



CLIENTS | PEOPLE | PERFORMANCE

City of Kalgoorlie-Boulder

Water Services Operating
Licence

Audit and Asset Management
Review - Final Report

June 2009



Contents

1.	Introduction	1
1.1	Scope	1
1.2	Documents Reviewed	2
1.3	Risk Assessment	2
1.4	Personnel Interviewed	2
1.5	Previous Audit	3
1.6	Assessment and Measurement of Compliance	3
1.7	Audit Time Input	4
2.	Previous Audit	5
2.1	Operational Audit	5
2.2	Asset Management Review	5
3.	Operating Licence Audit	8
4.	Asset Management System Review	25
5.	Conclusions and Recommendations	32
5.1	Operational Audit	32
5.2	Asset Management Review	33
5.3	Conclusion	35
5.4	Compliance Statement	36
6.	Post-Audit Implementation Plan	37
6.1	Personnel Involved In Discussion	37
6.2	Post-Audit Implementation Plan Time Input	37
6.3	Post-Audit Implementation Plan	37

Table Index

Table 1	Operating licence compliance rating scale	3
Table 2	Asset management review effectiveness rating scale	3
Table 3	Operational Audit Checklist	9
Table 4	Operational Audit Summary	23
Table 5	Asset Management Review Checklist	25
Table 6	Asset Management System Audit Summary	31



Table 7	Post-Audit Implementation Plan – Operational Audit	39
Table 8	Post-Audit Implementation Plan – Asset Management System Review	40

Appendices

- A Risk Assessment



1. Introduction

This Water Operating Licence and Asset Management Review was carried out on the waste water services at Kalgoorlie-Boulder for the period between 1st December 2005 and 30th November 2008 in accordance with the approved Audit Plan and the Audit Guidelines of the Economic Regulation Authority. Kalgoorlie-Boulder is located approximately 592 Kilometres east of Perth. The City was established in 1893 as a Gold Rush town and has continued to be a significant centre for mining and minerals processing. The City supports a population of approximately 30,000.

The Water Services Include:

- » The operational, maintenance and expansion of approximately 197kms of sewer collection system for Kalgoorlie-Boulder.
- » The South Boulder Wastewater Treatment Plant (WWTP) which collects and treats, on average, 8.0ML per day and produces 6.5ML of treated effluent per day. Approximately, 2.5ML per day is used to irrigate the City's parks, ovals and gardens, as well as private facilities such as schools, community facilities and non-Council sporting grounds.
- » The City has also committed to supply 1.5ML per day for a currently under construction grassed Golf Course.
- » The City has negotiated a contract with a local mining company for the on-sale for treated effluent. The minimum daily supply under the contract is 2.4ML per day.

The scope of services and licence compliance requirements are detailed in the City of Kalgoorlie-Boulder Operating Licence 4 Version OL1 dated 6th August 2008. This audit has been prepared in accordance with the "Economic Regulation Authority, Audit Guidelines: Electricity, Gas and Water Licences."

1.1 Scope

The Audit covers the period from 1st December 2005 to 30th November 2008 and was carried out on 24th February 2009 and 20th March 2009. As it is impractical to review all of the relevant documentation over this period, a sample of documents and services/events was examined in order to establish a thorough appreciation and assess compliance.

The objectives of this audit were:

- » To assess the City's operational and asset management compliance with the conditions of its operating licence.
- » Assess the City's status on recommendations made since the previous audit from April 2006.
- » To identify areas requiring improvement and make recommendations.

The methodology, order and content of the audit were:

- » Inspection of the sewer facilities, including treatment, collection and reuse systems;
- » Review of previous audit documentation and results;
- » Review of Licence Documentation, Asset Management systems, plans etc;
- » Interview with relevant personnel; and



- » Preparation of draft and final report

1.2 Documents Reviewed

The following documents, which relate to the water services operations and asset management, were reviewed during the audit.

- » Operational Licence – August 2008
- » Customer Services Charter – June 2008
- » Water Services Operating Licence Audit and Asset Management Review Final Report, GHD April 2006
- » Complaints Documentation
- » As Constructed Drawings and Plans
- » The City of Kalgoorlie-Boulder Annual Report 2007 - 2008
- » The City of Kalgoorlie-Boulder Strategic Plan 2005 – 2010
- » South Boulder WWTP – Operations and Maintenance Manuals
- » Relevant correspondence from the City to ERA
- » Capital and Operating Expenditure Plan
- » Licence from the Department of Environment and Conservation
- » Contingency and Emergency Response Plan
- » City's KPI's and reporting of performance indicators
- » The City of Kalgoorlie-Boulder's Annual Budget

1.3 Risk Assessment

A Risk Assessment completed for the Audit Plan identified the following items as high risk.

- » Sewerage services obligations due to high number of blockages in sewer system
- » Incident reports
- » Contingency Planning for asset failure
- » Asset Management Information System
- » Asset Operations
- » Asset Maintenance

A copy of the risk assessment is included in Appendix A

1.4 Personnel Interviewed

The following personnel were interviewed on the management, maintenance and operation of the water systems including:

- » The City of Kalgoorlie-Boulder



- Keith Boase – Manager Sustainability and Waste Management
- Richard Bolton – Environmental Coordinator
- Reg Franklyn – Senior Engineering Technical Officer
- Charlie Brown – Manager Finance
- Emil Saule – Waste Technical Officer

1.5 Previous Audit

The Audit report of April 2006 was reviewed and the recommendations and non-compliance issues discussed in the later sections of this report. The City of Kalgoorlie Boulder’s operational licence has been amended since the 2006 report.

1.6 Assessment and Measurement of Compliance

The Licensee’s compliance with licence requirements were assessed using the effectiveness scales in Table 1.

Table 1 Operating licence compliance rating scale

Effectiveness	Rating	Description
Compliant	5	Compliant with no further action required to maintain compliance
Compliant	4	Compliant apart from minor or immaterial recommendations to improve the strength of internal controls to maintain compliance
Compliant	3	Compliant with major or material recommendations to improve the strength of internal controls to maintain compliance
Non-compliant	2	Does not meet the minimum requirements
Significantly Non-compliant	1	Significant weaknesses and/or serious action required

In addition, the rating scale in Table 2 was used in assessing the effectiveness of the key outputs of the Asset Management System.

Table 2 Asset management review effectiveness rating scale

Effectiveness	Rating	Description
Continuously improving	5	Continuously improving organisation capability and process effectiveness
Quantitatively controlled	4	Measurable performance goals established and monitored
Well-defined	3	Standard processes documented, performed and



Effectiveness	Rating	Description
		coordinated
Planned and tracked	2	Performance is planned, supervised, verified and tracked
Performed informally	1	Base practices are performed
Not performed	0	Not performed (indicate if not applicable)

In addition to the above compliance assessment or in absence of a specific grading, observations and comments were made by the auditor with recommendations for improvement when deemed appropriate.

1.7 Audit Time Input

The professional resource requirements for the operations audit and asset management systems review were as follows:

1. Preparation of the Audit Plan and Risk Assessment	8 hrs
2. Conduct the Audit and AM Review	15 hrs
3. Prepare the Draft Report	14 hrs
4. Review and Amend Draft Report and Prepare Final Report	4 hrs
5. Total	41 hrs



2. Previous Audit

The status of the recommendations from the April 2006 Audit Report by GHD is shown in the following tables. The status of the recommendations demonstrates that some improvement has occurred since the previous audit and review. The following recommendations were completed under the Economic Regulation Authority's previous guidelines.

