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Queensland Competition Authority
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22March 2011

Letter QCA Post Submission Review 20110322.docx
QE09780

Dear Rodney,

SEQ Water and Wastewater Price Monitoring

Sinclair Knight Merz (SKM) is pleased to provide the Queensland Competition Authority (the Authority) with this addendum to our reports, *SEQ Interim Price Monitoring – CAPEX and OPEX Review* and *SEQ Interim Price Monitoring – Auxiliary Data Verification*, both issued in September 2010.

Scope

The scope of this additional work is as follows:

1) Review the information relating to the South Caboolture project and amend the earlier analysis as necessary, noting that the Authority's Draft Report states that:

   "In undertaking its review, SKM noted that Unitywater did not provide supporting documentation in relation to standards for technical, design and construction requirements and the proposed program of works. SKM recommends that Unitywater make this information available and that this information be given further consideration".
2) Review the information relating to the switchboard replacement program and determine whether the project is prudent and efficient in accordance with the original TOR.
3) Note Unitywater's request to remove the water main off-take project and amend the commentary accordingly.
4) Note Unitywater's request to revisit files in their original submission and, if warranted, amend the commentary on cost disaggregation accordingly.
5) Should any of these issues result in changes to the templates, advise the Authority on these changes and make the changes in the templates.
6) Review of the comments from QUU regarding comparable benchmarks. Make suitable comments regarding the choice of benchmarks.

Each of these points is discussed further in the following sections.

1. South Caboolture Sewage Treatment Plant Upgrade and Augmentation (Stage 2)

Unitywater proposes a capital expenditure of approximately $42.5 million over the interim period to upgrade and augment the South Caboolture STP. Unitywater claims that the project is required to meet population growth and expected future increases in demand. Once finalised, the works are expected to approximately double the design capacity of the plant. The project expenditure profile is outlined in Table 1-1below.

- **Table 1-1 Proposed Expenditure profile - South Caboolture STP Upgrade and Augmentation ($m)**

Project	2010-11	2011-12	2012-13	Total
South Caboolture WWTP Upgrade	38.1	3.9	0.4	42.5

Source SKM (2010)

SKM undertook a review of the prudency and efficiency of the South Caboolture STP Upgrade and Augmentation Project in September 2010. During this review we confirmed that the existing plant is approaching its maximum capacity and there is a demonstrated need for the facility to be upgraded to meet expected population growth and load increases. Therefore, we found the project to be prudent, as it is required to meet new growth.

In the September 2010 review, we confirmed that the project is efficient, finding that the project costs are reasonable. However, we noted that Unitywater did not provide supporting documentation in relation to standards for technical, design and construction requirements. Supporting documentation has now been provided including drawings and specifications for the design.

In the September 2010 review, whilst we noted that the project was well advanced and that it would be practicable to construct the plant in 2010-11, we also noted that a proposed program of works was not provided. A program of works has now been submitted which shows the majority of construction complete in July 2011 with all construction and commissioning (including the outfall works) complete by May 2012.

During the initial review we recommended that an asset should only be added to the RAB when it begins contributing to regulated service delivery for which it was commissioned. For projects commissioned in stages, the same principle should apply. That is, the equipment associated with a commissioning stage (and its costs), should only be added to the RAB when that stage being commissioned contributes to the regulated service delivery. If a project stage

is reliant on a subsequent stage to contribute to service delivery, it should only be added to the RAB when the subsequent stage has been commissioned.

Based on the provided project program, the South Caboolture STP will only start contributing to regulated service delivery once the commissioning is complete in 2012. Consequently, it is recommended that the costs are only added to RAB once the commissioning of the plant has been completed in the 2011/12 financial year.

The project program shows the Project Management for the project completing on 3 June 2013, therefore there is likely to be a small spend within the 2012/13 financial year.

We recommend that the expenditure profile is revised to reflect the commissioning of the South Caboolture STP, as shown below.

