

Tarrawonga Coal Mine Community Consultative Committee Meeting #63

Quarterly Environmental Monitoring Report
November 1 – January 31, 2020



Photo taken in January 2021 in a section of the Northern emplacement area that was rehabilitated in July 2020, showing promising growth after rain.

This report has been prepared for the Community Consultative Committee (CCC) meeting to show Environmental monitoring performance at Tarrawonga Coal Mine (TCM) for the reporting period from November 1 2020 to January 31, 2021. Maps with all the monitoring locations are available in *Appendix A*.

Noise Monitoring

Attended noise monitoring was conducted at the “Bungalow” (TN4), “Barbers Lagoon” (TN3) and “Matong” (TN2) properties from 1st to the 4th of December 2020. The noise criterion for the mine is 35dB(A) Leq (15 min) for all operating times.

The results below show that noise emissions from the mine did not exceed the operational noise criterion at the “Barbers Lagoon”, “Bungalow” or “Matong” monitoring locations during the monitoring event during the entire monitoring period.

(See below summary tables extracted from 210105 RWDI report 2190007-T-06 (Q4 2020))

Table 4-1 : Comparison of noise levels between TN2 and 573b Coomalgalah

Date	Time	Noise Limits	TN2 Mine L _{Aeq} Noise Level (dB)	573b Coomalgalah Mine L _{Aeq} Noise Level (dB)	
		L _{Aeq,15min}	Measured Mine Contribution	Commensurate Mine Compliance Level	Exceedance
01/12/2020	11:53	35	<27	<18	0
	12:10	35	<29	<20	0
	12:42	35	<27	<18	0
	21:35	35	<19 (I/A)	<10 (I/A)	0
	21:51	35	<20 (I/A)	<11 (I/A)	0
	22:07	35	<25 (I/A)	<16 (I/A)	0
	22:38	35	<26 (I/A)	<17 (I/A)	0
02/12/2020	21:28	35	<20 (I/A)	<11 (I/A)	0
	21:44	35	<20 (I/A)	<11 (I/A)	0
03/12/2020	11:46	35	25	16	0
	12:03	35	25	16	0
	12:18	35	24	15	0
	22:48	35	<17 (I/A)	<8 (I/A)	0
	23:03	35	<17 (I/A)	<8 (I/A)	0
	23:18	35	<26	<17	0
04/12/2020	10:13	35	30	21	0
	21:23	35	35	26	0
	21:39	35	<35	<26	0
	22:00	35	<34	<25	0
	22:15	35	<33	<24	0
	22:31	35	<32	<23	0
	22:47	35	<31	<22	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{Aeq}.

Table 4-3 : Summary of noise assessment at TN3

Date	Time	Noise Limits $L_{Aeq, 15 \text{ min}}$	TN3 Mine L_{Aeq} Noise Level (dB)		
			Measured Mine Contribution	Additional LF Penalty	Exceedance
01/12/2020	21:07	35	<29 (I/A)	-	0
02/12/2020	13:30	35	<14 (I/A)	-	0
	14:09	35	<13 (I/A)	-	0
	14:54	35	<16 (I/A)	-	0
	21:14	35	<35 (I/A)	-	0
	21:29	35	<34 (I/A)	-	0
	23:05	35	<28 (I/A)	-	0
03/12/2020	22:21	35	<35 (I/A)	-	0
	22:52	35	<33 (I/A)	-	0
	23:07	35	<33 (I/A)	-	0
04/12/2020	19:47	35	<27 (I/A)	-	0
	20:03	35	<28 (I/A)	-	0
	00:40	35	28	-	0
	00:57	35	30	-	0
	01:12	35	31	-	0
	01:28	35	32	-	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{A90} .

Table 4-5 : Summary of noise assessment at TN4

Date	Time	Noise Limits L _{Aeq,15min}	TN4 Mine L _{Aeq} Noise Level (dB)		
			Measured Mine Contribution	Additional LF Penalty	Exceedance
01/12/2020	10:53	35	<22 (I/A)	-	0
	11:41	35	<21 (I/A)	-	0
	11:59	35	<25 (I/A)	-	0
	20:57	35	<26 (I/A)	-	0
	21:11	35	<26 (I/A)	-	0
	23:28	35	<28 (I/A)	-	0
	23:43	35	<34 (I/A)	-	0
02/12/2020	11:18	35	<27 (I/A)	-	0
	12:08	35	<20 (I/A)	-	0

	12:23	35	<26 (I/A)	-	0
	23:39	35	<30	-	0
	23:55	35	<30	-	0
	00:10	35	<31 (I/A)	-	0
03/12/2020	23:59	35	29	-	0
	00:31	35	<28 (I/A)	-	0
04/12/2020	10:12	35	<18 (I/A)	-	0
	10:30	35	<17 (I/A)	-	0
	20:33	35	<25 (I/A)	-	0
	20:48	35	<26 (I/A)	-	0
	23:20	35	<24 (I/A)	-	0
	23:36	35	<26	-	0
	23:52	35	<26	-	0
	00:08	35	<26	-	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{A90}.

Noise from the mine must not exceed 45 dB(A) L1 (1 min) between 10 pm and 7 am. This is to minimise the potential for sleep disturbance as a result of individual loud noises from the mine. The results of the sleep disturbance monitoring show that the measured L1 (1 min) noise level did not exceed the sleep disturbance criterion.

Table 4-2 : Comparison of maximum noise events between TN2 and 573b Coomalgalah

Date	Time	Noise Limits		TN2 Mine L _{Amax} Noise Level (dB)	573b Coomalgalah Mine L _{Amax} Noise Level (dB)	
		L _{A1,1min}	Noise Source	Measured Level	Commensurate Mine Compliance Level	Exceedance
01/12/2020	22:07	45	-	I/A	-	0
	22:38	45	-	I/A	-	0
03/12/2020	22:48	45	-	I/A	-	0
	23:03	45	-	I/A	-	0
	23:18	45	-	NM	-	0
04/12/2020	22:00	45	-	NM	-	0
	22:15	45	-	NM	-	0
	22:31	45	-	NM	-	0
	22:47	45	-	NM	-	0

Note: NM indicates a significant maximum noise event was not observed.
I/A indicates the mine was inaudible during the measurement period.

