

Narrabri Mine Community Consultative Committee Meeting # 52

Date: Wednesday 10 March 2021

Time: 5:00pm

Location: Narrabri Mine

Present: Russel Stewart (RS)
James Stieger (JS)
Ian Duffy (ID)
Cr Ron Campey (Narrabri Shire Council)
Brent Baker (BB) – Narrabri Coal - Environmental Superintendent
Gerald Linde (GL) - Narrabri Coal- General Manager
Andrew Garratt (AG) – Whitehaven Coal – General Manager Community Engagement
David Ellwood (DE) – Narrabri Coal – Director Stage 3 Project (via ZOOM)

Apologies: Mark Foster
Cathy Redding

1. DECLARATION OF PECUNIARY INTEREST

None

2. PREVIOUS MINUTES

RS asked that previous minutes are accepted as an accurate record.

Moved: JS Seconded: ID

2.1 BUSINESS ARISING FROM PREVIOUS MINUTES

Nil actions outstanding from previous meeting.

3. OPERATIONS PROGRESS REPORT AND SAFETY UPDATE

Presented by GL

- Provided overview of current financial year production and safety performance.
- Outlined proposed mine plan modifications pending approval (bord and pillar) and the increased number of contractors required on-site for the project.
- GL commented on recent challenges encountered longwall mining through fault structures.
- General discussion around coal price and global markets.

4. ENVIRONMENTAL MONITORING REPORT

Presented by BB

- DEPOSITIONAL DUST:
 - 2020 annual average for all monitoring locations below licence limit of 4 g/m²/month.
 - 2021 annual average YTD below licence limit of 4 g/m²/month

- **PM10 AIR QUALITY:**
 - 2020 annual average for the two monitoring locations (Claremont and Turrabaa) below annual average limit of 30 µg/m3.
 - Rolling 12 month average currently below annual average limit.
 - No exceedances of the 24 hour limit since previous CCC meeting.

Discussion around wet weather which has reduced regional dust levels.

- **QUARTERLY NOISE MONITORING**

Quarterly attended noise monitoring was completed in accordance with approval conditions during the 22-24 February 2021. Compliance was achieved at all locations during all time periods.

Discussion around noise improvement measures being implemented, including acquisition of 2 new caterpillar stockpile dozer, and main fan activities.

- **SURFACE WATER MONITORING:**

No wet weather discharges have occurred from licensed discharge points during January-February 2021.

- **WATER LICENSING:** Presented graphs showing NCO water licence allocation usage. Namoi bore usage has been minimal and instead have been utilising Namoi River entitlements during recent flow events. Mine dewatering volume pumped from box-cut provided.

Discussion around brine management, and forecast requirement for additional brine pond. Discussed water usage charts.

- **GROUNDWATER MONITORING:** summary of 2020 Annual Review provided and discussed.
- **SUBSIDENCE MONITORING:** There have been no updates to the results reported in the previous CCC meeting. The next scheduled subsidence measurements are for the period April/May 2021.
- **COMPLAINTS:** Since the beginning of 2021 one complaint has been received. The nature of the complaint was related to odour.
- **INCIDENTS:** No reportable incidents to regulatory agencies since previous CCC meeting.

RC queried noise complaint issue during 2020 from neighbouring landholder to the North. BB explained that WHC has since acquired this property.

No further questions/comments from members.

5. STAGE 3 UPDATE

DE provided update (via ZOOM presentation)

- Presented summary of results from Groundwater Assessment report for Stage 3 with respect to stock and domestic bores that are predicted to be impacted by more than 2m drawdown. JS queried one of the bores located closer to the mine, discussion around water quality, DE explained it is salty. DE discussed map showing affected bores and explained potentially affected bores down south are located in Garawilla and Napperby formations.

ACTION: JS requested copy of map printed out.

(COMPLETED- DE printed and dropped in JS mailbox Thursday 11 March).

- Stage 3 EIS was on exhibition for 6 weeks over November and December. DE provided overview of submissions received:
 - 61 public submissions, 16 from Public Authorities and 6 from organisations.
 - 64 in support, 16 comments from government departments, 3 objections from 3 organisations (one organisation included 16 signatories).

- Key issues raised include: socio-economic benefits, traffic and transport, groundwater, biodiversity, surface water and subsidence.
 - DE explained that work is underway on preparing response to all submissions received. NCO requested additional 2 months to provide final response to DPI&E.
 - DE explained that all submissions are available for viewing on DPI&E Portal.
- Requested that CCC members provide detail for any bores that may have been missed from the Stage 3 bore census.
 - No additional information was provided by the CCC members during the meeting.

No further questions/comments from members.

6. GENERAL BUSINESS

- JS requested that Huw Morgan, Whitehaven Coal Water and Property Manager attend next meeting to provide presentation and discussion on Whitehaven Coal land management strategy.

ACTION: BB to send meeting invitation to Huw Morgan

- AG wished Council success with upcoming Arts Festival and advised Whitehaven Coal has made donation of \$5,000.
- AG advises CCC of \$25,000 to Narrabri Blues Rugby League Club and plans for name change to Narrabri Whitehaven Blues for the 2021 season
- AG commented that it is great to see more community events being planned with COVID restrictions easing.
- RS advised that Whitehaven Coal Narrabri Business Awards event will be back on this year.
- BB asked if CCC interested in organising surface tour for next CCC meeting. Could inspect rehabilitation, main fan or other surface activities. Proposed agenda discussed:
 - Surface (bus) tour to commence at 3pm for those CCC members interested in attending;
 - BBQ at 4:30pm.
 - Members not interested in attending to show up at 5pm for normal meeting.

ACTION: BB to send Agenda and meeting reminder 1 week prior to meeting.

No further questions/comments from members.

NEXT MEETING

- Wednesday the 02 June 2021 at Narrabri Mine:
 - Surface Tour commencing at 3pm
 - BBQ nibbles 4:30-5:00
 - Normal meeting commencing at 5pm

Narrabri Mine Community Consultative Committee Meeting #52

Environmental Monitoring Report: January-February 2021

Deposited Dust Monitoring

Month	Total Insoluble Matter results (g/m ² /month)										
	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman	ND13 Darjeeling
January 2021	3.4	1	0.8	2.1	1.4	0.5	0.9	0.4	1.7	0.5	0.6
February 2021	2.4	0.6	1.2	3.4	1.6	0.9	1.6	0.8	2.8	0.7	0.7

Results are assessed during the end of year Annual Review process, and if it is determined that mine related activities have caused a contribution above the annual average limit of 4 g/m²/month appropriate notifications will be prepared.

2020 annual average for all monitoring locations were below the licence limit of 4 g/m²/month (Insoluble Matter).

2021 annual average YTD for all monitoring locations is below the licence limit of 4 g/m²/month (Insoluble Matter)

PM₁₀ High Volume Air Sampling (HVAS)

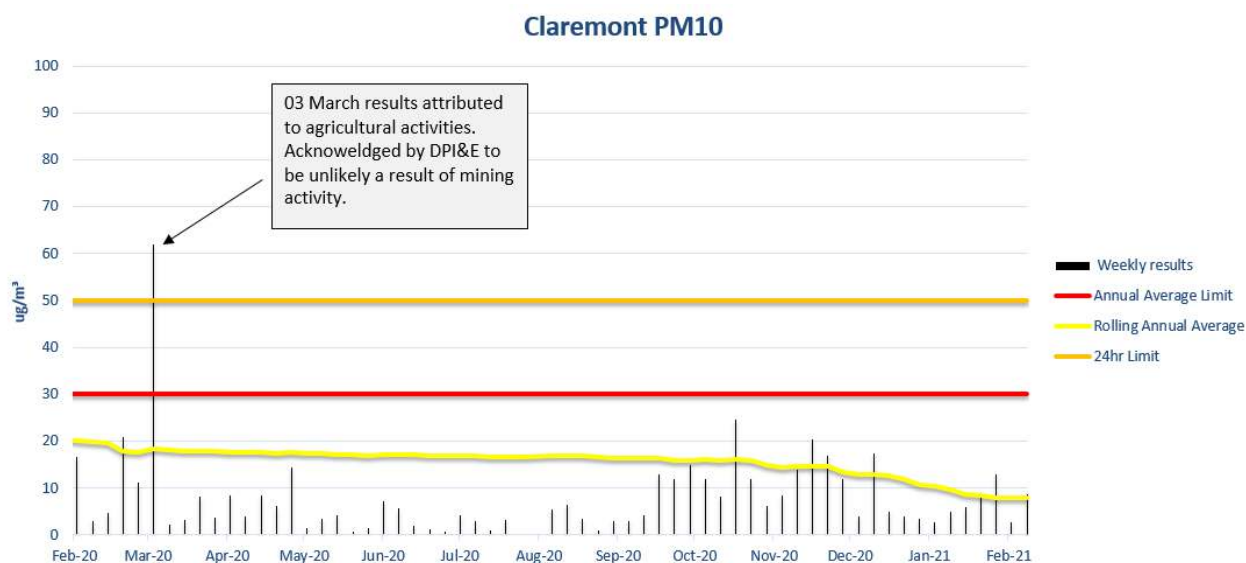


Figure 1: Claremont PM10 High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50 µg/m³.

The Claremont HVAS is returning an annual average of 7.86 µg/m³, which is below the annual average limit of 30 µg/m³. The 2020 calendar year annual average result was 10.33 µg/m³.

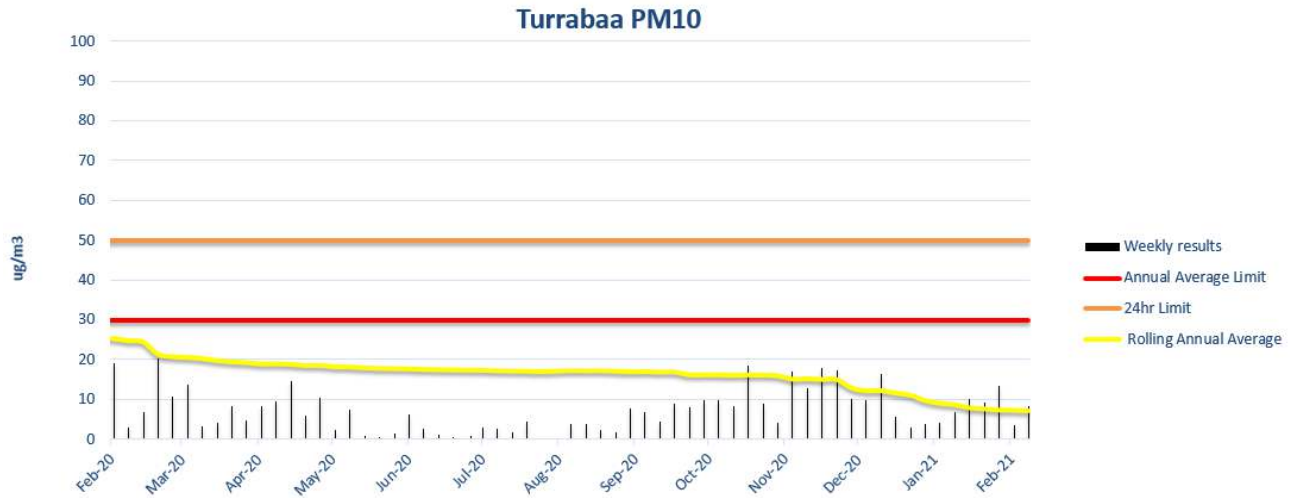


Figure 2: Turrabaa PM10 High Volume Air Sampler results. Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of $50.0\mu\text{g}/\text{m}^3$.

The Turrabaa HVAS is returning an annual average of $7.13\mu\text{g}/\text{m}^3$, which is below the annual average limit of $30\mu\text{g}/\text{m}^3$. The 2020 calendar year annual average result was $9.1\mu\text{g}/\text{m}^3$.

Noise Monitoring

Quarterly attended noise monitoring was completed in accordance with approval conditions during the 22-24 February 2021.

Compliance was achieved at all locations during all time periods. Summary of results is provided in following table.

Table 1 Performance Assessment – Operations

EPL ID	Location	Date	Narrabri Mine Contribution dBA				Noise Criteria ¹	Measurement Periods	Standard Weather ³			Compliant
			LAeq 15 min Day	LAeq 15 min Evening	LAeq 15 min Night	LA1 (1 min) Night			Day	Evening	Night	
N5	Oakleigh ²	22/02/2021	I/A	I/A	I/A	I/A	Day, Evening and Night – LAeq(15minute) 35 dBA Night LA1(1minute) – 45 dBA	Day - 1.5 hrs	Y	Y	N	Y
		23/02/2021	I/A	I/A	N/M	N/M		Evening - 0.5 hrs	Y	N	N	Y
		24/02/2021	N/M	I/A	I/A	I/A		Night – 1hrs	N	N	N	Y
N6	Newhaven	22/02/2021	N/M	32	29	30			N	N	N	Y
		23/02/2021	<28	N/M	I/A	I/A			Y	N	N	Y
		24/02/2021	I/A	I/A	I/A	I/A			Y	N	N	Y
N9	High Range ²	22/02/2021	N/M	N/M	27	30			Y	N	N	Y
		23/02/2021	<25	I/A	I/A	I/A			Y	N	N	Y
		24/02/2021	N/M	I/A	I/A	I/A			Y	N	N	Y
-	Bow Hills ¹	22/02/2021	33	34	34	37		Day 15 min Evening 15 min Night 15 min	Y	N	N	Y
-	Ardmona	22/02/2021	I/A	N/M	<25	27			Y	N	N	Y
-	Merriman ²	22/02/2021	I/A	32	35	38			N	N	N	Y
-	Matilda ²	22/02/2021	I/A	I/A	I/A	I/A			Y	N	N	Y

I/A = Inaudible, N/M = Not Measurable

Note 1: A private agreement between NCOPL and the residents of N1 Bow Hills of 50 dBA LAeq(15minute) is in place. This new level of 50 dBA LAeq(15minute) replaces the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Note 2: Property is owned by Narrabri Coal Operations

Note 3: Noise levels presented are the highest measured noise level under standard weather conditions over the monitoring period.

Surface Water Monitoring

No wet weather discharges have occurred from licensed discharge points during January-February 2021.

NSW Water- Licenced Usage

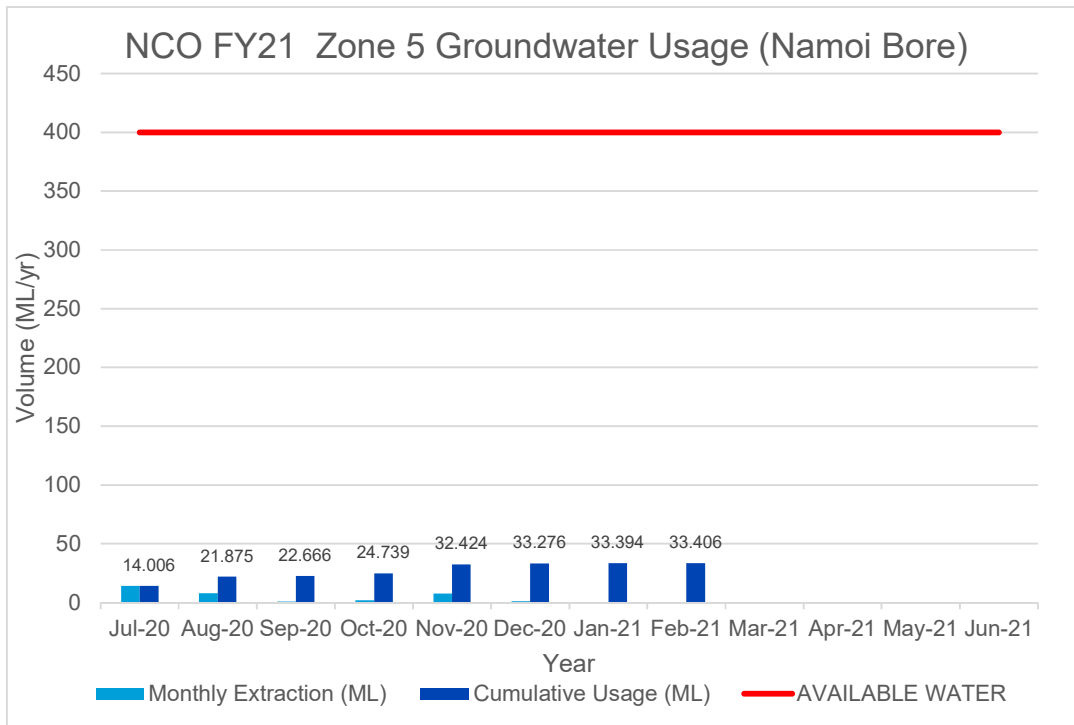


Figure 4: Zone 5 licenced groundwater usage from the Namoi Bore over the current Financial (Water) Year.

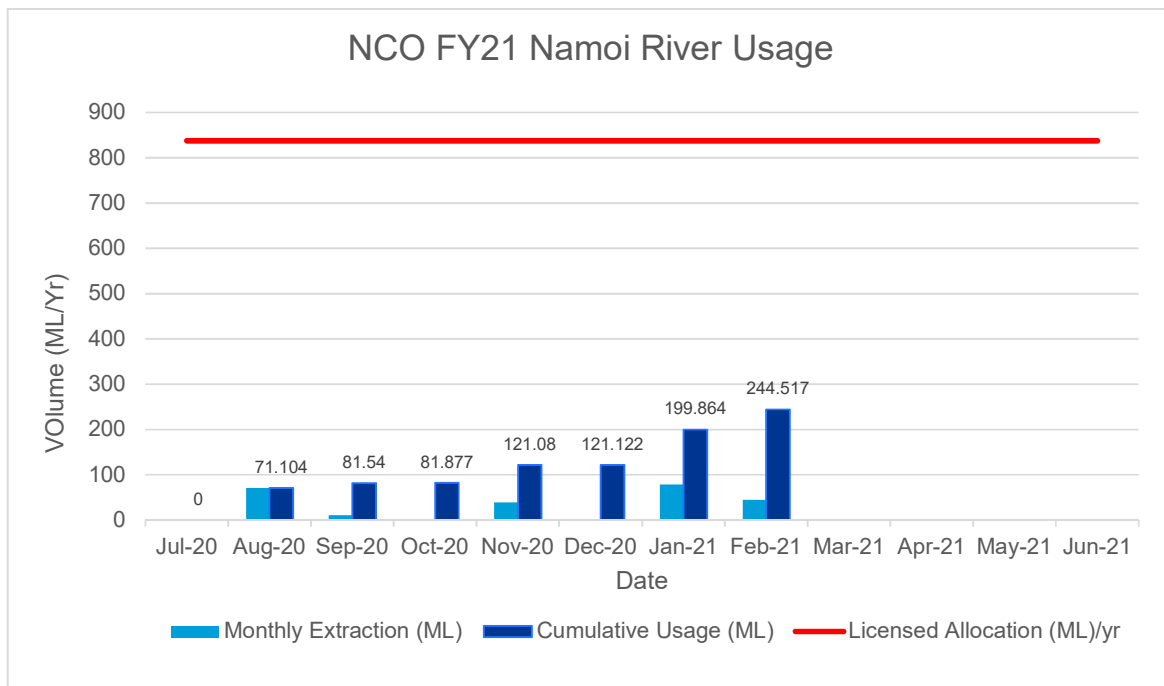


Figure 5: Namoi River usage over the current Financial (Water) year.

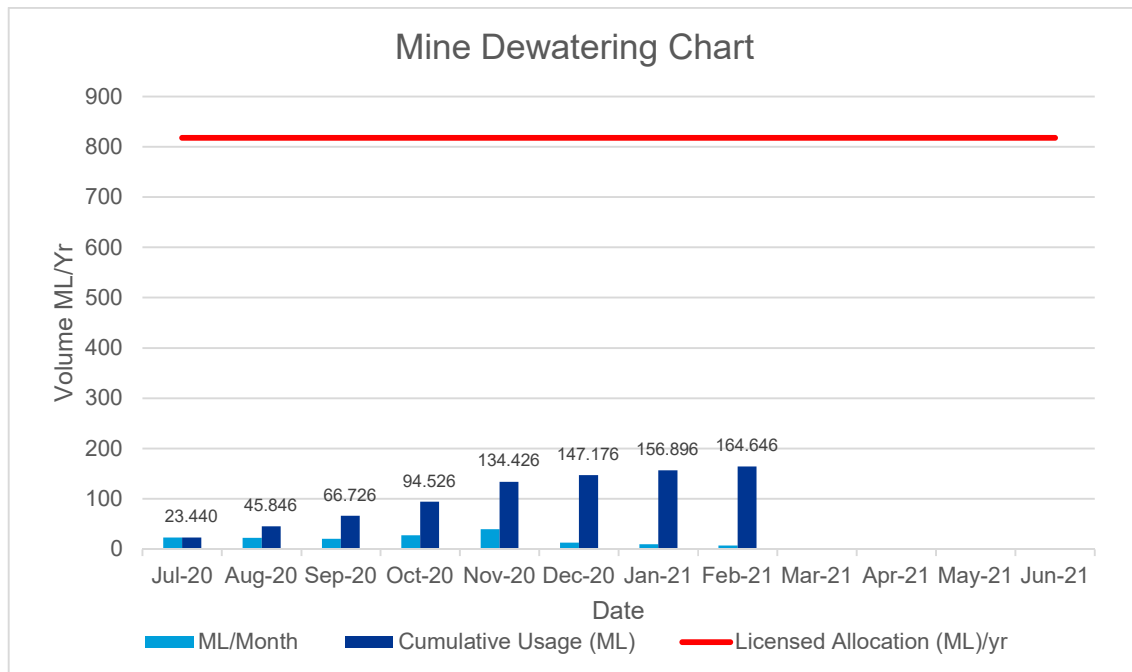


Figure 6: Dewatering from Box Cut over the current Financial (Water) year.

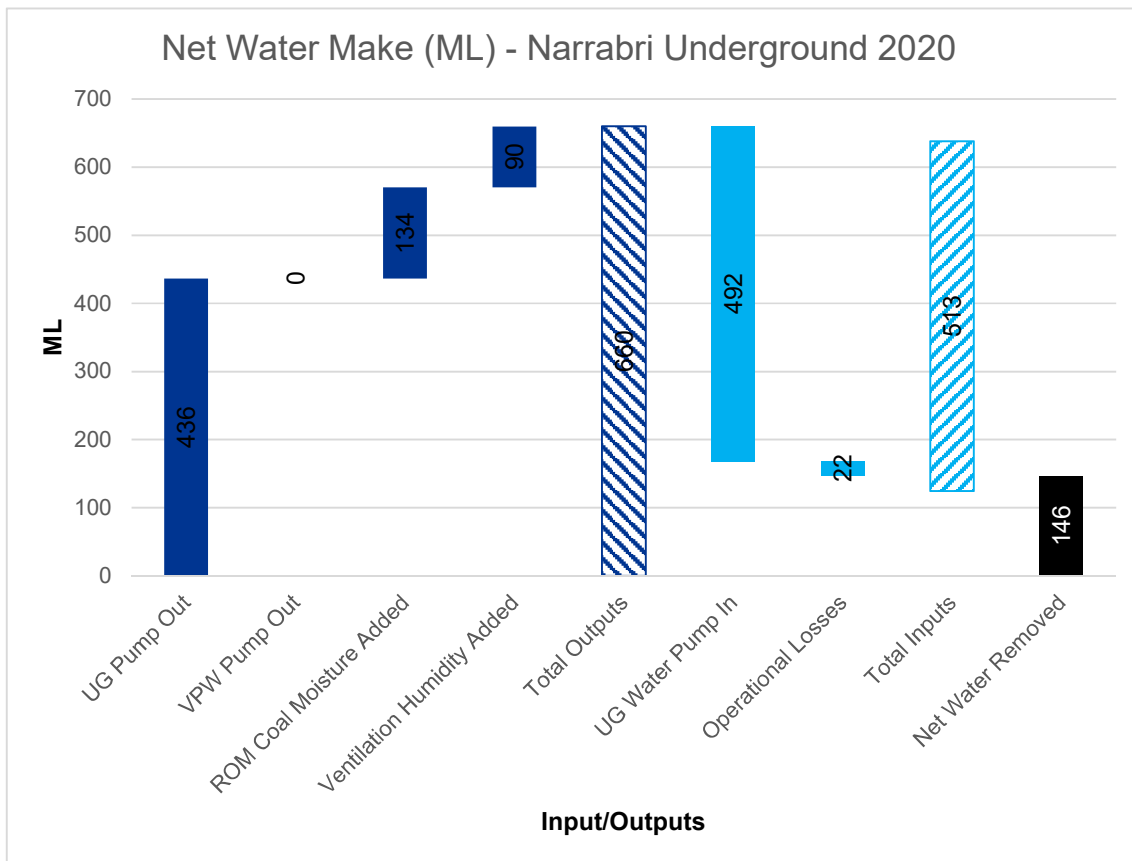


Figure 7: 'Waterfall chart' showing detail for Net groundwater removal from the mine for 2020 calendar year

Groundwater Monitoring

Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review (to be submitted by 31 March).

The 2020 Annual Groundwater Review has been received in draft format. A summary of groundwater impacts during the 2020 monitoring period is copied below:

Groundwater Levels

Standpipe Piezometers

- Climate conditions and more specifically rainfall patterns over the past few years have been highly variable with an extended below average rainfall period occurring from early 2017 through to early 2020 followed by above average rainfall in 2020. A rainfall residual mass curve has been included on numerous hydrographs in the review, where it is evident that there is a close correlation with groundwater levels in a number of monitoring standpipes screened in shallow weathered strata including Napperby Formation and also in Garrawilla Volcanics. Generally, this is only seen in monitoring standpipes with total depths less than 30m. Deeper than this and these environmental variables appear to be insulated.

Standpipe piezometers showing a clear drawdown in response to mining activities in this reporting period is limited to P16 screened at a total depth of 146m in the Garrawilla Volcanics.

Vibrating Wire Piezometers

- The VWP network has continued to evolve in recent years with older single instrument piezometers surrounding the box cut area and targeted multi-level VWP being decommissioned as predicted impacts pass with progressive mine development. Additional VWP's have been installed in southern areas providing a greater sub-regional context to groundwater pressures at depth.

All trends provided by the VWP network are consistent with predictions of impacts associated with mining activities.

Groundwater Quality

- Electrical Conductivity (EC) is the primary analyte used to assess trends and potential unforeseen impacts on the groundwater environment. It is acknowledged that with the implementation of a new water management plan in 2021, hard triggers on a range of analytes will require a more rigorous interrogation of statistical outliers. However, EC still remains an important indicator of the effects of environmental variability and the potential impact of mining related activities.

During 2020, the most significant trend is an increase in salinity, primarily in shallow standpipe piezometers (<40m) but the trend is also observed in deeper stratigraphy although generally in a much more subdued manner. This trend is consistent in areas in proximity to the mine area and also at distance in monitoring sites that represent background conditions with little prospect of being influenced by mining activities. The largest increase occurring in P4 and P5 to the north of the mine area.

This trend cannot be attributed to any mining related stresses and likely natural environmental variability associated with rainfall patterns. Although 2020 experienced an above average rainfall, the preceding three years are well below average and there may be some lag in the recovery of salinity levels.

Subsidence Monitoring

There have been no updates to the results reported in the previous CCC meeting.
The next scheduled subsidence measurements are for the period April/May 2021.

Complaints

Since the beginning of 2021 one complaint has been received. The nature of the complaint was related to odour.

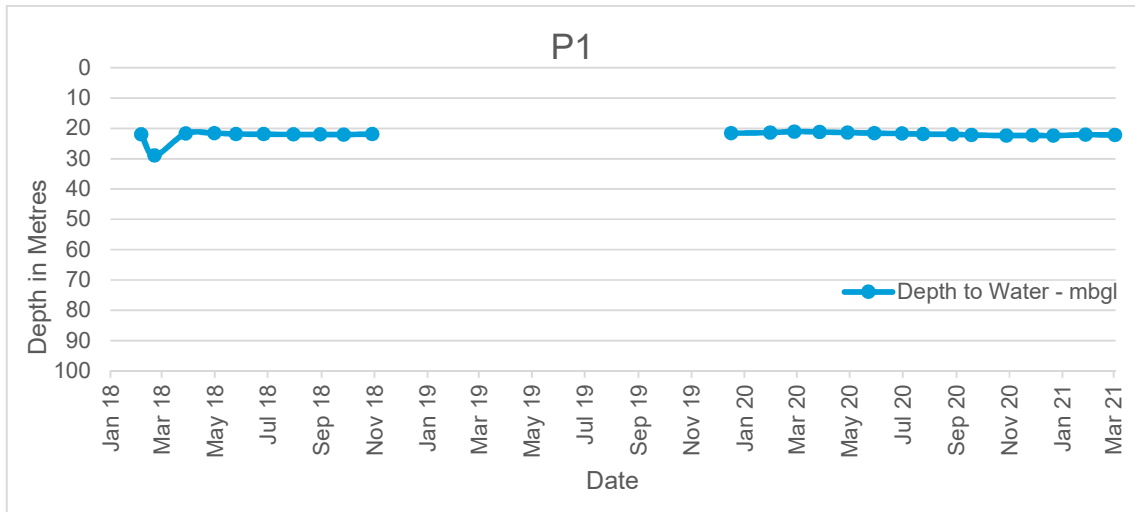
Reportable Incidents

Nil since previous CCC meeting.

Hydrographs for Groundwater Monitoring Wells



Figure 8: Location of groundwater monitoring wells



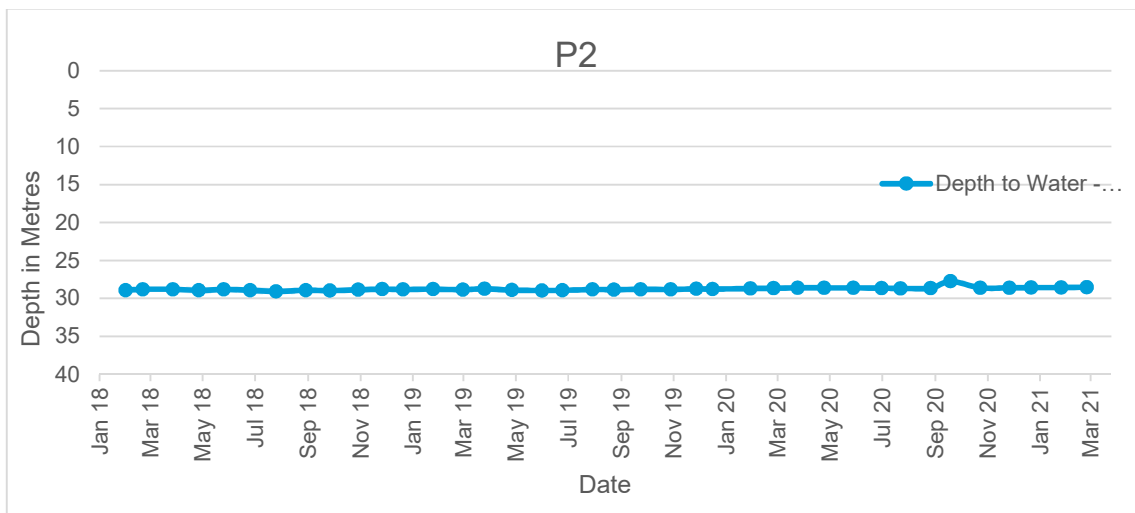
NCO Monitoring bore ID: P1

Location: Longsight

Geological unit: Garrawilla Volcanics

Bore depth: 50m

Explanation: Gap in data is due to land access issues.

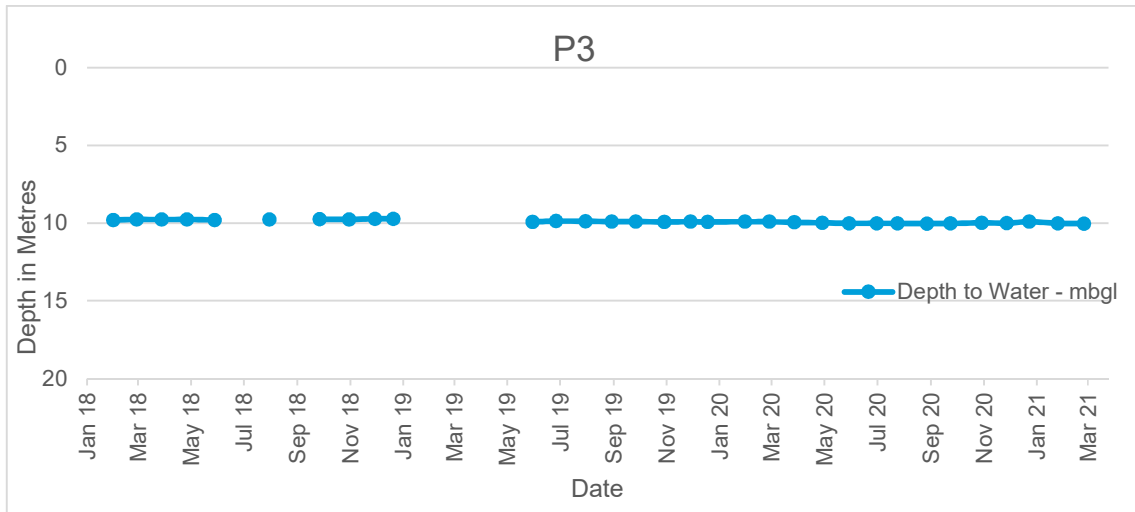


NCO Monitoring bore ID: P2

Location: Matilda

Geological unit: Napperby Formation

Bore depth: 50m

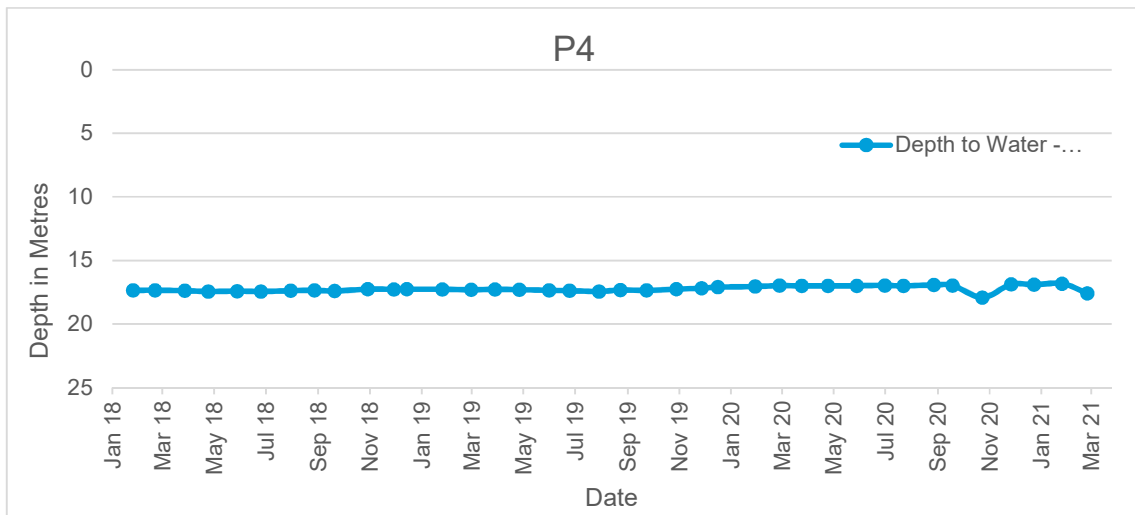


NCO Monitoring bore ID: P3

Location: Bow Hills

Geological unit: Pamboola Formation

Bore depth: 45m

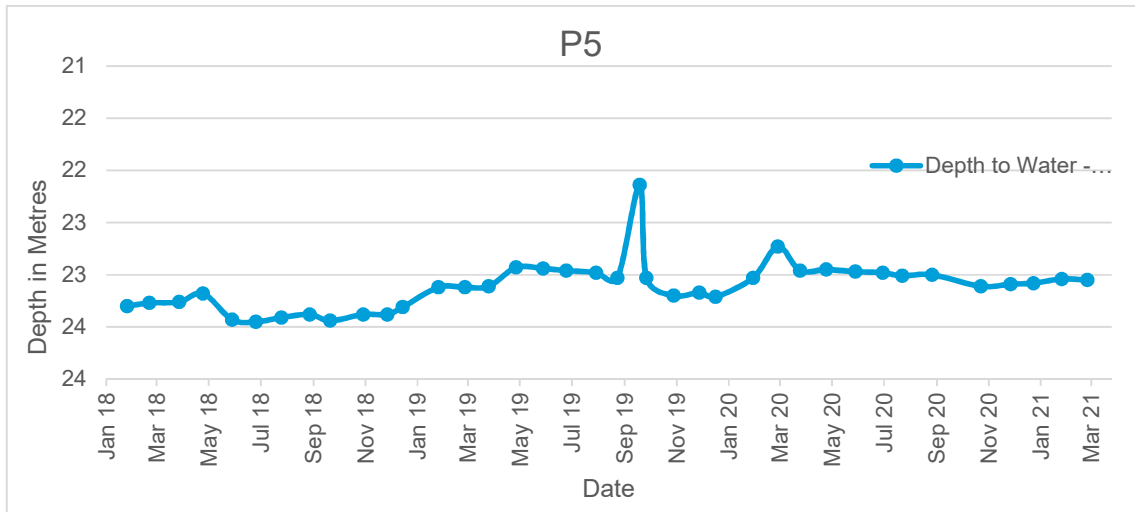


NCO Monitoring bore ID: P4

Location: North of Newhaven on Kamilaroi highway

Geological unit: Napperby Formation

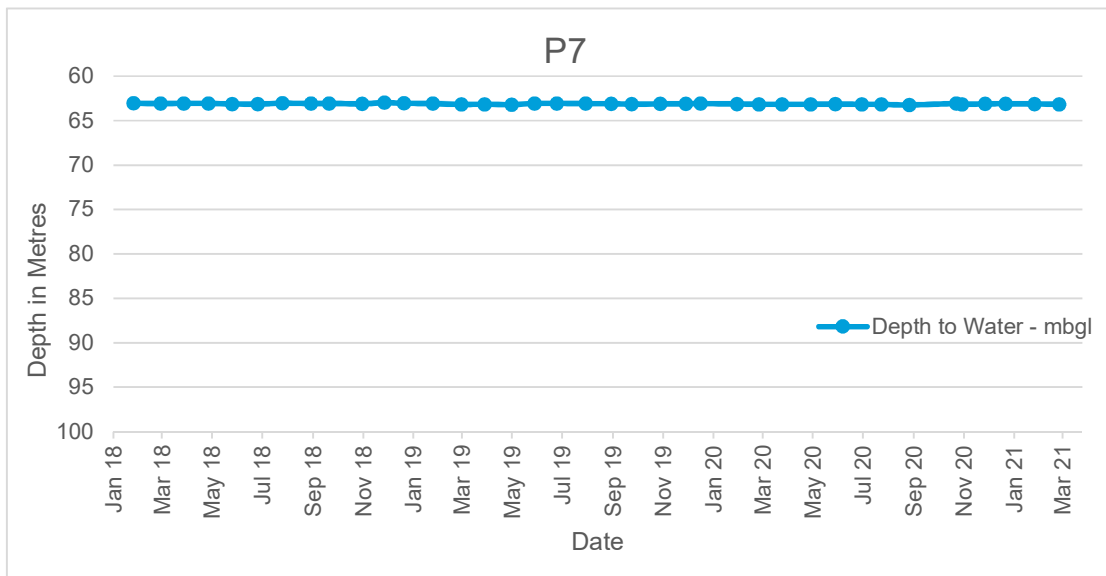
Bore depth: 30m



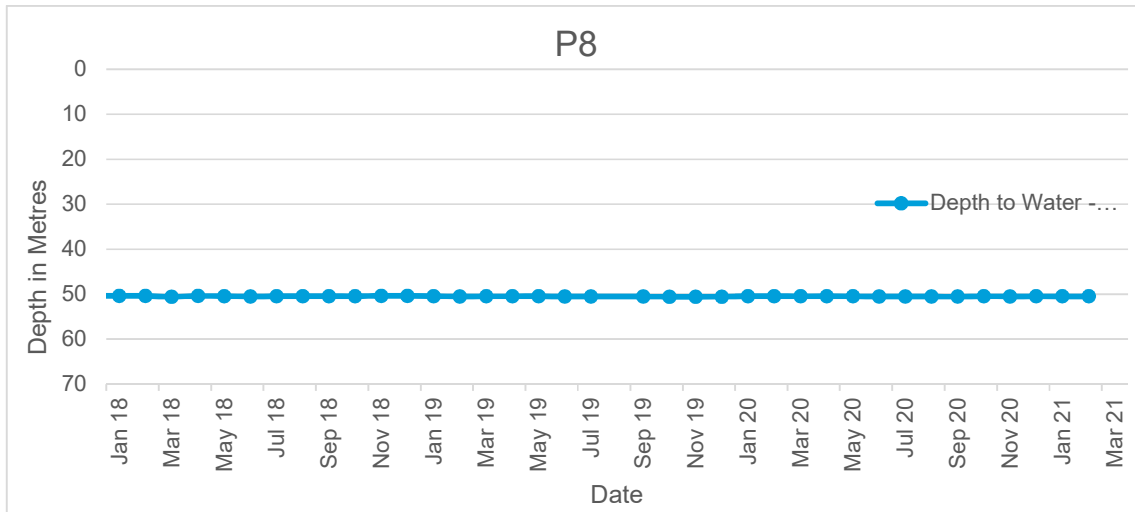
NCO Monitoring bore ID: P5
Location: Unknown - shown on Figure 10
Geological unit: Pamboola Formation
Bore depth: 30m

