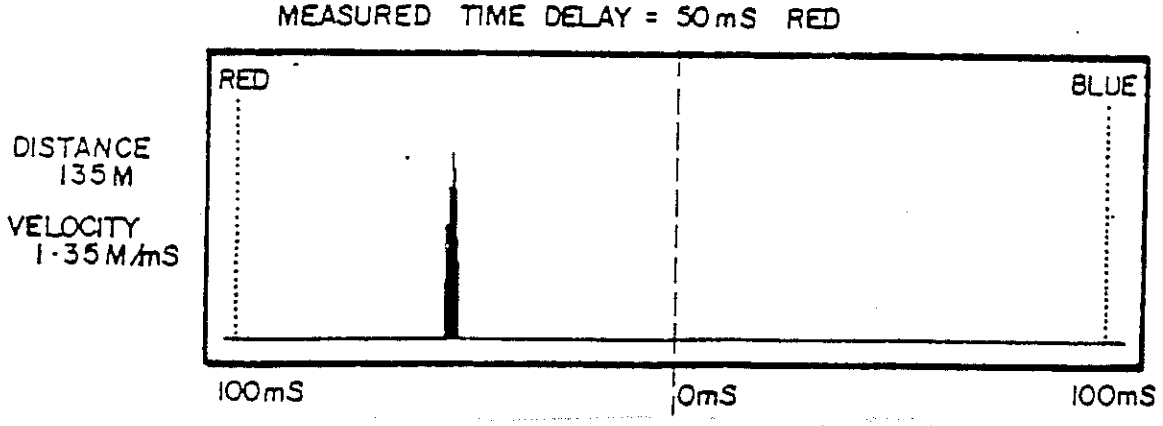
The advantage of leak noise correlation are the technique is cost effective, can be used to isolate leak noise from background noise, it is a quick method of location, is useful for locating difficult leaks, and is well suited to urban areas with a large number of fittings.

The disadvantage of this method is that it is not suitable for use in rural areas where there are large lengths of mains with relatively few fittings.

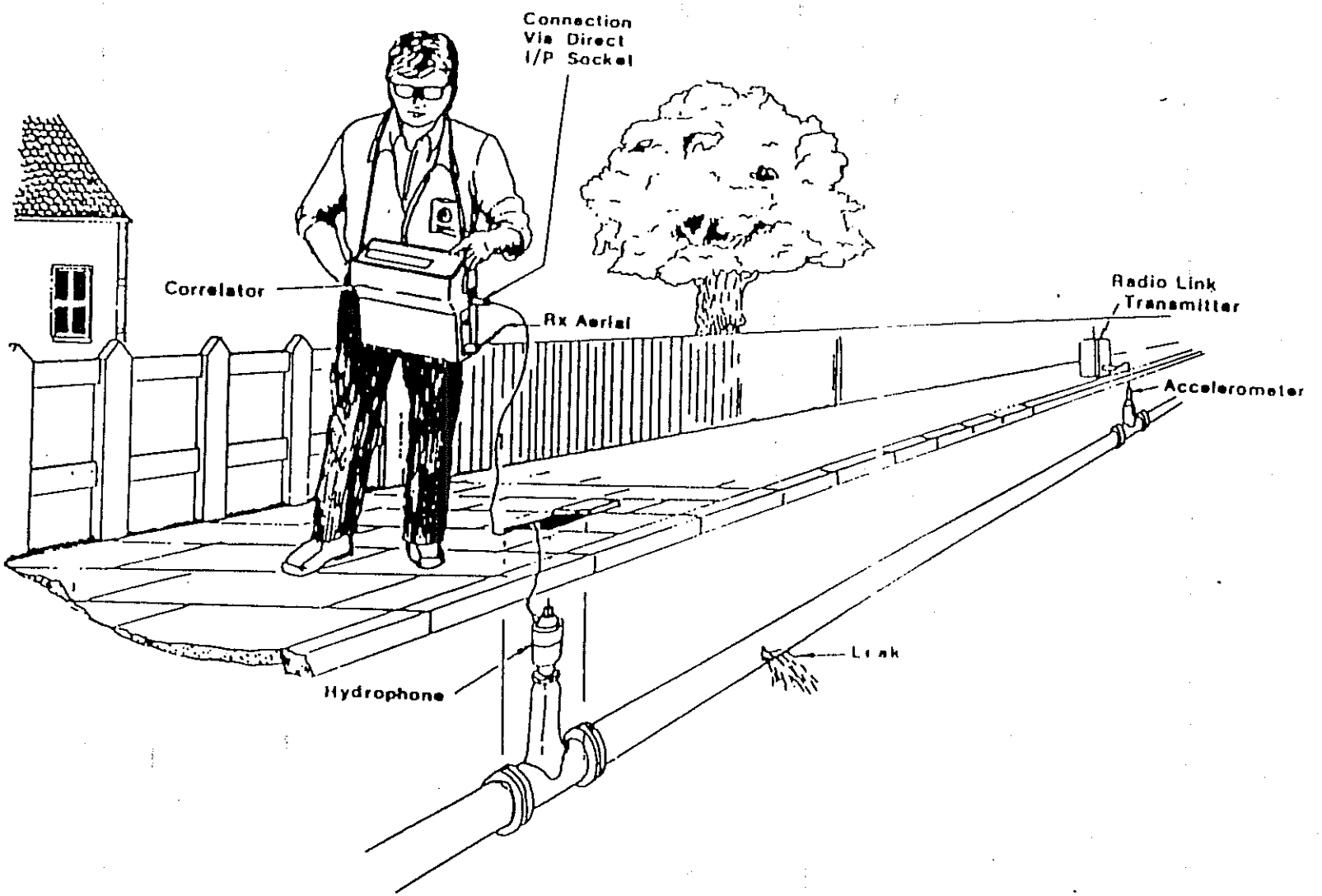
1o: Leak noise correlator



1p: Principle of leak noise correlation



1q: Leak noise correlator output



1r: Use of leak noise correlator

APPENDIX 4

Reproduced from the Website of Tauranga Water, New Zealand.

The Leak Detection Unit

Council has a leak detection programme that is working to reduce the number of leaks in the system. The entire district has been divided into 22 areas for investigation. Only 6 of these remain to be completed. It is a continual process that takes 3 years to be completed each time.