Table 4-4 : Summary of maximum noise events at TN3

Date	Time	Noise Limits	TN3 Mine L _{Amax} Noise Level (dB)		
		L _{A1,1min}	Noise Source	Measured Level	Exceedance
02/12/2020	23:05	45	-	I/A	0
03/12/2020	22:21	45	-	I/A	0
	22:56	45	-	I/A	0
	23:07	45	-	I/A	0
	00:40	45	-	NM	0
04/12/2020	00:57	45	-	NM	0
	01:12	45	-	NM	0
	01:28	45	-	NM	0

Note: NM indicates a significant maximum noise event was not observed.

Table 4-6 : Summary of maximum noise events at TN4

Date	Time	Noise Limits	TN4		
		L _{A1,1min}	Mine L _{Amax} Noise Level (dB)		
			Noise Source	Measured Level	Exceedance
01/12/2020	23:28	45	-	NM	0
	23:43	45	-	NM	0
02/12/2020	23:39	45	-	NM	0
	23:55	45	-	NM	0
	00:10	45	-	NM	0
03/12/2020	23:59	45	-	NM	0
	00:31	45	-	NM	0
04/12/2020	23:20	45	-	NM	0
	23:36	45	-	NM	0
	23:52	45	-	NM	0
	00:08	45	-	NM	0

Note: NM indicates a significant maximum noise event was not observed.

The real time noise monitor located on the “Coomalgah” property remains a management tool so the noise criteria are not applicable at that site. Level of noise recorded at that location is managed according to the noise management plan and trigger action response plan.

Blast Monitoring

Blasting Results

Since 2006, there have been 1024 blasts (until 31/01/2021) at TCM.

The highest result for Overpressure was 112.2dB recorded at the 'Tarrawonga' monitor on the 10/11/2020.

The highest result for ground vibration was 0.85 mm/s recorded at the 'Coomalgah' monitor on the 10/11/2020.

Table- 2: Max Peak Overpressure and Ground Pressure for the Quarter

Monitor Location	Date	Max. Peak Overpressure (dB)	Criterion (dB)	Date	Max. Peak Ground Pressure (mm/s)	Criterion (mm/s)
Tarrawonga*	10/11/20	112.2	N/A	04/12/20	0.61	N/A
Coomalgah	20/11/20	105.9	120	10/11/20	0.85	10

**Limit Not applicable according to EPL and PA11_0047 because project related property.*

Air Quality Monitoring

Dust Deposition Results

Table 3 shows deposited dust gauge results over 12 months. All the monitors are located on project related land; as such compliance criteria (4g/m²/month) do not apply. Overall deposited dust trends remain steady during the reporting period (refer graph in *Appendix B*)

MONTH	TEMPLEMORE (EB-4)	BOLLO CREEK STN (EB-5)	AMBARDI (EB-6)	TARRAWONGA (EB-7)	THUIN (EB-8)	PINE GROVE (EB-9)	TARRAWONGA MINE (EB-10)	TARRAWONGA MINE (EB-11)	TARRAWONGA MINE (EB-14)	TARRAWONGA MINE (EB-15)	JERALONG NORTH (EB-16)
Jan-20	3.5	29.5#	3.5	2.5	3.5	6.8	10.9	2.8	2.5	3.3	2
Feb-20	8.1	+	5.4	2.5	5.7	5	4.2	5.9	7.6	10.4	3.8
Mar-20	1.7	+	2.2	2	6.2	2.9	8.3	4.1	2.8	4	2.3
April-20	2.2	3	7.7	0.7	15.9	0.8	2.5	1.9	1.5	3.8	5.2
May-20	3	2.5	1.4	2.4	3.2	1.2	4.4	2.4	2.3	4.4	4.2
Jun-20	3.1	2	1.1	1	2.7	1.5	1.9	2.5	1.8	5.3	2.7
Jul-20	1.3	2.8	0.9	2	3.2	0.8	0.9	2.7	1.5	3.4	1.2
Aug-20	1.1	1.8	1.1	0.5	1.8	0.7	1.9	2	1.2	3.7	0.8
Sep-20	1.4	19.9#	1.0	0.9	2.4	1.9	0.9	1.3	1.7	3.6	1.9
Oct-20	0.9	2.1	1.3	1.1	++	1.2	3.1	1.9	2.3	5.5	2.5
Nov-20	3.2	2.7	1.1	1.2	++	3.1	5	3.2	2.4	+	3
Dec-20	4.3	2.5	2	1.3	++	12.7#	3.7	4.3	2.6	+	1.6
Jan-21	6.7#	4.6#	1.1	3.2	++	2.5	3.1	6.7#	8.4	6.5	4.4
12 MONTH ROLLING AVERAGE	2.8	2.4	2.2	1.6	++	1.8	3.1	3.0	3.0	5.0 ¹	2.8

#Sample was contaminated with Insects, bird droppings and plant material all noted on the field sheet.

++ EB08 was decommissioned due to reshaping activities at the Southern Emplacement area.

+ bottles missing due to replacement after contamination or temporary civil/mining activities in the area.

¹DDG bottle on the fenceline between TCM and BCM ROM.

Table 3 – Deposited Dust Gauge Results [g/m²/month]

High Volume Air sampler (PM10) Results

The High Volume Air Sampler (HVAS) installed at Coomalgah property monitors level of Particle Matter under 10 micron (PM₁₀). It operates for 24hr every 6 days. **Table 4** shows all the 24hr average values recorded for this quarter.