2.1 Operational Audit

Recommendation	Status	Further Action Required
Purchase and implement an Asset Management software system and migrate the hard and soft copy information to one system.	No Improvement – The City has obtained asset management software provided by ERA, however has not implemented and used the software.	Purchase / Develop Asset Management software and roll over all asset data to one system.
Update the Asset Management Plan for Water Services assets.	Minor Improvement - The City has started using the asset management capabilities of its financial system along with excel spreadsheets to monitor its sewer assets which are updated regularly. However the City does not use one standalone asset management system.	Purchase / Develop Asset Management software and roll over all asset data to one system.
Implement a pipe inspection, clearing and refurbishment / replacement program as priority to address the high rate of sewer blockages.	Reasonable Improvement - The City has initiated the refurbishment/replacement of poorly performing assets based on conditional appraisal from CCTV.	Expand current CCTV conditional appraisal of sewer system to create a refurbishment / replacement program to address high rate of sewer blockages.

2.2 Asset Management Review

Recommendation	Status	Further Action Required
Asset Planning/Creation/Acquisition		
Establish the strategic objectives of assets	No Improvement - The objectives are understood by the staff, however objectives are not well documented.	Identify and document asset objectives.
Document life cycle costs for all assets	Minor Improvement - The City's Asset Management system includes depreciation, replacement values and operating cost from the previous year.	Identify and document asset lifecycle costs for all assets.
Implement a system of full project evaluation for new assets	No Improvement - Small asset acquisition evaluations undertaken by staff, but not documented. Large asset	Create and implement asset creation and acquisition procedure including the evaluation of all life cycle costs.



Recommendation	Status	Further Action Required
	acquisition follows local government procedures and documented.	
Document asset details	Minor Improvement - The City has started using the asset management capabilities of its financial system to monitor some of its sewer assets.	Purchase / Develop Asset Management software and roll over all asset data to one system.
Environmental Analysis		
Document the performance requirements for all assets (availability of service, capacity, continuity, and emergency response)	No Improvement - Performance requirements for assets are not identified and documented. However the City does monitor and document its KPIs for the sewer system. (eg. Overflows and Blockages).	Identify and document performance requirements for all assets including availability of service and capacity.
Document the asset system objectives	No Improvement - The objectives are understood by the staff, however objectives are not well documented.	Identify and document asset objectives.
Prepare opportunities and threats assessment for each system	No Improvement - WWTP operations monitored and environmental impact assessed. No formal assessment for the sewer system, though staff understand the threats and opportunities.	Identify and document threats the sewer systems creates and create emergency response procedures.
Asset System Analysis		
Document the asset system components	Minor Improvement - The City has started using the asset management capabilities of its financial system to monitor its sewer assets.	Purchase / Develop Asset Management software and roll over all asset data to one system.
Assess the asset performance and condition	Reasonable Improvement - The City has initiated CCTV conditional appraisal of poorly performing assets.	Expand current CCTV conditional appraisal of sewer system to document asset performance and condition.
Update asset register and plans to system components level	Minor Improvement - The City has started using the asset management capabilities of its financial system to monitor some of its sewer assets.	Identify asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data and enter into Asset Management Software.
Record the asset type, location, material and an assessment of assets' physical/structural condition	Minor Improvement - Asset register exists, however does not include condition data. Accounting data on separate system.	Identify asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data and enter into Asset Management Software.



Recommendation	Status	Further Action Required
Instigate a system to assess asset efficiency, including performance capacity and deficiencies	Reasonable Improvement - The City has initiated CCTV conditional appraisal of poorly performing assets. WWTP has monthly maintenance schedule.	Expand current CCTV conditional appraisal of sewer system to document asset performance and condition. Maintain current maintenance schedule.
Document the outcomes in the Asset Management Plan	No Improvement - The City does not have a documented asset management plan.	Create and document an asset management plan for sewer system.
Update asset life, predictive failure modes and maintenance requirements	No Improvement - Likelihood of asset failure and maintenance requirements understood by staff, but not documented.	Identify and document likelihood of asset failure and maintenance requirements.
Risk Analysis and Contingency Planning		
Assess the probability and consequences of asset failures	No Improvement - Probability and consequences of asset failure not assessed.	Create and document risk register including the treatment and consequences of asset failure.
Prepare appropriate contingency plans for high risk failures	No Improvement - WWTP has contingency plans in place. Contingency plans for sewer system understood by staff, but not documented.	Create and document contingency plans based on risk management for the sewer system.
Identify unacceptable risks and prepare risk control measures	No Improvement - Staff understands risks, but not documented and no policies or procedures exist.	Identify risks and create risk management procedures and polices
Financial Planning		
Prepare detailed five year capital replacement program for water services assets	No Improvement - Five year financial plan does not exist. Strategic 5 year plan ends 2010. City in early stages of reviewing the Strategic 5 year plan.	Create and document 5 year financial plan including predicted costs for operation, maintenance and capital upgrade and expansion.
Capital Expenditure Planning		
Establish a detailed capital expenditure plan based on asset condition and performance and document within the AMP.	Minor Improvement - Limited documentation of capital expenditure planning. City in the early stages of creating capital expenditure plan with the assistance of CCTV.	Continue to create a capital expenditure plan based on the conditions of assets
Review		
Instigate a process for the periodic review of the asset management systems.	No Improvement - City's financial system which includes some WWTP assets audited regularly. However asset management system for sewer system has no documented internal audit or reviews.	Create asset management review procedure to ensure system is reviewed regularly.



3. Operating Licence Audit

James Alexander, accompanied by Keith Boase carried out the Audit interviews on 24th February 2009. The WWTP was inspected, accompanied by Emil Saule, on 20th March 2009. The audit included an overview of systems operations and facilities.

The WWTP is generally in good condition, operated effectively and generally performed within quality requirements.

The sewer systems are generally in good condition, maintained to an acceptable level and operated effectively. However the older sections of the City's sewer system are beginning to show signs of failure and in need of replacement.

To address the high blockage rate the City has implemented an annual CCTV review to undertake conditional appraisal of the older sections of the sewer collection system. Based on the information obtained from the CCTV operations the City has completed repairs and capital upgrades of pipeline sections found to be high priority.

The City is currently in the process of implementing a larger CCTV conditional appraisal program with the long term aim to include this task as part of their regular maintenance operations.

The "As Constructed" electronic information is now available to the public via the City's website using the Intramaps system. Operations and maintenance manuals are available for the WWTP.

The City's sewage demands have grown steadily in recent years due to the completion of a number of new subdivisions. However the amount of waste water entering the WWTP has slightly decreased recently and may be due to the slowing economy. The WWTP has adequate capacity to meet the predicted growth.

The City has contracts with Barnicott Plumbing for the maintenance of its sewerage infrastructure, Bilfinger Berger for the WWTP electrical maintenance, PUMPs for the WWTP mechanical maintenance and with a local mining company for the supply of treated effluent.



The following information, evidence and inspections were audited for the period:

Table 3 Operational Audit Checklist

Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
Schedule 2	Operating Area		
	It is in the correct operating area	Yes	4
Schedule 3	Customer Provisions		
Clause 2	Customer Service Charter		
2.1	The licensee must have in place a Customer Service Charter that accords with the Authority's review guidelines	Revised Customer Service Charter prepared, provided for customer comment and issued Sept 2008.	4
2.2	The Customer Service Charter:		
	a) Should be drafted in 'plain English'	Yes	4
	b) Should address all of the service issues that are reasonably likely to be of concern to its customers	Yes	4
2.3	Different parts of the Customer Service Charter may be expressed to apply different classes of customers	Yes. Includes additional detail for industrial and commercial waste customers.	4
2.4	Any proposed amendment to the Customer Service Charter must be forwarded to the authority for approval	Revised Customer Service Charter sent to ERA June 2008 and approved Sept 08.	4
2.5	The licensee must make the Customer Service Charter available to its customers in the following ways:		