No Graph

NCO Monitoring bore ID: P6
Location: shown on Figure 10
Geological unit: Pilliga sandstone
Bore depth: 90m
Explanation: Dry since 2012



NCO Monitoring bore ID: P7
Location: State forest
Geological unit: Pilliga sandstone
Bore depth: 90m

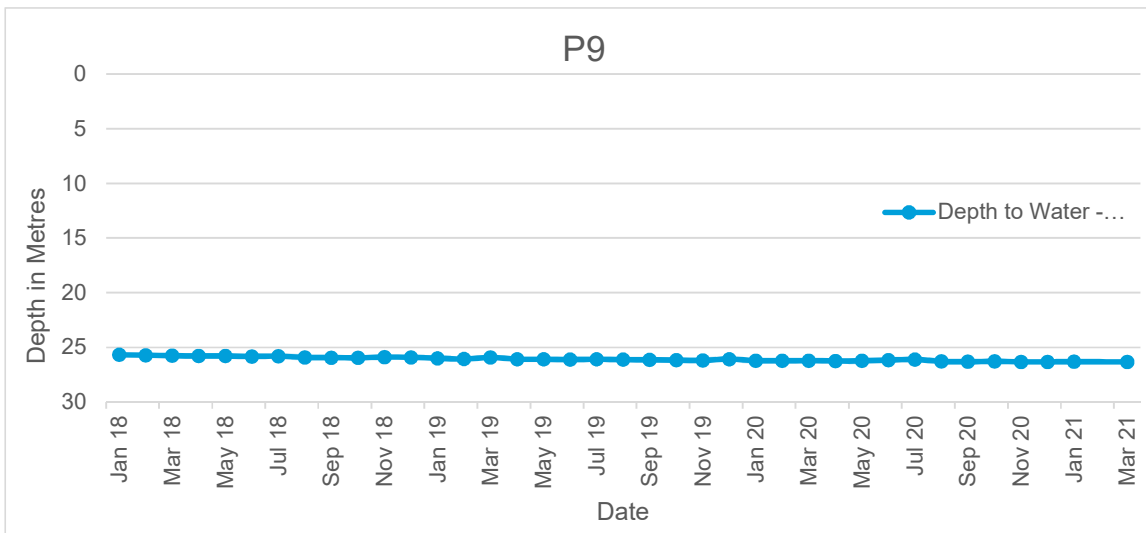


NCO Monitoring bore ID: P8

Location: Kurrajong

Geological unit: Purlawaugh Formation

Bore depth: 65m

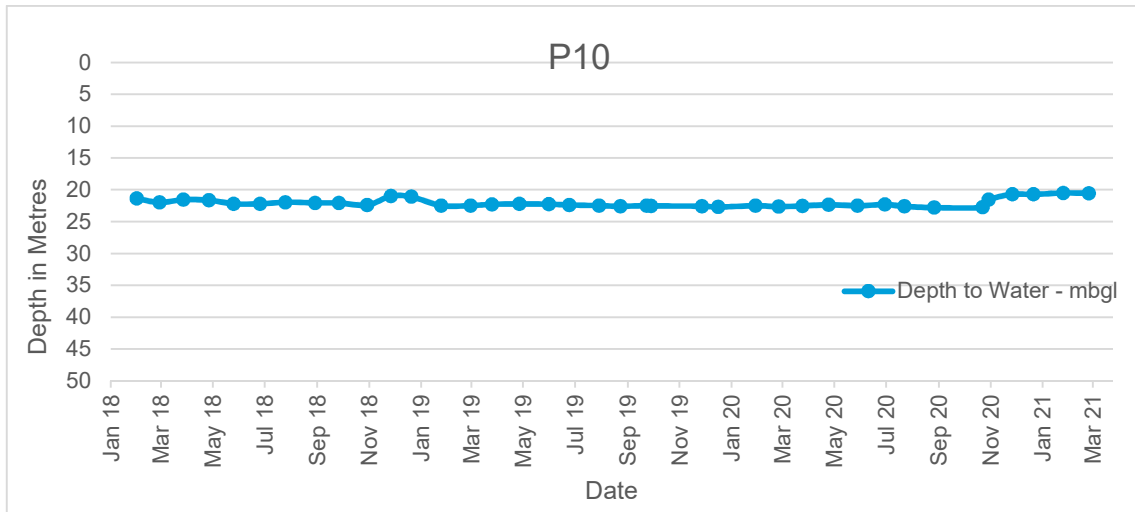


NCO Monitoring bore ID: P9

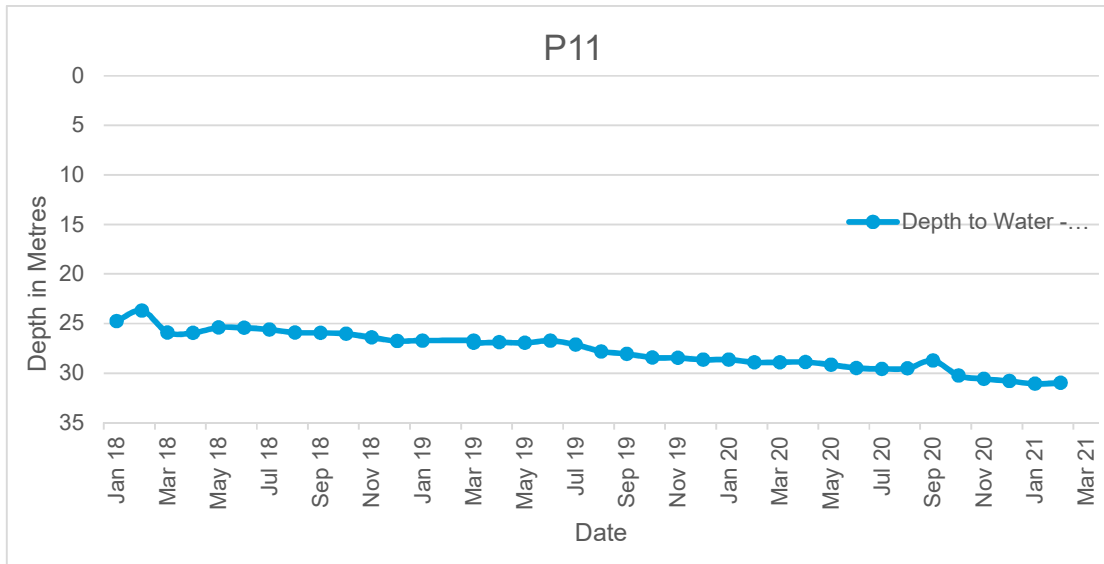
Location: NCO – Figure 10

Geological unit: Purlawaugh Formation

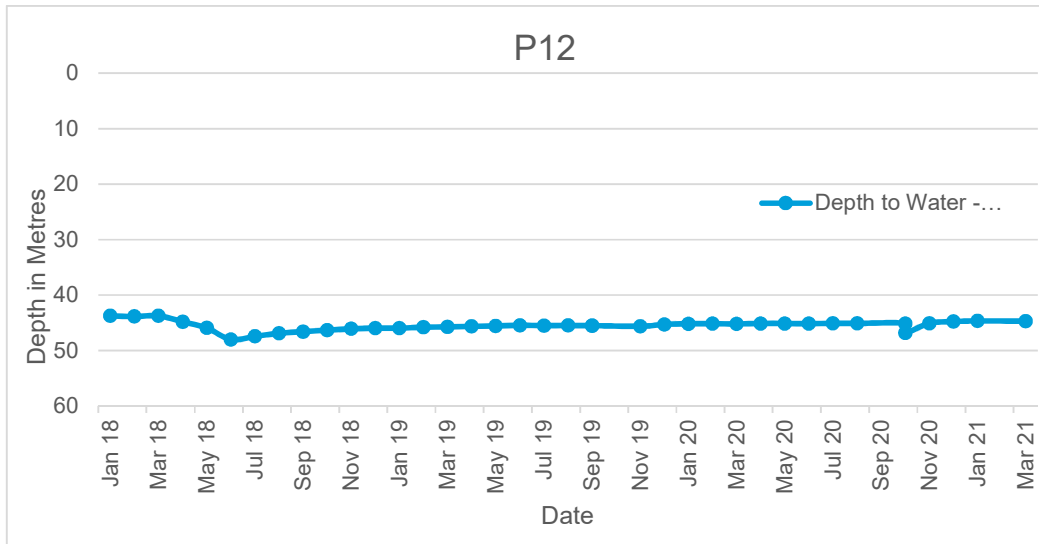
Bore depth: 30m



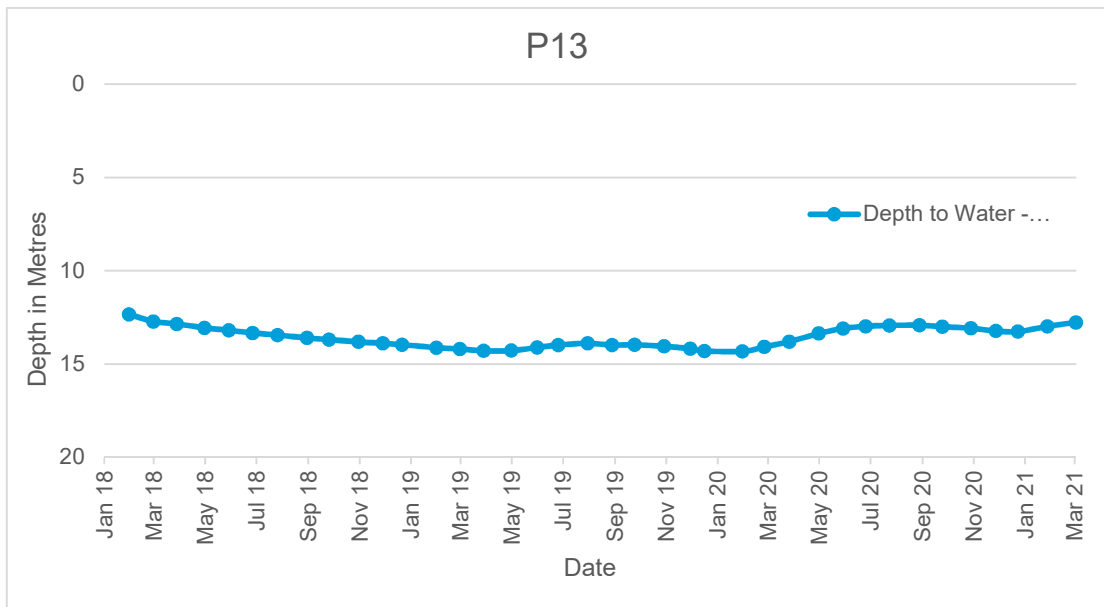
NCO Monitoring bore ID: P10
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 130m



NCO Monitoring bore ID: P11
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P12
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 90m



NCO Monitoring bore ID: P13
Location: NCO – see figure 10
Geological unit: Garrawilla Volcanics/Napperby
Bore depth: 30m

No Graph

NCO Monitoring bore ID: P14
Location: See Figure 10
Geological unit: Napperby Formation (no sill)
Bore depth: 78m
Explanation: Dry

Narrabri Coal Operations Pty Ltd ABN 76 107 813 963

10 Kurrajong Road, Baan Baa NSW 2390 | **P** 02 6794 4755 | **F** 02 6794 4753
 Locked Bag 1002, Narrabri NSW 2390

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No Graph

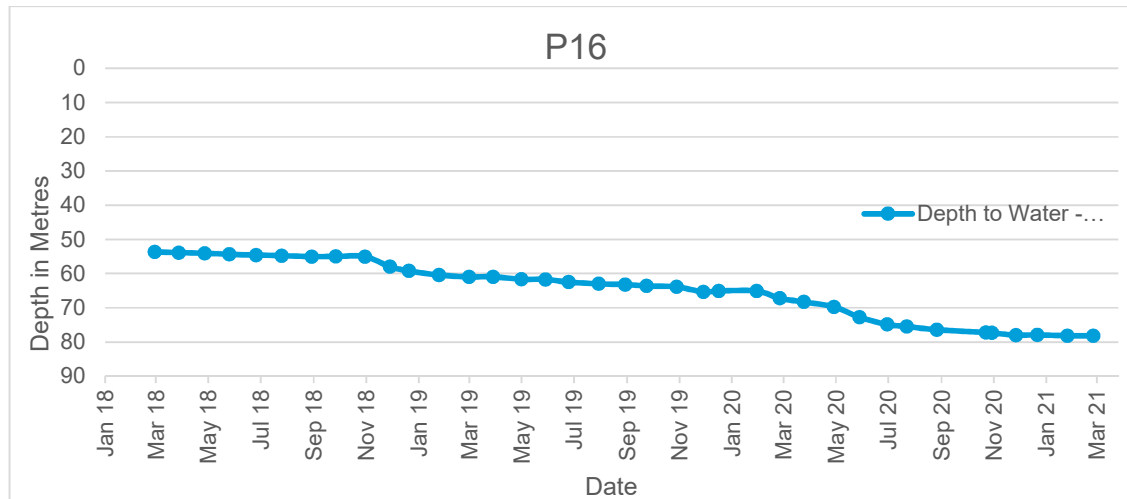
NCO Monitoring bore ID: P15

Location: See Figure 10

Geological unit: Garrawilla Volcanics

Bore depth: 30m

Explanation: Dry



NCO Monitoring bore ID: P16

Location: State forest (Western Boundary) – see figure 10

Geological unit: Garrawilla Volcanics

Bore depth: 146m

No Graph

NCO Monitoring bore ID: P17

Location: See figure 10

Geological unit: Purlawaugh Formation

Bore depth: 56m

Explanation: Dry since 2009

No Graph

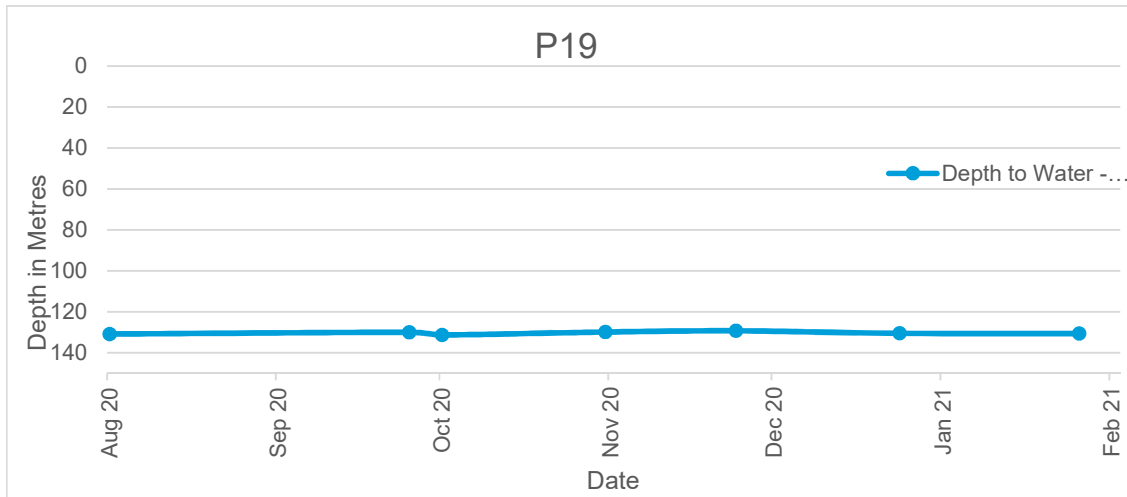
NCO Monitoring bore ID: P18

Location: See figure 10

Geological unit: Hoskissons seam

Bore depth: 146m

Explanation: Dry since 2011



NCO Monitoring bore ID: P19

Location: NCO

Geological unit: Pamboola

Bore depth: 187m

Explanation: Wrong bore previously monitored, true location monitored since August 2020

No Graph

NCO Monitoring bore ID: P20

Explanation: Cemented up – no longer monitoring

No Graph

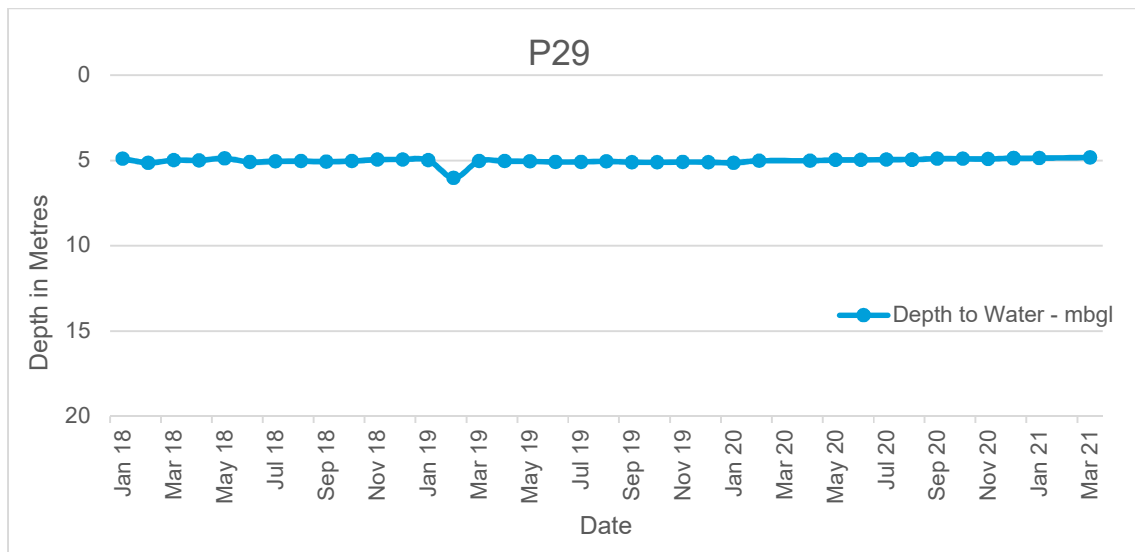
NCO Monitoring bore ID: P28

Location: See figure10

Geological unit: Napperby Formation (above sill)

Bore depth: 25m

Explanation: Dry since 2012



NCO Monitoring bore ID: P29

Location: NCO (Near site dams) – see figure 10

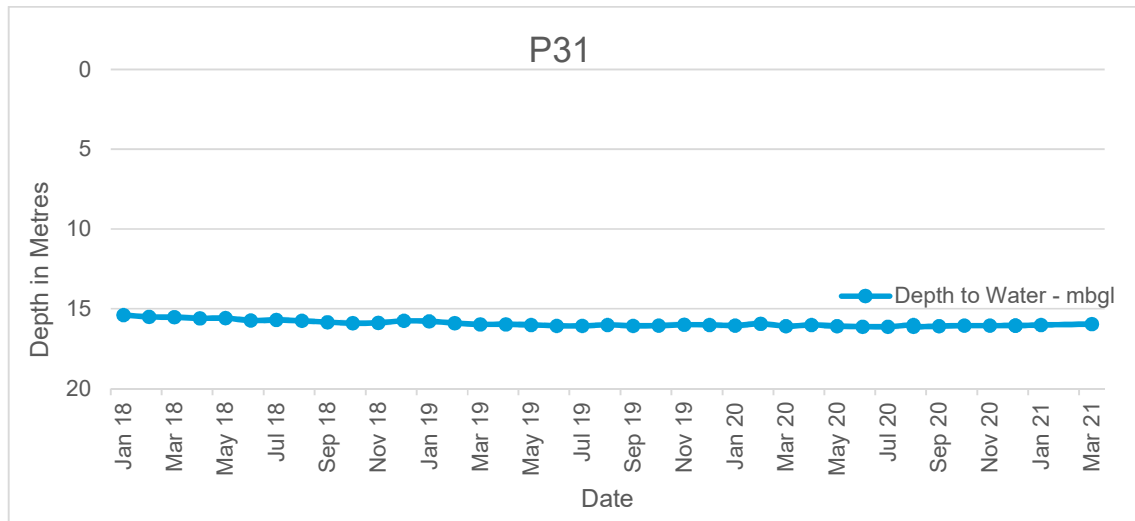
Geological unit: Napperby Formation (above sill).

Bore depth: 25m

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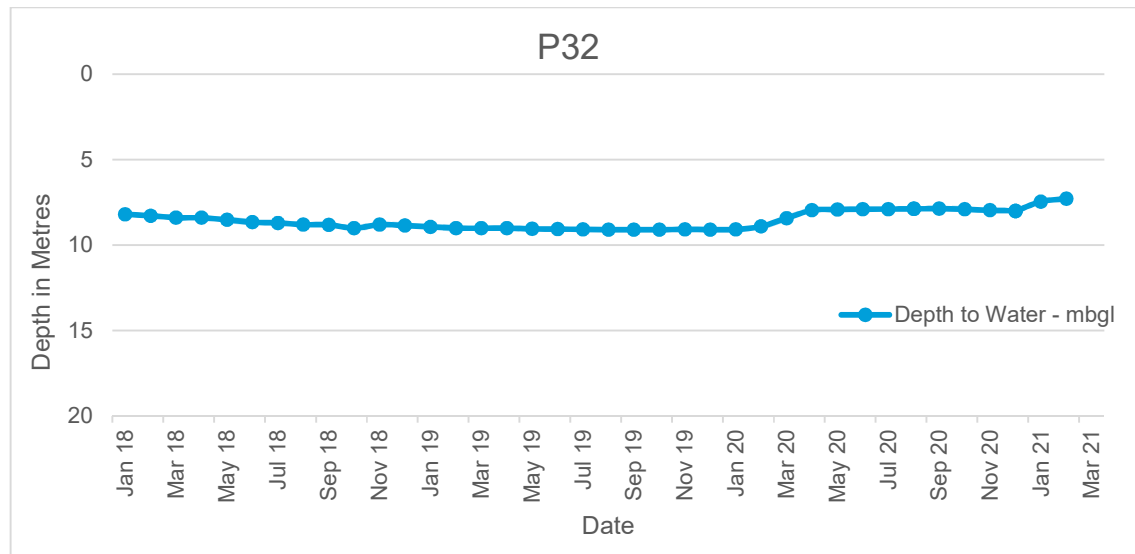


NCO Monitoring bore ID: P31

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby formation (above sill)

Bore depth: 15m



NCO Monitoring bore ID: P32

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

NCO Monitoring bore ID: P33

Location: See figure 6

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

Explanation: Dry since 2012

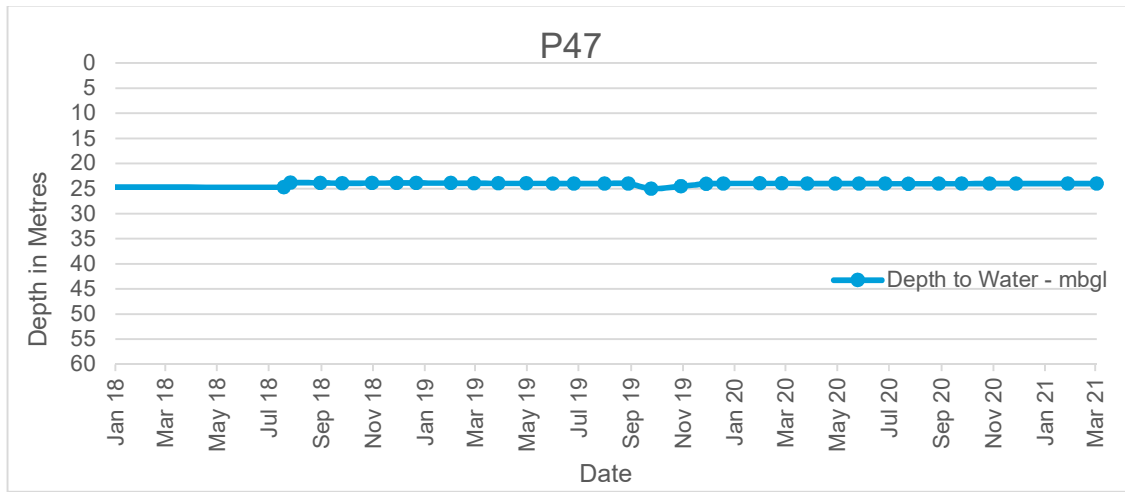
NCO Monitoring bore ID: P24

Location: See figure 6

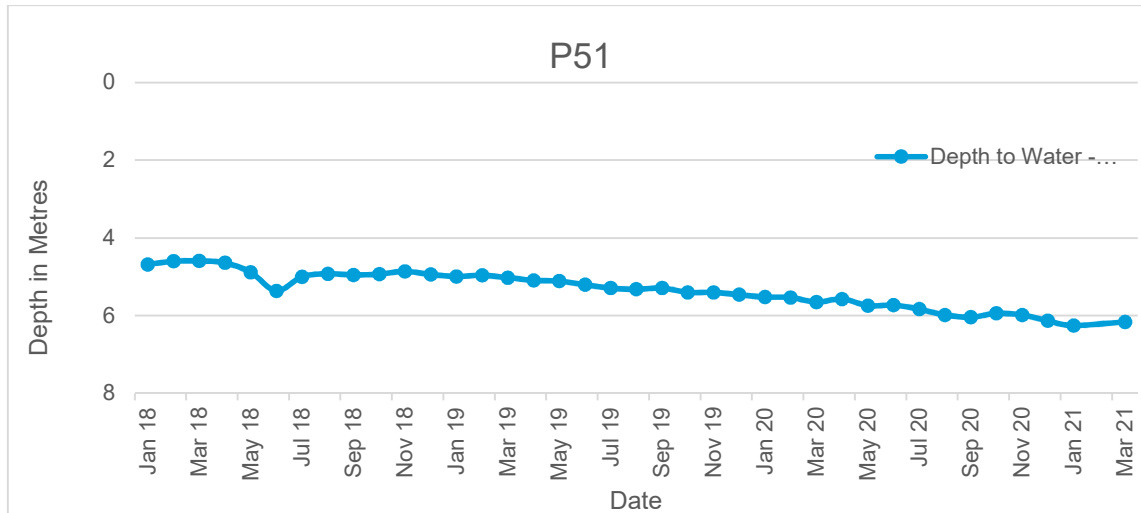
Geological unit: Napperby Formation (above sill)

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Bore depth: 15m
Explanation: Dry since 2012



NCO Monitoring bore ID: P47
Location: NCO – see figure 10
Geological unit: Garrawilla Volcanics
Bore Depth (m): 31m



NCO Monitoring bore ID: P51
Location: NCO
Geological unit: Garrawilla Volcanics
Bore Depth (m): 17m

Narrabri Mine Community Consultative Committee Meeting #53

Date: Wednesday 02 June 2021

Time: 5:00pm

Location: Narrabri Mine

Present: Russell Stewart
James Stieger
Ian Duffy
Charlie Melbourne
Allan Grumley
Peter Webb
Geoff Hunter
Cr Cathy Redding (Narrabri Shire Council)
Brent Baker (BB) – Narrabri Coal - Environmental Superintendent
Gerald Linde (GL) - Narrabri Coal- General Manager
Andrew Garratt (AG) – Whitehaven Coal – General Manager Community Engagement
David Ellwood (DE) – Narrabri Coal – Director Stage 3 Project

Apologies: Mark Foster
Rodney Dunlop

NOTE: Prior to 5pm meeting; at 3pm a tour of surface operations was undertaken. Areas inspected included rehabilitation, subsidence area, drilling activities, and the main fan compound to discuss completed noise abatement works. Attendees of the tour included: James & Robyn Stieger, Cr Cathy Redding, Allan Grumley, accompanied by Whitehaven Coal personnel BB, GL, AG.

1. DECLARATION OF PECUNIARY INTEREST

None

2. PREVIOUS MINUTES

RS asked that previous minutes are accepted as an accurate record.

Moved: JS Seconded: ID

2.1 BUSINESS ARISING FROM PREVIOUS MINUTES

Request from James Stieger for WHC Property Manager to attend meeting to discuss WHC property management strategy. BB advised that Huw Morgan- Group Manager- Water and Property was unable to attend today's meeting, however has confirmed he will attend the next meeting.

No further actions arising from previous meeting.

3. ENVIRONMENTAL MONITORING REPORT

Presented by BB

- **INCIDENTS:** No reportable incidents to regulatory agencies since previous CCC meeting
- **COMPLAINTS:** Since the beginning of 2021 one complaint has been received. The nature of the complaint was related to odour.
- **DEPOSITIONAL DUST:**
 - 2021 annual average YTD for all monitoring locations trending below licence limit of 4 g/m²/month
 - Allan Grumley noted April result of 9.2 g/m²/month Insoluble Solids at ND13 Darjeeling. BB explained that this result is an anomaly, and the highest recorded to date. BB advised that additional analysis to characterise dust composition would be undertaken for May samples, with results to be communicated to Allan.

ACTION: BB to communicate with Allan Grumley on the May depositional dust results at ND13, when they become available.

- **PM10 AIR QUALITY:**
 - No exceedances of the 24 hour limit within last 12 month period.
 - Rolling 12 month average currently below annual average limit (of 30 µg/m³) for the two monitoring locations (Claremont and Turrabaa).

- **QUARTERLY NOISE MONITORING**

Quarter 1 attended noise monitoring was completed during February, with compliance achieved at all locations during all time periods. Results were reported during March CCC meeting.

Quarter 2 attended noise monitoring has been scheduled for completion in June, with results communicated in the next CCC meeting.

- **SURFACE WATER MONITORING:**
No wet weather discharges have occurred from licensed discharge points during 2021.
- **WATER LICENSING:** Presented graphs showing NCO water licence allocation usage. Namoi bore usage has been minimal and instead have been utilising Namoi River entitlements during recent flow events.
Mine dewatering volume pumped from box-cut provided.

Discussed water usage charts. Geoff Hunter queried chart displaying mine water inputs and outputs, and net water removal. BB explained that chart displays figures for 2020 calendar year, and that chart would be updated again following end of financial (water) year.

ACTION: BB to update waterfall chart showing net groundwater removal from the mine over FY21 for discussion at next CCC meeting.

- **GROUNDWATER MONITORING:** Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review. A summary of the 2020 groundwater review was provided during the March CCC meeting.
- **SUBSIDENCE MONITORING:** Presented results from May monitoring of two subsidence lines. BB outlined use of aerial imagery (LIDAR) which is reviewed annually for subsidence.
Cathy Redding queried subsidence monitoring lines that are listed as 'monitoring has ceased'. Cathy queried if approval was required to stop monitoring. DE confirmed that approval is required to remove subsidence monitoring lines, and that this has been completed over the earlier longwall panels (i.e. LW101-105).

Russell Stewart enquired if subsidence changes were noticed after rain. BB explained that surface cracks above longwall panel may be noticed. BB explained that the site has Wet Weather checklists, which are triggered by a significant rain event and which prompt various environmental inspections, this includes checking for subsidence cracks.

Cathy Redding queried rehabilitation requirements for vent shaft when mining is finished. BB explained that shaft will have to be sealed and outlined the security bond the mine holds to ensure these liabilities are covered.

No further questions/comments from members.

4. OPERATIONS PROGRESS REPORT AND SAFETY UPDATE

Presented by GL

- GL commented on recent challenges encountered longwall mining through fault structures.
- Provided overview of recent safety incidents since March.
- Recruitment: reinvigorating cleanskin program- looking at recruiting local experienced operators.
Russell queried if this recruitment would be advertised locally. GL said yes it will be. Russell asked if the CCC could be notified when this happens so they can communicate it.

ACTION: BB to provide update to CCC members when cleanskin recruitment program commences.

5. STAGE 3 UPDATE

DE provided update

- Outlined the submissions that were made on the EIS. Key feedback from the DPI&E were socio-economic impacts, surface disturbance, groundwater impacts and greenhouse gas emissions. DE handed out flyer which summarises this information, and explained that the flyer was distributed today to surrounding landholders via a letterbox drop. NCO has prepared a Submissions Report to address the various submissions made on the EIS, and this report has been provided to the DPI&E and is available on the government website. DE explained next stages and anticipated timelines in approval process. DE explained that in addition to the Submissions Report, NCO has also lodged an Amendment Report. The Amendment Report is required as NCO made adjustments to the project in response to some of the submissions; this included a reduction in surface disturbance by approximately 5%, and committed to reducing Scope 1 greenhouse gas emissions by flaring methane gas in areas of the mine where the gas composition will allow, and committing to funding greenhouse gas abatement research.
Cathy Redding queried how the 5% reduction in surface disturbance was achieved. DE explained that detailed designs have determined that powerline corridors can be reduced in select areas, narrowing goaf drilling tracks in certain areas, and reduction in exploration drilling.
Discussed DPI&E response to NCO water model. DE commented that majority of questions raised by DPI&E were contained within original EIS, and a meeting was held with DPI&E, NCO and groundwater technical expert to discuss and address DPI&E concerns.
- Third stage of Bore Census has been completed and consultation undertaken with landholders.
- Discussed the bores that are predicted to be impacted with a drawdown of more than 2 metres, and how the make good provision will be implemented over the life of the project, even though the impacts are not modelled to be realised until after the end of mining. A total of nine bores are predicted to have a drawdown of more than 2 meters.
James Stieger asked what information was being given to affected landholders. DE explained each affected landholder has been provided an information pack specific to their property and bore etc. James suggested all affected landholders are provided the same information. DE explained that the process is on a case by case basis and the intent is simply to replace what the landholder already has eg. to 'make good'.
Geoff Hunter queried the affected bores and how the landholders prove when they have been impacted by more than 2 metres. DE explained that Project proposes installation of significant improvements to groundwater monitoring bore network, 18 new bores in 6 locations. These bores will be able to demonstrate what is happening in the groundwater formations across the impacted area and verify the groundwater model.
Cathy Redding queried location of proposed new monitoring bores (eg. close to mine, or near Baan Baa). DE explained that they will be spread over a large area, outside the mine boundary.
Geoff requested map of new monitoring bore locations.

ACTION: DE to provide map of proposed new groundwater monitoring bores and include detail of aquifer/monitoring purpose.

COMPLETED: distributed to CCC members with copy of these minutes.

