Quantum Assurance

BHP Nickel West Pty Ltd

2025 Asset Management System Review

Water Services Licence WL52

Report

Economic Regulation Authority
February 2026

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Limitations of this Report

This report was prepared for distribution to the Economic Regulation Authority and BHP Nickel West Pty Ltd for the purpose of fulfilling BHP Nickel West's asset management system review under its Water Services Licence. We disclaim any assumption of responsibility for any reliance on this report to any persons or users other than the Economic Regulation Authority and BHP Nickel West Pty Ltd, or for any purpose other than that for which it was prepared.

Because of the inherent limitations of any internal control environment, it is possible that fraud, error or non-compliance may occur and not be detected. A review is not designed to detect all instances of non-compliance with the procedures and controls over the licence obligations of the Water Services Licence, since we do not examine all evidence and every transaction. The audit conclusions expressed in this report have been formed on this basis.

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1. Executive Summary

1.1 Background

BHP Nickel West Pty Ltd ('BHP Nickel West') has a Water Services Licence, issued by the Economic Regulation Authority ('ERA') under the *Water Services Act 2012* ('Act'), for the provision of potable water supply and sewerage services in the mining town of Leinster.

Leinster is located in the northern Goldfields area of Western Australia, approximately 370 km north of Kalgoorlie on the Goldfields Highway and 650 kilometres northeast of Perth. Water supply and sewerage services to the Leinster Mine and Concentrator (Sites) and the airport located 12 km and 8 km respectively to the north of town are not included in the licence.

BHP Nickel West owns and operates all of the drinking water and sewerage infrastructure that services 125 residential customers at 30 June 2025 (296 at 30 June 2024) in the township of Leinster. The Nickel West operations and West Musgrave project (Western Australia Nickel) were suspended from October 2024. BHP intends to review the decision to temporarily suspend Western Australia Nickel by February 2027.

Leinster provides accommodation for employees and families of BHP Nickel West, as well as contracting companies and government agencies that support the town. BHP Nickel West has been operating and maintaining both water supply and sewerage systems at this site since 2005 and has implemented a number of upgrades and replacement of critical assets. All water services are provided in the town without charge.

BHP Nickel West is required to comply with the terms and conditions of their license. There was one version of the licence WL52 (Version 2), applicable from 22 September 2021 and in force during the review period.

Under the Act, water services licensees are required to provide reports on an operational audit ('audit') and an effectiveness review of their asset management system ('review') once every 24 months, or another period that has been specified by the ERA.

The ERA has engaged Quantum Assurance to complete an asset management system effectiveness review of BHP Nickel West's water supply services, to comply with the licensing requirements of the ERA.

This review covers the period from the previous audit and review being 1 October 2022 to 30 September 2025 and was completed in January/February 2026.

1.2 Summary

This review has been conducted to assess the effectiveness of the Licensee's asset management system.

For 58 criteria in the asset management systems, the review rated 49 as performing effectively, 3 as opportunity for improvement and 6 as corrective action required.

The assessment of the 12 asset management components prescribed in the ERA's 2025 Audit and Review Guidelines: Water Licences found that:

- 9 components were rated A1 (documentation adequately defined, performing effectively).
- 1 component (Review of Asset Management System) was rated B2 (process requires some improvement and performance requires some improvement).
- 2 components (Asset Creation and Acquisition, and Asset Disposal) were rated A2 (documentation adequately defined and performance requires some improvement).

The review made two recommendations as follows:

Asset Management Plan

a) The Drinking Water Asset Management Plan and the Sewerage Asset Management Plan (AMPs) which were due for review in August 2022 should be reviewed and updated.

b) The AMPs should be updated for the life cycle cost forecast for the next 5 years.

c) The forward plan for asset replacement in the AMPs should be updated for the next 5 years.

d) The AMPs should be updated with the current maintenance activities and costs.

Asset Creation and Acquisition

a) The Water Source Protection Plan that has been in draft since the previous review should be finalised and implemented.

b) The Sewerage AMP should be updated for the current sewerage discharge onto land and the maximum limits per day.

1.3 Conclusion

For the review period from 1 October 2022 to 30 September 2025, the water supply and sewerage systems under the Water Licence WL52 are considered to be operating with an effective approach. The infrastructure is being well-maintained pending a decision on the future of the Leinster Nickel mine. The main improvement is that the Asset Management Plan due for revision in 2022 should be reviewed and updated.

We have complied with our independence and other relevant ethical requirements of the *Code of Ethics for Professional Accountants* issued by the Australian Professional and Ethical Standards Board and complied with the applicable requirements of Australian Standard on Quality Control 1 to maintain a comprehensive system of quality control.

We confirm that the ERA's 2025 Audit and Review Guidelines: Water Licenses have been complied with in the conduct of this review and the preparation of the report, and that the review findings reflect our professional opinion.

Quantum Assurance

Geoff White
Director

25 March 2026

2. Asset Management System Review

2.1 Description of Infrastructure

BHP Nickel West owns and operates all of the drinking water and sewerage infrastructure that services 125 residential customers at 30 June 2025 (296 at 30 June 2024) in the township of Leinster. Leinster is located in the northern Goldfields area of Western Australia, approximately 370 km north of Kalgoorlie on the Goldfields Highway and 650 kilometres northeast of Perth.

Leinster provides accommodation for employees and families of BHP Nickel West, as well as contracting companies and government agencies that support the town. BHP Nickel West has been operating and maintaining both water supply and sewerage systems at this site since 2005 and has implemented a number of upgrades and replacement of critical assets. All water services are provided in the town without charge.

The Nickel West operations and West Musgrave project (Western Australia Nickel) have been suspended from October 2024. BHP intends to review the decision to temporarily suspend Western Australia Nickel by February 2027.

BHP Nickel West is required to comply with the terms and conditions of their licence, including applicable legislative provisions and reporting as set out in the Water Compliance Reporting Manual (July 2024).

This review covers the period from 1 October 2022 to 30 September 2025.

The previous review period was from 16 September 2020 to 30 Sept 2022.

2.2 Objectives and Scope

The objective of the review was to assess the adequacy and effectiveness of the asset management system in place for the undertaking, maintenance and monitoring of the licensee's assets.

The scope of the review included an assessment of the adequacy and effectiveness of the asset management system by evaluating the key processes of:

- Asset planning
- Asset creation/acquisition
- Asset disposal
- Environmental analysis
- Asset operations
- Asset maintenance
- Asset management information system
- Risk management
- Contingency planning
- Financial planning
- Capital expenditure planning
- Review of the asset management system.

As the previous review reported in May 2023 did not identify any serious deficiencies in the asset management systems, this was a limited assurance review.

The previous review made one recommendation re contingency planning:

"a) As stated in the Leinster Drinking Water incident Response Plan, the Plan should be trialled annually, alternating each year between desktop and field exercises, in conjunction with the Department of Health. Suitable documentation of the trial/test and any corrective actions should be retained.

b) The Incident Response Plan (due for review in August 2022) should be reviewed and updated."

An initial risk assessment is performed to enable the review to be focused upon the higher risk areas by determining the audit priority from 1 to 5 of each area, as per the table below. Priority 1 and 2 audit areas require more in-depth testing than priority 4 and 5 audit areas.