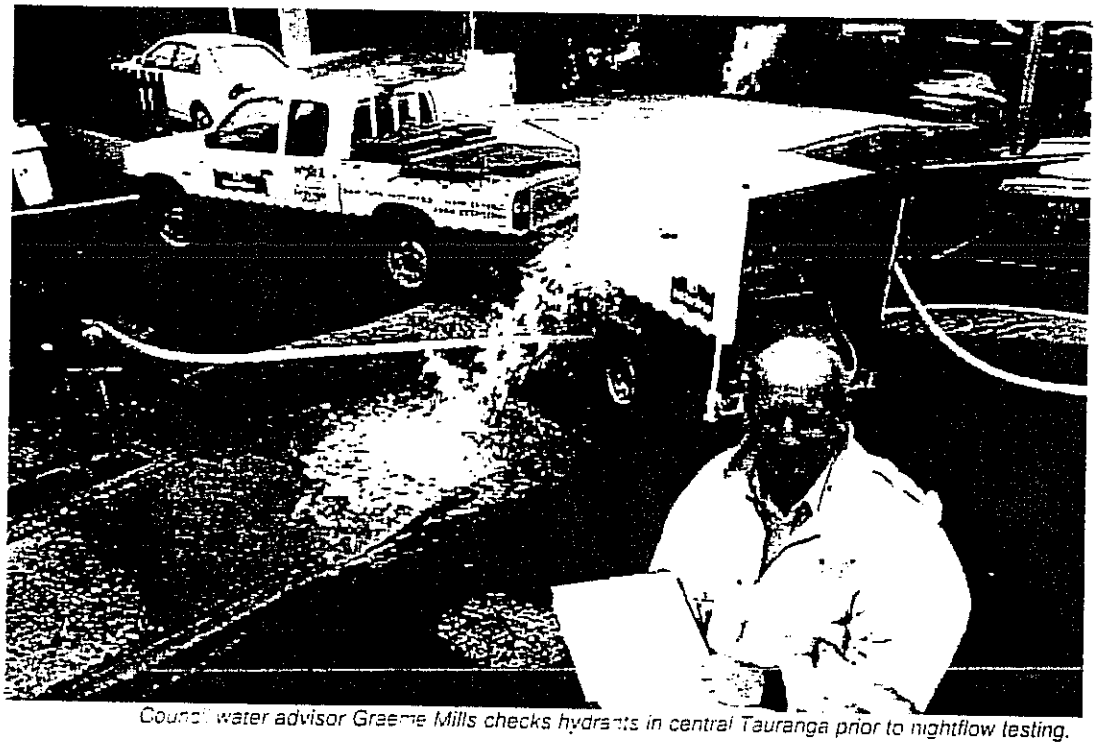
The program involves isolating sections of reticulation at night to find areas where water use is higher than normal. Unaccounted for water just means water that is above normal usage. This may be due to people irrigating, hoses left on, leaking toilets or even leaking taps. The investigations are only completed in winter - when no one needs to be watering their garden, and at night - when there is very little water use in the house. This way if water use is high, there may be a leak in the supply system.

To determine if there is unaccounted for water the supply to an area is forced to go through a very accurate water meter. If a high level of unaccounted for water is found then the investigation steps up a gear. Smaller areas may be isolated to focus in on where the problem might be and very sensitive listening equipment may used to locate the exact location of the leak so that it can be repaired.

Below is an article on the leak detection work being done.

Finding Leaks in the Dark

From City Views, Issue 30, October/November 2000



Council water advisor Graeme Mills checks hydrants in central Tauranga prior to nightflow testing.

Have you heard noises in the night? Have you heard someone pull up in a car in your street, fiddle around with the water valve or hydrant, then jump in the car and drive off, only to return again later and do the same.

Well never fear – it's just the council's night owl commercial water advisor Graeme Mills checking for leaks in the water pipes.

Graeme is in charge of a new three-year-long project which will find leaks in the city water pipes. The only thing is, this work must be done in the dead of night because that's when the water demand is at its lowest.

Before he heads into the dark, Graeme spends a couple of days researching plans and sectioning off an area to check.

For instance, one area he did included all the western side of Otumoetai Road from the Brookfield roundabout to the Ngatai Road roundabout. Graeme spent two days working out where the hydrants and water valves were and selected a spot where he could feed that area's water supply through a water flow trailer.

Then at 11pm he started work. The leak detection trailer was parked between two hydrants along the water main. A hose ran from one hydrant into the trailer and another hose ran out the other side and into the other hydrant. This meant all the water in that whole area had to pass through the trailer.

Once he is confident the area is completely closed off and the flow has stabilised (this usually happens about 1am) Graeme goes off to the furthest point in his planned area and starts shutting off valves.

A colleague, sits by the trailer and records the flow fluctuations as Graeme turns off the valves one by one – this takes about two hours.

``As we turn off the smaller areas we can identify any drop off in flow by looking at the meter on the flow trailer," Graeme says.

``If we switch off an area and the flow drops by 25 litres we know that we need to find out where that 25 litres has been going to. To the other extreme if someone gets up and flushes the loo the water flow will go up by 10 litres."

As well as checking for leaks, this project means the council can identify valves that won't turn off, faulty hydrants, broken equipment, leaking valves and update reticulation plans.

Once Graeme has been around the whole city checking the flows, he will then start investigating the areas of drop in flow to identify actual leaks - again in the dead of the night.

Using a highly sensitive ``sonic leak detector" he will walk along the water mains paths. A stethoscope on the detector will pick up the distinctive sound of water squirting out a hole.

Graeme says the leak detector is so accurate that he was able to find a leak in a 450 metre long pipe, almost to the exact spot.

``I love this job, even if it means working in the middle of the night, " Graeme says.

``The hardest part is when it is raining because my glasses fog up when I'm reading the plans. People must wonder about this ute parked in the street in the early hours of the morning, with the windows all fogged up."

Every now and then he will get a feeling that he is being watched and has often found people peering out from behind the curtains wondering what he is doing.

``Once I saw a man in his underpants standing under a tree in his garden, he had heard us

in the street and come out to make sure we weren't up to no good."

Graeme always contacts the police, the fire service and the councils' after hours service to let them know where he will be and what he is doing, just in case someone is concerned and phones up.