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
	a) by prominently displaying it in those parts of the licensee's offices to which customers regularly have access	Customer Service Charter on display at reception.	3
	b) by providing a copy, upon request, and at no charge, to the customer	Copies available at reception at request.	3
	c) by sending a current copy, or a summary document approved by the authority, to all customers at least once in every three year period or as agreed with the authority	Customers advised of availability through rates notices, however not supplied a current copy or approved summary.	2
2.6	The Customer Service Charter is to be reviewed by the licensee at least once in every three year period or as agreed with the Authority	Charter revised outside three year period. The June 2004 Charter was revised in June 2008.	2
2.7	The licensee provides services in a way which is consistent with its Customer Service Charter.	Yes - Compliant	4
Clause 3	Customer Complaints		
3.1	The licensee must have in place, a properly resourced process for effectively receiving, recording and (where possible) resolving customer complaints within a timeframe of 15 business days	Complaint management procedures are documented in the Standard Operating Procedures.	4
3.3	Disputes that arise between a customer and the licensee regarding a provided or requested water service, the customer may refer to the Department of Water	No disputes received during the audit period.	N/A
3.4	Where a dispute has not been resolved within 15 business days the licensee must inform the customer of the option of referring their complaint to the Department of Water	No disputes received during the audit period.	N/A



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
3.5	Where disputes are referred, the Department of Water may:		
	a) conciliate the dispute	No disputes received during the audit period.	N/A
	b) direct the licensee or customer to binding arbitration	No disputes received during the audit period.	N/A
3.6	During the process of investigation and conciliation, the licensee must make every endeavour to promptly cooperate with the Department of Water's requests, which must include the expeditious release of any information or documents requested by the Department of Water and the availability of the relevant staff of the licensee	No disputes received during the audit period.	N/A
3.7	The licensee must, on request, provide the Department of Water with details of complaints made, names and addresses of customers who have made complaints and the manner in which the complaint was resolved	No disputes received during the audit period.	N/A
3.8	To ensure the effectiveness of such a process the licensee must, as a minimum:		
	a) record details of each customer complaint and its outcome	Complaints are recorded on City wide documentation system. However they are not indexed under the same subject.	3
	b) provide an officer trained to deal with customer complaints who is authorised to, or has access to another officer who has the authority to, make the necessary decisions to settle customer complaints or disputes, and where applicable, make recommendations to Council as to the payment of monetary compensation	Four staff available and trained in dispute resolution.	4



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
	c) make all necessary arrangements to ensure that if possible complaints can be resolved in the timeframes set out in sub-clause 3.1	Documented in the Standard Operating Procedures manual.	4
Clause 4	Customer Consultation		
4.1	The licensee must establish ongoing customer consultation processes which both inform customers and proactively solicit customer opinion on the licensee's operation and delivery of services, the licensee may either:		
	a) establish a Customer Council, and consult with the Customer Council to facilitate community involvement in issues relevant to the exercise of the licensee's levels of service under the licence; OR	The City undertakes option b).	N/A
	b) institute at least two of the following:		
	(i) Meeting on a regular basis with customers to seek comment on issues relevant to the exercise of the licensee's levels of service under the licence	Customers are given the opportunity to provide their comments at the Council Meetings during public question time.	3
	(ii) Publishing a simple newsletter providing basic information about the licensee's operations	Newsletter included with annual rates.	3
	(iii) Establishing other forums for consultation to enable community involvement in issues relevant to the exercise of the licensee's obligations under this licence		
4.2	The Authority must be consulted with respect to the type and extent of customer consultation to be adopted by the licensee	The ERA was advised of the adopted method 27 June 2008.	3



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
4.3	The licensee may, or at the request of the Authority, must establish other forums for consultation, to enable community involvement in issues relevant to the exercise of the licensee's obligations under the licence	Not required during the audit period.	N/A
Clause 5	Customer Contracts		
5.1	The licensee may enter into an agreement with a customer to provide water services that exclude, modify or restrict the terms and conditions of the license	CKB has not entered into any customer contracts during the audit period.	N/A
5.2	The licensee may not enter into an agreement unless the following conditions are met:		
	a) must be approved by the Authority prior to its commencement; AND	Not required.	N/A
	b) must not be amended without the prior approval of the Authority	Not required.	N/A
5.3	The licensee does not need the approval of the Authority if the terms that exclude, modify or restrict the terms and conditions of the license:		
	a) were in force before the commencement of the licence	Not required.	N/A
	b) have previously been approved by the Authority in another agreement that applies to the same class of customer	Not required.	N/A



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
5.4	If the licensee enters into an agreement with a customer that excludes, modifies or restricts the terms of conditions of the license, the licensee must publish a report annually that includes the following information:		
	a) the total number of agreements entered into by the licensee, categorised by location and the type of exclusion, modification or restriction		
	b) the number of agreements entered into by the licensee during the reporting period, categorised by location and the type of exclusion, modification or restriction	Not required.	N/A
	c) the total number of agreements entered into by the licensee, categorised by location and by land use		
	d) the number of agreements entered into by the licensee during the reporting period, categorised by location and by land use		
Clause 6	Customer Surveys		
6.1	The Authority may require the licensee to commission an independent customer survey which must address and conform to the conditions and parameters set out in writing by the Authority	Not required during the audit period.	N/A
Schedule 4	Service & Performance Standards		
Clause 1	Customer Service Standards		



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
1.1	Emergency Response	The City has an automated phone system that directs customers to a 24hr on call officer. All response times are within 1 hour.	4
	The licensee shall provide an emergency telephone advice system such that customers need make only one telephone call to report an emergency and that the customer shall be advised of the nature and timing of the action to be undertaken by the licensee in accordance with a corresponding performance indicator / target		
1.2	Customer Complaints	Complaints resolved immediately or within 15 days.	4
	The Licensee shall respond to customer complaints in accordance with the following standard: 90% of written complaints in the preceding 12 months have been resolved within 15 business days.		
Clause 2	Sewerage Services		
2.1	Sewerage Services:	The 2007/08 rate of sewer main blockages was 159 per 100km, which exceeds the target of 40 per 100km. The percentage of customers receiving the standard service was 99.9%, which satisfies the target of 90%.	2
	The licensee must comply with the following sewerage services standards: fewer than 40 blockages per 100km of sewer main over the preceding 12 months and 90% of customers receive the standard for the licensee's scheme over the preceding 12 months.	The City also rectified 84 Inspection Shafts blockages located within customers' properties which is beyond its obligations under the licence.	



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
Schedule 5	Information Requirements (Reporting)		
Clause 2	Benchmarking and Performance Monitoring Information		
2.1	The licensee will provide the Authority with data required for performance monitoring purposes as set out in the Water Compliance Reporting Manual as amended from time to time	Data supplied to ERA on regular basis.	4
2.2	The licensee must provide the data required by Schedule 5 clause 2.1 for the previous financial year by 31 October each year	Data was sent to ERA on 22 Oct 2007 and on 16 Oct 2008.	4
2.3	Data supplied to the Authority pursuant to Schedule 5 clause 2.1 must be audited in accordance with clause 6 schedule 3 of the deed at least once every 36 months	Last audit completed April 2006.	4
2.4	The data supplied to the Authority in accordance with performance indicators LSS 1 and LSS 2 in the Water Compliance Reporting Manual must be provided on a monthly and a rolling 12 month basis.	Data supplied 16 Oct 2008 & 25 Oct 2007.	4
Clause 3	Incident Reports		
3.1	The licensee must inform the Authority in writing within 3 business days of the occurrence of any of the following incidents:	No incidents as described in a), b) and c) occurred during period.	
	a) any overflows from sewerage services or sewerage works that requires the licensee to notify the Department of Environment and Conservation under section 72 of the Environmental Protection Act 1986		N/A



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
	b) disruption of water services to a customer(s) for a period exceeding 24 hours		
	c) any incident related to water services works or the operation of water services that has been reported to another regulatory authority or public authority, such as the Department of Health		
3.2	In informing the Authority of the incident(s) under 3.1, the licensee must provide the following information to the Authority:	Not required during the audit period.	
	a) a detailed description of the incident, including, without limitation, the following details:		
	(i) date of the incident		
	(ii) nature and extent of any interruption caused by the incident		
	(iii) location of the incident		
	(iiii) number of services and customers affected by the incident		N/A
	b) any action the licensee has taken or intends to take to rectify the incident as well as any measures the licensee intends to implement to minimise the risk of such an incident recurring		
	c) any other information required by the Authority in writing with respect to the incident		
Schedule 6	Other Provisions		



