



**Moama Lifestyle Villages Pty Ltd Water Operating Licence
Audit and Asset Management Review
Final Report**

February 2013

This report: has been prepared by GHD for Moama Lifestyle Villages Pty Ltd; and may only be used and relied on by Moama Lifestyle Villages Pty Ltd; for the purpose agreed between GHD and Moama Lifestyle Villages Pty Ltd; as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Moama Lifestyle Villages Pty Ltd; arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Moama Lifestyle Villages Pty Ltd and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information

Table of contents

1.	Executive summary	1
1.1	Background	1
1.2	Operational Audit	2
1.3	Asset Management Review	11
2.	Audit/Review Scope	24
2.1	Objectives and Scope	24
2.2	Methodology	25
2.3	Time Period Covered in Audit/Review	26
2.4	Time Period of Audit/Review	26
2.5	Licensee's Representatives	26
2.6	Key Documents and Other Information Sources	26
2.7	Audit/Review Team Members and Hours Utilised	28
3.	Performance Summary	29
3.1	Operational Audit	29
3.2	Asset Management Review	81
4.	Signature of Auditor	101
	Appendix 1 - AQUASOL Report	102

Table index

Table 1 – Summary of Issues and Recommendations	3
Table 2 – AMS Summary of Issues and Recommendations	12
Table 3 Operational Audit Compliance Summary	30
Table 4 Operating Licence Audit Checklist	38
Table 5 Asset Management Process and Policy Definition Adequacy Ratings.....	81
Table 6 Asset Management Performance Ratings	81
Table 7 Asset Management Effectiveness Summary	82
Table 8 Asset Management Review Field Notes	83

1. Executive summary

1.1 Background

The regulation of water service industry in Western Australia is governed by the Water Services Licensing Act 1995 (the “Act”). The Act has established a regulatory framework surrounding the provision of water services primarily by way of a licensing scheme administered by the Economic Regulation Authority (the “Authority”).

Under the Act, providers of water supply, sewerage, irrigation and drainage services within controlled areas must be licensed. The licence sets a range of conditions, including minimum service standards and regular reporting.

The Authority has issued a Water Services Operating Licence to Moama Lifestyle Villages Pty Ltd (Moama) for the provision of sewerage and non-potable water services. The Licence was granted to Moama on the 7th day of September 2010.

There have been no changes to the type of license or business carried out since issuance of the licence and this is the first audit.

Not less than every 24 months, Moama is required to provide the Authority with an operational audit and a report on the effectiveness of its asset management system under section 37 and 36 respectively of the Act.

Moama Lifestyle Villages Pty Ltd is marketed as Tuart Lakes Lifestyle Village, under the parent organisation of National Lifestyle Villages (NLV) and is a lifestyle village for over 45's with development approval for 470 park homes, a club house and other recreational facilities. The Lifestyle Village model allows residents to purchase a Park Home and enter a long term land arrangement, typically 60 years.

Whilst the village is connected to scheme water for potable water it did not have an adequate quantity of water for other uses or access to wastewater discharge services. Connection to the Minister's Sewer network, currently under the control of the Water Corporation (Corporation), was considered prohibitive. This presented an opportunity to construct a decentralised water management system using a Water Recycling Scheme utilising a service provider other than the Corporation.

The Water Recycling Scheme includes the operation of a Wastewater Treatment Plant (WWTP) and associated infrastructure to collect sewage from village residents. Moama Lifestyle Village currently have 71 connections and approximately 1 kilometre of connecting sewer to the wastewater treatment plant. The plant has a capacity of 180 connections. The treated water is used for underground irrigation purposes around the village.

The key assets for Moama include the wastewater treatment plant, pipelines and service points.

The audit has been conducted in accordance with Audit Guidelines: Electricity, Gas and Water issued by the Authority (August 2010). The audit has been conducted in order to assess the licensee's level of compliance with the conditions of its licence and to assess the effectiveness of the asset management system.

The facility is located at Lots 102 and 1 (previously Lots 1, 3, and 703), Mandurah Road, Baldivis, City of Rockingham.

The audit and review were conducted in December 2012 and January 2013 and they covered the period from 7th September 2010 to 30th September 2012 and were conducted in accordance with the detail set down in the approved audit plan. This was the first compliance audit for the asset management system and the licence conditions.

Where issues of non-compliance were identified, recommendations and a suitable methodology to rectify the non-compliance have been provided. For relatively simple issues, the recommendations were addressed in the audit closure meeting. For more complex matters, the methodology and timeframe for compliance were to be decided by Moama and an action register has been established and forms part of this report.

A full set of field notes, including audit and assessment findings along with individual recommendations are included later in this report.

It is the responsibility of the Licensee to determine if the recommendations are appropriate and/or alternative means of addressing non-compliance are available. Ultimately the Licensee will be responsible for advising the Economic Regulation Authority of actions taken in rectification of the non-compliance issues. Also the Licensee Provider will be responsible for submitting a copy of the final report to the Economic Regulation Authority.

Whilst tables 1 and 2 which include the licensee's post-audit and post review implementation plans are contained in this report they do not formally form part of the audit and review. They are provided as demonstration of the licensee's plans to close the gaps in compliance.

1.2 Operational Audit

1.2.1 Summary of Opinion on the Control Environment

The control environment to ensure compliance with licensing conditions is assessed to be less than satisfactory in some critical areas.

The outcome of the inspection of the water service assets and interviews with Moama Lifestyle Village staff was that the systems are operated in general effectively, within the current standards and code requirements and present minimal risks to the Village's customers and residents.

The primary deficiencies with the operation of the Water Operation Licence were in the areas of the Licensee was not effectively demonstrating the adequate management of their third party maintenance provider, were lacking in written work instructions and are wanting in customer communication in relation to the wastewater treatment plant.

1.2.2 Overall Assessment

In the auditor's professional view, Moama is not achieving an acceptable level of compliance with the requirements of the Water Services Licence. A number of areas for improvement were identified that would rectify or improve the compliance.

It is noted however that Moama have met their reporting requirements to the Authority as required in an accurate and timely manner. Information, when requested has been forthcoming.

1.2.3 Previous Post-Audit Plan

This was the first audit.

1.2.4 Summary of Issues and Recommendations

Table 1 – Summary of Issues and Recommendations

Licence Condition Reference	Issue	Recommendation	Post- Audit Action Plan	Person Responsible/ Date of Implementation
Schedule 6 Other Provisions Obligations to Customers Clause 2.1	All work etc. connections done prior to occupation.	<i>The Licensee should include written information on the WWTP and the need to take care that unwanted items and substances are not flushed with new customers.</i>	Forms part of the Residential Site Agreement (RSA).	General Manager Resolved
		<i>The Licensee should educate/remind Customers of avoiding flushing unwanted materials and substances down the sewer at monthly village meetings.</i>	Site Manager to highlight the avoidance of flushing unwanted items and substances at RSA interview with new park residents	General Manager Resolved
			Will include as standing note at forums & minuted	General Manager Resolved
Clause 5.2	Two requests for information from ERA were sighted A letter from city of Rockingham relating to a complaint of untreated water discharge was sighted. A notification from DEC relating to the same discharge was also sighted. a) and b) A number of modifications have been made to WWTP and were	<i>The Licensee should ensure a Licensee's site representative sign each Maintenance Contractor site works record and the site to file the retained copy as proof of attendance by Maintenance Contractor.</i>	Implement a sign in sheet at WWTP. NLV representative to sign off attendance. <i>The Licensee should provide response to the requests for information about the sewerage overflows in the format of the next annual</i>	General Manager Resolved General Manager At next Audit Oct 14

Licence Condition Reference	Issue	Recommendation	Post- Audit Action Plan	Person Responsible/ Date of Implementation
	<p>confirmed by observation of same.</p> <p>The Auditor was informed that Maintenance Contractor technicians attend the site mostly daily since September 16th. Only unreliable documentary evidence of this attendance was produced.</p> <p>Schedule A 30 Aug 2012, 4 Sep 2012 and 30 Sep 2012.</p>		<i>compliance report.</i>	
Customer Complaints Clause 6.1 Schedule 3	<p>None concerning WWTP were found.</p> <p>Internal reports between Maintenance Contractor and NLV (14 reviewed).</p> <p>New register was produced. Previously no register was kept.</p> <p>Four compliant forms were viewed (only four in register) but there were no issues recorded against WWTP from customers (issue or complaints form)</p>	<p><i>The Licensee should ensure the new Customer Complaint Register is maintained and reviewed</i></p> <p><i>The Licensee should utilise a unique numbering system for "Complaints and Issues" internal proformas</i></p>	<p>The new Customer Complaint Register will be maintained and reviewed.</p> <p>Integrate a unique numbering system into the complaints and issues register</p>	<p>General Manager Resolved</p> <p>General Manager March 2013</p>
Schedule 3 Clause 3.1	<p>The site has a system but it was not documented No evidence of recorded ongoing/unresolved complaints at site – generated through local management system.</p>	<p><i>Develop a written procedure for complaints and ensure staff are aware of the process</i></p> <p><i>The procedure should set out the process for receiving, recording and (where</i></p>	<p>NLV have a hazard report. Operator generates incidents report.</p> <p>NLV have a complaint register.</p> <p>Add to existing complaint</p>	<p>General Manager</p>

Licence Condition Reference	Issue	Recommendation	Post- Audit Action Plan	Person Responsible/ Date of Implementation
		<i>possible) resolving customer complaints within a timeframe of 15 business days. It should also outline how the process will accurately monitor and record the number, nature and outcome of complaints. Ensure the procedure is such so as to fulfil the Conditions of this Licence including the requirements to provide information set out in this licence to complainants.</i>	register. Create a written procedure for complaints	April 2013
Schedule 3 Clause 3.2	<p>Complaints Register has no numbering system applied.</p> <p>Policy operations issues dealt with on site escalated only when unresolved.</p> <p>Only minor issues observed.</p> <p>No evidence of closure or timeframe provided.</p> <p>No written procedure for complaints/resolution</p> <p>Recently established file for complaints/disputes</p> <p>No current entries relating to the WWTP</p>	<i>Use a unique number for each complaint</i>	Use a unique number for each complaint.	General Manager Resolved

Licence Condition Reference	Issue	Recommendation	Post- Audit Action Plan	Person Responsible/ Date of Implementation
	were listed in the file.			
Customer Service Charter Clause 7.1 Schedule 3	Charter exists but not as a controlled document. Has a section for policy updates and amendments but no updates noted.	<i>The Licensee should establish a document control system to manage version control of the customer service charter</i>	Utilise NLV's existing document control procedures with sign off internally	General Manager Resolved
Schedule 3 Clause 2.1.	The Charter is in accord with Authority's guidelines with minor exception (see Clause 2.2 below)	<i>The Licensee should review the customer service charter and ensure it aligns with the Authority's guidelines</i>	NLV will review the customer service charter and ensure it aligns with the Authority's guidelines.	General Manager Resolved
Schedule 3 Clause 2.2.	Charter written in plain English Does not address the importance of not disposing damaging waste into WWTP.	<i>The Licensee should include a section explaining the prohibition of allowing damaging waste to enter the sewer system in its customer service charter</i>	A copy is included in the Residential Site Agreement and was discussed at the last community forum and will be an ongoing part of future forums A copy was delivered to all residents as a letter box drop	General Manager Resolved
Schedule 3 Clause 2.4.	No changes noted. The Auditor was not able to confirm whether any past proposed amendment was forwarded to the Authority or not	<i>The Licensee should ensure a system is in place to record notification to the Authority of any proposed amendment to the customer services charter</i>	No change to date but will conform should customer service charter review bring about a change.	General Manager April 2013
Schedule 3	Not displayed The customer services charter is	<i>The Licensee should display the customer services</i>	Customer Service Charter is to be displayed in the admin	General Manager

Licence Condition Reference	Issue	Recommendation	Post- Audit Action Plan	Person Responsible/ Date of Implementation
Clause 2.5.	<p>contained in a management pack that is discussed by the Local Manager with each prospective new client.</p> <p>It is available upon request by not openly promoted within the village.</p>	<i>charter at village meeting points (such as the gym, community meeting rooms, etc.) and the administration office.</i>	office.	Resolved
Schedule 3 Clause 2.6.	<p>Not reviewed for at least 2 years.</p> <p>Correspondence on this matter with the Authority was not found</p>	<p><i>The Licensee should review the customer service charter to ensure it effectively reflects the License requirements</i></p> <p><i>The Licensee shall forward a version controlled copy of the revised customer service charter to the Authority before release to customers.</i></p>	As Schedule 3 Clause 2.1	General Manager April 2013
Schedule 3 Clause 2.7.	Feedback from customers on this subject is not solicited.	<i>The Licensee should include a question on customer service provision in the customer survey feedback form.</i>	NLV will ensure the Annual Review process captures this information.	General Manager Resolved
Schedule 3 Clause 4.1	<p>Reviewed minutes of Village Liaison Committee (Customer Council)</p> <p>Evidence of regular meetings was observed</p>	<i>The Licensee should encourage customers to regularly access the closed circuit TV system to get up to date information and park</i>	<p>Newsletters are distributed frequently within the village, information will form part of this newsletter</p> <p><i>Include an item covering</i></p>	General Manager Resolved General Manager April 2013

Licence Condition Reference	Issue	Recommendation	Post- Audit Action Plan	Person Responsible/ Date of Implementation
	<p>The site has a closed circuit TV messaging system which may or may not be regularly accessed by customers.</p> <p>Urgent notices were observed posted on gym and meeting room notice boards</p> <p>The latest newsletter (distributed to all customers) was observed however no other previous edition were found</p> <p>The site has Open Forum meetings (2 monthly) which may or may not be well attended as observed meeting's minutes.</p> <p>Noticeboards are used to post topical information</p> <p>Client surveys are conducted</p> <p>Individual residential site agreements are signed by customers and kept on file by the site manager.</p>	<p><i>news.</i></p> <p><i>The Licensee may wish to consider the establishment of a regular newsletter.</i></p> <p><i>The Licensee may wish to include a sign in register at the door of each Open Forum meeting as a record of attendance. It will also provide a gauge of the percentage of customers attending against total customer numbers in residence to help measure the effectiveness of the meetings.</i></p>	<p><i>issues around the WWTP as a standing item on the meeting agenda.</i></p> <p><i>The Licensee should encourage customers to regularly access the closed circuit TV system to get up to date information and park news.</i></p> <p><i>The Licensee may wish to consider the establishment of a regular localised newsletter.</i></p> <p><i>The Licensee may wish to include a sign in register at the door of each Open Forum meeting as a record of attendance. It will also provide a gauge of the percentage of customers attending against total customer numbers in residence to help measure</i></p>	<p>General Manager April 2013</p> <p>General Manager April 2013</p> <p>General Manager April 2013</p>

