

Application for a Water Services Licence
Licence Summary

Town of Leinster

BHP **Nickel West Leinster**



For publication

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1.0 INTRODUCTION

This document summarises the Water Services Licence Application submitted by BHP Billiton Nickel West Pty Ltd to the Economic Regulation Authority (ERA) for the supply of drinking water and sewerage services to the township of Leinster, Western Australia. Although these services are already in place and are fully operational, BHP Billiton Nickel West Pty Ltd is applying for a Water Services Licence to comply with the requirements of the *Water Services Act 2012* (WA).

This application summary has been prepared in accordance with the ERA's Licence Application Guideline for Electricity, Gas and Water Licences (November 2016).

2.0 APPLICATION INFORMATION – NEW WATER LICENCE

2.1 Applicant Details

Legal	
Legal Name	BHP Billiton Nickel West Pty Ltd
Trading Name	BHP Nickel West
ABN	76 004 184 598
ACN	004 184 598
Registered Office	171 Collins Street Melbourne Victoria 3000 Australia
Principal Place of Business	125 St Georges Terrace Perth Western Australia 6000 Australia

Contact Details	
Primary Contact Name	Chris Stone General Manager Northern Operations
Postal Address	BHP Billiton Nickel West Pty Ltd PO Box 238, Welshpool Delivery Centre Welshpool Western Australia 6986 Australia
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Company Structure	
Legal Structure of Applicant	BHP Group Ltd. was incorporated in 1885 and is listed on the Australian Securities Exchange (ASX). BHP Billiton Nickel West Pty Ltd is a wholly owned subsidiary of BHP Group Ltd.

Company Structure	
Place and date of Incorporation	BHP Billiton Nickel West Pty Ltd (referred to as Nickel West or NIW throughout this summary document) was first incorporated in Western Australia on 27 November 2007.
Company Directors or Principals	NIW's Directors and Company Secretary are: • Gary Frampton – Director, Head of Business Development and Technical Projects • Eduard Haegel – Director, Asset President • Riaan Cloete – Director, Head of Finance • Jarad Preston – Alternate Director, Manager Finance • Angeli Gayfer – Company Secretary, Principal Subsidiary Management (Mel)

2.2 Proposed Licensed Services

Proposed Licensed Service		
Type of licence application	☒	Water Supply (potable) This licence application covers the supply of drinking water to the Leinster township
	☒	Sewerage services The Licence application covers the collection and treatment of sewage from the Leinster township
	☐	Water Supply (non-potable) The supply on non-potable water for industrial usage is not included in this licence application.
	☐	Drainage services Drainage services are not included in this licence application.
	☐	Irrigation services Irrigation services are not included in this licence application.

3.0 CORPORATE INFORMATION

The BHP Group is among the world's top producers of major commodities, including iron ore, metallurgical and energy coal, conventional and unconventional oil and gas, copper, aluminium, manganese, uranium, nickel and silver.

In 2001, BHP Billiton Limited (previously known as BHP Limited), an Australian-listed company, and BHP Billiton Plc (previously known as Billiton Plc), a UK listed company, entered into a Dual Listed Company merger. In November 2018, BHP Billiton Limited and BHP Billiton Plc changed their names to BHP Group Limited and BHP Group Plc, respectively. These entities and their subsidiaries operate together as a single for-profit economic entity (referred to as 'BHP' or 'the Group') with a common Board of Directors, unified management structure and joint objectives.

BHP Billiton Nickel West Pty Ltd was first incorporated in Western Australia on 27 November 2007 and is a wholly owned subsidiary of BHP Group Ltd. NIW was formed from the Nickel Business Unit of WMC Resources Ltd. WMC Resources became a wholly owned subsidiary of BHP Group Ltd. in August 2005.

NIW's core business is the management of nickel mining and processing operations in Western Australia. In doing so Nickel West also oversees the management of town and camp facilities. NIW has an average workforce of approximately 3,160 to support the operations at Leinster, Mt Keith, Kalgoorlie and Kwinana. This is comprised of 1,860 employees, 100 contractors working in various NIW roles and a monthly average of approximately 1,200 service contractors. The Leinster operation has 1,240 people involved in the day to day activities.

Since taking over the operations in 2005, NIW has been responsible for supplying drinking water and sewerage services to the Leinster township and camp at no charge.

4.0 FINANCIAL INFORMATION

NIW is a wholly owned subsidiary of BHP Group Ltd. and is in a sound financial position to continue to provide the required drinking water and sewerage services for Leinster, as demonstrated by the Group's financial performance in 2019. The assets used to supply the service are already in place and fully operational. No up-front investment is required to commence operation of the services.

