

117. CONFIDENTIAL REPORTS

117.1 **REPORT TITLE:** **CONFIDENTIAL ITEM:**
 TENDER 2008.022 – MOUNT BARKER
 WASTEWATER TREATMENT PLANT
 UPGRADE
DATE OF MEETING: **15 JUNE 2009**
AUTHOR: **BILL GRAHAM**
 MADHAWA RUPASINGHE
AUTHOR'S TITLE: **CONTRACTS & PROPERTY CO-**
 ORDINATOR
 GRADUATE ENGINEER
REPRESENTORS: **NIL**
FILE NUMBER: **70/030/194**
 70/040/153
DEPARTMENT: **INFRASTRUCTURE & PROJECTS**

DEPARTMENT **BRIAN CLANCEY**
MANAGER:

Moved Cr Campbell

1. That pursuant to Section 90(2) and 90(3) of the Local Government Act 1999 the District Council of Mount Barker orders that the public be excluded from attendance at the meeting to consider in confidence matters regarding:

(k) tenders for the supply of goods, the provision of services or the carrying out of works;

2. That the Chief Executive Officer, General Manager Infrastructure & Projects, General Manager Strategy, Development & Communities, General Manager Corporate, Manager Engineering and Technical Services, Engineer Community Waste Management Systems, and the Minute Secretary be permitted to remain in the room.

Seconded Cr Irvine and CARRIED

Moved Cr Irvine

3. That Council:
 - a) Awards Part 1 (Pre-treatment) and Part 2(Micro filtration upgrade) of Tender 2008.022 – Mount Barker Wastewater Treatment Plant Upgrade to Veolia Water Solutions &

Technologies (Australia) Pty Ltd for the amounts shown in attachments 1 and 2 respectively subject to execution of relevant contract documents by Council;

b) Authorises the Chief Executive Officer to execute relevant contract documents; and

4. Orders pursuant to Section 91(7) and (9) of the Local Government Act 1999 that only the financial amounts contained in Attachments 1 and 2, with the exception of those for Veolia Water Solutions & Technologies (Australia) Pty Ltd, are kept confidential until 1 June 2010 given they include commercial information of a confidential nature.
5. That subject to Section 90 of the Local Government Act 1999 as amended, the public be readmitted to the meeting at the conclusion of the item.

Seconded Cr Bails and CARRIED

17. CONFIDENTIAL REPORTS

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 TENDER 2008.022 – MOUNT BARKER
 WASTEWATER TREATMENT PLANT
 UPGRADE

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AUTHOR: **BILL GRAHAM**
 MADHAWA RUPASINGHE

AUTHOR'S TITLE: **CONTRACTS & PROPERTY CO-**
 ORDINATOR
 GRADUATE ENGINEER

REPRESENTORS: **NIL**

FILE NUMBER: **70/030/194**
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ATTACHMENTS: **CONFIDENTIAL ATTACHMENT 1 –**
 PRICING SUMMARY – PRE-TREATMENT
 CONFIDENTIAL ATTACHMENT 2 –
 PRICING SUMMARY – CMF UPGRADE
 ATTACHMENT 3 – HILLGROVE LETTER

DEPARTMENT: **INFRASTRUCTURE & PROJECTS**

DEPARTMENT **BRIAN CLANCEY**
MANAGER:

Note: Prior to considering the recommendation to discuss this item in confidence, there will be a brief presentation by Mr Atis Berzins, Manager, Engineering and Technical Services.

PURPOSE

To gain Council's approval to award Part 1 (Pre-treatment) and Part 2 (Micro filtration upgrade) of Tender 2008.022 – Mount Barker Wastewater Treatment Plant Upgrade to Veolia Water Solutions & Technologies (Australia) Pty Ltd subject to execution of relevant contract documents by Council.

RECOMMENDATION

1. That pursuant to Section 90(2) and 90(3) of the Local Government Act 1999 the District Council of Mount Barker orders that the public be excluded from attendance at the meeting to consider in confidence matters regarding:

(k) tenders for the supply of goods, the provision of services or the carrying out of works;

2. That the Chief Executive Officer, General Manager Infrastructure & Projects, General Manager Strategy, Development & Communities, General Manager Corporate, Manager Engineering and Technical Services and the Minute Secretary be permitted to remain in the room.

3. That Council:

- a) Awards Part 1 (Pre-treatment) and Part 2(Micro filtration upgrade) of Tender 2008.022 – Mount Barker Wastewater Treatment Plant Upgrade to Veolia Water Solutions & Technologies (Australia) Pty Ltd for the amounts shown in attachments 1 and 2 respectively subject to execution of relevant contract documents by Council;

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5. That subject to Section 90 of the Local Government Act 1999 as amended, the public be readmitted to the meeting at the conclusion of the item.

BACKGROUND

The existing Waste Water Treatment Plant (WWTP) receives effluent from septic tanks in Mount Barker and the nearby townships of Littlehampton and Nairne and a small volume of sewage from Brukunga and is currently operating at maximum capacity.

The WWTP comprises of fully mixed aeration lagoon, a polishing lagoon, dissolved air flotation (DAF) unit, Continuous Micro

Filtration (CMF) unit and discharge of treated effluent to the Laratinga wetland for final polishing and storage.

Treated effluent is currently used for agriculture and irrigation of Council gardens and reserves with excess treated effluent discharged to the Mount Barker Creek from the Laratinga Wetlands, which usually occurs only during in winter.

An upgrade of the WWTP was undertaken in 2007 to improve the management of excess inflows into the lagoons, improve biological treatment within the lagoons and improve sludge handling practices. The project was successful in achieving these objectives.