- **Table 1-2 Revised Expenditure profile - South Caboolture STP Upgrade and Augmentation ($m)**

Project	2010-11	2011-12	2012-13	Total
South Caboolture WWTP Upgrade	0	42.1	0.4	42.5

Note: SKM has not capitalised this expenditure using the Weighted Average Cost of Capital.

2. Water Supply Facilities - Switchboard Replacement Program

In its submission, Unitywater proposed capital expenditure of approximately $4.7 million over the 2010/11-2012/13 period to replace electrical switchboards and instrumentation to ensure service continuity and compliance with electrical and instrumentation legislation and standards. The proposed project expenditure profile is outlined in Table 2-1 below.

- **Table 2-1 Proposed Expenditure profile - Switchboard Replacement Program ($m)**

Project	2010-11	2011-12	2012-13	Total
Switchboard Replacement Program	0.7	2.3	1.7	4.7

Source SKM (2010)

During the September 2010 review, there was insufficient information to undertake a detailed assessment of the prudency and efficiency of this project. Unitywater has now provided additional information, as listed below:

- Project Definition and Deliverables Form (Moreton Bay Regional Council, October 2009)
- Switchboard Replacement Ranking Spreadsheet (Moreton Bay Water, November 2009)

- Sewage Pumping Station Standard Drawings for 0-4kW Direct On Line Start Station (Unitywater, November 2010)
- Sewage Pumping Station Standard Drawings for 4 - 25kW Soft Start Station (Unitywater, November 2010)
- Specification for Electrical Installations at Sewage Pumping Stations (Unitywater, February 2011)
- Switchboard Replacement Project - Site Type Variations (excel spreadsheet, provided 8/03/11)

We have reviewed the above information, including the method used to select switchboards for replacement. The following key points are made:

- The information provided within the Project Definition and Deliverables Form and the Switchboard Replacement Ranking Spreadsheet is consistent with the budgeted amount of $4.7 million.
- The Project Definition and Deliverables Form contains a suitable review and sign off procedure, including required signatures from a number of key resources (including the project sponsor, program manager, project manager and delivery manager) to verify items such as scope, procedural requirements, schedule and cost estimate. However, there is no evidence that this review and sign off procedure has been undertaken, i.e. no dates or signatures have been entered within the appropriate table. The form also indicates that for capital projects over $1.0 million, additional approval is required. There is no evidence of this additional approval being sought or given.
- Unitywater claims that "*the existing switchboard assets have deteriorated to a poor state providing higher risks to the safe and reliable operation of the network... leaving the existing switchboards in situ and continuing with the insufficient investment program provides for exposure to unsafe installations and underperforming assets"*. We agree that the project is prudent as it is required to renew existing infrastructure.
- We have reviewed the method used to select switchboards. A multi criteria assessment has been used to rank and select the priority switchboards for replacement. Unitywater has established the following four criteria to assess the need to replace switchboards: safety, reliability, capacity and asset life. The highest ranked criteria are safety (50%) reliability (25%) and capacity (15%). We agree that safety should have the highest priority. We suggest that safety could even be increased to a higher weighting (e.g. 70%) and that reliability, capacity and asset life criteria be assigned the same weighting. However this is a very subjective area and is normally based on personal preferences and experience.