Licence Condition Reference	Issue	Recommendation	Post- Audit Action Plan	Person Responsible/ Date of Implementation
			<i>the effectiveness of the meetings.</i>	
Schedule 3 Clause 4.2	See 4.1	<i>As per 4.1</i>	As per 4.1 above	As per 4.1 above
Customer Complaints Clause 1.2	<p>No register available at time of audit. New register being developed.</p> <p>Minor issues noted only.</p> <p>Verbal declaration by manager that all were quickly resolved. (None have been escalated to NLV).</p> <p>No resolution evident on forms used.</p> <p>WWTP complaints were not raised through this system.</p>	<p><i>The Licensee shall keep a complaints register</i></p> <p><i>The Licensee may wish to record all customer complaints.</i></p> <p><i>The Licensee may wish to declare resolution outcomes for review purposes.</i></p>	<p>Complaints register is in place.</p> <p>No complaints received to date.</p>	<p>General Manager</p> <p>Resolved</p>
Sewerage Services Clause 2.1	<p>General blockages causing overflows were noted.</p> <p>All blockages were at the WWTP itself.</p> <p>Estimated 1 km – 10 blockages.</p> <p>Viewed maintenance logs and MAINTENANCE CONTRACTOR incident reports. The documentary evidence reviewed was not fully reliable as in some cases work logs were not completed at the site and were not signed off by a Licensee representative</p>	<p><i>The Licensee should introduce a system where all maintenance contractor work sheets/logs are countersigned by a Licensee's site representative.</i></p>	<p>We will introduce a system where all maintenance contractor work sheets/logs are countersigned by a Licensee's site representative.</p>	<p>General Manager</p> <p>March 2013</p>

Licence Condition Reference	Issue	Recommendation	Post- Audit Action Plan	Person Responsible/ Date of Implementation
	<p>No overflow at customer's residents</p> <p>Sewer system design is such that a backup would overflow from a manhole rather than at a customers' residence. All overflows noted were at WWTP.</p> <p>The Licensee has engaged a consulting firm to investigate and offer solutions to prevent blockages at the plant that cause overflows.</p>			

1.3 Asset Management Review

1.3.1 Summary of Opinion on the Control Environment

The control environment for asset management is assessed to be unsatisfactory.

The primary deficiencies were confined to five areas of the asset management system, namely;

- Environmental Analysis;
- Asset Operations;
- Asset Maintenance;
- Risk Management; and
- Contingency Planning.

Whilst process and policy definition adequacy and performance were found to be unsatisfactory for these five areas, Moama management have recognised the issues and begun steps to rectify the shortfalls.

Improved management of the maintenance contractor, development of written work procedures, the implementation of more robust emergency contingencies and the planned risk assessment will provide for better asset management process definition and stronger performance giving greater control of the asset by Moama.

1.3.2 Overall assessment

In the auditor's professional view, Moama does not have an effective asset management system. A number of areas for improvement were identified and full details are incorporated later in this report.

Significant areas of recommended improvement are as follows;

- An improved risk management approach should be utilised to establish a more in depth risk register that better identifies hazards, impacts, controls and mitigation covering both the operation and future planning of the asset;
- Establish clear KPI's to better manage and measure the performance of the third party maintenance contractor; and,
- Set in place a mitigation plan to ensure, should existing controls at the asset fail, any contained spill be reintroduced into the system or removed from site by an appropriate sanitary contractor.

1.3.3 Previous Post-Audit Plan

This was the first audit.

1.3.4 Summary of Issues and Recommendations

Table 2 – AMS Summary of Issues and Recommendations

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
Asset Planning	An ongoing maintenance schedule is in place to prevent asset failure, undertaken by the contracted operator however no prioritising of risks have been undertaken to date.	<p><i>1 A risk workshop should be conducted to identify foreseeable asset failure risks, measure likelihood and estimate consequence. The workshop outputs should also risk rate the severity of any identified failure and assign controls to reduce the risk and mitigation measures to manage and minimise any negative outcome should a control be defeated and a failure was to occur.</i></p> <p><i>2 The Licensee should develop a risk register from this workshop so as to prioritise the risk of the identified asset failure possibilities.</i></p>	Emerson Stewart report did not foresee any asset future risks however NLV will conduct a risk workshop with a risk register that identifies hazard, impacts, controls and mitigation. .	General Manager May 2013
Asset Planning	Capital works are completed however no evidence of regular reviews or updates were found. Engineering consultancy, undertook an engineering report on the plant in November 2012.	<p><i>3 Maintenance plans require updating to include, the post sanitation process following an overflow spill contained within the catchment tray below the tanks</i></p> <p><i>4 Emerson Stewart engineering report undertaken in November 2012,</i></p>	<p>Maintenance plans will be updated to include, the post sanitation process following an overflow spill contained within the catchment tray below the tanks.</p> <p>Emerson Stewart engineering</p>	General Manager March 2013

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
		<i>maintenance plans require review to manage operation. This should be completed as a matter of priority by the Licensee.</i>	report undertaken in November 2012, maintenance plans will be reviewed to manage operation.	
Asset Planning (Section 1.9)	<p>Currently the plant has a capacity of 180 homes with 70 connected so far. Once Stage 2 is completed – the plant will be upgraded for an end use of 470 homes.</p> <p>No clear plan was available to ensure a smooth transition for the introduction of the upgrade</p>	<i>5 The Licensee should develop a transition plan for the initiation of the upgrade. Include a forecasted timeframe, triggers and early ordering of critical parts. Elements of this process should be included in a risk assessment workshop and a risk register be developed as an output. Consideration should include plant design, construction, commissioning, operation, maintenance and end of life disposal.</i>	Transition plan to be developed.	General Manager June 2013
Asset Disposal	Disposal alternatives have not been considered.	<i>6 The Licensee should revisit the “Whole of Asset Life” plan and determine strategies for disposal of plant including recycling of assets such as plastics, following decontamination of materials, disposal costs of non-recyclable materials.</i>	Disposal alternatives for redundant/replacement of major elements of the WWTP will be explored and considered.	General Manager June 2013
Asset Disposal	As reflected in the cash flow provided as part of application. Ongoing maintenance/preventative	<i>7 See Section 1.9 above in Asset Planning.</i>		

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
	maintenance considers replacement times for aspects of the system, replacement of whole asset is considered in 2019, as per Appendix. E of the original ERA application.			
Environmental Analysis	No past evidence except for the commissioning of the engineering report from Emerson Stewart. Some limited evidence of remedial action taken after untreated water discharge to ground.	<i>8 The Licensee should include environmental consideration in the proposed risk workshop recommended earlier in this checklist.</i>	Noted	General Manager May 2013
Environmental Analysis	No formal measurement of contractor performance was identified. No clear written performance standards were available. New Emergency response plans have recently been implemented.	<i>9 The Licensee should develop and implement clear, measurable Key Performance Indicators (KPIs) that are expected from the plant maintenance contractor. Provide feedback to the contractor in-line with the KPIs.</i> <i>10 Create clear written performance standards around the following;</i> <i>availability of service,</i> <i>capacity to provide service 24/7,</i> <i>continuity of service provision and,</i> <i>emergency response.</i> <i>10 b. Adjust the current Emergency</i>	KPIs will be implemented as noted below Create clear written performance standards around; availability of service, capacity to provide service 24/7,	General Manager March 2013

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
		<i>Response plan by removing Water Corporation as sewerage emergency contact and replace with correct reference.</i>	<p>continuity of service provision and, emergency response.</p> <p>Adjust the current Emergency Response plan by removing Water Corporation as sewerage emergency contact and replace with correct reference.</p>	General Manager Resolved
Environmental Analysis	The Licensee has continued to provide uninterrupted service to its clients however. Recent contained overflows at the plant were the cause of odorous smells and presented a possible serious public health risk to customers.	<i>11 The Licensee should ensure that any contained spills from overflows are pumped back into the system or removed from site by a licenced sanitary waste operator and the plant containment sumps are sanitised to eliminate odours and possible public health risk from an overflow incident.</i>	Ensure that any contained spills from overflows are pumped back into the system or removed from site by a licenced sanitary waste operator and the plant containment sumps are sanitised to eliminate odours and possible public health risk from an overflow incident (Will be included in written instruction)	General Manager March 2013
Asset Operations	There is a contract in place for the operations and maintenance of the	<i>12 The Licensee should review the services contract to ensure that it</i>	Review the services contract to ensure that it adequately	

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
	plant, the contract reflects the service levels required by the approval authorities. Operational procedures are not currently documented by the contracted operator.	<i>adequately addresses an acceptable service level.</i>	addresses an acceptable service level.	
Asset Operations	A new risk register was implemented in December 2012. A risk register was not found for the audit reporting period .Incident reports and Monthly reports are provided by the contracted operator along with any non-compliance issues and resolution actions.	<i>13 The Licensee should ensure that the risk register is populated to manage the foreseeable risks of the plant operation.</i>	Ensure that the risk register is populated to manage the foreseeable risks of the plant operation.	General Manager April 2013
Asset Operations	Asset register and accounting data records are kept for Tuart Lakes Lifestyle Villages. Details of all components are with the contracted operator.	<i>14 The Licensee should ensure that a detailed register of plant and equipment relating to the WWTP is kept on file at the licensee's office</i>	A detailed register of plant and equipment relating to the WWTP will be kept on file at the licensee's office	General Manager Resolved
Asset Operations	Tuart Lakes Lifestyle Village staff undertakes a daily visual checklist. Weekly and monthly checks are via the contracted operator.(No consistent document evidence was	<i>15 The Licensee should document a written work instruction for the daily visual inspection to be carried out by the Licensee's staff and maintain a record of their training to perform this</i>	Document a written work instruction for the daily visual inspection to be carried out by the Licensee's staff and maintain a record of their training to perform	General Manager March 2013

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
	provided)	<p><i>duty.</i></p> <p><i>16 Copies of completed visual checklist should be kept on site.</i></p> <p><i>17 The Licensee should ensure that reports are forthcoming from the maintenance provider and are kept at the Licensee's office.</i></p>	<p>this duty.</p> <p>Copies of completed visual checklist will be kept on site.</p> <p>Ensure that reports are forthcoming from the maintenance provider and are kept at the Licensee's office.</p>	
Asset Operations	The contracted operator is managed through regular communications and meetings, including the requirement for monthly reporting in line with service level requirements set out during the approvals phase. The contracted operator provides incident reporting/sample monitoring. Reports by exception i.e. any rectification works undertaken.	<p><i>18 The Licensee should establish clear KPIs (See section 4.2 of this checklist)</i></p> <p><i>19 The Licensee should develop stronger controls and more effective contractor management. i.e. contractual arrangements re: risk assessment to prioritise higher risks</i></p>	<p>Establish clear KPIs</p> <p>Develop stronger controls and more effective contractor management</p>	<p>General Manager March 2013</p> <p>General Manager March 2013</p>
Asset Operations	The contracted operator Maintenance Contractor places too much reliance on the technical knowledge of one person, this need to be addressed by training more people in Maintenance Contractor to prevent a knowledge gap when key personnel are away.	<i>20 Licensee should ensure that Maintenance Contractor can meet the KPIs as required or alternatively a better resourced provider be engaged that can meet expectations.</i>	<i>Licensee should ensure that Maintenance Contractor can meet the KPI's as required, including an escalation of site inspection frequencies when conditions require or alternatively a better resourced provider be engaged that can meet expectations.</i>	General Manager Resolved

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
Asset Maintenance	The contracted operator has a Maintenance and Operations Contract which is based on required service levels as stipulated by the approval authorities.	<i>21 In conjunction with the maintenance provider the Licensee should develop a written maintenance policy that reflects service levels required</i>	A written maintenance policy will be developed in conjunction with the maintenance provider that reflects service levels required	General Manager March 2013
Asset Maintenance	<p>The Contractor provides monthly water quality reports.</p> <p>Daily, weekly and monthly checks are undertaken but written reports appear to be sporadic.</p> <p>Limited work performed notices were available to provide evidence of contractor attendance.</p> <p>Local staff undertakes daily visual checks but these have recently been halted due to OHS concerns around the overflow incidents.</p> <p>The local staffs do not perform checks of a more technical nature as they do not have the appropriate level of training.</p>	<p><i>22 The Licensee should ensure that all completed check lists are signed off by local village management and are readily available for inspection.</i></p> <p><i>23 The Licensee should devise a daily inspection regime for site staff so they are not at health risk.</i></p> <p><i>24 The Licensee should ensure technical plant inspection regime is adequate.</i></p>	<p>Ensure that all completed check lists are signed off by local village management and are readily available for inspection.</p> <p>Devise a daily inspection regime for site staff so they are not at health risk.</p> <p>Ensure technical plant inspection regime is adequate.</p> <p>monitored during daily checks by TLLV staff.</p>	<p>General Manager Resolved</p> <p>General Manager Resolved</p>
Asset Maintenance	Planned maintenance is undertaken by the contracted operator. If there is an issue an incidental report is provided, along with details of	<i>25 The Licensee should develop a clear preventative maintenance schedule and keep up to date .Any failure to adhere to the plan should be</i>	Develop a clear preventative maintenance schedule and keep up to date .Any failure to adhere to the plan will be reported to	General Manager March 2013

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
	<p>corrective actions. Time taken to restore the plant to normal compliant operations is documented.</p> <p>This process is more reactive than planned and little evidence of documented maintenance plans was found.</p> <p>Emerson Stewart has undertaken a third party engineering report on the plant. National Lifestyle Villages will implement any recommendations</p>	<i>reported to Licensee's operational manager.</i>	Licensee's operational manager.	
Asset Maintenance	No evidence of a risk management approach to prioritise maintenance tasks was found.	<i>26 The Licensee should ensure that higher risk elements of the plant are risk assessed and take high priority in the maintenance schedule.</i>	Higher risk elements of the plant will be risk assessed and take high priority in the maintenance schedule.	General Manager April 2013
Asset Maintenance	The contracted operator allocates staff for maintenance and operations. There is a knowledge gap when Maintenance Contractor's key experienced personnel are unavailable, resulting in inconsistent maintenance quality.	<i>27 (See section 5.8 Asset Operations)</i>		
Asset Maintenance		<i>27B (AQUASOL report received by the auditor during draft document review and recommendations added).</i>		