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AQWEST - BUNBURY WATER BOARD
5 YEAR FINANCE PLAN 2004/05 TO 2008/09

		2003-2004 BUDGET	2004-2005 PROJECTION	2005-2006 PROJECTION	2006-2007 PROJECTION	2007-2008 PROJECTION	2008-2009 PROJECTION
	INCOME						
	WATER SALES	$	$	$	$	$	
1005	SUPPLY FEE-RESIDENTIAL	1,052,265	1,084,300	1,106,000	1,128,100	1,150,700	1,173,700
1015	CONSUMPTION-RESIDENTIAL	2,320,812	2,418,200	2,466,600	2,515,900	2,566,200	2,617,500
1025	RATES-NON RESIDENTIAL	1,587,831	$1,660,000	1,423,864	1,244,639	1,065,414	886,189
1026	SUPPLY FEE-NON RATEABLE	113,469	$116,000	154,632	198,917	243,203	287,488
1028	RATES-RESIDENTIAL VACANT LAND	127,042	$155,000	110,462	93,882	77,301	60,721
1035	CONSUMPTION-NON RESIDENTIAL	603,500	$603,500	644,285	837,570	966,427	1,095,284
2268	EX-GRATIA WATER ALLOWANCES	(30,000)	(30,000)	(30,000)	(30,000)	(30,000)	(30,000)
2273	GOVERNMENT REBATE - PENSIONERS	(109,000)	(113,200)	(115,500)	(117,800)	(120,200)	(122,600)
2275	AQWEST REBATE-PENSIONERS	-	-	-	-	-	-
2280	CONSUMPTION REBATE-PENSIONER	(114,200)	(116,500)	(118,800)	(121,200)	(123,600)	(126,100)
2285	PENSIONERS TENANT REBATE	(4,200)	(6,100)	(6,200)	(6,300)	(6,400)	(6,500)
2290	AQWEST REBATE-SENIORS	(7,100)	(7,200)	(7,300)	(7,400)	(7,500)	(7,700)
2297	SENIOR TENANT REBATE	(600)	(600)	(600)	(600)	(600)	(600)
		5,539,819	**5,763,400**	**5,627,443**	**5,735,708**	**5,780,945**	**5,827,382**
	DEVELOPERS CONTRIBUTIONS						
1070	MAINS SUBDIVISION	150,000	150,000	155,000	155,000	155,000	155,000
1075	HEADWORKS	400,000	400,000	400,000	400,000	400,000	400,000
		550,000	**550,000**	**555,000**	**555,000**	**555,000**	**555,000**
	INTEREST RECEIVED						
1090	AQWEST MAIN A/C INTEREST EARNED	71,250	75,000	75,000	75,000	75,000	75,000
1095	HEADWORKS RES.INTEREST EARNED	174,300	227,400	217,000	223,000	194,000	171,000
1100	EDP UPGRADE INTEREST EARNED	13,000	14,300	17,000	21,000	14,000	17,000
1105	SUBDIVISION RES.INTEREST EARNED	49,000	68,200	71,000	75,000	79,000	84,000
1110	ASSET REPLACE.RES.INTEREST EARNED	315,000	456,200	553,000	615,000	738,000	870,000
1114	BUSINESS DEVELOPMENT INTEREST EARNED	6,600	10,300	13,000	15,000	12,000	15,000
		629,150	**851,400**	**946,000**	**1,024,000**	**1,112,000**	**1,232,000**
	PROFIT ON SALE OF ASSETS						
1222	PROFIT/LOSS ON SALE - BUILDINGS	(43,969)	-	-	-	-	-
1223	PROFIT/LOSS ON SALE - RESERVOIRS	(96,535)	-	-	-	-	-
1224	PROFIT/LOSS ON SALE - TREATMENT PLANTS	-	-	-	-	-	-
1227	PROFIT/LOSS ON SALE - BORES & PUMPS	-	-	-	-	-	-
1228	PROFIT/LOSS ON SALE - PLANT & EQUIPMENT	-	-	-	-	-	-
1229	PROFIT/LOSS ON SALE - MOTOR VEHICLES	(6,714)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)
1231	PROFIT/LOSS ON SALE - TOOLS	-	-	-	-	-	-

APPENDIX "8"

AQWEST - BUNBURY WATER BOARD
5 YEAR FINANCE PLAN 2004/05 TO 2008/09

		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
		BUDGET	PROJECTION	PROJECTION	PROJECTION	PROJECTION	PROJECTION
1232	PROFIT/LOSS ON SALE - OFFICE EQUIP.	-	-	-	-	-	-
		(147,218)	(5,000)	(5,000)	(5,000)	(5,000)	(5,000)
	ALL OTHER REVENUE						
1006	WAWA SENIOR RATE RECOUP	6,800	9,100	9,300	9,500	9,700	9,900
1120	ALL OTHER REVENUE	3,000	3,000	3,000	3,000	3,000	3,000
1125	CONNECTION FEES	100,000	100,000	100,000	100,000	100,000	100,000
1130	DISCONNECTION FEES	3,000	4,000	4,000	4,000	4,000	4,000
1136	LEASE INCOME - 21 STIRLING STREET	21,600	32,000	32,700	25,050	-	-
1135	LEASE INCOME - TELECOMMUNICATIONS	32,600	33,300	34,000	34,700	35,400	36,200
1140	RATES-LEGAL INCOME	13,000	10,000	10,000	10,000	10,000	10,000
1144	FIRE SERVICES	25,750	34,200	34,900	35,600	36,300	37,000
1145	HYDRANT HIRE	40,000	40,000	40,000	40,000	40,000	40,000
1150	FINANCIAL ENQUIRIES RATE	20,000	30,000	30,000	30,000	30,000	30,000
1030	INTEREST PENALTIES	25,000	21,000	21,900	22,800	23,800	24,800
1155	METER TESTS	105	105	105	105	105	105
1156	METER READING CHARGES	5,000	7,000	7,000	7,000	7,000	7,000
1160	METERED SERVICE REPAIRS-DEBTORS	15,000	10,000	10,000	10,000	10,000	10,000
1164	UNIFORM REIMBURSEMENT	-	-	-	-	-	-
1165	CHARGEABLE WORKS DEBTORS	35,000	15,000	15,000	15,000	15,000	15,000
1166	SUNDRY DEBTORS	-	-	-	-	-	-
		339,055	**339,605**	**342,605**	**337,255**	**314,605**	**317,105**
	TOTAL REVENUE	**6,910,806**	**7,499,405**	**7,466,048**	**7,646,963**	**7,757,550**	**7,926,487**
	ONGOING WORKS						
2033	BORE OPERATIONS & MTCE	48,700	90,000	91,800	93,700	95,600	97,600
2037	RESERVOIR MTCE	43,600	50,000	51,000	52,100	53,200	54,300
2039	RES.LEAK REPAIR CONTINGENCY	10,700	5,000	5,000	5,000	5,000	5,000
2041	FILTER MTCE	178,000	203,000	207,100	211,300	215,600	220,000
2043	MAINS MTCE	180,300	224,000	228,500	233,100	237,800	242,600
2047	SERVICE MTCE	235,800	329,900	336,500	343,300	350,200	357,300
2051	NEW SERVICES	154,000	157,100	160,300	163,600	166,900	170,300
2052	METER MTCE	5,400	5,600	5,800	6,000	6,200	6,400
2054	BOOSTER-DELIVERY PUMP OPS.	43,600	44,500	45,400	46,400	47,400	48,400
2061	FILTER OPERATIONS	324,300	250,000	237,000	241,800	246,700	251,700
2065	CHEMICAL TREATMENT	148,900	151,900	155,000	158,100	161,300	164,600
2068	TOOLS REPAIRS & REPLACEMENTS	6,400	6,600	6,800	7,000	7,200	7,400
2072	OPERATIONS CENTRE MAINTENANCE	1,000	-	-	-	-	-
2076	METER READING	52,100	53,200	54,300	55,400	56,600	57,800