- A range of records have been used as part of the review including photos, fault data, audits and anecdotal history. The scoring system used is reasonable. The switchboards are arranged by rank into financial years, with the highest priority switchboards replaced in 2010/11 and the medium ranked switchboards replaced in the following two financial years. There appears to be no planned replacement of switchboards with an overall ranking of less than 450. It is noted that there are a number of switchboards which have a low overall ranking, but a high score in one of the four areas. It is suggested that these scores are also considered during the selection of switchboards for upgrade, for example a site which scores 5 or above in safety (i.e. a switchboard that is not AS3000 compliant) or 9 and above in any category may need to be automatically considered for replacement. Overall we would agree that the methodology used to select and prioritise switchboards is reasonable.
- The efficiency of a project is based on three criteria: the scope of the works, the standard of the works and the magnitude of the costs.
- The replacement of switchboards with safe, more reliable switchboards is considered to be the best means of achieving the desired outcome, therefore the project is considered efficient (cost-effective) in terms of the scope of the works.
- Based on the information provided, we understand that the switchboard design is a standardised design template which will be modified to suit individual and specific site conditions. The design will have RPEQ signoff and will be reviewed by engineering staff for conformance to business requirements. In addition, that the switchboards will be installed and tested to Moreton Bay Water (now Unitywater) standards. Additionally that the installation of a new Remote Terminal Unit device for each site will increase the sophistication of network control. We consider the project to be efficient in terms of the standard of the works.
- Based on the drawings supplied for standard pump stations it is considered that the costs included in the estimates are of the right order of magnitude. The costs appear low for some of the larger switchboards, e.g. Memorial Drive North Lakes with two 195kW variable speed drives (VSDs). SKM has attempted to further contact Unitywater to verify the extent of the capital works, particularly for the larger switchboards, but has been unable to do this within the timeframes of this review. Based on the information provided to date we consider the project to be efficient in terms of the magnitude of the costs.

In conclusion, we find the project to be prudent and efficient.

3. Water Main Off-Take and Supply Main from Northern Interconnector Pipeline

In its submission, Unitywater proposes capital expenditure of $4.3 million over the 2010/11-2012/13 period to construct a new water main linking the Boundary Reservoir Complex with the Northern Pipeline Interconnector. The proposed project expenditure profile is outlined in Table 3-1 below.

- **Table 3-1 Proposed Expenditure profile - Water Main Off-take - Northern Interconnector Pipeline ($m)**

Project	2010-11	2011-12	2012-13	Total
Water Main Off-take - Northern Interconnector	2.0	2.1	0.1	4.2

Source SKM (2010)

During the September 2010 review, we were unable to assess the prudency and efficiency of this project as Unitywater was unable to provide the requisite information within the project timelines.

Following the September 2010 review, Unitywater have advised that the Water main off-take and supply main from northern interconnector pipeline project is linked to the Boundary Road Reservoir No3 (24ML) project. There is a high probability that both of these projects will not proceed within the next five years due to a revised instruction from the Water Grid Manager that supply should be arranged through an alternative project. Unitywater have therefore confirmed their intention to remove these projects from the budget.

SKM recommends that the Authority amend its commentary on the above project on the basis that this project has been indefinitely deferred, and removes it from the budget.

4. Auxiliary Data - Cost Disaggregation

SKM acknowledges Unitywater's comment regarding the level of cost disaggregation provided within their submission and accompanying supporting documentation.

Our assessment of the comprehensiveness and accuracy of auxiliary data provided by Unitywater was based upon the information available to SKM during the September 2010 review. We noted throughout the *SEQ Interim Price Monitoring – Auxiliary Data Verification Report* that Unitywater were constrained by the availability of information at hand, which was predominately provided by the Councils.

We can confirm that Unitywater provided a significant amount of supporting information accompanying their submission to the Authority which was consolidated in the master file "Unitywater IPRM File and Work-paper Mapping.xls". This consolidated list of supporting information was instrumental to the analysis conducted by SKM.

Our appraisal of the information supplied by Unitywater related to specific data which the Authority required at the time of the submission which was either not available, incomplete, omitted, erroneous or not provided in accordance with the requirements set forth by the Authority.

We recognise that this is the first review undertaken by the Authority and first time the Authority's templates have been used. We would encourage Unitywater to continue to provide information and to develop their reporting procedures to facilitate future reviews.