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
		<p><i>see Appendix1 for full report.</i></p> <p><i>The Licensee may wish to consider implementing Aquasol's recommendations to further improve the WWTP operation.</i></p> <p><i>Aquasol are in the process of obtaining quotes for the addition of a turbidity monitor to be installed in the polishing loop to continuously monitor the discharge from the media filters. This will provide an excellent indicator of media filter performance that can be easily monitored during daily checks by TLLV staff.</i></p> <p><i>Aquasol are also pricing differential pressure monitoring across the ultra-filtration membranes. This will indicate blockages within the membranes and can be utilized to initiate a membrane backwash cycle</i></p> <p><i>An additional 32kL tank has been ordered and will be installed to provide temporary storage of wastewater for routine maintenance or breakdown contingency. The operating level of the polish, collection and irrigation</i></p>	<p>Install the proposed polishing loop and include outputs in daily checks.</p> <p>Install the proposed differential pressure monitoring system across the ultra-filtration membranes.</p> <p>Install the additional 32kL tank</p>	<p>General Manager April 2013</p> <p>General Manager May 2013</p> <p>General Manager March 2013</p>

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
		<i>tanks has also been lowered to provide greater capacity in times of breakdowns or maintenance.</i>		
Asset Management Information System	The asset is fenced and the gate is locked at all times, unless personnel are on site	<i>28 The Licensee may wish to consider the key lock be replaced by a key pad to provide a more suitable security control as a padlock key can lead to uncontrolled access.</i>	Consider the replacement of the key lock	General Manager Resolved
Risk Management	The Licensee states that risk management is part of all projects and is reported on. The asset management plan contains the risk assessment from the contracted operator, Appendix N page 14 of the original approval. No recent updates were found	<i>29 The Licensee should review the asset management plan and associated risk register at least annually or as changes occur.</i>	Review the asset management plan and associated risk register at least annually or as changes occur.	General Manager Resolved
Risk Management	A risk register has been recently initiated, and is not complete.	<i>30 The Licensee should develop the risk register to show how treatment plans are actioned and monitored.</i>	Develop the risk register to show how treatment plans are actioned and monitored.	General Manager April 2013
Risk Management	Asset failure can have catastrophic consequences to the operations of Tuart Lakes Lifestyle Village. There is no formally documented and completed register/plan and the site relies on the capability of the	<i>31 The Licensee should explore all foreseeable issues, and develop a risk based approach to managing those risks.</i>	Explore all foreseeable issues, and develop a risk based approach to managing those risks.	General Manager April 2013

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
	contracted operator.			
Contingency Planning	<p>Contingencies are part of the design of the plant, such as the inclusion of a sump to capture overflow and prevent unwanted discharge to ground, addition of in line filters upstream of the plant, etc.</p> <p>No documented contingency plans were found.</p>	<p><i>32 The Licensee should implement and test the recommendations from the recent Emerson Stewart report.</i></p> <p><i>33 The Licensee should develop documented contingency plans and ensure that site and other operational personnel are fully educated in what must be done in the event of a plant failure or incident. Any system devised should be tested for adequacy and effectiveness by drills and mock incidents.</i></p> <p><i>34 The licensee should source a sanitary waste contractor as standby to address emergency sewerage and waste removal</i></p>	<p>Implement and test the recommendations from the recent Emerson Stewart report.</p> <p>Develop documented contingency plans and ensure that site and other operational personnel are fully educated in what must be done in the event of a plant failure or incident.</p> <p>Test any system devised for adequacy and effectiveness by drills and mock incidents.</p> <p>Set up and emergency response agreement with Western Resource recovery</p>	<p>General Manager May 2013</p> <p>General Manager April 2013</p> <p>General Manager April 2013</p> <p>General Manager Feb 2013</p>
Contingency Planning	<p>Senior operational NLV staff are backed up by the contracted operator</p> <p>Alternative operators have been considered should the contracted operator be unavailable.</p>	<p><i>35 The Licensee should identify alternative competent contractor as a back-up.</i></p>	<p>Work in process to identify an alternative maintenance provider</p>	<p>General Manager April 2013</p>

Key Processes	Issue	Recommendation	Post-Audit Action Plan	Person Responsible/ Date of Implementation
Review of AMS	<p>No asset management reviews have been previously undertaken.</p> <p>No documented process for the review was found.</p>	<i>36 The Licensee should ensure that an internal review/audit is conducted of the Asset Management System prior to the external review. This should be a documented procedure.</i>	an internal review/audit is completed annually for the DoH	General Manager Resolved

2. Audit/Review Scope

2.1 Objectives and Scope

2.1.1 Operational Audit

The objective of the operating licence audit was to evaluate the effectiveness of the measures taken by Moama to meet the obligations of the performance and quality standards referred to in the Water Services Licence. The audit focussed on Moama's systems and effectiveness of processes used to ensure compliance with the obligations, standards, outputs and outcomes as required by the Licence.

The audit has identified areas where improvement is required and has recommended corrective action as necessary.

The audit has applied a risk-based approach to focus on the systems and effectiveness of processes used to ensure compliance with the standards, outputs and outcomes required by the licence.

The scope of the audit covered the following areas;

- **Risk Assessment** – the risks imposed by non-compliance with the licence standards and the development of a risk-based audit plan to focus on the higher risks areas, with less intense coverage of medium and low risk areas;
- **Process Compliance** – the effectiveness of systems and procedures in place throughout the audit period, including the adequacy of internal controls;
- **Outcome Compliance** – the actual performance against standards prescribed in the licence throughout the period of the licence;
- **Output Compliance** – the existence of output from systems and procedures throughout the audit period, i.e. proper records, written procedures and training to provide assurance that procedures are being consistently followed and controls are being maintained;
- **Integrity of Reporting** – the completeness and accuracy of the compliance and performance reports provided to the Authority; and
- **Compliance with any individual licence conditions** – the requirements imposed on the specific licensee by the Authority or specific issues that are advised by the Authority.

2.1.2 Asset Management Review

The objective of the Asset Management System (AMS) review (AMS) was to assess the measures taken by Moama for the proper management of assets used in the provision and operation of services and, where appropriate, the construction or alteration of relevant assets. The review focused on the asset management system and asset management plans that measure the proper operation and maintenance of assets within Moama.

More intense scrutiny was applied to the Environmental Analysis, Asset Operations, Asset Maintenance, Risk Management and Contingency sections of the AMS review than the other lower risk areas.

The scope of the AMS review covered the following key processes:

- Asset Planning;
- Asset Creation/Acquisition;
- Asset Disposal;
- Environmental Analysis;
- Asset Operations;
- Asset Maintenance;
- Asset Management Information System;
- Risk Management;
- Contingency Planning;
- Financial Planning; and
- Review of AMS.

2.2 Methodology

2.2.1 Field work – Operational Audit

- An initial meeting was conducted with relevant staff at Moama's office in Perth. The review process was discussed to obtain an understanding of the procedures, systems and controls in place to ensure compliance with licence conditions;
- The adequacy of the controls to cover identified risks were evaluated, the outcome of which determined where more extensive audit testing of higher risk areas so as to provide sufficient assurance and confirm lower risk areas by discussion and observation;
- A site visit was conducted to interview relevant site staff and to review records maintained at the site and to investigate the implementations of work systems;
- Compliance with the licensing conditions was assessed over the audit period as well as at the time of the audit;
- A further follow up discussion was held with senior staff at Moama's Perth office to review documents and hold discussion with the maintenance provider;
- Improvement options for issues and weaknesses were researched and appropriate and potential improvements were developed. Some less complex issues were dealt with and remedies were recommended during the audit.

2.2.2 Fieldwork – Asset Management Review

- An initial meeting was conducted with relevant staff at Moama's office in Perth. The review process was discussed to obtain an understanding of the procedures, systems and controls in place to ensure effective asset management;
- A site inspection of the asset was carried out;
- The Licensee's documented procedures and processes were analysed for planning, operation and maintenance of assets to assess whether they are consistent with the regulatory requirement arrangements under the licence and the ERA's Audit Guidelines Electricity, Gas and Water;

- The review focussed on the higher risk areas that were determined through a risk management approach. The lesser risk areas were reviewed but not with as much vigour as the higher risk areas;
- The effectiveness of the asset management approach was evaluated and weaknesses and issues were identified and recommendations being formulated with Moama management to create a more robust system;

2.2.3 Audit Reporting

- Prior to the conclusion of the audit visits, the auditor discussed any observations and recommendations with the Licensee's representative to confirm understanding of the issue and to agree upon actions to be taken.
- A draft report was provided to the Licensee for review and response to the post audit recommendations in a post audit implementation plan, including any proposed corrective action, responsible person and timeframe.
- A final draft report, including the agreed post audit plan implementation plan is provided to the Authority for final acceptance.
- Upon acceptance by the Authority, a copy of the final report is provided to the Licensee who provided an electronic copy and three printed copies to the Authority.
- The Authority may make and publically distribute copies of the final report and publish results in their entirety or in a comparative report. The Authority will make the report publically available on the ERA website after the Authority has fulfilled its statutory functions.

2.3 Time Period Covered in Audit/Review

The Audit covered the period from 7th September 2010 to 30th September 2012

2.4 Time Period of Audit/Review

The Audit was conducted from December 2012 to January 2013.

2.5 Licensee's Representatives

Moama Lifestyle Village Pty Ltd, (Tuart Lakes Lifestyle Village) primary contacts are as follows:

Staff	Position
Ian Nichol	Group General Manager - Developments
Andrew Heartcliffe	Assistant Project Manager
Philip Thompson	Area Manager - South
Bronwyn Barry	Village Administrator – Tuart Lakes

2.6 Key Documents and Other Information Sources

2.6.1 Operational Audit

- Audit Guidelines: Electricity, Gas and Water Licences, August 2010

- Moama Lifestyle Villages Pty Ltd Water Services Operating Licence, issued 7th day of September 2010
- Approved, Moama Lifestyle Villages Pty Ltd Water Operating Licence Audit and Asset Management Review Audit Plan (61/28891-December 2012)
- Tuart Lakes Lifestyle Village Customer Charter
- Tuart Lakes Wastewater Treatment Plant file containing:
 - Risk management plan
 - Sewer Design
 - Irrigation Design
 - WWTP Location Plan
 - WWTP Site Plan
 - Media Filtration Scheme
 - WWTP Design Information
 - Maintenance – Expenditure Report
 - NLV Safety Management
 - Water Examination Laboratory Reports
 - Govt. WA DOH – recycled water scheme approval
 - Govt. WA W&C works approval
 - Village concept plan planning approval letter
 - GHD Health Risk Assessment Report (November 2008)
- Village Code of Conduct (uncontrolled)
- Residential Site Agreement – Tuart Lakes Lifestyle Village (RSA-TuartLakes-20100813_V1.0.doc)
- Complaints Register (uncontrolled)
- Issues Form (uncontrolled)
- Lifestyler's Manual (uncontrolled)
- Tuart Lakes Clubhouse Induction (uncontrolled)
- Tuart Lakes Helpful Information (uncontrolled but dated 2012)
- Tuart Lakes Village Emergency Standing Orders (dated 20111006 – 6th Oct 2011)
- Tuart Lakes Village Policies (uncontrolled)
- Tuart Lakes Risk Register (V2, December 2012)
- Tuart Lakes Lessons Learnt Register (V1)
- Licence Statistics Reports to ERA
- Aquasol water test record sheets (uncontrolled)
- Tuart Lakes customer survey document (uncontrolled)

2.6.2 Asset Management Review

- Audit Guidelines: Electricity, Gas and Water Licences, August 2010
- Approved, Moama Lifestyle Villages Pty Ltd Water Operating Licence Audit and Asset Management Review Audit Plan (61/28891-December 2012)
- Emerson Stewart Engineering Review (Project 4217, dated 30/11/2012)
- Tuart Lakes Wastewater Treatment Plant file
- Risk management plan
- Sewer Design
- Irrigation Design
- WWTP Location Plan
- WWTP Site Plan
- Media Filtration Scheme
- WWTP Design Information
- Maintenance – Expenditure Report
- NLV Safety Management
- Water Examination Laboratory Reports
- Govt. WA DOH – recycled water scheme
- Govt. WA W&C works approval
- Village concept plan planning approval letter
- DEC Environmental Assessment Report
- GHD Health Risk Assessment Report (November 2008)
- Various uncontrolled AQUASOL documents

2.7 Audit/Review Team Members and Hours Utilised

Staff	Hours
Doug Edgar – Project Director	2
Alan Meagher – Lead Auditor	50
Les Wilson – Asset Management Reviewer	22
Total	74

3. Performance Summary

3.1 Operational Audit

3.1.1 Compliance Rating Scale

Compliance Status	Rating	Description of compliance
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 minimum requirements.
SIGNIFICANTLY NON-COMPLIANT	1	Significant weaknesses and/or serious action required.
NOT APPLICABLE	N/A	Determined that the compliance obligation does not apply to the licensee's business operations.
NOT RATED	N/R	No relevant activity took place during the audit period; therefore it is not possible to assess compliance.