AQWEST - BUNBURY WATER BOARD
5 YEAR FINANCE PLAN 2004/05 TO 2008/09

		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
		BUDGET	PROJECTION	PROJECTION	PROJECTION	PROJECTION	PROJECTION
2300	ASSET MANAGEMENT	81,953	83,600	85,300	87,100	88,900	90,700
2330	ANNUAL LEAVE	37,500	41,432	43,100	44,900	46,700	48,600
2332	SUPERANNUATION	9,874	10,300	10,800	11,300	11,800	12,300
2333	OCCUPATIONAL SUPER-PWO	37,961	42,345	44,100	45,900	47,800	49,800
2335	LONG SERVICE LEAVE	19,985	16,616	17,300	18,000	18,800	19,600
2340	PUBLIC HOLIDAYS	19,000	21,381	22,300	23,200	24,200	25,200
2345	SICK LEAVE	13,000	13,600	14,200	14,800	15,400	16,100
2350	STAFF SAFETY TRAINING	6,600	6,900	7,200	7,500	7,800	8,200
2355	STAFF TRAINING	25,900	27,000	28,100	29,300	30,500	31,800
2360	SAFETY & LOSS CONTROL	34,000	34,700	35,400	36,200	37,000	37,800
2373	PLANT & VEHICLE OPERATION	53,100	66,000	57,700	58,900	60,100	61,400
2501	PRIVATE WORKS	35,000	35,000	35,000	35,000	35,000	35,000
2380	LESS ALLOCATED TO WORKS	(336,509)	(348,274)	(349,600)	(360,900)	(372,500)	(384,800)
2400	GROSS SALARIES & WAGES	1,475,549	1,549,200	1,584,400	1,646,700	1,711,500	1,779,000
2405	LESS ALLOCATED TO WORKS	(1,475,549)	(1,549,200)	(1,584,400)	(1,646,700)	(1,711,500)	(1,779,000)
		1,470,164	**1,621,400**	**1,635,400**	**1,668,000**	**1,701,200**	**1,735,100**
	ELECTRICITY						
2010	ELECTRICITY	358,000	310,400	307,300	304,300	301,300	298,300
		358,000	**310,400**	**307,300**	**304,300**	**301,300**	**298,300**
	OTHER SERVICE EXPENSES						
2025	OPERATIONAL AUDIT	-	12,000	-	12,800	-	13,500
2079	WATER QUALITY GUIDELINES IMPLEMENTATION	10,000	30,000	30,000	20,000	20,000	20,000
2080	FORWARD PLANNING BEST PRACTICE	10,000	10,500	11,100	11,700	12,300	13,000
2084	ENGINEERING ANALYSIS	7,000	7,000	8,000	8,000	9,000	9,000
		27,000	**59,500**	**49,100**	**52,500**	**41,300**	**55,500**
	BAD DEBTS						
186	BAD DEBTS	2,000	2,000	2,000	2,000	2,000	2,000
		2,000	**2,000**	**2,000**	**2,000**	**2,000**	**2,000**
	COMPUTER MAINTENANCE						
2160	COMPUTER CONSUMABLES	6,400	7,000	7,200	7,400	7,600	7,800
2165	COMPUTER LICENCES & MTCE	50,300	113,600	80,000	81,600	83,300	85,000
2167	EDP MTCE CONTRACT	57,700	109,150	80,000	81,600	83,300	85,000
		114,400	**229,750**	**167,200**	**170,600**	**174,200**	**177,800**

AQWEST - BUNBURY WATER BOARD
5 YEAR FINANCE PLAN 2004/05 TO 2008/09

		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
		BUDGET	PROJECTION	PROJECTION	PROJECTION	PROJECTION	PROJECTION
	DEPRECIATION						
2452	DEPN-BUILDINGS AT COST	35,170	47,130	46,927	45,530	44,175	42,860
2453	DEPN-RESERVOIRS AT VALUATION (FROM 1 JULY 2003)	172,606	287,082	311,174	325,248	370,097	372,220
2454	DEPN-TREATMENT PLANTS AT COST	360,253	373,636	512,406	536,508	540,484	540,216
2455	DEPN-MAINS & REPLACE.AT COST	44,997	48,152	55,566	65,850	76,240	91,974
2456	DEPN-MAINS & REPLACE.AT VALUATION	277,255	277,255	277,255	277,255	277,255	277,255
2457	DEPN-BORES & PUMPS AT VALUATION (FROM 1 JULY 2003)	133,122	305,363	371,963	374,213	440,213	440,213
2458	DEPN-PLANT & EQUIPMENT AT COST	4,496	6,452	4,565	3,460	2,652	2,054
2459	DEPN-MOTOR VEHICLES AT COST	73,202	52,571	73,056	75,178	90,620	74,888
2460	DEPN-METERS AT VALUATION (FROM 1 JULY 2003)	93,574	48,920	56,970	61,770	67,070	72,870
2461	DEPN-TOOLS AT COST	5,806	14,387	10,048	10,203	10,042	9,877
2462	DEPN-OFFICE EQUIPMENT AT COST	35,294	90,572	65,929	33,127	45,051	194,839
		1,235,775	**1,551,519**	**1,785,858**	**1,808,341**	**1,963,899**	**2,119,266**
	INSURANCES						
2118	INSURANCE- W/COMP (ADMIN)	23,100	21,500	22,000	22,500	23,000	23,500
2185	INSURANCE- ADMINISTRATION	16,210	16,000	16,400	16,800	17,200	17,600
2186	INSURANCE-PROPERTY/ASSETS	72,031	60,000	61,200	62,500	63,800	65,100
2187	INSURANCE-P/LIAB. ENG.WORKS	40,641	35,000	35,700	36,500	37,300	38,100
2365	INSURANCE-W/COMP (FIELD STAFF)	43,389	20,000	20,400	20,900	21,400	21,900
		195,371	**152,500**	**155,700**	**159,200**	**162,700**	**166,200**
	INTEREST PAID						
2270	LOAN INTEREST	-	-	-	-	-	
		-	-	-	-	-	-
	LEGAL EXPENSES						
2195	LEGAL EXPENSES	60,000	60,000	25,000	25,000	25,000	25,000
		60,000	**60,000**	**25,000**	**25,000**	**25,000**	**25,000**
	RENT						
2000	LEASES W/BRD FACILITY SITES	37,000	38,200	39,400	40,600	41,900	43,200
2122	OFFICE RENT	32,300	33,300	34,300	26,500	-	-
		69,300	**71,500**	**73,700**	**67,100**	**41,900**	**43,200**

