



**SUBJECT:                   BOROREN WATER SUPPLY SCHEME**

**Responsible Officer:    Director Infrastructure Services**

**Meeting Date:            19 January 2010**

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**Executive Summary:**

This report provides Council with information on investigations into the reliability and condition of the existing Bororen water supply source (bores), treatment options, financial implications and recommends that the existing scheme be upgraded to meet drinking water guidelines.

**Background:**

From the end of September 2009 the Water and Sewerage Section of the Infrastructure Services Department began receiving complaints from some consumers within the Bororen township regarding the quality of the water. Of concern to officers was the allegation that consumers were unaware that the existing Bororen Water Scheme, although treated (disinfected) by chlorination the water supply was non-potable (i.e. Not drinking water standard despite there long record of discolouration caused my high iron and manganese levels.

Continued lobbying, concern and uninformed debate within the community culminated in Council elected members and senior officers attending a public meeting on the 27 October 2009. From this an undertaking was made to:

1. Do reliability testing of the existing water source (bores), investigate potential treatment options followed by financial analysis with a view to communicating back to the residents by Christmas;
2. Advise residents of the next flush by mail and also include a phone number for them to ring when the water discolouration occurs again to optimise flushing frequency but not ignoring water conservation. (Note: A fortnightly flushing program is currently in place).
3. Give residents are contact point for queries on what they are permitted to do with their own water connection.

**Comment:**

Borefield Reliability

The following investigations for the Bororen Water Supply Scheme were undertaken by Environmental Hydrology Associates (EHA) Ltd on behalf of Council to ascertain the condition and reliability of the bores:

- Initial Investigations (GW-09-21-REP-001- Rev A) – 11 Nov 2009
- Bore Condition Investigations (GW-09-21-REP-002- Rev O) – 9 Dec 2009
- Test Pumping & Preliminary Aquifer Performance Assessment (GW-09-21-REP-003- Rev A) – 18 Dec 2009

Key recommendations:

- Bore #1 needs further cleaning and a process of disinfection and then retested to confirm the success of this process
- Some form of treatment should be applied to address elevated iron and manganese values
- Consider blending water from two bores to reduce salinity and hardness from bore #3
- Consider installing groundwater level data loggers to allow long-term examination of groundwater level behaviour (for refined yield assessment)
- Consider installation of dedicated groundwater monitoring bores remote from the pump influence of the borefield area (long-term groundwater level behaviour)

Reliability conclusions:

- At the time of testing the system was supplying approx 2.2 L/s (190 m<sup>3</sup>/d) from one bore and following EHA's pump testing and analysis a raw water supply rate of 4.0 L/s is achievable.

Treatment

MWH were commissioned to investigate a number of treatment options of the raw water (Refer to separate technical report – Bororen WTP Options Evaluation report 26 Nov 2009 by MWH), these were:

- Do nothing (but retain the existing process of disinfection and regular flushing of the network).
- Remove some of the Iron and Manganese but still have a non-potable water supply scheme.
- Remove most of the Iron and Manganese and have a potable water supply scheme.

There is marginal difference between the last two options (approx \$25K – *MWH Report*) however this is for the treatment plant only and other costs have been identified i.e. upgrading of the bores, work at the existing storage tank, provision of telemetry services and cleaning the existing reticulation network through "pigging" the pipework. This would be required for either option therefore it is recommended that the treatment to potable be the way forward.

(NOTE: Fortnightly flushing is estimated to cost in the vicinity of \$10,000/year. This will not however eliminate complaints due to discolouration and does not promote a good image with respect to conservation of groundwater resources).

Other issues

- The existing parcel of land is not big enough to accommodate the infrastructure (including a building) and additional land will be required. The adjoining land is classified as "Reserve for showgrounds" and Council will have to apply to DERM to change a portion to "Reserve for water"
- Final design, tender, construction and commissioning are expected to take about six months.

**Link to Corporate/Operational Plan:**

4.1.3 – Develop and maintain clean, sustainable & affordable water networks and an effective waste water strategy

**Communication/Consultation (Internal/External):**

Public meeting, resident information sheets and notices and press releases.  
Queensland Health; Queensland Ombudsman; Department of Infrastructure & Planning.

**Legal Implications (statutory basis, legal risks):**

Council has obligations under government legislation to register and develop and implement Drinking Water Management Plans for all potable water schemes.

