

# JOHN HUMPHREYS and ASSOCIATES PTY. LTD.

Consulting Mechanical and Electrical Engineers  
and Project Managers

(INCORPORATED IN N.S.W.)

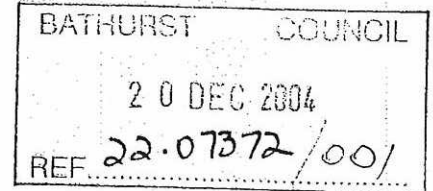
13 KABBERA BOULEVARDE,  
KELSO N.S.W. 2795

A.B.N. 36 002 931 295  
A.C.N. 002 931 295

TELEPHONE: (02) 6331 5717  
FAX: (02) 6332 2107

17 December, 2004

The General Manager,  
Bathurst Regional Council,  
Civic Centre,  
BATHURST. NSW. 2795.



Dear Sir,

**RE: CARTER R.W., W.E. & I.R., 10 LITTLEBOURNE ST., KELSO  
WATER METER SIZING**

The site was visited on 15<sup>th</sup> December, 2004 and points of water usage surveyed in relation to the size of the installed water meter.

The mains water pressure was checked at 600 kPa and the following recommendation is made in relation to continuity of the existing standard of water service to the site, serving the following major points of discharge.

- 5 showers
- 5 basins
- 10 WC's
- 5 sinks
- 6 hose reels
- 4 yard taps

On the basis of the foregoing, with the diversity arising from there being 5 small commercial premises on the site and with two hose reels operating simultaneously, the existing 40 diameter meter can be reduced to 32 diameter.

Yours faithfully,

J.K. HUMPHREYS. B.E. M.I.E.A. C.P.Eng.

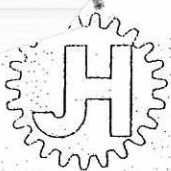
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DO NOT RETURN  
RECORD

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**JOHN HUMPHREYS and ASSOCIATES PTY. LTD.**  
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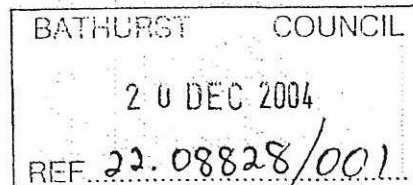
13 KABBERA BOULEVARDE,  
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17 December, 2004

The General Manager,  
Bathurst Regional Council,  
Civic Centre,  
BATHURST. NSW. 2795.



Dear Sir,

**RE: CARTER R.W., W.E. & I.R., 15 ADRIENNE ST., RAGLAN  
WATER METER SIZING**

The site was visited on 15<sup>th</sup> December, 2004 and points of water usage surveyed in relation to the size of the installed water meter.

The mains water pressure was checked at 610 kPa and the following recommendation is made in relation to continuity of the existing standard of water service to the site, serving the following major points of discharge.

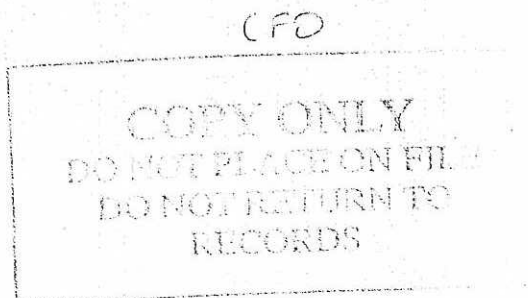
- 2 showers
- 2 basins
- 2 WC's
- 1 sink
- 4 hose reels
- 4 yard taps

On the basis of the foregoing, allowing for 2 hose reels to operate simultaneously, the existing 40 diameter meter serving the premises can be reduced to 32 diameter.

The additional 40 diameter meter on the footpath outside the premises is a facility to fill water tankers parked on Adrienne Street and does not onfeed to the subject property.

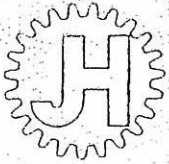
Yours faithfully,

J.K. HUMPHREYS. B.E. M.I.E.A. C.P.Eng.