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
Clause 2	Obligations to Customers: Availability and Connection of Services		
2.1	The licensee must set out in writing its 'conditions for connection' and make that information available to all applicants for connection and to people inquiring about connection	The City has a 'Connecting to Sewerage' information sheet available to applicants at reception. Information sheet outlines the 'conditions for connection'.	4
2.2	The licensee must ensure that its services are available for connection on request to any land situated in Operating Areas, subject to the applicant meeting any conditions the licensee may determine to endure safe, reliable and financially viable supply of services to land in the Operating Areas in accordance with the Operational Licence and any Water Acts. Satisfactory compliance with the conditions of connection is to be taken as forming an essential requirement of gaining approval for connection to the licensee's schemes	Application forms and processes available at reception. New connections are included in new subdivisions. The application process is also outlined in the Customer Service Charter.	4
2.3	The licensee may, with the written agreement of the property owner, discontinue a service to a property where the servicing of the property is not commercially viable	No services were discontinued during the audit period due to commercial viability.	N/A



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
Clause 5	Compliance		
5.1	Subject to any modifications or exemptions granted pursuant to the Water Services Licensing Act 1995, the licensee must comply with any applicable legislation.	The City's operates within the current applicable legislation.	4
5.2	The Authority may direct the licensee in writing to do any measure necessary to: a) correct the breach of any applicable legislation; or b) prevent the breach of any applicable legislation occurring again.	No correspondence received from the ERA regarding breaches of applicable legislation during the audit period.	N/A
Clause 15	Accounting Records		
15.1	The licensee must maintain accounting records that comply with Australian Accounting Standards Board Standards.	The City's financial system complies with Australian Accounting Standards Board Standards and is audited regularly. However CKB does not currently have a 5 year financial plan.	4
Clause 18	Reporting		
18.1	The licensee must report to the Authority: a) if the licensee is under external administration as defined by the Corporations Act 2001 (Cwlth) within 2 business days; or b) if the licensee experiences a significant change in the licensee's corporate, financial or technical circumstances upon which may affect the licensee's ability to meet its obligations under the licence within 10 business days of the change occurring.	CKB was not under external administration during the audit period. CKB did not experience significant changes to its corporate, financial or technical circumstances during the audit period.	N/A N/A



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
Clause 19	Individual Performance Standards		
19.2	The Authority may prescribe individual performance standards in relation to the licensee of its obligations under the licence or the applicable legislation.		
19.3	Before approving any individual performance standards under this clause, the Authority will:		
	a) provide the licensee with a copy of the proposed individual performance standards;		
	b) allow 15 business days for the licensee to make submissions on the proposed individual performance standards; and	The ERA changed some of the performance standards in Schedule 4 when the license was last renewed, however CKB do not notice the changes therefore did not submit any comments within 15 business days.	3
	c) take into consideration those submissions.		
19.4	Once approved by the Authority, the individual performance standards are included as additional terms and conditions to the licence under Schedule 4.		
Clause 21.1	Provision of Information		
	The licensee must provide to the Authority any information that the Authority may require in connection with its functions under the Water Services Licensing Act 1995 in the time, manner and form specified by the Authority.	CKB has provided all information required by the ERA.	4



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
Clause 22	Publishing Information		
22.1	The Authority may direct the licensee to publish any information within a specified timeframe it considers relevant in connection with the licensee or the performance by the licensee of its obligations under the licence.	CKB has published all requested information.	4
22.2	Subject to clause 22.3 the licensee must publish the information referred to in clause 22.1		
22.3	If the licensee considers that the information is confidential it must: a) immediately notify the Authority; and b) seek a review of the Authority's decision.		
22.4	Once the Authority has reviewed the decision it will direct the licensee in accordance with the review to: a) publish the information; b) publish the information with the confidential information removed or modified; or c) not publish the information.	The licensee was not required to notify the ERA that any requested information to be published was confidential during the audit period.	N/A



Licence Clause or Schedule	The Licence Obligation	System established by the Licensee to comply with obligations of Licence dated August 2008	Compliance Scale
Clause 23	Notices		
23.1	Unless otherwise specified, all notices must be in writing.		
23.2	A notice will be regarded as having been sent and received:		
	a) when delivered in person to the addressee; or		
	b) 3 business days after the date of posting if the notice is posted in Western Australia; or	CKB keeps records all notices when sent to the addressee on its documentation system.	4
	c) 5 business days after the date of posting if the notice is posted outside Western Australia; or		
	d) if sent by facsimile when, according to the sender's transmission report, the notice has been successfully received by the addressee; or		
	e) if sent by email when, according to the sender's electronic record, the notice has been successfully sent to the addressee's water licensing email address.		

The results of the operational audit are summarised in Table 4.



Table 4 Operational Audit Summary

Licence Clause or Schedule	Operating Licence Reference (Sch=Schedule, Cl=Clause)	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (refer to the 5-point rating scale in Table 1 for details)						
						1	2	3	4	5	N/A	
Operating Areas	Sch. 2											
Correct operating area		2	C	M	S				4			
Customer Provisions	Sch. 3											
Customer service charter	Cl. 2	2	B	M	M			3				
Customer complaints	Cl. 3	2	B	M	W				4			
Customer consultation	Cl. 4	1	B	L	W			3				
Customer contracts	Cl. 5	1	B	L	M							X
Customer surveys	Cl. 6	1	B	L	W							X
Service and Performance Standards	Sch. 4											
Customer Service Standards	Cl. 1	2	B	M	W				4			
Sewerage Services	Cl. 2	2	A	H	W		2					
Information Requirements (Reporting)	Sch. 5											
Benchmarking and Performance Monitoring Information	Cl. 2	1	C	L	W				4			
Incident Reports	Cl. 3	3	B	H	M							X
Other Provisions	Sch. 6											
Obligations to customers: Availability and Connection of Services	Cl. 2	2	B	M	M				4			
Compliance	Cl. 5	2	B	M	M				4			
Accounting Records	Cl. 15	2	B	M	M				4			
Reporting	Cl. 18	1	B	L	W							X



Licence Clause or Schedule	Operating Licence Reference (Sch=Schedule, Cl=Clause)	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (refer to the 5-point rating scale in Table 1 for details)					
						1	2	3	4	5	N/A
Individual Performance Standards	Cl. 19	1	C	L	M			3			
Provision of Information	Cl. 21.1	1	B	L	M				4		
Publishing Information	Cl. 22	2	C	M	M				4		
Notices	Cl. 23	1	C	L	M				4		
Compliance	Cl. 5	2	B	M	M				4		
Accounting Records	Cl. 15	2	B	M	M				4		
Reporting	Cl. 18	1	B	L	W						X
Individual Performance Standards	Cl. 19	1	C	L	M			3			
Provision of Information	Cl. 21.1	1	B	L	M			3			
Publishing Information	Cl. 22	2	C	M	M				4		



4. Asset Management System Review

The Asset Management System comprises the asset register, operations and maintenance manuals, Standard Operating Procedures (SOP) document, drawing register, maintenance plans and works records. The Asset Management systems are very basic, but understood by the Waste Services staff and are stored in the City's computer systems on a variety of software platforms. The City does not have a standalone Asset Management Software System, nor a current Asset Management Plan for the Water Services. However the City's financial system, Synergy Soft, has asset management capabilities and some of these capabilities have been used to monitor some sewer assets.

While the current systems provide a basic maintenance management system, they do not include the capabilities or requirements of an Asset Management System as detailed in the International Infrastructure Management Manual.