The water supply and sewerage systems are required to sustain the workforce for nickel mining and processing at Leinster. All water services are provided to NIW employees and others without charge and NIW has no intention of changing this arrangement.

Evidence supporting the application has been provided to the Economic Regulation Authority.

5.0 TECHNICAL INFORMATION

This licence application applies to water supply services and sewerage services for the Leinster township and associated facilities (Town). Water supply and sewerage services to the Leinster Mine and Concentrator (Site) and the airport located 12 km and 8 km respectively to the north of town are not included in this licence application. NIW has the technical capabilities and resources to supply the required drinking water and sewerage services to the Town. Evidence supporting the application has been provided to the Economic Regulation Authority.

5.1 Location and Supply Area

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's location in relation to major towns and state boundaries is illustrated in Figure 1 below.

Mining at Leinster dates back to 1897 when the East Murchison United Company began mining for gold in the region. Leinster was built as a mining town in 1976 to support the Agnew nickel project developed under the State Agreement ratified by the Nickel (Agnew) Agreement Act 1974 (WA). It was gazetted a town site under the Local Government Act 1960 (WA) in 1981.

The climate is semi-arid with hot, dry summers and cold to mild winters, with an annual average temperature of 28.3°C. Rainfall averages 253 mm per year and is generally confined to intense events associated with tropical cyclones during the summer months and frontal systems in the winter months. Due to the low average rainfall and climate variability, Leinster's water supply is sourced from groundwater via the 11 Mile Borefield.

The land system and landform pattern around the Site and Town consist primarily of ironstone hills and ridges of various reliefs draining to lower colluvial and alluvial plains. The area is prone to flooding after seasonal, tropical storms and cyclones. Recharge to the aquifers is sporadic, and is generally dependent on cyclonic rains reaching the area and causing runoff in the drainages. The surface water catchment for the recharge zone is approximately 112 km² in area and this is shown in Figure 1.

Leinster has a population of approximately 2,100 with a mixture of permanent residents accommodated across 280 houses and a fly-in fly-out work force using camp accommodation. NIW also provides mining camp and residential accommodation to third party companies at Leinster, which includes provision of water and sewerage services.



Figure 1: Leinster Location and Drinking Water Catchment

5.2 Assets

5.2.1 Drinking Water Assets

Raw water for the drinking water supply is abstracted from 16 production bores at the 11 Mile Borefield, which is located approximately 6 km north of Leinster. Raw water is pumped from the bores to four raw water storage tanks located at 11 Mile.

Tank levels are monitored via ultrasonic level detectors, which are connected to a Supervisory Control and Data Acquisition (SCADA) system. When the tank levels fall below the set point, the bore pumps are activated (in priority order) to re-fill the tanks. There is also a transfer pumping station at this location for conveyance of treated water to Leinster.

A gaseous chlorine dosing facility is also located at 11 Mile, where chlorine is dosed at the transfer pump suction pipework. Chlorine residual levels are continuously monitored and dose rates adjusted to ensure chlorine set points are maintained. The system will automatically shut down for high and low chlorine residual concentrations.

Water pumped to Town and Site is metered, however individual consumption per property is not. One 3 ML drinking water storage tank is located within the Town to supply the township and camp. Free chlorine residual at the Town Tank is continuously monitored via the SCADA system.

Water is distributed to approximately 300 residential and commercial/industrial properties and over 1,500 accommodation units with associated laundry, mess, office and toilet facilities at the Camp.

There are two small package reverse osmosis (RO) plants in Leinster at the Camp Mess and Medical Centre, where residents can collect high quality filtered water if that is their preference. The camp laundries are also fitted with under sink RO units for the collection of drinking water.

5.2.2 Sewerage Assets

The Leinster township is serviced by a conventional sewerage system that is comprised of gravity mains and sewage pumping stations that pump from the low areas to a receiving manhole in the gravity system. Sewage then flows by gravity to an Intermittently Decanted Extended Aeration (IDEA) Wastewater Treatment Plant (WWTP) located approximately 1.4 km northwest of the town centre. Effluent from the WWTP is then pumped to a series of evaporation ponds located a further 1.5 km northwest from the WWTP. NIW holds a licence for the WWTP under Part V of the Environmental Protection Act 1986. Sludge generated by the process is dried and transferred to skips for disposal at the Site landfill. NIW holds a Controlled Waste Carrier licence for this movement activity.

The Leinster sewerage system collects the sewage from 280 residential houses, 10 commercial properties and approximately 1,500 accommodation units with associated laundry, mess, office and toilet facilities at the Camp. It is a self-contained system that consists of four gravity sewer catchments. The majority of the residential area (north-western section of Town) is served by a gravity system while the low lying areas around the camp have three gravity catchments draining to pumping stations.