3.1.2 Operational Audit Compliance Summary

Table 3 Operational Audit Compliance Summary

Performance Operating Area	Operating Licence Reference	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (1=Highest, 5=lowest, N/A = Not Applicable, N/R = Not Rated)						
Operating Areas						1	2	3	4	5	N/A	N/R
Sewerage services in designated areas	Sch. 1 CI 2.1	1	C	Low	S					✓		
Customer Service						1	2	3	4	5	N/A	
Obligations to customers Conditions for Connection in writing	Sch. 6 CI 2.1	1	C	Low	M			✓				
Services available for connection	Sch. 6 CI 2.2	2	C	Medium	M					✓		
Written agreement to discontinue services	Sch. 6 CI 2.3	1	C	Low	M					✓		
Term						1	2	3	4	5	N/A	
Term	Clause 3.1	1	C	Low	M					✓		
Fees						1	2	3	4	5	N/A	

Performance Operating Area	Operating Licence Reference	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C= unlikely)	Inherent Risk	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (1=Highest, 5= lowest, N/A = Not Applicable, N/R = Not Rated)						
Fees	Clause 4.1	1	C	Low	M					✓		
Compliance						1	2	3	4	5	N/A	
Compliance to applicable legislation	Sch. 3 Cl 5.1	2	C	Medium	M				✓			
Correct or prevent breaches	Sch. 3 Cl 5.2	2	C	Medium	M				✓			
Customer complaints						1	2	3	4	5	N/A	N/R
Customer complaints process in place	Sch. 3 Cl 6.1	1	C	Low	M			✓				
Timeframe to resolve complaints	Sch. 3 Cl 3.1	1	C	Low	M			✓				
Unique complaint number, appropriate personnel, complaint resolution protocols, records	Sch. 3 Cl 3.2	1	C	Low	M				✓			
Disputes may be referred to Department of Water	Sch. 3 Cl 3.3	1	C	Low	M							✓
Disputes must be referred to Department of Water	Sch. 3 Cl 3.4	1	C	Low	M							✓
Actions on Department of Water requests	Sch. 3 Cl 3.5	1	C	Low	M				✓			
Licensee must cooperate with Department of Water	Sch. 3 Cl 3.6	1	C	Low	M					✓		
Details of complaint must be provided to	Sch. 3 Cl 3.7	1	C	Low	M							✓

Performance Operating Area	Operating Licence Reference	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C= unlikely)	Inherent Risk	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (1=Highest, 5= lowest, N/A = Not Applicable, N/R = Not Rated)						
the Department of Water upon request												
Customer service charter						1	2	3	4	5	N/A	
The Licensee must establish a customer service charter	Sch. 3 CI 7.1	1	C	Low	M				✓			
The charter must accord with the Authorities guidelines	Sch. 3 CI 2.1	1	C	Low	M					✓		
The charter should be drafted in plain English and address likely service issues	Sch. 3 CI 2.2	1	C	Low	M				✓			
Different parts of charter may address different classes of customers	Sch. 3 CI 2.3	1	C	Low	M						✓	
Amendments must be forwarded to Authority for approval	Sch. 3 CI 2.4	1	C	Low	M				✓			
Availability of charter to customers	Sch. 3 CI 2.5	1	C	Low	M		✓					
Review of charter by Licensee	Sch. 3 CI 2.6	1	C	Low	M				✓			
Services supplied are consistent with charter	Sch. 3 CI 2.7	1	C	Low	M				✓			
Customer consultation						1	2	3	4	5	N/A	N/R
Customer consultation must be established	Sch. 3 CI 8.1	1	C	Low	M							✓
Actively solicited ongoing customer	Sch. 3 CI 4.1	2	C	Medium	M				✓			

Performance Operating Area	Operating Licence Reference	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C= unlikely)	Inherent Risk	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (1=Highest, 5= lowest, N/A = Not Applicable, N/R = Not Rated)						
consultation												
The Authority must be consulted with respect to the customer consultation adopted	Sch. 3 Cl 4.2	1	C	Low	M		✓					✓
Other forums of customer consultation must be established upon the request of the Authority	Sch. 3 Cl 4.3	1	C	Low	M				✓			
Memorandum of understanding						1	2	3	4	5	N/A	N/R
Memorandum of understanding	Clause 9										✓	
Transfer of licence						1	2	3	4	5	N/A	N/R
Transfer of licence	Clause 10										✓	
Cancellation of licence						1	2	3	4	5	N/A	N/R
Cancellation of licence	Clause 11										✓	
Surrender of licence						1	2	3	4	5	N/A	N/R
Surrender of licence	Clause 12										✓	
Renewal of licence						1	2	3	4	5	N/A	N/R
Renewal of licence	Clause 13										✓	
Amendment of licence						1	2	3	4	5	N/A	N/R

Performance Operating Area	Operating Licence Reference	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C= unlikely)	Inherent Risk	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (1=Highest, 5= lowest, N/A = Not Applicable, N/R = Not Rated)						
Amendment of licence	Clause 14	1	C	Low	M							✓
Accounting records						1	2	3	4	5	N/A	N/R
Accounting records to comply with Australian Accounting Standards	Clause 15	1	C	Low	M					✓		
Operational audit						1	2	3	4	5	N/A	N/R
Operational audit to be undertaken within 24 months and every 24 months thereafter	CI 16.1	1	C	Low	M							✓
Audit must comply with the Authority's standard audit guidelines	CI 16.2	1	C	Low	M					✓		
Licensee may seek review of Authority's standard audit guidelines	CI 16.3	1	C	Low	M							✓
Independent auditor must be approved by the Authority	CI 16.4	1	C	Low	M					✓		
Asset management system						1	2	3	4	5	N/A	N/R
The Authority must be notified of the asset management system	Cl. 17.1	1	C	Low	M					✓		
Any material change to asset must be reported to the Authority	Cl. 17.2	1	C	Low	M							✓
Licensee must conduct an asset management system review and provide the Authority a subsequent report every	Cl. 17.3	1	C	Low	M							✓

Performance Operating Area	Operating Licence Reference	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C= unlikely)	Inherent Risk	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (1=Highest, 5= lowest, N/A = Not Applicable, N/R = Not Rated)						
24 months												
Review must comply with the Authority's standard guidelines dealing with the asset management review	Cl. 17.4	1	C	Low	M					✓		
Licensee may seek review of Authority's standard guidelines dealing with the review	Cl. 17.5	1	C	Low	M							✓
Independent expert must be approved by the Authority	Cl. 17.6	1	C	Low	M					✓		
Reporting						1	2	3	4	5	N/A	N/R
Report to Authority if under external administration or significant change in Licensee's circumstances	Clause 18	1	C	Low	M							✓
Individual performance standards						1	2	3	4	5	N/A	N/R
Individual performance standards in applicable legislation	Cl. 19.1	1	C	Low	M							✓
Authority may prescribe individual performance standards	Cl. 19.2	1	C	Low	M					✓		
Licensee submissions considerations in relation to prescribed individual performance standards imposed	Cl. 19.3	1	C	Low	M					✓		
Approved performance standards set out in Schedule 4	Cl. 19.4	1	C	Low	M					✓		

Performance Operating Area	Operating Licence Reference	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C= unlikely)	Inherent Risk	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (1=Highest, 5= lowest, N/A = Not Applicable, N/R = Not Rated)						
Service and Performance Standards						1	2	3	4	5	N/A	N/R
Emergency response	Sch. 4 CI 1.1	2	B	Medium	W				✓			
Customer complaints	Sch. 4 CI 1.2	2	B	Medium	M				✓			
Sewerage services	Sch. 4 CI 2.1	2	A	High	W				✓			
Service performance standards	Sch. 4 CI 20.1	2	B	Medium	M				✓			
Provision of information						1	2	3	4	5	N/A	N/R
Provision of information	Cl. 21.1	1	C	Low	M				✓			
Licensee compliance with Schedule 5 requirements	Cl. 21.2	1	C	Low	M				✓			
Information requirements (reporting)						1	2	3	4	5	N/A	N/R
Information requirements (reporting)	Sch. 5 CI 2.1	1	C	Low	M					✓		
Publishing information	Cl. 22.1	1	C	Low	M					✓		
Publishing information	Cl. 22.2	1	C	Low	M					✓		
Confidential information	Cl. 22.3	1	C	Low	M					✓		
Authority's direction to publish information	Cl. 22.4	1	C	Low	M					✓		
Notices						1	2	3	4	5	N/A	N/R

Performance Operating Area	Operating Licence Reference	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C= unlikely)	Inherent Risk	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (1=Highest, 5= lowest, N/A = Not Applicable, N/R = Not Rated)						
Notices in writing	Cl. 23.1	1	C	Low	M					✓		
Evidence of receipt of notices	Cl. 23.2	1	C	Low	M					✓		
Review of authority's decisions						1	2	3	4	5	N/A	N/R
Review of authority's decisions	Cl. 24.1	1	C	Low	M							✓
Review of authority's decisions	Cl. 24.2										✓	
Customer contracts (not addressed above)						1	2	3	4	5	N/A	N/R
Non-standard customer contracts	Sch. 3 Cl 5.1	1	C	Low	M					✓		
Approval to allow non-standard contracts	Sch. 3 Cl 5.2	1	C	Low	M					✓		
Terms and conditions previously in place	Sch. 3 Cl 5.3	1	C	Low	M						✓	
Reporting of non-standard customer contracts	Sch. 3 Cl 5.4	1	C	Low	M							✓
Authority required independent customer surveys	Sch. 3 Cl 6.1	1	C	Low	M				✓			

3.1.3 Observations and Recommendations

These field notes were compiled by Alan Meagher.

Table 4 Operating Licence Audit Checklist

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
Operating Area Clause 2.1 Schedule 1	<i>Is it in the correct operating area</i>	Review drawing (OWR-OA-298)	Observed as correct.	5	NIL
Schedule 6 Other Provisions Obligations to Customers Clause 2.1	<i>The licensee must set out in writing its "conditions for connection" and make that information available to all applicants and to people inquiring about connection.</i>	Review "conditions for connection" documentation Check that information is available and provided to all applicants enquiring about connection	The Licensee has provided in writing its conditions for connection and All work etc. connections done prior to occupation by licenced plumbers.	4	<i>The Licensee should include written information on the WWTP and the need to take care that unwanted items and substances are not flushed.</i> <i>The Licensee should educate/remind Customers of avoiding flushing unwanted materials and substances down the sewer at monthly village meetings.</i>
Clause 2.2	<i>The licensee must ensure that its services are available for connection on request to any land situated in the operating areas, subject to the applicant meeting</i>	Review connections availability register. Request information	As a site is planned to be occupied a connection is made available from an existing network. Register of connections and available connections is kept on the site manager's wall. Information is also	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>any conditions the licensee may determine to ensure safe, reliable and financially viable supply of services to land in the operating areas in accordance with this 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.</i>		documented with prestart occupancy interview.		
Clause 2.3	<i>The licensee may, with the written agreement of the property owner, discontinue a</i>	Review any discontinuances	None provided. Verbal – none issued.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>service to a property where servicing of the property is not commercially viable.</i>				
Term Clause 3.1	<i>This licence commences on the commencement date and continues until the earlier of:</i> <i>a) the cancellation of the licence pursuant to clause 11 of the licence</i> <i>b) the surrender of the licence pursuant to clause 12 of the licence; or</i> <i>c) the expiry date</i>	Review licence issue date and expiry date	In date, expires in 2035.	5	NIL
Fees Clause 4.1	<i>The licensee must pay the applicable fees in accordance with the Regulations</i>	Observe receipt of payment Review internal systems for generating reminders to pay	Fees were paid to the Authority at application for the water licence.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
		fees.			
Compliance Clause 5.1	<i>Subject to any modifications or exemptions granted pursuant to the Act, the licensee must comply with any applicable legislation</i>		No modifications. Client says they comply but unable to fully verify.	4	NIL
Clause 5.2	<i>Subject to the provisions of any applicable legislation, 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</i>	Request breach notices and subsequent actions if applicable	1 request for information from ERA was sighted, however this was dated outside the audit period No breach notices were found A letter from city of Rockingham relating to a complaint of untreated water discharge was sighted. A notification from DEC relating to the same discharge was also sighted. a) and b) A number of modifications have been made to WWTP and were	4	<i>3 The Licensee should ensure a Licensee's site representative sign each Maintenance Contractor site works record and the site to file the retained copy as proof of attendance by Maintenance Contractor. 3 a The Licensee should provide response to the requests for information about the sewerage overflows in the format of the next annual compliance report.</i>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>again, and specify a time limit which such action must be taken</i>		<p>confirmed by observation of same.</p> <p>The Auditor was informed that Maintenance Contractor technicians attend the site mostly daily since September 16th. Only unreliable documentary evidence of this attendance was produced.</p> <p>Schedule A 30 Aug 2012, 4 Sep 2012 and 30 Sep 2012 Investigation not possible to occur unless final chlorine dosing failed.</p>		
Customer Complaints Clause 6.1 Schedule 3	<i>The licensee must establish a customer complaints process as set out in Schedule 3</i>	<p>Check for evidence of a complaints procedure</p> <p>Inspect customer complaints register</p> <p>View a sample of complaints to ensure compliance with internal processes.</p>	<p>None concerning WWTP.</p> <p>Internal reports between Maintenance Contractor and NLV (14 reviewed).</p> <p>New register was recently produced. Previously no register was kept.</p> <p>Four compliant forms were viewed (only four in register) but there were no issues recorded against</p>	3	<p><i>4 The Licensee should ensure the new Customer Complaint Register is maintained and reviewed</i></p> <p><i>5 The Licensee should utilise a unique numbering system for "Complaints and Issues" internal proformas</i></p>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
			WWTP from customers (issue or complaints form)		
Schedule 3 Clause 3.1	<i>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.</i>	Review complaints procedure and complaints register to ensure actions have been recorded and review timeframes for completeness	<p>The site has a system but it was not documented No evidence of recorded ongoing/unresolved complaints at site – generated through local management system.</p> <p>Complaint of release of raw sewage sent directly by lifestyle to DoH.</p> <p>Current action being undertaken by NLV.</p>	3	<p><i>Develop a written procedure for complaints and ensure staff are aware of the process</i></p> <p><i>The procedure should set out the process for receiving, recording and (where possible) resolving customer complaints within a timeframe of 15 business days. It should also outline how the process will accurately monitor and record the number, nature and outcome of complaints. Ensure the procedure is such so as to fulfil the Conditions of this Licence including the requirements to provide information set out in this licence to complainants.</i></p>
Schedule 3 Clause 3.2	<p><i>To ensure the effectiveness of such a process the licensee must, as a minimum;</i></p> <p><i>a) establish a system for providing each aggrieved customer with a unique identifying complaint number</i></p>	<p>a) Review complaints register for unique numbering</p> <p>b) Review complaints process to ensure complaints can be</p>	<p>Complaints register exists but no numbering system was applied.</p> <p>Policy operations issues dealt with on site escalated only when unresolved.</p>	4	<i>Use a unique number for each complaint</i>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>b) provide an appropriate number of designated officers who are trained to deal with customer complaints and who are authorised to, or have ready access to officers who are authorised to make the necessary decisions to settle customer complaints or disputes, including where applicable, approving the payment of monetary compensation;</i></p> <p><i>c) establish a complaint resolution protocol which is designed to resolve customer complaints or disputes within 15</i></p>	<p>adequately processed and resolved</p> <p>c) Discover written procedure and/or review complaints for resolution timeframe</p> <p>d) Review risk register</p>	<p>Only minor issues observed.</p> <p>No evidence of closure or timeframe provided.</p> <p>No written procedure for complaints/resolution</p> <p>Recently established file for complaints/disputes</p> <p>No current entries relating to the WWTP were listed in the file.</p>		