BESDT  
CFD

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**JOHN HUMPHREYS and ASSOCIATES PTY. LTD.**  
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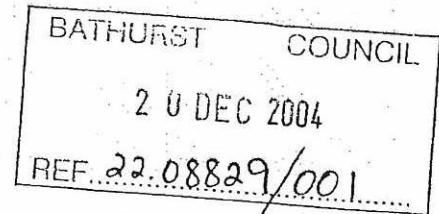
13 KABBERA BOULEVARDE,  
KELSO N.S.W. 2795

A.B.N. 36 002 931 295  
A.C.N. 002 931 295

TELEPHONE: (02) 6331 5717  
FAX: (02) 6332 2107

17 December, 2004

The General Manager,  
Bathurst Regional Council,  
Civic Centre,  
BATHURST. NSW. 2795.



Dear Sir,

**RE: CARTER R.W., W.E. & I.R., 6 LITTLEBOURNE ST., KELSO  
WATER METER SIZING**

The site was visited on 15<sup>th</sup> December, 2004 and points of water usage surveyed in relation to the size of the installed water meter.

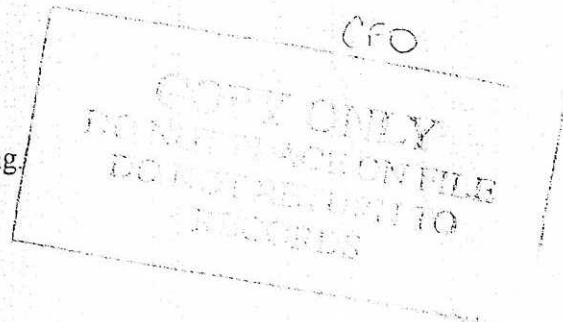
The mains water pressure was checked at 610 kPa and the following recommendation is made in relation to continuity of the existing standard of water service to the site, serving the following major points of discharge.

- 2 showers
- 4 basins
- 4 WC's
- 2 sinks
- 3 hose reels
- 1 carwash (1 X 20 diameter outlet)

On the basis of the foregoing, with the diversity arising from there being two small commercial premises on the site, and allowing for 2 hose reels to operate simultaneously, the existing 50 diameter meter serving the premises can be reduced to 32 diameter.

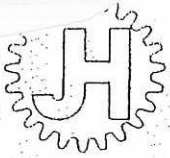
Yours faithfully,

J.K. HUMPHREYS. B.E. M.I.E.A. C.P.Eng.



BESDT  
CFO

227



**JOHN HUMPHREYS and ASSOCIATES PTY. LTD.**  
**Consulting Mechanical and Electrical Engineers**  
**and Project Managers**

(INCORPORATED IN N.S.W.)

13 KABBERA BOULEVARDE,  
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A.C.N. 002 931 295

TELEPHONE: (02) 6331 5717  
FAX: (02) 6332 2107

17 December, 2004

The General Manager,  
Bathurst Regional Council,  
Civic Centre,  
BATHURST. NSW. 2795.

BATHURST COUNCIL  
20 DEC 2004  
REF. 22. D1000/005

Dear Sir,

**RE: CARTER BROS. ENGINEERING, HAMPDEN PARK RD., KELSO  
WATER METER SIZING**

The site was visited on 15<sup>th</sup> December, 2004 and points of water usage surveyed in relation to the size of the installed water meter.

The mains water pressure was checked at 560 kPa and the following recommendation is made in relation to continuity of the existing standard of water service to the site, serving the following major points of discharge.

- 2 showers
- 4 basins
- 4 WC's
- 2 sinks
- 4 hose reels
- 3 yard taps
- 1 truck wash ( 1 X 25 diameter outlet)

On the basis of the foregoing, with the diversity arising from there being multiple commercial premises on the site and allowing for 2 hose reels to operate simultaneously, the existing 40 diameter meter should be retained.

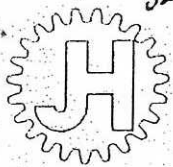
Yours faithfully,

J.K. HUMPHREYS. B.E. M.I.E.A. C.P.Eng.

ESDT  
CFO

CFO  
RECORD





329/003

**JOHN HUMPHREYS and ASSOCIATES PTY. LTD.**  
Consulting Mechanical and Electrical Engineers  
and Project Managers

(INCORPORATED IN N.S.W.)

13 KABBERA BOULEVARDE,  
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TELEPHONE: (02) 6331 5717  
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17 December, 2004

The General Manager,  
Bathurst Regional Council,  
Civic Centre,  
BATHURST. NSW. 2795.