- DE outlined NSW Government release of Strategic Statement on Coal Exploration and Mining, this included the area to the north west of the existing mine lease, known as Gorman North. DE explained that NCO are intending on submitting an application for Exploration Lease. This will be published in the local paper, and DE will provide copy to CCC members. DE explained the subsequent government assessment process and timeframes. Further discussion around the extent of the government authority, and the area that NCO intend on applying for.

ACTION: DE to provide copy of Exploration Application advertisement when ready to publish in newspaper. BB to distribute to CCC members.

- Geoff Hunter queried DPI&E comments on the Groundwater model and how NCO have responded in the Response to Submission report.
David summarised DPI&E comments, consultation undertaken with Department, and the substantial groundwater modelling reviews undertaken and included in the NCO submissions response.

No further questions/comments from members.

6. GENERAL BUSINESS

- GL mentioned Stage 2 mining activities planned around southern area of Mine Lease, including exploration drilling and construction of access tracks.
- AG outlined Kurumbede open day planned for 12 June. Formerly family home of Dorothea Mackellar. Outlined the local businesses that Whitehaven have engaged to provide services for the event.
- AG explained changes occurring in July to Whitehaven Coal community sponsorships and donations. There will be a community based committee formed, who will meet quarterly and decide on where the Whitehaven provided funds (\$50,000 quarterly) will be distributed. This will provide a more transparent approach to Whitehaven sponsorship endeavours and will provide the community a sense of ownership and pride. This will commence in July and will be supported by advertisements on local radio and newspapers. Will cover council areas of Narrabri, Gunnedah and Liverpool Plains.

Cathy Redding queried how Whitehaven will decide on the formation of the committee.

Andrew advised that Whitehaven will be writing to individual Councils and requesting a representative. Committee is intended to comprise of a council representative, an individual, and an indigenous representative; from each council area.

- BB advised that the mine are preparing an application for a Modification the Project Approval. This was mentioned in previous CCC meeting as well. Proposal is for a change in mining method in the currently approved Longwall 201 & 202 mining areas, where the mining method is proposed to be changed from longwall to a bord and pillar method of extraction. Impacts are predicted to be less than if the area was mined using longwall method. There will be an increased number of contractors required on-site for the project. General discussion around bord and pillar mining method.

No further questions/comments from members.

- Cathy Redding queried if Narrabri are in discussions with Gunnedah Shire Council regarding VPA for Narrabri Stage 3 Project. David and Andrew advised that as Gunnedah Shire Council formally requested that they be consulted with respect to a Voluntary Planning Agreement, therefore NCO are obligated to ensure that consultation with Gunnedah Shire Council is undertaken and requests considered by Whitehaven.

NEXT MEETING

- Wednesday the 15 September 2021 at Narrabri Mine:

Narrabri Mine Community Consultative Committee Meeting #53

Environmental Monitoring Report: March - May 2021

Reportable Incidents

Nil since previous CCC meeting.

Complaints

Nil since previous CCC meeting.

Since the beginning of 2021 one complaint has been received. The nature of the complaint was related to odour.

Deposited Dust Monitoring

Deposited Dust samples remain in the field for a period of 30 days (+/- 2 days).

Month	Total Insoluble Matter results (g/m ² /month)										
	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman	ND13 Darjeeling
March 2021	1.4	0.5	1.3	2.8	2.3	4	1.7	0.7	1.7	2.2	1.8
April 2021	2.5	1	0.8	2.5	1.5	0.6	2.3	0.8	1.6	0.5	9.2

Results are assessed during the end of year Annual Review process, and if it is determined that mine related activities have caused a contribution above the annual average limit of 4 g/m²/month appropriate notifications will be prepared.

2021 annual average YTD for all monitoring locations is below the licence limit of 4 g/m²/month (Insoluble Matter).

PM₁₀ High Volume Air Sampling (HVAS)

Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50 µg/m³, and an annual average limit of 30 µg/m³.

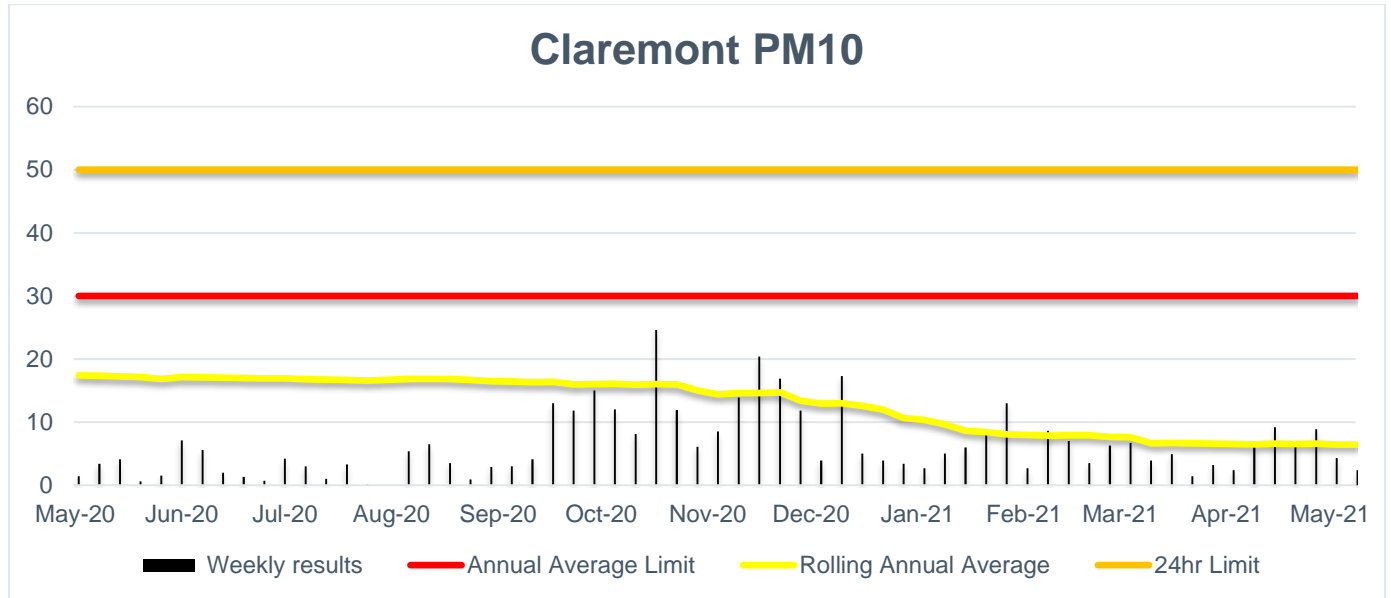


Figure 1: Claremont PM10 High Volume Air Sampler results for last 12 month period.

The Claremont HVAS is returning an annual average of 6.46 µg/m³, which is below the annual average limit of 30 µg/m³. The 2020 calendar year annual average result was 10.33 µg/m³. There have been no exceedances of the 24 hour compliance limit of 50 µg/m³ within the last 12 month period.

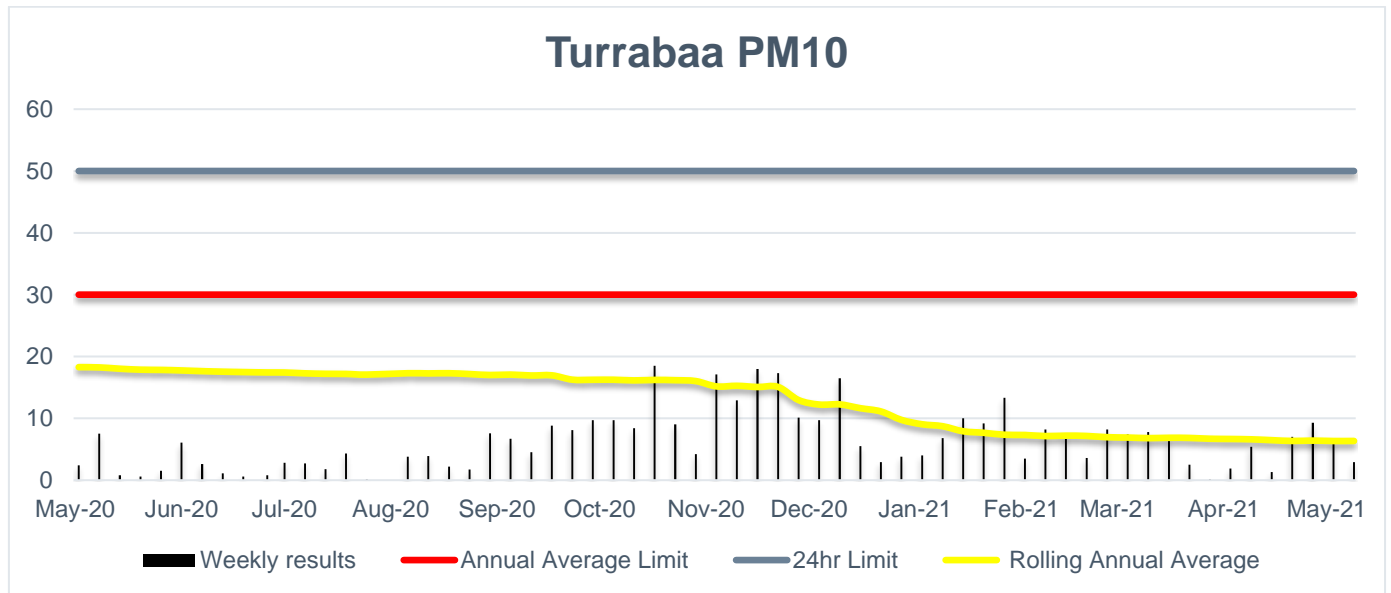


Figure 2: Turrabaa PM10 High Volume Air Sampler results for last 12 month period.

The Turrabaa HVAS is returning an annual average of 6.34 µg/m³, which is below the annual average limit of 30 µg/m³. The 2020 calendar year annual average result was 9.1 µg/m³. There have been no exceedances of the 24 hour compliance limit of 50 µg/m³ within the last 12 month period.

Noise Monitoring

Quarter 1 attended noise monitoring was completed during February, with compliance achieved at all locations during all time periods. Results were reported during March CCC meeting.

Quarter 2 attended noise monitoring has been scheduled for completion in June, with results communicated in the next CCC meeting.

Surface Water Monitoring

No wet weather discharges have occurred from licensed discharge points during the period from last CCC meeting (March-June 2021).

NSW Water- Licenced Usage

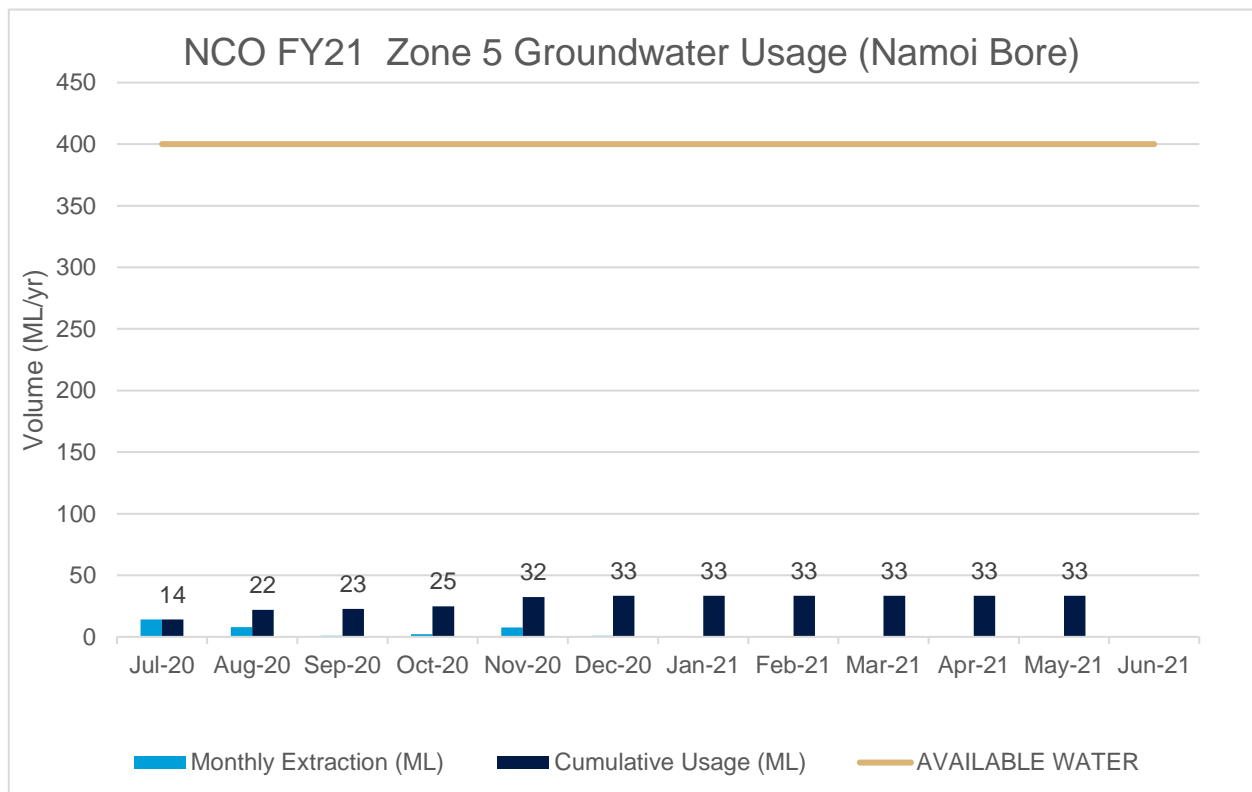


Figure 3: Zone 5 licensed groundwater usage from the Namoi Bore for the current Financial (Water) Year.

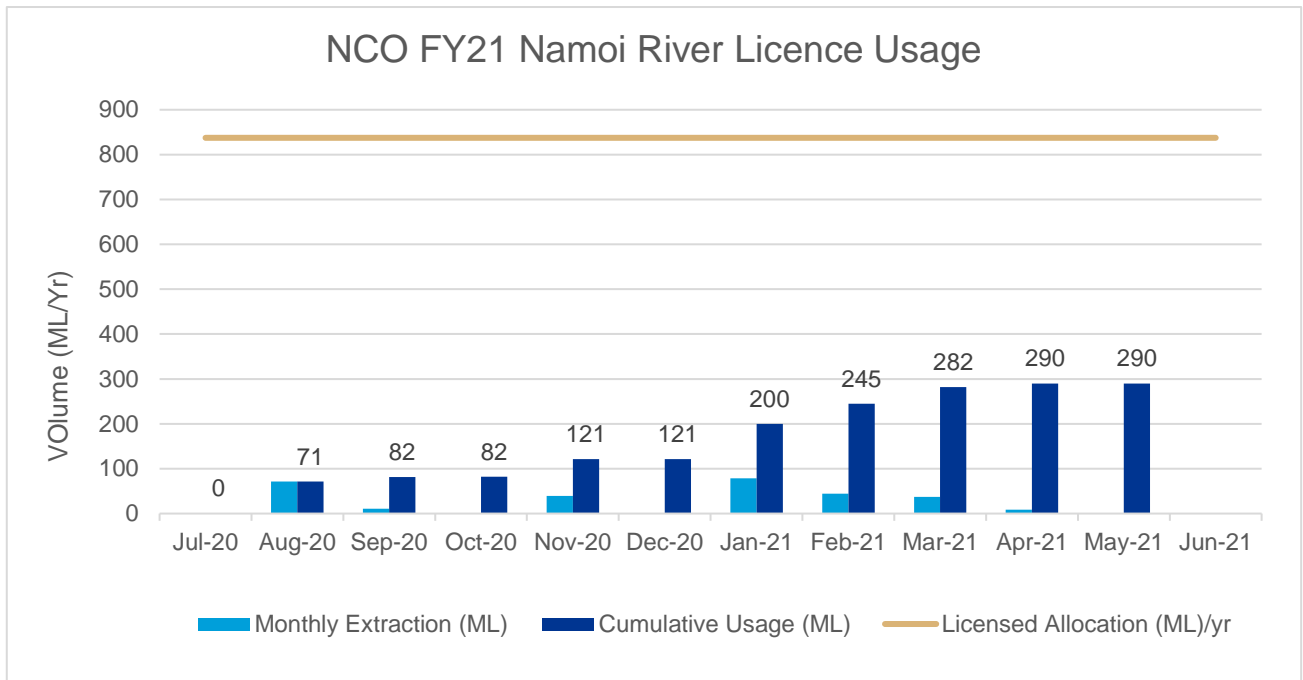


Figure 4: Namoi River licensed water allocation usage for the current Financial (Water) year.

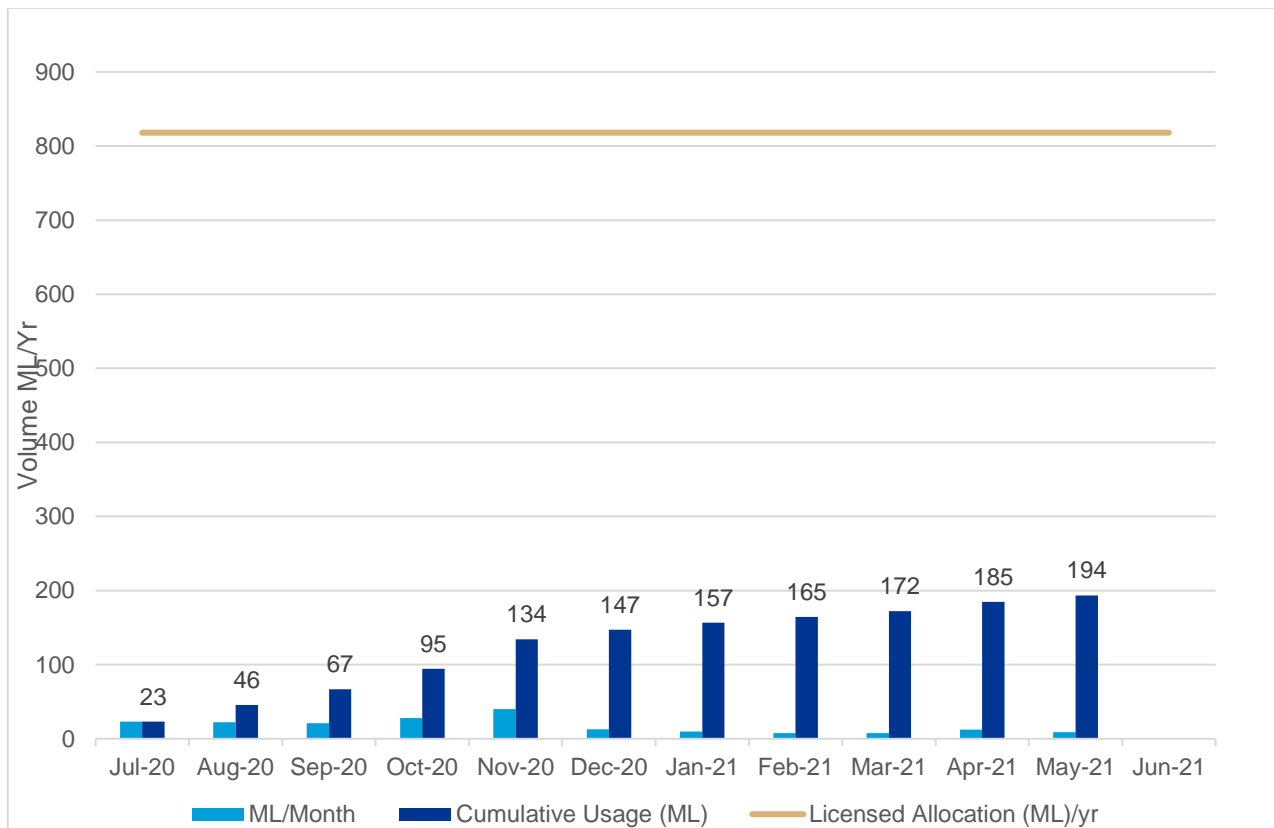


Figure 5: Dewatering from Box Cut work approval for the current Financial (Water) year.

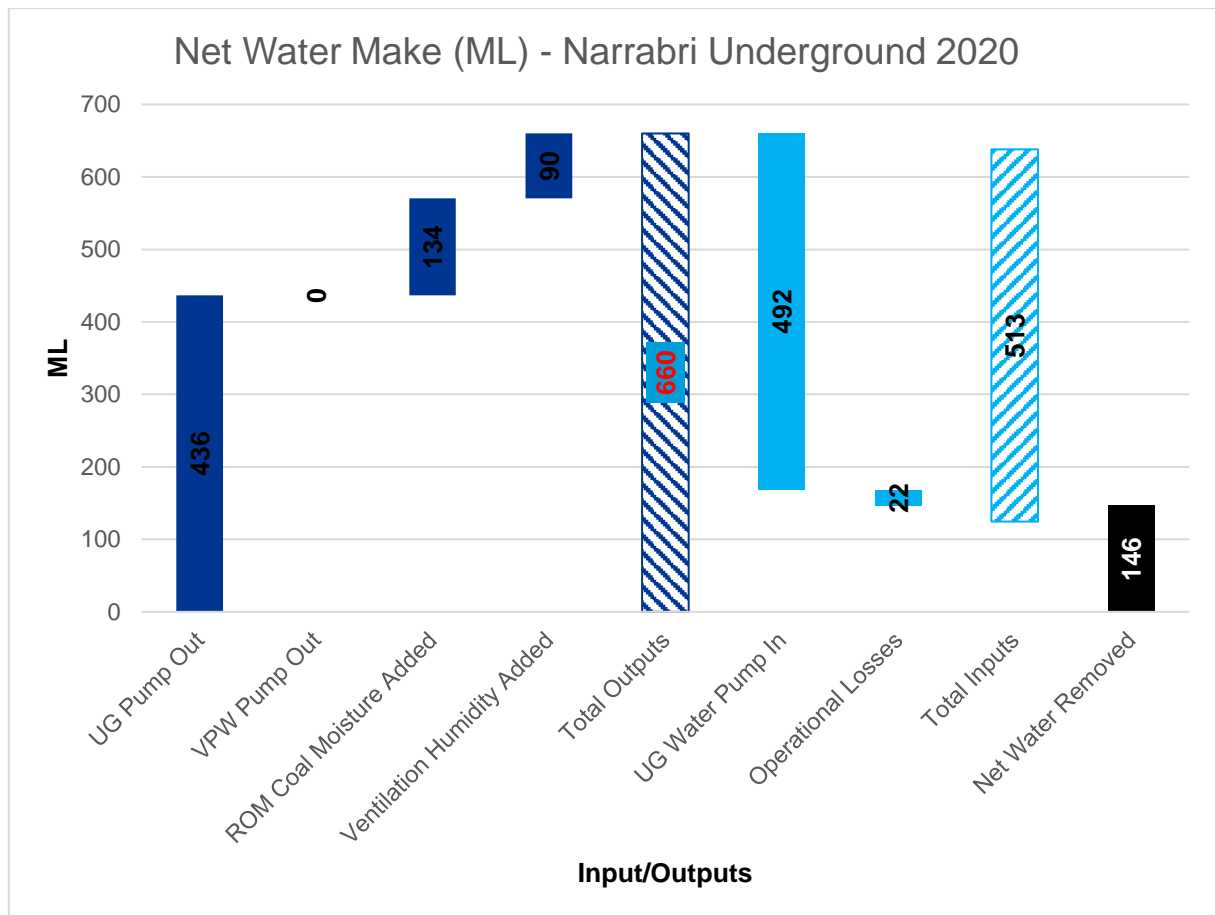


Figure 6: 'Waterfall chart' showing detail for Net groundwater removal from the mine for 2020 calendar year

Groundwater Monitoring

Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review. A summary of the 2020 groundwater review was provided during the March CCC meeting.

Subsidence Monitoring

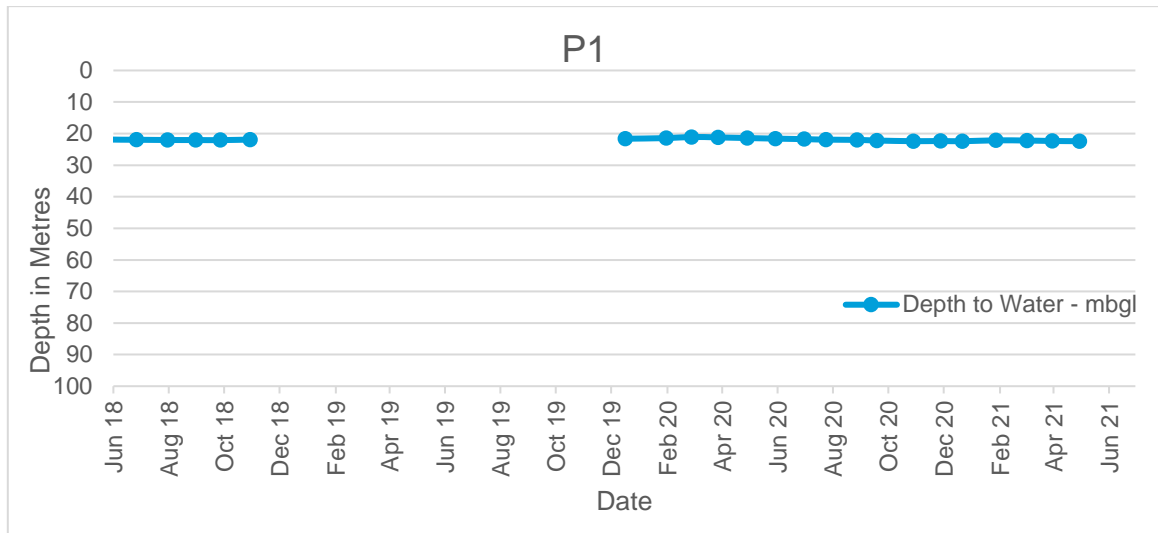
- Movement in Line 107 has ceased and monitoring has been discontinued.
- Line 108 north and Line H were monitored on 14/05/2021.
- LIDAR data is captured and reviewed annually.

Longwall Panels (LW) 109		
	Maximum Predicted Extraction Plan	Maximum Measured
Line 101 – Centre of LW101 – Monitoring has ceased		
Line 102 – Centre of LW102 – Monitoring has ceased		
Line 103 – Centre of LW103 – Northern – Monitoring has ceased		
Line 103 – Centre of LW103 – Southern – Monitoring has ceased		
Line 104 – Centre of LW104 – Northern – Monitoring has ceased		
Line 104 – Centre of LW104 – Southern – Monitoring has ceased		
Line 105 – Centre of LW105 – Northern – Monitoring has ceased		
Line 105 – Centre of LW105 – Southern – Monitoring has ceased		
Line 106 – Centre of LW106 – Northern – Being closed out		
Line 107 – Centre of LW107 – Northern – Monitoring has ceased		
Line 108 (measured 14/05/2021)		
Subsidence (m)	2.75	2.68
Tilt (mm/m)	38	36.3
Tensile Strain (mm/m)	10	16.2
Compressive Strain (mm/m)	13	38.9
Line 108 – Southern		
Line A – Cross Panel Survey Line – Being closed out		
Line B – Pine Creek Tributary 1 – Monitoring has ceased		
Line D – Pine Creek – Monitoring has ceased		
Line E – Pine Creek Tributary 1 Crossline 1 – Monitoring has ceased		
Line F – Pine Creek Tributary 1 Crossline 2 – Monitoring has ceased		
Line G – Pine Creek Tributary 1 Crossline 3 – Monitoring has ceased		
Line H – Cross Panel Survey Line (measured 14/05/2021)		
Subsidence (m)	2.75	2.75
Tilt (mm/m)	53	31.70
Tensile Strain (mm/m)	13 – 20^	16.60
Compressive Strain (mm/m)	16 – 24^	9.60

Hydrographs for Groundwater Monitoring Wells



Figure 7: Location of groundwater monitoring wells



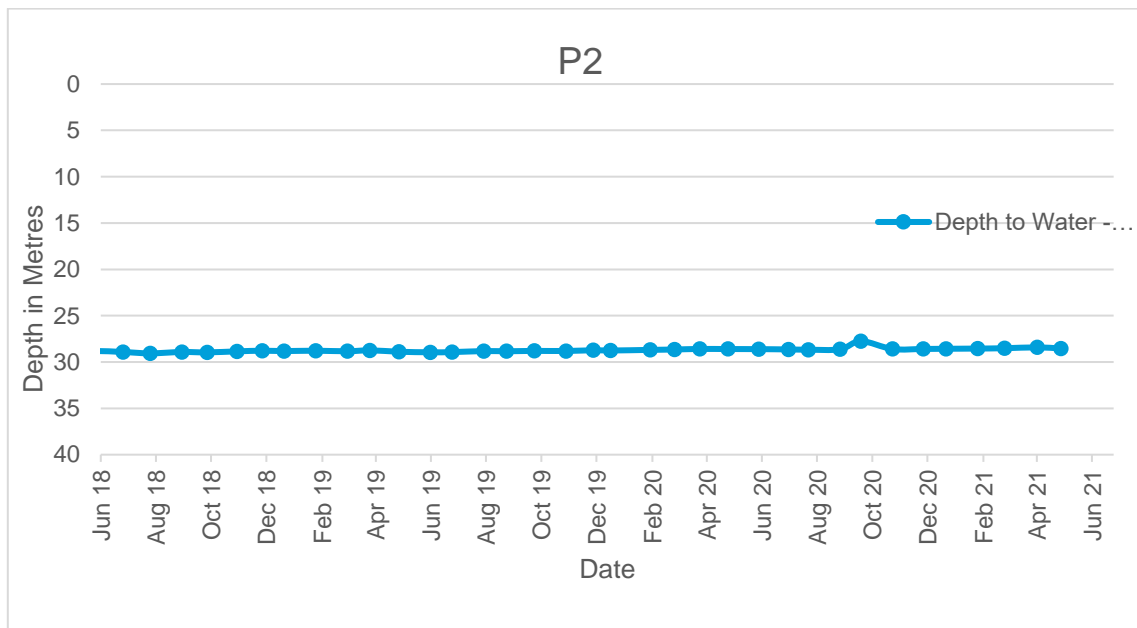
NCO Monitoring bore ID: P1

Location: Longsight

Geological unit: Garrawilla Volcanics

Bore depth: 50m

Explanation: Gap in data is due to land access issues.