Council adopted the *Strategy for future collection, treatment and reuse of CWMS effluent -2020* prepared by Kellogg Brown and Root Pty Ltd (KBR) in August 2003; which is available on request. The plant currently operates at an Average Daily Flow (ADF) of approximately 2.5 million litres (ML) per day, which is expected to increase and the Strategy estimated approximately 5.6 ML/day (average of winter and summer flows) by 2020. The estimate may need to be revised depending on the outcomes of the State Government 30 Year Growth Study.

The Strategy looked at developing concepts and options for the cost cost-effective effluent treatment and reuse with the ultimate goal to utilise all treated effluent water with zero discharge to the Mount Barker creek. The future effluent generations projected back in 2003 as follows.

Year	Average Daily Flow		Winter Flow		Estimated Population
	ML/day	Litres/sec	ML/day	Litres/sec	
2004	2.3	26.6	3.1	35.9	11595
2013	3.9	46.0	5.1	59.0	18600
2020	4.9	56.0	6.3	72.4	22848

Reference: Strategy for future collection, treatment and reuse of CWMS effluent -2020, KBR (2003)

The plant presently experiences increased inflows due to wet weather and these flows can be in the order of 2 – 3 times the dry wether flow as a result of storm water intrusion and the treatment plant needs sufficient capacity to manage the increased flows. An audit of 5% of the existing scheme and house connections will be carried out during 2009/2010 to define the extent of the problem. The audit will be funded through current reserves and education and monitoring programs will also be considered as a means of controlling storm water intrusions.

According to previous standards of Department of Health SA, Mount Barker WWTP produced Class A water. However with the introduction of the new National Guidelines there are now new standards that need to be met and the current plant does not comply with the validated Virus Log reduction required for unrestricted municipal irrigation. Unrestricted municipal irrigation which includes irrigation of parks and reserves requires a 5 Log virus reduction to be achieved. Should Council ever wish to return the treated effluent for residential reuse such as toilet flushing or domestic irrigation then a 6.5 log reduction in viruses will be required. Log reduction values are attributed to specific treatment process units and indicate the effectiveness of the treatment process.

Each treatment process unit must be validated for its effectiveness (Log reduction) with the Department of Health, to enable the supply of reclaimed water fit for purpose.

Staged upgrades to the tertiary treatment components of the Waste Water Treatment Plant are proposed to cater for the population increase based on the current growth boundaries. Further staged upgrades will still be required as population growth occurs.

Additionally the District Council of Mount Barker and Hillgrove Resources have agreed to arrangements for the use of treated water in the operation of the Kanmantoo mine. According to the agreement, the Council is to provide an annual quantity of 540ML of reclaimed water with a 5.0 Log reduction from 30 March 2010. Hillgrove is currently seeking a joint venturer of capital to fund the mine project. The Stage 1 and Stage 2 upgrades proposed initially, namely the Pre-filtration and filtration components will increase the capacity of the plant but will not achieve the required log reduction to deliver the water to Hillgrove Resources.

The term sheets between Hillgrove and Council have now been signed. Hillgrove has recently written to Council to provide an update on the status of the project (refer attachment 3). Hillgrove has indicated that they will be in a position to confirm the status of the funding by July/August of this year.

The \$500,000 State Government grant to the Council for the construction of the Callington pipe line extension can only proceed when Hillgrove has made a commitment to proceed with the project. Council is currently in discussion with the State Government to address the timing issue.

The upgrade aims to increase the capacity of the WWTP and improve the treated water quality in a staged approach. The following changes are proposed to the treatment system post lagoon (listed in order of priority);

1. Part 1 Pre-treatment (prior to filtration)
2. Part 2 Filtration upgrade
3. Part 3 UV treatment
4. Part 4 Chlorination plant and pump station

A process flow diagram on the following page diagrammatically shows the four stages of the Mount Barker Waste Water Treatment Plant Upgrade Project.

Part 3 and 4 of the overall WWTP upgrade project are required and will be completed in the order of priority listed and are subject to future budget considerations.

Recycled water from the upgraded plant will supply two separate delivery streams.

The existing supply of filtered water to the Laratinga wetlands will remain. The existing wetlands pumping station will continue to supply treated water to Samwells for Brussels sprouts irrigation.