BATHURST	COUNCIL
20 DEC 2004	
REF. 22.08830/001	

Dear Sir,

**RE: CARTER BROS. ENGINEERING, 3 TORONTO ST., KELSO  
WATER METER SIZING**

The site was visited on 15<sup>th</sup> December, 2004 and points of water usage surveyed in relation to the size of the installed water meter.

The mains water pressure was checked at 810 kPa and the following recommendation is made in relation to continuity of the existing standard of water service to the site, serving the following major points of discharge.

- 1 shower
- 2 basins
- 2 WC's
- 1 urinal
- 2 sinks
- 3 hose reels
- 4 yard taps

On the basis of the foregoing, allowing for 2 hose reels to operate simultaneously, the existing 32 diameter meter should be retained.

Yours faithfully,

J.K. HUMPHREYS. B.E. M.I.E.A. C.P.Eng.

CFO

BESDT  
CFO

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10 December 2004

Mr Ray Carter  
Director  
Carter Bros Engineering Pty Ltd  
3 Toronto Street  
KELSO NSW 2795

Dear Mr Carter

**Implementation of Best Practice Sewer Charges**

To assist in addressing your concerns regarding the implementation of Best Practice Sewer Charges, Council will make Engineering Staff available to review the Sewerage Discharge Factors estimated for your affected properties.

Council will also engage a Hydraulic Engineer to fully assess meter requirements for each of the properties. The costs for the Hydraulic Engineer and any resulting downsizing or removing of meters will be met by Council. The properties that Council will be reviewing are listed below:

Owner	Assessment #	Address	Current SDF	Current Meters
Carter RW WE & IR	2662-43000-4	10 Littlebourne Street KELSO	95%	1 x 40mm
Carter RW WE & IR	5361-93000-4	15 Adrienne Street RAGLAN	95%	2 x 40mm
Carter RW WE & IR	5631-94020-1	11 Adrienne Street RAGLAN	95%	1 x 40mm
Carter RW WE & IR	2662-44000-3	6 Littlebourne Street KELSO	95%	1 x 50mm
Carter RW WE & IR	2662-45000-2	2 Littlebourne Street KELSO	95%	1 x 32mm & 1 x 40mm
Carter RW WE & IR	5631-94210-8	9 Adrienne Street RAGLAN	95%	1 x 50mm
Carter Bros Engineering	1508-01998-9	Hampden Park Road KELSO	95%	1 x 40mm
Carter Bros Engineering	4727-25000-5	3 Toronto Street KELSO	95%	1 x 32mm
Carter Bros Engineering	5631-94010-2	13 Adrienne Street KELSO	95%	1 x 40mm
Pre-Fabricated Buildings Pty Ltd	52444-00000-5	369 Stewart Street MITCHELL	95%	1 x 100mm
Coveport Pty Ltd	50340-00000-4	5 Zagreb Street KELSO	95%	1 x 80mm
Coveport Pty Ltd	50338-00000-8	1 Adrienne Street RAGLAN	95%	1 x 50mm

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Mr Ray Carter  
10 December 2004

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Any changes to sewer charges that result as an outcome of these reviews will be made from 1 July 2004.

If you have any further questions about the reviews, please contact Council's Manager of Water and Waste, Russell Deans on 02 6333 6225. Other enquiries can be directed to Council's Senior Accountant, Toni Dwyer on 02 6333 6291.

Yours faithfully



R Roach  
**CHIEF FINANCIAL OFFICER**

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## MEMORANDUM

TO: SENIOR ACCOUNTANT, ✓MANAGEMENT  
ACCOUNTANT, SENIOR RATING OFFICER

FROM: CITY TREASURER

DATE: 8 JULY 2002

SUBJECT: SEWERAGE PRICING STRUCTURE

FILE: RR:AB:16.00004

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Please find **attached** a copy of an article that appeared in the Water Supply, Sewerage and Trade Waste Pricing Overview by the Land & Water Conservation.

Please read this article as this will be the model for our new sewerage pricing system.



R Roach  
CITY TREASURER

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# Sewerage and Trade Waste Pricing

**Best-practice sewerage pricing** involves cost-reflective pricing, the removal of land value from sewerage access charges, a two-part tariff for non-residential customers and cost-reflective fees and charges for liquid trade wastes.