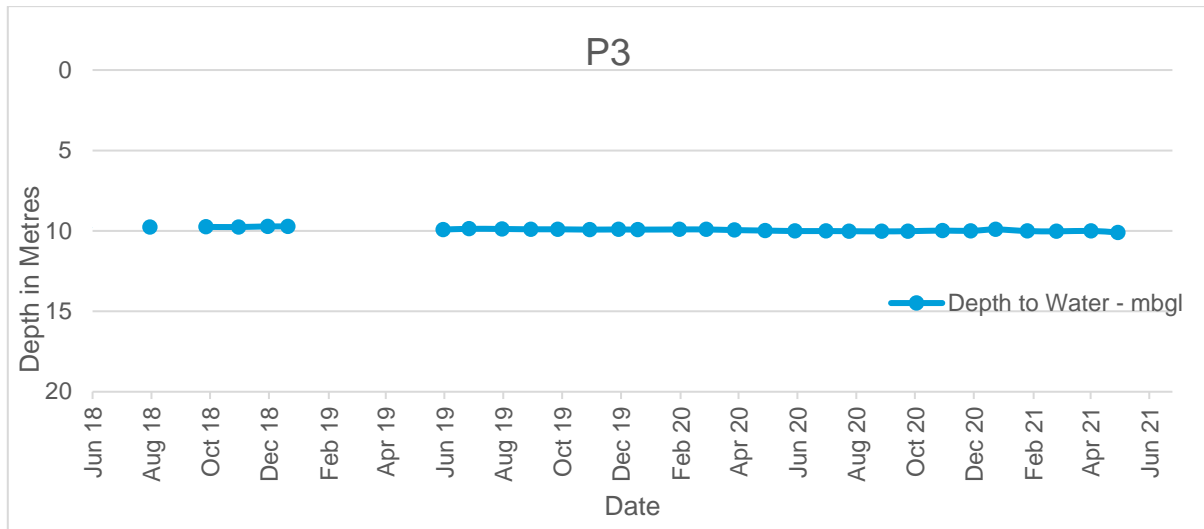


NCO Monitoring bore ID: P2

Location: Matilda

Geological unit: Napperby Formation

Bore depth: 50m

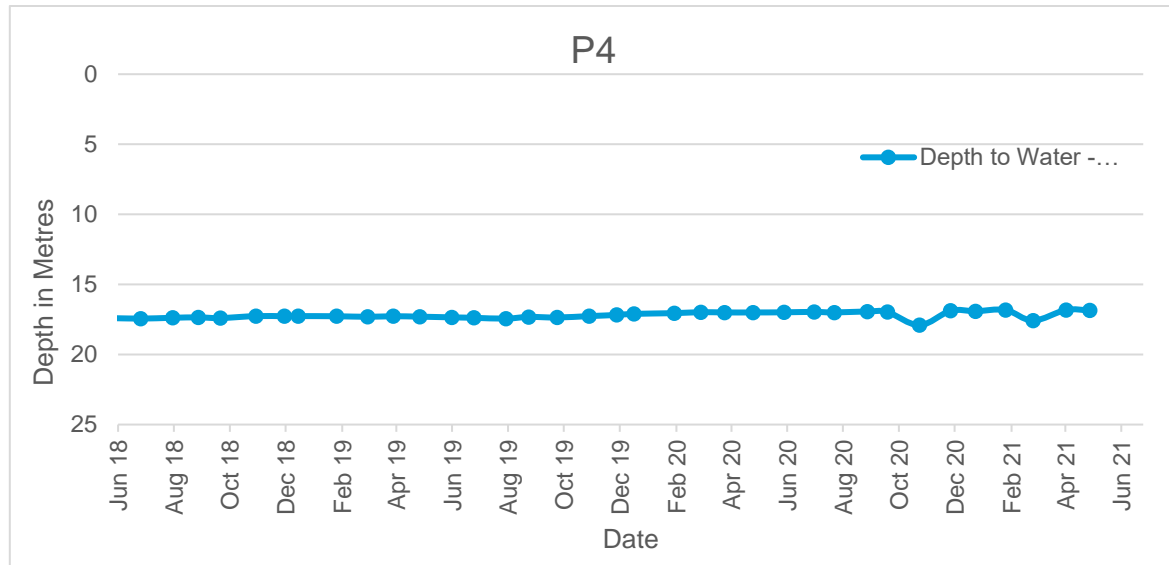


NCO Monitoring bore ID: P3

Location: Bow Hills

Geological unit: Pamboola Formation

Bore depth: 45m

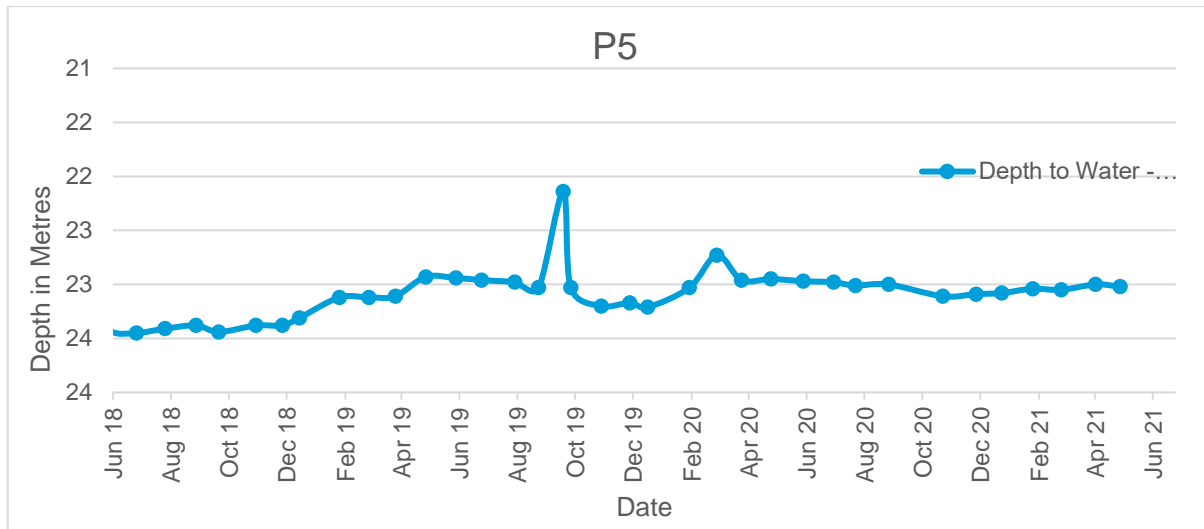


NCO Monitoring bore ID: P4

Location: North of Newhaven on Kamilaroi highway

Geological unit: Napperby Formation

Bore depth: 30m



NCO Monitoring bore ID: P5

Location: Unknown - shown on Figure 10

Geological unit: Pamboola Formation

Bore depth: 30m

No Graph

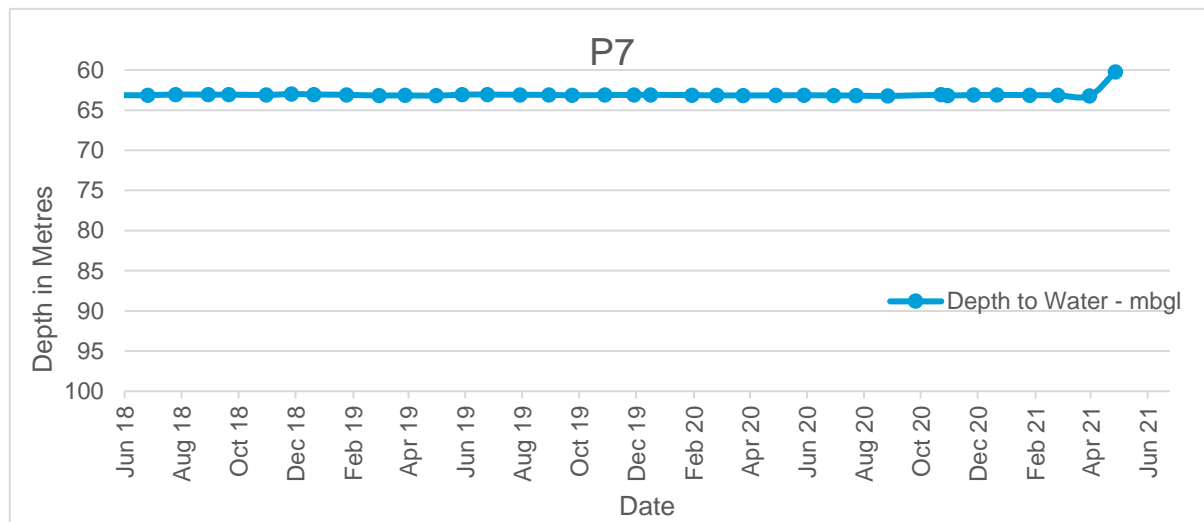
NCO Monitoring bore ID: P6

Location: shown on Figure 10

Geological unit: Pilliga sandstone

Bore depth: 90m

Explanation: Dry since 2012

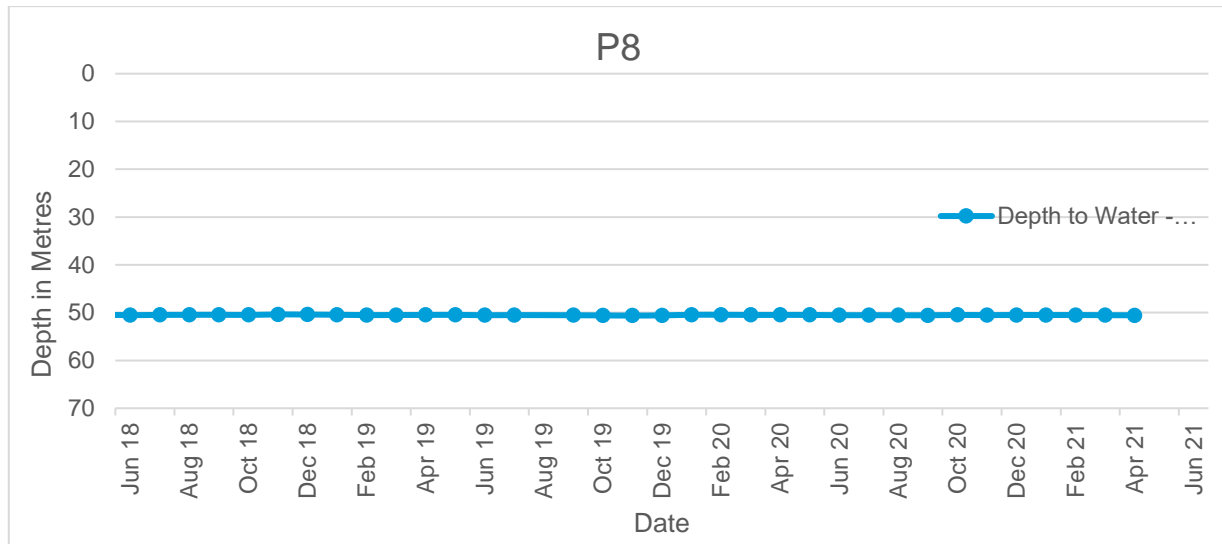


NCO Monitoring bore ID: P7

Location: State forest

Geological unit: Pilliga sandstone

Bore depth: 90m

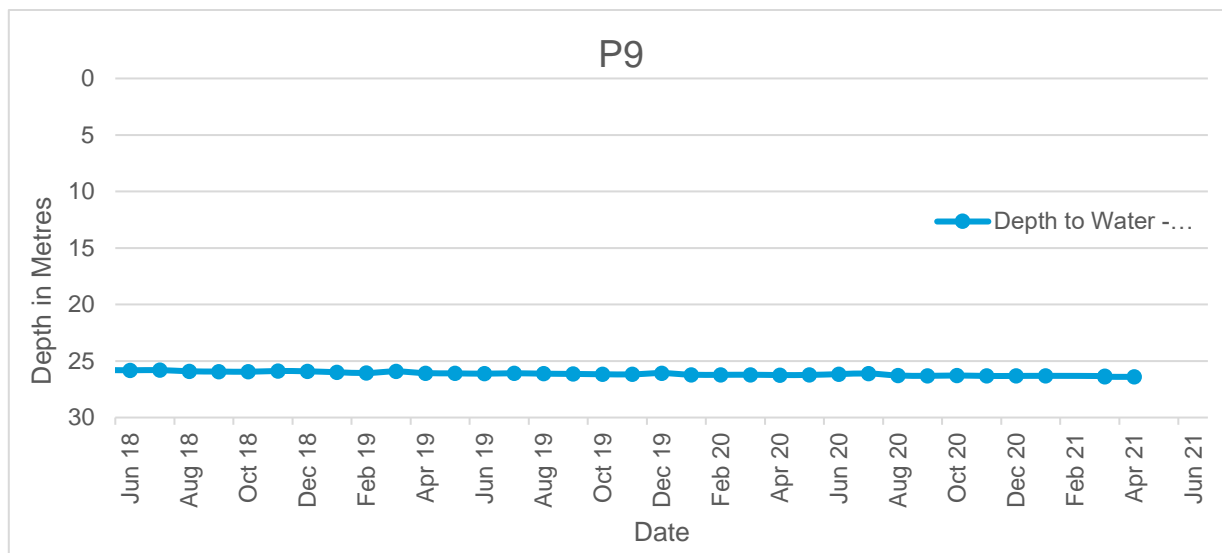


NCO Monitoring bore ID: P8

Location: Kurrajong

Geological unit: Purlawaugh Formation

Bore depth: 65m

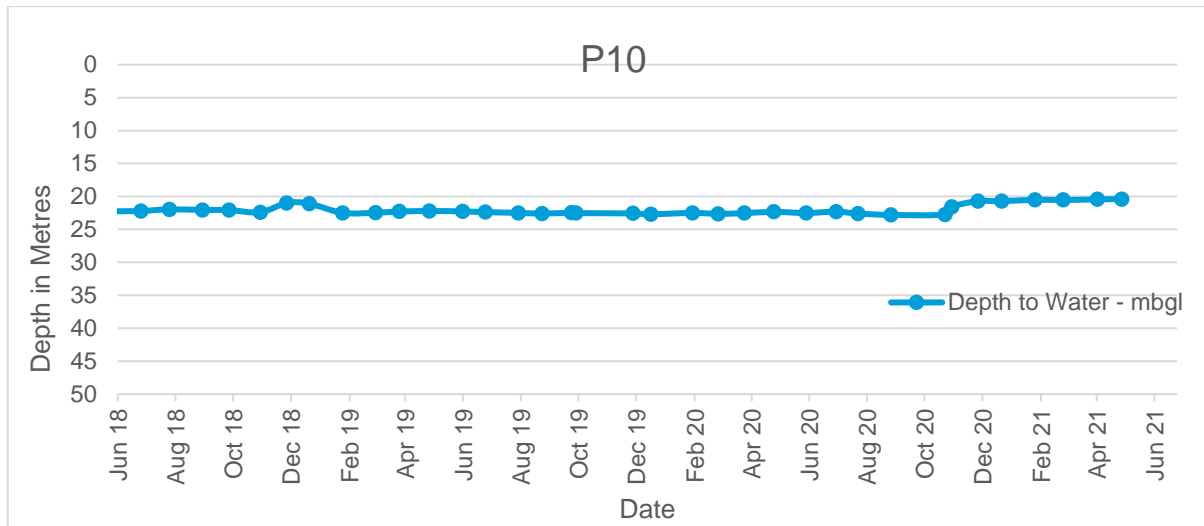


NCO Monitoring bore ID: P9

Location: NCO – Figure 10

Geological unit: Purlawaugh Formation

Bore depth: 30m

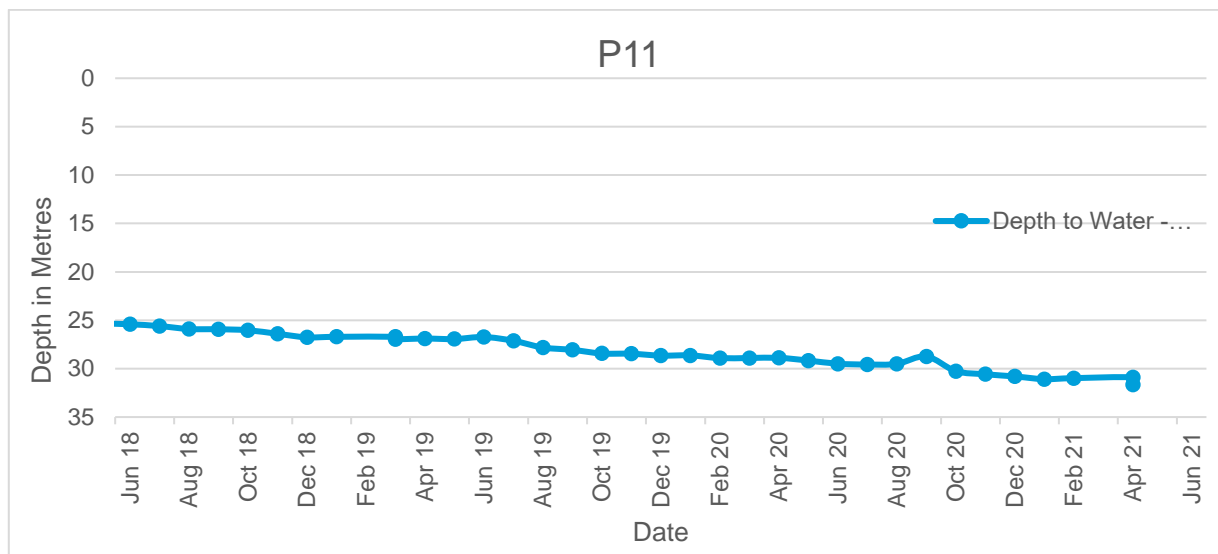


NCO Monitoring bore ID: P10

Location: NCO – see figure 10

Geological unit: Napperby Formation

Bore depth: 130m

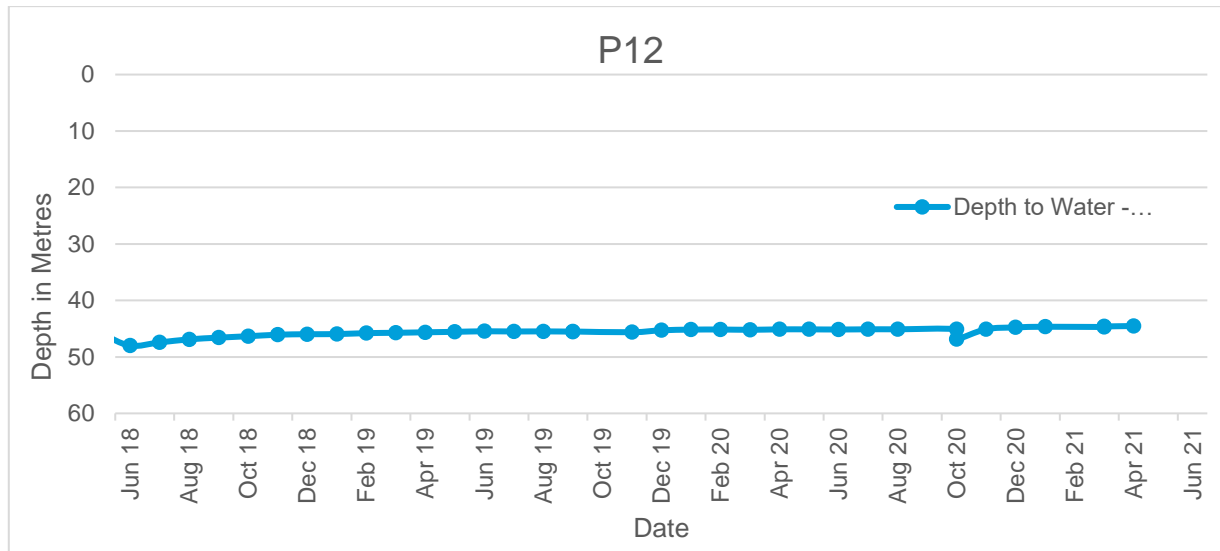


NCO Monitoring bore ID: P11

Location: NCO – see figure 10

Geological unit: Napperby Formation

Bore depth: 50m

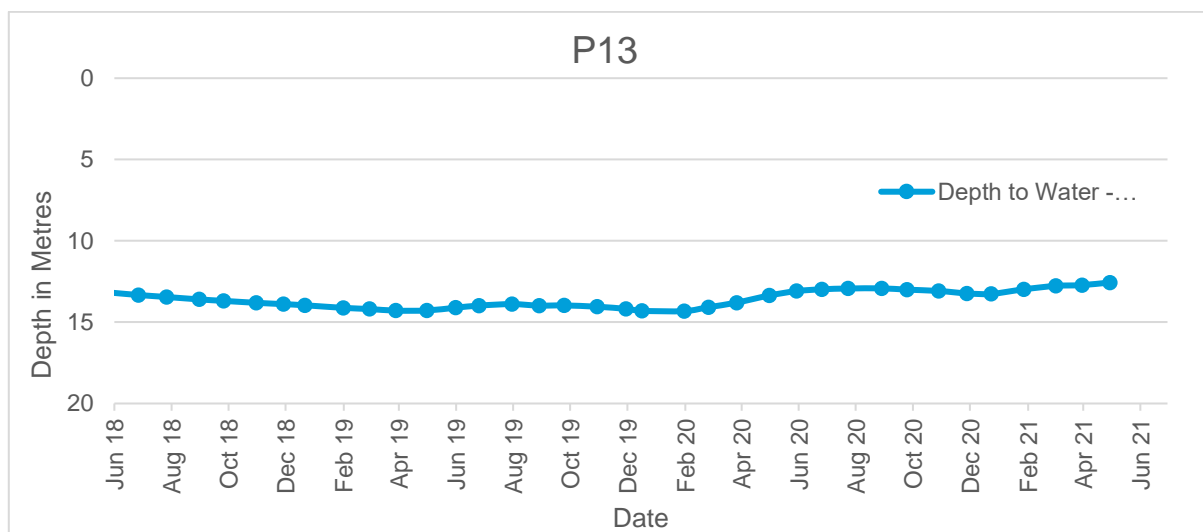


NCO Monitoring bore ID: P12

Location: NCO – see figure 10

Geological unit: Napperby Formation

Bore depth: 90m



NCO Monitoring bore ID: P13

Location: NCO – see figure 10

Geological unit: Garrawilla Volcanics/Napperby

Bore depth: 30m

No Graph

NCO Monitoring bore ID: P14

Location: See Figure 10

Geological unit: Napperby Formation (no sill)

Bore depth: 78m

Explanation: Dry

No Graph

NCO Monitoring bore ID: P15

Location: See Figure 10

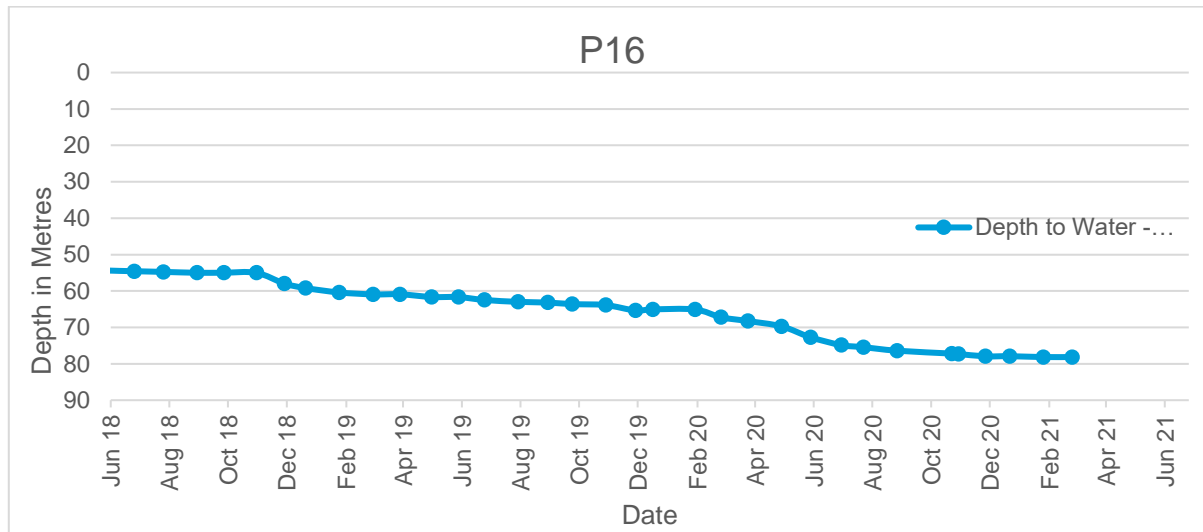
Geological unit: Garrawilla Volcanics

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10 Kurrang Road, Baan Baa NSW 2390 | P 02 6794 4755 | F 02 6794 4753
Locked Bag 1002, Narrabri NSW 2390

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Bore depth: 30m
Explanation: Dry



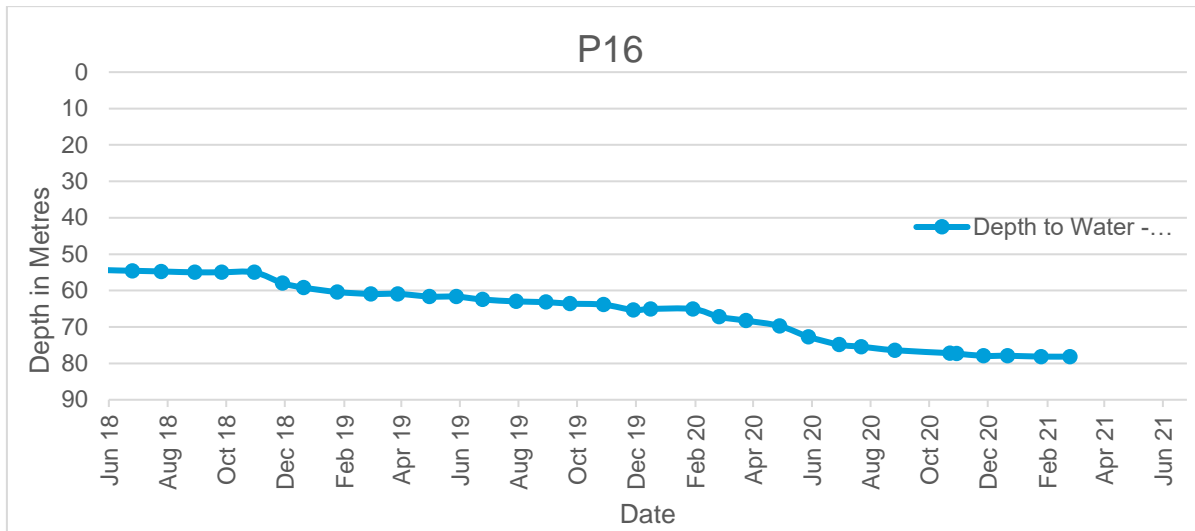
NCO Monitoring bore ID: P16
Location: State forest (Western Boundary) – see figure 10
Geological unit: Garrawilla Volcanics
Bore depth: 146m

No Graph

NCO Monitoring bore ID: P17
Location: See figure 10
Geological unit: Purlawaugh Formation
Bore depth: 56m
Explanation: Dry since 2009

No Graph

NCO Monitoring bore ID: P18
Location: See figure 10
Geological unit: Hoskissons seam
Bore depth: 146m
Explanation: Dry since 2011



NCO Monitoring bore ID: P19

Location: NCO

Geological unit: Pamboola

Bore depth: 187m

Explanation: Wrong bore previously monitored, true location monitored since August 2020

No Graph

NCO Monitoring bore ID: P20

Explanation: Cemented up – no longer monitoring

No Graph

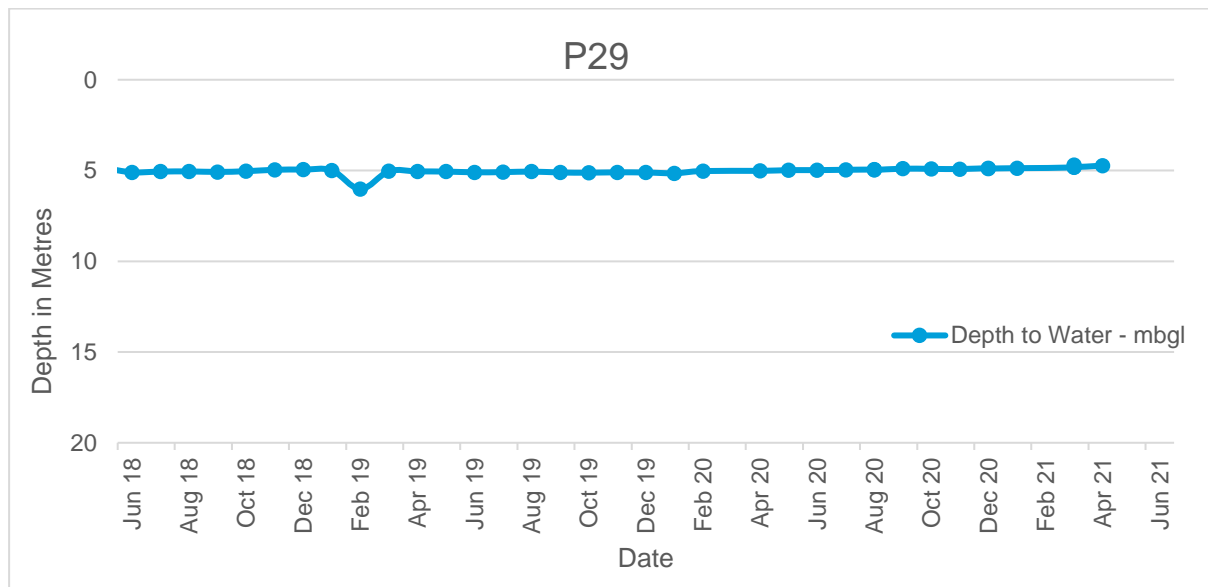
NCO Monitoring bore ID: P28

Location: See figure10

Geological unit: Napperby Formation (above sill)

Bore depth: 25m

Explanation: Dry since 2012



NCO Monitoring bore ID: P29

Location: NCO (Near site dams) – see figure 10

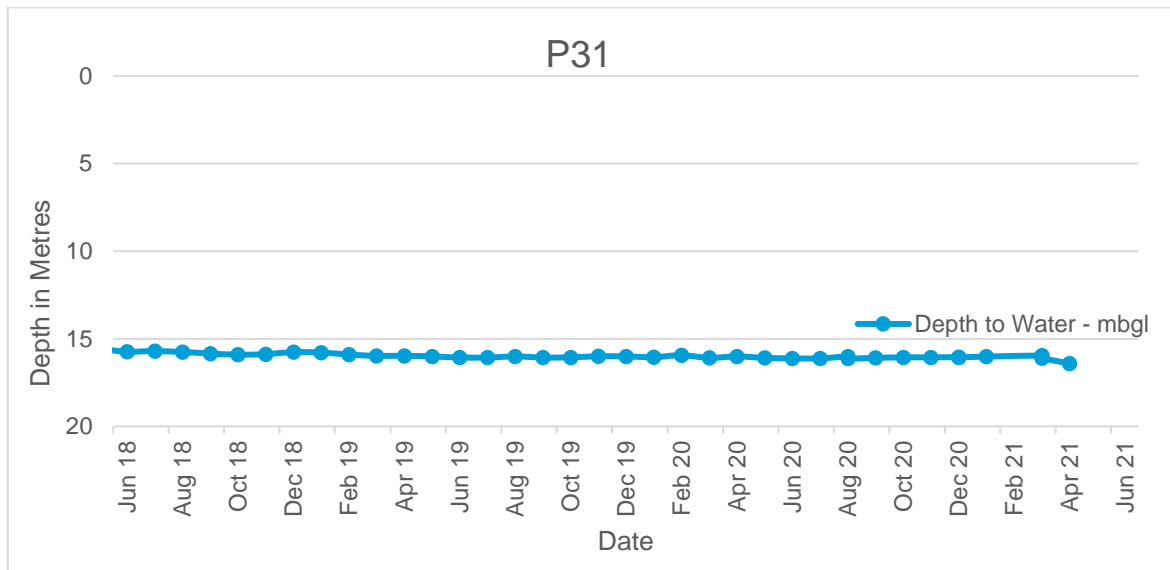
Geological unit: Napperby Formation (above sill).

Bore depth: 25m

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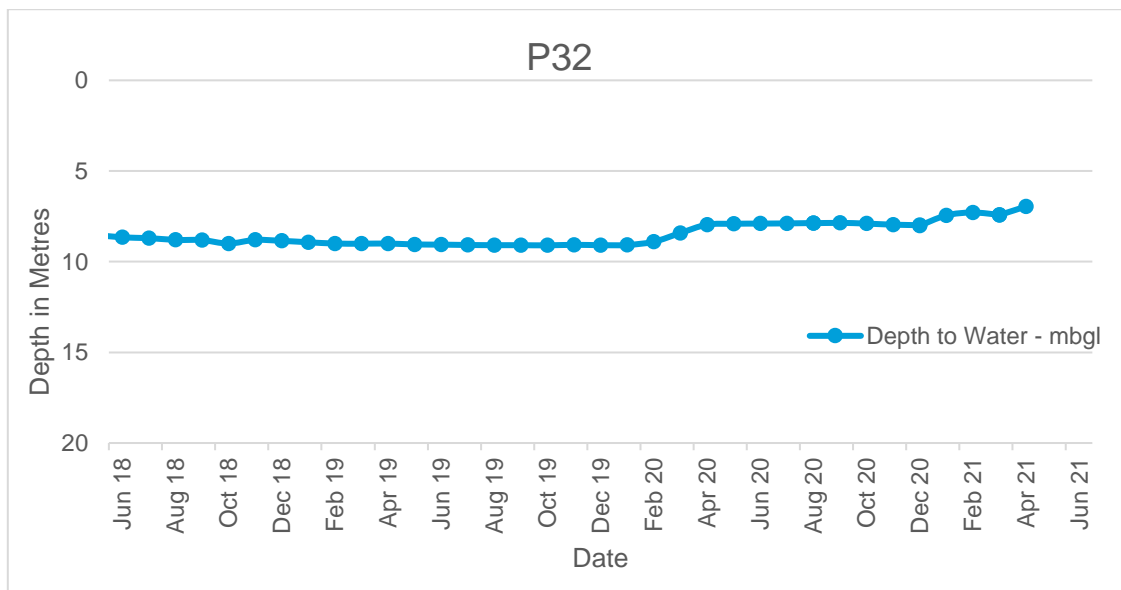


NCO Monitoring bore ID: P31

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby formation (above sill)

Bore depth: 15m



NCO Monitoring bore ID: P32

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

NCO Monitoring bore ID: P33

Location: See figure 6

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

Explanation: Dry since 2012

NCO Monitoring bore ID: P24

Location: See figure 6

Narrabri Coal Operations Pty Ltd ABN 76 107 813 963

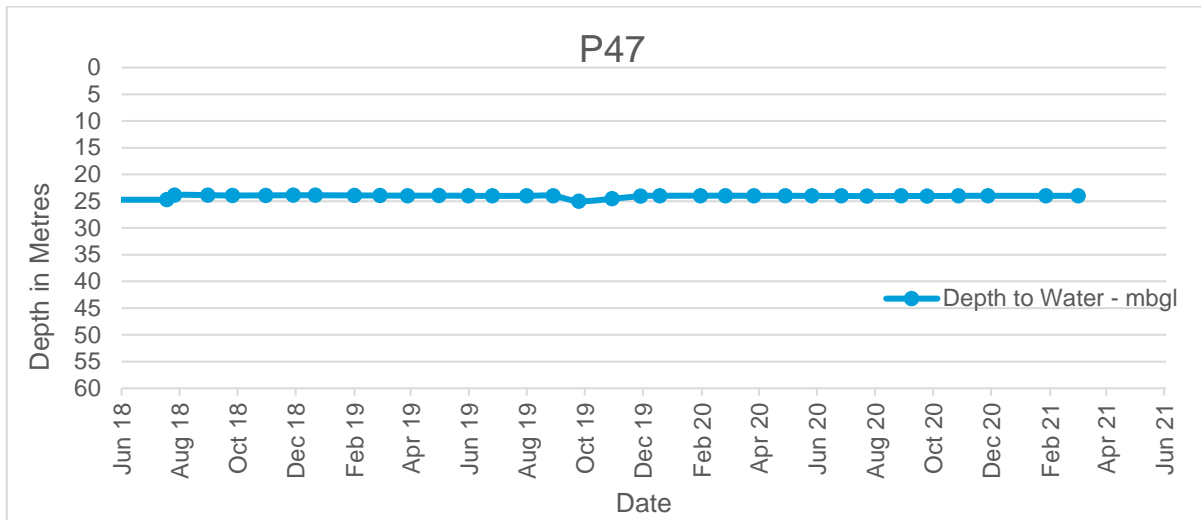
10 Kurrajong Road, Baan Baa NSW 2390 | P 02 6794 4755 | F 02 6794 4753
Locked Bag 1002, Narrabri NSW 2390

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Geological unit: Napperby Formation (above sill)

Bore depth: 15m

Explanation: Dry since 2012

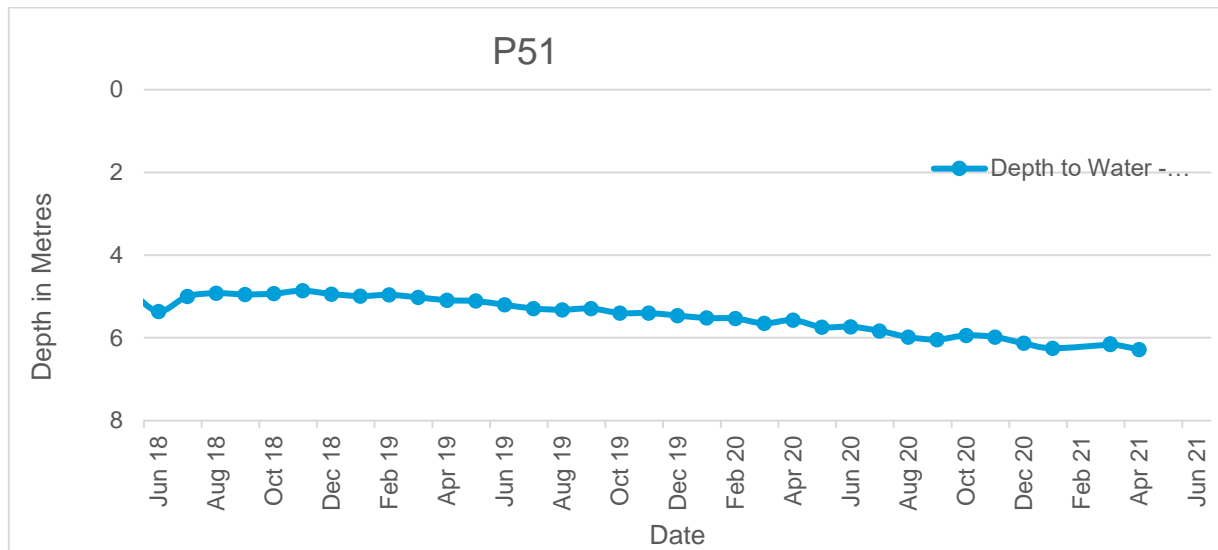


NCO Monitoring bore ID: P47

Location: NCO – see figure 10

Geological unit: Garrawilla Volcanics

Bore Depth (m): 31m



NCO Monitoring bore ID: P51

Location: NCO

Geological unit: Garrawilla Volcanics

Bore Depth (m): 17m

Narrabri Mine Community Consultative Committee Meeting #54

Date: Wednesday 13 October 2021

Time: 5:00pm

Location: Narrabri Mine

Present: Russell Stewart (RS)
James Stieger (JS)
Ian Duffy (ID)
Peter Webb (PW)
Geoff Hunter (GH)
Cr Cathy Redding- Narrabri Shire Council (CR)
Brent Baker (BB) – Narrabri Coal - Environmental Superintendent (via ZOOM)
Gerald Linde (GL) - Narrabri Coal- General Manager
David Ellwood (DE) – Narrabri Coal – Director Stage 3 Project
Huw Morgan (HM)- Whitehaven Coal- Manager Water and Property (via ZOOM)

Apologies: Mark Foster
Charlie Melbourne
Rodney Dunlop

1. DECLARATION OF PECUNIARY INTEREST

None

RS and BB informed members that Rodney Dunlop has tendered his resignation from the Narrabri Mine CCC. Rodney is performing work for the mine in his capacity as an Environmental Consultant and feels it is appropriate to step down. Russell and Brent to organise Thank You letter for Rodney for his service to the CCC over a number of years.

2. PREVIOUS MINUTES

RS asked if everyone has read previous minutes. GH queried what happened with GH and Cathy Redding comments on first draft of previous minutes. BB confirmed that comments were included in an amended version of minutes (distributed to members on 13 July).

RS asked CR if her comments were addressed. CR confirmed OK.

GH queried the previous meeting minutes discussion around impacted landholder bores identified during Stage 3 EIS and 'make-good' arrangements. DE clarified that 9 landholder bores have been identified to be impacted, with 6 identified as impaired and will potentially lose access to groundwater. DE confirmed NCO will be implementing make good agreements for all 9 potentially affected bores. DE confirmed make-good agreements have been drafted, and sent to DPI&E for review against draft Stage 3 project approval conditions. DE outlined proposed offers for make good agreements will either comprise of installation of a fully equipped brand new bore, or financial compensation. DE explained that NCO are working with DPI&E to try and work through legal advice that it will also be a requirement to decommission existing bore, DE opinion is that this is unnecessary and leaving the existing bore to be available for landholder use until it is impacted would be better option for landholders. DE explained that is why agreements haven't gone out to landholders, as NCO are working with DPI&E on the legal complexities to try and ensure that the most practical and favourable option will be available to affected landholders, i.e. that the make good agreements will ensure affected landholders receive **1.** installation of a new bore or financial compensation, and **2.** still be allowed to continue to utilise existing bore.

RS asked GH if he required previous minutes to be amended to include this. GH preferred that this discussion be included in the current minutes.

RS confirmed that previous minutes be accepted, with the addition of note in current minutes.

Moved: ID Seconded: GH

2.1 BUSINESS ARISING FROM PREVIOUS MINUTES

No further actions arising from previous meeting.

3. OPERATIONS PROGRESS REPORT AND SAFETY UPDATE

Presented by GL

- Safety: very pleasing quarter on Safety performance with nearly four months with no medical treatment injuries. Sensational result. 150 days TRI free.
- Mining: 1.5 million tonne produced FYTD. About 80kT behind budget at end of quarter.
- Potential underground heating few months ago, which was managed via temporary Nitrogen plant on surface. Still some equipment in place to manage this, however plant mostly idle as the conditions underground are stable.
- Longwall relocation commencing in a few weeks' time. Will be some additional truck movements associated with equipment moving on & off site as part of the longwall move. GH queried location of move. GL advised the longwall is moving to the west to Panel 110.
- NCO have submitted a Modification application to allow different mining method in panels 201 and 202. Additional workforce approximately 15 per shift. CCC notified in previous meetings. Progressing application with Dept Planning.
- CR queried cleanskin recruitment program recently undertaken by NCO. GL explained closing date was extended and is now closed. Approximately 24 interviewed, hoping to employ 10-12. Focus on local candidates. Positions mainly for labourers. Discussion around difficulty to source experienced trades-people locally eg. electricians with industrial experience. RS provided overview of Regional Development Australia website for recruiting. Discussion if this would be useful for sourcing candidates to support mining operations. GH mentioned developing apprentices. Gerald outlined NCO apprenticeship program. Discussion around presenting diversity of mining career opportunities to local high school seniors. RS explained his experience with high schoolers, challenges and advertising methods.

4. ENVIRONMENTAL MONITORING REPORT

Presented by BB

- INCIDENTS: No reportable incidents to regulatory agencies since previous CCC meeting
- COMPLAINTS: Since the beginning of 2021 one complaint has been received. The nature of the complaint was related to odour.
- DEPOSITIONAL DUST:
 - 2021 annual average YTD for all monitoring locations trending below licence limit of 4 g/m²/month
- PM10 AIR QUALITY:
 - No exceedances of the 24 hour limit within last 12 month period at Claremont monitoring location. There has been one exceedance of the 24 hour compliance limit of 50 µg/m³ within the last 12 month period at Turrabaa monitoring location. This exceedance was communicated to DPI&E on Friday the 2nd of July. DPI&E acknowledged that this exceedance was not related to mining operations and likely to be caused by adjacent roadwork activities on Kamilaroi Highway upgrade project.
 - Rolling 12 month average currently below annual average limit (of 30 µg/m³) for the two monitoring locations (Claremont and Turrabaa).
- QUARTERLY NOISE MONITORING

Quarter 1 attended noise monitoring was completed during February, with compliance achieved at all locations during all time periods.

Quarter 2 attended noise monitoring was completed in June, with compliance achieved at all locations during all time periods.

Quarter 3 attended noise monitoring was completed in September, with compliance achieved at all locations during all time periods.