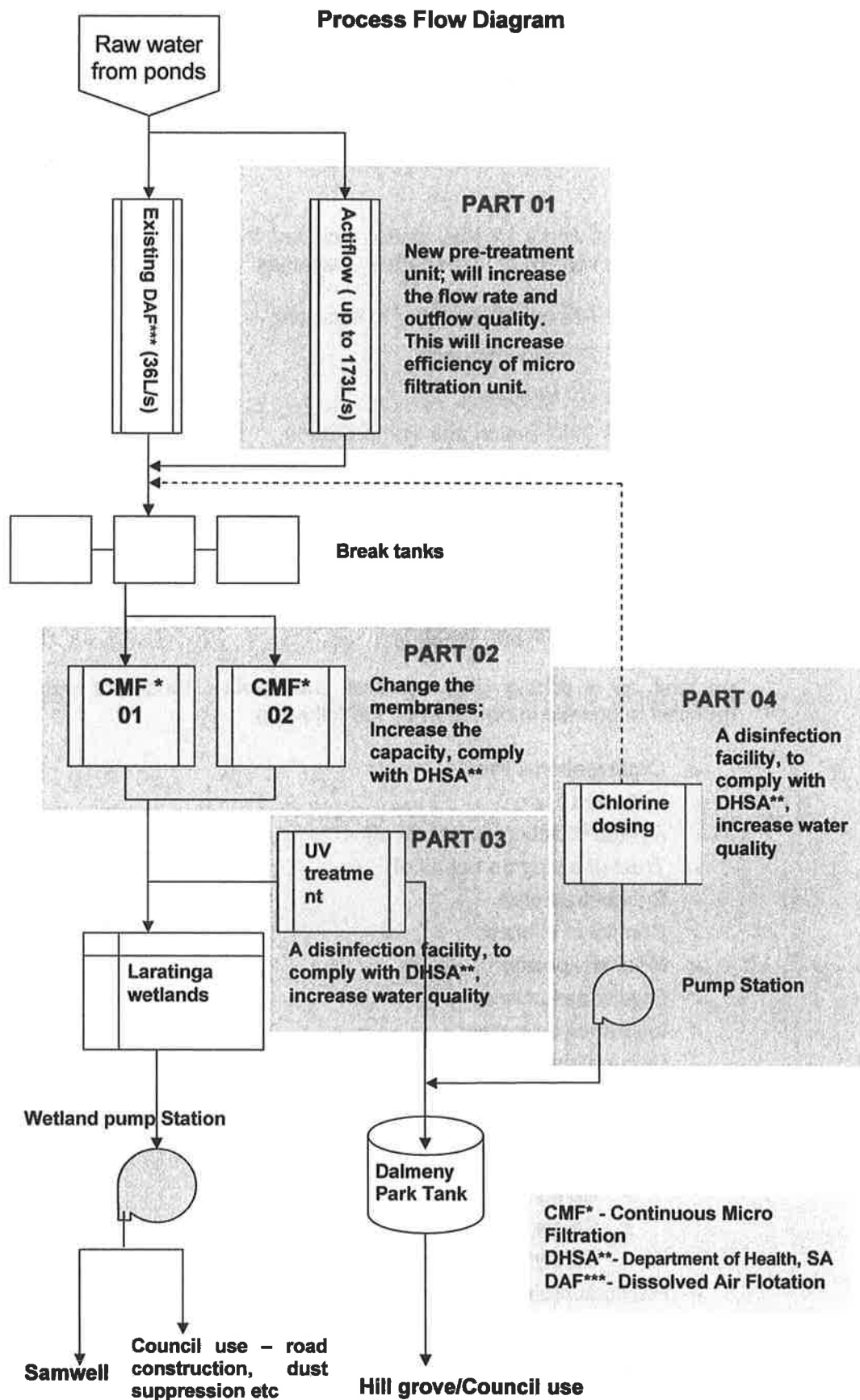
A new delivery stream will provide disinfected water by UV treatment and chlorination from the WWTP via a new pumping station and pipeline to the Dalmeny Estate gravity tank to meet the Department of Health requirements to supply reclaimed water to Hillgrove Resources.

Recycled water will be gravity fed from the Dalmeny tank to irrigate Council parklands and supply disinfected water to a new customer (Hillgrove Copper Pty Ltd) via the existing Bald Hills Road pumping station and another new delivery pipeline.

In addition there is a requirement to improve the quality of treated water from the WWTP to maximise opportunities to supply other users, minimise treated effluent discharge to the environment and to comply with new EPA and Health Department's regulations.

Council's commitment to the project and overall reuse strategy is further evidenced by the recent acquisition by Council of the land on the corner of Bald Hills Road and Little Dublin Road (Brown Land) for the construction of a strategic storage facility. A development application has been lodged by council seeking approval for the construction of the dam.

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DISCUSSION

In accordance with Council's Procurement policy, an open tender process has been undertaken to secure a suitably qualified contractor to undertake the upgrade works. Council's Procurement policy requires Council to approve tenders above the value of \$ 500,000.00.

The scope of works for this tender included the supply, installation and commissioning of 4 separate packages of work as outlined below:

Part 1 Pre-treatment (prior to filtration);

Part 2 Filtration upgrade;

Part 3 UV treatment; and

Part 4 Chlorination and Pump Station.

Tenderers were advised that they could submit proposals for any or all of the four parts of the overall WWTP upgrade as separable portions, but were made aware that Council reserves the right not to proceed with any single part of the works.

The tender provided Council with the flexibility to consider each part separately depending on budget.

As well as a pricing and technical submissions tenderers were required to provide information on the following:

- Organisational Profile
- Referees
- Agents (if acting on behalf of)
- Trust (if acting on behalf of)
- Subcontractors
- Conflict of interest
- Financial position
- Quality assurance
- Insurance coverage
- Occupational Health & Safety including:
 - Safety record
 - Safe work practices and procedures
 - OHS policy and management
 - Safety and health workplace inspection
 - Safety and health consultation
 - Safety and health performance monitoring
- Previous projects
- Current commitment schedule
- Human resources schedule

Nine tenders were received, these being (and in no particular order) from:

1. AJM Environmental Services Pty Ltd
2. Guidera O'Connor Pty Ltd
3. Water Infrastructure Group Pty Ltd
4. Odis Pty Ltd
5. Integra Water Treatment Solutions Pty Ltd
6. Orica Water Care Pty Ltd
7. Veolia Water Solutions & Technologies (Australia) Pty Ltd
8. Aquatec Maxcon Pty Ltd
9. Amiad Australia Pty Ltd

Tenders have been evaluated by the following Council staff:

Atis Berzins	Manager, Engineering & Technical Services
Madhawa Rupasinghe	Graduate Engineer
Mark Millington	CWMS Technical Officer
Bill Graham	Contracts & Property Co-ordinator

The evaluation panel has been assisted by a technical specialist on water and waste water treatment, Mr Nathan Silby of Wallbridge & Gilbert Consulting Engineers, who was retained by council. This is similar to the approach taken by Council previously for other high magnitude tender assessments; e.g. Kerbside waste tender in 2008.

In addition Council's Accountant Mr Marcus Smith has reviewed the financial information and added further value to the evaluation process.

With the exception of Orica Water Care Pty Ltd all tenderers lodged were conforming tenders.