Appropriate pricing is essential to provide relevant pricing signals to non-residential and liquid trade waste customers, enabling them to make informed decisions on their indoor water use and resulting sewage and trade waste discharges.

This will encourage such customers to use water efficiently and minimise wastage of our valuable water resources and associated sewerage infrastructure.

The NSW sewerage and trade waste pricing software will enable each utility to examine a range of best-practice options and determine appropriate sewerage and liquid trade waste fees and charges for its customers.

Historically, water utilities in Australia have used a sewerage tariff based on land value. Many utilities also have an additional charge per WC or urinal. These do not provide an appropriate pricing signal. Basing access charges on land value is inequitable and leads to inefficient allocation of resources and WC and urinal charges are less cost-reflective than a two-part tariff for non-residential customers.

## Sewerage Pricing Structure

**Residential sewerage bills** should be independent of land value and based on a cost-reflective uniform sewerage charge per property. The IPART Pricing Principles indicate that pay-for-use sewerage pricing was not warranted for residential customers due to a lack of net benefits from such pricing. The costs of sewage collection and transfer are largely driven by hydraulic capacity which is dependent on wet weather flows and the cost of treatment works is driven by biological and suspended solids loads which relate to the number of people serviced.

**Non-Residential bills** should be independent of land value and based on a cost-reflective two-part tariff comprising an access charge and a sewer usage charge/kL for the estimated total volume discharged to the sewer. The access charge should be proportional to the square of the size of the water supply service connection to reflect the load that can be placed on the sewerage system. The sewer usage charge should be broadly based on the long-run marginal cost. Typical values for non-metropolitan NSW range from 80c/kL to \$1.50/kL (see box at bottom of facing page).

***Sewerage and trade waste tariffs should be set to achieve long-term financial sustainability of the sewerage business.***

***Non-residential sewerage bills should be based on a two-part tariff.***

## Sewerage and Trade Waste Compliance

For NSW water utilities to comply with best-practice sewerage and liquid trade waste pricing:

- 25% of utilities need to remove present property value based tariffs (rates)
- 90% of utilities need an appropriate two-part tariff for non-residential customers
- 70% of utilities need to introduce trade waste fees and charges.

## Financial Sustainability

In introducing a new sewerage tariff structure (eg. replacing a uniform access charge with a two-part tariff for non-residential customers), removal of the present cross-subsidies will generate additional income. However, in setting their tariffs the 30% of NSW water utilities with a negative real rate of return (RRR) should increase their RRR to at least -0.5, which has been found to be the minimum required for long-term financial sustainability for a utility with little growth. For utilities with significant growth and associated major capital works programs, it has been found that a RRR of 1 to 1.5 is required for long-term financial sustainability.

To assist NSW water utilities, DLWC has developed Sewerage and Trade Waste Pricing software. The model enables the utility to examine the merits of a range of pricing options.

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## Trade Waste Pricing Structure

All NSW utilities responsible for sewerage should implement appropriate trade waste fees and charges for their liquid trade waste dischargers as part of their next annual management plan. Utilities should levy cost-reflective annual trade waste licence fees and reinspection fees for all liquid trade waste dischargers. These fees are in addition to the non-residential sewerage charges. Trade waste usage charges should be as follows:

- (1) No trade waste usage charges for dischargers requiring nil or minimal pre-treatment.
- (2) For trade waste dischargers with prescribed pre-treatment, a trade waste usage charge/kL should be set for the estimated trade waste volume.
- (3) For large dischargers (over about 20kL/d) and industrial wastes, Council should set excess mass charges for wastes exceeding the normal acceptance limits in Schedule A of the "Concurrence Guideline for Liquid Trade Waste Discharges to the Sewerage System", DLWC 2002 or any lower limits specified in Council's trade waste policy.

Typically, over 50% of non-residential customers are also trade waste dischargers. Where dischargers with prescribed pre-treatment have appropriate pre-treatment (eg. a properly maintained

### Cross-subsidies – Sewerage and Trade Waste

Where a new sewerage tariff eliminates significant existing cross-subsidies, it is inevitable that the beneficiaries of these cross-subsidies will receive a significant increase in their charges eg. replacing existing uniform access charges for non-residential customers with a cost-reflective two-part tariff and introducing cost-reflective trade waste fees and charges. Where large increases in charges are required, these should be phased in over a period of 3 years.

grease trap) the trade waste usage charge should be the same value as the non-residential sewer usage charge. However, if a discharger does not provide adequate pre-treatment, the utility would face a much higher cost for treating such wastes. It is therefore recommended that a trade waste usage charge/kL of at least five times that of the sewer usage charge be set for such dischargers. This charge would reflect only about half of the cost to the utility and would provide an incentive for dischargers to install appropriate pre-treatment.