Table- 4: HVAS PM10 24 hr average levels for the Quarter

Date	24hr averaged PM10 (µg/m³)	Criterion 24hr average (µg/m³)	Comments
4/11/2020	22.2	50	Nil
10/11/2020	20.0		
16/11/2020	148.0		Considered not mining related as farming/harvest activity was noted on contractor field sheet. Wind speeds up to 6.7m/s recorded from predominantly SW direction. DPIE was notified.
22/11/2020	26.2		Nil
28/11/2020	41.5		
4/12/2020	13.5		
10/12/2020	33.4		
16/12/2020	7.9		
22/12/2020	4.9		
28/12/2020	6.7		
3/01/2021	6.4		
9/01/2021	9.0		
15/01/2021	8.9		
21/01/2021	18.0		
27/01/2021	23.0		

Real-time Air monitoring (PM₁₀)

According to the current Air Quality and Greenhouse gas Management Plan, the real time air quality unit (TEOM) installed at the “Flixton” property monitors PM₁₀ levels in ambient air. It is an operational management tool and dust levels nearing or reaching the nominated criteria will trigger actions onsite to assess the source of dust and modify operations if it is determined to be related to Tarrawonga operations.



TEOM installed at Flixton property

Three portable dust (PM₁₀) monitors have improved the real-time dust monitoring network and assist the operation to mitigate any potential dust generated by the operation.



Portable and real-time dust monitor installed at TCM in November 2018

Water Monitoring

Groundwater

Routine groundwater monitoring was undertaken in December 2020 and showed in **Table 5** (refer to graphs in *Appendix C*).

Table 5- Groundwater results Summary

Site	Date	SWL (mbgl)	pH (units)	Elect. Conductivity (µS/cm)
MW1	December 2019	7.35	8.0	3,510
	March 2020	7.36	8.0	3,520
	June 2020	7.42	7.8	3,490
	September 2020	7.27	8.16	3,260
	December 2020	6.8	7.9	3,510
MW2	December 2019	4.65	7.1	560
	March 2020	3.15	7.6	496
	June 2020	3.18	7.3	490
	September 2020	3.39	7.39	435
	December 2020	3.71	7.3	535
MW4	December 2019	10.14	7.3	3,530
	March 2020	10.46	7.7	3,600
	June 2020	10.57	7.4	3,530
	September 2020	10.38	7.3	3,380
	December 2020	10.35	7.4	3,640
MW5	December 2019	3.25	7.8	2,080
	March 2020	2.41	7.8	874
	June 2020	2.29	7.6	675
	September 2020	2.34	7.7	2,090
	December 2020	2.67	7.1	1,960
MW8	December 2019	13.76	Casing blocked	Casing blocked
	March 2020	13.76	Casing blocked	Casing blocked
	June 2020	13.71	Casing blocked	Casing blocked
	September 2020	13.44	Casing blocked	Casing blocked
	December 2020	13.57	Casing blocked	Casing blocked

Note: MW7 was decomissioned due to mine progression

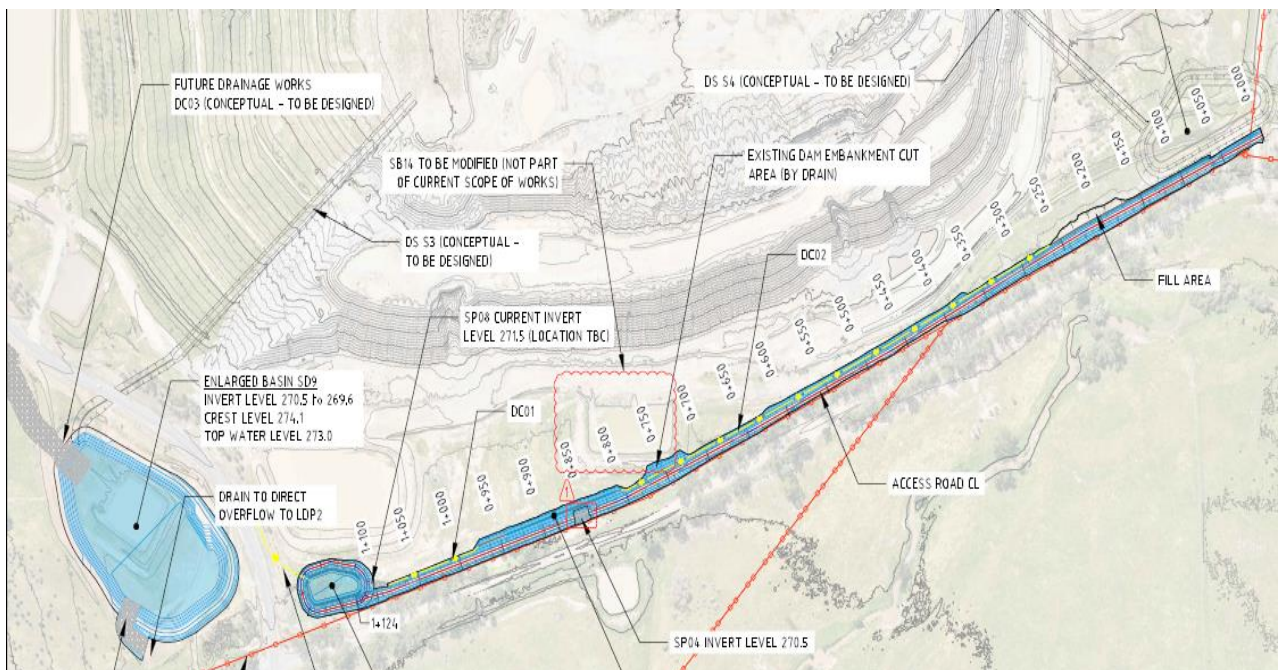
Surface Water

Water storage onsite is expected to be sufficient for at least the next 12 months.

Total Rainfall recorded onsite during Calendar Year 2020 was approximately 930mm which is almost three times the amount of rainfall recorded over a 12 month period in 2019 (277mm). During January 2021, TCM received 58.4mm..