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>business days of being notified of their existence; and d) provide a system for accurately monitoring and recording the number, nature and outcome of complaints in order to fulfil the requirements to provide information set out in this licence.</i>				
Schedule 3 Clause 3.3	<i>Where a dispute arises between a customer and the licensee regarding a provided or requested water service, the customer may refer the dispute to the Department of Water.</i>	Review for any forwarded disputes or outstanding dispute records	None recorded.	N/R	NIL
Schedule 3	<i>Where a dispute</i>	Review register for	None recorded.	N/R	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
Clause 3.4	<i>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.</i>	resolutions longer than 15 business days			
Schedule 3 Clause 3. 5	<i>The Department of Water may; a) conciliate the dispute; or b) direct the licensee or customer to binding arbitration.</i>	Review any disputes that were referred to the Department of Water.	<p>Whilst letters requesting action and information from the following were observed relating to overflows and discharges from the WWTP no involvement with the Department of Water was evident ;</p> <p>Dept. of Health asked for 3rd party certification for the WWTP</p> <p>Dept. of Environment and Conservation were provided with hazard reports and Aquasol's incident Report</p>	4	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
			<p>City of Rockingham had seven questions regarding the WWTP.</p> <p>It should be noted that all these requests for action and or information were outside the audit period</p>		
Schedule 3 Clause 3.6	<i>During the process of investigation and conciliation, the licensee must make every endeavour to promptly cooperate with the Department of Water's(or its representative's) request, which must include the expeditious release of any relevant information or documents requested by the Department of Water and the availability of the relevant staff of the</i>	Check for any Department of Water interventions and review if applicable	<p>Interventions exist.</p> <p>Client appears to be cooperative and forthcoming</p>	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>licensee.</i>				
Schedule 3 Clause 3.7	<i>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.</i>	Check if applicable	No WWTP related complaints registered through the internal system were found. Direct to DOH by lifestylers. Names recorded on form but none outlined the resultant resolution.	N/R	NIL
Customer Service Charter Clause 7.1 Schedule 3	<i>The licensee must establish a customer service charter as set out in Schedule 3</i>	Check for evidence of charter	Exists but not as a controlled document. Has a section for policy updates and amendments but no updates noted.	4	<i>The Licensee should establish a document control system to manage version control of the customer service charter</i>
Schedule 3 Clause 2.1.	<i>The licensee must have in place a customer service charter that accords with the Authority's review guidelines.</i>	Review charter	The charter is in accord with Authority's guidelines	5	

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
Schedule 3 Clause 2.2.	<i>The customer charter: a) should be drafted in "plain English; and b) should address all of the service issues that are reasonably likely to concern to its customers.</i>	a) Review for "plain English" b) check it addresses an likely issues	Charter is written in plain English Does not address the importance of not disposing damaging waste into WWTP.	4	<i>The Licensee should include a section explaining the prohibition of allowing damaging waste to enter the sewer system in its customer service charter</i>
Schedule 3 Clause 2.3.	<i>Different parts of the customer service charter may be expressed to apply to different classes of customers.</i>	Not applicable in this instance	N/A	N/A	NIL
Schedule 3 Clause 2.4.	<i>Any proposed amendment to the customer services charter must be forwarded to the Authority for approval.</i>	Check for amendments and any forwarded to the Authority. Has it been updated	No changes noted. The Auditor was not able to confirm whether any past proposed amendment was forwarded to the Authority or not	4	<i>The License should ensure a system is in place to record notification to the Authority of any proposed amendment to the customer services charter</i>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
Schedule 3 Clause 2.5.	<p><i>The licensee must make the customer service charter available to its customers in the following ways:</i></p> <p><i>a) by prominently displaying it in those parts of the licensee's office to which customers regularly have access;</i></p> <p><i>b) by providing a copy, upon request, and at no charge, to the customer; and</i></p> <p><i>c) by sending a current copy, or summary document approved by the Authority, to all customers at least once in every three year period or as agreed with the</i></p>	<p>Check for evidence of how the charter is provided to customers</p> <p>a) Check for appropriate display</p> <p>b) Is a copy readily available?</p> <p>c) Interview a cross section of customers to test that copy has been provided to customers</p>	<p>Not displayed</p> <p>The customer services charter is contained in a management pack that is discussed by the Local Manager with each prospective new client</p> <p>It is available upon request but not openly promoted within the village.</p>	2	<p><i>The Licensee should display the customer services charter at village meeting points (such as the gym, community meeting rooms, etc.) and the administration office.</i></p>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>Authority.</i>				
Schedule 3 Clause 2.6.	<i>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.</i>	Does the copy have version control and has it been updated. Review any correspondence with the Authority regarding the Customer Service Charter	Not reviewed for at least 2 years. Correspondence on this matter with the Authority was not found	4	<i>The Licensee should review the customer service charter to ensure it effectively reflects the License requirements</i> <i>The Licensee shall forward a version controlled copy of the revised customer service charter to the Authority before release to customers.</i>
Schedule 3	<i>It is a condition of the licence that the</i>	Review service charter and	Services are provided to customers in accord with its	4	<i>The Licensee should include a question on customer service provision in the customer survey feedback</i>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
Clause 2.7.	<i>licensee provides services in a way which is consistent with its customer service charter. This condition is not intended to create a statutory duty nor provide any third party with a legally enforceable right or cause of action.</i>	interview staff and customers where available to test	customer service charter however feedback from customers on this subject is not solicited.		<i>form.</i>
Customer Consultation Clause 8.1 Schedule 3	<i>The licensee must establish a customer consultation processes as set out in Schedule 3</i>	Check for evidence of customer consultation process	Several local and documented issues were evidenced but none related to the WWTP.	N/R	NIL
Schedule 3 Clause 4.1	<i>The licensee must establish ongoing customer consultation processes which both inform customers and proactively solicit customer opinion on the licensee's</i>	Check for records, minutes of meetings of customer council or meetings with customers on relevant issues Look for newsletters and	Reviewed minutes of Village Liaison Committee (Customer Council) Evidence of regular meetings was observed The site has a closed circuit TV messaging system which may or may not be regularly accessed by	4	<i>Include an item covering issues around the WWTP as a standing item on the meeting agenda.</i> <i>The Licensee should encourage customers to regularly access the closed circuit TV system to get up to date information and park news.</i>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>operations and delivery of services. Acceptable approaches to the satisfaction of this requirement are set out below.</i></p> <p><i>The licensee may either:</i></p> <p><i>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; or</i></p> <p><i>b) institute at least two of the following processes;</i></p> <p><i>(i) Meeting on a regular basis with customers to seek comment on issues relevant to the</i></p>	<p>evidence of distribution of same.</p> <p>Check for other evidence of information provision and customer consultation</p>	<p>customers.</p> <p>Urgent notices were observed posted on gym and meeting room notice boards</p> <p>The latest newsletter (distributed to all customers) was observed however no other previous edition were found</p> <p>The site has Open Forum meetings (2 monthly) which may or may not be well attended as observed meeting's minutes.</p> <p>Noticeboards are used to post topical information</p> <p>Client surveys are conducted</p> <p>Individual residential site agreements are signed by customers and kept on file by the site manager.</p>		<p><i>The Licensee may wish to consider the establishment of a regular localised newsletter.</i></p> <p><i>The Licensee may wish to include a sign in register at the door of each Open Forum meeting as a record of attendance. It will also provide a gauge of the percentage of customers attending against total customer numbers in residence to help measure the effectiveness of the meetings.</i></p>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>exercise of the licensee's levels of service under the licence;</i></p> <p><i>(ii) Publishing a simple newsletter providing basic information about the licensee's operation; and/or</i></p> <p><i>(iii) Establishing other forums for consultation to enable community involvement in issues relevant to the exercise of the licensee's obligations under his licence.</i></p>				
Schedule 3 Clause 4.2	<p><i>The Authority must be consulted with respect to the type and extent of customer consultation to be adopted by the</i></p>	<p>Check for any notification to or meetings with the Authority on customer consultation</p>	<p>No meetings noted.</p>	2	<p><i>The licensee shall formally advise the Authority to the type and extent of customer consultation that is or is to be adopted</i></p>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>licensee.</i>				
Schedule 3 Clause 4.3	<i>In addition, 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 this licence.</i>	Question Moama management on other forums that may be established	See 4.1	4	As per 4.1
Memorandum of Understanding Clause 9	<i>Not applicable to this licence</i>		N/A	N/A	N/A
Transfer of Licence Clause 10			N/A	N/A	N/A
Cancellation of Licence			N/A	N/A	N/A

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
Clause 11					
Surrender of Licence Clause 12			N/A	N/A	N/A
Renewal of Licence Clause 13			N/A	N/A	N/A
Amendment of Licence Clause 14		Check for any amendments Sight current licence for amendments	No amendments.	N/R	NIL
Accounting Records Clause 15.1	<i>The licensee and any related body corporate must maintain accounting records that comply with the Australian Accounting Standards Board Standards or equivalent</i>	Inspect a sample of accounts	A sample of accounts were inspected during the Asset Management System Review and appear to comply with Australian Accounting Standards	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>International Accounting Standards.</i>				
Operational Audit Clause 16.1	<i>The licensee must, unless otherwise notified in writing by the Authority, provide the Authority with an operational audit within 24 months after the commencement date, and every 24 months thereafter,</i>	This is the first audit. Check for any prior notices from the Authority to alter the timeframe requirements	This is the first audit.	N/R	NIL
Clause 16.2	<i>The licensee must comply, and must require the licensee's auditor to comply with the Authority's standard audit guidelines dealing with the operational audit, including any minimum requirements relating to the</i>	Check Licensee's scope requirements of the auditor in compliance with Authority's standard audit guidelines.	Email trail relating to auditor approval and approved audit plan. Meeting with ERA representatives, prospective auditors and Moama representatives.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>appointment of the auditor, the scope of the audit, the conduct of the audit and the reporting of the results of the audit.</i>				
Clause 16.3	<i>The licensee may seek a review of any of the requirements of the Authority's standard audit guidelines in accordance with clause 24.1.</i>	Check for any requests for review	No reviews sought to date.	N/R	NIL
Clause 16.4	<i>The independent auditor may be nominated by the licensee but must be approved by the Authority prior to the audit pursuant to clause 16.1. Should the Authority reject the licensee's nomination of an independent auditor</i>	Has the auditor been approved by the Authority	Authority approval email.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>twice or, in the event that no nomination has been made by the licensee within 1 month of the date the audit was due, the Authority may choose an independent auditor who will conduct the audit.</i>				
Asset Management System Clause 17.1	<i>The licensee must provide for, and notify the Authority of, an asset management system in respect of the licensee's assets within 2 business days from the commencement date unless otherwise notified in writing by the Authority.</i>	Check that copy has been provided to Authority.	Provided for in the original approval	5	NIL
Clause 17.2	<i>The licensee must notify the Authority</i>	Note if any changes have occurred and	No changes noted	N/R	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>of any material change to the asset management system within 10 business days of such change.</i>	if subsequence notice of change has been forwarded to Authority in timely manner			
Clause 17.3	<i>The licensee must, unless otherwise notified in writing by the Authority:</i> <i>a) conduct an asset management system review; and</i> <i>b) provide the Authority with a report on the asset management system review, within 24 months after the commencement date and every 24 months thereafter.</i>		This is the 1 st audit being conducted	N/R	NIL
Clause 17.4	<i>The licensee must comply, and must require the licensee's expert to</i>	Confirm that guidelines have been met	An approved Audit plan is being followed by the auditor.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>comply, with the Authority's standard guidelines dealing with the asset management system review, including any minimum requirements relating to the appointment of the expert, the scope of the review, the conduct of the review and the reporting of the results of the review.</i>				
Clause 17.5	<i>The licensee may seek a review of any of the requirements of the Authority's standard guidelines dealing with the asset management system review in accordance with</i>	Check for any reviews	This is the 1 st audit.	N/R	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>clause 24.1.</i>				
Clause 17.6	<i>The independent expert may be nominated by the licensee but must be approved by the Authority prior to the review pursuant to clause 17.3. Should the Authority reject the licensee's nomination of an independent expert twice or, in the event that no expert has been nominated by the licensee within 1 month of the date the review was due, the Authority may choose an independent expert who will conduct the review.</i>		Approval given. ERA emails sighted.	5	NIL
Reporting	<i>The licensee must report to the</i>	Check	Not under external	N/R	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
Clause 18.1	<p><i>Authority;</i></p> <p><i>a) if the licensee is under external administration as defined by the Corporations Act 2001 (Commonwealth) within 2 business days; or</i></p> <p><i>b) if the licensee experiences a significant change in the licensee's corporate, financial or technical circumstances upon which this licence was granted which may affect the licensee's ability to meet obligations under this licence within 10 business days of the change occurring.</i></p>	management status	<p>administration.</p> <p>No significant changes observed.</p>		

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
Individual Performance Standards Clause 19.1	<i>Performance standards are contained in applicable legislation</i>		.	N/R	N/A
Clause 19.2	<i>The Authority may prescribe individual performance standards in relation to the licensee of its obligations under this licence or the applicable legislation.</i>	Check License schedules for individual performance standard	Individual performance standards included on licence.	5	NIL
Clause 19.3	<i>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;</i>	Check for any submissions	Copy provided. No licensee submissions observed.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>b) allow 15 business days for the licensee to make submissions on the proposed individual performance standards; and</i> <i>c) take into consideration those submissions.</i>				
Clause 19.4	<i>Once approved by the Authority, the performance standards to this licence are set out in Schedule 4.</i>		Set out in Schedule 4 observed.	5	NIL
Schedule 4 – Service & Performance Standards Emergency Response Clause 1.1.	<i>The licensee shall provide an emergency telephone advice system such that customers need make only one telephone call to report an emergency and that</i>	Test emergency telephone system Review emergency call log Check outcomes against performance target	Emergency 24/7 number provided to all customers and will be redirected as necessary if primary responder is unavailable. Other Emergency Services numbers provided also in Community Lifestylers Manual that outlines park rules, provides Government	4	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>the customer shall be advised of the nature and timing of the action to be undertaken in accordance with the following standard.</i></p> <p>Service Activity:</p> <p>Telephone answering – emergency response;</p> <p>Measurement:</p> <p><i>Number of calls requiring a response within one hour divided by the total number of calls requiring a response, expressed as a percentage:</i></p> <p>Performance Indicator/Targets:</p> <p><i>90% of customers</i></p>		<p>generated information and is presented in person by the village management..</p> <p>System also cascades through management numbers, including text messages.</p> <p>No evidence of calls found.</p> <p>Target has not been tested.</p>		

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>within one hour of reporting an emergency shall be advised of the nature and timing of the action to be undertaken by the licensee.</i>				
Customer Complaints Clause 1.2	<i>The licensee shall respond to customer complaints in accordance with the following standard.</i> Service Activity: Complaints to be resolved within 15 business days Measurement: <i>The number of written complaints due for resolution in the previous 12 month period successfully resolved within 15</i>	Review customer complaints register Review a sample of complaints Look for satisfactory resolution, timeframes, any overtime and open complaints Check outcomes against performance target	New register was recently produced. Previously no register was kept. Minor issues noted only. Verbal declaration by manager that all were quickly resolved. (None have been escalated to NLV). No resolution evident on forms used. No WWTP complaints were raised through this system.	3	The Licensee shall keep a complaints register The Licensee may wish to record all customer complaints. The Licensee may wish to declare resolution outcomes for review purposes.