Information, such as, the Levels of Service, asset performance, asset descriptions and condition have not been comprehensively documented and the level of equipment detail for many assets is limited.

Table 5 Asset Management Review Checklist

1. Asset Planning		
	Effectiveness	Comments
Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	2	The objectives are understood by the staff, however objectives are not well documented.
Service levels are defined	1	Service levels understood by staff, but not documented.
Non-asset options (e.g. demand management) are considered	2	City part of Water Wise initiative. No documented objectives in place.
Lifecycle costs of owning and operating assets are assessed	2	The City's Asset Management system includes depreciation, replacement values and operating cost from the previous year.
Funding options are evaluated	2	The City has access to other funding options available apart from customer rates, such as low interest loans.
Costs are justified and cost drivers identified	2	Costs are justified through the City's budget process.
Likelihood and consequences of asset failure are predicted	1	Likelihood and consequences of asset failure understood by staff, but not documented.
Plans are regularly reviewed and updated	2	Regular review of the capital and operational expenditure completed.



2. Asset Creation and Acquisition

	Effectiveness	Comments
Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solution	1	Small asset acquisition evaluations undertaken by staff, but not documented. Large asset acquisition follows local government procedures and documented.
Evaluations include all life-cycle costs	1	Not completed for small assets. Completed for large asset acquisition and creation.
Projects reflect sound engineering and business decisions	3	Decisions for project are made by group of experienced engineers and managers.
Commissioning tests are documented and complete	2	Some testing is completed and documented for WWTP. Not completed for sewer network. Private subdivision developments require testing of sewer system.
Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood	3	Staff are aware of requirements and obligations are documented.

3. Asset Disposal

	Effectiveness	Comments
Under-utilised and under-performing assets are identified as part of a regular systematic review process	2	No formal system in place. Performance of assets relies on knowledge of staff.
The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	2	Staff critically examine and take corrective action when poor performing asset is identified. However no documented procedure in place.
Disposal alternatives are evaluated	1	No sewer lines have been decommissioned. Minimal disposal of WWTP assets.
There is a replacement strategy for assets	2	Regular maintenance program in place for WWTP. City in the early stages of creating a replacement strategy for the sewer system using CCTV results.



4. Environmental Analysis

	Effectiveness	Comments
Opportunities and threats in the system environment are assessed	1	<p>WWTP operations monitored and environmental impact assessed. Sewerage entering the WWTP is monitored and assessed, such as oils / contaminates entering the plant.</p> <p>No formal assessment for the sewer system, though staff understand the threats such as damage by tree roots and contractor excavations.</p> <p>New subdivision developments are used as opportunities to expand / upgrade the current sewer system.</p>
Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved	2	<p>Performance standards are measured and documented. The City has excessive blockages in the sewer system. (Over the 40 per 100km KPI)</p> <p>The City goes beyond its licence obligations and rectifies inspection shaft blockages on customers' properties.</p>
Compliance with statutory and regulatory requirements	3	Statutory and Regulatory requirements meet.
Achievement of customer service levels	3	All customer service levels achieved apart from excessive blockages in sewer system.

5. Asset Operations

	Effectiveness	Comments
Operational policies and procedures are documented and linked to service levels required	2	Operational policies and procedures are documented and linked to customer service charter.
Risk management is applied to prioritise operations tasks	1	Staff prioritise operational tasks based on risk through knowledge of assets operations. However risk management and priorities not documented.
Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	2	Asset register exists, however does not include condition data. Accounting data on separate system.



Operational costs are measured and monitored	2	Operational costs are measured and monitored by City Budget quarterly reviews.
Staff receive training commensurate with their responsibilities	3	Staff receives regular training and training is budgeted for.

6. Asset Maintenance

	Effectiveness	Comments
Maintenance policies and procedures are documented and linked to service levels required	2	WWTP has maintenance procedure in place. No maintenance procedure exists for sewer system. City in early stages of creating procedure for sewer system using CCTV.
Regular inspections are undertaken of asset performance and condition	3	Regular inspections undertaken for WWTP. City started using CCTV to undertake inspections of higher risk sections of the sewer system.
Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	2	WWTP has maintenance plan undertaken by City contractors. No maintenance plan exists for sewer system, though the City is in early stages of creating one.
Failures are analysed and operational/maintenance plans adjusted where necessary	2	WWTP failures reviewed and operational / maintenance plan adjusted. City analyses sewer blockages with CCTV and completes maintenance required, however no plan exists to adjust.
Risk management is applied to prioritise maintenance tasks	1	WWTP asset operations monitored and prioritise in maintenance plan if necessary. Minimal risk management completed on sewer system using CCTV.
Maintenance costs are measured and monitored	3	Maintenance costs are measured and monitored by the City's Budget review process and financial system.

7. Asset Management Information System

	Effectiveness	Comments
Adequate system documentation for users and IT operators	3	City wide documentation system exists and all staff receives training and documentation.
Input controls include appropriate verification and validation of data entered into the system	2	Data verified and entered by experienced staff. No documented verification procedure exists.
Logical security access controls appear adequate, such as passwords	3	All computer systems require passwords.



Physical security access controls appear adequate	3	Swipe cards required for building access.
Data backup procedures appear adequate	3	Data backed up nightly and monthly. Backup kept offsite.
Key computations related to licensee performance reporting are materially accurate	3	Data into asset management system updated regularly.
Management reports appear adequate for the licensee to monitor licence obligations	2	Asset data regularly available and used to monitor licence obligations. However data layout 'not user friendly'.

8. Risk Management

	Effectiveness	Comments
Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	1	Staff understands risks, but no policies or procedures exist.
Risks are documented in a risk register and treatment plans are actioned and monitored	0	Not undertaken.
The probability and consequences of asset failure are regularly assessed	0	Not undertaken.

9. Contingency Planning

	Effectiveness	Comments
Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	1	WWTP has contingency plans in place. Contingency plans for sewer system understood by staff, but not documented.

10. Financial Planning

	Effectiveness	Comments
The financial plan states the financial objectives and strategies and actions to achieve the objectives	3	The City's annual budget outlines financial objectives in detail.
The financial plan identifies the source of funds for capital expenditure and recurrent costs	3	The City's budget identifies source of funds. Funds obtained from sewer rates used only for sewerage system.
The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	3	Yes. Budget identifies previous year financial position and statements.



The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period	0	Five year financial plan does not exist. Strategic 5 year plan ends 2010. City in early stages of reviewing the Strategic 5 year plan.
The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	3	Yes. City's Budget is itemised and includes operations, maintenance, administration and capital expenditure requirements.
Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	3	Yes. City's reviews its budget expenditure on a quarterly basis.

11. Capital Expenditure Planning

	Effectiveness	Comments
There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	2	Limited documentation of capital expenditure planning. City in the early stages of creating capital expenditure plan with the assistance of CCTV.
The plan provide reasons for capital expenditure and timing of expenditure	3	Capital expenditure is justified in City's Budget.
The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	2	WWTP capital expenditure is based on asset life and condition. Sewer system based on staff knowledge and not documentation.
There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	3	Capital expenditure is reviewed during the quarterly budget reviews.

12. Review of Audit Management System

	Effectiveness	Comments
A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	1	No documented review process in place. Asset Management system reviewed time to time by City staff.
Independent reviews (e.g. internal audit) are performed of the asset management system	1	City's financial system which includes some WWTP assets audited regularly. However asset management system for sewer system has no documented internal audit or reviews.



The results of the asset management system audit are summarised in Table 6.