2020	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Rain (mm)	109.2	261.2	113.2	65.6	16.0	23.4	31.0	38.3	30.2	55.8	3	184.4	931.1
Cumulative (mm)	109.2	370.4	483.6	549.2	565	588.4	619.4	567.7	687.9	743.7	746.7	931.1	
2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Rain (mm)	58.4	49.6 (to 08/02)	-	-	-	-	-	-	-	-	-	-	
Cumulative (mm)	58.4	108 (to 08/02)	-	-	-	-	-	-	-	-	-	-	

TCM has nearly finished construction of new water infrastructures at the entrance of the mine. Sediment dam (SD09) was enlarged from 9ML to 52 ML; two new sediment dams and drainage systems have been constructed along the front fenceline.



Plan view of new water infrastructures

Rehabilitation and Clearing

Rehabilitation

TCM has ordered 11,000 tubestock trees for rehabilitation purposes for CY21. Approximately 8,000 trees will be planted over 20Ha of new rehabilitation areas and approximately 3,000 trees over 35Ha of pre-existing maintenance rehabilitation areas. TCM will spread native seeds during the rehabilitation campaign. This will include native groundcover species, shrubs and sub-shrub species as per the Rehabilitation Management plan.

Reshaping activities have been completed throughout the Northern and Southern Emplacement areas. Topsoil spreading and preparation for planting will begin on the Southern Emplacement area in the next few months.

Clearing

The next vegetation clearing campaign is scheduled to begin after the 15th February and may proceed through to April 2020. Specialists (i.e. Archeologist, RAPs, Ecologist and Soil expert) have completed pre-clearing inspections in those areas (shown as blue polygons in the figure below).



Clearing areas - scheduled to begin works in February 2021.

Complaints

No complaints have been recorded through the reporting period.

Environmental Management Plans

The Biodiversity Management Plan was approved in December 2020 and is published on WHC website

BTM Water Strategy

The BTM mines submitted an updated BTM Groundwater Model and report to DPIE in December 2020. The 3 mines are waiting on the determination.

Annual and Compliance Reporting

Annual Review and Annual Return Reports

The Annual Return is being prepared and will be submitted to EPA by 8th March. The Annual Review is being prepared and will be submitted to DPIE by the end of March 2021.

Annual Compliance EPBC statement

Next Annual Compliance EPBC statement will be submitted to DAWE in June 2021.

Annual National Pollutant Inventory (NPI) and Greenhouse Gas Emission (NGERs) Reports 2021

Next NPI and NGERs reports will be submitted in September and October 2021 respectively.

Audits- Compliance

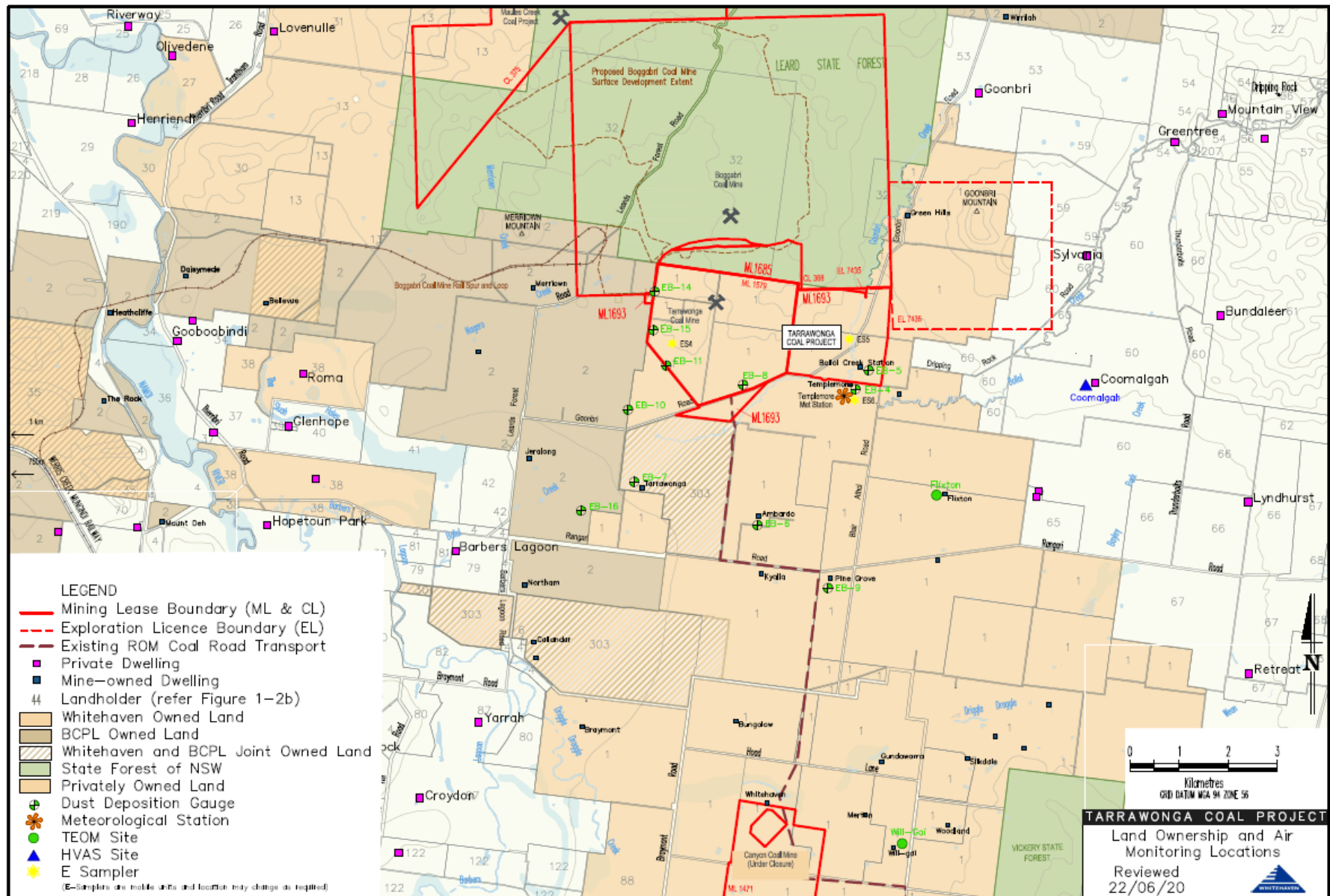
DPIE has scheduled a site inspection during vegetation clearing activities between (February- April 2021)