All water utilities responsible for sewerage should move to develop a trade waste agreement (or service contract) with each liquid trade waste discharger connected to their sewerage system. The agreement should set out the utility's requirements for pre-treatment of wastes where appropriate, the conditions of discharge to the utility's sewers, including the maximum concentrations of pollutants and maximum discharge rates in accordance with the Schedule A of the DLWC Concurrence Guideline or the utility's trade waste policy.

## Sewerage and Trade Waste Pricing Model

Pricing software has been prepared to assist NSW utilities to develop best-practice sewerage and trade waste tariff structures which yield the required income from annual charges and to analyse their impact (percentage real increase in the sewerage bill) on a range of residential, non-residential, trade waste and non-rateable customers (ie. incidence analysis).

The model has been developed in MS Excel 97 and enables the water utility to examine the merits of a range of sewerage and trade waste pricing options.

As an example of the use of the sewerage and trade waste pricing model, analysis of sewerage and trade waste pricing in Bombala was undertaken as a case study and is shown overleaf.

**All utilities should levy best-practice non-residential sewerage charges and liquid trade waste fees and charges for each trade waste discharger as part of their next annual management plan.**

<b>Non-Residential Sewerage Bill</b>	=	Access Charge (proportional to square of water connection size)	+	Customer's Water Consumption	x	Sewer Usage Charge	x	Sewer Discharge Factor
<b>Trade Waste Bill*</b>	=	Annual Licence and Reinspection Fees	+	Customer's Water Consumption	x	Trade Waste Usage Charge	x	Trade Waste Discharge Factor

\*Applies to trade waste dischargers with prescribed pre-treatment (see (2) above). The trade waste bill for large dischargers and industrial waste comprises a licence fee and reinspection fee and the excess mass charges indicated in (3) above. Trade waste customers pay both a non-residential sewerage bill and a trade waste bill.





10 December 2004

Mr Ray Carter  
 Director  
 Carter Bros Engineering Pty Ltd  
 3 Toronto Street  
 KELSO NSW 2795

Dear Mr Carter

**Implementation of Best Practice Sewer Charges**

To assist in addressing your concerns regarding the implementation of Best Practice Sewer Charges, Council will make Engineering Staff available to review the Sewerage Discharge Factors estimated for your affected properties.

Council will also engage a Hydraulic Engineer to fully assess meter requirements for each of the properties. The costs for the Hydraulic Engineer and any resulting downsizing or removing of meters will be met by Council. The properties that Council will be reviewing are listed below:

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Coveport Pty Ltd	50340-00000-4	5 Zagreb Street KELSO	95%	1 x 80mm
Coveport Pty Ltd	50338-00000-8	1 Adrienne Street RAGLAN	95%	1 x 50mm

Reference: TD:AL:26.00010  
 Enquiries: Mrs Toni Dwyer (02) 6333 6291

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*Attachment D*

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Mr Ray Carter  
10 December 2004

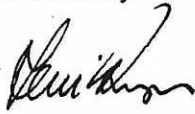
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Any changes to sewer charges that result as an outcome of these reviews will be made from 1 July 2004.

If you have any further questions about the reviews please contact Council's Manager of Water and Waste, Russell Deans on 02 6333 6225. Other enquiries can be directed to Council's Senior Accountant, Toni Dwyer on 02 6333 6291.