In accordance with the tender specification these tenders have been evaluated against the following criteria;

- (a) non financial (50% weighting);
- (b) financial (50% weighting)

a) NON-FINANCIAL

- Technical merit of submission (10%);
- Demonstrated performance of equipment operating in similar installations (10%);
- Log reduction in effluent quality improvement across each part of the process (10%);
- Anticipated operating costs for plant and equipment (5%);

- Minimisation in the use of chemicals required to operate the plant (5%);
- Demonstrated project management capability with projects of a similar scale ie cost, time, quality, performance and outcomes (5%);
- Demonstrated wastewater technical support capability (5%).

A summary of the weighted scores of the capacity for the tenderers to provide parts 1 and 2 (highest to lowest) shows:

Veolia Water Solutions & Technologies (Australia) Pty Ltd	31.5
Guidera O'Connor Pty Ltd	26.5
AJM Environmental Services Pty Ltd	22.5
Odis Pty Ltd	16.5
Integra Water Treatment Solutions Pty Ltd	16.0
Aquatec Maxcon Pty Ltd	14.0
Water Infrastructure Group Pty Ltd	13.0
Amiad Australia Pty Ltd (provided only for part 1)	11.0
Orica Water Care Pty Ltd (non conforming tender)	0.0

b) FINANCIAL

Tenderers were requested to provide lump sum prices for each or all of the parts. Pricing attracted a 50% weighting. Prices submitted can be seen in the confidential attachments to this report.

Amiad Australia Pty Ltd (Amiad) tendered the lowest price for Part 1 (refer confidential attachment) but the evaluation panel rated Amiad well down in the non-financial criteria. In addition the treatment technology offered by Amiad is not preferred by the technical expertise of the evaluation panel.

Following the initial evaluation of both financial and non-financial aspects of the tender the evaluation panel short listed Veolia Water Solutions & Technologies (Australia) Pty Ltd ("Veolia") and Guidera O'Connor as preferred tenderers. Both tenderers personally presented their submissions to members of the evaluation panel and to the technical specialist Mr. Nathan Silby.

Council has engaged both Guidera O'Connor and Veolia in previous Council projects and has been satisfied with their works and commitment.

Part 1- Pre treatment

Veolia provides the Actiflo™ process which is compact and conventional type pre treatment package. Aluminum sulphate is used as a flocculation

agent and micro sand is used as a seed for floc formulation. Benefits of this system includes high overflow rates and short retention time.

Guidera O'Connor (GO) offering SEPA Water Australia model SWA 300 DAF unit which is capable of treating 83Litres/sec. This is very similar to existing pre-treatment and according to GO's specification required no chemical usage during the process.

	Actiflo (Veolia)	SEPA DAF (Guidera O'Connor)
Flow rate	up to 80 Litres / second (with minor modification can go up to 173 L/s)	up to 83 Litres / second
Chemical usage	Alum (aluminum sulphate) use as coagulant in a lesser rate than existing unit	No chemical usage
Algal removal	Very effective	Effective but doubted as it is not using any coagulants
Adjusting rapid swings in water quality	Effective and less adjusting time	With the experience with existing SEPA DAF, this will take more time
Treated water quality	Consistent quality	Vary with the flow
Operational costs	Low	Low

Comparison of two technologies offered

Two evaluation panel members (Atis Berzins and Mark Millington) and independent water treatment specialist (Nathan Silby) visited Gibson Island Waste Water Treatment Plant (Brisbane) to understand the suitability of Actiflo™ as a pre-treatment unit for Mount Barker WWTP. For probity reasons Council met the full cost of Council representatives and Walbridge & Gilbert met the full cost of Nathan Silby. Site visit exposed that Actiflo™ is far superior than the existing DAF unit in terms of the operational and maintenance aspect. This plant although much larger in scale has similar feed characteristics and space limitations as the Mt Barker WWTP. A rigorous process assessment on this project indicated that the Actiflo was more suitable than a DAF. The water quality data at the outlet of the Actiflo unit was achieving the parameters outlined in the MT Barker brief, which provided the team with confidence that the system was appropriate for use in Mt Barker.

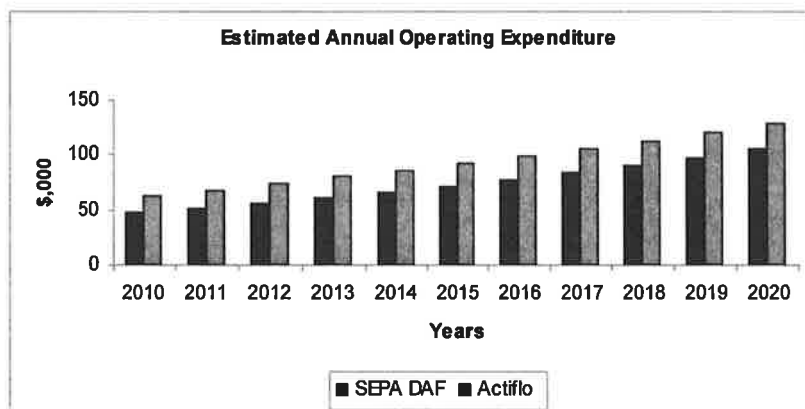
The Projected operating expenditure over the next ten years show a lower estimated life cycle cost around 27% from the Guidera O'Connor tender (refer Estimated annual operating expenditure graph below). Guidera O'Connor achieved this by using very low amount of coagulants, Veolia included this cost, which is approximately 48 % of total their operating expenditure.

Council's Engineering department questioned the statement that chemical dosing was not required with this DAF unit during the post tender negotiations. Clarification from GO and its suppliers have indicated that the suspended solid less than 10 parts per million could be achieved most of

the time without dosing but it could not be guaranteed and polymer dosing would more than likely be required. Given the high algal loads that come from the feed lagoons Council's Consulting Engineers and Council's Engineering Department consider that dosing of polymer on a regular basis will be required. This would increase the operating cost of the SEPA DAF unit.