The majority of the collection network was constructed in 1977 but there has been some expansion over the years with the development of additional residential housing and camp accommodation units. Manholes are located throughout the gravity network to allow access to the system for repair, maintenance and condition assessment.

5.2.3 Asset Management System

BHP uses the “1SAP” asset management system for asset and work management processes. The work management processes defined in 1SAP provide NIW 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 health, safety, environmental 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 uses a 5-year strategic asset planning process that enables 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 1SAP is used to enhance the planning and budgeting process.

An asset management plan has been developed for both the drinking water and sewerage systems.

5.3 Drinking Water Quality Management Plan

The Australian Drinking Water Guidelines 2011 incorporate the framework for the management of drinking water quality and provide guidance on quality parameters. A Drinking Water Quality Management Plan (DWQMP) has been prepared to provide direction on how drinking water quality at Leinster is managed from source to supply. There is also a Drinking Water Incident Response Plan that contains specific responses for operational and drinking water quality events.

5.4 Customer Services Information

NIW is responsible for managing all customers that receive drinking water and sewerage services in Leinster. All water services, whether residential or commercial, NIW or non-NIW employees, are provided without charge. Services are not metered.

There is a Leinster Drinking Water and Wastewater Services Customer Charter that provides customers with a clear understanding of the standards of service that can be expected from NIW, their responsibilities as a customer, and NIW's obligations in providing the services. Customer assistance is available through a 24-hour phone number for all town services, which can deal with issues including service interruptions and plumbing issues such as sewer blockages and water leaks/bursts.

NIW has a customer feedback procedure that meets the minimum requirements of the Water Services Code of Conduct (Customer Service Standards) 2018.

5.4.1 Customer Contracts

NIW does not use customer contracts and will continue to supply the services as per the Leinster Drinking Water and Wastewater Services Customer Charter and through Residential Tenancy Agreements and commercial leases.

5.4.2 Customer Accounts and Services

NIW does not charge for the provision of water and sewerage services in Leinster and therefore does not issue any accounts. Customer information is collected through the Residential Tenancy Agreements and commercial leases.

5.4.3 Water Services Ombudsman

NIW is committed to being a member of the Water Services Ombudsman Scheme (WA).

5.5 Additional Regulatory Approvals and other Regulatory Requirements

Nickel West has the following licences and approvals in place:

- Department of Environment Regulation, Environmental Protection Act (1986) for the Leinster WWTP.
- 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.
- Department of Water and Environmental Regulation, *Rights in Water and Irrigation Act (1914)* for the approval to take water.
- Department of Health, *Medicines and Poisons Act (2014)* for the purchase of chlorine gas for application during drinking water treatment.
- 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.

Approvals to be sought after the Water Services Licence is obtained include:

- Memorandum of Understanding between the Department of Health and BHP Billiton Nickel West Pty Ltd for Drinking Water at Leinster
- Memorandum of Understanding between the Department of Health and BHP Billiton Nickel West Pty Ltd for Sewerage Services at Leinster
- Membership of the Water Services Ombudsman Scheme

5.6 Relevant Experience of the Applicant

NIW has been operating and maintaining the drinking water and sewerage systems at Leinster since 2005. There is a team of technicians, plumbers, supervisors and managers with a broad range of experience and qualifications that support the operation, maintenance and upgrading of the systems.

Competency requirements for operations and maintenance personnel involved in source water, treatment and distribution are identified and documented in position profiles. Training plans are then established and implemented to ensure employees and contractors are competent.

Cert III training in Water Operations is being implemented for all NIW plumbers based at Leinster.

The use of sub-contractors is critical to the success of the NIW operations. Sub-contractors are used to provide specialist services and equipment and are available to assist during times of peak workload and emergency response. Consultants are also engaged to assist with technical investigations, regulatory reporting and infrastructure design.

NIW engages contractors who have completed appropriate training to undertake correct operation and maintenance of its assets. All contractors undergo site specific Health and Safety training and area specific inductions to be made aware of procedures and risks associated with the location in which they will be working.

6.0 PUBLIC INTEREST CONSIDERATIONS

It would not be contrary to the public interest to issue a Water Services Licence to NIW for the supply of water and sewerage services to the town of Leinster, pursuant to the *Water Services Act 2012* (WA)

6.1 Environmental Considerations

6.1.1 Rights in Water and Irrigation Act 1914: Ground Water Abstraction Licence

The 11 Mile Borefield is utilised for domestic consumption and ore processing purposes, and is authorised under Ground Water Licence (GWL 63834 (4)) with the Department of Water and Environmental Regulation. The licence was last issued in April 2015 and the current term expires 13 April 2025.