AQWEST - BUNBURY WATER BOARD
5 YEAR FINANCE PLAN 2004/05 TO 2008/09

		2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
		BUDGET	PROJECTION	PROJECTION	PROJECTION	PROJECTION	PROJECTION
	SALARIES & WAGES						
2100	SALARIES & WAGES-ADMININSTRATION	537,727	584,000	581,600	604,900	629,100	654,300
2310	SALARIES & WAGES-ENGINEER.ADMIN	222,748	221,300	230,200	239,400	249,000	259,000
		760,475	**805,300**	**811,800**	**844,300**	**878,100**	**913,300**
	SUPERANNUATION						
2104	SUPERANNUATION-ADMINISTRATION	47,578	49,500	51,500	53,600	55,700	57,900
2105	OCCUPATIONAL SUPER-ADMIN	45,795	52,800	54,900	57,100	59,400	61,800
2312	SUPERANNUATION-ENGINEER.ADMIN	-	-	-	-	-	-
2314	OCCUPATIONAL SUPER-ENG.ADMIN	18,075	15,700	16,300	17,000	17,700	18,400
		111,448	**118,000**	**122,700**	**127,700**	**132,800**	**138,100**
	ALL OTHER EXPENSES						
2151	BUSINESS DEVELOPMENT STRATEGY	-	-	-	-	120,000	-
2106	CEO EMPLOYEE AWARDS	2,000	2,000	2,000	2,000	2,000	2,000
2107	CORPORATE UNIFORMS	20,064	12,000	12,000	12,000	12,000	12,000
2109	FBT-VEHICLES	10,000	10,000	10,000	10,000	10,000	10,000
2110	ADMIN.STAFF TRAINING	6,100	6,300	6,500	6,700	6,900	7,100
2111	EMPLOYEES ASSISTANCE PROGRAM	1,200	700	800	900	1,000	1,100
2115	PRIVATE VEHICLE ALLOWANCES	-	-	-	-	-	-
2120	ADMIN OFFICE UTILITIES	39,600	34,000	34,000	34,000	30,000	31,000
2124	TELEPHONE	42,500	43,400	44,300	45,200	46,200	47,200
2125	WATER SERVICE CENTRE MAINTENANCE		25,000	25,500	26,100	26,700	27,300
2126	TRAVELLING & ACCOM.EXPENSES	5,000	10,000	15,000	10,000	10,000	10,000
2136	ADVERTISING	15,000	20,400	20,900	21,400	21,900	22,400
2138	CUSTOMER SURVEY	7,500	7,900	10,000	10,000	10,000	10,000
2140	PUBLIC RELATIONS	33,800	115,000	36,000	36,800	37,600	38,400
2142	WATER CONSERVATION PUBLICITY	24,500	18,400	18,800	19,200	19,600	20,000
2150	AUDIT FEES	19,000	19,400	19,800	20,200	20,700	21,200
2155	BANK CHARGES & FID	8,600	11,300	11,600	11,900	12,200	12,500
2170	EFTPOS / BPAY CHARGES	20,500	19,600	19,600	19,600	19,600	19,600
2175	FAAA PLANNING	1,600	1,700	1,800	1,900	2,000	2,100
2180	INDUSTRIAL SERVICES/MEMBER FEES	5,300	4,000	4,100	4,200	4,300	4,400
2200	OFFICE EXPENSES	8,600	8,800	9,000	9,200	9,400	9,600
2202	OFFICE EQUIPMENT MTCE	2,200	3,300	3,400	3,500	3,600	3,700
2205	POSTAGE	20,500	21,000	21,500	22,000	22,500	23,000
2210	PRINTING & STATIONERY	25,600	28,100	28,700	29,300	29,900	30,500
2215	RECORDS MANAGEMENT	6,000	6,000	6,000	6,000	6,000	6,000

AQWEST - BUNBURY WATER BOARD
5 YEAR FINANCE PLAN 2004/05 TO 2008/09

		2003-2004 BUDGET	2004-2005 PROJECTION	2005-2006 PROJECTION	2006-2007 PROJECTION	2007-2008 PROJECTION	2008-2009 PROJECTION
2217	RELOCATION EXPENSES	11,540	-	-	-	-	-
2235	TAX EQUIVALENT PLANNING	7,600	6,000	8,000	6,400	6,600	6,800
2240	VALUATION EXPENSES	10,000	35,000	10,000	10,000	10,000	40,000
	ASSET REVALUATION (CONTINGENCY)		15,000				
2153	ECONOMIC REGULATION AUTHORITY	2,000	30,000	10,000	10,000	10,000	10,000
	WATER RESOURCE LICENCE ADMINISTRATION FEES	-	-	-	-	-	-
2250	BOARD MEMBERS FEES	41,600	30,600	31,300	32,000	32,700	33,400
2255	CONFERENCE EXPENSES	4,400	4,500	4,600	4,700	4,800	4,900
2260	MEETING EXPENSES	5,400	5,600	5,800	6,000	6,200	6,400
2265	TRAVEL/ACCOM.BOARD MEMBERS	4,400	4,500	4,600	4,700	4,800	4,900
2316	STAFF TRAINING ENGINEER ADMIN.	7,000	4,600	4,700	4,800	4,900	5,000
2370	PAYROLL TAX	36,200	48,000	49,000	50,000	51,000	52,100
		455,304	**612,100**	**489,300**	**490,700**	**615,100**	**534,600**
	TOTAL EXPENSES	**4,859,237**	**5,593,969**	**5,625,058**	**5,719,741**	**6,039,499**	**6,208,366**
	OPERATING PROFIT	**2,051,569**	**1,905,436**	**1,840,990**	**1,927,222**	**1,718,051**	**1,718,121**
2177	INCOME TAX	617,500	571,600	552,300	578,200	515,400	515,400
		617,500	**571,600**	**552,300**	**578,200**	**515,400**	**515,400**
	OPERATING PROFIT AFTER TAX	**1,434,069**	**1,333,836**	**1,288,690**	**1,349,022**	**1,202,651**	**1,202,721**

	2003-2004 BUDGET	2004-2005 PROJECTION	2005-2006 PROJECTION	2006-2007 PROJECTION	2007-2008 PROJECTION	2008-2009 PROJECTION
Total Capex	$ 3,436,395	$ 3,037,000	$ 1,848,300	$ 2,268,800	$ 2,149,800	$ 1,764,000
Total Opex	$ 3,624,662	$ 4,055,450	$ 3,853,200	$ 3,926,400	$ 4,091,600	$ 4,106,200
Total Depreciation	$ 2,210,043	$ 2,210,043	$ 2,210,043	$ 2,210,043	$ 2,210,043	$ 2,210,043
Total Expenditure	$ 9,271,100	$ 9,302,493	$ 7,911,543	$ 8,405,243	$ 8,451,443	$ 8,080,243