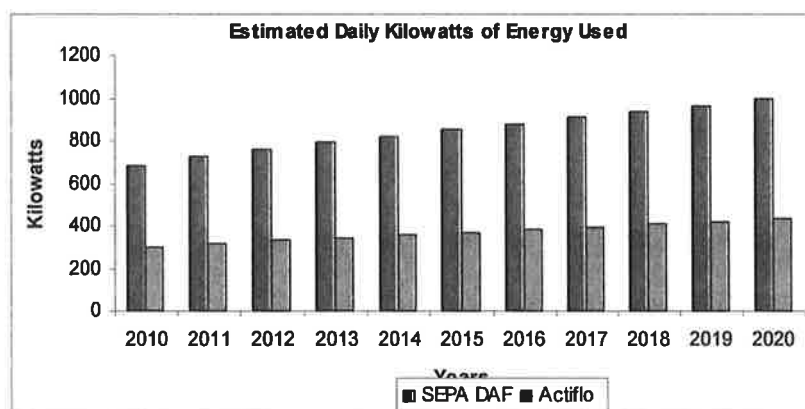
The following assumptions have been made during this calculation.

- A CPI of 3% has been applied with the exception to electricity where there is an increase of 5%.
- Depreciation is calculated based on a straight line with no residual based on a twenty year useful life.
- Operating cost is as per tender documents (i.e. some doubt as to whether the SEPA DAF operating cost would be as claimed).
- Average flows are as per the 2003 KBR report



Estimated annual operating expenditure (SEPA DAF & ActiFlo)

Annual electricity consumption of each unit is presented in the following chart and the ActiFlo is the more greener product compared with the SEPA DAF.



Estimated Daily power consumption in kilowatts (SEPA DAF & ActiFlo)

Technical Considerations

Further to the cost implications of both systems the following issues also need to be considered when selecting the appropriate component for pretreatment.

- 1) Available space – The Actiflo unit is only 3.6m wide by 7.4m long. This allows it to sit on the existing pad without having to relocate any of the existing infrastructure such as the Alum tank. This small footprint also provide maximum flexibility at the site to cater for the other upgrades that will be required both initially and to cater for the Ultimate plant flow. The proposed DAF has a footprint 18.4m by 4.2m. This will require the current pad to be extended, the retaining wall closest to the CMF to be moved and the Alum tank to be removed. This would add significant costs.
- 2) Capacity – The DAF has a capacity of 83 l/s which equates to the peak flow currently predicted for 2020. However with the pending revision of Adelaide's Growth Boundary this figure may change. The Actiflo unit selected has an upper bound treatment capacity of 173 L/s or 15 ML/d. This means that expansion of the pretreatment component is unlikely to be required in the medium to long term.
- 3) The Actiflo unit is operating in the middle of its operating range. This provides significant contingency. A unit operating at the top of its range may experience breakthrough (some sand passing through the process) and hence reduce the effectiveness of the CMF. The fact that the plant is operating in its lower range initially may reduce the volume of chemical dosing required and hence the operating costs.
- 4) Sludge removal from the Actiflo is expected to be much simpler than the DAF. Additional cost is likely if sloped hoppers are added to the DAF to make desludging easier.
- 5) Peak Flow – With a much higher peak flow capacity in the Actiflo it will enable a greater volume of effluent to be treated when catering for peak winter flows and after the plant has been taken off line for maintenance and catch up is required. In these instances it may be desirable to treat above the predicted peak flow for short periods of time (say up to 1 week)
- 6) Carbon Footprint. The DAF unit proposed has a predicted energy usage twice that of the Actiflo. Although the cost of Carbon is not yet incorporated into the financial analysis it should at least be considered.
- 7) Council's WWTP operations staff have assessed the ease of maintenance of both systems and believe that the Actiflo will be a simpler unit to operate. The shut down and start up operation is almost instantaneous which is important when there are changing feed conditions as is likely with the operation of the current fully mixed lagoon.

Part 2 – Continuous Micro-Filtration (CMF) Upgrade

Both short listed tenderers provided a similar product which is to upgrade the existing filtration membranes to Low Pressure PVdF L10V membranes with porous size of 0.04 micron (4×10^{-5} mm). New membranes are capable of providing high flow rates and it is expected to gain a 2 log reduction from the Department of Heath. Compared to the existing membranes the

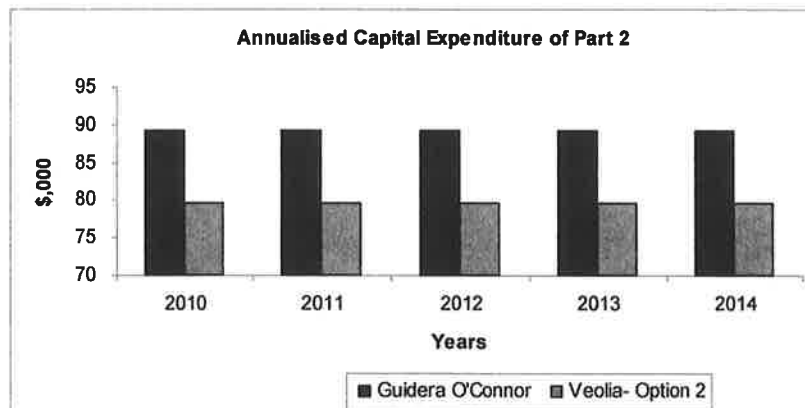
operational cost of new membranes will be lower as the new membranes will operate at a lower pressure and will produce a higher quality water.

The continuous Micro Filtration (CMF) units comprise of 180 membrane modules which need to be replaced every 5 years. In general each module cost around \$1800 and total replacement cost will be around \$300-350K.