- **SURFACE WATER MONITORING:**
No wet weather discharges have occurred from licensed discharge points during 2021.
- **WATER LICENSING:** Presented graphs showing NCO water licence allocation usage. Usage from water licences has been minimal with recent wet weather and mine has been utilising water captured on-site. Presented updated chart showing mine water inputs and outputs, and actual net water usage for 2021 financial year.
- **GROUNDWATER MONITORING:** Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review. A summary of the 2020 groundwater review was provided during the March CCC meeting.
- **SUBSIDENCE MONITORING:** No updates since previous CCC meeting.

No further questions/comments from members.

5. STAGE 3 UPDATE

David Elwood provides update.

- Continuation of discussion raised when reviewing previous minutes around the 'make good' agreements for the 9 impacted bores that have been identified as potentially impacted from the Stage 3 project. DE explained that in last meeting NCO were considering 'making good' by installing a new bore adjacent to impacted bore. Since last meeting there have been queries from impacted landholders about potential for monetary compensation in lieu of a new bore. NCO decided to include this as an option for affected landholders, and have completed a legal review. Legal advice is that to adequately make good there is a requirement to decommission the old bore. NCO think that is a poor outcome, as some of the bores are not predicted to be impacted for many years, and could continue to be utilised by the landholders in the interim. NCO have been consulting with DPI&E to determine if the new Project Approval can be conditioned to allow the old bore to be retained. NCO are now awaiting feedback from DPI&E before consulting with impacted landholders and making formal offers for the make good agreements. Still ongoing and will provide CCC with update when resolved.
- Key change since last meeting is that DPI&E has received advice back from Independent Advisory Panel for Underground Mining. IAPUM was established in 2020 by NSW Government to provide world class panel of experts that can provide advice to Dept Planning. Key outcomes: subsidence assessment doesn't prevent any difficulties or uncertainties in relation to surface subsidence impacts, low risk of any strong connection between mining and Namoi Alluvium, little to suggest that Namoi Alluvium will be impacted (agreeing with NCO assessment), impacts from mining will not be excessive on a regional scale (both during and after mining). IAPUM recommended more groundwater monitoring locations- three more vibrating wire piezometers; NCO will act on this recommendation. IAPUM noted there is minimal surface water quality and flow data available for minor ephemeral streams and tributaries upstream of the mine; they suggest NCO enact process to ensure samples can be collected during the (often small) window available when these streams are in flow.
CR queried location of IAPUM recommended groundwater monitoring locations

ACTION: DE to provide map of NCO proposed groundwater monitoring bores and description of the three additional sites recommended by IAPUM.

COMPLETED: distributed to CCC members with copy of these minutes.

- DPI&E are still assessing remainder of Stage 3 application. DE believes it is likely the project will be referred to IPC.
- GH queried if DPI&E responded to NCO Response to Submissions regarding groundwater comments. DE explained that DPI&E had some additional comments on NCO's Response to Submissions, which NCO have subsequently addressed. In addition IAPUM provided comments. DPI&E have confirmed they are comfortable with the provided information regarding groundwater impacts and will continue progressing the determination on the Stage 3 application.
- DE advised that all reports and responses discussed above are available on the DPI&E Major Projects website.
- GH queried what process is now. DE explained waiting on DPI&E to produce Whole of Government report. DE expects it will be referred to IPC. Timeframes not clear. DE explains that once Project Approval is issued then there are a raft of Secondary Approvals required (eg. management plans). CR queried number of Environmental Management plans, DE thinks perhaps 10 plans. CR queried if Stage 3 plans will be duplicating current Stage 2 plans. DE said yes majority of existing conditions will carry over in new Project Approval, with some additional conditions for Stage 3.

- GL advised the Mining Lease application will be submitted mid-November. DE advised that this application is to ensure government has sufficient time to process the application (generally 3 months) however the Mining Lease won't be granted until the Project Approval is issued.

No further questions/comments from members.

6. GENERAL BUSINESS

- Huw Morgan introductions. Shared presentation on Whitehaven Coal property management.

Overview of properties owned by Narrabri Coal Operations. 20 farms, 3 houses in Narrabri township. Huw outlined breakdown of properties leased, used for mining, or biodiversity management. Across the Whitehaven group there are approximately 130 properties leased, totalling 45,000 hectares. Focus this year is shifting towards lessee compliance with licence agreements, with emphasis placed on those properties leased by former owners. Will be looking at issues such as sub-leasing without agreement, weed management, general care and maintenance.

JS notes feral animal management not mentioned. HM confirms yes it is part of lessee requirements, however hard to enforce as it is not readily apparent (eg. unless feral animals are sighted during an inspection then hard to know if there is an issue or if it is being undertaken well). Regardless HM will make a note of this and ensure lessees are queried on feral animal control efforts during inspections.

Whitehaven 5 year plan shifting to commercial focus with licence agreements. With all leases going to Expression of Interest, trying to attract competitive market rates quality farmers who are going to manage the land well. Licence agreement will focus on property improvement, with a portion of the lease fee being invested back into the property; which results in the lessee gets the benefit of improvements to the management of the property and Whitehaven as the landholder gets the benefit of improving the property value. Overall aim is for the property portfolio of the business operating independently of the mining business, and effectively operating as a cash neutral business with all profits reinvested back into the properties.

HM outlined other activities where Whitehaven is exploring opportunities or alternative land uses for poorer quality land not suited for agricultural uses.

GH believes strategy is good and if achieved will be positive for management of the land. GH believes there should be more opportunities for younger farmers, tend to see bigger operators moving in and taking over, and who are not necessarily better farmers are. GH also believes this potentially limits innovation that the younger and keener farmers would bring. GH believes former landholders get too much latitude and continuing to give them every opportunity is not the right approach to achieve good outcomes for best land management. HM outlined how the new strategy is trying to turn this around.

GH queried options for Biodiversity Offsets and grazing. HM said it's very challenging given the strict conditions applied to the Offset properties.

- **No further General Business.**

NEXT MEETING

- 5pm Wednesday the 15 December at Baan Baa Hotel, followed by Christmas Party.

Narrabri Mine Community Consultative Committee Meeting #54

Environmental Monitoring Report: June - September 2021

Reportable Incidents

Nil since previous CCC meeting.

Complaints

Nil since previous CCC meeting.

Since the beginning of 2021 one complaint has been received. The nature of the complaint was related to odour.

Deposited Dust Monitoring

Deposited Dust samples remain in the field for a period of 30 days (+/- 2 days).

Total Insoluble Matter results (g/m ² /month)											
Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman	ND13 Darjeelang
June-21	1.6	1.1	0.8	1.3	1.2	0.3	1.6	0.6	0.7	0.1	0.2
July-21	0.9	0.4	2.2	3	1.5	0.3	0.5	0.3	1.5	0.2	0.3
August-21	4.1	0.8	2.5	0.2	0.0	3.4	1.8	0.2	0.3	0.3	0.2
September-21	1.3	2.1	1.3	0.7	5.7	11.1	0.7	0.5	1	0.2	0.5

Results are assessed during the end of year Annual Review process, and if it is determined that mine related activities have caused a contribution above the annual average limit of 4 g/m²/month appropriate notifications will be prepared.

2021 annual average YTD for all monitoring locations is below the licence limit of 4 g/m²/month (Insoluble Matter).

PM₁₀ High Volume Air Sampling (HVAS)

Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50 µg/m³, and an annual average limit of 30 µg/m³.

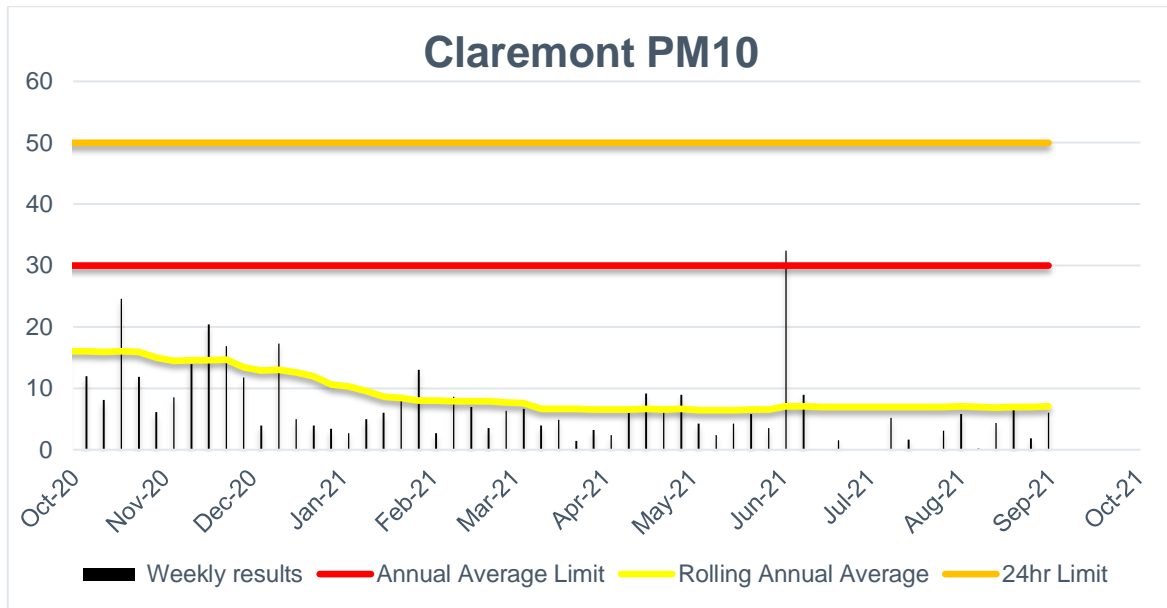


Figure 1: Claremont PM10 High Volume Air Sampler results for last 12 month period.

The Claremont HVAS is returning an annual average of 7.03 µg/m³, which is below the annual average limit of 30 µg/m³. The 2020 calendar year annual average result was 10.33 µg/m³. There have been no exceedances of the 24 hour compliance limit of 50 µg/m³ within the last 12 month period.

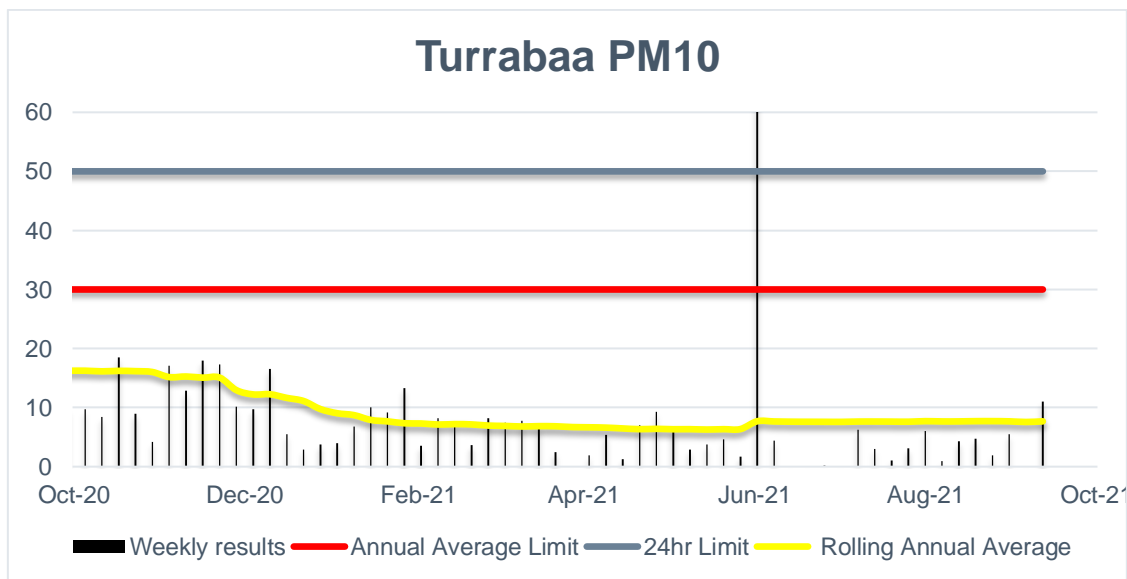


Figure 2: Turrabaa PM10 High Volume Air Sampler results for last 12 month period.

The Turrabaa HVAS is returning an annual average of $7.67 \mu\text{g}/\text{m}^3$, which is below the annual average limit of $30 \mu\text{g}/\text{m}^3$. The 2020 calendar year annual average result was $9.1 \mu\text{g}/\text{m}^3$. There has been one exceedance of the 24 hour compliance limit of $50 \mu\text{g}/\text{m}^3$ within the last 12 month period. This exceedance was communicated to DPI&E on Friday the 2nd of July. DPI&E acknowledged that this exceedance was not related to mining operations and likely to be caused by roadwork activities.

Noise Monitoring

- Quarter 1 attended noise monitoring was completed during February, with compliance achieved at all locations during all time periods. Results were reported during March CCC meeting.
- Quarter 2 attended noise monitoring was completed in June, with compliance achieved at all locations during all time periods. Results are summarised on table below.
- Quarter 3 attended noise monitoring was completed on September 2021, results will be reported at next CCC.

Table 1 Performance Assessment – Operations

EPL ID	Location	Date	Narrabri Mine Contribution dBA				Noise Criteria ¹	Measurement Periods	Standard Weather ³			Compliant
			LAeq 15 min Day	LAeq 15 min Evening	LAeq 15 min Night	LA1 (1 min) Night			Day	Evening	Night	
N5	Oakleigh ²	21/06/2021	I/A	I/A	I/A	I/A	Day, Evening and Night – LAeq(15minute) 35 dBA <					

I/A = Inaudible, N/M = Not Measurable

Note 1: A private agreement between NCOPL and the residents of N1 Bow Hills of 50 dBA LAeq(15minute) is in place. This new level of 50 dBA LAeq(15minute) replaces the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Note 2: Property is owned by Narrabri Coal Operations

Note 3: Noise levels presented are the highest measured noise level under standard weather conditions over the monitoring period.

Surface Water Monitoring

No wet weather discharges have occurred from licensed discharge points during the period from last CCC meeting (June-September 2021).

NSW Water- Licenced Usage

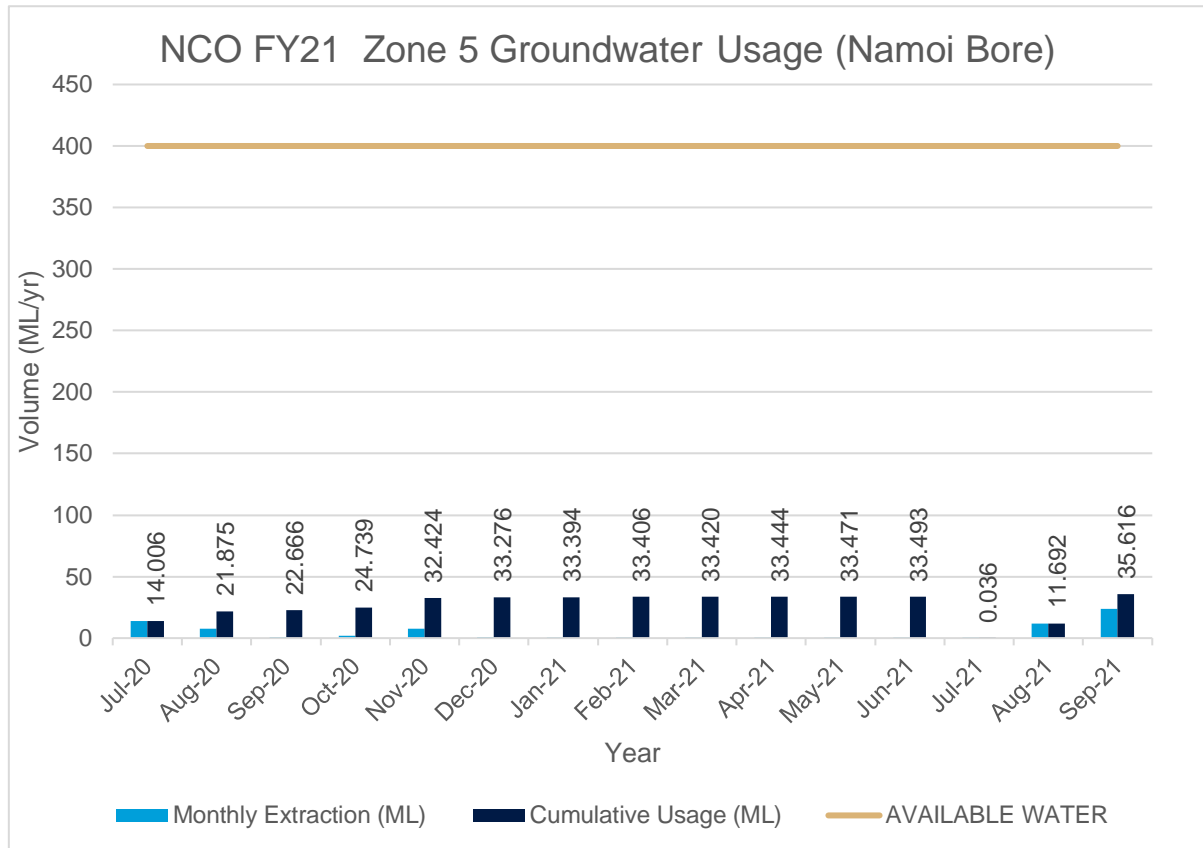


Figure 3: Zone 5 licensed groundwater usage from the Namoi Bore for FY 21 and into the current Financial (Water) Year.

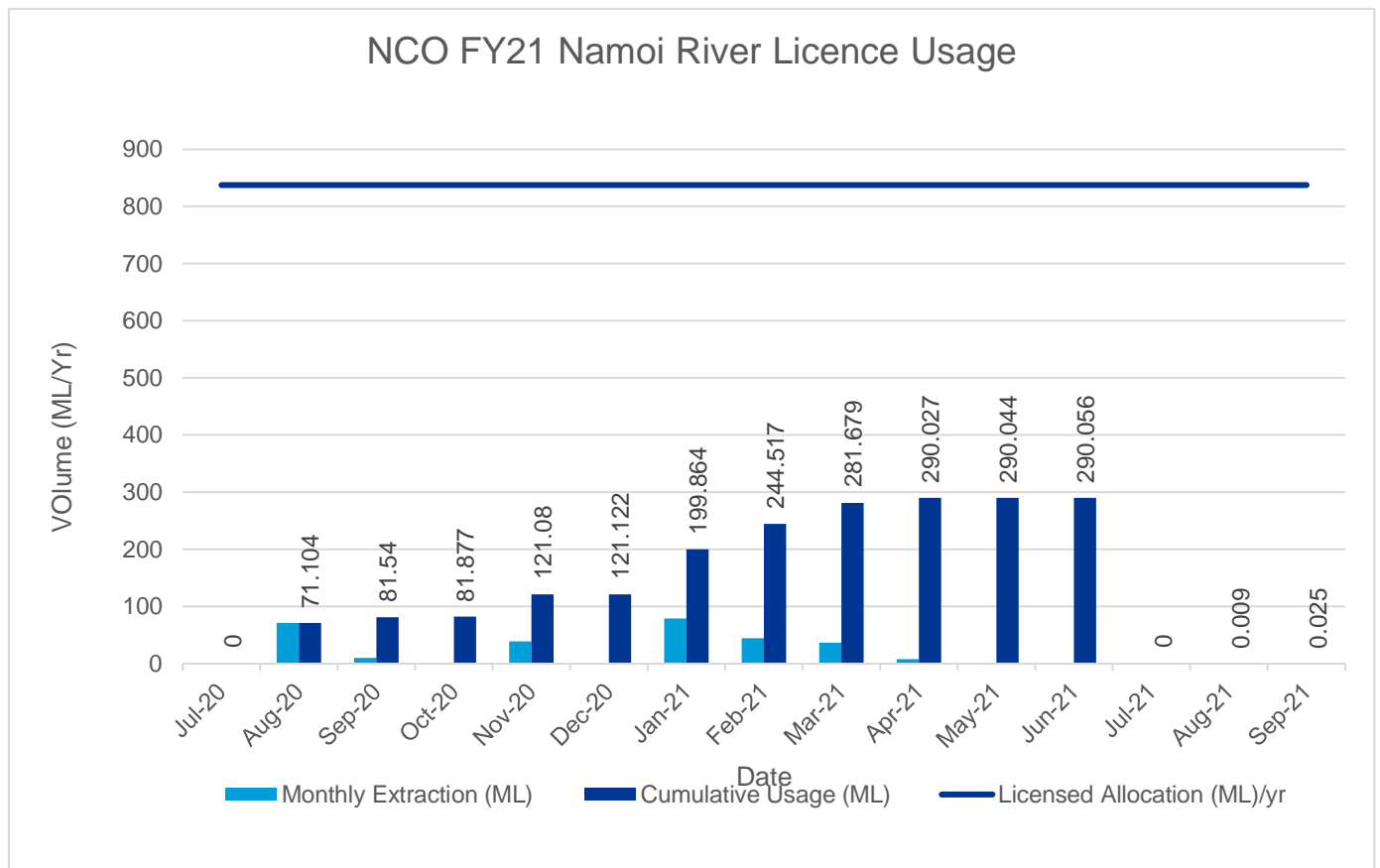


Figure 4: Namoi River licensed water allocation usage for FY 21 and into the current Financial (Water)

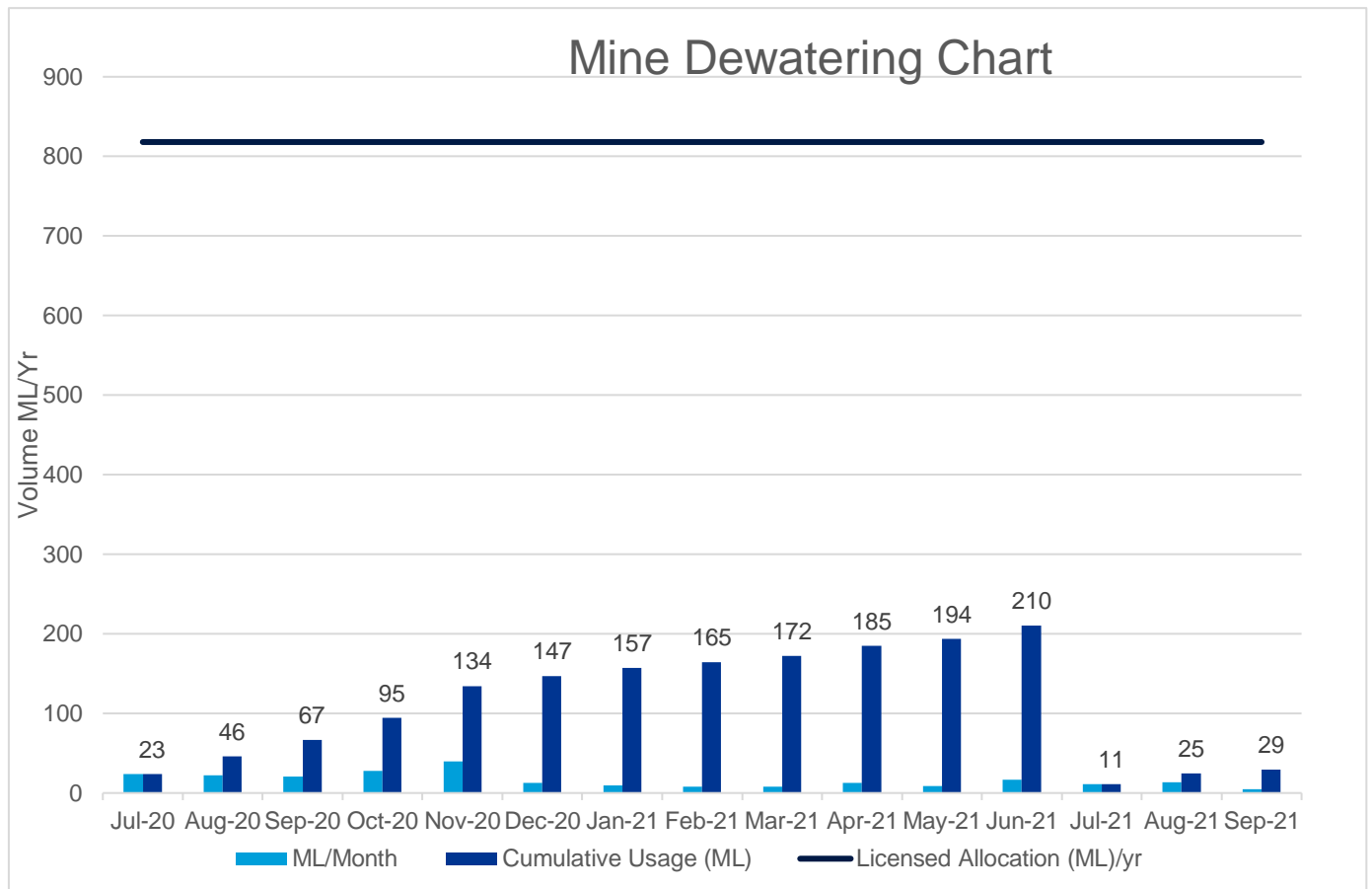


Figure 5: Dewatering from Box Cut work approval for FY 21 and into the current Financial (Water)

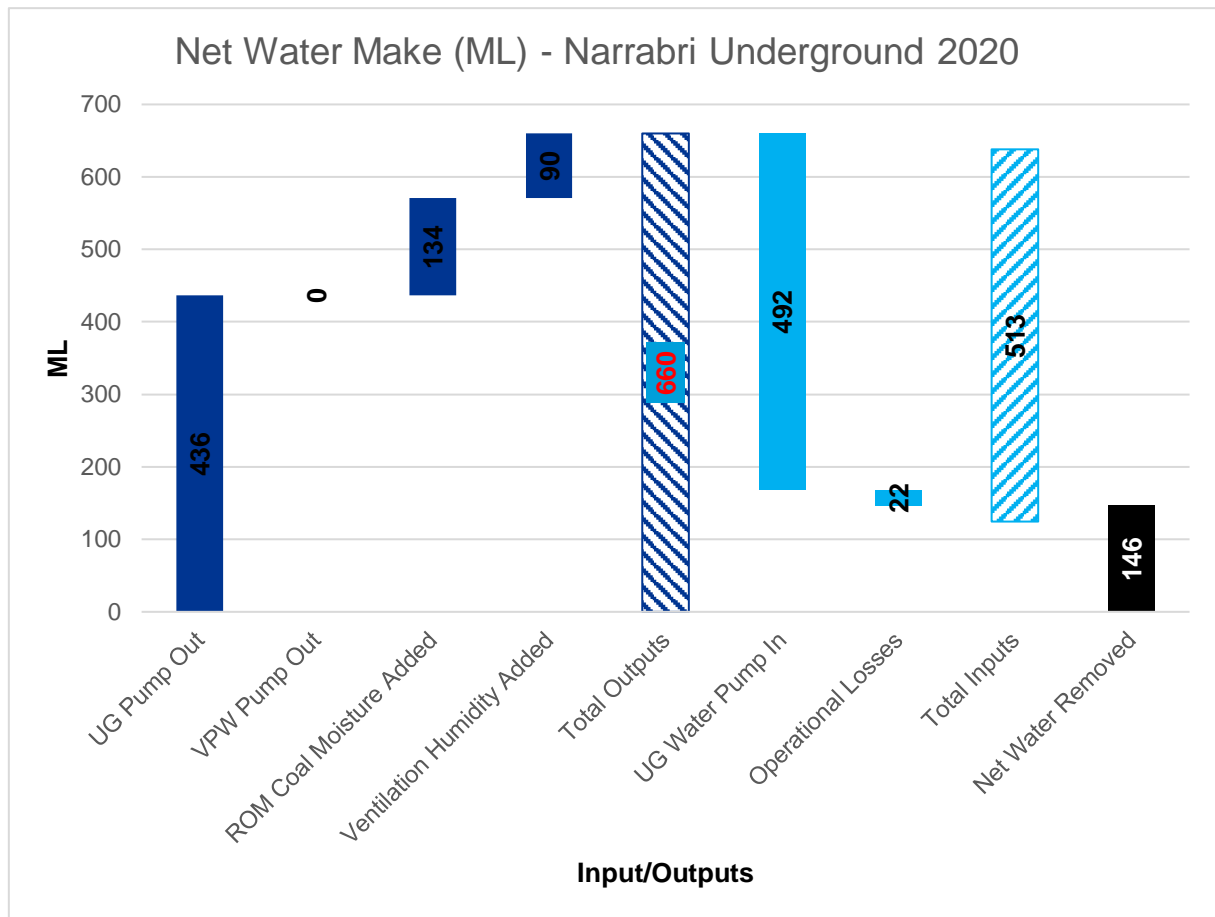


Figure 6: ‘Waterfall chart’ showing detail for Net groundwater removal from the mine for 2020 calendar year

Groundwater Monitoring

Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review. A summary of the 2020 groundwater review was provided during the March CCC meeting.

Subsidence Monitoring

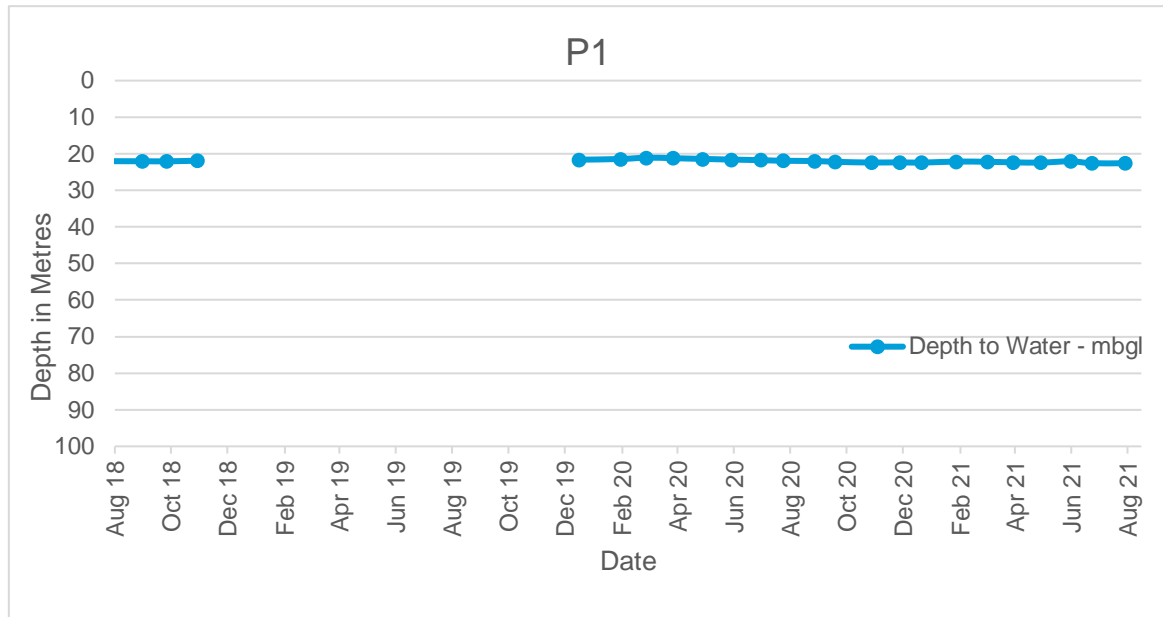
- Line 108 north and Line H were monitored on 14/05/2021.
- LIDAR data is captured and reviewed annually.

Longwall Panels (LW) 109		
	Maximum Predicted Extraction Plan	Maximum Measured
Line 101 – Centre of LW101 – Monitoring has ceased		
Line 102 – Centre of LW102 – Monitoring has ceased		
Line 103 – Centre of LW103 – Northern – Monitoring has ceased		
Line 103 – Centre of LW103 – Southern – Monitoring has ceased		
Line 104 – Centre of LW104 – Northern – Monitoring has ceased		
Line 104 – Centre of LW104 – Southern – Monitoring has ceased		
Line 105 – Centre of LW105 – Northern – Monitoring has ceased		
Line 105 – Centre of LW105 – Southern – Monitoring has ceased		
Line 106 – Centre of LW106 – Northern – Being closed out		
Line 107 – Centre of LW107 – Northern – Monitoring has ceased		
Line 108 (measured 14/05/2021)		
Subsidence (m)	2.75	2.68
Tilt (mm/m)	38	36.3
Tensile Strain (mm/m)	10	16.2
Compressive Strain (mm/m)	13	38.9
Line 108 – Southern		
Line A – Cross Panel Survey Line – Being closed out		
Line B – Pine Creek Tributary 1 – Monitoring has ceased		
Line D – Pine Creek – Monitoring has ceased		
Line E – Pine Creek Tributary 1 Crossline 1 – Monitoring has ceased		
Line F – Pine Creek Tributary 1 Crossline 2 – Monitoring has ceased		
Line G – Pine Creek Tributary 1 Crossline 3 – Monitoring has ceased		
Line H – Cross Panel Survey Line (measured 14/05/2021)		
Subsidence (m)	2.75	2.75
Tilt (mm/m)	53	31.70
Tensile Strain (mm/m)	13 – 20^	16.60
Compressive Strain (mm/m)	16 – 24^	9.60

Hydrographs for Groundwater Monitoring Wells



Figure 7: Location of groundwater monitoring wells



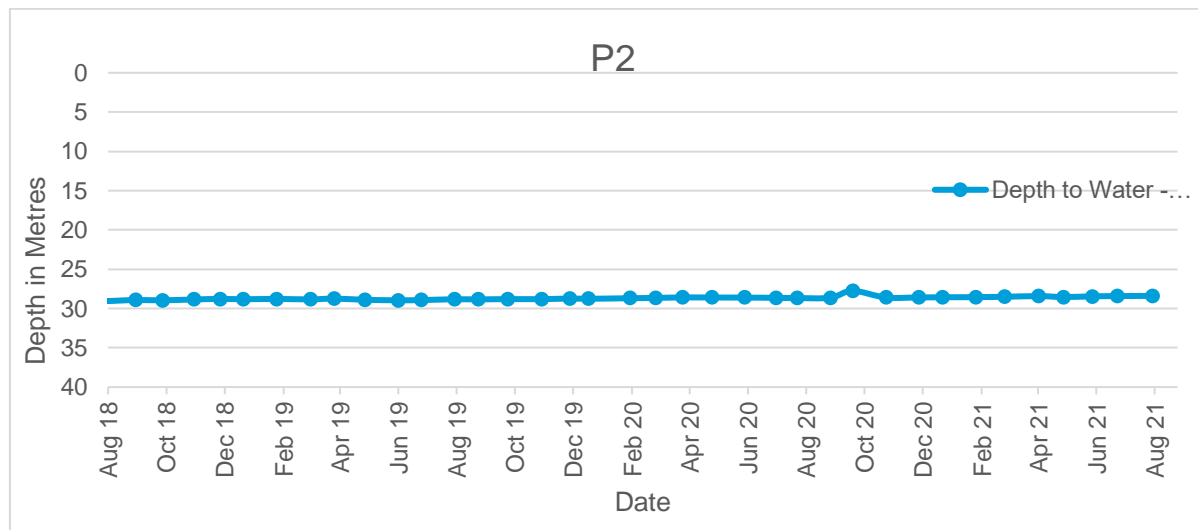
NCO Monitoring bore ID: P1

Location: Longsight

Geological unit: Garrawilla Volcanics

Bore depth: 50m

Explanation: Gap in data is due to land access issues.