5. Changes to the templates

During the September 2010 review, a revised template was provided by SKM to the Authority based on the removal of any projects not found to the prudent and efficient, as shown below:

- **Table 5-1 Proposed revisions to Unitywater's information requirement template**

Project	FY10/11 Total	FY11/12 Total	FY12/13 Total
Water Supply Service Reservoir, Boundary Road Reservoir No 3 (24ML)	$ 515	$ 4,283	$ 163
Water Main Off-take - Northern Interconnector	$ 2,034	$ 2,131	$ 87
Water Supply Facilities - Switchboard Replacement Program	$ 738	$ 2,266	$ 1,663
Total	**$ 3,287**	**$ 8,680**	**$ 1,912**

As a result of this review, the revisions as shown in the September 2010 template require some amendment as shown below:

- **Table 5-2 Updated revisions to Unitywater's information requirement template**

Project	Template Updated Revision
Water Supply Service Reservoir, Boundary Road Reservoir No 3 (24ML)	No change - both projects have been indefinitely deferred and removed from the budget
Water Main Off-take - Northern Interconnector	
Water Supply Facilities - Switchboard Replacement Program	Project has been found to be prudent and efficient and should be reintroduced to the budget.
South Caboolture STP Upgrade and Augmentation	A change is required to reflect the delay to the commissioning of the plant (as shown in Table 1-2).

The revised template is shown in **Attachment A**.

In addition, we note again that there are some variations between the Required Information Template provided and Unitywater's project list. This variation results in the generation of negative costs within the Required Information Template. We continue to recommend that these differences should be resolved.

6. Comparable Benchmarks

Benchmarking is a tool that is widely used by both regulators and utilities to measure the relative efficiency of a business relative to its peers. However it has a significant limitation in that it is difficult to normalise benchmarks to accurately correct for business-specific differences.

For the expenditure review, the entities are required to forecast to a high level of accuracy. Business specific costs must also be taken into account in the review. SKM's expenditure review has therefore focussed on verifying that the underlying operating forecasts provided by the entity are reasonable and we have not relied unduly on benchmark comparisons in making our assessment.

However, our view is that it is appropriate to use benchmarking as a further test to provide a high level indication that forecast expenditures are reasonable.

When benchmarking expenditures, it is important to remember that normalising variables is often imperfect, and it is generally difficult to normalise to a high degree of accuracy.

We have made the following considerations while undertaking the benchmarking exercise:

- Historic characteristics, designs, standards, climate and topography will mean there will always be valid differences between water authorities
- Simple normalisations have been avoided (such as OPEX per length of network will favour smaller utilities with large networks but few customers, and OPEX per customer will favour urban utilities with smaller pipe lengths but a large customer base)
- The number, size and level of sewage treatment plants may skew the results

We have used a two dimensional normalisation, using the two cost drivers for overall operation costs to create a cost curve for comparison. The size of the distribution network (ie the length of pipeline in the network) was identified as a driver which would be relevant to maintenance, operations, and field operations, whilst the number of customers will be driver for such costs as customer service, billing and meter services.

Detailed calculations have not been supplied as they are linked to data sources that are commercial in confidence; however a detailed methodology used to produce Figures 4-10 and

4-11 in the *SEQ Interim Price Monitoring – CAPEX and OPEX Review Report* has been provided below.

- The following data was taken from the NWC PR data set for 2008 for all of the reporting utilities:
  - Total connected properties - water supply (000s)
  - Total connected properties - sewerage (000s)
  - Length of water mains (km)
  - Properties served per km of water main
  - Length of sewerage mains and channels (km)
  - Properties served per km of sewer main
  - Operating cost - water ($/property)
  - Operating cost - sewerage ($/property
- Utilities with incomplete data or former SEQ Council utilities (ie Gold Coast Water, Brisbane Water) have been filtered.
- A CPI index has been applied to 2008 operating costs to allow for comparison with 2010 supplied by the entities in the submission
- OPEX ($)/connection and connection/km of pipeline for 2010 have been calculated from data supplied by the entities
- A logarithmic trend line has been added to the data

NWC PR data can be obtained from the following website:

http://www.nwc.gov.au/www/html/1087-national-performance-report-2007-08---urban-water-utilities.asp?intSiteID=1

We bring to QCA's attention that the comparison of water supply operating costs includes the pass through cost of bulk water (as given in the NWC data set). The SKM report notes the cost of bulk water is higher in SEQ than other capital cities as a factor in operating costs for all three utilities appearing to be higher than their interstate peers. While it is understood that these are "pass through costs" and not within the control of the entities, the short time frame to undertake the assessment did not permit an analysis of the operating costs, with non-controllable costs excluded.