	Renew membranes (option 1)	Upgrade to new low pressure unit (option 2)	Comment
Flow rate	34L/s (total)	60 L/s (total)	Higher flow rate
Chemical resistance	Not resistance to chlorine	Chlorine resistance	Adds another barrier to micro- organisms and prevent algal growth
Back wash pressure	600 KPa	200 KPa	lower power consumption
Porous size	0.2 Micro metre	0.04 micro metre	Increases the quality of treatment
Log reduction	No	Minimum 2 log reduction	Comply with new regulations
Cost	\$305,000	\$397,970	

Comparison of two options offered by Veolia

Either option from Guidera Conner or Veolia in the supply of the filtration component for the low pressure unit will have similar operating costs and are compared on purchase cost only. Veolia water supply cost of \$ 397,970 with a saving of around \$49k over the life of the asset.



Annualised capital expenditure for part 2 (GO & Veolia)

Considering technical knowledge, experience in similar projects, understandability of Department of Health requirements and pricing Veolia is the preferred contractor for Parts 1 and 2 for this project.

Evaluation panel members, Mr Silby and Veolia met the Department of Health on 23rd April 2009 to understand views and thoughts of DH. Outcomes of the meeting were as follows;

- High possibility of getting minimum of 2 log reductions for the CMF unit upgrade (with the option 2 of Veolia). However this is under discussion with the membrane manufacture (Memco) at the present.
- DH reluctant to comment about log reductions for lagoons but said that it is highly cost intensive work.
- DH commented that there is a possibility of getting 3 log reductions for chlorination plant and another 1.5 -2 log reduction for UV treatment plant which will be considered in part 3 & 4 of the overall upgrade.

Parts 3 and 4 of the Mount Barker WWTP upgrade project will be considered with future budget allocations and will be subjected to a future tender call.

POLICY IMPLICATIONS

1. Financial/budget

\$ 1,175,000.00 has been allocated within the 2008/09 budget for parts 1 and 2 excluding grant income.

Stage 3 and 4 of the Mount Barker WWTP upgrade project has been included within the draft 2009/10 budget for \$803,000.00 together with a grant income of \$445,000.

There is a long lead time for the supply of the unit due a high demand within the waste water industry with the uptake in reuse projects. The overall expenditure for 2008/09 is expected to be approximately \$400,000.00 to \$500,000.00 with the balance carried forward into the 2009/10 financial year.

The LGA applied (behalf of SA Councils) for a federal grant under State wide Wastewater Re-Use Project which is scheduled for completion in June 2010 with final reports due after that date.

A maximum of \$ 445,000.00 has been secured from LGA for the overall project (part 1-4 inclusive) which is subjected to a total expenditure of at least \$ 1,785,000.00 (Council's minimum commitment \$1,340,500.00) with the project completed by June 2010.

Projected cost for the each part of the project are as follows;

Part 1 – Pre treatment	= \$ 660,000
Part 2 – CMF upgrade	= \$ 400,000
Part 3 – UV treatment plant	= \$ 450,000 (est.)
Part 4 – Chlorination plant & pump station	= \$ 350,000 (est.)
Total cost for project	= \$1,860,000
Government grant	= \$ 445,000
Actual cost to the Council	= \$1,415,000

2. Legal

Tenders have been called in accordance with Council's Code of Tendering and Procurement policies.

Council's Code of Tendering policy states:

"All information provided between Tenderers and the Council shall be treated as confidential information during the contract selection process. Both the Tenderer and the Council shall undertake to maintain that information as confidential and commercial - in - confidence during the contract selection process and after the contract is formally awarded, except for information which the public has a right to know about after the contract is awarded, as follows:

- The name of the successful Tenderer;
- The value of the contract; and
- The nature of the contracted work (location, type of work, benefit for the community).

A contract with the successful contractor prepared by Council's lawyers will be established with the contractor.

No EPA licence variation is needed for the Mount Barker WWTP Upgrade.

Use of reclaimed water is regulated by the Department of Health. Discussions with the Department regarding the use of reclaimed water in the Hillgrove mining operation require the reclaimed water to be treated to a quality equivalent to that of municipal use with public access. The treatment must achieve a log reduction of 5.0 for viruses, 3.5 for protozoa and 4.0 for bacteria.

Applications for Log reductions shall be lodged to the Department of Health by the successful tenderer or tenderers. The plant must include automated monitoring, logging and alarms as required to satisfy Department of Health that the process is sound and particular log reduction can be achieved

3. Staffing/Work Plans

The Tendering process, assessment and award have been undertaken by existing staff from the council and Walbridge & Gilbert. The Contract will be superintended by council staff.

4. Environmental

Reduce the volume of treated effluent discharged into the Mount Barker creek by July 2010 and increase the volume of treated wastewater reused. With the operation of Hillgrove Copper Pty Ltd, Council has a target of 90% usage of treated effluent by end of 2010. The following chart shows the annual treated effluent discharge to the Mount Barker Creek over last 5 years. The discharge occurs over the winter months.

The previous upgrade completed during 2006/2007 has allowed Council to further increase the volumes of treated wastewater reused with a reduction in the volume discharged to Mount Barker Creek (see table below)

Year	2003/04	2004/05	2005/06	2006/07	2007/08
Annul discharge to creek (million litres)	575	602	607	310	344

Annual treated effluent discharge to the Mount Barker Creek

Tenderer's Management system certified by AS/NZS ISO 14001:2004.

ISO 14001:2004 which specifies requirements for an environmental management system (EMS) to enable an organization to develop and implement a policy and objectives which take into account legal requirements and other requirements to which the organization subscribes, and information about significant environmental aspects.

5. Social

The upgrade has been considered within the Strategy for Future Collection, Treatment and Reuse for CWMS Effluent -2020 prepared by KBR in 2003. However this will need to be further considered with the State Government's 30 year growth study.