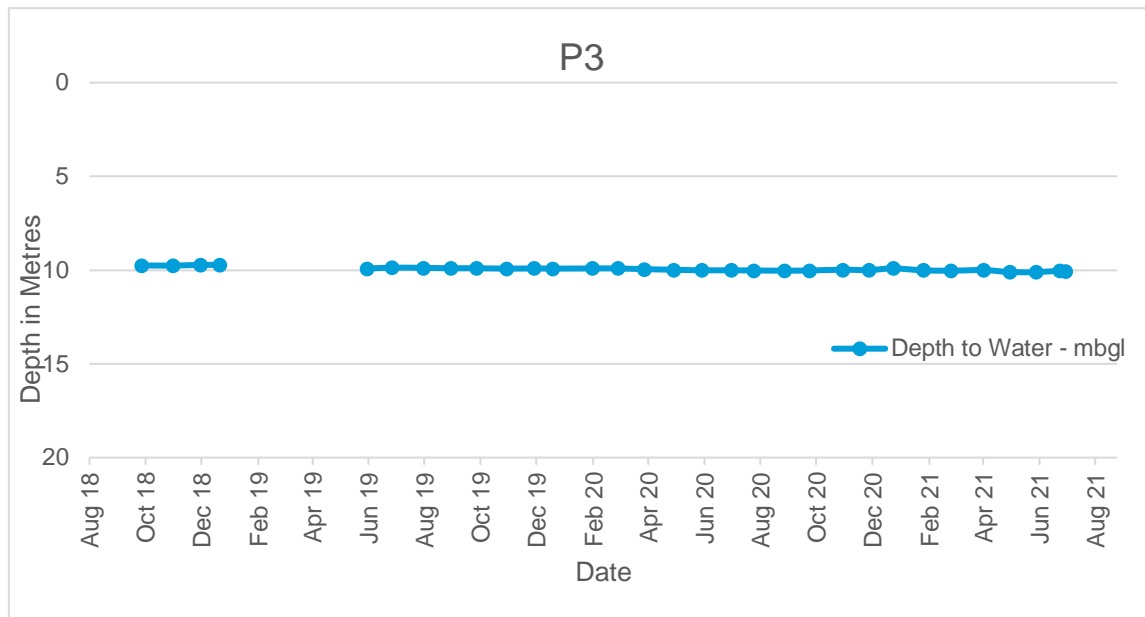


NCO Monitoring bore ID: P2

Location: Matilda

Geological unit: Napperby Formation

Bore depth: 50m

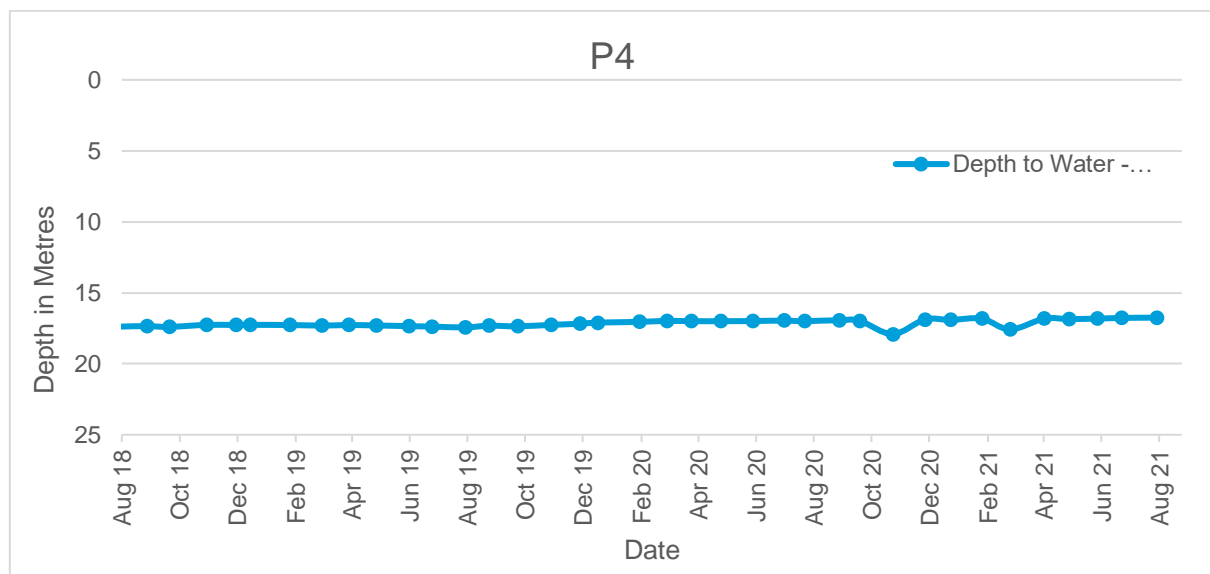


NCO Monitoring bore ID: P3

Location: Bow Hills

Geological unit: Pamboola Formation

Bore depth: 45m

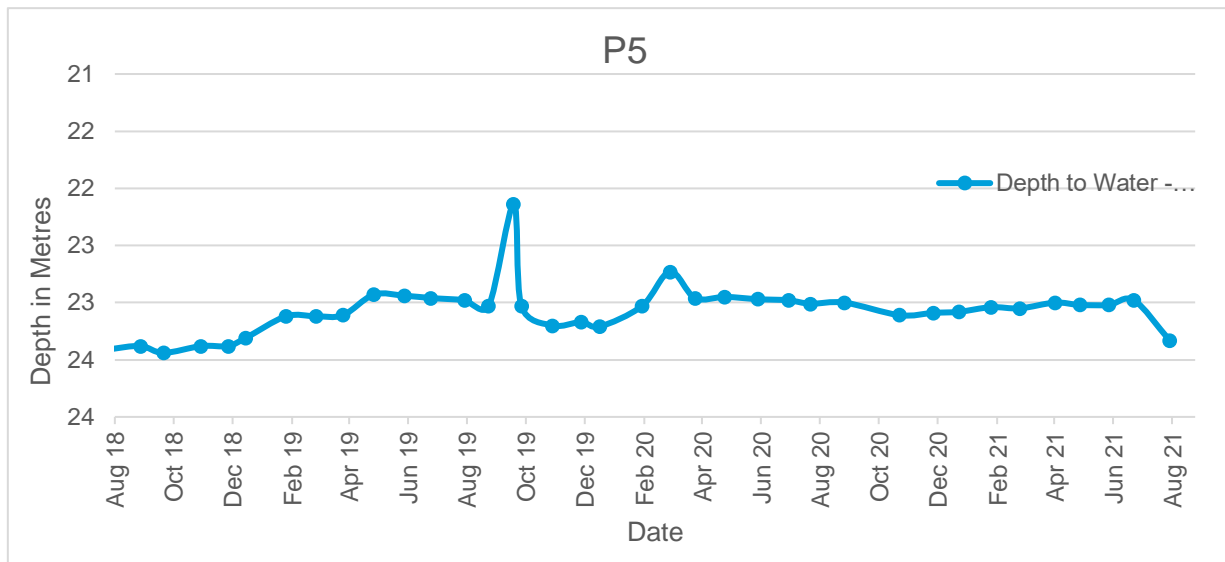


NCO Monitoring bore ID: P4

Location: North of Newhaven on Kamilaroi highway

Geological unit: Napperby Formation

Bore depth: 30m



NCO Monitoring bore ID: P5

Location: Unknown - shown on Figure 10

Geological unit: Pamboola Formation

Bore depth: 30m

No Graph

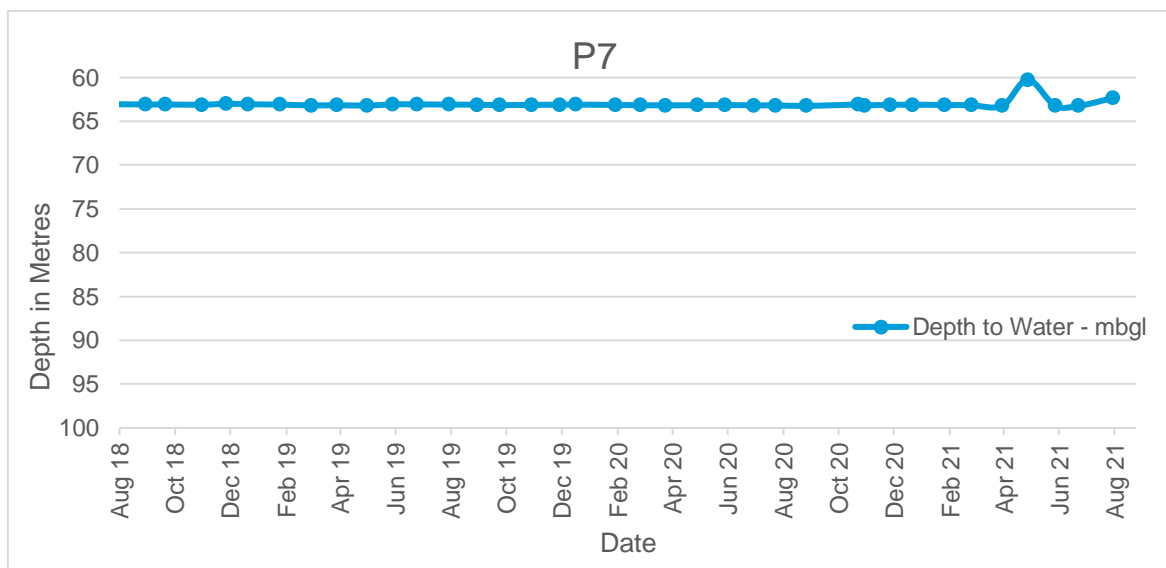
NCO Monitoring bore ID: P6

Location: shown on Figure 10

Geological unit: Pilliga sandstone

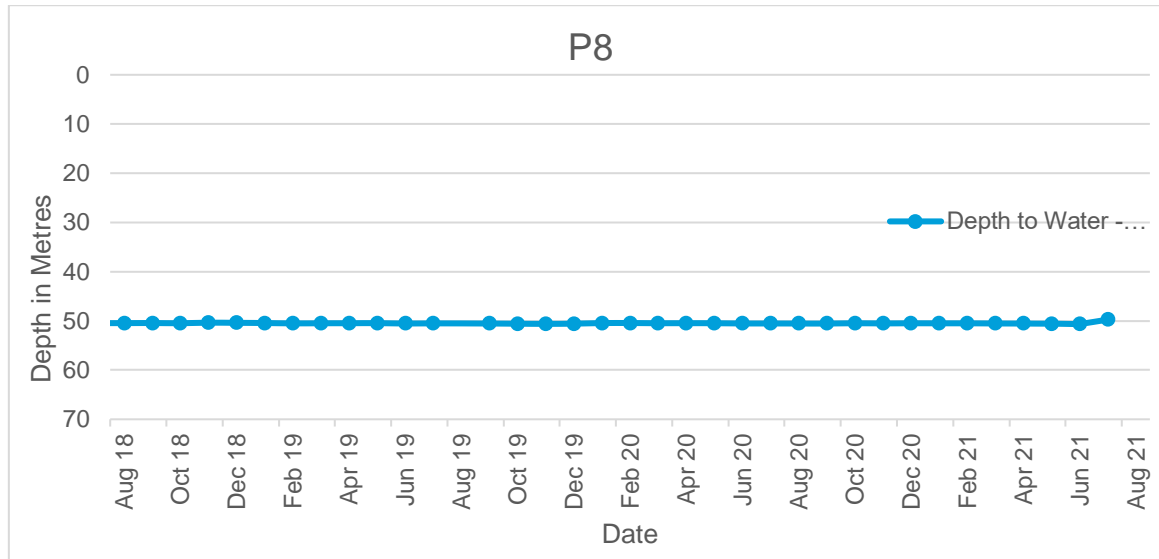
Bore depth: 90m

Explanation: Dry since 2012

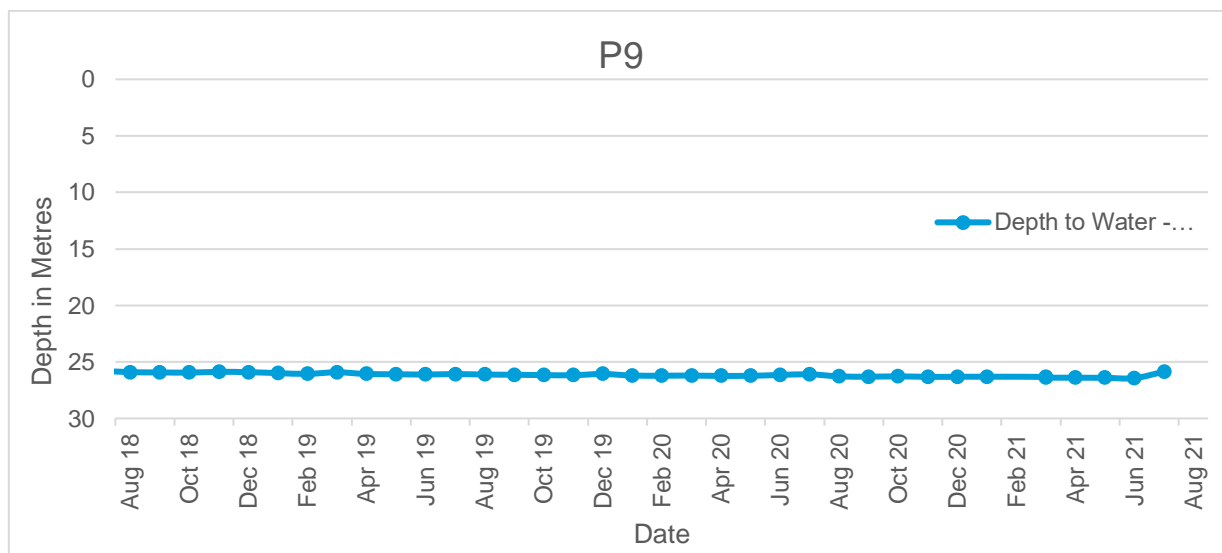


NCO Monitoring bore ID: P7
Location: State forest

Geological unit: Pilliga sandstone

Bore depth: 90m

NCO Monitoring bore ID: P8
Location: Kurrajong

Geological unit: Purlawaugh Formation

Bore depth: 65m

NCO Monitoring bore ID: P9
Narrabri Coal Operations Pty Ltd ABN 76 107 813 963

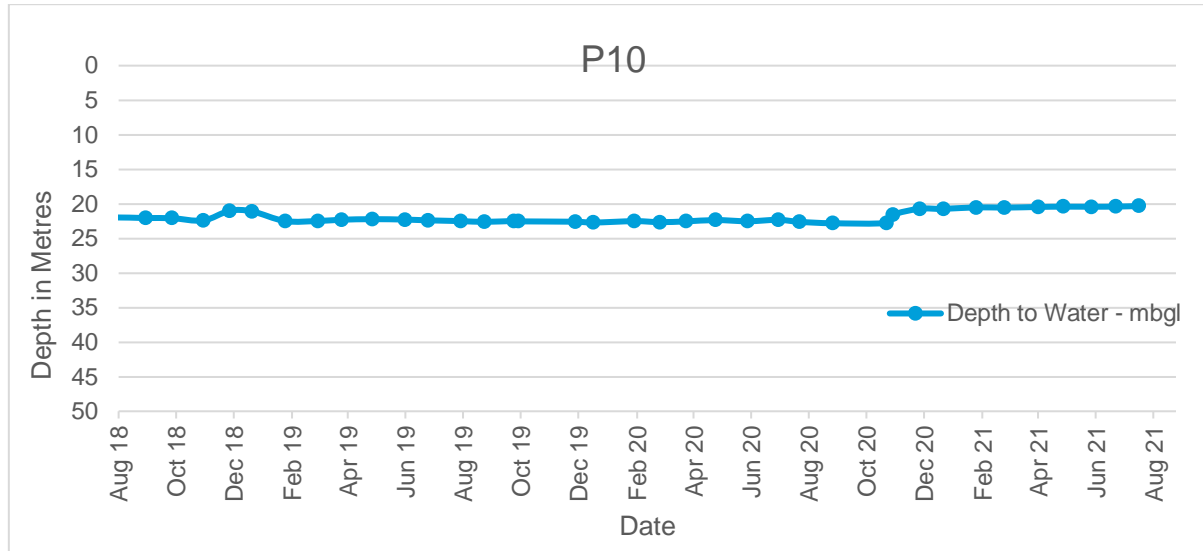
 10 Kurrajong Road, Baan Baa NSW 2390 | P 02 6794 4755 | F 02 6794 4753
 Locked Bag 1002, Narrabri NSW 2390

WHITEHAVENCOAL.COM.AU

Location: NCO – Figure 10

Geological unit: Purlawaugh Formation

Bore depth: 30m

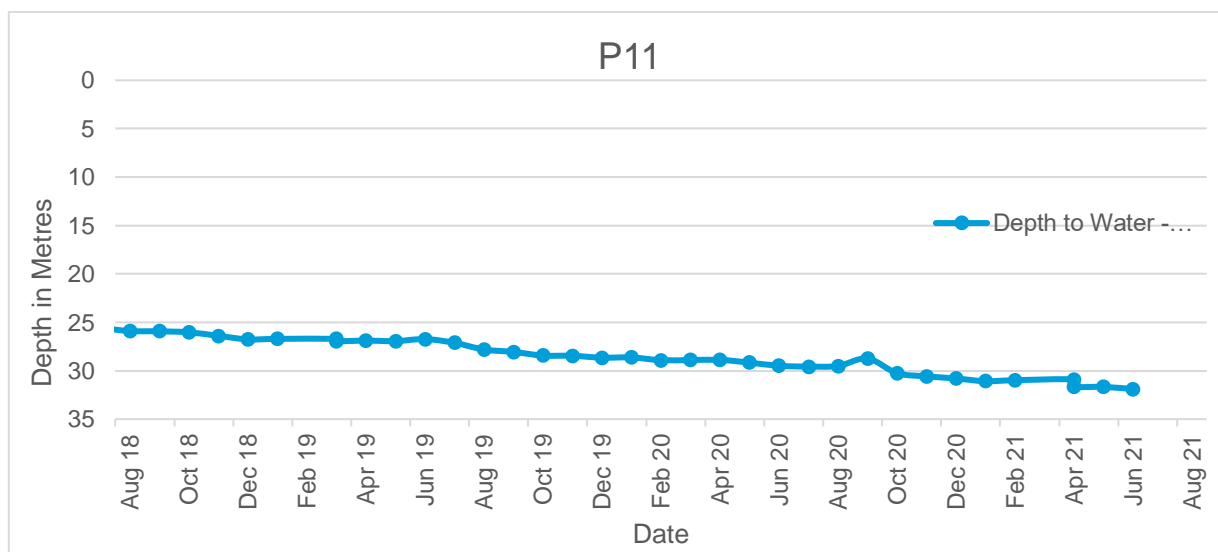


NCO Monitoring bore ID: P10

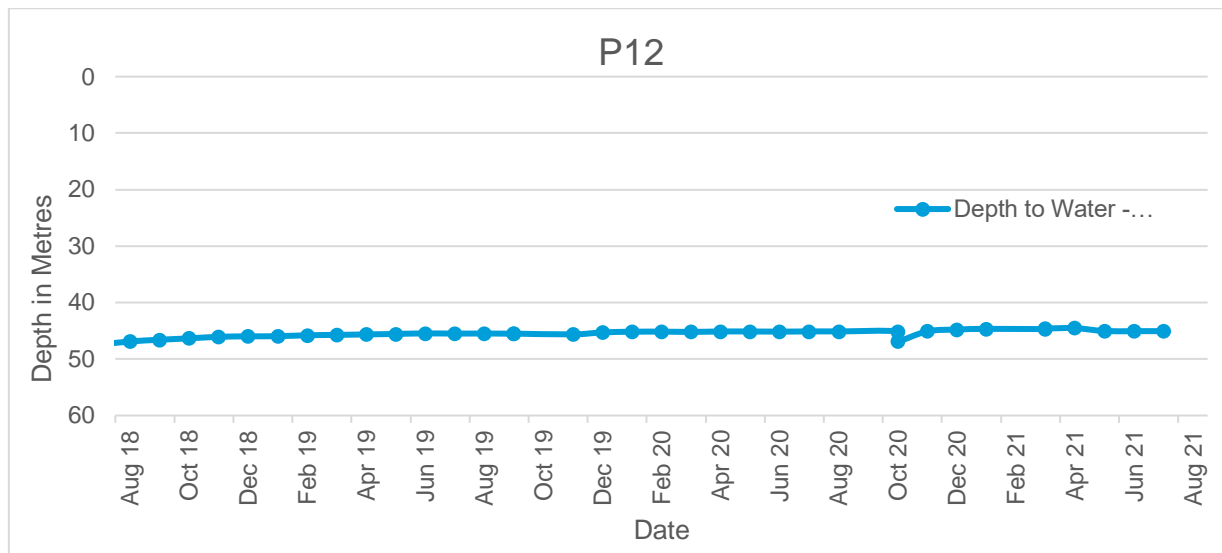
Location: NCO – see figure 10

Geological unit: Napperby Formation

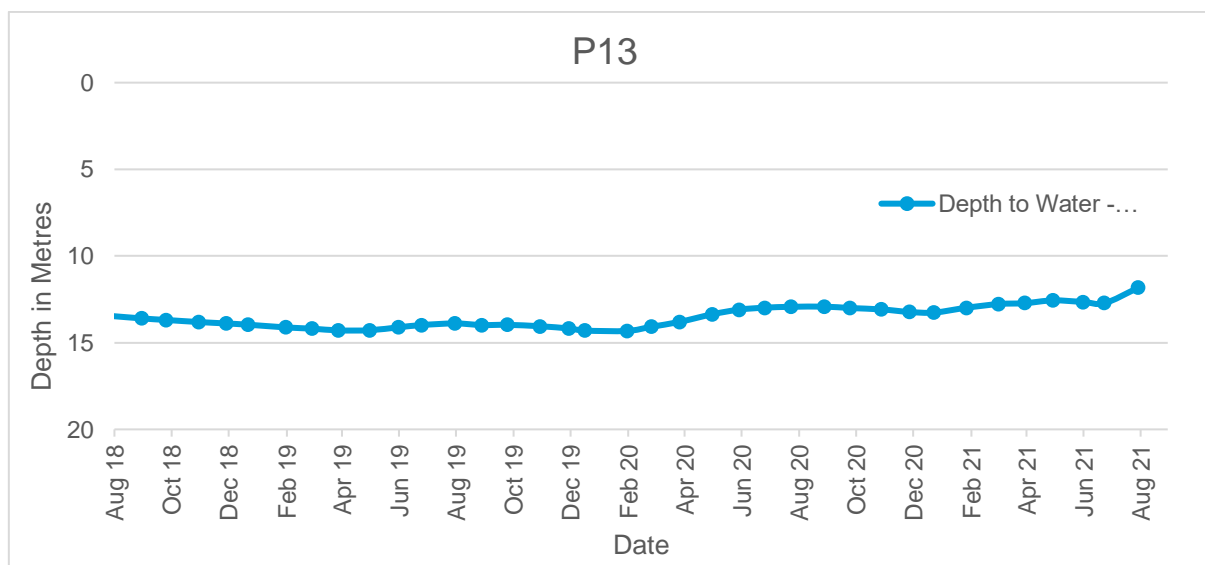
Bore depth: 130m



NCO Monitoring bore ID: P11
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 50m



NCO Monitoring bore ID: P12
Location: NCO – see figure 10
Geological unit: Napperby Formation
Bore depth: 90m



NCO Monitoring bore ID: P13

Location: NCO – see figure 10

Geological unit: Garrawilla Volcanics/Napperby

Bore depth: 30m

No Graph

NCO Monitoring bore ID: P14

Location: See Figure 10

Geological unit: Napperby Formation (no sill)

Bore depth: 78m

Explanation: Dry

No Graph

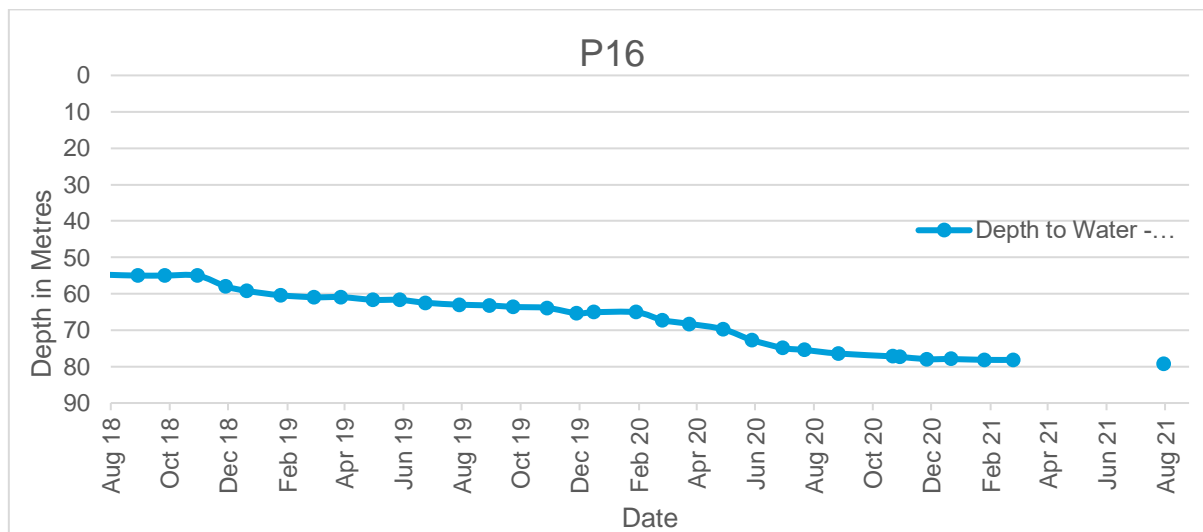
NCO Monitoring bore ID: P15

Location: See Figure 10

Geological unit: Garrawilla Volcanics

Bore depth: 30m

Explanation: Dry



NCO Monitoring bore ID: P16

Location: State forest (Western Boundary) – see figure 10

Geological unit: Garrawilla Volcanics

Bore depth: 146m

Note: Space in data is due to dipping tape stopping at 82m.

No Graph

NCO Monitoring bore ID: P17

Location: See figure 10

Geological unit: Purlawaugh Formation

Bore depth: 56m

Explanation: Dry since 2009

No Graph

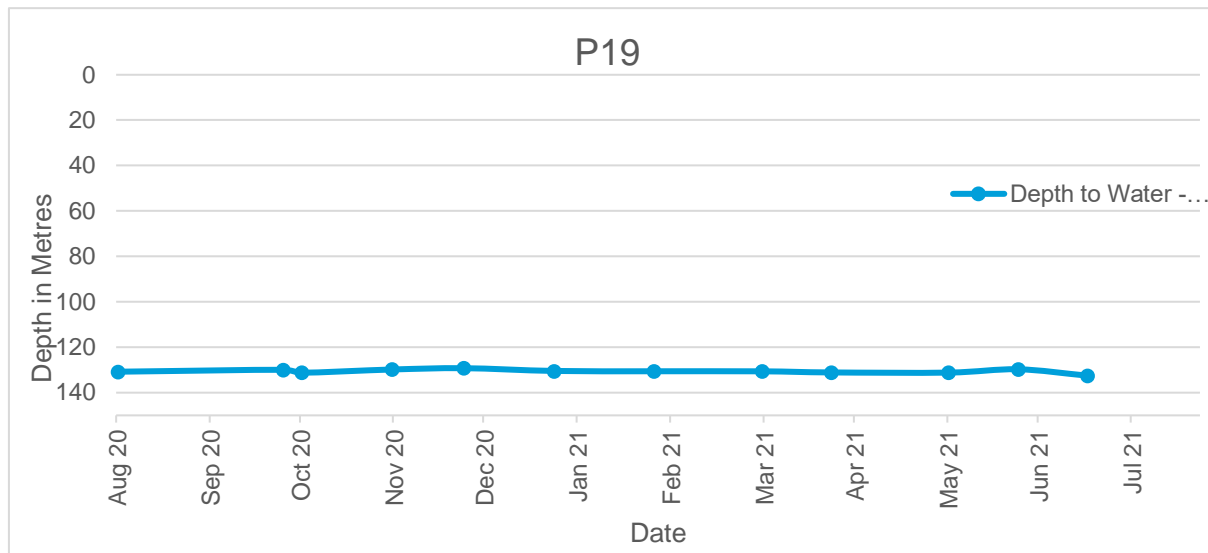
NCO Monitoring bore ID: P18

Location: See figure 10

Geological unit: Hoskissons seam

Bore depth: 146m

Explanation: Dry since 2011



NCO Monitoring bore ID: P19

Location: NCO

Geological unit: Pamboola

Bore depth: 187m

Explanation: Wrong bore previously monitored, true location monitored since August 2020

No Graph

NCO Monitoring bore ID: P20

Explanation: Cemented up – no longer monitoring

No Graph

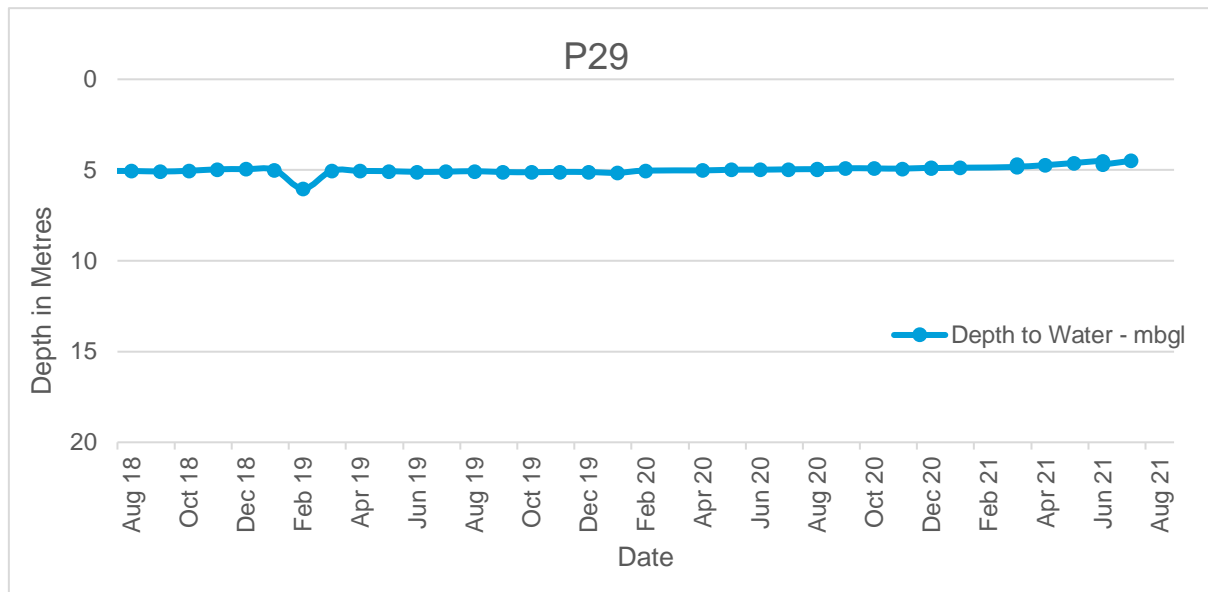
NCO Monitoring bore ID: P28

Location: See figure10

Geological unit: Napperby Formation (above sill)

Bore depth: 25m

Explanation: Dry since 2012

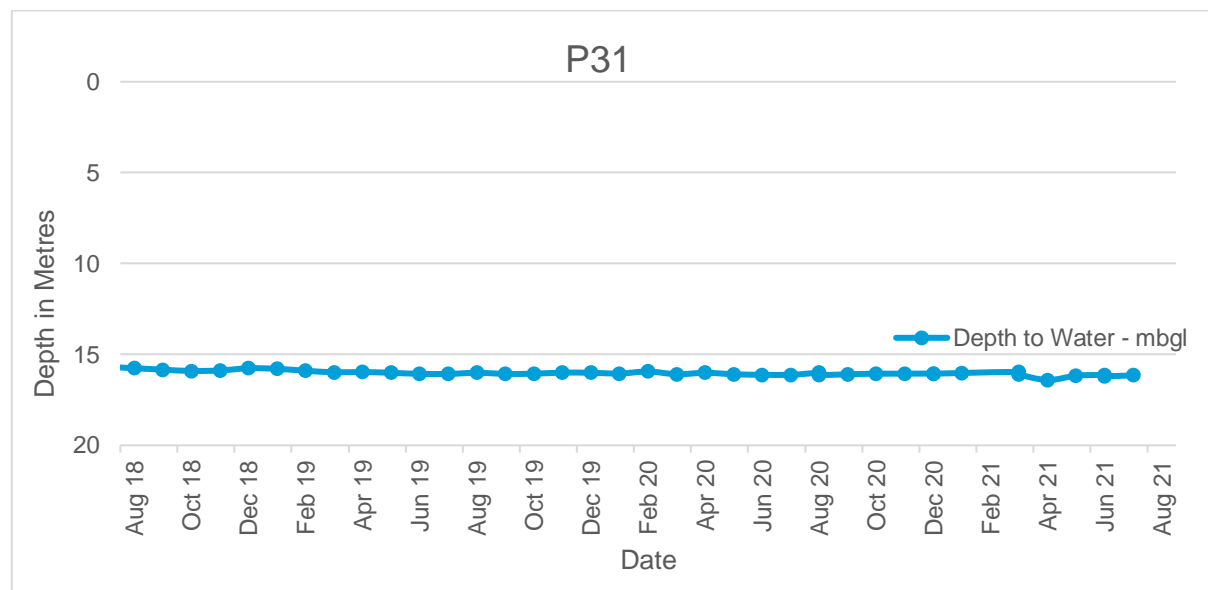


NCO Monitoring bore ID: P29

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby Formation (above sill).

Bore depth: 25m

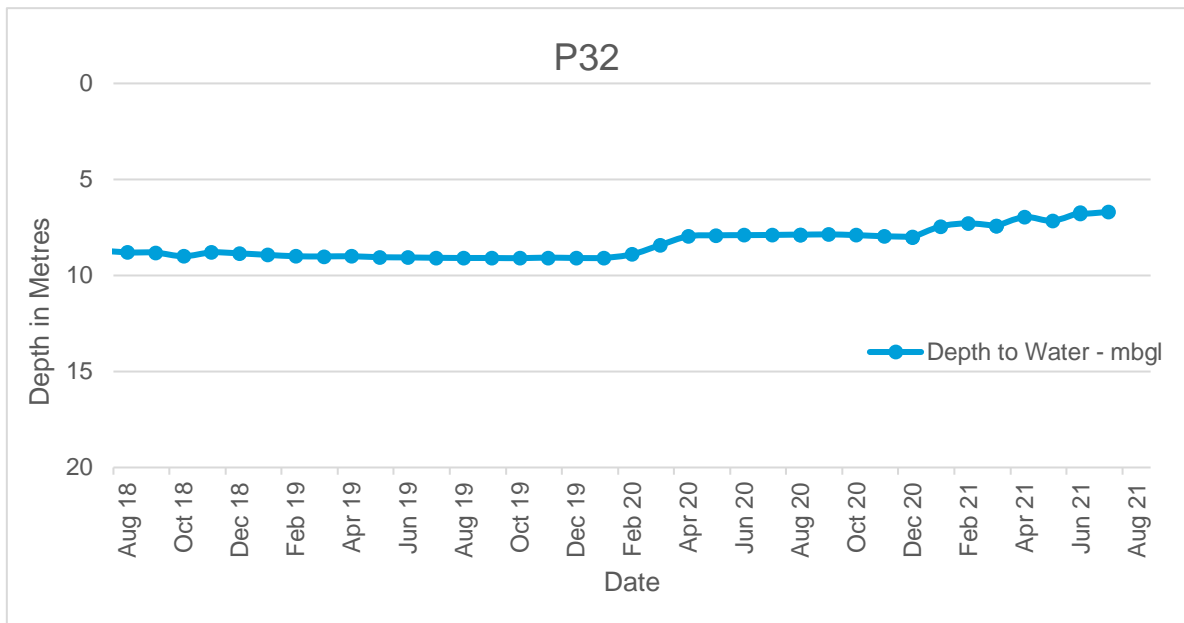


NCO Monitoring bore ID: P31

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby formation (above sill)

Bore depth: 15m



NCO Monitoring bore ID: P32

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

NCO Monitoring bore ID: P33

Location: See figure 6

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

Explanation: Dry since 2012

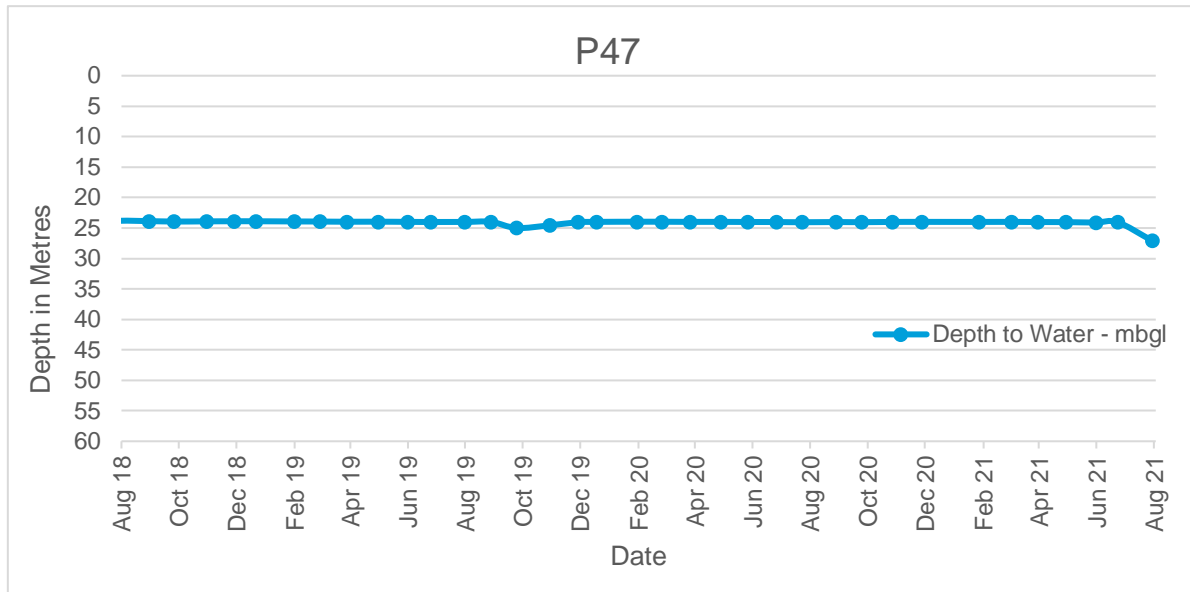
NCO Monitoring bore ID: P24

Location: See figure 6

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

Explanation: Dry since 2012

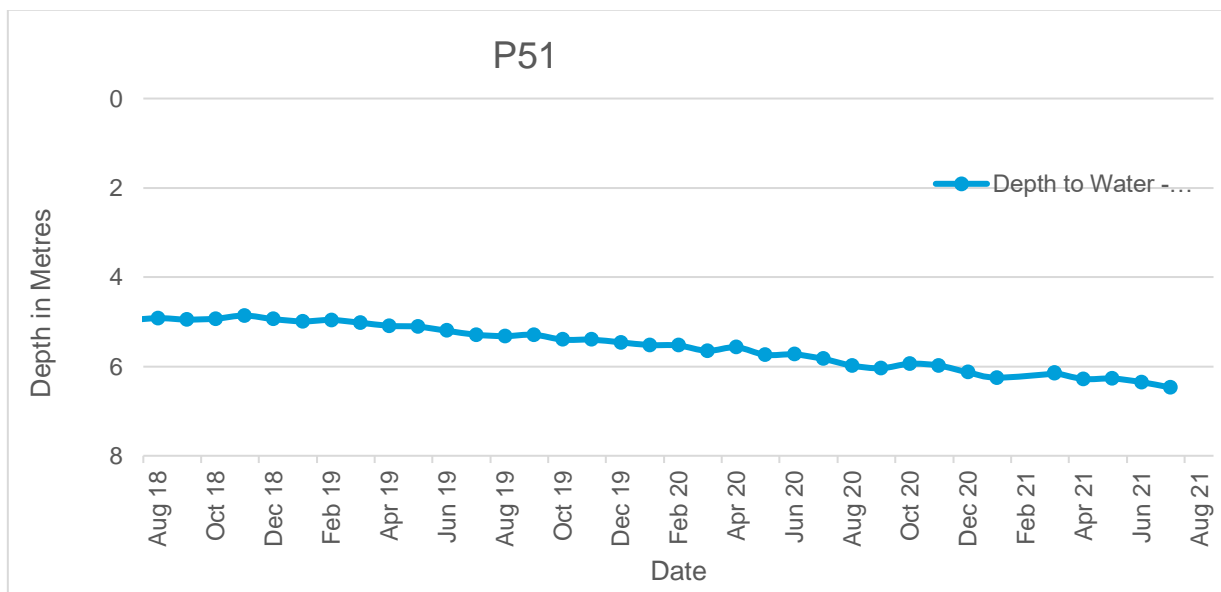


NCO Monitoring bore ID: P47

Location: NCO – see figure 10

Geological unit: Garrawilla Volcanics

Bore Depth (m): 31m



NCO Monitoring bore ID: P51

Location: NCO

Geological unit: Garrawilla Volcanics

Bore Depth (m): 17m

Narrabri Mine Community Consultative Committee Meeting #55

Date: Wednesday 15 December 2021
Time: 5:00pm
Location: Bann Baa Hotel

Present: Russell Stewart (RS)
James Stieger (JS)
Ian Duffy (ID)
Peter Webb (PW)
Mark Foster (MF)
Donna Ausling - Narrabri Shire Council (CR)
Brent Baker (BB) – Narrabri Coal
Gerald Linde (GL) - Narrabri Coal
David Ellwood (DE) – Narrabri Coal
Shane Rily - Narrabri Coal

Apologies: None

1. DECLARATION OF PECUNIARY INTEREST

No changes to previous.

