Boggabri Coal Operations Pty Ltd
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NRAR Quarterly Report 4: Q2 2024

11/07/2024

To: Alex Bowlay
Senior Investigator
Natural Resources Access Regulator (NRAR)

Enforceable Undertaking Commitments

Contents

Water Balance Model (WBM)

The Goldsim WBM has been implemented and reported internally every month which is assisting in guiding a wholistic approach to water management, across the site.

The WBM is also allowing BCOP to validate water intercepted from undisturbed catchments and forecast when groundwater/river extraction will be required due to low site water storage.

Proposed Water Metering

As previously mentioned, all metering and telemetry has been installed in accordance with Appendix 1 of the EU and monitoring is ongoing.

Calculating Water Take

A verification model was run to assess the model's accuracy in representing the rainfall runoff response to the WMS and to estimate the volume of runoff intercepted from the undisturbed catchment in the previous quarter.

The Site Water Balance data in **Figure 1** indicates the modelled storage volume (blue line) is similar to the observed storage volume (orange line). The modelled storage has showed a similar rise to the observed volumes during the quarter as increased rainfall and cooler conditions lead to a slight increase in site storages. Above average rainfall (Table 1) also lead to a more saturated catchment and subsequently increased runoff was also experienced.

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Figure 1: Water Model Run as of 30 June 2024.

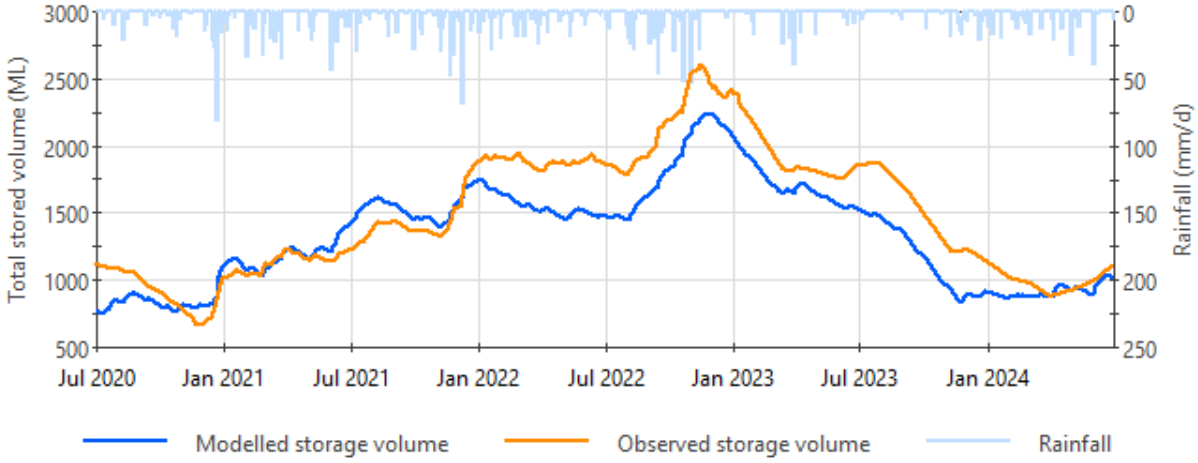

Table 1: Rainfall during reporting period

Month	**Rainfall (mm)**
April 2024	111.6
May 2024	38.2
June 2024	59.2

Table 2: Estimated & Actual volume of runoff intercepted from soil stockpile dam undisturbed catchment Apr-Jun 2024

	Estimated runoff Volumes into Soil Stockpile dam from undisturbed catchment	Metered pump volumes Actual Interception (Soil Stockpile dam)
Volume (ML	20.39	15.50

Increased runoff during May & June has lead to an increased quantity of water modelled to be intercepted by non-minor streams (Table 3). BCO had sufficient licence to account for unregulated water take during the Quarter.

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Table 3: Total Licensable take for Apr-Jun 2024

	Runoff from Third order and higher watercourses	Runoff from minor watercourses	Runoff from minor watercourses in excess of landholdings' harvestable rights
Volume (ML)	68.58	7.8	0

Table 4: Total Licensable take 2023/24 Water Year

	Runoff from Third order and higher watercourses	Runoff from minor watercourses	Runoff from minor watercourses in excess of landholdings' harvestable rights
Volume (ML)	87.99	9.9	0

As seen above in Table 4, BCOPL had sufficient licence (400ML) to account for water take from the Bluevale Water Source in the 2023/24 Water Year

Forecasting water take for acquisition allocation.