Assessment of Review Priority

		Control Risk		
		High (weak controls)	**Moderate**	**Low (strong controls)**
Inherent Risk	**High**	Audit priority 1	Audit priority 2	
	Medium	Audit priority 3	Audit priority 4	
	Low	Audit priority 5		

The highest priority areas (priority 1, 2 or 3) based on inherent risk and the previous review's effectiveness ratings are:

- Contingency Planning.

The following criteria are rated priority 2 with a high inherent risk due to High potential consequences:

- 1.1 Asset management plan covers the processes in this table
- 4.1 Opportunities and threats in the asset management system environment are assessed
- 9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks

2.3 Asset Management Process and Performance Rating Scales

The adequacy of process policy and definition and the performance of the key processes were assessed using the scales described in the tables below. The overall effectiveness rating for each asset management process is based on a combination of the process and policy adequacy rating and the performance rating

.

Asset Management Process and Policy Definition - Adequacy ratings

RATING	DESCRIPTION	CRITERIA
A	Adequately defined	• 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	• Process and policy documentation require 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) requires minor improvements (taking into consideration the assets being managed).
C	Requires substantial improvement	• Process and policies are incomplete or require substantial improvement. • Processes and policies do not document the required performance of the assets. • Processes and policies are considerably out of date. • The asset management information system(s) requires substantial improvement (taking into consideration the assets being managed).
D	Inadequate	• Processes and policies are not documented. • The asset management information system(s) is not fit for purpose (taking into consideration the assets being managed).

Asset Management Performance Ratings

RATING	DESCRIPTION	CRITERIA
1	Performing effectively	• 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	Improvement required	• 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 implemented.
3	Corrective action required	• 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 implemented.
4	Serious action required	• Process is not performed, or the performance is so poor that the process is considered to be ineffective.

2.4 Summary of Asset Management System Effectiveness Ratings

The review's assessment of the asset management system process and policy definitions and their effectiveness, based on the ratings scale in Section 2.3, is shown in the table below.

Section 2.6 provides further details of the current rating results for each process in the asset management system.

Summary of Asset Management Performance Ratings

Process and Policy Definition – Adequacy Rating	Performance Rating for Effectiveness Criteria					
	Rating	1 Performing effectively	2 Improvement required	3 Corrective action required	4 Serious action required	Total
	A -Adequately defined	49	3	-	-	**52**
	B – Requires some improvement	-	-	6	-	**6**
	C – Requires substantial improvement	-	-	-	-	
	D – Inadequate	-	-	-	-	
	Total	**49**	**3**	**6**	**-**	**58**

Asset Management System Performance Ratings

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
1. Asset planning (including the development and maintenance of an asset management plan)	A				1				
1.1 Asset management plan covers the processes in this table.	✓				✓				
1.2 Planning process and objectives reflect the needs of all stakeholders and are integrated with business planning.	✓				✓				
1.3 Service levels are defined in the asset management plan.	✓				✓				
1.4 Non-asset options (e.g. demand management) are considered.	✓				✓				
1.5 Lifecycle costs of owning and operating assets are assessed.	✓				✓				
1.6 Funding options are evaluated.	✓				✓				
1.7 Costs are justified and cost drivers identified.	✓				✓				
1.8 Likelihood and consequences of asset failure are predicted.	✓				✓				
1.9 Asset management plan is regularly reviewed and updated.		✓					✓		
2. Asset creation and acquisition	A					2			
2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.	✓				✓				
2.2 Evaluations include all life-cycle costs.		✓					✓		
2.3 Projects reflect sound engineering and business decisions.	✓				✓				
2.4 Commissioning tests are documented and completed.	✓				✓				

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
2.5 Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.		✓					✓		
3. Asset disposal	**A**					**2**			
3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process.	✓					✓			
3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken.	✓				✓				
3.3 Disposal alternatives are evaluated.	✓				✓				
3.4 There is a replacement strategy for assets.		✓					✓		
4. Operational environmental (all external factors affecting the system)	**A**				**1**				
4.1 Opportunities and threats in the asset management system environment are assessed.	✓				✓				
4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved.	✓				✓				
4.3 Compliance with statutory and regulatory requirements.	✓				✓				
4.4 Achievement of customer service levels.	✓				✓				
5. Asset operations	**A**				**1**				
5.1 Operational policies and procedures are documented and linked to service levels required.	✓					✓			
5.2 Risk management is applied to prioritise operations tasks.	✓				✓				
5.3 Assets are documented in an Asset Register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition.	✓					✓			
5.4 Accounting data is documented for assets.	✓				✓				
5.5 Operational costs are measured and monitored.	✓				✓				

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
5.6 Staff resources are adequate and staff receive training commensurate with their responsibilities.	✓				✓				
6. Asset maintenance	**A**				**1**				
6.1 Maintenance policies and procedures are documented and linked to service levels required.	✓				✓				
6.2 Regular inspections are undertaken of asset performance and condition.	✓				✓				
6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule.	✓				✓				
6.4 Failures are analysed and operational/maintenance plans adjusted where necessary.	✓				✓				
6.5 Risk management is applied to prioritise maintenance tasks.	✓				✓				
6.6 Maintenance costs are measured and monitored.		✓					✓		
7. Asset Management Information System	**A**				**1**				
7.1 Adequate system documentation for users and IT operators.	✓				✓				
7.2 Input controls include appropriate verification and validation of data entered into the system.	✓				✓				
7.3 Security access controls appear adequate, such as passwords.	✓				✓				
7.4 Physical security access controls appear adequate.	✓				✓				
7.5 Data backup procedures appear adequate and backups are tested.	✓				✓				
7.6 Computations for licensee performance reporting are accurate.	✓				✓				
7.7 Management reports appear adequate for the licensee to monitor licence obligations.	✓				✓				

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation.	✓				✓				
8. Risk management	**A**				**1**				
8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks.	✓				✓				
8.2 Risks are documented in a risk register and treatment plans are implemented and monitored.	✓				✓				
8.3 Probability and consequences of asset failure are regularly assessed.	✓				✓				
9. Contingency planning	**A**				**1**				
9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	✓				✓				
10. Financial planning	**A**				**1**				
10.1 The financial plan states the financial objectives and identifies strategies and actions to achieve those.	✓				✓				
10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs.	✓				✓				
10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets).	✓				✓				
10.4 The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	✓				✓				
10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services.	✓				✓				
10.6 Large variances in actual/budget income and expenses are identified and corrective action taken where necessary.	✓				✓				

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
11. Capital expenditure planning	**A**				**1**				
11.1 There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates.	✓				✓				
11.2 The capital expenditure plan provides reasons for capital expenditure and timing of expenditure.	✓				✓				
11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan.	✓				✓				
11.4 There is an adequate process to ensure that the capital expenditure plan is regularly updated and implemented.	✓				✓				
12. Review of asset management system		**B**				**2**			
12.1 A review process is in place to ensure that the asset management plan and the asset management system described in it remain current.		✓					✓		
12.2 Independent reviews (e.g., internal audit) are performed of the asset management system.	✓				✓				

2.5 Status of Previous Review Recommendations

The previous review covered the period from the period of licence commencement from 16 September 2020 to 30 September 2022 and was reported in July 2023. Recommendations from the previous review are listed in the following table with the current status of actions to address the recommendations.