2. PREVIOUS MINUTES

RS asked if everyone has read previous minutes.

BB advised that no feedback on minutes has been received from members and therefore there have been no changes to the minutes issued on 25 October 2021.

RS asked for previous minutes to be accepted as a true and accurate record.

Moved: ID Seconded: JS

2.1 BUSINESS ARISING FROM PREVIOUS MINUTES

No further actions arising from previous meeting.

3. OPERATIONS PROGRESS REPORT AND SAFETY UPDATE

Presented by GL

- Mining: 1.8 million tonne produced FYTD.
- Longwall relocation to Panel 110 currently underway therefore coal production idle at moment.
- Safety: 5 injuries since previous meeting. No major injuries. Increasing energy on safety management.
- Longwall 110 scheduled to start up this weekend.
- Modification 7 to Project Approval for bord and pillar mining in panels 201 and 202 has been approved by the Department of Planning, Industry and Environment. Aiming to commence mining in March 2022. MF and JS queried location of panels 201 and 202, general discussion on overlying surface features / property boundaries, DE provided aerial image on computer which shows mine plan layout.

- RS queried recent flooding road closures and impact on mine staffing levels. GL said we lost about quarter of workforce, so bit of an impact for a few days.
MF queried how COVID measures are impacting operations. GL provided overview of site procedures for employees that have been confirmed as close contacts or positive cases and how these various scenarios are managed for the mining operations.

4. ENVIRONMENTAL MONITORING REPORT

Presented by BB

- INCIDENTS: No reportable incidents to regulatory agencies since previous CCC meeting. Nil for calendar year.
 - COMPLAINTS: Since the beginning of 2021 one complaint has been received. The nature of the complaint was related to odour.
 - DEPOSITIONAL DUST:
 - 2021 annual average YTD for all monitoring locations trending below licence limit of 4 g/m²/month.
 - PM10 AIR QUALITY:
 - No exceedances of the 24 hour limit within last 12 month period at Claremont monitoring location. There has been one exceedance of the 24 hour compliance limit of 50 µg/m³ within the last 12 month period at Turrabaa monitoring location. This exceedance was communicated to DPI&E on Friday the 2nd of July. DPI&E acknowledged that this exceedance was not related to mining operations and likely to be caused by adjacent roadwork activities on Kamilaroi Highway upgrade project.
 - Rolling 12 month average currently below annual average limit (of 30 µg/m³) for the two monitoring locations (Claremont and Turrabaa).
 - QUARTERLY NOISE MONITORING

Quarter 1 attended noise monitoring was completed during February, with compliance achieved at all locations during all time periods.

Quarter 2 attended noise monitoring was completed in June, with compliance achieved at all locations during all time periods.

Quarter 3 attended noise monitoring was completed in September, with compliance achieved at all locations during all time periods.

Quarter 4 attended noise monitoring scheduled for week of 12-16 December.
 - SURFACE WATER MONITORING:

During November and December controlled discharges of stormwater from sediment dams was conducted in accordance with licence conditions. Water samples of the discharge water and the downstream ambient watercourse are collected and tested against limits specified in the Environment Protection Licence; no exceedances of water quality criteria were recorded during the discharge events.
 - WATER LICENSING: Presented graphs showing NCO water licence allocation usage. Usage from water licences has been minimal with recent wet weather and mine has been utilising water captured on-site. Presented updated chart showing mine water inputs and outputs, and actual net water usage for 2021 calendar year.
- GROUNDWATER MONITORING: Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review. A summary of the 2021 groundwater review will be provided at next CCC meeting.
- SUBSIDENCE MONITORING: No updates since previous CCC meeting. An annual review of monitoring results is undertaken against subsidence predictions and a summary will be provided at next CCC meeting.

JS asked for more detail on water quality of stormwater discharges, to compare against discharge limits.

ACTION: BB to include requested detail on future environmental monitoring reports.

GL mentioned additional infrastructure and activities to manage stored surface water, including:

- additional water treatment and evaporation of brine;
- amending management plans to discharge clean treated water into Namoi River in accordance with Project Approval;
- preparing design plans for construction of new brine dam.

No further questions/comments from members.

5. STAGE 3 UPDATE

David Elwood provides update.

- NCO has received majority of draft conditions for the new Project Approval but still waiting on a few conditions to be provided by the Department of Planning, Industry & Environment (DPIE). NCO has provided comments back to the Department on the draft conditions.
- The DPIE have advised Stage 3 project will be referred to the Independent Planning Commission (IPC) for final consent approval.
- Regarding potentially impacted groundwater bores and previously discussed 'make good' agreements. The draft Stage 3 Approval conditions require NCO to *'use its best endeavours to finalise all make good agreements within two years of commencement of the project'*. NCO are currently in consultation with the affected landholders and plan on are aiming to complete all required arrangements well within the required 2 year timeframe. The draft conditions only allow for a cash settlement if water cannot be supplied to the affected landholders. NCO believe that all proposed new bores will be able to provide a suitable groundwater supply. NCO are finalising draft legal agreements for provision to the affected landholders, and will continue consultation to progress through execution of the agreements and required bore installation activities. DE repeated that the Stage 3 groundwater impact assessment predicted it would be approximately 100 years before any impacts to the private landholder bores are experienced.
- Regarding the intersection of Kurrajong Creek Road and Kamilaroi Highway. Transport for NSW raised concerns through the consultation process with the findings of the Stage 3 traffic assessment, where it was identified that a low risk (i.e. 1 in 5 years) of the queued traffic in the highway turning bays backing up due to train movements across the road crossing. Transport for NSW raised concerns with the intersection being able to adequately manage the traffic flow. NCO have committed to funding the design and upgrade of the intersection to Transport for NSW specifications. JS expressed frustration about the lack of consultation with him as the affected landholder across the highway from the intersection. DE explained that these developments have only occurred in the last few weeks, and NCO opinion is that current intersection performance is adequate, however Transport for NSW were firm in their requirement for an intersection upgrade.

No further questions/comments from members.

6. GENERAL BUSINESS

- JS wants to put on record that the mine infrastructure (eg. brine dams and rail loop) have altered stormwater surface flow paths which in very wet times results in more surface flows being directed into the Kurrajong Creek tributary that flows past his residence. JS is concerned that this could result in the tributary overtopping its banks and causing flooding to his house. JS expressed concerns that now with more work planned such as highway intersection upgrade and new brine pond it will funnel even more stormwater into the Kurrajong Creek tributary and past his house. BB and GL agreed to review the historical flood assessments that have been completed as part of mine Stage 1 and Stage 2 approvals processes, with a view to updating any existing flood models. JS is to be included in consultation and provided outcomes of this flood assessment review process.

ACTION: NCO to review historical flood assessment.

- DE mentioned the application for an Exploration Licence in the area northwest of the existing Mine Lease that was discussed with CCC members in the June 2021 meeting. NCO lodged the application, however the Department advised that the forms on their website were incorrect and therefore NCO were instructed by the Department to withdraw the application. NCO have since received a letter from DPI&E giving consent to make the application and advising that the forms have been corrected. The resubmission will be completed in January or February of 2022, and essentially will be

the same as previous application, however the process requires NCO to publish another advertisement of the application. NCO will notify CCC members prior to the application and newspaper advertisement. General discussion around NSW and areas still available for coal leases.

- RS expressed thanks to Whitehaven for partnering with the Narrabri Chamber of Commerce to run the upcoming Narrabri Christmas Street Carnival scheduled for Thursday night 16 December.

No further General Business.

NEXT MEETING

- 5pm Wednesday the 16 March at Narrabri Mine.

Narrabri Mine Community Consultative Committee Meeting #55

Environmental Monitoring Report: October - December 2021

Reportable Incidents

Nil since previous CCC meeting.

Complaints

Nil since previous CCC meeting.

Since the beginning of 2021 one complaint has been received. The nature of the complaint was related to odour.

Deposited Dust Monitoring

Deposited Dust samples remain in the field for a period of 30 days (+/- 2 days).

Total Insoluble Matter results (g/m ² /month)											
Month	ND1 Turrabaa	ND2 Claremont	ND3 Bow Hills	ND4a New Matoppo	ND5 Claremont	ND6 Willarah	ND7 Claremont	ND8 Claremont	ND11 Oakleigh	ND12 Merriman	ND13 Darjeeling
Sep-21	1.3	2.1	1.3	0.7	5.7	11.1	0.7	0.5	1	0.2	0.5
Oct-21	1.7	1.9	3.7	0.7	2.6	0.8	1.6	0.5	0.7	0.6	0.2
Nov-21	0.8	0.3	0.4	1.2	2.7	5.7	0.1	0.3	1.2	0.2	0.7
Annual Average	2.1	0.9	1.6	2.3	2.2	2.6	1.4	0.5	1.3	0.6	1.4

2021 annual average (year to date) for all monitoring locations is below the licence limit of 4 g/m²/month (Insoluble Matter).

PM₁₀ High Volume Air Sampling (HVAS)

Samples are collected over a 24 hour period once every week, with a (24hr) compliance limit of 50 µg/m³, and an annual average limit of 30 µg/m³.

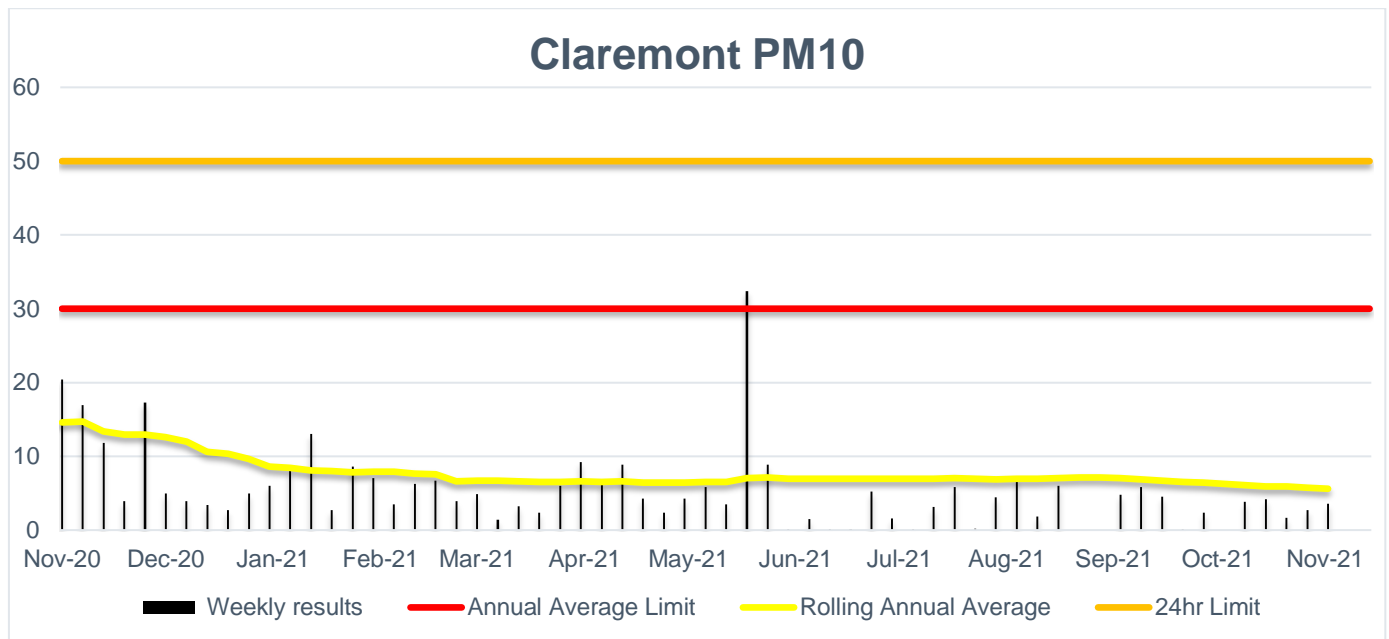


Figure 1: Claremont PM₁₀ High Volume Air Sampler results for last 12 month period.

The Claremont HVAS is returning a rolling annual average of 5.60 µg/m³, which is below the annual average limit of 30 µg/m³. There have been no exceedances of the 24 hour compliance limit of 50 µg/m³ within the last 12 month period.

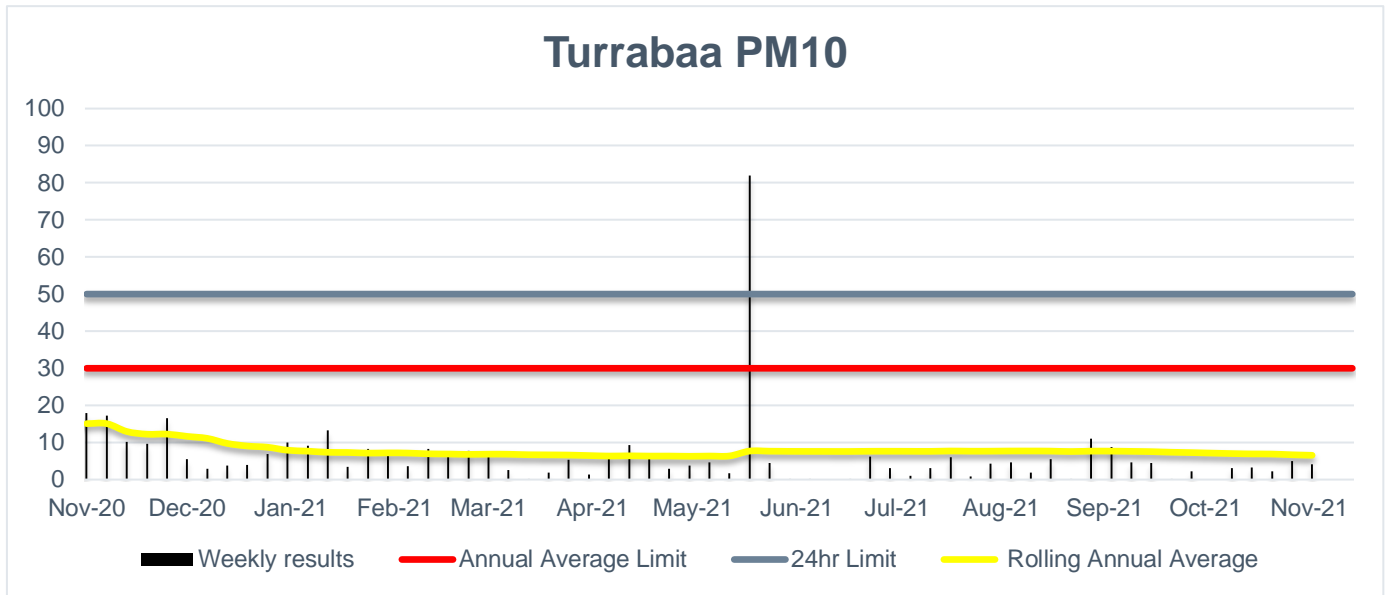


Figure 2: Turrabaa PM10 High Volume Air Sampler results for last 12 month period.

The Turrabaa HVAS is returning a rolling annual average of $6.54\mu\text{g}/\text{m}^3$, which is below the annual average limit of $30\mu\text{g}/\text{m}^3$. There has been one exceedance of the 24 hour compliance limit of $50\mu\text{g}/\text{m}^3$ within the last 12 month period ($82\mu\text{g}/\text{m}^3$ on 02/06/2021); this exceedance was communicated to DPI&E who acknowledged that the dust result was not related to mining operations and likely to be caused by roadwork activities on the Kamilaroi Highway.

Noise Monitoring

- Quarter 1 attended noise monitoring was completed during February, with compliance achieved at all locations during all time periods. Results were reported during March CCC meeting.
- Quarter 2 attended noise monitoring was completed in June, with compliance achieved at all locations during all time periods. Results were reported during September CCC meeting.
- Quarter 3 attended noise monitoring was completed in September 2021, with compliance achieved at all locations during all time periods. The results are provided in the table copied below.
- Quarter 4 attended noise monitoring is scheduled for December 2021, with results reported at the next CCC meeting.

Table 1 Performance Assessment – Operations

EPL ID	Location	Date	Narrabri Mine Contribution dBA				Noise Criteria ¹	Measurement Periods	Standard Weather ³			Compliant
			LAeq 15 min Day	LAeq 15 min Evening	LAeq 15 min Night	LA1 (1 min) Night			Day	Evening	Night	
N5	Oakleigh ²	20/09/2021 ⁴	I/A	25	I/A	I/A	Day, Evening and Night – LAeq(15minute) 35 dBA Night LA1(1minute) – 45 dBA	Day - 1.5 hrs Evening - 0.5 hrs Night – 1hrs	N	N	Y	Y
		21/09/2021 ⁴	I/A	I/A	I/A	I/A			Y	N	Y	Y
		22/09/2021 ⁴	31	I/A	I/A	I/A			Y	Y	N	Y
N6	Newhaven	20/09/2021 ⁴	I/A	28	30	34			N	N	Y	Y
		21/09/2021 ⁴	28	33	34	40			Y	N	Y	Y
		22/09/2021 ⁴	27	23	31	34			Y	N	Y	Y
N8	Haylin View ⁵	20/09/2021 ⁴	I/A	24	I/A	I/A			N	N	N	Y
		21/09/2021 ⁴	I/A	I/A	I/A	I/A			N	Y	Y	Y
		22/09/2021 ⁴	30	30	I/A	I/A			Y	Y	N	Y
N9	High Range ²	20/09/2021	I/A	I/A	26	28			N	N	N	Y
		21/09/2021	I/A	31	32	39			N	Y	Y	Y
		22/09/2021	I/A	I/A	25	27			Y	N	Y	Y
-	Bow Hills ¹	22/09/2021	30	29	38	47		Day 15 min Evening 15 min Night 15 min	N	N	N	Y
-	Ardmona	20/09/2021	I/A	31	<25	25			Y	N	Y	Y
-	Merriman ²	22/09/2021	I/A	I/A	33	39			Y	N	N	Y
-	Matilda ²	22/09/2021	I/A	30	I/A	I/A			Y	Y	N	Y

I/A = Inaudible, N/M = Not Measurable

Note 1: A private agreement between NCOPL and the residents of N1 Bow Hills of 50 dBA LAeq(15minute) is in place. This new level of 50 dBA LAeq(15minute) replaces the levels identified in Conditions 1-3, Schedule 4 of PA 08_0144 Mod 2 and the identical limits contained in condition L3 of Environment Protection Licence No 12789

Note 2: Property is owned by Narrabri Coal Operations

Note 3: Noise levels presented are the highest measured noise level under standard weather conditions over the monitoring period.

Note 4: Evening and Night monitoring conducted on this date, Day monitoring conducted during the following day period.

Note 5: Due to an error, only one 15-minute measurement was able to be undertaken during the daytime monitoring on 22 September.

Narrabri Coal

10 Kurrajong Rd,
Locked Bag 100,
Narrabri NSW 2390

Surface Water Monitoring

During November and December controlled discharges of stormwater from sediment dams was conducted in accordance with licence conditions. Water samples of the discharge water and the downstream ambient watercourse are collected and tested against limits specified in the Environment Protection Licence; no exceedances of water quality criteria were recorded during the discharge events.

Environment Protection Licence 12789- water discharge concentration limits

pH	Oil and Grease	Total Suspended Solids
6.5- 8.5	<10 mg/L	50 mg/L *

*Limit does not apply when rainfall exceeds 38.4mm over a consecutive 5 day period

NSW Water- Licenced Usage

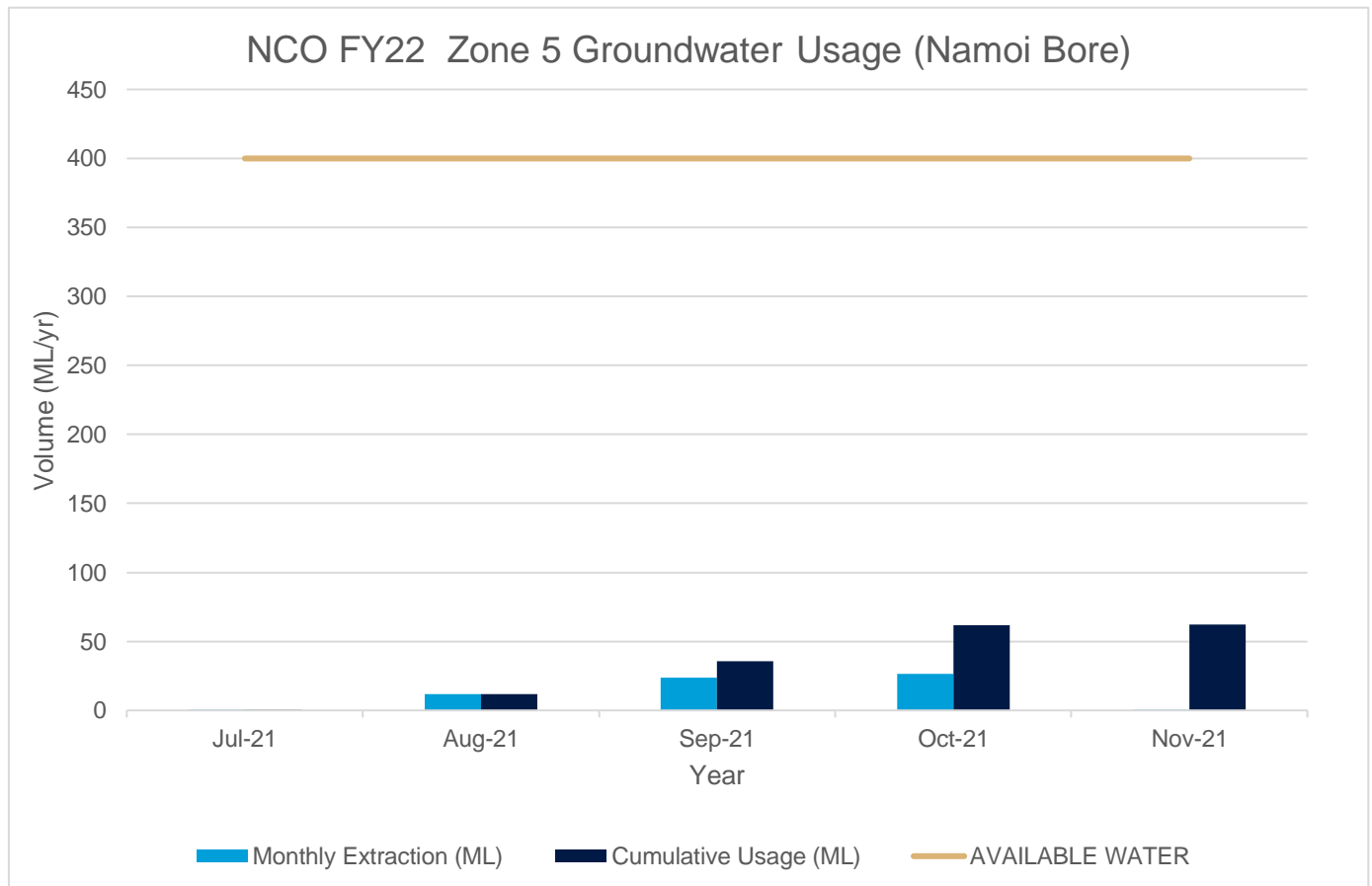


Figure 3: Zone 5 licensed groundwater usage from the Namoi Bore for the current Financial (Water) Year.

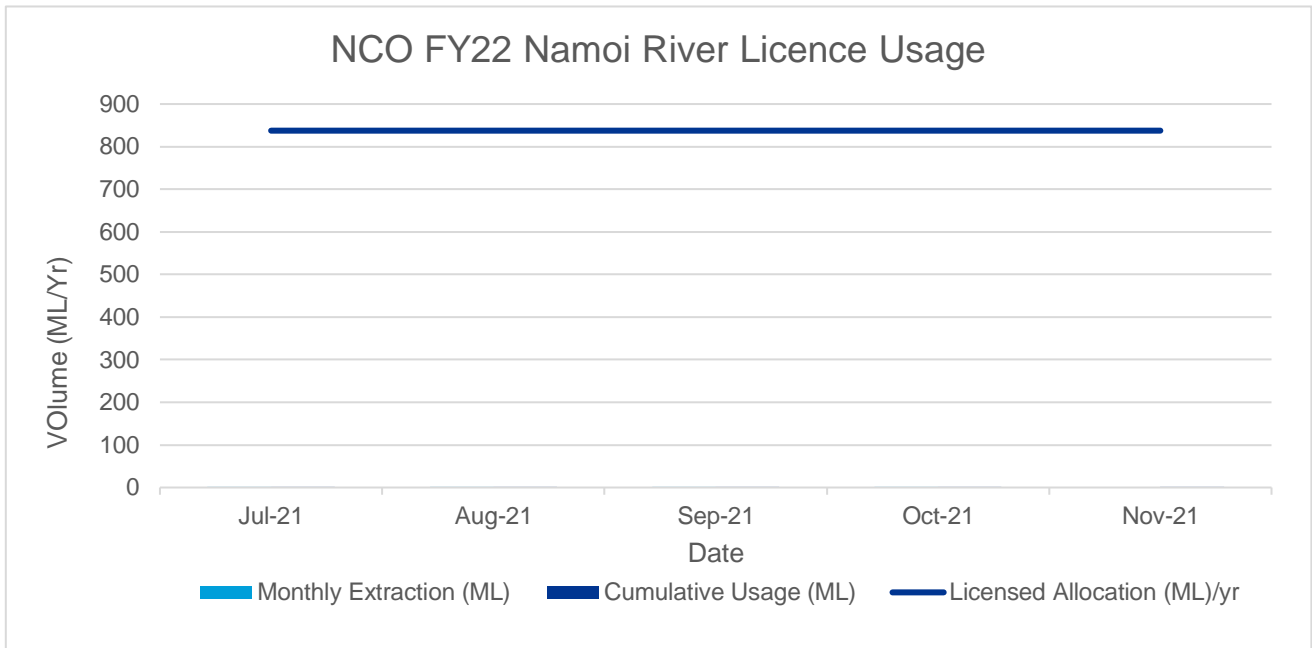


Figure 4: Namoi River licensed water allocation usage for the current Financial (Water)

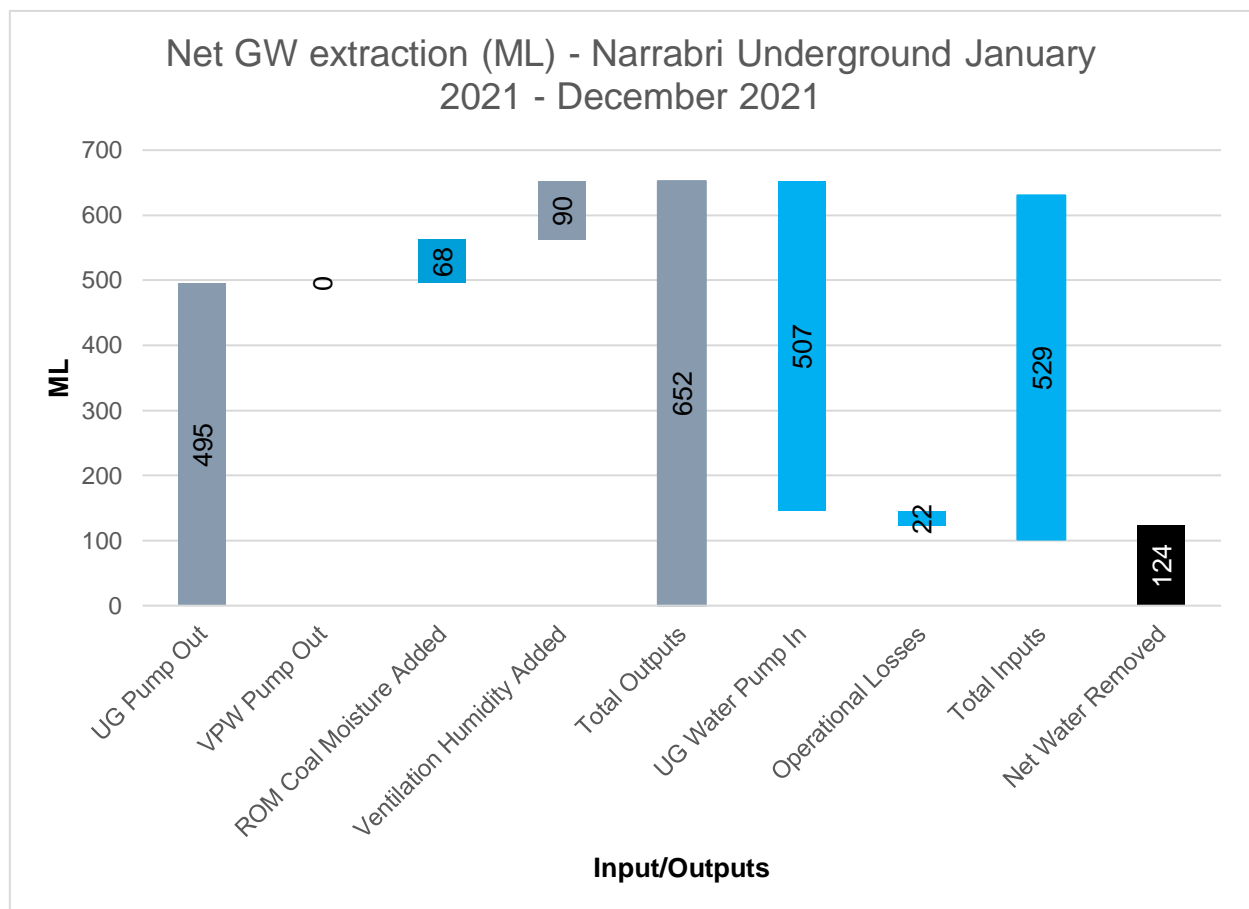


Figure 5: 'Waterfall chart' showing detail for Net groundwater removal from the mine for 2021 calendar year

Groundwater Monitoring

Groundwater monitoring results are reviewed at the end of each year by a suitably qualified hydrogeologist and reported on in the Annual Review.

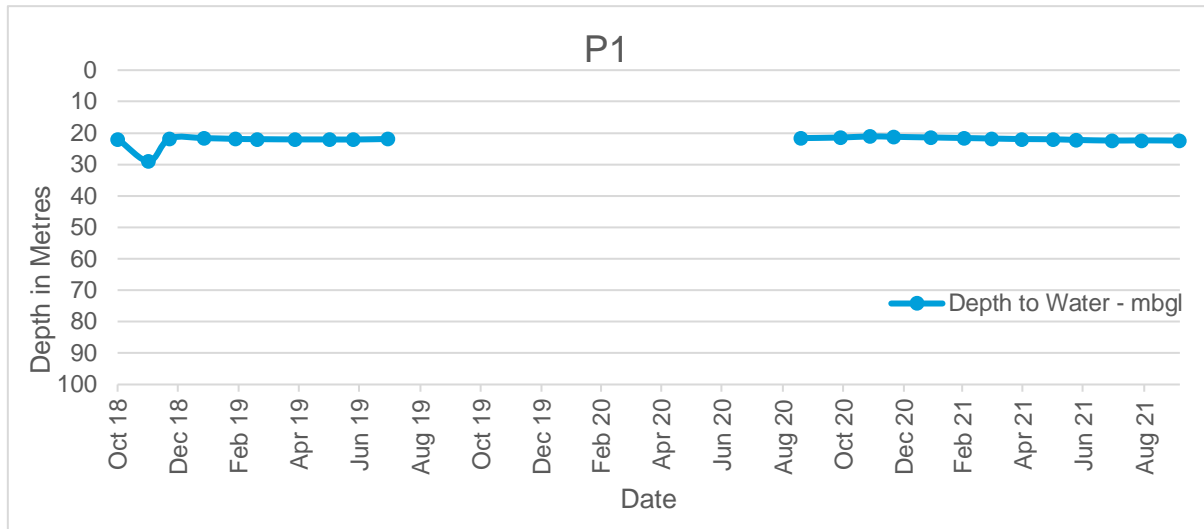
Subsidence Monitoring

- No monitoring scheduled since previous CCC meeting.
- LIDAR data is captured annually, and reviewed against subsidence predictions by a suitably qualified expert.

Hydrographs for Groundwater Monitoring Wells



Figure 6: Location of groundwater monitoring wells



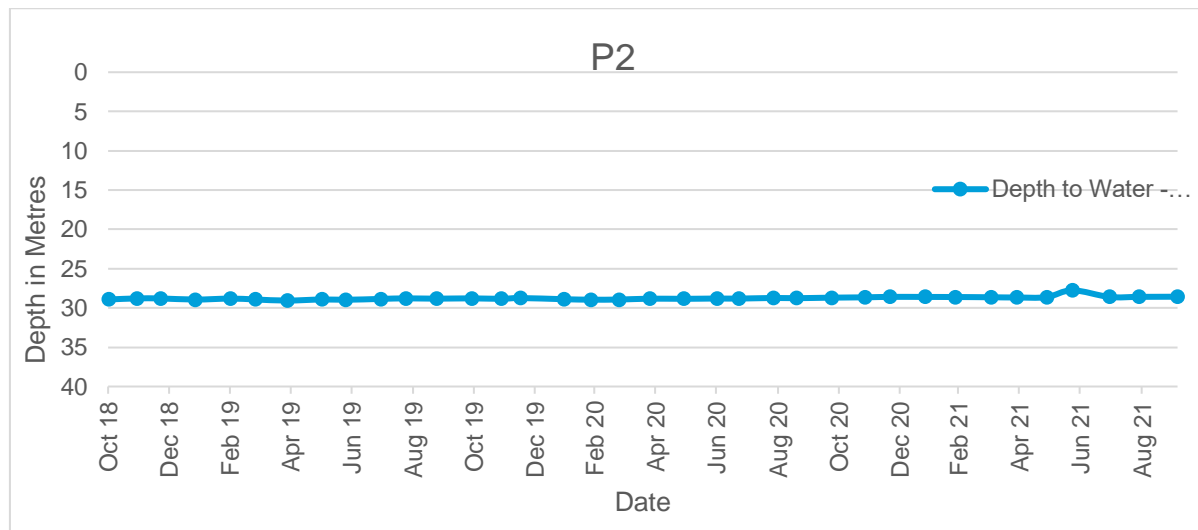
NCO Monitoring bore ID: P1

Location: Longsight

Geological unit: Garrawilla Volcanics

Bore depth: 50m

Explanation: Gap in data is due to land access issues.