A Water Balance Model forecast was run to ensure BCOPL holds sufficient water allocation to account for future surface water take (See figure 2). See results below:

Three-month BOM Climate Outlook July-Sep 2024: Wet

Table 5: Predicted water take Jul-Sep 2024

	Predicted Runoff from Third order and higher watercourses	Predicted runoff from minor watercourses	Predicted runoff from minor watercourses in excess of landholdings' harvestable rights	Predicted volume requiring licencing
Volume (ML)	34.22	3.84	0	34.22

Current allocation held in WAL44134 (Water Year 24/25): 586ML

Industry learnings

- The installation of real-time metering has allowed BCOP water managers to make real-time decisions around storages and water movement across the site.
- Additional pumping, pipework and filtration installed as part of the process has facilitated the use of dam water in the Coal Processing Plant, thereby reducing the requirement for the use of bore water.
- The real-time storage monitoring will also reduce the need for regular survey pickup of dam storage levels which is a strain on resources and can vary with human error.
- The Goldsim model has provided reliable modelling of our site water storages recently during dry times which has allowed the mine to adequately prepare groundwater bore infrastructure and implement water saving initiatives on site.

Surface Water Management Plan (SWMP)

BCO submitted the SWMP for approval on 10 April. Currently still waiting for approval from DPHIE.

Consultation

Initial consultation has been conducted with members of the local Aboriginal community (25 July 2023) to discuss the background to the Enforceable Undertaking and to commence the discussion on past impact of water take on Aboriginal communities and their cultural practices. Follow up meetings were held in October 2023, January 2024 & June 2024. During the June 24 meeting, a discussion took place around cultural water management on both our mine footprint and offsets. BCO has extended an offer to the broader Aboriginal community to visit site for further discussions and to observe landscape flows.

The next ASCF is planned for Q4 2024.

A copy of this report will be disseminated to the Registered Aboriginal Parties (RAPs)

Consultation also took place at the May 2024 CCC meeting. No issues were raised.

An Email was sent to WaterNSW on 3 July advising them of BCO's water take over the previous 12 Months for all water sources (Appendix 1). BCO has also commenced an application to establish a Miscellaneous Works for WAL44134 to assist WaterNSW in water accounting.