	2003-2004 BUDGET	2004-2005 PROJECTION	2005-2006 PROJECTION	2006-2007 PROJECTION	2007-2008 PROJECTION	2008-2009 PROJECTION
SUPPLY FEE-NON RATEABLE	113469	116000	154632	198917	243203	287488
RATES-RESIDENTIAL VACANT LAND	127042	155000	110462	93882	77301	60721
Net transfers from Asset Replacement Reserves	$ 1,456,264	$ 1,750,000	$ 500,000	$ 1,325,000	$ 300,000	$ 315,000
Interest Received	$ 629,150	$ 851,400	$ 946,000	$ 1,024,000	$ 1,112,000	$ 1,232,000
Developers Contributions	$ 550,000	$ 550,000	$ 555,000	$ 555,000	$ 555,000	$ 555,000
Profit(Loss) On Asset Disposal	-$ 147,218	-$ 5,000	-$ 5,000	-$ 5,000	-$ 5,000	-$ 5,000
All Other Revenue	$ 339,055	$ 339,605	$ 342,605	$ 337,255	$ 314,605	$ 317,105
TOTAL Adjustments	$ 3,067,762	$ 3,757,005	$ 2,603,699	$ 3,529,054	$ 2,597,109	$ 2,762,314
Adjusted Total Capex	$ 368,633	-$ 720,005	-$ 755,399	-$ 1,260,254	-$ 447,309	-$ 998,314
Total Opex	$ 3,624,662	$ 4,055,450	$ 3,853,200	$ 3,926,400	$ 4,091,600	$ 4,106,200
Total Depreciation	$ 2,210,043	$ 2,210,043	$ 2,210,043	$ 2,210,043	$ 2,210,043	$ 2,210,043
Adjusted Total Expenditure	$ 6,203,338	$ 5,545,488	$ 5,307,844	$ 4,876,189	$ 5,854,334	$ 5,317,929
Total Demand	6,846,789	7,190,000	7,280,000	7,370,000	7,460,000	7,550,000
Res Demand	4,884,027	5,128,850	5,193,050	5,257,249	5,321,449	5,385,649
Nonres Demand	1,962,762	2,061,150	2,086,950	2,112,751	2,138,551	2,164,351
Number Connections	13186	14200	14592	14994	15408	15833
Res Connections	11332	12204	12540	12886	13242	13607
Nonres Connections	1854	1996	2052	2108	2166	2226
Demand Per Connection	519	506	499	492	484	477
Res	431	420	414	408	402	396
Nonres	1059	1032	1017	1002	987	972

	2003-2004 BUDGET	2004-2005 PROJECTION	2005-2006 PROJECTION	2006-2007 PROJECTION	2007-2008 PROJECTION	2008-2009 PROJECTION	AVERAGE
	All Consumers						
Average Fixed Costs	$ 192.77	$ 110.00	$ 104.86	$ 71.75	$ 117.31	$ 82.84	$ 121.47
Average SRMC	$ 0.53	$ 0.55	$ 0.52	$ 0.52	$ 0.54	$ 0.53	$ 0.53
Average LRMC	$ 0.91	$ 0.77	$ 0.73	$ 0.66	$ 0.78	$ 0.70	$ 0.77
	Residential Customers						
Fixed Costs	$ 169.02	$ 95.57	$ 92.76	$ 64.78	$ 103.26	$ 73.79	$ 107.06
SRMC	$ 0.57	$ 0.59	$ 0.55	$ 0.54	$ 0.57	$ 0.56	$ 0.56
LRMC	$ 0.94	$ 0.81	$ 0.76	$ 0.69	$ 0.82	$ 0.73	$ 0.80
Total Fee to Consumer of 350kl	$ 275.00	$ 275.00	$ 275.00	$ 275.00	$ 275.00	$ 275.00	$ 275.00
Fixed Fee	$ 88.00	$ 88.00	$ 88.00	$ 88.00	$ 88.00	$ 88.00	$ 88.00
Variable Fee	$ 0.53	$ 0.53	$ 0.53	$ 0.53	$ 0.53	$ 0.53	$ 0.53
Average Total Fee	$ 0.79	$ 0.79	$ 0.79	$ 0.79	$ 0.79	$ 0.79	$ 0.79
	Non Residential Customers						
Fixed Costs	$ 366.56	$ 179.11	$ 198.56	$ 139.30	$ 221.71	$ 155.29	$ 226.47
SRMC	$ 0.45	$ 0.48	$ 0.45	$ 0.44	$ 0.47	$ 0.46	$ 0.45
LRMC	$ 0.81	$ 0.66	$ 0.66	$ 0.60	$ 0.71	$ 0.63	$ 0.69
Total Fee to Consumer of 1000kl	$ 1,182.01	$ 1,133.75	$ 1,008.07	$ 987.71	$ 937.92	$ 890.12	$ 1,051.50
Fixed Fee	$ 856.48	$ 831.47	$ 694.03	$ 590.41	$ 491.81	$ 398.10	$ 679.67
Variable Fee	$ -	$ -	$ 0.04	$ 0.13	$ 0.22	$ 0.31	$ 0.10
Average Total Fee	$ 1.12	$ 1.10	$ 0.99	$ 0.99	$ 0.95	$ 0.92	$ 1.03

Methods used to allocate revenue and expenses between residential and non-residential - applied to 2003/2004 results

		Residential	Non-Residential	% Residential	% Non-Residential
1	Revenue - Split between residential and non residential revenue	$3,381,071.01	$2,586,470.34	56.66%	43.34%
2	Connections - Split between residential and non-residential connections	12384	2026	85.94%	14.06%
3	Consumption - Split between residential and non-residential consumption	4217648	1694962	71.33%	28.67%
Act	Actual - Split between residential and non-residential acutal costs				
Est	Estimated - Split between residential and non-residential estimated costs				