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>business days divided by the total number of written complaints due for resolution and expressed as a percentage.</i></p> <p>Performance Indicator/Targets:</p> <p><i>90% of customer complaints resolved within 15 business days.</i></p>				
<p>Sewerage Services</p> <p>Clause 2.1</p>	<p><i>The licensee must comply with the following sewerage services standards</i></p> <p>Service Activity:</p> <p><i>The number of sewer blockages per 100 km of sewer mains</i></p> <p>Measurement:</p>	<p>Review maintenance logs and blockage reports</p> <p>Check outcomes against performance target</p>	<p>General blockages causing overflows were noted.</p> <p>All blockages were at the WWTP itself.</p>	4	

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>The number of sewer blockages per 100 km of sewer mains.</i></p> <p>Performance Indicator/Targets:</p> <p><i>In the preceding 12 months there were fewer than 40 blockages per 100 km of sewer main.</i></p> <p>Service Activity:</p> <p>Percentage of connected properties experiencing a wastewater overflow</p> <p>Measurement:</p> <p><i>Percentage of connected properties experiencing a wastewater overflow</i></p> <p>Performance</p>	<p>Check maintenance logs and conduct physical inspection to review overflow issues</p> <p>Check outcomes against performance target</p>	<p>Estimated 1 km – 10 blockages.</p> <p>Viewed maintenance logs and MAINTENANCE CONTRACTOR incident reports. The documentary evidence reviewed was not fully reliable as in some cases work logs were not completed at the site and were not signed off by a Licensee representative</p> <p>No overflow at customer's residents Sewer system design is such that a backup would overflow from a manhole rather than</p>		<p>The Licensee should introduce a system where all maintenance contractor work sheets/logs are countersigned by a Licensee's site representative.</p>

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p>Indicator/Targets:</p> <p><i>In the preceding 12 month period 90% of customers receive the standard for the licensee's schemes.</i></p>		<p>at a customers' residence. All overflows noted were at WWTP.</p> <p>The Licensee has engaged a consulting firm to investigate and offer solutions to prevent blockages at the plant that cause overflows.</p>		
<p>Service Performance Standards</p> <p>Clause 20.1</p>	<p><i>The licensee must comply with the service and performance standards as set out in Schedule 4.</i></p>		Observed.	4	NIL
<p>Provision of Information</p> <p>Clause 21.1</p>	<p><i>The licensee must provide to the Authority any information that the Authority may require in connection with its functions under the Act in the time, manner and form</i></p>	Check that information has been forthcoming as required	Currently required information has been forwarded to the Authority with the exception of general issues with the WWTP.	4	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>specified by the Authority.</i>				
Clause 21.2	<i>The licensee must comply with the information reporting requirements as set out in Schedule 5.</i>	Review reports	Sighted and confirmed	5	NIL
Schedule 5 – Information requirements (Reporting) Clause 2.1	<i>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.</i>	Check that information has been forthcoming as required. Check that annual performance and compliance reports have been forwarded to the Authority in completeness and timely	Yes, sighted Yes, sighted	5	NIL
Publishing Information Clause 22.1	<i>The Authority may direct the licensee to publish any information within a specified timeframe it considers</i>	Check that information has been published if and as required	Yes – nominal reporting only.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>relevant in connection with the licensee or the performance by the licensee of its obligations under this licence.</i>				
Clause 22.2	<i>Subject to clause 22.3, the licensee must publish the information referred to in clause 22.1</i>		Published on ERA site.	5	NIL
Clause 22.3	<i>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 in accordance with clause 24.1.</i>	Check nature of publications	None found to be declared as confidential.	5	NIL
Clause 22.4	<i>Once it has reviewed the</i>		Pending current issues.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>decision, the Authority will direct the licensee in accordance with the review to;</i></p> <p><i>a) publish the information;</i></p> <p><i>b) publish the information with the confidential information removed or modified; or</i></p> <p><i>c) not publish the information.</i></p>				
Notices Clause 23.1	<i>Unless otherwise specified, all notices must be in writing.</i>	Test for evidence of notices being delivered verbally in lieu of written notices	All correspondence observed was in hard copy letter or email.	5	NIL
Clause 23.2	<p><i>A notice will be regarded as having been sent and received:</i></p> <p><i>a) when delivered in person to the</i></p>	Review a sample of notices for compliance with requirements	Yes, sighted	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>addressee; or</i></p> <p><i>b) 3 business days after the date of posting if the notice is posted in Western Australia; or</i></p> <p><i>c) 5 business days after the date of posting if the notice is posted outside Western Australia; or</i></p> <p><i>d) if sent by facsimile when, according to the sender's transmission report, the notice has been successfully received by the addressee; or</i></p> <p><i>e) if sent by email when, according to the sender's electronic record, the notice has been</i></p>				

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>successfully sent to the addressee's water licensing email address.</i>				
Review of the Authority's Decisions Clause 24.1	<i>The licensee may seek a review of a reviewable decision by the Authority pursuant to this licence in accordance with the following procedure:</i> <i>a) the licensee must make a submission on the subject of the reviewable decision within 10 business days (or other period as approved by the Authority) of the decision; and</i> <i>b) the Authority will consider the submission and provide the</i>	Check if any reviews have been sought. If so have they met requirements	No reviews have been sought.	N/R	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>licensee with a written response within 20 business days.</i>				
Clause 24.2	<i>For the avoidance of doubt, this clause does not apply to a decision of the Authority pursuant to the Act, nor does it restrict the licensee's right to have a decision of the Authority reviewed in accordance with the Act.</i>		N/A currently.	N/A	
Schedule 3 (Not addressed above) Customer Contracts Schedule 3 Clause. 5.1	<i>Subject to compliance with this clause 5, the licensee may enter into an agreement with a customer to provide water services that exclude, modify or restrict the terms and conditions of</i>	Check for any agreements Check that copy has been provided to customer	No other agreements in force except for Residential Site Agreement. August 2011.	5	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>this licence.</i>				
Schedule 3 Clause. 5.2	<p><i>Subject to clause 5.3, an agreement referred to in clause 5.1:</i></p> <p><i>a) must be approved by the Authority prior to its commencement; and</i></p> <p><i>b) must not be amended without the prior approval of the Authority.</i></p>	<p>Check for approvals</p> <p>Check for timing and amendments</p>	No prior agreements in place.	5	NIL
Schedule 3 Clause 5.3	<p><i>The licensee does not need the approval of the Authority if the terms that exclude, modify or restrict the terms and conditions of this licence;</i></p> <p><i>a) were in force before the commencement of</i></p>		N/A	N/A	N/A

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>this licence; or b) have previously been approved by the Authority in another agreement that applies to the same class of customer.</i>				
Schedule 3 Clause 5.4	<i>If a licensee enters into an agreement with a customer that excludes, modifies or restricts the terms and conditions of this licence, 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</i>	Check terms and conditions for conflict with the Licence Review number of agreements and categorisations	None found	N/R	NIL

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<p><i>type of exclusion, modification or restriction;</i></p> <p><i>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;</i></p> <p><i>c) the total number of agreements entered into by the licensee, categorised by location and by land use; and</i></p> <p><i>d) the number of agreements entered into by the licensee during the reporting period categorised by location and by</i></p>				

Licence Clause or Schedule	Licence Obligation	Audit Actions	Findings	Compliance Scale	Recommended Action (s)
	<i>land use.</i>				
Schedule 3 Customer Surveys Clause 6.1	<i>Not more frequently than every 12 months 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.</i>	Check for completed customer surveys, review content to ensure they meet requirements	Only two Licensee generated customer surveys were sighted for the period of the audit No Authority requests were sighted	4	NIL

3.2 Asset Management Review

Table 5 Asset Management Process and Policy Definition Adequacy Ratings

Rating	Description	Criteria
A	Adequately defined	<ul style="list-style-type: none"> Processes and policies are documented. Processes and policies adequately document the required performance of the assets. Processes and policies are subject to regular reviews, and updated where necessary. The asset management information system(s) are adequate in relation to the assets that are being managed.
B	Requires some improvement	<ul style="list-style-type: none"> Process and policy documentation requires improvement. Processes and policies do not adequately document the required performance of the assets. Reviews of processes and policies are not conducted regularly enough. The asset management information system(s) require minor improvements (taking into consideration the assets that are being managed).
C	Requires significant improvement	<ul style="list-style-type: none"> Process and policy documentation is incomplete or requires significant improvement. Processes and policies do not document the required performance of the assets. Processes and policies are significantly out of date. The asset management information system(s) require significant improvements (taking into consideration the assets that are being managed).
D	Inadequate	<ul style="list-style-type: none"> Processes and policies are not documented. The asset management information system(s) is not fit for purpose (taking into consideration the assets that are being managed).

Table 6 Asset Management Performance Ratings

Rating	Description	Criteria
1	Performing effectively	<ul style="list-style-type: none"> The performance of the process meets or exceeds the required levels of performance. Process effectiveness is regularly assessed and corrective action taken where necessary.
2	Opportunity for improvement	<ul style="list-style-type: none"> The performance of the process requires some improvement to meet the required level. Process effectiveness reviews are not performed regularly enough. Process improvement opportunities are not actioned.
3	Corrective action required	<ul style="list-style-type: none"> The performance of the process requires significant improvement to meet the required level. Process effectiveness reviews are performed irregularly, or not at all. Process improvement opportunities are not actioned.
4	Serious Action required	<ul style="list-style-type: none"> Process is not performed, or the performance is so poor that the process is considered to be ineffective.

Table 7 Asset Management Effectiveness Summary

ASSET MANAGEMENT SYSTEM	Asset Management process and policy definition adequacy rating	Asset Management performance rating
Asset planning	B	2
Asset creation/ acquisition	A	1
Asset disposal	B	3
Environmental analysis	C	3
Asset operations	D	4
Asset maintenance	C	3
Asset Management Information System	B	2
Risk Management	D	4
Contingency planning	C	3
Financial planning	A	2
Capital expenditure planning	A	2
Review of AMS	D	2

3.2.1 Observations and Recommendations

Field notes compiled by Les Wilson with review by Alan Meagher.

Table 8 Asset Management Review Field Notes

1. Asset Planning			
<p>Key process: Asset planning strategies are focussed on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).</p> <p>Outcome: Integration of asset strategies into operational or business plans will establish a framework for existing and new assets to be effectively utilised and their service potential optimised</p>			
<p>Review approach</p> <ul style="list-style-type: none">• Assess the adequacy of the asset planning process.• Assess the adequacy of the asset management plan.• Assess whether the asset management plan is up to date and implemented in practice. <p>Assess whether the plan clearly assigns responsibilities and whether these have been applied in practice.</p>			
Effectiveness Criteria	Effectiveness	Comments	Recommendations
1.1 Does the planning process and objectives reflect the need of all stakeholders and is it integrated with business planning?	Yes	<p>It is the view of the auditor that Moama could be viewed as having one client in Tuart Lakes Lifestyle Village Pty Ltd but in effect should be seen as having 70 clients (all of Tuart Lakes Lifestyle Village resident connections) as it accepts revenue on behalf of Moama for service provision to those residents.</p> <p>Planning is around approval requirements and reporting needs to the Statutory Authorities,</p>	

		allowed for as part of TLLV yearly plan. The compliant operational plant meets the needs of Tuart Lakes Lifestyle Village and its residents.	
1.2 Have service levels been defined?	Yes	As part of planning/design and approvals process. The main deliverables are around Wastewater Out levels.	
1.3 Have non-asset options (e.g. demand management) been considered.	Yes	Demand is linked solely to the occupancy level of the village which is capped at a maximum of 470 homes when the village is complete. Current WWTP has a capacity to serve 180 homes under phase 1 and will be extended / upgraded as the village occupancy grows under phase 2 At the time of the review approximately 70 homes were connected.	
1.4 Have the lifecycle costs of owning and operating assets been assessed?	Yes	As part of the ERA Approval	
1.5 Have funding options been evaluated?	Yes	Funded by parent company National Lifestyle Villages who own Tuart Lakes Lifestyle Village and Moama Lifestyle Village.	
1.6 Are the costings justified and have the cost drivers been identified?	Yes	Capital cost – applied during the project phase of Tuart Lakes Lifestyle Village and funded by National Lifestyle Villages. Maintenance is operated through Tuart Lakes Lifestyle Village.	
1.7 Have the likelihood and consequences of asset failure been predicted?	No	An ongoing maintenance schedule is in place to prevent asset failure, undertaken by the contracted operator however there has been no prioritising of risks have been undertaken to date.	1 A risk workshop should be conducted to identify foreseeable asset failure risks, measure likelihood and estimate consequence. The workshop outputs should also risk rate the severity of any identified failure and assign controls to reduce the risk and mitigation measures to manage and minimise any negative outcome should a control be defeated and a failure was to occur.