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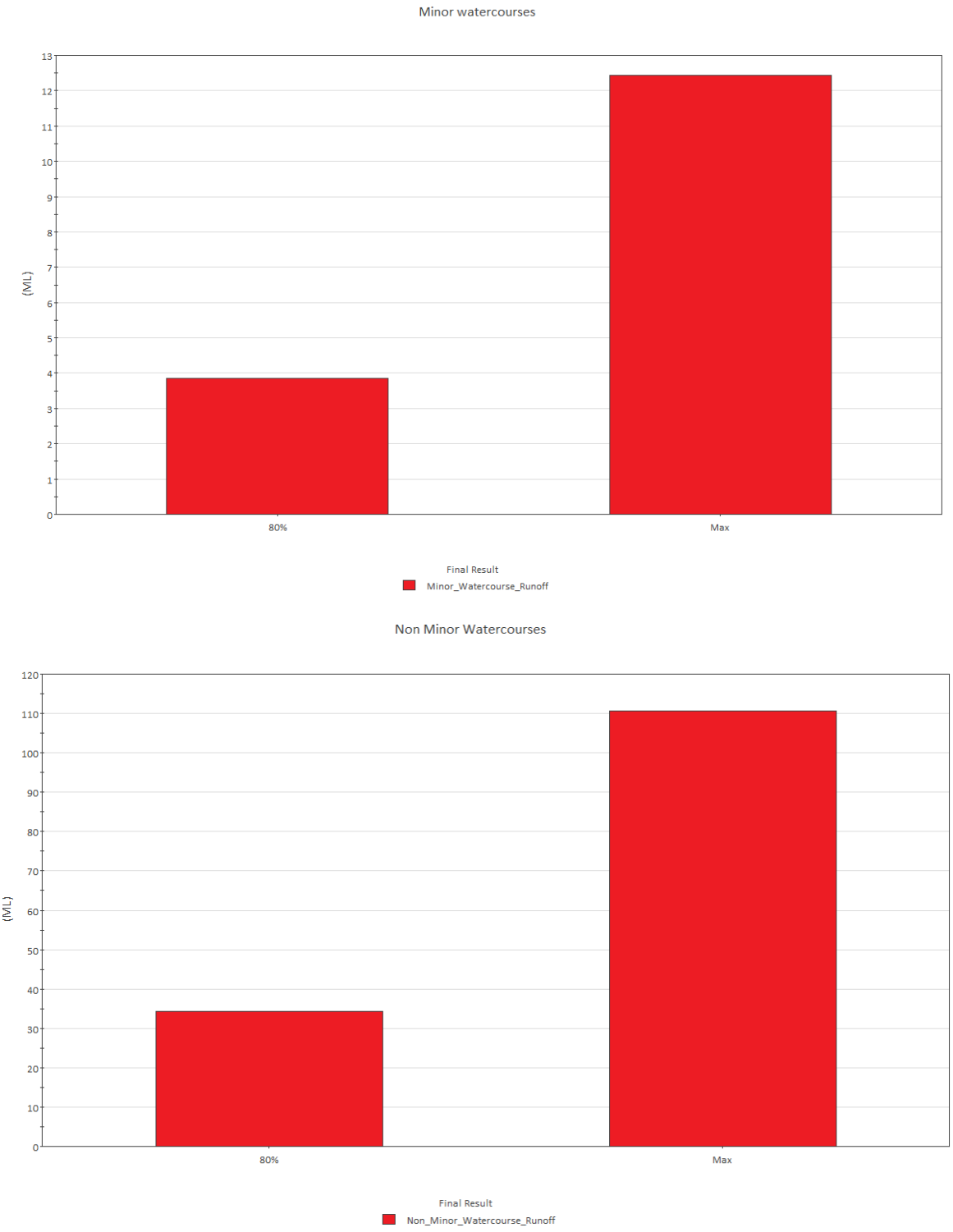

Figure 2: Predicted licensable water take for Jul-Sep 2024.

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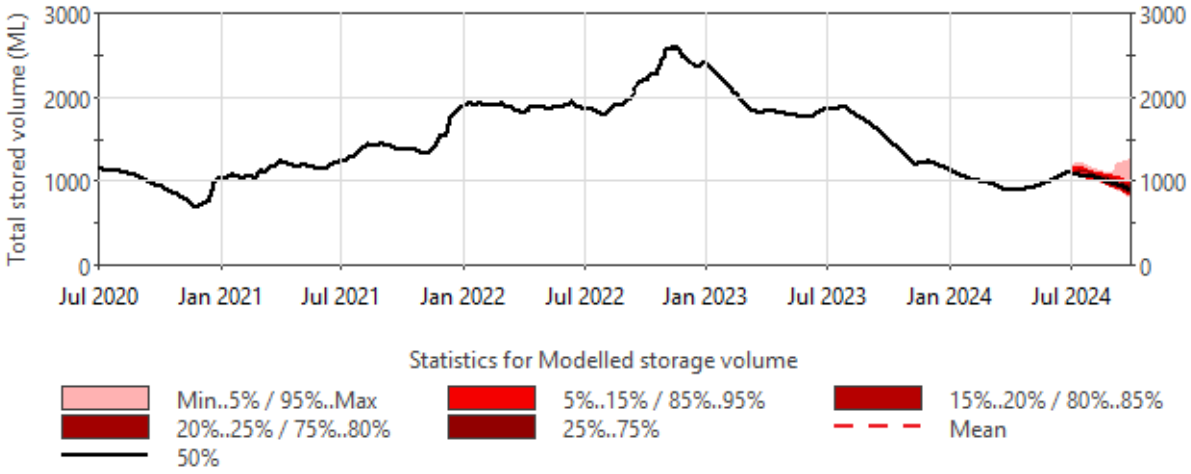

Figure 3: Predicted Site storage Volumes Jul-Sep 2024.