Please contact me should you have any comments or queries on the information above.

Regards

[redacted]

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Attachment A – Revised Template (March 2011)

AUTHORITY

SEQ INTERIM REVENUE MONITORING - INFORMATION REQUIREMENT TEMPLATE

5.6.1 CAPITAL EXPENDITURE

Entities are to provide total capital expenditure (i.e. excluding capital contributions). If establishment costs are included as a capital item, this should be specified as a separate asset class in the Business Details schedule, so that the values for the establishment costs are shown separately in this Schedule.

Capital expenditures is to be entered in the year that the asset is commissioned.

See section 5.6.1 of the Information Requirements.

Capital Expenditure for Unitywater

Reporting year = 2011

Geographic Area 1 - Moreton Bay

TOTAL FOR GEOGRAPHIC AREA

value of capex - new	$'000	59,828.2	51,490.2	149,496.6	58,885.5	23,518.4	0.0	0.0	0.0	0.0
value of capex - renewal of existing infrastructure	$'000	0.0	14,783.8	15,473.2	17,620.8	12,059.3	0.0	0.0	0.0	0.0
value of capex - improvements	$'000	0.0	134,975.0	61,585.5	9,503.7	5,018.7	0.0	0.0	0.0	0.0
value of capex - compliance	$'000	0.0	3,448.3	8,125.2	17,090.1	9,811.6	0.0	0.0	0.0	0.0
Total capital expenditure	**$'000**	**59,828.2**	**204,697.4**	**234,680.5**	**103,100.0**	**50,408.0**	**0.0**	**0.0**	**0.0**	**0.0**

DRINKING WATER

Reservoirs

value of capex - new	$'000	0.0	5,220.1	504.4	-1,171.3	1,442.1				
value of capex - renewal of existing infrastructure	$'000	0.0	841.7	119.3	58.5	0.0				
value of capex - improvements	$'000	0.0	1.9	247.4	133.2	0.0				
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**6,063.8**	**871.1**	**-979.5**	**1,442.1**	**0.0**	**0.0**	**0.0**	**0.0**

swatman:
Removal of Water Supply Service Reservoir, Boundary Road Reservoir No 3 (24ML)

Pump stations

value of capex - new	$'000	0.0	77.4	247.4	419.9	174.9				
value of capex - renewal of existing infrastructure	$'000	0.0	269.2	497.0	1,740.2	1,873.7				
value of capex - improvements	$'000	0.0	1,792.9	0.7	0.0	0.0				
value of ca ex - com liance	$'000	0.0	141.1	0.0	0.0	0.0				
Total capital expenditure	**$'000**	**0.0**	**2,280.5**	**745.1**	**2,160.1**	**2,048.6**	**0.0**	**0.0**	**0.0**	**0.0**

swatman:
Includes the Water Supply Facilities - Switchboard Replacement Program

Treatment

value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Associated telemetry and control systems

value of capex - new	$'000	0.0	507.3	977.8	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**507.3**	**977.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Meters

value of capex - new	$'000	1,120.4	284.2	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	35.1	204.8	315.5	316.3				
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**1,120.4**	**319.3**	**204.8**	**315.5**	**316.3**	**0.0**	**0.0**	**0.0**	**0.0**

Billing systems

value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000	0.0	0.0	116.0	62.5	0.0				
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**116.0**	**62.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Corporate systems

value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Sundry property, plant and equipment

value of capex - new	$'000	68.6	1,423.1	870.9	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000	0.0	0.0	90.0	0.0	0.0				
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**68.6**	**1,423.1**	**960.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Land

value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Building other than infrastructure housing

value of capex - new	$'000	26.2	461.2	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**26.2**	**461.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Distribution infrastructure not included in another category

value of capex - new	$'000	19,039.6	27,210.8	3,507.0	2,064.8	2,346.6				
value of capex - renewal of existing infrastructure	$'000	0.0	1,796.5	1,518.3	1,701.5	1,243.0				
value of capex - improvements	$'000	0.0	310.9	1,585.1	2,263.7	2,132.3				
value of capex - compliance	$'000	0.0	0.0	116.6	62.8	0.0				
Total capital expenditure	**$'000**	**19,039.6**	**29,318.2**	**6,727.1**	**6,092.9**	**5,722.0**	**0.0**	**0.0**	**0.0**	**0.0**

swatman:
Removal of Water Main WM NLC (500mm x 2800m) Off take and supply main from Northern Interconnected Pipeline.