As a condition of the licence, a Leinster Ground Water Operating Strategy (GWOS) has been in place since 2002 (pre-NIW) and was last updated in 2016. The GWOS requires detailed monitoring to demonstrate compliance to licence conditions and includes the submission of a Groundwater Monitoring Review to the Department of Water and Environmental Regulation. Reporting is in the form of an Annual Groundwater Monitoring Summary and Triennial Groundwater Monitoring Review.

NIW is required to report annually and triennially against the conditions contained within the licence and has consistently demonstrated adherence to compliance auditing and reporting obligations.

6.1.2 Environmental Protection Act 1986: Part V licence

NIW holds a licence (L6606/2008/1) for the Leinster Town WWTP under Part V of the *Environmental Protection Act 1986*. The licence regulates the operation of the Leinster WWTP to ensure environment discharges and control measures are managed and maintained. As a condition of the licence, NIW reports annually on volumetric flow rate and effluent quality parameters.

The WWTP was upgraded in 2011 under Works Approval W4830/2010/1. Design treatment capacity for the plant of 0.6 ML/d exceeds the typical operational treatment rate of approximately 0.42 ML/d, and provides adequate contingency for future increases in town residency.

Under the licence, NIW is also subject to notification requirements in the event of failure or malfunction of pollution controls, or any incident which may cause pollution. NIW is required to report annually against the conditions contained within the licence and has consistently demonstrated adherence to compliance auditing and reporting obligations.

6.1.3 Environmental Protection (Controlled Waste) Regulations 2004

NIW holds a Controlled Waste Carrier licence (T00742) with the Department of Water and Environmental Regulation for the transport of dried sludge from the WWTP to the Site landfill. NIW has demonstrated consistent compliance with the conditions under the current licence.

6.2 Public Health Considerations

Leinster township and mining camp provide accommodation and affiliated services such as drinking water and sewerage to their employees, as well as employees of third parties, that are essential to ensure the maintenance of a workforce for the Leinster mining operations.

Health considerations for residents of the town and mining camp have the added protection afforded by requirements under Mine Safety and Inspection Act and regulations through application of the Australian Drinking Water Guidelines, and Occupational Safety and Health legislation. NIW adopts standards and procedures that are

consistent across all aspects of their operations, whether directly associated with mine operations or with services that enable the mining operation, such as provision of accommodation, drinking water and sewerage services.

6.2.1 Australian Drinking Water Guidelines

The Australian Drinking Water Guidelines incorporate the framework for the management of drinking water quality and provide guidance on quality parameters. A DWQMP has been prepared to provide direction on how drinking water quality at Leinster is managed from source to supply. There is also a Drinking Water Incident Response Plan that references the above documents and contains specific responses for operational and drinking water quality events.

The Draft Memorandum of Understanding between the Department of Health and BHP Billiton Nickel West Pty Ltd for Drinking Water at Leinster and associated Binding Protocols will be finalised following approval of the Water Services Licence. These documents contain specific obligations for the:

- management of drinking water quality;
- audit of water supply systems;
- publication and exchange of information and data; and
- managing events of public health significance

Operational drinking water events are those that impact the operation of the treatment plant or environment but have no immediate impact on public health. Operational events are therefore managed and reviewed internally and are not reported to any external agencies.

Drinking water related events that could pose a threat to public health are communicated to the Department of Health in accordance with agreed protocols.

6.2.2 Drinking Water Source Protection Plan

The Leinster Drinking Water Source Protection Plan provides direction for the protection of the water source for the Leinster drinking water supply and the monitoring required to ensure the strategies and procedures are effective and understood.

This plan is an integral part of the overall framework applied by NIW for managing drinking water quality at Leinster. Protecting the catchment is considered a critical first step in a multiple barrier approach to provision of safe drinking water supplies.

Current land uses and activities and their risks to the drinking water source are outlined in the Plan along with a Source Protection Strategy.

6.2.3 Water Quality Monitoring and Reporting

NIW has a well-established drinking water sampling programme, which includes monitoring for chemical, physical and microbiological parameters. Monitoring is conducted frequently using the Department of Health Small Communities Sampling Grid in accordance with the Australian Drinking Water Guidelines. Water samples are submitted to a NATA accredited analytical laboratory. Results of routine monitoring are provided by NIW to the Department of Health WA through quarterly reporting.

The level of residual chlorine at the 11 Mile dosing point and drinking water storage tank in town is continuously monitored by SCADA.

6.2.4 Health Act 1911: Poisons Permit

NIW holds a permit under the *Health Act 1911*, to allow for the purchase of chlorine gas for the drinking water chlorination plant. This permit requires chlorine to be stored in a locked, ventilated storage area, and all personnel accessing this area and handling the chlorine are appropriately trained.