Yours faithfully

FIT



R Roach  
**CHIEF FINANCIAL OFFICER**

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Reference: TD:AL:26.00010  
Enquiries: Mrs Toni Dwyer (02) 6333 6291  
OFFICIAL/AMANDA TYPING/Response Letter/rd/carter.doc

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NEW SOUTH WALES

# APPENDIX

9 of 9  
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MINISTER FOR ENERGY AND UTILITIES  
MINISTER FOR SCIENCE AND MEDICAL RESEARCH  
MINISTER ASSISTING THE MINISTER FOR HEALTH (CANCER)  
MINISTER ASSISTING THE PREMIER ON THE ARTS

MSO Ref: 09605  
DEUS Ref: 04/2100

Mr Lachlan Sullivan  
President  
Bathurst Chamber of Commerce  
PO Box 293  
BATHURST NSW 2795

24 DEC 2004

Dear Mr Sullivan

I refer to your letter of 5 October 2004 regarding the introduction of best-practice sewerage pricing by Bathurst Regional Council.

As outlined in the Best-Practice Management of Water Supply and Sewerage Guidelines, the sewer access charge should reflect the customer's capacity requirements.

As you point out, the present charges for some customers such as those with large connections sized for fire flows, may be higher than warranted by their load on the sewerage system. Such customers may wish to submit evidence to Council that supports an alternative approach to determining sewer access charges. This may involve presenting an independent hydraulic report which analyses the customer's historical and likely future water consumption and sewer discharge patterns and the likely peak discharge requirements. Council has assured me that it will assess such evidence provided by its customers on a case by case basis.

I am keen to see that all customers are treated fairly and that businesses in Bathurst are not faced with unwarranted access charges. I will therefore continue to monitor the implementation of the new sewerage charges in Bathurst.

Thank you for bringing this matter to my attention.

Yours sincerely

Frank Sartor

243

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NEW SOUTH WALES

# APPENDIX 'B'

MINISTER FOR ENERGY AND UTILITIES  
MINISTER FOR SCIENCE AND MEDICAL RESEARCH  
MINISTER ASSISTING THE MINISTER FOR HEALTH (CANCER)  
MINISTER ASSISTING THE PREMIER ON THE ARTS

MSO Ref: 09208 09538  
DEUS Ref: 04/1832 04/2123

Mr Ray Carter  
Director  
Carter Bros Engineering Pty Ltd  
3 Toronto Street  
BATHURST NSW 2795

24 DEC 2004

Dear Mr Carter

I refer to your letters of 8 October 2004 and 25 August 2004 regarding the introduction of best-practice sewerage pricing by Bathurst Regional Council. The Member for Bathurst, Mr Gerard Martin MP has also made representations to me on your behalf regarding this matter. I apologise for the delay in responding to you.

Bathurst Regional Council's recent introduction of best-practice sewerage pricing will ensure that the sewerage system operates efficiently. Under such a tariff, customers with significant sewer discharges will pay a fair share of the costs imposed on the system. An important aspect of a fair sewerage tariff is an annual access charge which reflects the peak load that can be placed on the sewerage infrastructure.

I recognise your concerns regarding the sewer access charge. However, Bathurst Regional Council has assured me that customer concerns will be fairly addressed on a case by case basis. Council has also recently increased its resources to assist customers with their queries by appointing a hydraulic engineer. I therefore encourage you to continue working with Council to satisfactorily resolve this issue.

As outlined in the NSW Government's Best-Practice Management of Water Supply and Sewerage Guidelines, the sewer access charge should reflect a customer's capacity requirements and the load they place on the sewerage system relative to residential customers.

In her letter to you of 20 September 2004, Ms Kath Knowles, Administrator, Bathurst Regional Council states "Council will reconsider the implementation of nominal sizing of water meters if it is given enough supporting evidence to establish that there is a more equitable manner of applying charges".

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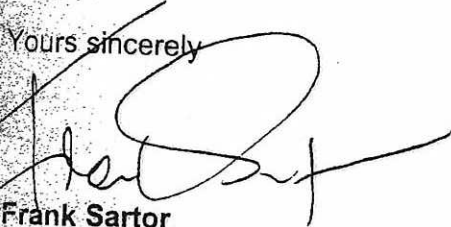
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Accordingly, if you believe that the access charge ascribed to you by Council does not reflect your load on the sewerage system, you may wish to commission an independent hydraulic report and present it to Council. Such a report would analyse the historical and likely future water consumption and sewer discharge patterns of your premises and the likely peak discharge requirements.

Best-practice sewerage pricing is sometimes a difficult adjustment to make for local water utilities and some of their customers. Bathurst Regional Council has taken a responsible approach in moving to such a tariff.

Thank you for bringing this matter to my attention.

Yours sincerely



Frank Sartor

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