Reference (no./year)	Previously Assessed Process and Policy Deficiency (Rating, Asset management process, Details)	Previous Auditor's Recommendation and *Action Taken*	Date Resolved	Further action required
A. Resolved before end of previous review				
	Nil			
B. Resolved during current review period				
8/2022 **A3**	**Contingency Planning** *Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.* Contingency plans are documented in the Leinster Drinking Water Incident Response Plan (NLN-HSEC-PLN-0002). This considers a range of possible events including a chlorine leak, bush fire that threatens the drinking water supply, loss of drinking water supply (e.g. due to a pipe failure, pumping failure or chlorination equipment failure) and water quality incidents. The Incident Response Plan states that: "As per the requirements of NIW-HSEC-PRO-0008 Nickel West Emergency Management Plan Part 1, at least one Incident Response Plan (IRP) must be trialled annually, alternating each year between desktop and field exercises. Under the MoU with DoH, NIW has agreed to jointly undertake reasonable levels of staff training for incident response plans and conduct joint exercises annually. These joint exercises can be desktop in nature and do not necessarily need to have a field component. The format of the exercises will be agreed with DoH each year. Under the MoU with DoH, NIW has agreed to jointly maintain and review incident response plans with the DoH." There are no records of testing (desktop or field based) being undertaken of the incident response plans since they were developed in May 2020. The Incident Response Plan was also due for review in August 2022.	a) As stated in the Leinster Drinking Water incident Response Plan, the Plan should be trialled annually, alternating each year between desktop and field exercises, in conjunction with the Department of Health. Suitable documentation of the trial/test and any corrective actions should be retained. b) The Incident Response Plan (due for review in August 2022) should be reviewed and updated. **Status: Completed** *a) An Annual Desktop Mock Exercise was completed on 21 March 2024 and on 25 March 2025. The review sighted the documentation and corrective actions from the exercise.* *b) The Leinster Drinking Water incident Response Plan Incident Response was reviewed and updated in December 2023 and in February 2025. The next review is due by December 2026.*	March 2024	Nil

Reference (no./year)	Previously Assessed Process and Policy Deficiency (Rating, Asset management process, Details)	Previous Auditor's Recommendation and *Action Taken*	Date Resolved	Further action required
C. Unresolved during current review period				
	Nil			

2.6 Detailed Review Observations

The review period is from 1 October 2022 to 30 September 2025.

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
1	**ASSET PLANNING (**including development and maintenance of an asset management plan)			**A**	**1**
1.1	2	Asset management plan covers the processes in this table.	The Asset Management Plans were developed in May 2020 for the Leinster drinking water and sewerage systems to ensure the assets continue to provide reliable services to the Leinster town and community in a cost effective manner throughout their useful life. The relevant documents are: • Asset Management Plan - Leinster Drinking Water Supply System (NLN-NPI-PLN-0003) ('Drinking Water AMP). • Asset Management Plan - Leinster Sewerage System Asset Management Plan (NLN-NPI-PLN-0004) ('Sewerage AMP'). The plans cover the processes in this table. There have been no major changes to the infrastructure since the plants were commissioned. The number of residential customers has declined from approximately 300 in 2022 to 125 in 2025.	A	1
1.2	4	Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning.	BHP uses a 5-year strategic asset planning process that includes the definition of objectives and activities needed in order to deliver the required level of service. The plan and budget requirements are reviewed and updated annually. The data collected in the 1SAP system is used to enhance the planning and budgeting process. This approach is consistent with the above Asset Management Plans.	A	1
1.3	4	Service levels are defined in the asset management plan.	Section 4 of both the Drinking Water and Sewerage AMPs outline the objectives for managing the drinking water and sewerage system are: • Protect public health and safety. • Minimise Health, Safety, Environment and Community (HSEC) risks. • Meet expectations of continuity and reliability of the water supply. • Meet expectations of quality, continuity and reliability of sewerage collection and treatment. Service levels are defined in Section 4 of the Drinking Water AMP as follows:	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			• Quality of drinking water supplied meets Town and Site forecast demand targets. • Quality of drinking water supplied meets the requirements of the Australian Drinking Water Guidelines (ADWG). Service levels are defined in Section 4 of the Sewerage AMP as follows: • Quantity of wastewater treatment meets Town forecast demand targets. It is noted that the Water Services Licence includes pressure and flow standards (a minimum pressure of 15m, a maximum pressure of 100m and a minimum flow of 20 litres per minute) and a requirement to advise customers if the pressure and flow falls outside the range. There have been no non-compliances reported in the Annual Compliance Reports to the ERA for 2022/23, 2023/24 and 2024/25.		
1.4	4	Non-asset options (e.g., demand management) are considered.	With only a minor forecast of growth expected over the next 5 years at the time of preparing the Drinking Water AMP, non-asset options such as demand management were not considered necessary. Future demand may be subject to change if mining activities resume and this is monitored by BHP Nickel West as stated in Section 6 of the plan.	A	1
1.5	4	Lifecycle costs of owning and operating assets are assessed.	Section 7 of the Drinking Water and Sewerage AMPs include an assessment of the lifecycle costs including operational costs, planned corrective maintenance, preventative maintenance, breakdown maintenance and a capital strategy over a 5 year period for the assets.	A	1
1.6	4	Funding options are evaluated.	No funding or financial support is required for the operation, maintenance and future investment for the Leinster drinking water and sewerage systems. The core business of BHP Nickel West is mining, and the provision of water services is to enable the maintenance of a workforce within reasonable proximity to its mining operations. As such, the cost of delivery of these services is considered to be operational expenditure and the projected expenditure for the next five years is included in both AMPs.	A	1
1.7	4	Costs are justified and cost drivers identified.	The understanding of costs and cost drivers is demonstrated in the financial budgets for operational expenditure and capital expenditure included in Section 5 of the AMPs. The plans include forecast expenditure for the next 5 years and actual expenditure for the previous 3 years.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
1.8	4	Likelihood and consequences of asset failure are predicted.	The risk assessment of drinking water assets is discussed in Section 5 of the Drinking Water AMP. The detailed risk assessment is referred to with a summary included in the AMP. The risks considered are asset failure risks which are assessed in terms of safety and financial consequences. The likelihood of failure assessment is based on the asset's visual assessment of condition. Further details are included in the BHP Nickel West Leinster Drinking Water Supply Asset Integrity Risk Assessment document. Similarly, the risk assessment for the sewerage system assets is discussed in Section 5 of the Sewerage AMP. This follows the same process of assessing risk consequence and likelihood as the drinking water system risks. The assessments are completed in accordance with the requirements of the NIW-IOPS-STD-0001. This process is consistent with the BHP global risk management principles outlined in 'Risk Management – Our Requirements'. The combination of consequence and likelihood results in a risk level of low, moderate, high or extreme. Risks that are high or above require an action to reduce the risk to as low as reasonably practicable. The Leinster Drinking Water System Performance Review document includes the quarterly review of various risks including asset failure. The Superintendent – Health, Safety, Security and Emergency Management confirmed that quarterly meetings are held.	A	1
1.9	4	Asset management plan is regularly reviewed and updated.	The Drinking Water AMP and Sewerage AMPs include revision history tables with the plans being developed in May 2020. The next revision date is stated as August 2022, so the plans are overdue for review. This is considered a minor issue as there have been no significant changes to the services and the plants are in a care and maintenance phase pending a decision on the future of the nickel mine. *Recommendation 1/2025* *a) The Drinking Water Asset Management Plan and the Sewerage Asset Management Plan which were due for review in August 2022 should be reviewed and updated.*	B	3