Support services

value of capex - new	$'000	0.0	141.8	153.9	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	0.0	3,143.7	3,081.1	1,622.6				
value of capex - improvements	$'000	0.0	0.0	1,735.8	2,008.6	847.0				
value of capex - compliance	$'000	0.0	0.0	198.2	106.7	0.0				
Total capital expenditure	**$'000**	**0.0**	**141.8**	**5,231.6**	**5,196.5**	**2,469.6**	**0.0**	**0.0**	**0.0**	**0.0**

Other 1 [please specify]

value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Other 2 [please specify]

value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Unallocated cash contribution

value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

OTHER CORE WATER SERVICES

Reservoirs

value of capex - new	$'000	0.0	0.8	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Pump stations

value of capex - new	$'000	0.0	236.3	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000	0.0	3,616.6	0.0	0.0	0.0				
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**3,852.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Treatment

value of capex - new	$'000	0.0	0.0	25.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	0.0	407.9	338.6	450.0				
value of capex - improvements	$'000	0.0	0.0	0.0	44.5	23.9				
value of capex - compliance	$'000	0.0	2,549.7	0.0	8.9	124.3				
Total capital expenditure	**$'000**	**0.0**	**2,549.7**	**432.9**	**392.0**	**598.2**	**0.0**	**0.0**	**0.0**	**0.0**

Associated telemetry and control systems

value of capex - new	$'000	0.0	3.7	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**3.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Meters										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000	0.0	0.0	81.9	126.2	126.5				
Total capital expenditure	**$'000**	**0.0**	**0.0**	**81.9**	**126.2**	**126.5**	**0.0**	**0.0**	**0.0**	**0.0**
Billing systems										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Corporate systems										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Sundry Property, Plant and Equipments										
value of capex - new	$'000	0.6	43.0	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	46.5	0.0	0.0	0.0				
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.6**	**89.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Land										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Buildings other than infrastructure housing										
value of capex - new	$'000	5,768.8	0.0	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	140.4	0.0	0.0	0.0				
value of capex - improvements	$'000									
value of capex - compliance	$'000	0.0	0.0	20.5	11.0	0.0				
Total capital expenditure	**$'000**	**5,768.8**	**140.4**	**20.5**	**11.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Distribution infrastructure not listed above										
value of capex - new	$'000	6,122.0	734.4	90.8	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	0.0	14.1	0.0	0.0				
value of capex - improvements	$'000	0.0	5,724.2	42.0	405.4	206.1				
value of capex - compliance	$'000	0.0	0.0	0.0	562.0	655.3				
Total capital expenditure	**$'000**	**6,122.0**	**6,458.6**	**146.9**	**967.4**	**861.4**	**0.0**	**0.0**	**0.0**	**0.0**
Support services										
value of capex - new	$'000	0.0	0.0	108.5	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	0.0	27.4	26.8	14.1				
value of capex - improvements	$'000	0.0	0.0	129.9	17.5	7.4				
value of capex - compliance	$'000	0.0	0.0	1.7	0.9	0.0				
Total capital expenditure	**$'000**	**0.0**	**0.0**	**267.5**	**45.2**	**21.5**	**0.0**	**0.0**	**0.0**	**0.0**
Other 1 [please specify]										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Other 2 [please specify]										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Unallocated cash contribution										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