			2 The Licensee should a risk register should be developed from this workshop so as to prioritise the risk of the identified asset failure possibilities.
1.8 Are the plans being regularly reviewed and updated?	No	Capital works are completed however no evidence of regular reviews or updates were found. Engineering consultancy, undertook an engineering report on the plant in November 2012.	3 Maintenance plans require updating to include, the post sanitation process following an overflow spill contained within the catchment tray below the tanks 4 Emerson Stewart engineering report undertaken in November 2012, maintenance plans require review to manage operation. This should be completed as a matter of priority by the Licensee.
1.9 Is the capability of the plant adequate to meet future demand?	Yes	Currently the plant has a capacity of 180 homes with 70 connected so far. Once Stage 2 is completed – the plant will be upgraded for an end use of 470 homes. No clear plan was available to ensure a smooth transition for the introduction of the upgrade	5 The Licensee should develop a transition plan for the initiation of the upgrade. Include a forecasted timeframe, triggers and early ordering of critical parts. Elements of this process should be included in a risk assessment workshop and a risk register be developed as an output. Consideration should include plant design, construction, commissioning, operation, maintenance and end of life disposal.
2. Asset Creation and Acquisition			
<p>Key process: 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.</p> <p>Outcome: A more economic, efficient and cost effective asset acquisition framework which will reduce demand for new assets, lower service costs and improve service delivery.</p>			
<p>Review approach</p> <ul style="list-style-type: none"> Assess the adequacy of policies and procedures covering the creation and acquisition of assets. Select a sample of creations/acquisitions over the review period and confirm that adequate procedures have been followed and actual costs are as predicted. 			
Effectiveness Criteria	Effectiveness	Comments	Recommendations
2.1 Are full project evaluations being undertaken for new	N/A	Not applicable as no new assets are required no new capital outlay is envisaged for the current plant, only when phase 2 comes on	

<i>assets, including comparative assessment of non-asset solutions?</i>		line. Preventative maintenance schedules are evaluated.	
<i>2.2 Do evaluations include all life-cycle costs?</i>	N/A	They do for asset replacement: the original plans did consider whole of life costs.	
<i>2.3 Do projects reflect sound engineering and business decisions?</i>	Yes	Ultimate design and operational efficacy is achieved with the assistance of consulting engineers and the contracted operator.	
<i>2.4 Are the commissioning tests documented and completed?</i>	Yes	As part of the application and approvals process: DEC, DOH & ERA validation was a priority.	
<i>2.5 Have the ongoing legal/environmental/safety obligations of the asset owner been assigned and understood?</i>	Yes	Moama Lifestyle Villages Pty Ltd holds the license. The operations and maintenance are contracted out and consultants assist in ensuring conditions are met. The auditor is of the opinion that Moama understands its environmental, legal and safety obligations based on environmental, legal and safety statements that have been released by Moama	
3. Asset Disposal			
<p>Key process: Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, underperforming or unserviceable assets. Alternatives are evaluated in cost benefit terms.</p> <p>Outcome: Effective management of the disposal process will minimise holdings of surplus and underperforming assets and will lower service costs.</p>			

Review approach <ul style="list-style-type: none"> Assess the adequacy of policies and procedures covering the identification of underperforming assets, disposal of assets and replacement strategy. Determine whether a regular review of the usefulness of assets is performed. Select a sample of disposals over the review period and confirm that adequate procedures have been followed. 			
Effectiveness Criteria	Effectiveness	Comments	Recommendations
3.1 Are under-utilised and under-performing assets identified as part of a regular systematic review process?	N/A	Not Applicable, the asset is integral to Tuart Lakes Lifestyle Village being able to operate. (There is no alternative such as the ministers sewer)	
3.2 Are the reasons for under-utilisation or poor performance critically examined and corrective action or disposal undertaken?	N/A	Not Applicable	
3.3 Are disposal alternatives evaluated?	No	Disposal alternatives have not been considered.	6 The Licensee should revisit the “Whole of Asset Life” plan and determine strategies for disposal of plant including recycling of assets such as plastics, following decontamination of materials, disposal costs of non-recyclable materials
3.4 Is there a replacement strategy for assets?	Yes	As reflected in the cash flow provided as part of application. Ongoing maintenance/preventative maintenance considers replacement times for aspects of the system, replacement of whole asset is considered in 2019, as per Appendix. E of the original ERA	7 See section 1.9 above in Asset Planning

		application.	
4. Environmental Analysis			
<p>Key process: Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.</p> <p>Outcome: The asset management system regularly assesses external opportunities and threats and takes corrective action to maintain performance requirements.</p>			
<p>Review approach</p> <ul style="list-style-type: none"> Review achievement of performance and service standards over the audit period. Investigate any breaches and assess corrective action taken. Review the adequacy of reporting and monitoring tools. 			
Effectiveness Criteria	Effectiveness	Comments	Recommendations
4.1 Are opportunities and threats in the system environment assessed?	No	No past evidence except for the commissioning of the engineering report from Emerson Stewart. Some limited evidence of remedial action taken after untreated water discharge to ground.	8 The Licensee should include environmental consideration in the proposed risk workshop recommended earlier in this checklist.
4.2 Are Performance Standards (availability of service, capacity, continuity, emergency response etc.) measured and achieved?	No	<p>No formal measurement of contractor performance was identified.</p> <p>No clear written performance standards were available.</p> <p>New Emergency response plans have recently been implemented.</p> <p>The current Emergency Response plan notes Water Corporation as sewerage emergency contact</p>	<p>9 The Licensee should develop and implement clear, measurable Key Performance Indicators (KPIs) that are expected from the plant maintenance contractor. Provide feedback to the contractor in-line with the KPIs.</p> <p>10 Create clear written performance standards around the following;</p> <ul style="list-style-type: none"> availability of service, capacity to provide service 24/7, continuity of service provision and, emergency response. <p>10 b. Adjust the current Emergency Response plan by removing</p>

			<i>Water Corporation as sewerage emergency contact and replace with correct reference.</i>
4.3 Is there compliance with statutory and regulatory requirements?	Yes	Moama has met mandatory reporting requirements of the ERA Moama is unaware of any reporting requirements for the Dept of Health or Dept Environment & Conservation for the audit period. A 2012 internal audit report was available and has been forwarded in November 2012, which is outside the audit period.	
4.4 Have customer service levels been achieved?	Yes / but limited	The Licensee has continued to provide uninterrupted service to its clients however. recent contained overflows at the plant were the cause of odorous smells and presented a possible serious public health risk to customers.	<i>11 The Licensee should ensure that any contained spills from overflows are pumped back into the system or removed from site by a licenced sanitary waste operator and the plant containment sumps are sanitised to eliminate odours and possible public health risk from an overflow incident.</i>
5. Asset Operations			
<p>Key process: Operations functions relate to the day-to-day running of assets and directly affect service levels and costs.</p> <p>Outcome: Operations plans adequately document the processes and knowledge of staff in the operation of assets so that service levels can be consistently achieved.</p>			
<p>Review approach</p> <ul style="list-style-type: none"> Assess the adequacy of policies and procedures covering operations functions Assess the adequacy of staff resourcing and training Confirm the policies and procedures have been followed during the review period by testing of asset register, observation of operational procedures, analysis of costs, etc. Assess the significance of exceptions identified and whether adequate corrective action has been taken. 			

Effectiveness Criteria	Effectiveness	Comments	Recommendations
5.1 Are the operational policies and procedures documented and do the link to the required service levels?	No	There is a contract in place for the operations and maintenance of the plant, the contract reflects the service levels required by the approval authorities. Operational procedures are <i>not currently</i> documented by the contracted operator.	12 The Licensee should review the services contract to ensure that it adequately addresses an acceptable service level.
5.2 Is risk management applied to prioritise operations tasks?	Yes	A new risk register was implemented in December 2012. A risk register was not found for the audit reporting period. Incident reports and Monthly reports are provided by the contracted operator along with any non-compliance issues and resolution actions.	13 The Licensee should ensure that the risk register is populated to manage the foreseeable risks of the plant operation.
5.3 Are assets documented in an Asset Register including asset type, location, material, plans of components, an assessment assets' physical/structural condition and accounting data?	Yes	Asset register and accounting data records are kept for Tuart Lakes Lifestyle Villages. Details of all components are with the contracted operator.	14 The Licensee should ensure that a detailed register of plant and equipment relating to the WWTP is kept on file at the licensee's office
5.4 Are operational costs measured and monitored?	Yes	Maintenance and operational costs are run through Tuart Lakes Lifestyle Village — Capital spend is through the parent National Lifestyle Villages, with the asset then being recorded against the Tuart Lakes Lifestyle Village entity.	

5.5 Are staff receiving training commensurate with their responsibilities?	No	Tuart Lakes Lifestyle Village staff undertakes a daily visual checklist. Weekly and monthly checks are via the contracted operator. (No consistent document evidence was provided)	<p>15 The Licensee should document a written work instruction for the daily visual inspection to be carried out by the Licensee's staff and maintain a record of their training to perform this duty.</p> <p>16 Copies of completed visual checklist should be kept on site.</p> <p>17 The Licensee should ensure that reports are forthcoming from the maintenance provider and are kept at the Licensee's office.</p>
5.6 Are the WWTP operations able to provide a reliable service to customers?	Yes	Generally reliable, without the service Tuart Lakes Lifestyle Village would not be in a position to operate.	
5.7 Where the Licensee contracts a third party to manage the WWTP assets, does the Licensee effectively monitor the performance of the third party?	No	The contracted operator is managed through regular communications and meetings, including the requirement for monthly reporting in line with service level requirements set out during the approvals phase. The contracted operator provides incident reporting/sample monitoring. Reports by exception i.e. any rectification works undertaken.	<p>18 The Licensee should establish clear KPIs (See section 4.2 of this checklist)</p> <p>19 The Licensee should develop stronger controls and more effective contractor management. i.e. contractual arrangements re: risk assessment to prioritise higher risks</p>
5.8 Is the current staffing arrangements and responsibilities adequate for effective asset operations?	No	<p>The contracted operator Maintenance Contractor places too much reliance on the technical knowledge of one person, this need to be addressed by training more people in Maintenance Contractor to prevent a knowledge gap when key personnel are away.</p> <p>Currently, due to recent difficulties with the operation of the plant, Aquasol representatives are reported to have been in attendance daily to inspect the plant's operation. This is not stated in contractual terms and it is the view of the auditor that it</p>	20 Licensee should ensure that Maintenance Contractor can meet the KPIs as required, including an escalation of site inspection frequencies when conditions require or alternatively a better resourced provider be engaged that can meet expectations.

		is not unreasonable to make contractual arrangement allowing an increase of frequency of inspection when conditions call for that level of scrutiny.	
6. Asset Maintenance			
Key process: Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.			
Outcome: Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost.			
Review approach <ul style="list-style-type: none"> Assess the adequacy of policies and procedures covering maintenance functions Confirm the policies and procedures have been followed during the review period by testing of maintenance schedules, analyses of cost etc. Assess the significance of exceptions identified and whether adequate corrective action has been taken. 			
Effectiveness Criteria	Effectiveness	Comments	Recommendations
6.1 Have the maintenance policies and procedures been documented and linked to service levels required.	Yes / but limited	. The contracted operator has a Maintenance and Operations Contract which is based on required service levels as stipulated by the approval authorities.	21 In conjunction with the maintenance provider the Licensee should develop a written maintenance policy that reflects service levels required
6.2 Are regular inspections undertaken of asset performance and condition?	No	<p>The Contractor provides monthly water quality reports.</p> <p>Daily, weekly and monthly checks are undertaken but written reports appear to be sporadic.</p> <p>Limited work performed notices were available to provide evidence of contractor attendance.</p> <p>Local staff undertakes daily visual checks but these have recently been halted due to OHS concerns around</p>	<p>22 The Licensee should ensure that all completed check lists are signed off by local village management and are readily available for inspection.</p> <p>23 The Licensee should devise a daily inspection regime for site staff so they are not at health risk.</p> <p>24 The Licensee should ensure technical plant inspection regime is adequate.</p>

		<p>the overflow incidents.</p> <p>The local staff do not perform checks of a more technical nature as they do not have the appropriate level of training.</p>	
<p>6.3 Have the maintenance plans (emergency, corrective and preventative) been documented and completed on schedule.</p>	No	<p>Planned maintenance is undertaken by the contracted operator. If there is an issue an incidental report is provided, along with details of corrective actions. Time taken to restore the plant to normal compliant operations is documented.</p> <p>This process is more reactive than planned and little and little evidence of documented maintenance plans was found.</p> <p>Emerson Stewart has undertaken a third party engineering report on the plant. National Lifestyle Villages will implement any recommendations</p>	<p>25 The Licensee should develop a clear preventative maintenance schedule and keep up to date .Any failure to adhere to the plan should be reported to Licensee's operational manager.</p>
<p>6.4 Are the failures analysed and operational/maintenance plans adjusted where necessary?</p>	Yes	<p>Failures are investigated and corrective action is taken, with assistance from consultants as required.</p>	
<p>6.5 Has risk management been applied to prioritise maintenance tasks?</p>	No	<p>No evidence of a risk management approach to prioritise maintenance tasks was found.</p>	<p>26 The Licensee should ensure that higher risk elements of the plant are risk assessed and take high priority in the maintenance schedule.</p>
<p>6.6 Are the maintenance costs measured and monitored?</p>	Yes	<p>Yes capital spend on plant is recorded against National lifestyle Villages, with ongoing operational cost recorded against Tuart Lakes Lifestyle Villages.</p>	

6.7 Is the current staffing arrangements and responsibilities adequate for effective asset maintenance?	No	The contracted operator allocates staff for maintenance and operations. There is a knowledge gap when Maintenance Contractor's key experienced personnel are unavailable, resulting in inconsistent maintenance quality.	27 (See section 5.8 Asset Operations) 27B (Aquasol report received by the auditor during draft document review and recommendations added). see Appendix1 for full report.
---	-----------	--	---

7. Asset Management Information System

Key process: An asset management information system is a combination of processes, data and software that support the asset management functions.

Outcome: The asset management information system provides authorised, complete and accurate information for the day to date running of the asset management system. The focus of the review is the accuracy of performance information used by the licensee to monitor and report on service standards.

Review approach

- Assess the adequacy of policies and procedures covering the general control and security of the computer systems used to provide management information on service standards/licence obligations.
- Confirm that management reports on service standards/licence obligations are being reviewed and significant exceptions to service standards are promptly up and action.