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
2		**ASSET CREATION and ACQUISITION**		A	2
2.1	4	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.	No significant assets were created during the review period. A project to enhance water treatment at the 11 Mile site is currently being considered, but not sufficiently advanced in the review period to demonstrate the project evaluation process. Section 7.2 of the AMPs briefly describe how BHP Nickel West follow a structured approach for developing capital programs and budgets. As previously discussed, these AMPs need to be updated to reflect the planning for projects such as the 11 Mile water treatment project which is being considered from a water quality risk management approach. The document BHP Capital Projects Our Requirements describes the "phase" requirements for major capital projects with the evaluation activities needed to be complete to pass through the gateways from project initiation, identification, selection, definition and execution. The initiation phase requires a range of investment alternatives to be generated including the option to "optimise without". These are developed to identify the preferred investment alternative. The "optimise without" option is carried through together with the preferred investment alternative to the selection phase to enable effective evaluation of the preferred alternative.	A	1
2.2	4	Evaluations include all life-cycle costs.	Section 7 of the AMPs include assessment of the lifecycle costs including operational costs, planned corrective maintenance, preventative maintenance, breakdown maintenance and a capital strategy over a 5-year period for the assets. The information contained in the AMPs reflects a forecast to FY 2025 and requires updating. A business announcement regarding the temporary suspension of WA Nickel is planned for February 2027. *Recommendation 1/2025* *b) The AMPs should be updated for the life cycle cost forecast for the next 5 years or when the asset future is announced in February 2027.*	B	3

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
2.3	4	Projects reflect sound engineering and business decisions.	With no significant asset creation projects undertaken during the review period, it was not possible to review the engineering and business decisions relating to asset creation. A minor project completed to improve the small water treatment unit adjacent to the medical centre was viewed. The change improved maintenance of a disinfection residual and reflected sound engineering decisions.	A	1
2.4	4	Commissioning tests are documented and completed.	Without any significant asset creation projects during the review period, it was not possible to demonstrate commissioning tests and their documentation.	A	NR
2.5	4	Ongoing legal/environmental /safety obligations of the asset owner are assigned and understood.	The 200320-Water Services Licence Document Map provides a useful guide to the Regulatory documents, Management Plans, Procedures and Work Instructions that form BHP Nickel West approach to the Leinster Drinking Water and Sewerage Services. Table 1 of the Leinster Drinking Water Supply System – Operations and Maintenance Manual provides a list of Regulatory Compliance and Management Related Documents relating to Drinking Water. This includes: • ERA Water Services Licence • Groundwater Abstraction Licence • Nickel West Leinster Drinking Water Quality Management Plan • Nickel West Leinster Drinking Water Source Protection Plan (draft) • MoU between Department of Health and BHP Nickel West for Drinking Water The Water Source Protection Plan is not yet finalised. The plan was at a draft stage at the time of the previous review and should be completed. The MoU with the Department of Health for drinking water has been finalised since the previous review (dated 17 June 2024). The sewerage AMP references the Wastewater Treatment Plant Environmental Licence to Operate and includes the licence monitoring requirements (DWER). The licence permits BHP Nickel West to discharge treated sewage onto land up to a maximum of 600 m3/day. The licence also requires BHP Nickel West to monitor the discharge volumetric flow rate and quality. The data presented in the AMP (section 5.1.1) has not been updated since Feb 2020. The Environment team monitor the discharge rates and report this to DWER.	B	3