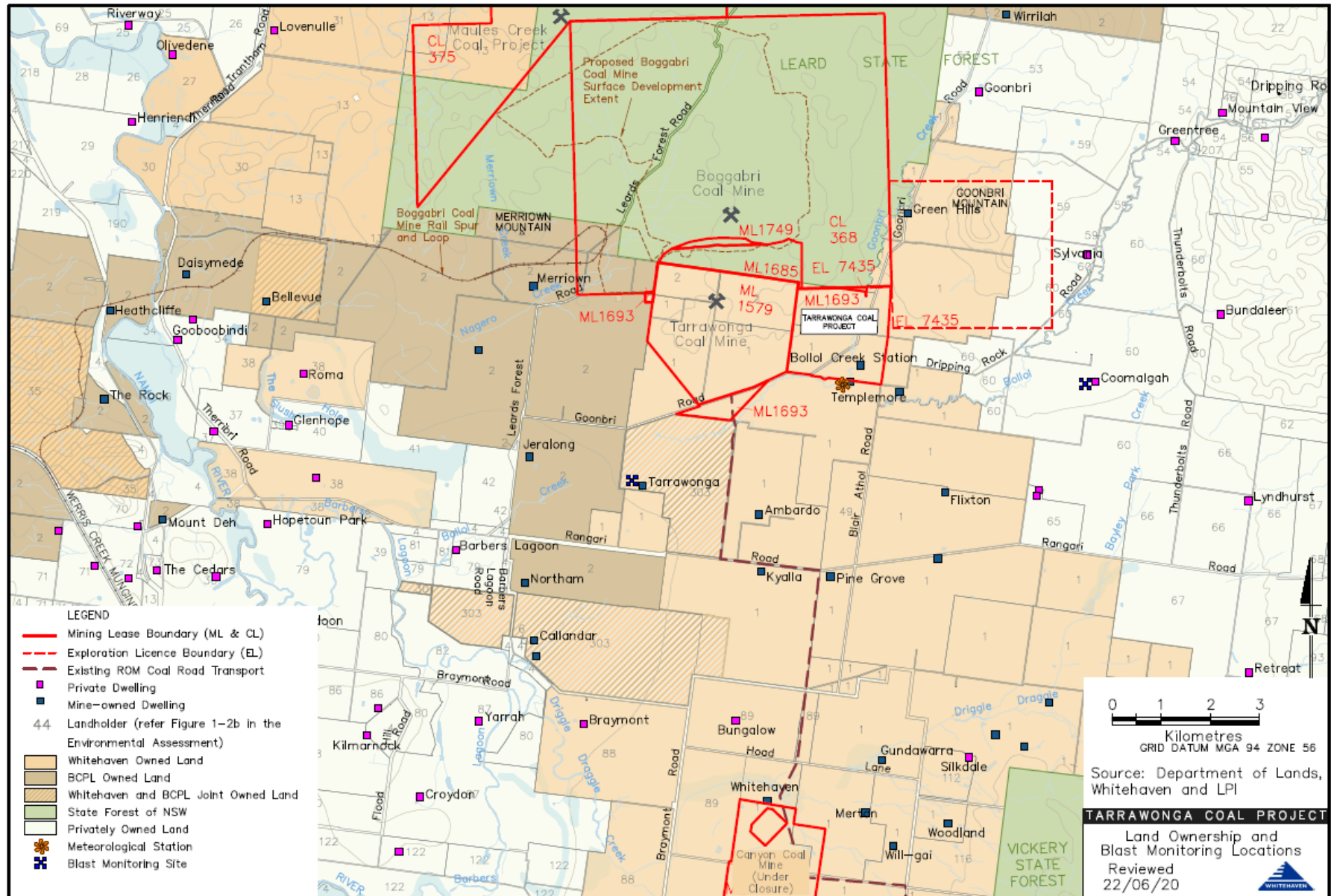
Approval and Licencing

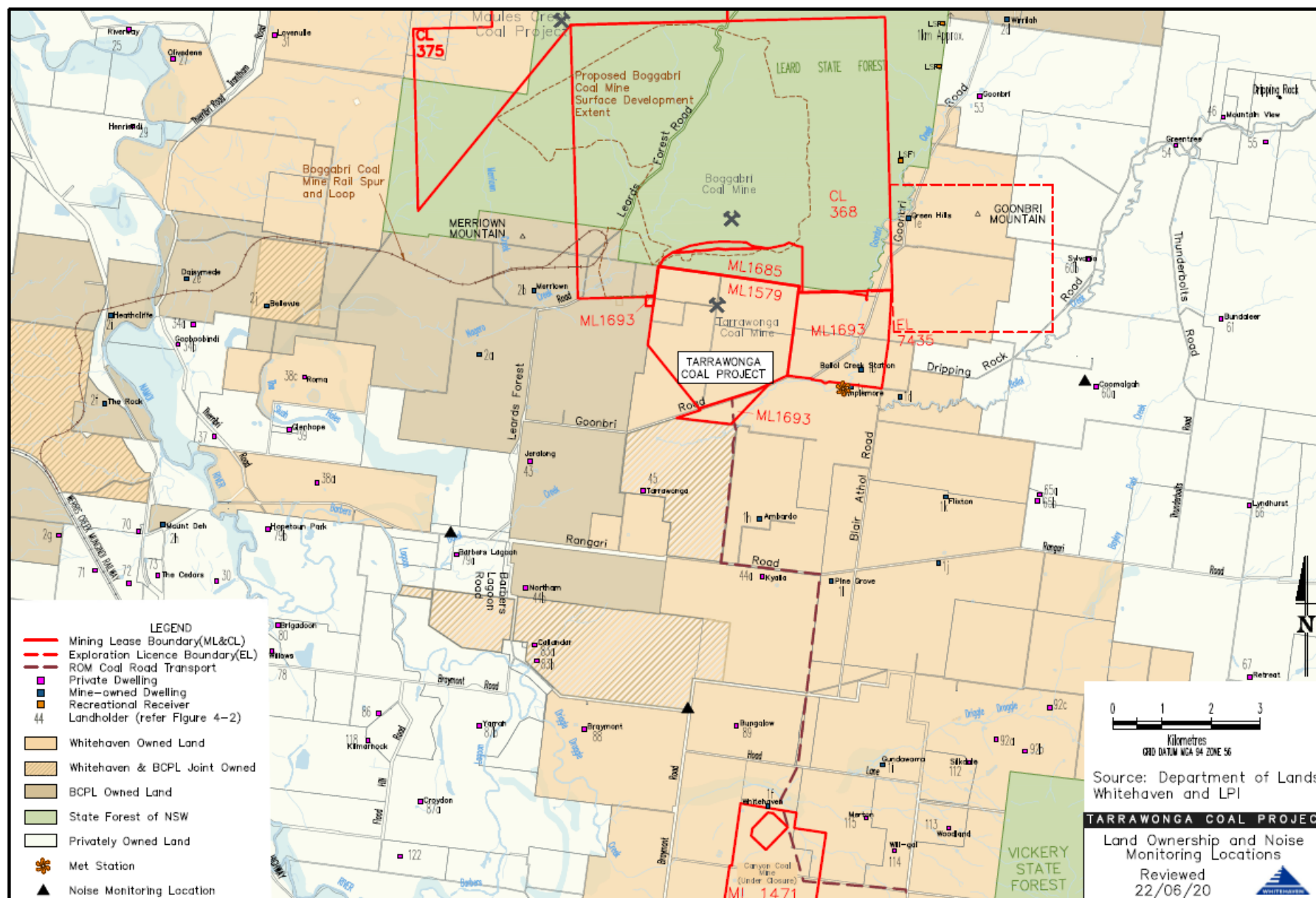
TCM received final determination and Approval of Modification (MOD7) of Project Approval (PA11_0047) regarding the Life of Mine, in February 2021.