Account	Description	Method		Residential %	Non-Residential %	Total Residential	Total Non-Residential	Grand Total
1005	Supply Fee - Residential	Act		100%	0%	- 1,069,491	-	- 1,069,491
1015	Consumption - Residential	Act		100%	0%	- 2,559,327	-	- 2,559,327
1025	Rates - Non Residential	Act		0%	100%	-	- 1,704,629	- 1,704,629
1026	Supply Fee - Non Rateable	Act		0%	100%	-	- 113,950	- 113,950
1028	Rates - Residential Vacant Land	Act		100%	0%	- 153,398	-	- 153,398
1030	Rates - Interest Income	Est		80%	20%	- 5,374	- 1,343	- 6,717
1031	Consumption - Interest Income	Est		80%	20%	- 14,358	- 3,589	- 17,947
1035	Consumption - Non Residential	Act		0%	100%	-	- 578,540	- 578,540
1144	Fire Services	Est		50%	50%	- 17,977	- 17,977	- 35,954
2268	Ex-Gratia Water Allowances	Est		80%	20%	16,738	4,185	20,923
2273	Government Rebate - Pensioners	Act		100%	0%	111,329	-	111,329
2275	Aqwest Rebate - Pensioners	Act		100%	0%	- 444	-	- 444
2280	Consumption Rebate - Pensioner	Act		100%	0%	134,700	-	134,700
2285	Pensioners Tenant Rebate	Act		100%	0%	5,904	-	5,904
2290	Aqwest Rebate - Seniors	Act		100%	0%	-	-	-
2297	Senior Tenant Rebate	Act		100%	0%	-	-	-
						- 3,551,698	- 2,415,844	- 5,967,541
	Interest Received							
1032	Accounts Receivable - Interest Income	Est		80%	20%	1,152	288	1,440
1033	Interest Income - Headworks - Fund 4	Est		80%	20%	- 683	- 171	- 854
1034	Interest Income - Subdivision - Fund 5	Est		100%	0%	- 29	-	- 29
1090	AQWEST Main Account Interest Earned		1	57%	43%	- 40,194	- 30,748	- 70,941
1091	AQWEST Main Account Interest Accrued		1	57%	43%	- 1,386	- 1,060	- 2,446
1095	Headworks Reserve Interest Earned		1	57%	43%	- 137,635	- 105,289	- 242,923
1096	Headworks Reserve Interest Accrued		1	57%	43%	79	60	139
1100	EDP Upgrade Interest Earned		1	57%	43%	- 7,601	- 5,815	- 13,417
1101	EDP Upgrade Interest Accrued		1	57%	43%	- 429	- 328	- 757
1105	Subdivision Reserve Interest Earned		1	57%	43%	- 39,339	- 30,094	- 69,433
1106	Subdivision Reserve Interest Accrued		1	57%	43%	6,498	4,971	11,469
1110	Asset Replacement Reserve Interest Earned		1	57%	43%	- 226,435	- 173,219	- 399,654
1111	Asset Replacement Reserve Interest Accrued		1	57%	43%	2,394	1,832	4,226
1114	Business Development Rsv-Interest Earned		1	57%	43%	- 3,024	- 2,313	- 5,338
1115	Business Develop.Res.Int.Accrued		1	57%	43%	- 963	- 736	- 1,699
						- 447,594	- 342,622	- 790,216
	Developers Contributions							
1070	Mains Subdivision Headworks		1	57%	43%	- 82,651	- 63,226	- 145,877
1075	Headworks		1	57%	43%	- 237,035	- 181,329	- 418,364
						- 319,686	- 244,555	- 564,241
	Loss on sale							
1222	Surplus On Sale - Buildings At Cost		3	71%	29%	22,763	9,148	31,911
1223	Surplus On Sale - Reservoirs At Cost		3	71%	29%	74,653	30,001	104,654
1224	Surplus On Sale - Treatment Plants At Cost		3	71%	29%	7,466	3,000	10,467
1228	Surplus On Sale - Plant and Equipment At Cost		3	71%	29%	1,470	591	2,060
1229	Surplus on Sale - Motor Vehicles At Cost		3	71%	29%	- 5,625	- 2,261	- 7,886
1230	Surplus On Sale - Meters At Cost		3	71%	29%	6,169	2,479	8,648
1231	Surplus on Sale - Tools At Cost		3	71%	29%	15,241	6,125	21,366
1232	Surplus On Sale - Office Equipment At Cost		3	71%	29%	1,473	592	2,064
4010	Sale/Trade Plant & Vehicles		3	71%	29%	-	-	-
						123,609	49,675	173,284
	Ongoing Works							
2033	Bore Operations & Mtce		3	71%	29%	54,083	21,734	75,817
2037	Reservoir Mtce		3	71%	29%	52,417	21,065	73,481
2039	Res.Leak Repair Contingency		3	71%	29%	11,468	4,609	16,077
2041	Filter Mtce		3	71%	29%	192,536	77,375	269,911
2043	Mains Maintenance		3	71%	29%	198,617	79,819	278,435
2047	Service Maintenance		3	71%	29%	189,228	76,046	265,274
2051	New Services		2	86%	14%	144,549	23,648	168,197
2052	Meter Maintenance		2	86%	14%	7,686	1,257	8,943
2054	Booster - Pump Operations Mtce		3	71%	29%	21,874	8,791	30,665
2061	Filter Operations		3	71%	29%	176,025	70,338	245,363
2065	Chemical Treatment		3	71%	29%	95,710	38,463	134,173
2068	Tools Repairs & Replacements		3	71%	29%	4,844	1,947	6,791
2072	Operations Centre		3	71%	29%	4,580	1,841	6,421
2076	Meter Reading		2	86%	14%	49,483	8,095	57,578
2300	Salaries & Wages-Asset Management		3	71%	29%	41,380	16,629	58,009
2302	Occupational Super-Asset Management		3	71%	29%	5,131	2,062	7,193
2304	Consultant's Fees-Asset Management		3	71%	29%	3,923	1,577	5,500
2305	Salaries & Wages Accrued - Asset Management		3	71%	29%	3,295	1,324	4,619
2306	Staff Training-Asset Management		3	71%	29%	3,766	1,513	5,279

Methods used to allocate revenue and expenses between residential and non-residential - applied to 2003/2004 results

		Residential	Non-Residential	% Residential	% Non-Residential
1	Revenue - Split between residential and non residential revenue	$3,381,071.01	$2,586,470.34	56.66%	43.34%
2	Connections - Split between residential and non-residential connections	12384	2026	85.94%	14.06%
3	Consumption - Split between residential and non-residential consumption	4217648	1694962	71.33%	28.67%
Act	Actual - Split between residential and non-residential acutal costs				
Est	Estimated - Split between residential and non-residential estimated costs				