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			Recommendation 2/2025 *a) The Water Source Protection Plan that has been in draft since the previous review should be finalised and implemented.* *b) The Sewerage AMP should be updated for the current sewerage discharge onto land and the maximum limits per day. The discharge rates have reduced due to the reduced population in the town.*		
3		**ASSET DISPOSAL**		A	2
3.1	4	Under-utilised and under-performing assets are identified as part of a regular systematic review process.	Section 5.2 of the AMPs (Asset Condition) and section 7.2 (Capital Strategy) describe the regular assessment of performance, condition and risk to identify under-performing assets. With the Nickel Operations suspended, it is understandable that forward planning for the Leinster water and sewerage systems is uncertain. BHP Nickel West provided their Standard "Asset Integrity Management of Temporarily Suspended and / or Redundant Assets". This applies to assets including Drinking Water Systems and Non-Processing Infrastructures (NPI). The intent of the Standard is to protect the personnel and physical assets on site during suspension and to ensure a safe and efficient restart. Under this Standard, regular inspection and monitoring is required to make sure problems do not develop and deteriorate that will impact system operations. Processes are in place to maintain inspections and this was confirmed by the site visit and review of inspection documentation. However, the condition assessment information included in the AMPs dates back to approximately 2020 and an update is required as part of updating the asset management plans. *An improvement is that the AMPs should be updated for the current condition assessments of the assets.*	A	2
3.2	4	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken.	With suspension of the Nickel Operations, the Town of Leinster has seen a significant drop in population. Water use has reduced, but with green spaces being maintained from the water supply, it is the sewerage system that has seen the more significant reduction in flow. Two of the wastewater pump stations servicing the workers accommodation have been mothballed whilst the accommodation is not in use. Use	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			of the evaporation ponds has also been adjusted given the substantial drop in the treated wastewater requiring disposal. These demonstrate BHP Nickel West's current approach to under-utilisation of infrastructure.		
3.3	4	Disposal alternatives are evaluated.	Section 7 of the AMPs describes that asset disposal is generally completed as part of a replacement project rather than a discrete program for decommissioning.	A	1
3.4	4	There is a replacement strategy for assets.	The Standard "Asset Integrity Management of Temporarily Suspended and / or Redundant Assets" describes the approach to maintaining assets. The forward plan for asset replacement is provided in the AMPs, however these were last updated in 2020 and the replacement forecasts extend only to 2025. *Recommendation 1/2025* *c) The forward plan for asset replacement in the AMPs should be updated for the next 5 years or when the asset future is announced in February 2027.*	B	3
4		**OPERATIONAL ENVIRONMENT** (All external factors affecting the system)		A	1
4.1	2	Opportunities and threats in the asset management system environment are assessed.	The AMP adequately sets out the overall system environment. The opportunities and threats are documented in the Risk Assessment and Mitigation Measures document. The risks include detailed risk assessments for categories of risk being ground water system, treatment plant, storage, reticulation and consumers.	A	1
4.2	4	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved.	Service levels are documented in the AMPs, including availability of service, service interruptions and system failure or complaint. These are reviewed on a regular basis. Over the review period of 3 years, there has been no service interruptions and no customer complaints re water quality. BHP Nickel West do at least weekly inspections and have remote monitoring of critical components. There are also contract plumbers and electricians available on call near the plant.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
4.3	4	Compliance with statutory and regulatory requirements.	Section 3 of the AMP lists regulatory requirements relating to the ERA, DoH and DWER (water and environment). Safety is not referenced although Appendices are referred which include a Work, Health and Safety Policy and a Job Safety Analysis. There is also a Compliance and Reporting Register with the ongoing regulatory obligations to ERA, DOH and DWER. The following regulatory approvals from other agencies are in place: • Department of Environment Regulation *Environmental Protection Act (1986)* for the Leinster WWTP L6606/1995/9 Approval to 03/04/2032. • Department of Water and Environmental Regulation *Environmental Protection (Controlled Waste) Regulations 2004* for the transport of dried sludge from the WWTP to the Site landfill. T00742 15/05/2021. • Department of Water and Environmental Regulation *Rights in Water and Irrigation Act (1914)* for the approval to take water. GWL63834(4) 13/04/2025. • Department of Health *Medicines and Poisons Act (2014)* for the purchase of chlorine gas for application during drinking water treatment 16931 30/06/2021. • Department of Mines, Industry Regulation and Safety *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007* for the storage and handling of chlorine gas 15478 and 15479 21/10/2021. The Memorandum of Understanding (MoU) between the Department of Health and BHP Billiton Nickel West Pty Ltd for Drinking Water at Leinster was finalised in June 2024.	A	1
4.4	4	Achievement of customer service levels.	Service levels are documented in the Drinking Water AMP and Sewerage AMP, including availability of service, service interruptions and system failure or complaints. These are reviewed on a regular basis. Note: As per the Drinking Water AMP, the quality of water does not fully meet ADWG guidelines due to the high nitrate concentrations in the water supply. The drinking water is unsuitable for pregnant women and children under the age of three months to consume. Water treated using reverse osmosis to reduce nitrate concentrations to acceptable levels is available from the Medical Centre or Camp Mess and the Fly-in Fly-out village. This was confirmed in the site visit.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			Over the review period of 3 years, there has been no service interruptions and no customer complaints re the water quality. This indicates that customer service levels are being achieved.		
5		**ASSET OPERATIONS**		**A**	**1**
5.1	4	Operational policies and procedures are documented and linked to service levels required.	Operational policies and procedures are documented in the following 2 documents: • Operations and Maintenance Manual - Leinster Drinking Water Supply (issued 2020, next review due Aug 2025). This is the main document detailing the approach to operation and maintenance. • Drinking Water Quality Management Plan - Leinster Drinking Water Supply System (effective Oct 2024, next review due Aug 2026). This document details the approach to managing water quality. The manual lists service levels and compliance requirements as key objectives for the operation and maintenance of the system. More detailed asset-specific Operations and Maintenance (O&M) documents are also referenced (e.g. Operating Manual for the Camp Mess Reverse Osmosis (RO) Plant and the Chlorination System O&M Manual). The WQ management plan addresses the requirements of the Australian Drinking Water Quality Guidelines, including a source to tap approach, a focus on critical control point monitoring and reporting, risk assessment, incident response and improvement initiatives. *An improvement is that the AMPs should be updated for the current condition assessments of the assets.*	A	2
5.2	4	Risk management is applied to prioritise operations tasks.	The risk assessment process undertaken as part of the Drinking Water Quality Management Plan has identified a number of operating activities to mitigate water quality risks. The water and sewerage system AMPs include asset risk assessments and discussion of the actions to reduce any risks assessed of high or above, which include operational and maintenance activities.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
5.3	4	Assets are documented in an Asset Register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition and accounting data.	The Drinking Water AMP and Sewerage AMP (Appendix A) include a list of the assets and their condition assessment. The condition assessments will need to be updated as part of updating the AMPs. During the site visit the 11 Mile Treatment facility, the town tank, the wastewater treatment plant, the evaporation ponds, the small RO systems at the camp mess and the medical facility and the sewer pump stations were inspected. From the visual inspection all assets were in good condition. *An improvement is that the AMPs should be updated for the current condition assessments of the assets.*	A	2
5.4	4	Accounting data is documented for assets.	The reviewer sighted the audited Financial Reports for BHP for 2023/24 and 2024/25 prepared by external accountants. This confirms that accounting data is documented in the financial system.	A	1
5.5	4	Operational costs are measured and monitored.	Operational costs are recorded and reviewed against budgets in monthly financial reporting.	A	1
5.6	4	Staff resources are adequate and staff receive training commensurate with their responsibilities.	Qualified plumbers are employed to operate and maintain the water and sewerage systems. Other resources (e.g. electrician) and specialist contractors are also engaged to support maintenance of specialist equipment such as the RO plant and gaseous chlorine dosing. Cert. III training in Water Operations has been implemented for all NIW plumbers based at Leinster. The site visit confirmed that staff and contractor resources are adequate to maintain the drinking water and sewerage systems.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
6		**ASSET MAINTENANCE**		A	1
6.1	4	Maintenance policies and procedures are documented and linked to service levels required.	The maintenance approach is documented and has the aim of continuing to meet service levels at the lowest asset lifecycle cost, at an acceptable risk exposure. The maintenance plans and procedures are recorded in BHP Nickel Westy's Asset Management System, 1SAP. The system records both planned and responsive maintenance activities. The maintenance activities that are undertaken are categorised as: • Planned Corrective Maintenance (PM01): Planned non-scheduled maintenance required to rectify a known issue which is not urgent. Corrective maintenance work is generally identified through preventive maintenance. • Preventive Maintenance (PM02): Planned scheduled maintenance necessary to ensure the reliability or to sustain the design life of an asset. Preventive maintenance generally includes asset servicing and inspections. • Breakdown Maintenance (PM03): Unplanned maintenance required to bring an asset back to working order when it has failed or is worn out. This work must be completed within 1 to 8 days. • Project Work (PM06): Engineering requests that lead to project work such as replacement or improvements that must be programmed. Depending on the asset type, the scheduling of maintenance is based on a run to fail (and replacement), fixed time maintenance or a condition-based monitoring approach. Qualified plumbers are employed by BHP Nickel West and are in attendance every day of the year. Responsibility for operations and maintenance of the drinking water and sewerage system is divided between the Site and Town based maintenance groups. The Site based group is responsible for the operation and maintenance of the source water bores, chlorination system, all instrumentation, and the distribution system to the town tank. The Site plumbers are also responsible for water supply and sewerage at the mine and processing facilities, which is not included in the scope of the licence. The Town based maintenance group looks after distribution of drinking water, the reverse osmosis plants at the Camp Mess and Medical Centre, collection of sewage and the wastewater treatment plant located on the outskirts of town.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
6.2	4	Regular inspections are undertaken of asset performance and condition.	Asset inspections and asset condition monitoring are regularly performed. Inspection tasks are scheduled at frequencies ranging from 2 weekly to annual, depending on the asset. An output of the maintenance tasks (including inspection) scheduled during 2025 at the 11 Mile facility was obtained. The records confirm tasks were completed. A sample of the paperwork completed for a range of tasks were also obtained showing the list of tasks carried out for activities such as monthly WWTP inspections, borefield pipeline and valve checks, and borefield motors electrical inspection.	A	1
6.3	4	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule.	The maintenance plans for the Leinster drinking water and sewer systems are loaded into BHP Nickel West's Asset Management System, 1SAP. An output of the maintenance tasks scheduled during 2025 at the 11 Mile facility was obtained. The records confirm tasks were completed. A sample of the paperwork completed for a range of tasks were also obtained showing the list of tasks carried out for activities such as monthly WWTP inspections, borefield pipeline and valve checks, borefield motors electrical inspection and the 11 mile water treatment plant service. Appendix C of both AMPs document the Preventative Maintenance Program.	A	1
6.4	4	Failures are analysed and operational/maintenance plans adjusted where necessary.	The asset management system uses information from corporate systems such as 1SAP to review asset performance. Asset performance is measured and monitored through the following inputs: • Drinking water quality monitoring programme • Effluent quality monitoring program • Flow and demand data • Recording of breakdown maintenance • Incident reporting	A	1
6.5	4	Risk management is applied to prioritise maintenance tasks.	The AMPs (section 7.1) state the that scheduled preventative maintenance tasks are to ensure the quality and reliability of the water supply, the sewage collection and treatment are maintained. The Drinking Water Quality Management Plan includes maintenance tasks within the improvement plan (e.g. frequency of inspections to reduce risk of contamination).	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
6.6	4	Maintenance costs are measured and monitored.	The Drinking Water and Sewerage AMPs section 5.1 include information on the type of maintenance completed in the past 3 years and in section 5.4 the cost of planned, preventative and breakdown maintenance over past years. The Sewerage AMP provides a similar review of maintenance activities and costs over past years. This information should be brought up to date with updating of the AMPs which is overdue. *Recommendation 1/2025* *d) The AMPs should be updated with the current maintenance activities and costs.*	B	3
7		**ASSET MANAGEMENT INFORMATION SYSTEM**		A	1