[redacted]

From: [redacted]
Sent: Wednesday, 3 July 2024 7:34 AM
To: Ryan Jenkins; WaterNSW
Cc: [redacted] BCL BGI - Environmental
Subject: Boggabri Coal 2023/24 Account Usage

WaterNSW,

Due to the end of the 2023/24 water year, Boggabri Coal requests the following water be deducted from our accounts.

The following needs to be included when deducting water from Boggabri Coal's accounts:

1. Groundwater bore extraction
2. Modelled interception (Groundwater & Surface Water)

The following has been extracted from Boggabri Coal groundwater bores in the 2023/24 Water Year:

Upper Namoi Zone 4 Namoi Valley (Keepit Dam to Gin's Leap):
There are 2 extraction bores in Zone 4. See below meter readings for the 'Victoria Park' & 'Cooboobindi' Bores.

	Cooboobindi Bore 90CA807034 ESID 49545	Victoria Park Bore 90CA807034 ESID 147269
27/06/2023	232408.2	2451.463
1/07/2024	232535.4	2494.751
Total Extraction (ML)	127	43.3

Total Zone 4 extraction – 170.3ML

Boggabri Coal does not extract groundwater from the Upper Namoi Zone 11 Maules Creek Groundwater source

Gunnedah Oxley Basin Murray Darling Basin Groundwater Source.
There is one extraction bore in the Gunnedah Oxley Basin Murray Darling Basin Groundwater Source. See below meter readings for 'Lovton' Bore.

	Lovton Bore 90WA822528 ESID 78537
27/6/2023	84.455
24/6/24	90.859
Total extraction (ML)	6.404

The modelled drawdown caused by pit interception (Boggabri, Tarrawonga, Maules Creek Complex Groundwater Model Update (2020))

The Boggabri, Tarrawonga, Maules Creek Complex Groundwater Model Update (2020) has predicted the following interception:

Predicted groundwater volumes indirectly intercepted from alluvial aquifer zones:
Upper Namoi Zone 4 Namoi Valley (Keepit Dam to Gin's Leap): 32ML
Upper Namoi Zone 11 Maules Creek Groundwater source: 1ML

Predicted groundwater volumes intercepted within porous rock WSP
Gunnedah Oxley Basin Murray Darling Basin Groundwater Source: 229ML

Modelled surface water intercepted by the pit that requires licencing:
Bluevale Water Source: 88ML

See below summary of Boggabri Coal's Groundwater consumption for the 2023/24 water year.

Upper Namoi Zone 4 Namoi Valley (Keepit Dam to Gin's Leap)

	Groundwater bore extraction (ML)	Intercepted volume (ML)	**TOTAL**
Usage (ML)	170.3	32	**202.3**

Upper Namoi Zone 11 Maules Creek Groundwater source

	Groundwater bore extraction (ML)	Intercepted volume (ML)	**TOTAL**
Usage (ML)	N/A	1	**1**

Gunnedah Oxley Basin Murray Darling Basin Groundwater Source

	Groundwater bore extraction (ML)	Intercepted volume (ML)	**TOTAL**
Usage (ML)	6.4	229	**235.4**

Bluevale Water Source

	Pumped extraction (ML)	Intercepted volume (ML)	**TOTAL**
Usage (ML)	N/A	88	**88**

We request that the following usages be debited from the following Account Numbers:

Upper Namoi Zone 4 Namoi Valley (Keepit Dam to Gin's Leap)

Licence number	**Usage (ML)**
90AL806945	30
90AL807033	149.8

Upper Namoi Zone 11 Maules Creek Groundwater source

Licence number	**Usage from each account (ML)**
90AL835721	1

Gunnedah Oxley Basin Murray Darling Basin Groundwater Source

Licence number	**Usage from each account (ML)**
90AL822527	6.2
90AL822548	229

Bluevale Water Source

Licence number	**Usage (ML)**
90AL837780	88

Boggabri Coal is currently in the process of installing pattern approved meters on all abovementioned bores. We are also in the process of cleaning up current and redundant 'works' in order to improve accuracy and transparency of water usage.

Boggabri Coal will keep WaterNSW up to date with bore metering updates to ensure ongoing compliance.

Please give me a call to discuss if required.

Thanks

[redacted]

[redacted]

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