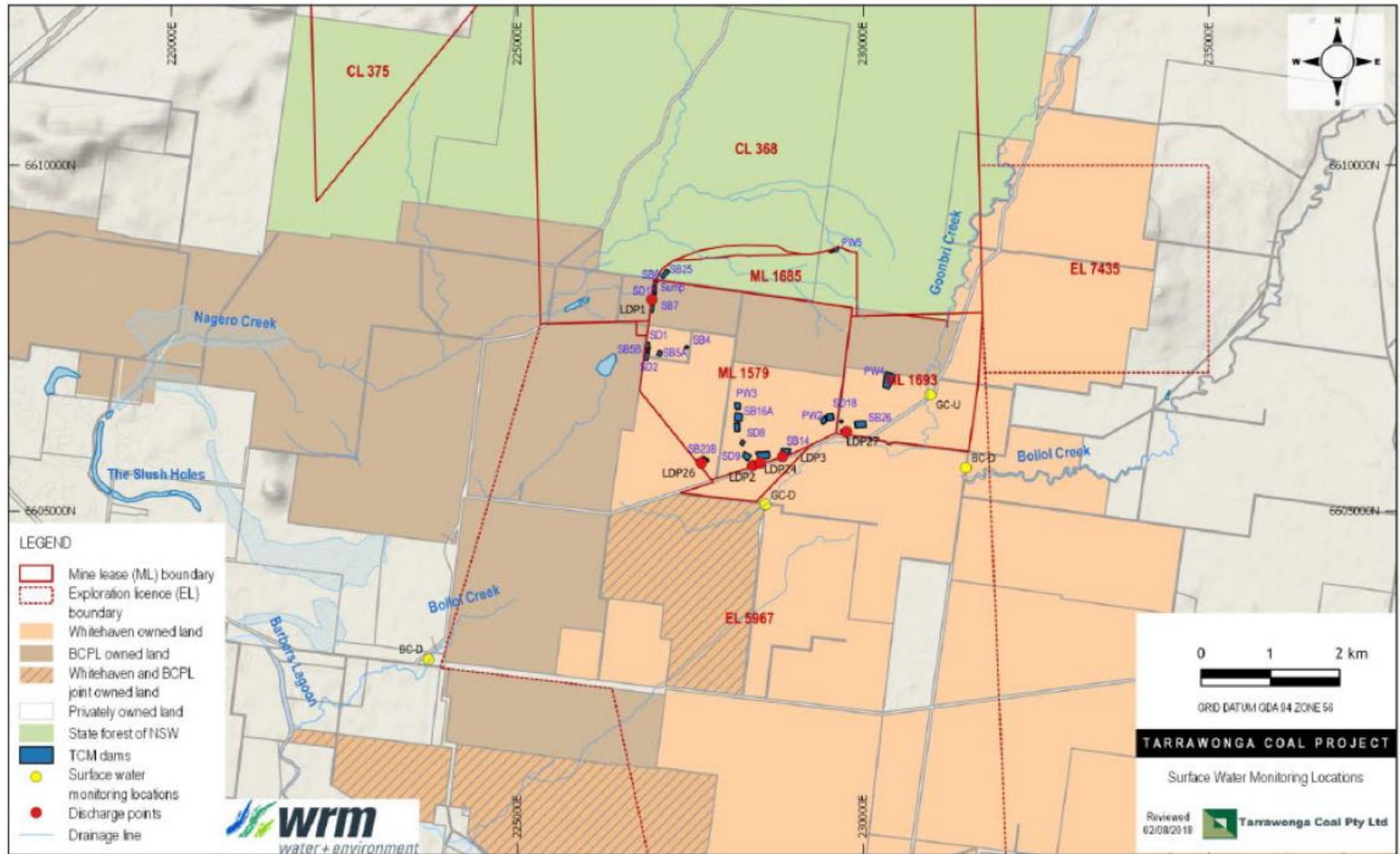
In August 2020, TCM submitted a MOP Amendment F that covers mining activities to November 2022. It was approved by the Resources Regulator on the 23rd October 2020