7.1	4	Adequate system documentation for users and IT operators.	BHP Nickel West uses the "1SAP" asset management system for asset and work management processes. The work management processes defined in 1SAP provide BHP with the ability to identify, plan, schedule, execute and manage multidisciplinary work activities. Work management processes are used for the development of repeatable work plans and strategies, reporting and investigating HSE and other events and management of work execution (e.g. generation of work orders for planning and scheduling work, shutdown management and contractor management). 1SAP is also utilised for data collection and management, analysing performance and documenting asset condition. BHP Nickel West has a comprehensive Management System and hierarchy of supporting documentation which defines water supply and sewerage system responsibilities. It includes a range of controlled documents covering health and safety, project development and implementation, operations and maintenance, and training. All employees have access to current procedures by means of the company intranet.	A	1
7.2	4	Input controls include appropriate verification and validation of data entered into the system.	Data accuracy is controlled by edit checks of data fields in the key system and checks by the user when entering manually completed work order requests and updates. Considered adequate.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
7.3	4	Logical security access controls appear adequate, such as passwords.	The BHP Nickel West Information Technology (IT) Department is responsible for the administration, operation and maintenance of the IT systems. Data is encrypted using AES-128 standard and stored in secure data centres or hosting facilities. Procedures are in place for user authentication, cyber security, IT risk management, incident management and disaster recovery. The IT systems are accessible via authorised computer terminals (on the LAN) and users require a valid account and current password. The computer terminals are not available to the general public and are located in approved lockable buildings. In addition, the IT systems are remotely accessible to authorised users using a two-factor authentication system. Restricted access is given to authorised users of the following systems: • Supervisory Control and Data Acquisition (SCADA) systems. • Enterprise Resources Planning system 1SAP.	A	1
7.4	4	Physical security access controls appear adequate.	The physical access restrictions to the site office in Leinster were confirmed during the field visit. All offsite assets (e.g., bores, pump stations, storage tanks, water treatment plant) are located in secure, fenced and locked compounds. Access to systems via Laptop PCs and mobile devices is controlled by passwords, which are required to be changed on a regular basis.	A	1
7.5	4	Data backup procedures appear adequate and backups are tested.	Data is continually backed up to cloud storage with a managed Information Technology (IT) service provider. There is also a physical back up of the key data systems used by BHP Nickel West to external hard drives. Backups are tested and data backup procedures are sound.	A	1
7.6	4	Computations for licensee performance reporting are materially accurate.	From review of source data for the performance reporting, the calculations are considered to be accurate.	A	1
7.7	4	Management reports appear adequate for the licensee to monitor licence obligations.	Service levels are documented in the Drinking Water AMP and Sewerage AMP after and Sewerage AMP, including availability of service, service interruptions and system failure or complaints. These are reviewed on a regular basis, including quarterly meetings to review all service standards. Minutes of these meetings were sighted.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
7.8	4	Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation.	Access to all systems have restricted user access and require passwords that are regularly changed. Data is continuously backed up to cloud storage. Backups are tested and data backup procedures are sound.	A	1
8		**RISK MANAGEMENT**		A	1
8.1	4	Risk management policies and procedures exist and are being applied to minimise internal and external risks.	BHP's risks are managed on an enterprise-wide basis in accordance with the group document Risk Management – Our Requirements. The natural diversification in its portfolio of commodities, geographies, currencies, assets and liabilities is a key element in its risk management approach. ERA Water Services Licence Application - Leinster Drinking Water and Sewerage Services - BHP Nickel West states: • Risk management is embedded in all critical business activities, functions and processes. Materiality and tolerance for risk are key considerations in decision-making. • Each year the BHP Board reviews and considers the risk profile for the whole Group. This risk profile covers both operational and strategic risks. The risk profile is assessed to ensure it supports the achievement of the Group's strategy while maintaining a solid 'A' credit rating. Risk issues are identified, analysed and assessed in a consistent manner. Performance requirements exist for the identification, assessment, control and monitoring of material risk issues that could threaten the corporate purpose and business plans.	A	1
8.2	4	Risks are documented in a risk register and treatment plans are implemented and monitored.	The risk assessment of drinking water assets is included in Section 5 of the Drinking Water AMP. The specific risks include the failure of assets and other interruptions to supply, as well as safety and financial risks. The likelihood and consequences of failure, including mitigation measures, are assessed. The process is consistent with the BHP global risk management principles outlined in the Risk Management – Our Requirements document. Further details are included in the BHP Nickel West Leinster Drinking Water Supply Asset Integrity Risk Assessment document. The risk assessment for sewerage is included in Section 5 of the Sewerage AMP. This assessment was completed in accordance with the requirements of the Nickel West Standard Asset Integrity NIW-IOPS-STD-0001. The risk assessment process	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			assesses likelihood of failure and consequence of failure to determine the resultant risk of each asset. This process is consistent with the BHP global risk management principles outlined in 'Risk Management – Our Requirements'. There were no risks assessed as high risk. The risk assessments in the AMP are to be reviewed every 2 years, although the latest review due in August 2022 is overdue. This is considered a minor issue as the site visit confirmed the risks are being reviewed on a weekly basis through maintenance checklists.		
8.3	4	Probability and consequences of asset failure are regularly assessed.	In July 2020, NIW completed an asset integrity risk assessments for the drinking water and sewerage system assets in accordance with the requirements of the NIW Standard Asset Integrity NIW-IOPS-STD-0001. The risk assessment process assesses likelihood of failure and consequence of failure to determine the resultant risk of each asset. This process is consistent with the BHP global risk management principles outlined in 'Risk Management – Our Requirements'. The likelihood of failure assessment is based on an asset's visual assessment of condition. The likelihood is assessed with preventive controls (scheduled maintenance, inspections and condition assessment) in place. The consequence severity assessment considers impacts that apply to safety and financial loss, environmental impacts arising from the water supply operations are not covered in this assessment. The consequence is assessed with mitigating controls (duty/standby arrangement, critical spares, equipment interchangeability and emergency response) in place. The risk assessment was completed for 32 'Assets Groups' in the drinking water system and 43 for the sewerage system. The risk assessment identifies improvement actions to mitigate high risks with an assessment of revised risk following implementation. The risks are regularly reviewed in quarterly meetings. Minutes of the meetings were sighted.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
9		**CONTINGENCY PLANNING**		A	1
9.1	2	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	Contingency plans are documented in the Leinster Drinking Water Incident Response Plan (NLN-HSEC-PLN-0002). This considers a range of possible events including a chlorine leak, bush fire that threatens the drinking water supply, loss of drinking water supply (e.g. due to a pipe failure, pumping failure or chlorination equipment failure) and water quality incidents. The Leinster Drinking Water incident Response Plan Incident Response was reviewed and updated in December 2023 and in February 2025. The next review is due by December 2026. The Incident Response Plan states that: "As per the requirements of NIW-HSEC-PRO-0008 Nickel West Emergency Management Plan Part 1, at least one Incident Response Plan (IRP) must be trialled annually, alternating each year between desktop and field exercises. Under the MoU with DoH, NIW has agreed to jointly undertake reasonable levels of staff training for incident response plans and conduct joint exercises annually. These joint exercises can be desktop in nature and do not necessarily need to have a field component. The format of the exercises will be agreed with DoH each year. Under the MoU with DoH, NIW has agreed to jointly maintain and review incident response plans with the DoH." An Annual Desktop Mock Exercise was completed on 21 March 2024 and on 25 March 2025. The review sighted the documentation and corrective actions from the exercise.	A	1
10		**FINANCIAL PLANNING**		A	1
10.1	4	The financial plan states the financial objectives and strategies and actions to achieve the objectives.	The water supply and sewerage systems are required to sustain the workforce for nickel mining and processing at Leinster. The mining facility is closed and is in a care and maintenance phase. There is no charge for the services and therefore no projected revenue. As such there is no need to demonstrate the financial viability achieved from the sale of drinking water or sewage collection and treatment charges under this licence.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
10.2	4	The financial plan identifies the source of funds for capital expenditure and recurrent costs.	The water supply and sewerage systems are required to sustain the workforce for nickel mining and processing at Leinster. The mining facility is closed and is in a care and maintenance phase. There is no charge for the services and therefore no projected revenue. As such there is no need to demonstrate the financial viability achieved from the sale of drinking water or sewage collection and treatment charges under this licence.	A	1
10.3	4	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets).	The water supply and sewerage systems are required to sustain the workforce for nickel mining and processing at Leinster. The mining facility is closed and is in a care and maintenance phase. There is no charge for the services and therefore no projected revenue. As such there is no need to demonstrate the financial viability achieved from the sale of drinking water or sewage collection and treatment charges under this licence. Operating and capital expenditure is planned for a 5 year period and ongoing costs are compared to budget on a monthly basis.	A	1
10.4	4	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	The water supply and sewerage systems are required to sustain the workforce for nickel mining and processing at Leinster. The mining facility is closed and is in a care and maintenance phase. There is no charge for the services and therefore no projected revenue. As such, there is no need to demonstrate the financial viability achieved from the sale of drinking water or sewage collection and treatment charges under this licence.	A	1
10.5	4	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services.	The mining facility is closed and is in a care and maintenance phase. The ongoing maintenance costs are included in the AMPs. There is no applicable administration expenditure as there is no billing of customers.	A	1
10.6	4	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary.	An annual operating budget is prepared identifying monthly expenditure. There is evidence of comparison of the annual budget to the previous year's actuals.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
11		**CAPITAL EXPENDITURE PLANNING**		**A**	**1**
11.1	4	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates.	The Drinking Water AMP and the Sewerage AMP (Section 7.2) include a structured approach for developing capital programs and budgets (in conjunction with the BHP Corporate Alignment Planning(CAP) - Our Requirements procedure. At the conclusion of each CAP cycle, capital programs and budgets are allocated by BHP to BHP Nickel West for the coming financial year but these are subject to change by BHP Nickel West and BHP management, depending on business circumstances. The capital budget information presented in this section is based on current knowledge and is subject to annual review following the BHP CAP process. Projected capital expenditure for the next five years, including issues to be addressed, actions proposed, responsibilities and dates are included in the Drinking Water AMP and the Sewerage AMP. However, the mining facility is closed and is in a care and maintenance phase. There is no requirement for a capital expenditure plan until a decision is made on the future of the mining facility.	A	1
11.2	4	The plan provides reasons for capital expenditure and timing of expenditure.	The reviewer confirmed the Capital Expenditure Plan is based on review of the condition of the assets and the estimated life of the assets as recorded in the Drinking Water AMP and the Sewerage AMP The AMPs include the expected capital expenditure for 5 years.	A	1
11.3	4	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan.	The reviewer confirmed the Capital Expenditure Plan is based on review of the condition of the assets and the estimated life of the assets as recorded in the Drinking Water AMP and the Sewerage AMP. The asset life is also stated in the plans.	A	1
11.4	4	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned.	The AMP includes review and update as required or if major changes occur. The capital expenditure planning process is considered adequate for the drinking water and sewerage assets.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
12		**REVIEW OF ASSET MANAGEMENT SYSTEM**		B	2
12.1	4	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	The Drinking Water AMP and Sewerage AMP include revision history tables with the plans being developed in May 2020. The next revision date is stated as August 2022, so the plans are overdue for review. This is considered a minor issue as there have been no significant changes to the services and the plants are in a care and maintenance phase pending a decision on the future of the nickel mine. *Refer Recommendation 1/2025* *a) The Drinking Water Asset Management Plan and the Sewerage Asset Management Plan which were due in August 2022 should be reviewed and updated.*	B	3
12.2	4	Independent reviews (e.g., internal audit) are performed of the asset management system.	Independent reviews of specific elements of the water services have been conducted during the review period by external contractors as required. An independent review is also performed (by the ERA appointed auditors) every 24 months as required by the licence or longer period as specified by the ERA.	A	1