Table 6 Asset Management System Audit Summary

Asset Management System	Not performed	Performed informally	Planned and tracked	Well-defined	Quantitatively controlled	Continuously improving
Process Effectiveness rating	0	1	2	3	4	5
Asset Planning			2			
Asset Creation and Acquisition			2			
Asset Disposal			2			
Environmental Analysis			2			
Asset Operations			2			
Asset Maintenance			2			
Asset Management Information System				3		
Risk Management	0					
Contingency Planning		1				
Financial Planning				3		
Capital Expenditure Planning				3		
Review of AMS		1				



5. Conclusions and Recommendations

The outcome of the inspection of the water services assets and interviews with the City of Kalgoorlie-Boulder staff was that the systems are operated effectively, within the current standards and code requirements and present minimal risks to the City's customers and residents. However, the level of documentation and management systems is still very basic and inadequate for the number and complexity of the water services assets.

The City has initiated the refurbishment/replacement of poorly performing assets based on conditional appraisal from CCTV. Reporting to the ERA has also improved.

Asset data monitoring has slightly improved with some sewer assets being entered into the City's financial 'Synergy Soft' systems where assets operational, replacement costs and depreciation can be monitored.

Overall the City's operation of the Water Services Licence is compliant with major or material recommendations to improve the strength of internal controls to maintain compliance. The primary deficiencies with the operation of the Water Services Licence are in the area of management systems, reporting and asset management planning. The recommended improvements are:

5.1 Operational Audit

The following recommendations are provided to improve the compliance City's Operating Licence:

Licence Clause	Licence Obligation	Compliance Scale	Issues Identified	Recommendation
Schedule 4 Service & Performance Standards Clause 2.1 Sewerage Services	The licensee must comply with the following sewerage services standards: fewer than 40 blockages per 100km of sewer main over the preceding 12 months.	2	The 2007/08 rate of sewer main blockages was 159 per 100km, which exceeds the target of 40 per 100km.	Expand current CCTV conditional appraisal of sewer system to create a refurbishment / replacement program to address high rate of sewer blockages.
Schedule 3 Customer Provisions Clause 2.6 Customer Service Charter	The Customer Service Charter is to be reviewed by the licensee at least once in every three year period or as agreed with the Authority.	2	Charter revised outside three year period.	Create and document a review procedure for the Customer Service Charter.



5.2 Asset Management Review

The following improvements are recommended for the Asset Management System:

Asset Management Process	Effectiveness Criteria	Effectiveness Rating	Issues Identified	Recommendation
Asset Planning	Service levels are defined.	1	Service levels not identified.	Identify and document service levels for assets.
	Likelihood and consequences of asset failure are predicted.	1	Consequences of asset failure not identified.	Identify and document likelihood and consequences of asset failure.
	Lifecycle costs of owning and operating assets are assessed.	2	Asset objectives and lifecycle costs not identified.	Identify and document asset objectives and lifecycle costs for all assets.
Asset Creation / Acquisition	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solution.	1	Full project evaluations are not undertaken for small assets including life cycle costs.	Create and implement asset creation and acquisition procedure including the evaluation of all life cycle costs
Asset Disposal	Disposal alternatives are evaluated.	1	Disposal alternatives are not evaluated.	Create and implement asset disposal procedure based on performance of assets.
	There is a replacement strategy for assets.	2	City in early stages of creating a replacement strategy for sewer system.	Create and implement replacement strategy for sewer system
Environmental Analysis	Opportunities and threats in the system environment are assessed.	1	No formal assessment of opportunities and threats in the system environment are completed for the sewer system.	Identify and document threats the sewer systems creates and create emergency response procedures.
				Identify and document threats the system environment creates for the sewer system and create procedures for minimising the threats.
	Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved.	2	Limited assessment of performance standards for assets	Identify and document performance requirements for all assets including availability of service and capacity.
Asset Operations	Risk management is applied to prioritise operations tasks.	1	No formal Risk management is completed of asset operations.	Create and document a risk management procedure for asset operations



Asset Management Process	Effectiveness Criteria	Effectiveness Rating	Issues Identified	Recommendation
	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data.	2	Asset register exists, however does not include condition data. Accounting data on separate system.	Identify asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data and enter into Asset Management Software
Asset Maintenance	Maintenance policies and procedures are documented and linked to service levels required.	2	No documented maintenance policies and procedures exist for sewer system. The City is in early stages of creating a documented maintenance plan based on recorded sewer blockages and CCTV condition assessments.	Continue to create and document policies and procedures linked to service levels for the sewer system.
	Failures are analysed and operational/maintenance plans adjusted where necessary.	2	City analyses sewer blockages with CCTV and completes maintenance required. City in early stages of creating maintenance plan based on recorded blockages.	Create, document and regularly review a maintenance plan for the sewer system including emergency, corrective and preventative measures.
	Risk management is applied to prioritise maintenance tasks.	1	Minimal risk management completed on sewer system using CCTV.	Undertake risk analysis of maintenance tasks and prioritise maintenance plan based on risk assessment.
Asset Management Information System	Input controls include appropriate verification and validation of data entered into the system.	2	Data verified and entered by experienced staff. No documented verification procedure exists.	Create data verification procedure for asset data.
	Management reports appear adequate for the licensee to monitor licence obligations.	2	Asset data regularly available and used to monitor licence obligations. However data layout 'not user friendly'.	Purchase / Develop Asset Management software and roll over all asset data to one system.
Risk Management	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	1	Staff understands risks, but no policies or procedures exist.	Identify risks and create risk management procedures and policies.
	Risks are documented in a risk register and treatment plans are actioned and monitored.	0	Not undertaken.	Create and document risk register including the treatment and consequences of asset failure.



Asset Management Process	Effectiveness Criteria	Effectiveness Rating	Issues Identified	Recommendation
	The probability and consequences of asset failure are regularly assessed.	0	Not undertaken.	As above.
Contingency Planning	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	1	Contingency plans for sewer system understood by staff, but not documented.	Create and document contingency plans based on risk management for the sewer system.
Financial Planning	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	0	Five year financial plan does not exist. Strategic 5 year plan ends 2010. City in early stages of reviewing the Strategic 5 year plan.	Create and document 5 year financial plan including predicted costs for operation, maintenance and capital upgrade and expansion.
Capital Expenditure Planning	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates.	2	Limited documentation of capital expenditure planning. City in the early stages of creating capital expenditure plan with the assistance of CCTV.	Continue to create a capital expenditure plan based on the conditions of assets.
Review of AMS	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	1	No documented review process in place. Asset Management system reviewed time to time by City staff.	Create asset management review procedure to ensure system is reviewed regularly.

5.3 Conclusion

The City's water services systems are generally in reasonable condition and operated effectively by the City's staff, Barnicott Plumbing and the WWTP contracted maintenance crew.

The City still has an excessive level of sewer blockages and this indicates the need for an increase in preventative maintenance, which the City has planned using CCTV.

The City needs to implement asset management procedures and documentation to improve the monitoring and planning of its assets, especially for its sewer system. Other areas for improvement in the City's asset management area are in capital expenditure planning, 5 year financial plan, risk management, contingency planning and risk management. It is also recommended the City purchase a dedicated asset management software system.



5.4 Compliance Statement

James Alexander, GHD's Civil Engineer for the Kalgoorlie Office has prepared this report for the City.

It is certified that the "Economic Regulation Authority – Audit Guidelines – Electricity, Gas and Water Licences – September 2006" have been followed in conducting the review, making the review findings and preparing the report.

The assessment, findings and recommendations contained in this report reflect the professional opinion of Reviewer.

James Alexander
Civil Engineer
GHD Pty Ltd
Kalgoorlie Office
24 March 2009



6. Post-Audit Implementation Plan

This Post-Audit Implementation Plan covers the City of Kalgoorlie-Boulder's (CKB) proposed actions to the recommendations made in operational audit and asset management system review of the City's Water Services completed by GHD in April 2009 in accordance with the requirements of the Economic Regulation Authority (ERA).

The methodology and order completed for Post-Audit Implementation Plan was:

- » Meeting with relevant CKB personal to discuss the audit recommendations, appropriate actions, responsible personal and completion dates; and
- » Preparation of Post-Audit Implementation Plan.