**Policy/Local Law/Delegation Implications:**

Nil

**Financial and Resource Implications:**

The total estimated cost to get the system to drinking water standard will be in the order of \$390,000.

Although the State Government has removed its subsidy of water supply projects, including the Small Communities Assistance Program (SCAP) it is recommended that Council apply to the Minister for Local Government, Ms Desley Boyle for funding assistance.

Currently, Bororen consumers pay an annual access charge of \$182 and a usage charge of \$2.05 per kilolitre. The actual cost of providing the existing service is \$675 per equivalent service as indicated in the attached table. This effectively means that the scheme is currently being heavily subsidised by the general rate base, a situation that has existed for many years.

The Bororen Water scheme currently has reserve funds of \$166,000 which can be committed to this project. This leaves a balance of \$224,000 which is not funded by this scheme. If Council were to borrow these funds externally the repayment over 20 years would amount to \$20,500 per annum. The additional depreciation cost involved with the acquisition of the new assets is \$7,200 per annum. The total cost impact of the project is therefore \$27,700 or \$280 per equivalent service (98 equivalent services). This is in addition to the current total cost of \$675, thus making the full cost of an upgraded potable supply, \$955 per equivalent service per annum.

The CEO has placed a separate report to Council dealing with the issue of charging philosophies for services including water. The following paragraph is based on the assumption that the CEO's recommendation will be adopted by Council.

Council has allocated \$265,000 in the current budget to upgrade the water treatment plant at Miriam Vale. Upon completion of this project the quality of the water from both the Bororen and Miriam Vale plants will be identical. Based on a desire (if adopted as outlined above) to move to uniform pricing over time it is suggested that Council advise Bororen residents that Council will move to equalise charges between the Bororen and Miriam Vale services in the 2010/11 budget using the current Miriam Vale potable water supply charge as the base. Miriam Vale residents currently pay an access charge of \$308 per annum and a consumption charge of \$3.36 per kilolitre.

**Asset Management Implications:**

Ongoing funding of whole of life costs such as operational, maintenance, depreciation, renewal and replacement will be required in future budgets.

Operationally the system will be designed to operate as a remote facility which won't increase the existing supervision requirements.

Cost of water quality testing for the new scheme compared to the existing supply will not increase.

Chemical and electrical cost will increase and, depending on the final design and is estimated to be in the order of \$400/month.

**Officer's Recommendation:**

That

1. Council proceed with the upgrading of the Bororen Water Supply to drinking water standard at an estimated cost of \$390,000; and
2. Council write to the Minister for Local Government, Ms Desley Boyle requesting funding assistance towards the implementation a drinking water standard for water supply scheme for the small community of Bororen.
3. Council advise Bororen residents that Council will move to equalise charges between the Bororen and Miriam Vale services in the 2010/11 budget using the current Miriam Vale potable water supply charge as the base. Miriam Vale residents currently pay an access charge of \$308 per annum and a consumption charge of \$3.36 per kilolitre.

**Attachments:**

1. Water Charges and Scheme Pricing.

**Tabled Items:**

1. EHA Report - Initial Investigations (GW-09-21-REP-001- Rev A) – 11 Nov 2009
2. EHA Report - Bore Condition Investigations (GW-09-21-REP-002- Rev O) – 9 Dec 2009
3. EHA Report - Test Pumping & Preliminary Aquifer Performance Assessment (GW-09-21-REP-003- Rev A) – 18 Dec 2009
4. MWH Report - Bororen WTP Options Evaluation report 26 Nov 2009

**Report Prepared by:** Director Infrastructure Services

**ATTACHMENT****Water Schemes - Full Cost Pricing**

	<b>Lake Awoonga</b>	<b>Bororen</b>	<b>Agnes Water</b>	<b>Miriam Vale</b>	<b>Combined Total</b>
Total Operating Costs	6,645,582	59,555	549,342	153,732	7,408,211
No. of Equivalent Services	26,846	98	1,158	206	28,308
<b>Total Cost per Service</b>	<b>247.54</b>	<b>607.70</b>	<b>474.39</b>	<b>746.27</b>	<b>261.70</b>
Current Gross Access Charge	238.00	182.00	416.00	308.00	248.30
Current Nett Access Charge [after discount]	214.20	163.80	374.40	277.20	223.47