2.7 Review Recommendations

Note: As per the Audit and Review Guidelines, only recommendations with a Policy or Process Rating of C or D and/or Performance Rating of 3 or 4 are included in this report. Other improvement opportunities are provided direct to the Licensee.

Table of Current Review Asset System Deficiencies and Recommendations

A. Resolved during current review period

Reference (no./year) Compliance rating	Asset System Deficiency (AMS Component/Effectiveness Criteria/Details)	Auditor's Recommendation	Management Action taken by end of review period
	Nil		

B. Unresolved during current review period

Reference (no./year) Compliance rating	Asset System Deficiency (AMS Component/Effectiveness Criteria/Details)	Auditor's Recommendation	Management Action taken by end of audit period
1/2025 **B3**	**Asset Management Plan** *Asset Planning* *Asset management plan is regularly reviewed and updated.* *Review of Asset Management System* *A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.* a) The Drinking Water AMP and Sewerage AMPs include revision history tables with the plans being developed in May 2020. The next revision date is stated as August 2022, so the plans are overdue for review. This is considered a minor issue as there have been no significant changes to the services and the plants are in a care and maintenance phase pending a decision on the future of the nickel mine.	a) The Drinking Water Asset Management Plan and the Sewerage Asset Management Plan which were due for review in August 2022 should be reviewed and updated. b) The AMPs should be updated for the life cycle cost forecast for the next 5 years or when the asset future is announced in February 2027. c) The forward plan for asset replacement in the AMPs should be updated for the next 5 years or when the asset future is announced in February 2027. d) The AMPs should be updated with the current maintenance activities and costs.	No action to end of audit period.