Upgrade will be provide

- extra treatment capacity for future CWMS flows
- highly treated water and comply with new regulations.

6. Strategic Plans

Mount Barker District's Community Strategic Plan 2004 – 2007
3 Environment

Objective 1 All development in the District occurs in an environment, social and economic sustainable manner.

Objective 4 Provide a leadership role in a range of environmental issues including water management

Strategy 3.10 Develop a water resource management strategy that encompasses all areas and activities that impact on water quality, water quantity and flooding involving all key stakeholders. Take advantage of potential opportunities through use of reclaimed effluent.

5 Community Assets

Objective 3 Community facilities are provided to the highest standard meeting local community needs.

Strategy for future collection, treatment and reuse of CWMS effluent -2020 prepared by Kellogg Brown and Root Pty Ltd (KBR) in August 2003;

Water conservation by optimum use of reclaimed water (eg; Hillgrove Copper Pty Ltd, irrigation of parks and gardens). Water is used in a sustainable manner reducing the demand for River Murray water and the pressure on surface and ground water.

To provide adequate CWMS treatment capacity for the future growth in the Council area.

A Strategic and Business Plan for CWMS will be developed during 2009/2010.

7. Risk Assessment

The following risk factors will be eliminated with the upgrade of the WWTP

- Risk of overflow due to insufficient capacity during high rainfall
- Risk of processing low quality water as a result of high flow rates

Risk assessment of the undertaking each part of the project will be conducted by the successful tenderer after awarding the contract and before starting the project work.

8. Asset Management

There will be a positive impact on Council's sustainable provision of services from infrastructure assets as a result of increased capacity of the WWTP and reduce the cost per Kilolitre of operational expenditure.

The pre-treatment unit will be an additional asset and reduce the annual operating cost of pre-treatment on a volume basis of effluent treated. The unit will improve the water quality prior to the Continuous Micro Filtration (CMF) which in turn reduces the maintenance cost of the CMF. This unit has a useful life of approximately 15 years.

Existing membranes in the CMF shall be disposed of due to the end of their useful life. New membranes will increase the life of the CMF unit by five (5) years. Operational and maintenance costs will be reduced with the installation of the low pressure CMF.

COMMUNITY CONSULTATION**1. Customer Needs Analysis**

The existing plant is operating at maximum capacity. Upgrade is necessary to meet increasing demand and meet new reclaimed water guidelines.

2. Promotion/Communications

Project outcomes will be published in The Courier.

CONFIDENTIAL ATTACHMENT 1 - PRICING SUMMARY
TENDER 2008.022 - MOUNT BARKER WASTEWATER TREATMENT PLANT UPGRADE
PART 1 - PRE-TREATMENT

#	Company	Options	Price	Op. Ex Cents per KL	Operational cost	Process Description	Comments
1	AJM Environmental	Supply & install of pre-treatment system including reaction tank, DAF unit and 6 media filters Supply DAF only Inclusion of Automatic De-sludge	\$1,650,000 \$1,265,000 \$107,000	36.61	Power : 250,000 kWh per year Labor : up to 300 hours per year Chemical : Alum up to \$500,000, Caustic up to \$125,000 Shutdown - up to 40 hours per year Parts- \$ 10000 in the future years Servicing - 40 hours per year	Proposed system consists of reaction tank, DAF unit and 6 media filters. Alum use as coagulant in the reaction tank and caustic will be used for pH correction	This is over our budget and operating expenditure is high
2	Amiad Water Systems	System consists of four (4) GRP pressure filter vessels of 1800mm diameter installed in a 40ft Hi Cube container.	\$480,080	2.19	Power : 11680 kW Hours per year Labor : 52 hours per year Chemical : \$35000 per year Maintenance : 8 hours every 6 months	The system uses prescreening filter and four (4) GRP pressure filter vessels for pre-treatment process. 100 micron screen use to provide pre-screening process. Pressure filter vessels are filled with Nextsand that has a nominal filtration degree of 3-5 micron. Filter media consist of Gravel -8/16 coarse sand media and Nextsand. Project duration is 32 weeks Maximum daily flow rate 6.9 ML/day	Amiad significantly low on qualitative criteria Using granular filter media which is not preferred by technical expertise of evaluation panel

3	Aquatec- Maxcon	DAF- Pre treatment system	\$1,159,336	Not provided	Information was not provided with the tender documents.	<p>The new DAF mainly consist of flotation tank, ejector, air saturation vessel which is similar to existing DAF. Circular tank will be use as floatation tank and circular scrapers are mounted at the top. The thicken sludge float is used by scrapers.</p> <p>In alternative 02 Aquatic-Maxcon offered one unit DAF and two train DAF systems</p>	High capital cost.
4	Veolia Water	DAF plus DAFF- pre treatment polishing	\$2,753,094	6.84	<p>1. Coagulant 150-200ppm of alum</p> <p>2. Polymer 0.5-1.0 ppm of LT25 Anionic Polymer</p> <p>3. Microsand- \$5 per day</p> <p>4. Power – 25kW load</p> <p>5. Assume that, 2 hour labor needed per week and service contract about \$12,000 per year</p>	<p>Veolia suggest a Actiflo which is similar to conventional- type clarifier. Chemical coagulant is added to raw wastewater and process is enhanced by use of microsand. Microsand act as seed for floc formation increase the surface area for flocculation..</p> <p>System uses Allen Bradley PLC controls</p>	PREFERRED TENDER (see financial and non financial evaluation parts of the report)
5	Guidera O'Connor	Sewa Water DAF-300	\$651,855	<p>5.10 (case 1) 10.60 (case 2)</p>	<p>1. Power -57.5 kW load</p> <p>2. Labor 4 hours per week</p> <p>3. Chemical Alum usage 4ppm (case 1) Alum usage 200-300ppm (case 2- current usage)</p> <p>4. Annual service & maintenance cost \$12,000</p>	<p>Pre-treatment unit comprises of two parts; the DAF and galvanized recycle skid which is similar to existing unit.</p>	(see financial and non financial evaluation parts of the report)