Account	Description	Method	Residential %	Non-Residential %	Total Residential	Total Non-Residential	Grand Total
2308	Miscellaneous-Asset Management	3	71%	29%	379	152	532
2330	Annual Leave	3	71%	29%	25,848	10,388	36,235
2332	Superannuation	3	71%	29%	7,452	2,995	10,447
2333	Occupational Super-PWO	3	71%	29%	28,352	11,394	39,746
2335	Long Service Leave	3	71%	29%	10,919	4,388	15,308
2340	Public Holidays	3	71%	29%	16,142	6,487	22,630
2341	Rostered Days Off	3	71%	29%	- 729	- 293	- 1,022
2345	Sick Leave	3	71%	29%	6,049	2,431	8,480
2350	Staff Safety Training	3	71%	29%	5,189	2,085	7,274
2355	Staff Training	3	71%	29%	6,410	2,576	8,986
2360	Safety & Loss Control	3	71%	29%	25,399	10,207	35,607
2373	Plant & Vehicle Operation	3	71%	29%	35,319	14,194	49,513
2380	Less Allocated to Works (Total Overheads Expensed)	3	71%	29%	- 216,058	- 86,828	- 302,886
2400	Gross Salaries & Wages	3	71%	29%	-	-	-
2405	Less Allocated to Works	3	71%	29%	-	-	-
2501	Private Works	Est	20%	80%	1,630	6,520	8,150
					1,211,895	444,829	1,656,724
					-		
	Electricity						
2010	Electricity	3	71%	29%	213,612	85,845	299,457
					213,612	85,845	299,457
	Other Service Expenses						
2079	System Quality Improvement	3	71%	29%	1,242	499	1,741
2080	Forward Planning Best Practice	3	71%	29%	25,136	10,101	35,237
2084	Engineering Analysis	3	71%	29%	1,908	767	2,674
2094	SCADA Non-Capital	3	71%	29%	563	226	790
					28,849	11,594	40,443
	Cost of Services						
	Bad Debts						
186	Write Off Account	3	71%	29%	438	176	615
					438	176	615
	Computer Maintenance						
2160	Computer Consumables	3	71%	29%	4,854	1,951	6,804
2165	Computer Licences & Mtce	3	71%	29%	43,687	17,557	61,244
2167	EDP Maintenance Contract	3	71%	29%	28,289	11,369	39,658
					76,831	30,876	107,707
	Depreciation						
2452	Depreciation - Buildings At Cost	3	71%	29%	54,628	21,953	76,581
2453	Depreciation - Reservoirs at Valuation	3	71%	29%	191,932	77,132	269,064
2454	Depreciation - Treatment Plants At Cost	3	71%	29%	224,275	90,130	314,405
2455	Depreciation - Mains and Replacement At Cost	3	71%	29%	26,679	10,722	37,401
2456	Depreciation - Mains and Replacement At Valuation	3	71%	29%	197,774	79,480	277,256
2457	Depreciation - Bores & Pumps at Valuation	3	71%	29%	83,347	33,495	116,841
2458	Depreciation - Plant and Equipment At Cost	3	71%	29%	5,505	2,212	7,717
2459	Depreciation - Motor Vehicles At Cost	2	86%	14%	47,518	7,774	55,292
2460	Depreciation - Meters at Valuation	2	86%	14%	31,944	5,226	37,171
2461	Depreciation - Tools At Cost	3	71%	29%	5,525	2,220	7,745
2462	Depreciation - Office Equipment At Cost	3	71%	29%	36,622	14,717	51,339
					905,748	345,062	1,250,810
	Insurances						
2118	Workers Compensation-Admin	3	71%	29%	9,764	3,924	13,687
2185	Insurances-Administration	3	71%	29%	10,387	4,174	14,561
2186	Insurances-Property/Assets	3	71%	29%	42,130	16,931	59,061
2187	Insurance P/Liab Eng.Works	3	71%	29%	24,696	9,925	34,621
2365	Insurance-Workers Comp.	3	71%	29%	11,604	4,663	16,267
					98,580	39,617	138,197
	Legal Expenses						
2195	Legal Expenses	2	86%	14%	42,917	7,021	49,938
					42,917	7,021	49,938
	Rent						
2000	Leases W/Brd Facility Sites	3	71%	29%	25,946	10,427	36,373
2122	Office Rent	3	71%	29%	21,648	8,700	30,348
					47,595	19,127	66,722
	Salaries & Wages						
2100	Salaries & Wages-Administration	2	86%	14%	467,185	76,431	543,616
2101	Salaries & Wages Accrued - Administration	2	86%	14%	19,495	3,189	22,684
2310	Salaries & Wages-Engineering Admin	3	71%	29%	159,013	63,903	222,917

Methods used to allocate revenue and expenses between residential and non-residential - applied to 2003/2004 results

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3	Consumption - Split between residential and non-residential consumption	4217648	1694962	71.33%	28.67%
Act	Actual - Split between residential and non-residential acutal costs				
Est	Estimated - Split between residential and non-residential estimated costs				

Account	Description	Method	Residential %	Non-Residential %	Total Residential	Total Non-Residential	Grand Total
2311	Salaries & Wages Accrued - Engineering Admin	3	71%	29%	- 10,697	- 4,299	- 14,995
					634,996	139,225	774,221
	Superannuation						
2104	Superannuation-Administration	2	86%	14%	44,150	7,223	51,373
2105	Occupational Super-Administration	2	86%	14%	46,371	7,586	53,958
2312	Superannuation-Engineering Admin	3	71%	29%	458	184	643
2314	Occupational Super-Engineering Admin	3	71%	29%	11,268	4,528	15,797
					102,248	19,522	121,769
	All Other Expenses						
150	Rounding Account	2	86%	14%	125	20	145
2106	C.E.O. Employee Awards	2	86%	14%	1,227	201	1,428
2107	Corporate Uniforms	3	71%	29%	12,769	5,131	17,900
2109	FBT-Vehicles	3	71%	29%	9,938	3,994	13,932
2110	Admin.Staff Training	2	86%	14%	3,150	515	3,665
2111	Employee Assistance Program	3	71%	29%	321	129	450
2120	Admin Office Utilities	3	71%	29%	31,208	12,542	43,749
2124	Telephone	3	71%	29%	27,467	11,038	38,505
2126	Travelling & Accom.Expenses	3	71%	29%	2,419	972	3,391
2136	Advertising	2	86%	14%	12,905	2,111	15,016
2138	Customer Survey	2	86%	14%	6,131	1,003	7,134
2140	Public Relations	2	86%	14%	30,332	4,962	35,294
2142	Water Conservation Publicity	2	86%	14%	11,600	1,898	13,497
2150	Audit Fees	3	71%	29%	13,910	5,590	19,500
2152	Bad Debts	3	71%	29%	-	-	-
2153	Economic Regulation Authority	3	71%	29%	-	-	-
2155	Bank Charges & FID (Main Aqwest Bank Account)	2	86%	14%	8,534	1,396	9,930
2170	EFTPOS Facilities (Admin).	2	86%	14%	6,490	1,062	7,552
2175	F.A.A.A. Planning	3	71%	29%	799	321	1,120
2180	Industrial Services/Memb.Fees	3	71%	29%	2,739	1,101	3,840
2200	Office Expenses	2	86%	14%	6,507	1,065	7,572
2202	Office Equipment Mtce	2	86%	14%	2,719	445	3,164
2205	Postage	2	86%	14%	18,789	3,074	21,863
2210	Printing & Stationery	2	86%	14%	26,715	4,371	31,086
2215	Records Archives & Storage	2	86%	14%	4,894	801	5,694
2217	Relocation Expenses	2	86%	14%	26,897	4,400	31,298
2235	Tax Equivalent Planning-Admin	3	71%	29%	1,944	781	2,726
2240	Valuation Expenses	3	71%	29%	5,691	2,287	7,978
2250	Board Member's Allowances	2	86%	14%	23,927	3,914	27,841
2255	Conference Expenses	2	86%	14%	183	30	213
2260	Meeting Expenses	2	86%	14%	5,408	885	6,293
2265	Travel & Accommodation-Board Members	2	86%	14%	-	-	-
2307	Miscellaneous	3	71%	29%	20,231	8,130	28,362
2316	Staff Training-Engineering Admin	3	71%	29%	2,395	963	3,358
2370	Payroll Tax	3	71%	29%	38,104	15,313	53,417
					366,468	100,445	466,912
	Total Revenue						
	Total Expenses				3,853,785	1,293,013	5,146,799
	Total Expenses - excluding depn				2,948,037	947,951	3,895,988
	Operating Profit				- 646,440	- 1,815,854	- 2,462,295