B. Unresolved during current review period			
Reference (no./year) Compliance rating	**Asset System Deficiency** (AMS Component/Effectiveness Criteria/Details)	**Auditor's Recommendation**	**Management Action taken by end of audit period**
	Asset Creation and Acquisition *Evaluations include all life-cycle costs.* b) Section 7 of the AMPs include assessment of the lifecycle costs including operational costs, planned corrective maintenance, preventative maintenance, breakdown maintenance and a capital strategy over a 5-year period for the assets. The information contained in the AMPs reflects a forecast to FY 2025 and requires updating. *Asset Disposal* *There is a replacement strategy for assets.* c) The Standard "Asset Integrity Management of Temporarily Suspended and / or Redundant Assets" describes the approach to maintaining assets. The forward plan for asset replacement is provided in the AMPs, however these were last updated in 2020 and the replacement forecasts extend only to 2025. *Asset Maintenance* *Maintenance costs are measured and monitored.* d) The Drinking Water and Sewerage AMPs section 5.1 include information on the type of maintenance completed in the past 3 years and in section 5.4 the cost of planned, preventative and breakdown maintenance over past years. The Sewerage AMP provides a similar review of maintenance activities and costs over past years. This information should be brought up to date with updating of the AMPs which is overdue.		

B. Unresolved during current review period			
Reference (no./year) Compliance rating	**Asset System Deficiency** (AMS Component/Effectiveness Criteria/Details)	**Auditor's Recommendation**	**Management Action taken by end of audit period**
2/2025 **B3**	**Asset Creation and Acquisition** *Ongoing legal/environmental /safety obligations of the asset owner are assigned and understood.* The 200320-Water Services Licence Document Map provides a useful guide to the Regulatory documents, Management Plans, Procedures and Work Instructions that form BHP Nickel West approach to the Leinster Drinking Water and Sewerage Services. Table 1 of the Leinster Drinking Water Supply System – Operations and Maintenance Manual provide a list of Regulatory Compliance and Management Related Documents relating to Drinking Water. This includes: • ERA Water Services Licence • Groundwater Abstraction Licence • Nickel West Leinster Drinking Water Quality Management Plan • Nickel West Leinster Drinking Water Source Protection Plan (draft) • MoU between Department of Health and BHP Nickel West for Drinking Water The Water Source Protection Plan is not yet finalised. The plan was at a draft stage at the time of the previous review and should be completed. The MoU with the Department of Health for drinking water has been finalised since the previous review (dated 17 June 2024). The sewerage AMP references the Wastewater Treatment Plant Environmental Licence to Operate and includes the licence monitoring requirements (DWER). The licence permits BHP Nickel West to discharge treated sewage onto land up to a maximum of 600 m3/day. The licence also requires BHP Nickel West to monitor the discharge volumetric flow rate and quality. The data presented in the AMP (section 5.1.1) has not been updated since Feb 2020. The Environment team monitor the discharge rates and report this to DWER.	a) The Water Source Protection Plan that has been in draft since the previous review should be finalised and implemented. b) The Sewerage AMP should be updated for the current sewerage discharge onto land and the maximum limits per day. The discharge rates have reduced due to the reduced population in the town.	No action to end of audit period.

Appendix A - Methodology

A1. Review Approach

Our approach to meeting the requirements for the asset management system review is set out below.

Review Planning

- Conduct an initial meeting with the ERA to confirm the review approach and timing for the review, if required.
- Contact the licensee to gain an understanding of the business, relevant management plans and systems that may affect the risk assessment for planning purposes.
- Prepare a risk assessment including any specific factors or changes relevant to the licensee (in tabular form against each asset management system component).
- Submit a draft Review Plan, including the risk assessment and proposed approach, to the ERA for review and approval.
- Send a Pre-Visit Checklist of information and documentation to the licensee to enable staff to prepare for the visit (and where possible, send us information prior to the site visit).

Fieldwork

- Undertake a visit to the licensee and conduct various meetings with stakeholders, including corporate services and works/facilities management personnel, to determine the effectiveness of systems and procedures in place and to compare actual performance against the licence standards. The on-site visit included our Principal Engineer.
- Obtain copies of the latest asset management plans, performance reporting statistics and relevant correspondence between the licensee and the ERA for the audit period.
- The activities in the Asset Management System Review include:
    - analyse the documented procedures and processes for the planning, construction, operation and maintenance of assets to assess whether they are consistent with regulatory requirements under the licence;
    - interview key personnel to assess whether they understand and comply with the documented processes and procedures;
    - physically inspect the key assets and infrastructure; and
    - assess the effectiveness of the processes and system in place.

Review Reporting

- Prior to the conclusion of the visit, the lead auditor will discuss any observations and recommendations with the licensee's management to confirm our understanding of the issues and to discuss the action to be taken.
- Provide a draft report to the ERA for review no later than two weeks before the final report is due and make any revisions necessary.
- Provide the updated draft report to the ERA for review and feedback prior to finalising the report.
- Issue the final report to the ERA.
- The ERA will arrange responses to the proposed actions in the Post Audit Implementation Plan.

A2. Key Documents Reviewed

Regulatory Compliance

- Water Services Act 2012
- Water Services Code of Conduct (Customer Service Standards) 2018
- Water Services Regulations 2013
- 2025 Audit and Review Guidelines: Water Licences
- Water Services Operating Licence WL52 – Version 2 (from 21 September 2021 to current).
- Map of Licence Operating Area OWR-OA-318
- Compliance reports to ERA for 2022/23, 2023/24 and 2024/25.
- Performance reporting datasheets for 2022/23, 2023/24 and 2024/25
- Water, Sewerage and Irrigation Licence Performance Reporting Handbook
- Memorandum of Understanding between the Department of Health and BHP Nickel West on Drinking Water quality
- Memorandum of Understanding between the Department of Health and BHP Nickel West on Sewerage Services
- Relevant correspondence between the Licensee and the ERA, Department of Environment and Department of Health (as applicable).

Asset Management System Review

- Asset Management Plan – Leinster Drinking Water Supply System
- Asset Management Plan – Leinster Sewerage System
- Nickel West Leinster Drinking Water Quality Management Plan
- Nickel West Leinster Drinking Water Source Protection Plan
- Leinster Drinking Water Supply System - Operations and Maintenance Manual
- Leinster Drinking Water Incident Response Plan
- Leinster Township Emergency Management
- Water Licence Desktop Scenario – March 2025
- NIW Standard Asset Integrity
- BHP Nickel West Leinster Drinking Water Supply Asset Integrity Risk Assessment
- Asset Integrity Management of Temporarily Suspended or Redundant Assets Standard
- BHP Annual Reports for 2023/24 and 2024/25
- Customer Charter – Leinster Drinking Water and Wastewater Services
- BHP Nickel West's Managing Customer Feedback at Leinster Procedure
- Quarterly and Annual Potable Water Reports to Department of Health 2022 to 2024
- Minutes of DOH meetings May 2024 to December 2025
- WWTP Facility Checks 2024/25
- Compliance and Reporting Register with the ongoing regulatory obligations to ERA, DOH and DWER
- PFA BHP Nickel West Fixed Asset Register
- BHP Capital Projects Our Requirements

A3. Key Contacts

The licensee's representatives participating in the review were:

- Micheal Mifsud - Superintendent - Health, Safety, Security and Emergency Management, Northern Operations, West Australian Nickel
- Oliver Son – Health Safety Security Emergency Management Superintendent
- Giovanna De Sousa – Health Principal
- Brett Courtney – HSS Manager
- Ian Pritchard – NPI Superintendent
- Joshua Levett – Environment Superintendent
- Anthony Summers – Environment Principal
- Alex Franklin – Health Safety Hygiene Specialist
- Brendan Hort – Technician Plumber.

A4. Consultants

NAME AND POSITION	BUDGET HOURS
Geoff White - Director	35
Geoff Hughes – Principal Engineer	40
TOTAL	**75**

END OF REPORT