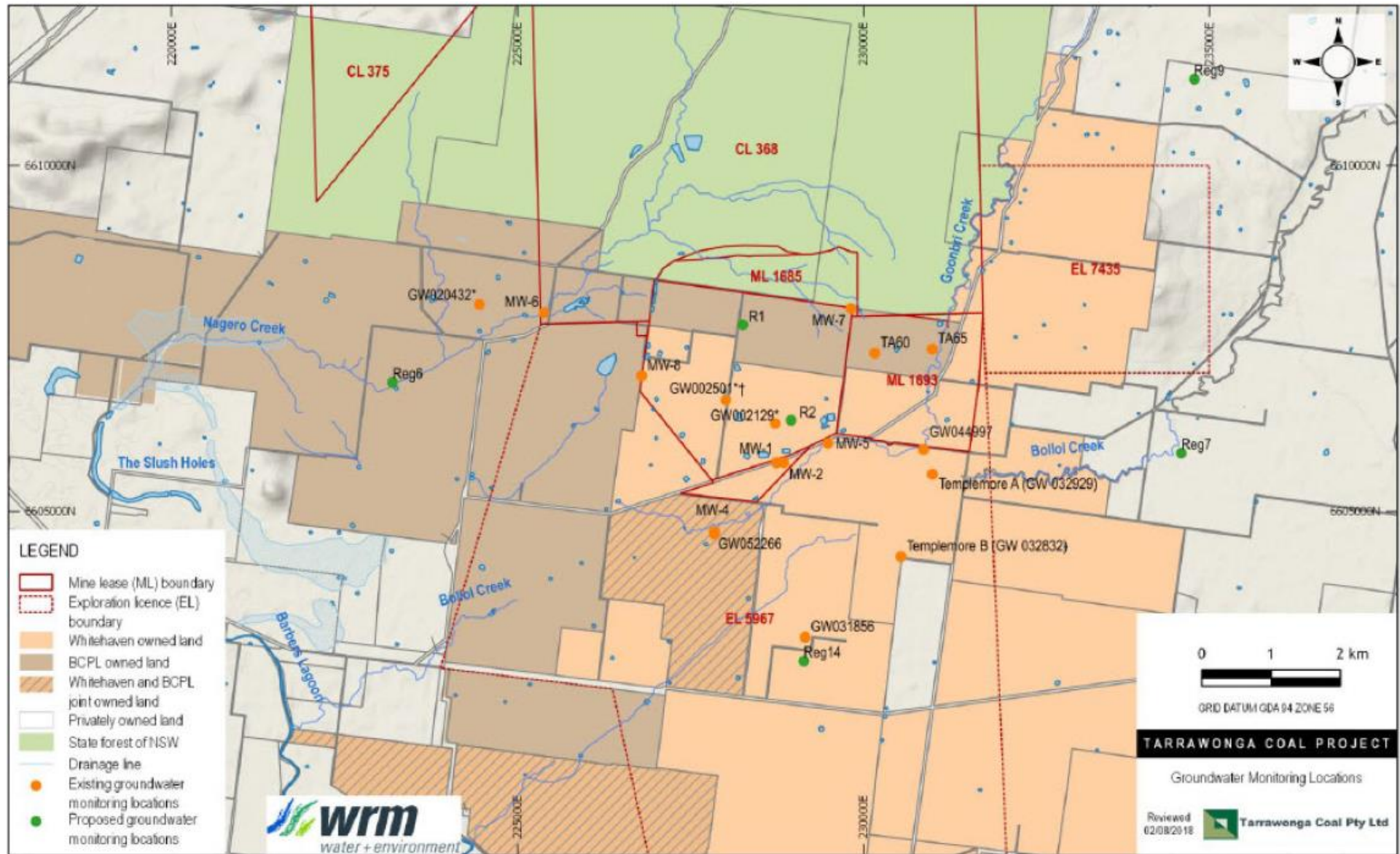
Appendix A