6.1 Personnel Involved In Discussion

The following personnel were involved in the Post-Audit Implementation Plan discussions on the audit recommendations, appropriate actions, responsible personal and completion dates:

– Keith Boase	Manager Sustainability and Waste Management	CKB
– Richard Bolton	Environmental Coordinator	CKB
– James Alexander	Civil Engineer	GHD

6.2 Post-Audit Implementation Plan Time Input

The professional resource requirements for the Post-Audit Implementation Plan were as follows:

• Preparation of the data	7 hrs
• Discussion meeting	4 hrs
• Prepare the Draft Plan	6 hrs
• Review and Prepare Plan	2 hrs
Total	19 hrs

6.3 Post-Audit Implementation Plan

James Alexander, accompanied by Keith Boase and Richard Bolton carried out discussions on 5th May 2009 for the actions to be undertaken by the City to satisfy the recommendations made by GHD in the operational audit and asset management system review.

To satisfy the operational deficiencies the City plans to reduce the excessive number of blockages by creating a 5 year plan for its CCTV condition appraisal, pipe relining and maintenance for the sewer system prioritised on current blockage and overflow records. Also to improve its reporting of relevant information to the ERA the City proposes to investigate ways to set reminders for reporting and reviews into its documentation system.

To improve the monitoring, planning and management of its assets the City proposes to utilise asset management tools endorsed by the ERA and create operational and maintenance procedures for the sewer system and WWTP. The City proposed to train its staff on the asset management tool's use and how to keep it updated with asset information with the overall target to have all asset information rolled over within the next 5 years.



The City also proposes to create a 5 year capital expenditure and financial plan and apply risk rankings and contingency plans to its assets.

Tables 7 and 8 outline the operational audit and asset management system review recommendations along with the City's proposed actions, responsible personal and completion dates.



Table 7 Post-Audit Implementation Plan – Operational Audit

Licence Clause	Licence Obligation	Compliance Scale	Issues Identified	Recommendation	Actions to be taken	Person Responsible	Date
Schedule 4 Service & Performance Standards Clause 2.1 Sewerage Services	The licensee must comply with the following sewerage services standards: fewer than 40 blockages per 100km of sewer main over the preceding 12 months.	2	The 2007/08 rate of sewer main blockages was 159 per 100km, which exceeds the target of 40 per 100km.	Expand current CCTV conditional appraisal of sewer system to create a refurbishment / replacement program to address high rate of sewer blockages.	Create 5 year plan for CCTV condition appraisal, pipe relining and maintenance for the sewer system prioritised on current blockage and overflow records.	Manager of Sustainability and Waste Services	30 Jun 2009
Schedule 3 Customer Provisions Clause 2.6 Customer Service Charter	The Customer Service Charter is to be reviewed by the licensee at least once in every three year period or as agreed with the Authority.	2	Charter revised outside three year period.	Create and document a review procedure for the Customer Service Charter.	Create review policy for Customer Service Charter and investigate creating a review reminder within CKB's documentation system. Additionally organise for the Customer Service Charter to be sent to customers yearly along with the rate notices.	Manager of Sustainability and Waste Services	30 Jun 2009



Table 8 Post-Audit Implementation Plan – Asset Management System Review

Asset Management Process	Effectiveness Criteria	Effectiveness Rating	Issues Identified	Recommendation	Actions to be taken	Personal Responsible	Date
Asset Planning	Service levels are defined.	1	Service levels not identified.	Identify and document service levels for assets.	Define service levels for system including: <ul style="list-style-type: none"> • Capacity of current sewer system and its ability to handle current and future demands. • Capacity of WWTP and its ability to handle current and future demands. • Compare recorded blockages and overflows to current sewer capacity. 	Manager of Sustainability and Waste Services	31 Dec 2010
	Likelihood and consequences of asset failure are predicted.	1	Consequences of asset failure not identified.	Identify and document likelihood and consequences of asset failure.	CKB to use records of blockages and overflows to predict likelihood and consequences of asset failures and add to asset register.	Manager of Sustainability and Waste Services	30 Jun 2011
	Lifecycle costs of owning and operating assets are assessed.	2	Asset objectives and lifecycle costs not identified.	Identify and document asset objectives and lifecycle costs for all assets.	CKB to define and document lifecycle costs of sewer and WWTP assets based on past records.	Manager of Financial Services	31 Dec 2010
Asset Creation / Acquisition	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solution.	1	Full project evaluations are not undertaken for small assets including life cycle costs.	Create and implement asset creation and acquisition procedure including the evaluation of all life cycle costs	CKB to create and document checklist / procedure for staff to follow when acquiring new assets including updating the asset register and life cycle costs.	Manager of Sustainability and Waste Services	31 Dec 2010



Asset Management Process	Effectiveness Criteria	Effectiveness Rating	Issues Identified	Recommendation	Actions to be taken	Personal Responsible	Date
Asset Disposal	Disposal alternatives are evaluated.	1	Disposal alternatives are not evaluated.	Create and implement asset disposal procedure based on performance of assets.	CKB to locate and modify other department's asset disposal procedure and implement.	Manager of Financial Services	31 Dec 2010
	There is a replacement strategy for assets.	2	City in early stages of creating a replacement strategy for sewer system.	Create and implement replacement strategy for sewer system.	CKB to continue to create replacement strategy of CKB sewer system and implement. CKB to develop and implement an improved monitoring and replacement procedure for WWTP.	Manager of Sustainability and Waste Services	31 Dec 2010
Environmental Analysis	Opportunities and threats in the system environment are assessed.	1	No formal assessment of opportunities and threats in the system environment are completed for the sewer system.	Identify and document threats the sewer systems creates and create emergency response procedures.	CKB to define and document threats the sewer environment contains using past records of incidents and create procedures to deal with each threat when it occurs.	Manager of Sustainability and Waste Services	31 Dec 2010
				Identify and document threats the system environment creates for the sewer system and create procedures for minimising the threats			
	Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved.	2	Limited assessment of performance standards for assets.	Identify and document performance requirements for all assets including availability of service and capacity.	Define and monitor service levels for system including: <ul style="list-style-type: none"> • Capacity of current sewer system and its ability to handle current and future demands. • Capacity of WWTP and its ability to handle current and future demands. • Compare recorded blockages and overflows to current sewer capacity. 	Manager of Sustainability and Waste Services	31 Dec 2010



Asset Management Process	Effectiveness Criteria	Effectiveness Rating	Issues Identified	Recommendation	Actions to be taken	Personal Responsible	Date
Asset Operations	Risk management is applied to prioritise operations tasks.	1	No formal Risk management is completed of asset operations.	Create and document a risk management procedure for asset operations	See Risk Management Section		
	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data.	2	Asset register exists, however does not include condition data. Accounting data on separate system.	Identify asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data and enter into Asset Management Software	Short Term: CKB to train staff in Asset Management Software endorsed by ERA. Long Term: Rollover all asset information into one system.	Manager of Sustainability and Waste Services	Short Term: 30 June 2010 Long Term: 30 June 2014
Asset Maintenance	Maintenance policies and procedures are documented and linked to service levels required.	2	No maintenance plan exists for sewer system, though the City is in early stages of creating one.	Create and document policies and procedures linked to service levels for the sewer system.	CKB to update standard operational procedures to include maintenance tasks linked to service levels. Determined preventive maintenance cycle for sewer system.	Manager of Sustainability and Waste Services	31 Dec 2010
	Failures are analysed and operational/maintenance plans adjusted where necessary.	2	City analyses sewer blockages with CCTV and completes maintenance required, however no plan exists to adjust.	Create, document and regularly review a maintenance plan for the sewer system including emergency, corrective and preventative measures.	CKB operational and maintenance procedures to be reviewed annually and adjusted according using recorded information including analysed failures.	Manager of Sustainability and Waste Services	31 Dec 2010
	Risk management is applied to prioritise maintenance tasks.	1	Minimal risk management completed on sewer system using CCTV.	Undertake risk analysis of maintenance tasks and prioritise maintenance plan based on risk assessment.	See Risk Management Section		