Effectiveness Criteria	Effectiveness	Comments	Recommendations
7.1 Is there adequate system documentation for users and IT operators?	Yes	The PLC system of the plant is managed by the contracted operator, which will alert staff of any issues with an SMS. Operators' manuals are available. There is an internal file containing all license information and management process.	
7.2 Do the input controls include appropriate verification and validation of data entered into the system?	Yes	A register of results of water tests was viewed and found to have been entered on the system in date order with hard copy documents kept on file for reference if required	

7.3 Is there a logical security access control which is adequate, such as passwords?	Yes	Internal company documents are only available to National Lifestyle Villages' staff via hard copy files and secure servers.	
7.4 Does the physical security access control appear adequate?	Yes	The asset is fenced and the gate is locked at all times, unless personnel are on site	28 The Licensee may wish to consider the key lock be replaced by a key pad to provide a more suitable security control as a padlock key can lead to uncontrolled access.
7.5 Does the data backup procedure appear adequate?	Yes	(Moama) National Lifestyle Villages' server is password protected and backed up, it includes documents and correspondence relating to the asset.	
7.6 Are the key computations related to licensee performance reporting materially accurate?	Yes	All reports and outputs are linked to <i>compliant</i> operations and approval authorities required service levels.	
7.7 Do the management reports appear adequate for the licensee to monitor licensee obligations?	Yes	Monthly reports are provided against statutory requirements in relation to service levels.	
8. Risk Management			
Key process: Risk management involve the identification of risks and their management within an acceptable level of risk.			
Outcome: An effective risk management framework is applied to manage risks related to the maintenance of service standards.			
Review approach <ul style="list-style-type: none"> Assess the adequacy of policies and procedures covering risk management and contingency planning. Assess whether the risk management policies and procedures have been applied in practice Assess the adequacy of staff understanding and training on risk management. 			
Effectiveness Criteria	Effectiveness	Comments	Recommendations

8.1 Do risk management policies and procedures exist and are they being applied to minimise internal and external risks associated with the asset management system?	No	The Licensee states that risk management is part of all projects and is reported on. The asset management plan contains the risk assessment from the contracted operator, Appendix N page 14 of the original approval. No recent updates were found	29 The Licensee should review the asset management plan and associated risk register at least annually or as changes occur.
8.2 Are risks documented in a risk register and are treatment plans actioned and monitored?	No	A risk register has been recently initiated, and is not complete.	30 The Licensee should develop the risk register to show how treatment plans are actioned and monitored.
8.3 Is the probability and consequences of asset failure being regularly monitored?	No	Asset failure can have catastrophic consequences to the operations of Tuart Lakes Lifestyle Village. There is no formally documented and completed register/plan and the site relies on the capability of the contracted operator.	31 The Licensee should explore all foreseeable issues, and develop a risk based approach to managing those risks.

9. Contingency Planning

Key process: Contingency plans document the steps to deal with unexpected failure of an asset.

Outcome: Contingency plans have been developed and tested to minimise any significant disruption to service standards.

Review approach

- Determine whether contingency plans have been developed and are current

Determine whether contingency plans have been tested. If so, review the results to confirm that any improvements identified have been actioned.

Effectiveness Criteria	Effectiveness	Comments	Recommendations
9.1 Are contingency plans documented, understood and tested to confirm	No	Contingencies are part of the design of the plant, such as the inclusion of a sump to capture overflow and prevent unwanted discharge to ground, addition of in line filters upstream of the	32 The Licensee should implement and test the recommendations from the recent Emerson Stewart report. 33 The Licensee should develop documented contingency

<i>their operability and to cover higher risks?</i>		<p>plant, etc.</p> <p>No documented contingency plans were found</p>	<p><i>plans and ensure that site and other operational personnel are fully educated in what must be done in the event of a plant failure or incident. Any system devised should be tested for adequacy and effectiveness by drills and mock incidents.</i></p> <p><i>34 The licensee should source a sanitary waste contractor as standby to address emergency sewerage and waste removal</i></p>
<i>9.2 Is there a contingency plan for the unavailability or loss of key operational staff (including third party contract staff)?</i>	No	<p>Senior operational NLV staff are backed up by the contracted operator</p> <p>Alternative operators have been considered should the contracted operator be unavailable.</p>	<i>35 The Licensee should identify alternative competent contractor as a back-up. .</i>

10. Financial Planning

Key process: 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.

Outcome: A financial plan that is reliable and provides for the long-term financial viability of the services.

Review approach

- Obtain an understanding of the financial planning, budgeting and reporting process and assess its effectiveness.
- Obtain a copy of the current financial plan (including budget/actual) and assess whether the process is being followed.

Effectiveness Criteria	Effectiveness	Comments	Recommendations
<i>10.1 Does the financial plan state the financial objectives and strategies and actions to achieve the objectives?</i>	Yes	<p>This is a standalone operation- Capex costs are against National Lifestyle Villages.</p> <p>Opex costs form part of Tuart Lakes Lifestyle Village annual budget and cash flow.</p>	

		(Expansion is capex).	
10.2 Does the financial plan identify the source of funds for capital expenditure and recurrent costs?	Yes	Source is Tuart Lakes Lifestyle Village and National Lifestyle Villages dependent on the works undertaken.	
10.3 Does the financial plan provide projections of operating statements (profit and loss) and statement of financial position (balance sheets)?	Yes	Not consolidated, all works are through the Special Purpose Vehicle- Tuart Lakes Lifestyle Village which has accounts audited as part of the parent group.	
10.4 Does the financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period?	Yes	Regarding income Tuart Lakes Lifestyle Village are the owner and client for the wastewater treatment plant, underwritten by the parent group. Costs associated with the asset are treated as operational costs of the entity. Income of the asset is not a consideration from a group accounting perspective.	
10.5 Does the financial plan provide for the operations and maintenance, administration and capital expenditure requirements of the services?	Yes	Through the Tuart Lakes Lifestyle Village entity.	
10.6 Are significant variances in actual/budget income and expenses identified and corrective action taken where necessary?	Yes	Variances associated with the operation and maintenance of the plant are examined and reported on.	
11. Capital Expenditure Planning			

Key process: 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, preferably longer. Projections over the next five years would usually be based on firm estimates.

Outcome: A capital expenditure plan that provides reliable forward estimates of capital expenditure and asset disposal income, supported by documentation of the reasons for decisions and evaluation of alternatives and options.

Review approach

- Obtain an understanding of the capital expenditure planning process and assess its effectiveness.
- Obtain a copy of the capital expenditure plan for the current year and assess whether the process is being followed.

Effectiveness Criteria	Effectiveness	Comments	Recommendations
11.1 <i>Is there a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates?</i>	Yes	Part of operational budget for Tuart Lakes Lifestyle Village.	
11.2 <i>Does the plan provide reasons for capital expenditure and timing of expenditure?</i>	Yes	Included in Tuart Lakes Lifestyle Village cash flow for the coming 12 months	
11.3 <i>Is the capital expenditure plan consistent with the asset life and condition identified in the asset management plan?</i>	Yes	With input from the contracted operator and consultants. The expansion to 470 homes is based on the number of homes that have been occupied in the village, in line with the current approvals.	
11.4 <i>Is there adequate process to ensure that the capital expenditure plan is regularly updated and actioned?</i>	Yes	Tuart Lakes Lifestyle Village financial controls.	

12. Review of AMS

Key process: The asset management system is regularly reviewed and updated.

Outcome: Review of the Asset Management System to ensure the effectiveness of the integration of its components and their currency.

Review approach

- Determine when the asset management plan was last updated and assess whether any significant changes have occurred.
- Determine whether any independent reviews have been performed. If so, review results and actions taken.
- Consider the need to update the asset management plan based on the results of this review.
- Determine when the AMS has last reviewed.

Effectiveness Criteria	Effectiveness	Comments	Recommendations
12.1 Is there a review process in place to ensure that the asset management plan and the asset management system described therein are kept?	No	No asset management reviews have been previously undertaken. No documented process for the review was found.	36 The Licensee should ensure that an internal review/audit is conducted of the Asset Management System prior to the external review. This should be a documented procedure.
12.2 Are independent reviews (e.g. internal audit) of the asset management system reviewed?	Yes	On an ongoing basis ensuring that the asset is operable as required by the approval authorities. The first ERA audit will be completed in Jan 2013; DoH audits have already been submitted	

4. Signature of Auditor

To the best of my knowledge, this report is based on true representation of the audit findings and opinions.

My thanks go to all parties who assisted in providing information and cooperation in respect to this audit.

Alan Meagher,

Lead Auditor

GHD

Risk Management Group

GHD House, 239 Adelaide Tce,

Perth WA 6004

Appendix 1 - AQUASOL Report

22nd January 2013

National Lifestyle Villages

Tuart lakes Lifestyle Village

WWTP Issues & Improvements Report January 2013

Introduction

This report has been compiled to highlight some of the issues contributing to incidents occurring at the Waste Water Treatment Plant (WWTP) installed at the Tuart Lakes Lifestyle Village in Baldivis by Aquasol and the actions or improvements that have been put in place to both reduce the likelihood of reoccurrence and minimise the effect of any unforeseen incidents in the future.

Pump/Valve Blockages

Several incidents of tanks overflowing within the WWTP compound can be contributed to blockages in pumps and or valves. Although both pump stations supplying the WWTP are fitted with sewage grinder pumps there have still been several large foreign objects found blocking pumps and valves.

Three large inlet strainers have been fitted to the inlet the Anaerobic Tank to prevent larger objects from entering the WWTP. An additional 6" overflow between tanks 1 & 2 has been installed to reduce the chance of any blockages in the existing 4" pipe work. There have also been occurrences of hair and other foreign matter building up around the disc on butterfly valves. For this reason all butterfly valves have been removed from process lines within the plant.

Emergency Leach Drain

During an incident of an overflowing tank in a time of substantial rainfall the WWTP compound began to flood. Geological surveys of the ground in which the leach drain has been placed has found the soil to be non-hydrophobic with good water absorption properties. It was decided that earlier incidents of tank overflows may have introduced some flocculant and fine solids into the leach drain network potentially blocking drain.

The emergency leach drain and soak well were flushed with a low concentration of hydrogen peroxide. The effect was immediate in both the soak well and leach drain as the water absorption rate improved dramatically. Flushing of the emergency leach drain will now occur after any tank overflow incident or as part of quarterly servicing as a minimum.

Filter/Membrane Blockages

There have been occurrences of blockages in the media filters, ultra-filtration membranes and irrigation filters. Due to the significant amount of flocculant being dosed into the system any carry-over from the clarifier or fine particles passing through a filter quickly settle out in the base of the polishing, collection and irrigation tanks. When constructed the pump suction for the polishing, ultra-filtration and irrigation pumps were all taken from the base of the tanks.

The pump suction take offs on the polish, collection and irrigation tanks have been raised 600mm off the ground to ensure that any solids collected in the base of tank are not pumped directly through the filters/membranes potentially causing blockages. Any build up of solids will be drained from the tank in a controlled manner and returned to the start of the system for further treatment.

SMS Alarm System

The WWTP is fitted with a GSM, SMS alarm system. Both the GSM hardware and GSM network in Baldivis have proven to be unreliable and on several occasions have provided no indication of pending faults or issues. Early detection of problems within the plant would have greatly reduced the severity or impact of any ensuing incidents.

We have purchased and are in the process of installing a 'Next G' modem into the plant. This, along with regular testing of the SMS alarm system will improve overall alarm monitoring. In addition, both TLLV and NLV staff have been included in the SMS alarm recipient list to monitor reaction times and ensure that all alarms are dealt with in a timely manner. The alarms will be split into 'Critical Alarms' and 'Non-Critical Alarms', with a suggested 2 hours response to critical alarms and an 8 hour response to non-critical alarms.

Operator Training

Since commissioning of the plant the daily operation, monitoring and maintenance of the plant has been the responsibility of Aquasol. The current service contract does not allow for daily attendance at the plant by Aquasol staff. It was agreed with NLV/TLLV management that local TLLV staff should be provided basic training on the operation of the plant and utilized for daily checks of the plant conditions.

Training has been provided to local staff along with a daily checklist highlighting normal operating conditions for the plant. Any changes in flow, pressure, level, turbidity etc, are then reported to Aquasol for investigation.

General Improvements

There have been several other improvements to the plant that have increased reliability.

When investigating blockages in the media filters it was discovered that the lower laterals in both filters had been damaged. The laterals have since been upgraded from the manufacturer's moulded plastic laterals to stronger PVC laterals fabricated and installed by Aquasol technicians. The filtration media has also been upgraded to 'Glass Media'. The manufacturer claims 3-5 micron filtration as opposed to the 30-50 micron filtration usually achieved by standard sand filtration. This will greatly reduce the load on the ultra-filtration membranes.

When media passed through the broken laterals it pooled in the polishing flow meter, eventually blocking the pipe totally. The polishing flow meter has been replaced with a thermal flow switch with no moving parts to avoid any future fouling issues. A section of clear PVC pipe has also been installed at the lowest point of the polishing loop to give a visual indication of any media or other objects that could potentially block the polishing pipe work.

The ultra-filtration membranes have been replaced and operating/flushing/backwash program further tuned for the best possible filtration and longevity of the membranes.

An additional 32kL tank has been ordered and will be installed to provide temporary storage of waste water for routine maintenance or breakdown contingency. The operating level of the polish, collection and irrigation tanks has also been lowered to provide greater capacity in times of breakdowns or maintenance.

Planned Improvements

Aquasol are in the process of obtaining quotes for the addition of a turbidity monitor to be installed in the polishing loop to continuously monitor the discharge from the media filters. This will provide an excellent indicator of media filter performance that can be easily monitored during daily checks by TLLV staff.

We are also pricing differential pressure monitoring across the ultra-filtration membranes. This will indicate blockages within the membranes and can be utilized to initiate a membrane backwash cycle.

Summary

Both NLV and Aquasol have invested a great deal of time and money to not only improve the performance of the plant, but to provide a better service to residents, comply with licensing regulations, reduce the risk of potential hazards to personnel and the environment, and to maintain operating and maintenance costs at a sustainable level into the future.

Andrew Mortlock

Technical Manager

+61 433 684 398

AQUASOL – Water Treatment Solutions

GHD

GHD House, 239 Adelaide Tce. Perth, WA 6004
P.O. Box 3106, Perth WA 6832
T: 61 8 6222 8222 F: 61 8 6222 8555 E: permail@ghd.com.au

© GHD 2013

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.

G:\61\28861\WP\Moama Lifestyle Villages Final Report.DOCX

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
A	A Meagher	M Hardin	<i>M Hardin</i>	A Meagher	<i>A Meagher</i>	24/01/2013
C	A Meagher	A Chivinge	<i>A Chivinge</i>	A Meagher	<i>A Meagher</i>	12/02/2013
0	A Meagher	A Chivinge		A Meagher		26/02/2013



www.ghd.com