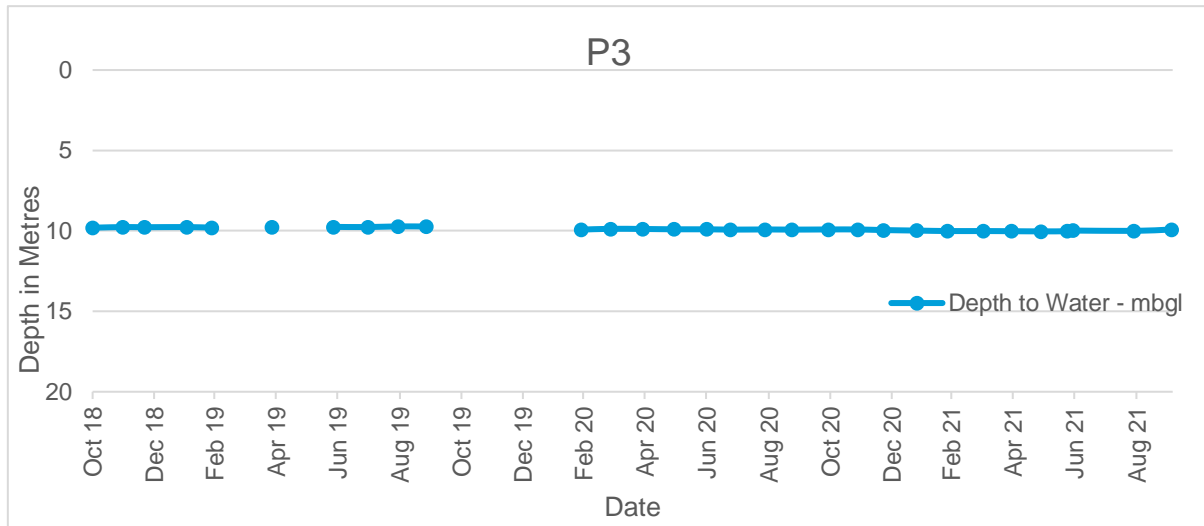


NCO Monitoring bore ID: P2

Location: Matilda

Geological unit: Napperby Formation

Bore depth: 50m



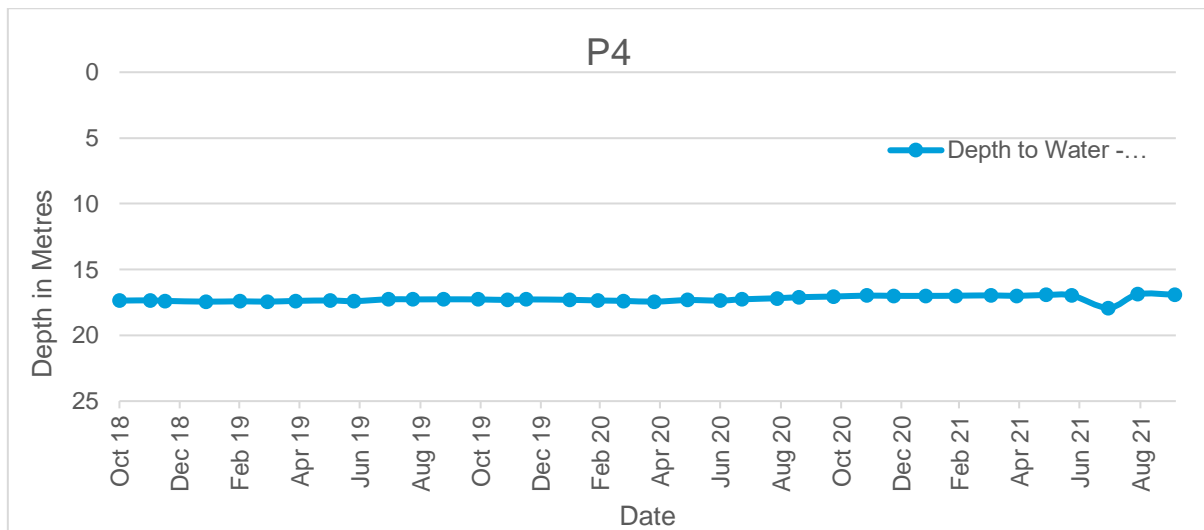
NCO Monitoring bore ID: P3

Location: Bow Hills

Geological unit: Pamboola Formation

Bore depth: 45m

Explanation: Gap in data is due to land access issues.

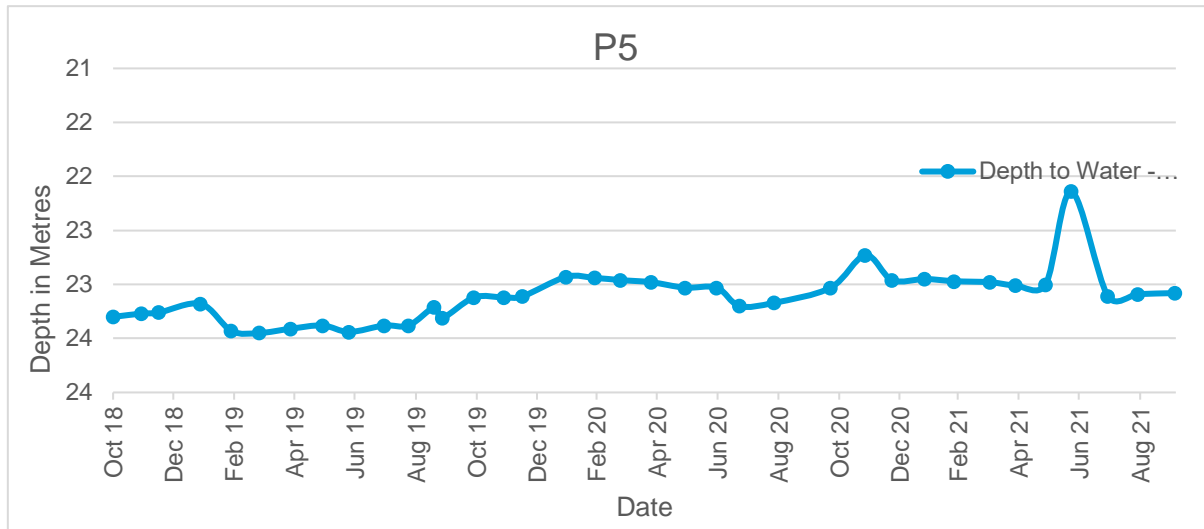


NCO Monitoring bore ID: P4

Location: North of Newhaven on Kamilaroi highway

Geological unit: Napperby Formation

Bore depth: 30m



NCO Monitoring bore ID: P5

Location: Unknown - shown on Figure 10

Geological unit: Pamboola Formation

Bore depth: 30m

No Graph

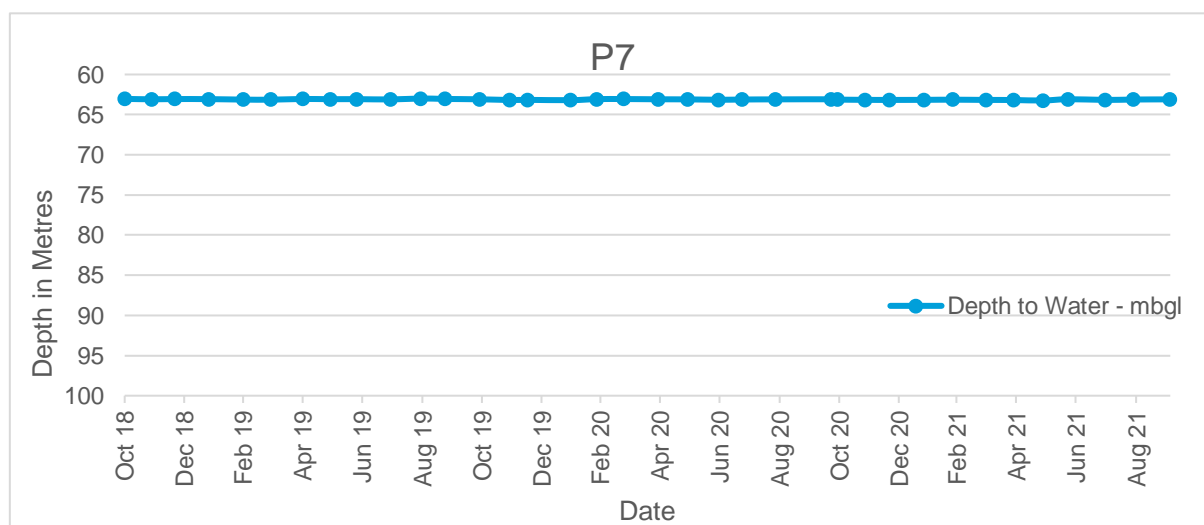
NCO Monitoring bore ID: P6

Location: shown on Figure 10

Geological unit: Pilliga sandstone

Bore depth: 90m

Explanation: Dry since 2012

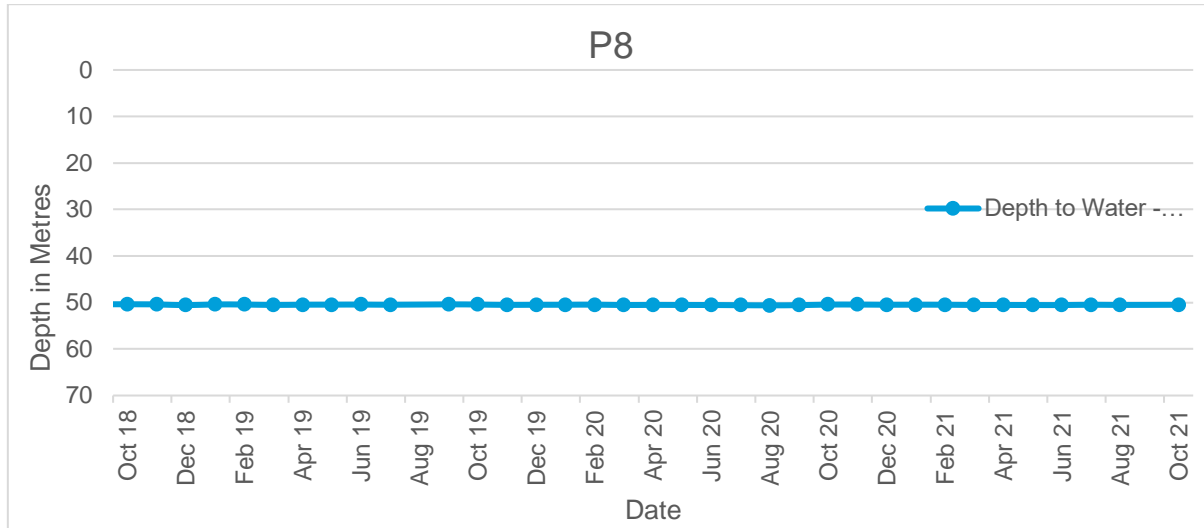


NCO Monitoring bore ID: P7

Location: State forest

Geological unit: Pilliga sandstone

Bore depth: 90m

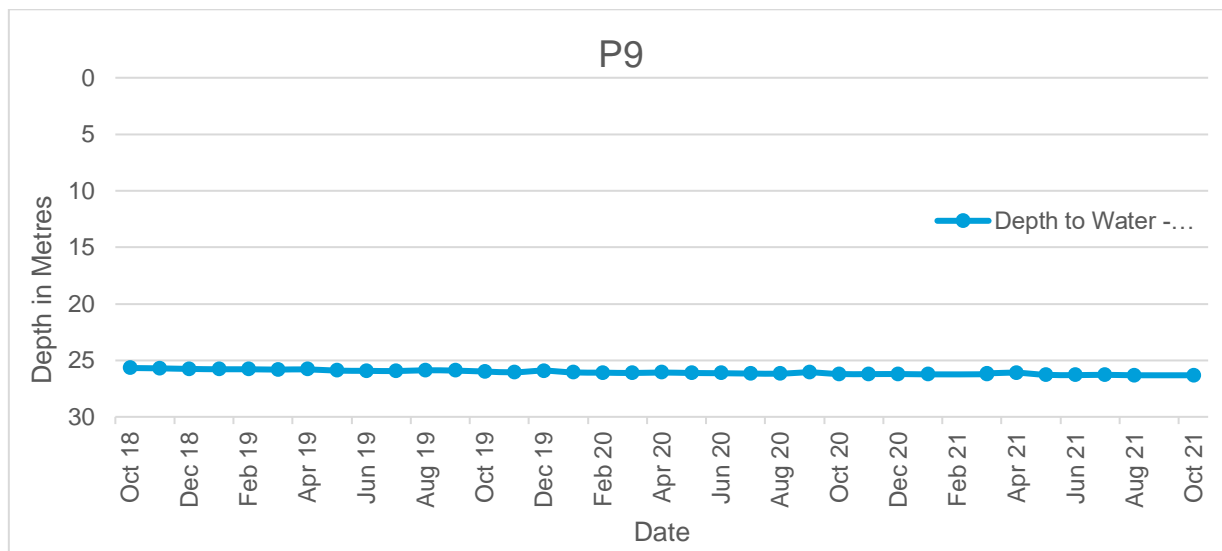


NCO Monitoring bore ID: P8

Location: Kurrajong

Geological unit: Purlawaugh Formation

Bore depth: 65m



NCO Monitoring bore ID: P9

Location: NCO – Figure 10

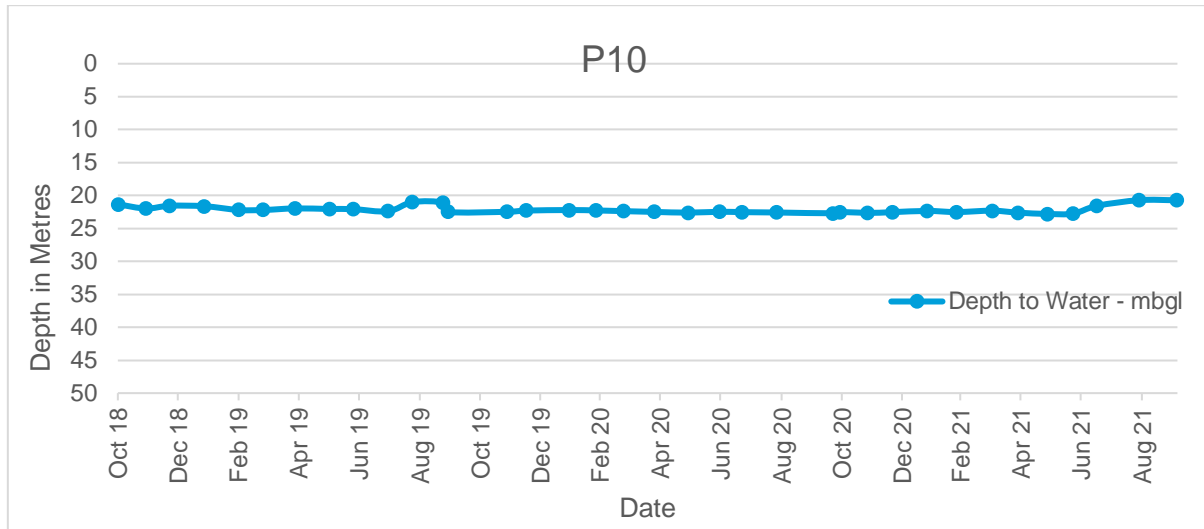
Geological unit: Purlawaugh Formation

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Bore depth: 30m

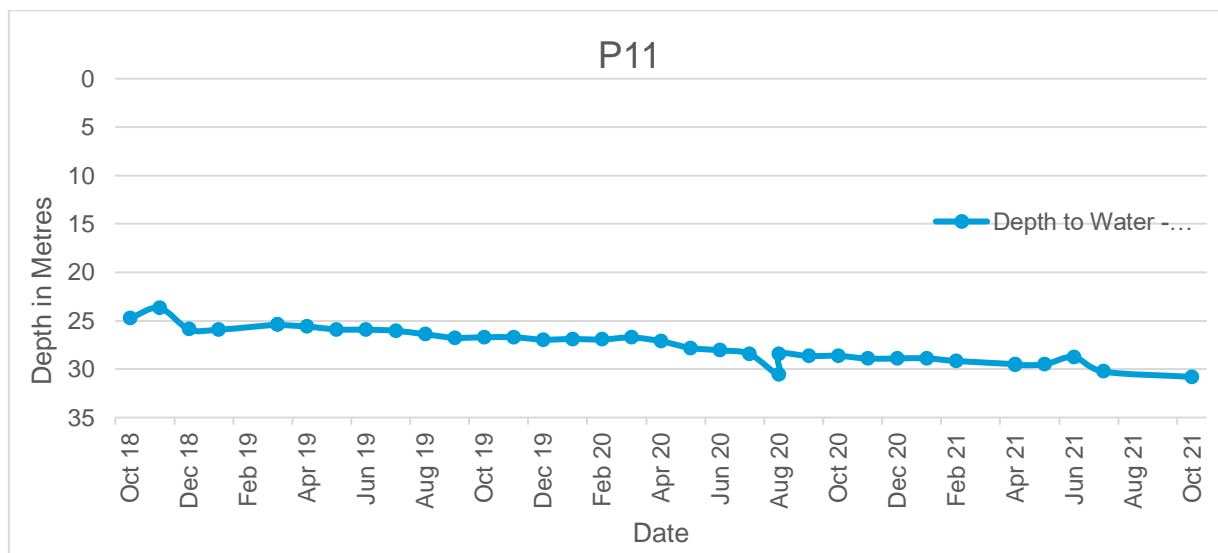


NCO Monitoring bore ID: P10

Location: NCO – see figure 10

Geological unit: Napperby Formation

Bore depth: 130m



NCO Monitoring bore ID: P11

Location: NCO – see figure 10

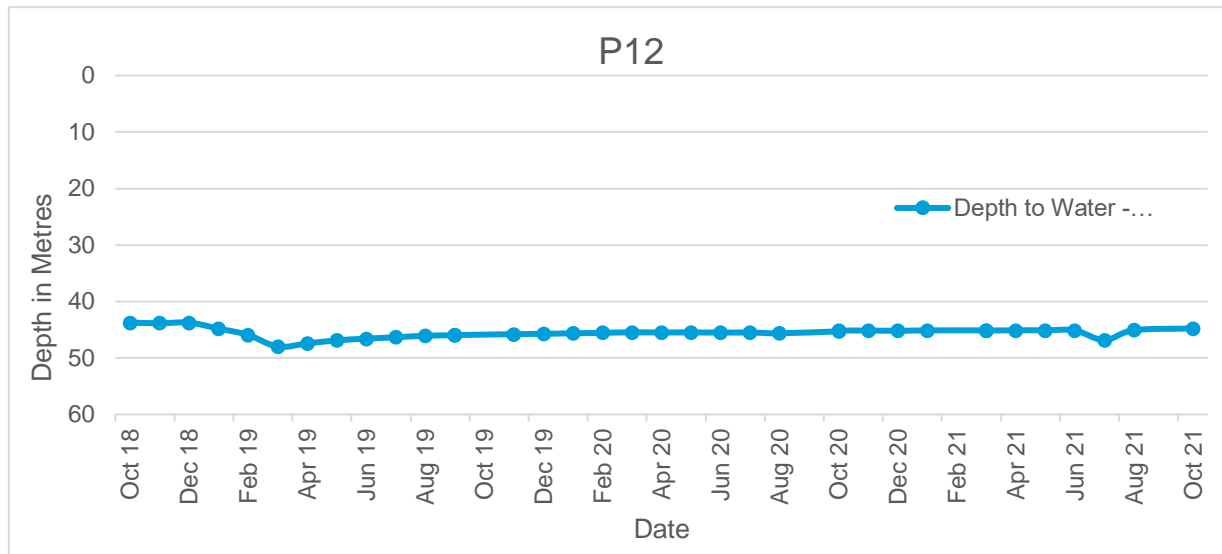
Geological unit: Napperby Formation

Bore depth: 50m

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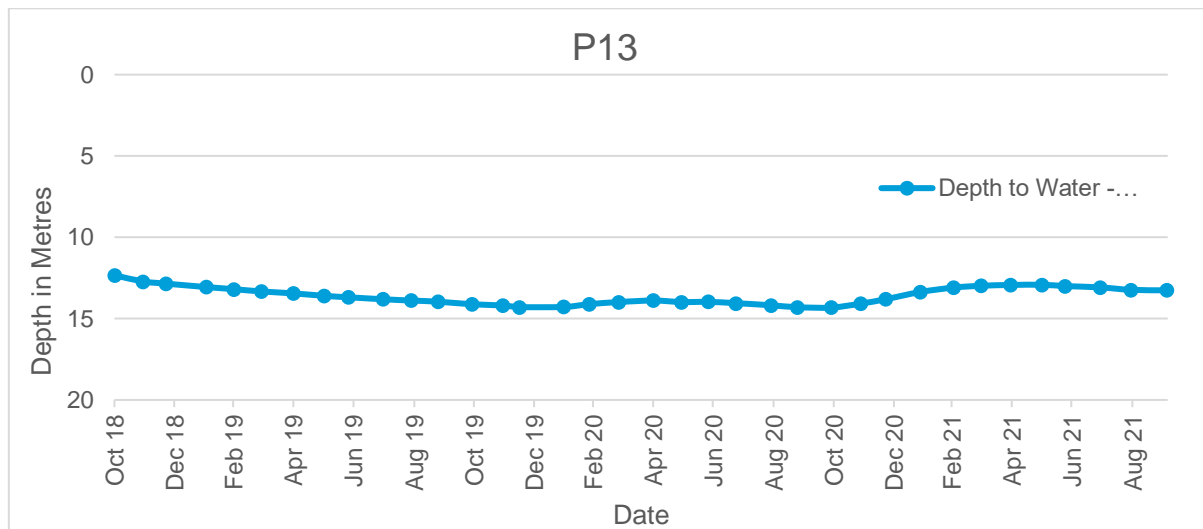


NCO Monitoring bore ID: P12

Location: NCO – see figure 10

Geological unit: Napperby Formation

Bore depth: 90m



NCO Monitoring bore ID: P13

Location: NCO – see figure 10

Geological unit: Garrawilla Volcanics/Napperby

Bore depth: 30m

No Graph

NCO Monitoring bore ID: P14

Location: See Figure 10

Geological unit: Napperby Formation (no sill)

Bore depth: 78m

Explanation: Dry

No Graph

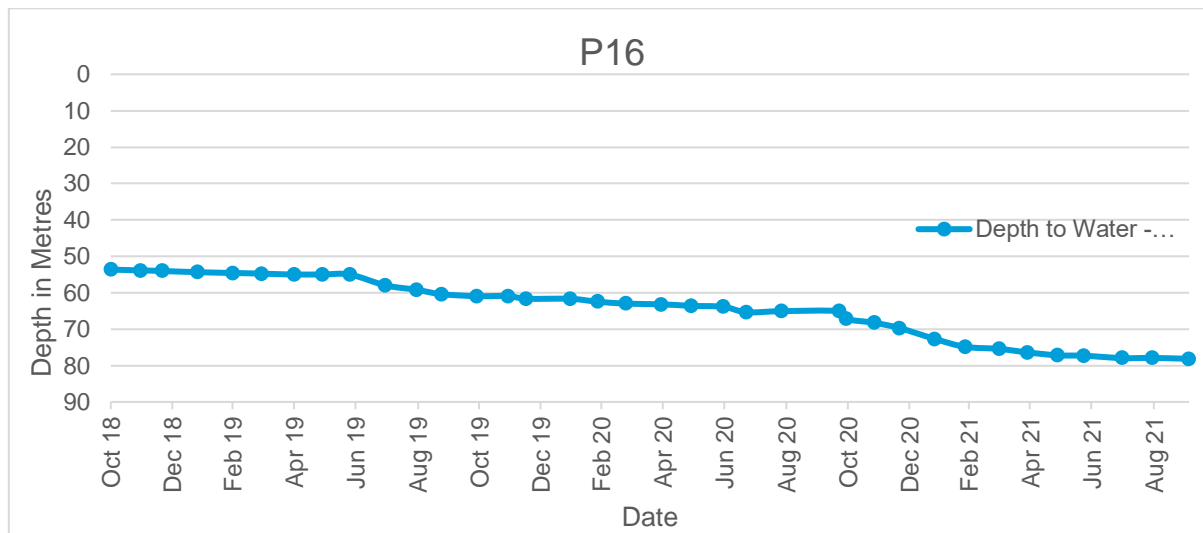
NCO Monitoring bore ID: P15

Location: See Figure 10

Geological unit: Garrawilla Volcanics

Bore depth: 30m

Explanation: Dry



NCO Monitoring bore ID: P16

Location: State forest (Western Boundary) – see figure 10

Geological unit: Garrawilla Volcanics

Bore depth: 146m

Note: Space in data is due to dipping tape stopping at 82m.

No Graph

NCO Monitoring bore ID: P17

Location: See figure 10

Geological unit: Purlawaugh Formation

Bore depth: 56m

Explanation: Dry since 2009

No Graph

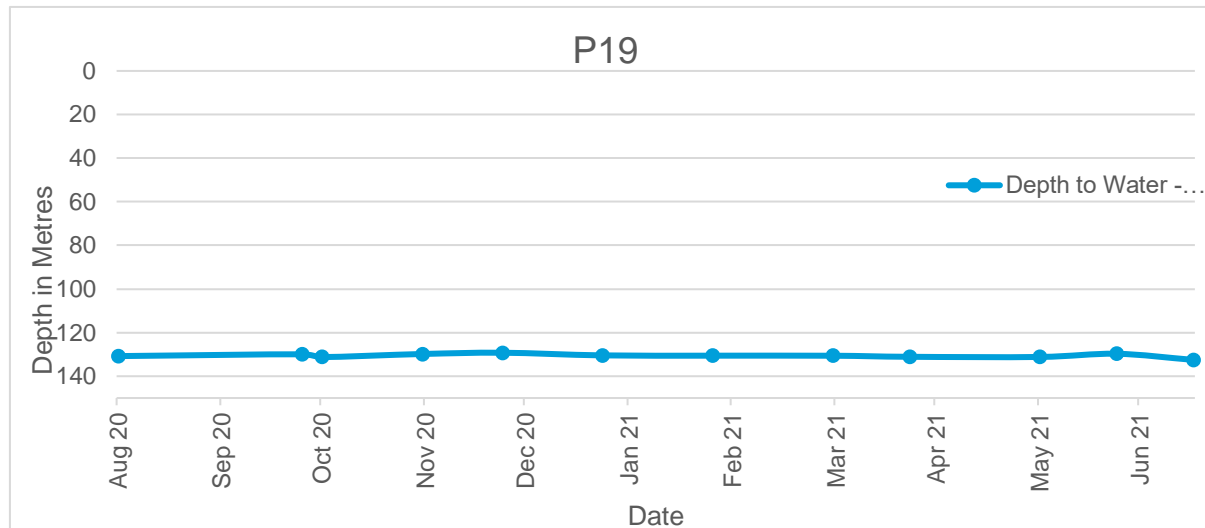
NCO Monitoring bore ID: P18

Location: See figure 10

Geological unit: Hoskissons seam

Bore depth: 146m

Explanation: Dry since 2011



NCO Monitoring bore ID: P19

Location: NCO

Geological unit: Pamboola

Bore depth: 187m

Explanation: Wrong bore previously monitored, true location monitored since August 2020

No Graph

NCO Monitoring bore ID: P20

Explanation: Cemented up – no longer monitoring

No Graph

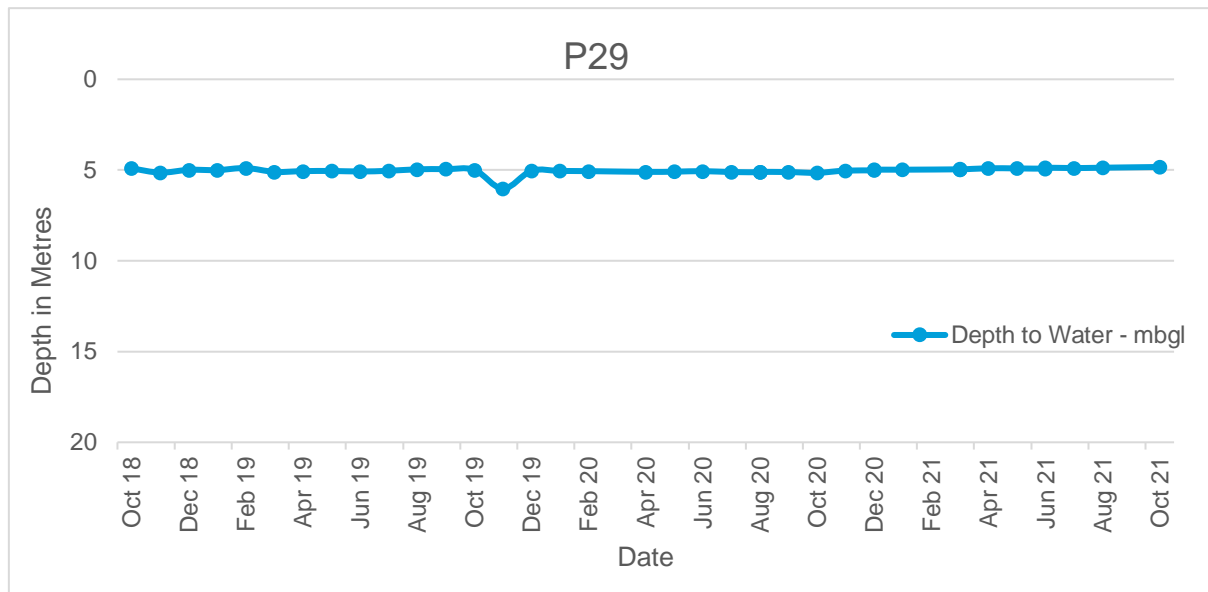
NCO Monitoring bore ID: P28

Location: See figure10

Geological unit: Napperby Formation (above sill)

Bore depth: 25m

Explanation: Dry since 2012

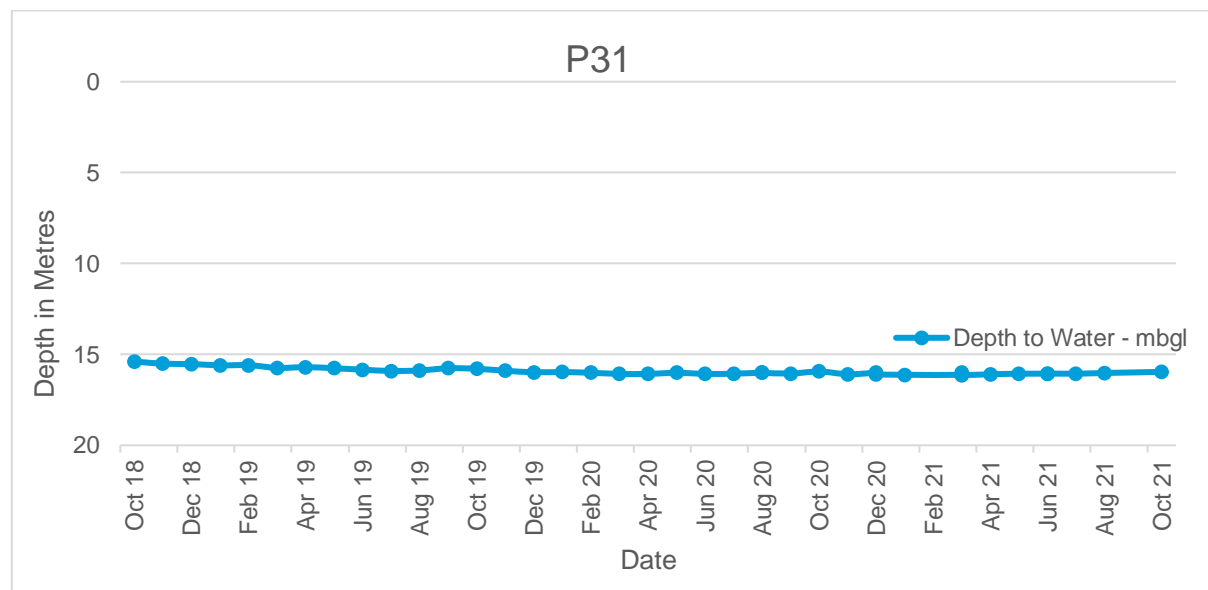


NCO Monitoring bore ID: P29

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby Formation (above sill).

Bore depth: 25m

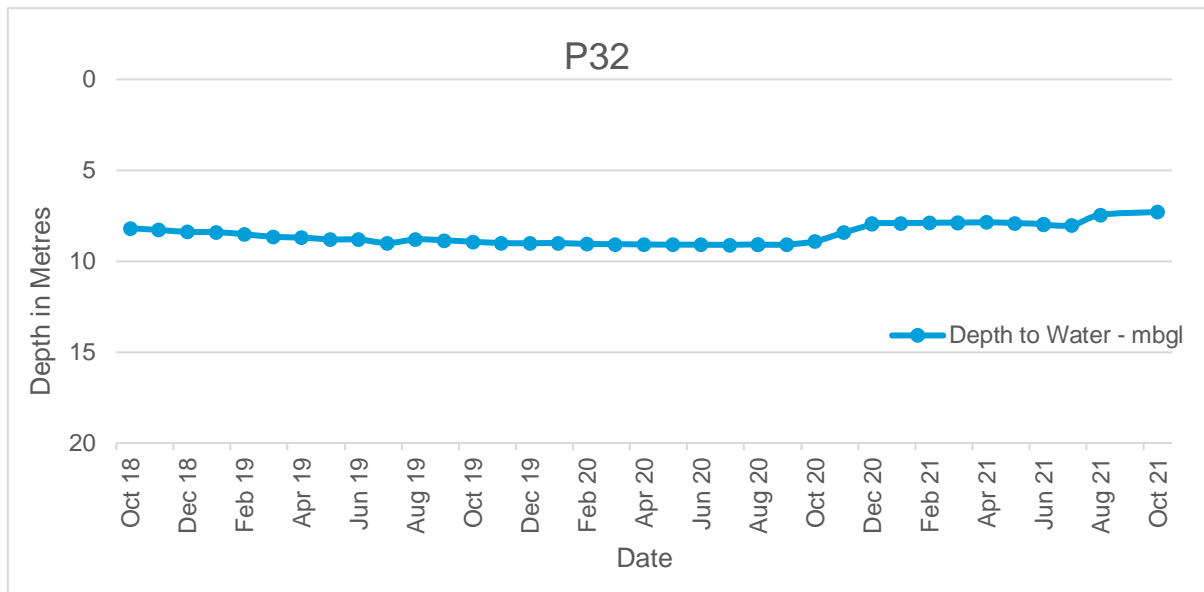


NCO Monitoring bore ID: P31

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby formation (above sill)

Bore depth: 15m



NCO Monitoring bore ID: P32

Location: NCO (Near site dams) – see figure 10

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

NCO Monitoring bore ID: P33

Location: See figure 6

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

Explanation: Dry since 2012

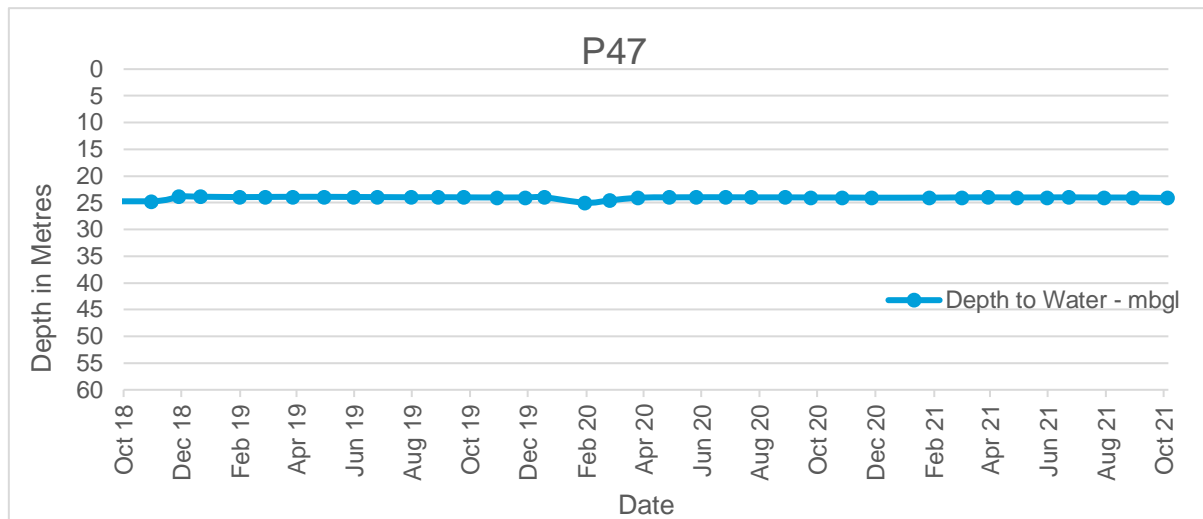
NCO Monitoring bore ID: P24

Location: See figure 6

Geological unit: Napperby Formation (above sill)

Bore depth: 15m

Explanation: Dry since 2012

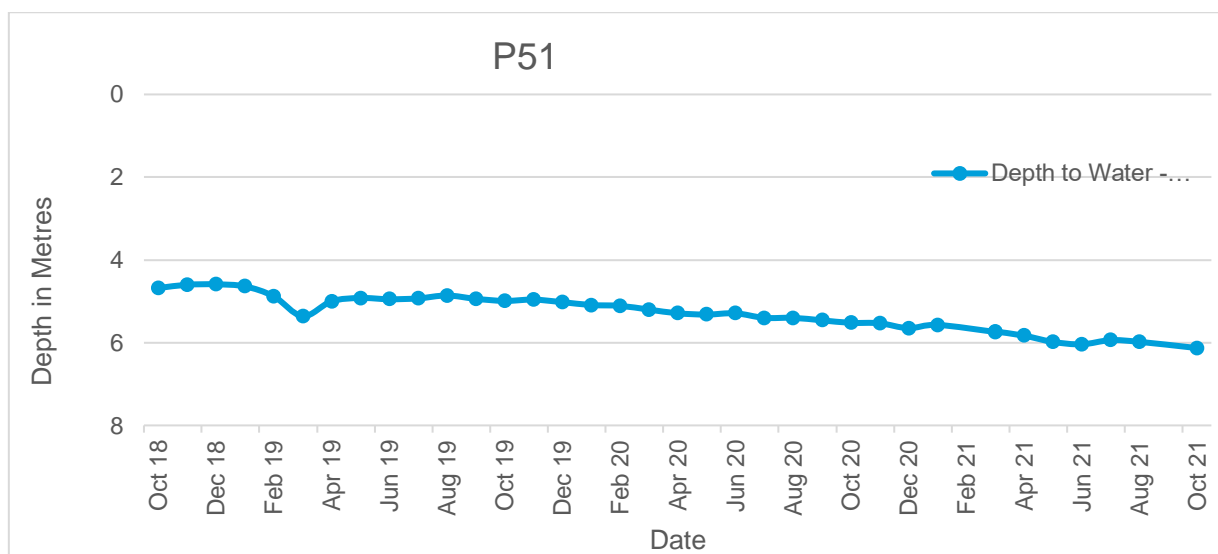


NCO Monitoring bore ID: P47

Location: NCO – see figure 10

Geological unit: Garrawilla Volcanics

Bore Depth (m): 31m



NCO Monitoring bore ID: P51

Location: NCO

Geological unit: Garrawilla Volcanics

Bore Depth (m): 17m