AGGREGATE NON-CORE WATER SERVICES

Reservoirs										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Pump stations										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Treatment										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Associated telemetry and control systems										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Meters										
value of capex - new	$'000									
value of ca_ ex - renewal of existin_ infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Billing systems										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Corporate systems										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Sundry Property, Plant and Equipments										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Land										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Buildings other than infrastructure housing										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Distribution infrastructure not listed above										

value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Support services										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Other 1 [please specify]										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Other 2 [please specify]										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Unallocated cash contribution										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

WASTEWATER VIA SEWER

Reservoirs										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Pump stations										
value of capex - new	$'000	0.0	-2,870.7	69,952.4	7,017.5	848.2				
value of capex - renewal of existing infrastructure	$'000	0.0	3,110.6	3,062.1	990.8	351.1				
value of capex - improvements	$'000	0.0	8,554.4	5,948.1	223.5	96.8				
value of capex - compliance	$'000	0.0	514.0	816.1	546.8	165.8				
Total capital expenditure	**$'000**	**0.0**	**9,308.3**	**79,778.8**	**8,778.6**	**1,461.8**	**0.0**	**0.0**	**0.0**	**0.0**
Treatment										
value of capex - new	$'000	0.0	816.4	52,871.7	33,084.2	4,524.0				
value of capex - renewal of existing infrastructure	$'000	0.0	241.8	864.3	886.6	876.3				
value of capex - improvements	$'000	0.0	114,360.9	47,836.9	75.2	33.2				
value of capex - compliance	$'000	0.0	0.0	550.6	9,573.9	7,298.2				
Total capital expenditure	**$'000**	**0.0**	**115,419.2**	**102,123.5**	**43,619.9**	**12,731.6**	**0.0**	**0.0**	**0.0**	**0.0**
Associated telemetry and control systems										
value of capex - new	$'000	0.0	0.0	56.0	30.1	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000	0.0	14.3	0.0	0.0	0.0				
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**14.3**	**56.0**	**30.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Meters										
value of capex - new	$'000	0.0	0.0	15.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	0.0	23.2	12.5	0.0				
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**38.2**	**12.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Billing systems										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Corporate systems										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Sundry Property, Plant and Equipments										
value of capex - new	$'000	79.9	474.2	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**79.9**	**474.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Land										
value of capex - new	$'000	9,621.6	0.0	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**9,621.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Buildings other than infrastructure housing										
value of capex - new	$'000	29.9	689.7	0.0	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	721.9	15.0	0.0	0.0				
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**29.9**	**1,411.6**	**15.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Distribution infrastructure not listed above										
value of capex - new	$'000	17,950.3	14,216.4	19,813.2	17,352.4	14,134.0				
value of capex - renewal of existing infrastructure	$'000	0.0	3,296.3	1,383.1	4,784.7	3,293.2				
value of capex - improvements	$'000	0.0	154.4	1,793.4	1,877.1	665.8				
value of capex - compliance	$'000	0.0	70.6	6,108.0	5,966.1	1,441.6				
Total capital expenditure	**$'000**	**17,950.3**	**17,737.7**	**29,097.7**	**29,980.3**	**19,534.5**	**0.0**	**0.0**	**0.0**	**0.0**
Support services										
value of capex - new	$'000	0.0	0.0	22.2	0.0	0.0				
value of capex - renewal of existing infrastructure	$'000	0.0	186.2	3,959.8	3,590.8	1,891.0				
value of capex - improvements	$'000	0.0	0.0	2,023.0	2,340.9	987.1				
value of capex - compliance	$'000	0.0	0.0	230.9	124.3	0.0				
Total capital expenditure	**$'000**	**0.0**	**186.2**	**6,235.9**	**6,056.1**	**2,878.1**	**0.0**	**0.0**	**0.0**	**0.0**
Other 1 [please specify]										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Other 2 [please specify]										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Unallocated cash contribution										
value of capex - new	$'000									
value of capex - renewal of existing infrastructure	$'000									
value of capex - improvements	$'000									
value of capex - compliance	$'000									
Total capital expenditure	**$'000**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

swatman:
Transfer of $38.1 million from FY10/11 to FY11/12 to reflect commissioning date of South Caboolture STP