Asset Management Process	Effectiveness Criteria	Effectiveness Rating	Issues Identified	Recommendation	Actions to be taken	Personal Responsible	Date
Asset Management Information System	Input controls include appropriate verification and validation of data entered into the system.	2	Data verified and entered by experienced staff. No documented verification procedure exists.	Create data verification procedure for asset data.	CKB to create and document a checklist to be followed to verify data before entered into the system.	Manager of Sustainability and Waste Services	31 Dec 2010
	Management reports appear adequate for the licensee to monitor licence obligations.	2	Asset data regularly available and used to monitor licence obligations. However data layout 'not user friendly'.	Purchase Asset Management software and roll over all asset data to one system.	Short Term: CKB to train staff in Asset Management Software endorsed by ERA. Long Term: Rollover all asset information into one system.	Manager of Sustainability and Waste Services	Short Term: 30 June 2010 Long Term: 30 June 2014
Risk Management	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	1	Staff understands risks, but no policies or procedures exist.	Identify risks and create risk management procedures and policies.	CKB to create a risk rating for all assets and include in asset register. The CKB sewer system to be ranked from 1 to 5 using CCTV.	Manager of Sustainability and Waste Services	31 Dec 2010
	Risks are documented in a risk register and treatment plans are actioned and monitored.	0	Not undertaken.	Create and document risk register including the treatment and consequences of asset failure.			
	The probability and consequences of asset failure are regularly assessed.	0	Not undertaken.	As above.			



Asset Management Process	Effectiveness Criteria	Effectiveness Rating	Issues Identified	Recommendation	Actions to be taken	Personal Responsible	Date
Contingency Planning	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	1	Contingency plans for sewer system understood by staff, but not documented.	Create and document contingency plans based on risk management for the sewer system.	Contingency plans to be linked to risk rankings and reviewed regularly and adjusted based on past failures.	Manager of Sustainability and Waste Services	31 Dec 2010
Financial Planning	The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	0	Five year financial plan does not exist. Strategic 5 year plan ends 2010. City in early stages of reviewing the Strategic 5 year plan.	Create and document 5 year financial plan including predicted costs for operation, maintenance and capital upgrade and expansion.	CKB to create and document 5 year financial plan including predicted costs for operation, maintenance and capital upgrade and expansion.	Manager of Financial Services	31 Dec 2009
Capital Expenditure Planning	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates.	2	Limited documentation of capital expenditure planning. City in the early stages of creating capital expenditure plan with the assistance of CCTV.	Continue to create a capital expenditure plan based on the conditions of assets.	CKB to continue to create a capital expenditure plan based on the conditions of assets.	Manager of Financial Services	31 Dec 2009
Review of AMS	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	1	No documented review process in place. Asset Management system reviewed time to time by City staff.	Create asset management review procedure to ensure system is reviewed regularly.	CKB to create and implement a review procedure for all asset management process. CKB to investigate creating a review reminder within CKB's documentation system	Manager of Sustainability and Waste Services	31 Dec 2010



Appendix A
Risk Assessment



Risk Assessment of Operational Licence

Licence Obligation	Operating Licence Reference (Sch=Schedule, CI=Clause)	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Assessment of Audit Priorities (1 to 5)
Operating Areas	Sch. 2					
Correct operating area		2	C	M	S	4
Customer Provisions	Sch. 3					
Customer service charter	Cl. 2	2	B	M	M	4
Customer complaints	Cl. 3	2	B	M	W	3
Customer consultation	Cl. 4	1	B	L	W	5
Customer contracts	Cl. 5	1	B	L	M	5
Customer surveys	Cl. 6	1	B	L	W	5
Service and Performance Standards	Sch. 4					
Customer Service Standards	Cl. 1	2	B	M	W	3
Sewerage Services	Cl. 2	2	A	H	W	1
Information Requirements (Reporting)	Sch. 5					
Benchmarking and Performance Monitoring Information	Cl. 2	1	C	L	W	5
Incident Reports	Cl. 3	3	B	H	M	2
Other Provisions	Sch. 6					
Obligations to customers: Availability and Connection of Services	Cl. 2	2	B	M	M	4
Compliance	Cl. 5	2	B	M	M	4
Accounting Records	Cl. 15	2	B	M	M	4
Reporting	Cl. 18	1	B	L	W	5



Licence Obligation	Operating Licence Reference (Sch=Schedule, Cl=Clause)	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Assessment of Audit Priorities (1 to 5)
Individual Performance Standards	Cl. 19	1	C	L	M	5
Provision of Information	Cl. 21.1	1	B	L	M	5
Publishing Information	Cl. 22	2	C	M	M	4
Notices	Cl. 23	1	C	L	M	5



Asset Management Risk Assessment

Asset Management Area	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=unlikely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Assessment of Audit Priorities (1 to 5)
1. Asset planning: Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).	2	B	M	M	4
2. Asset creation and acquisition: Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay.	2	B	M	M	4
3. Asset Disposal: Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms.	1	C	L	W	5
4. Environmental Analysis: Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.	2	C	M	M	4
5. Asset Operations: Operations functions relate to the day-to-day running of assets and directly affect service levels and costs	3	B	H	M	2
6. Asset Maintenance: Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.	2	B	H	M	2
7. Asset Maintenance Information System: An asset management information system is a combination of processes, data and software that support the asset management functions	2	B	H	M	2
8. Risk Management: Risk management involves the identification of risks and their management within an acceptable level of risk.	2	B	M	W	3
9. Contingency Planning: Contingency plans document the steps to deal with the unexpected failure of an asset.	3	A	H	W	1



10. Financial Planning: The financial planning component of the asset management plan brings together the financial elements of the service delivery to ensure its financial viability over the long term.	2	B	M	M	4
11. Capital expenditure Planning: The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years. Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferable longer. Projections over the next five years would usually be based on firm estimates.	2	B	M	M	4
12. Review of AMS: The asset management system is regularly reviewed and updated.	1	B	L	M	5

Definitions and notes:

The approach for analysing the compliance risks is completed firstly indentifying the “Consequences” and “Likelihood” of the inherent risks (first two columns). Then secondly identify and assess the strength of existing internal controls and rate as an audit priority (last three columns).

Consequences are to be assessed as either:

1. Minor
2. Moderate
3. Major

Likelihood is an indication of how often the failure will occur during the period to be audited. The likelihood is to be assessed as either

- A. Likely
- B. Probable
- C. Unlikely

Based on the Consequences and Likelihood Rating the Inherent Risk is to be assessed as either

- » (H) High;
- » (M) Medium;
- » (L) Low

The adequacy of the licensee existing controls to control the inherent risks is to be assessed as:

- » (S) Strong
- » (M) Moderate
- » (W) Weak

Based on the Inherent Risk and Adequacy of existing controls ratings the operational and asset management areas are to be rank as audit priorities from 1 to 5 with 1 being the highest.



The following the above risk assessment the audit priorities for the audit period will be:

- » Sewerage services obligations due to high number of blockages in sewer system
- » Incident reports
- » Contingency Planning for asset failure
- » Asset Management Information System
- » Asset Operations
- » Asset Maintenance



GHD

Suite 1, 58 Egan Street
KALGOORLIE WA 6430
T: 08 9080 9900 F: 08 9091 2183 E: kgimail@ghd.com.au

© GHD 2009

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	J Alexander	S Henderson	Original Signed	J Alexander	Original Signed	30/04/09
1	J Alexander	M Bourhill	Original Signed	J Alexander	Original Signed	08/05/09
2	J Alexander	M Bourhill	Original Signed	J Alexander	Original Signed	22/05/09
3	J Alexander	M Bourhill	Original Signed	J Alexander	Original Signed	19/06/09