				(assumed)			
6	ODIS Filtering Ltd		\$749,985	4.50	Energy cost 40,000kWh/year Alum doing 52.56-129.6 KL per year	The pre treatment will consist of three stages including Screen filtration (200 micron), Course Filtration and Sand Filtration using deep bed filters. The Odismatic self cleaning filters will be used in the first stage. The water flows through a double stage filtration consisting of alum coagulation and multistage coarse filtration and sand filtration	This process use sand filtration and has possibility of bacterial growth. Not preferred by the technical expertise.
7	Water Infrastructure group	Not Provided	\$1,373,003	Not Available	Not provided	Not Provided	There are no details regarding the treatment methods or equipments they are going to use. No operating cost provided.
8	Integra Water Solutions	Submerge membrane technology which replace the requirement of a membrane unit.	3,557,910 (part 1+2)	5.24	Electricity : 41kWh, Chemical \$6300 per year Labor : 2 hours a day Service cost \$12,000 (assumption)	This is using submerged membrane technology to combine pre-treatment and micro-filtration. Maximum flow rate is 40l/s.	Provide solution for Part 1 & 2, however this is not cost effective.

* Power costs calculated using previous data and it is 13.82 cents per kW on average

Notes: Not included in the pricing summary:

- Orica Water Care Pty Ltd submitted a non conforming tender and has been eliminated on this basis
- Integra Water Treatment Solutions Pty Ltd tender a price for Part 1 and Part 2

**CONFIDENTIAL ATTACHMENT 2 – PRICING SUMMARY
TENDER 2008.22 – MOUNT BARKER WASTEWATER TREATMENT PLANT UPGRADE
PART 2- CONTINUOUS MICRO FILTRATION UPGRADE**

#	Company	Options	Price	Op. Ex Cents per KL	Operational cost Comments	Process Description	Comments
1	Veolia Water	Option A: Replace existing M10D modules with M10C modules	305,000	Not Available	Not provided	Option A membrane modules are similar to existing modules and not accredited for any log reduction values.	This system is similar to existing CMF unit. Can not achieve any log reductions
		Option B: Supply and install of 180 Siemens Memcor L10V PVdF modules (low pressure unit)	397,970	Lower to the existing plant due to low power consumption	Not provided	Option B is advanced membranes modules, chlorine resistance and low power consumption, higher flow rates attainable. Possibility of getting 2 log reduction for the option B	Preferred Tender
2	Guidera O'Connor	Supply and install of 180 Siemens Memcor L10V PVdF modules (low pressure unit)	446,609	Lower to the existing plant due to low power consumption	Not provided	Same as Option B in Veolia.	Higher capital cost compared to Veolia.
3	Integra Water Solutions	Submerge membrane technology which replace the requirement of a membrane unit.	3,557,910	Not Available	Not provided	This is using submerged membrane technology to combine pre-treatment and micro-filtration. Maximum flow rate is 40l/s.	Higher capital cost and exceed the Council's budget
4	Odis	Ultra Filtration (UF) unit	1,694,089	Not Available	Not provided	Odis proposed a UF unit for CMF unit upgrade which is capable of treating 83 L/s.	Advanced technology but higher capital cost and exceed the Council's budget

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Attachment 3 to Item 17.1

15 May 2009

Mr Brian Clancy
General Manager Infrastructure & Projects
The District Council of Mt. Barker
P.O. Box 54
Mt. Barker SA 5251

Dear Brian,

Hillgrove Copper Pty Ltd – Kanmantoo Project Update

Further to the recent email received on the 22 April 2009 from David Ninio requesting an update from Hillgrove on progress at the Kanmantoo Project towards developing the Kanmantoo Copper/Gold Mine I am pleased to outline the following.

We are targeting moving the mine into development with the commencement of civil works on the 1 October this year, with a view to being in production in the final calendar quarter of 2010 or early 2011.

To this end we are moving to complete the mine licensing process by early September. Unfortunately, for various reasons licensing has taken longer than we would have liked, nevertheless, all licensing issues now appear to be moving to a satisfactory resolution.

We are continuing to receive long lead time equipment to site, including major items of capital equipment such as the SAG mill. We are also moving to appointing mining contractors who will undertake mining operations on our behalf.

Despite unprecedented volatility in the equity, debt, currency and commodities markets over the last year, Hillgrove is fortunate that our investments in Eastern Star Gas and highly prospective gold interests in Indonesia have enjoyed a superior performance. This resulted in Hillgrove reporting a profit of \$11 million for the 2009 financial year, confirming we are a solid company and placing us in an excellent position to deliver the Kanmantoo Project.

Hillgrove has received a high level of interest from a number of overseas groups regarding partnering with a significant investment in the Kanmantoo Mine. These discussions are ongoing and likely to be concluded in the next 60 days. In the meantime, the copper price continues to trend upwards and provides a sound pricing base for the development of the project. The Kanmantoo Mine is exceptionally well placed, as it will be in production at the front end of the next commodity upward price cycle.

As Laratinga water is an important ingredient in our operations, we anticipate an early conclusion of arrangements for this water supply soon after October 2009.

The District Council of Mount Barker is an important stakeholder in the Kanmantoo Project and we wish to particularly thank the council and staff for their support and assistance during the development to date.

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Hillgrove remains totally committed to the successful development of the Kanmantoo Project, and we look forward to a long association with the DCMB as our project progresses and passes from construction and into operations.

Yours sincerely

A handwritten signature in black ink, appearing to read 'D. Archer', with a long horizontal flourish extending to the right.

David Archer
Managing Director