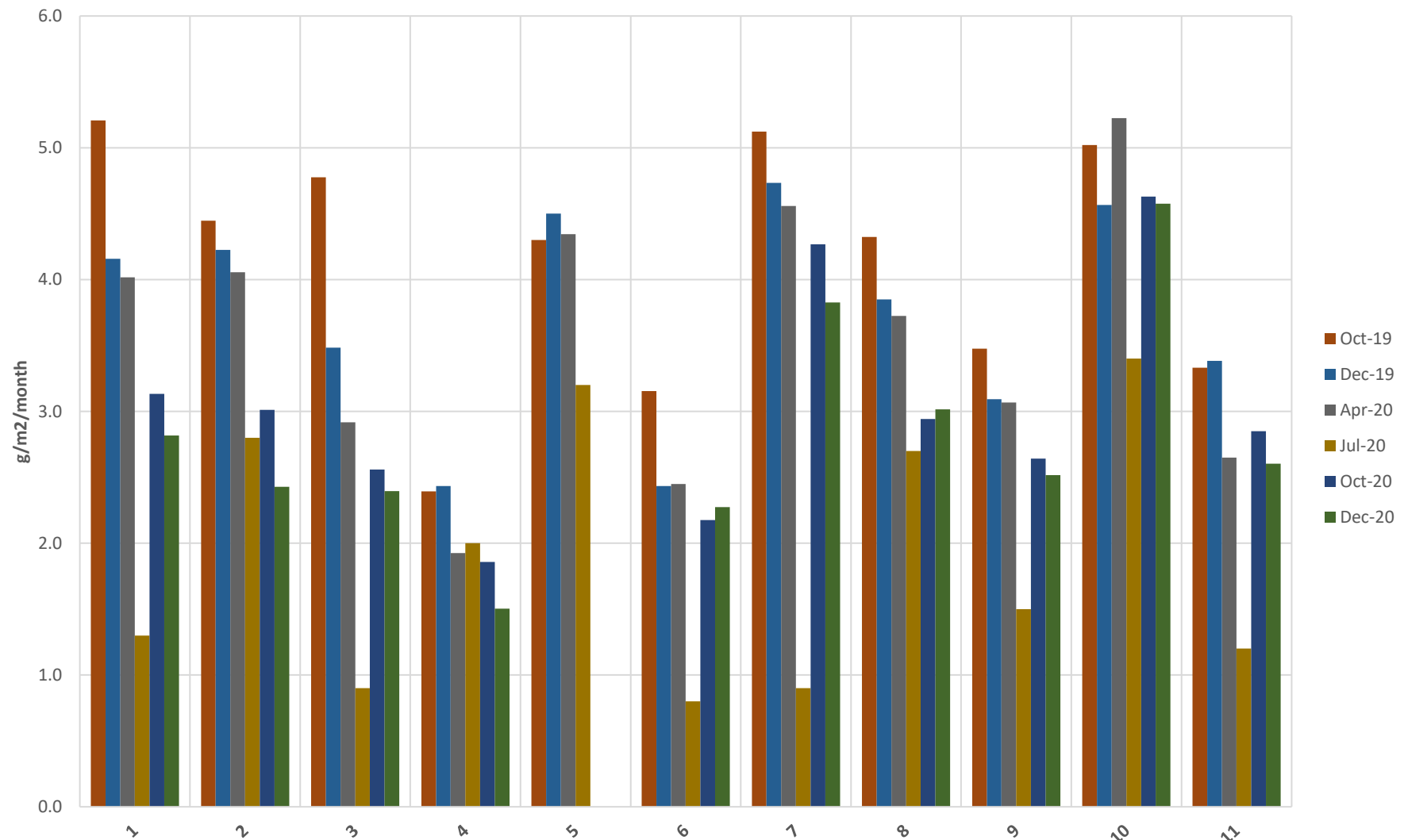




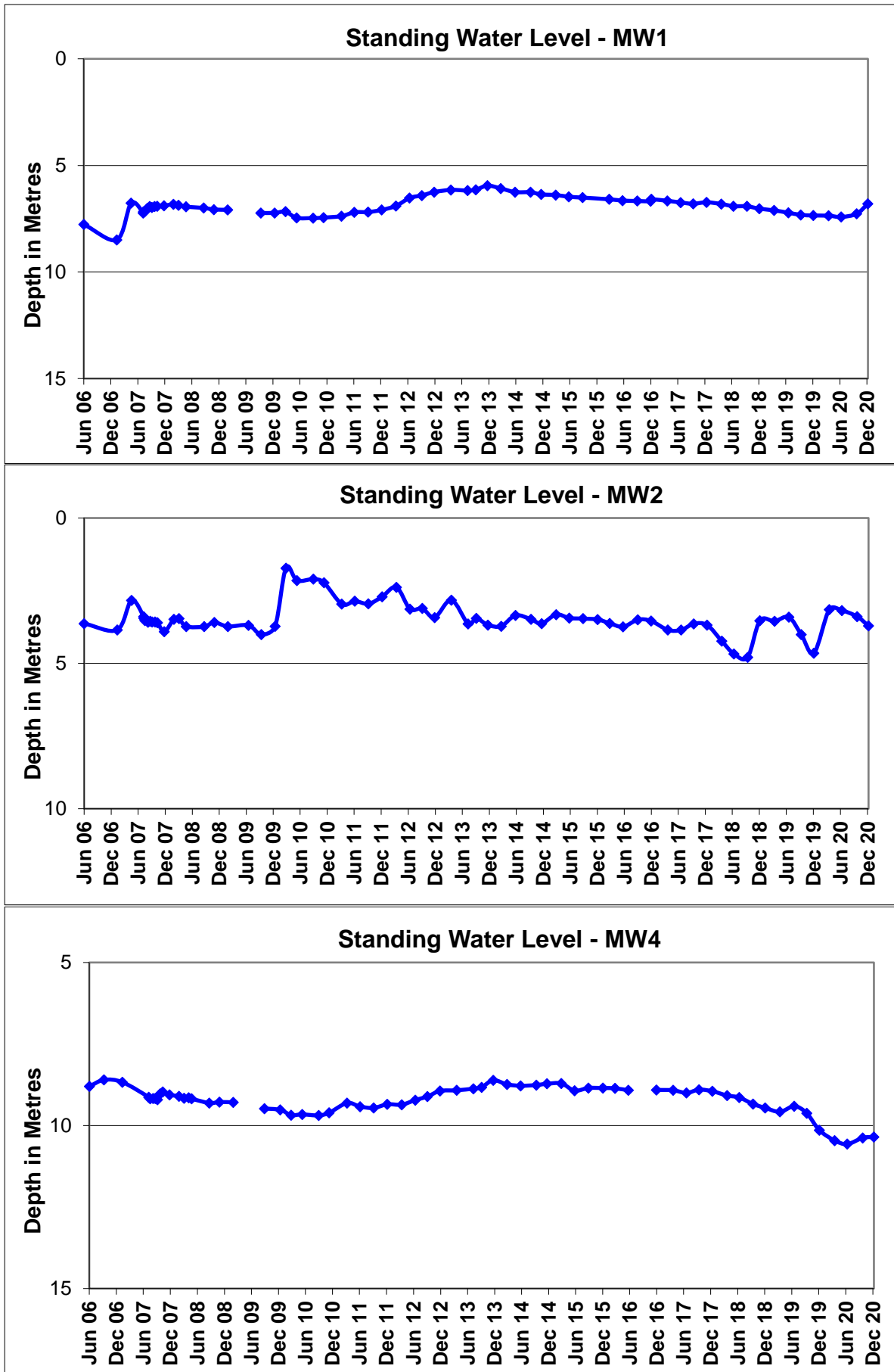


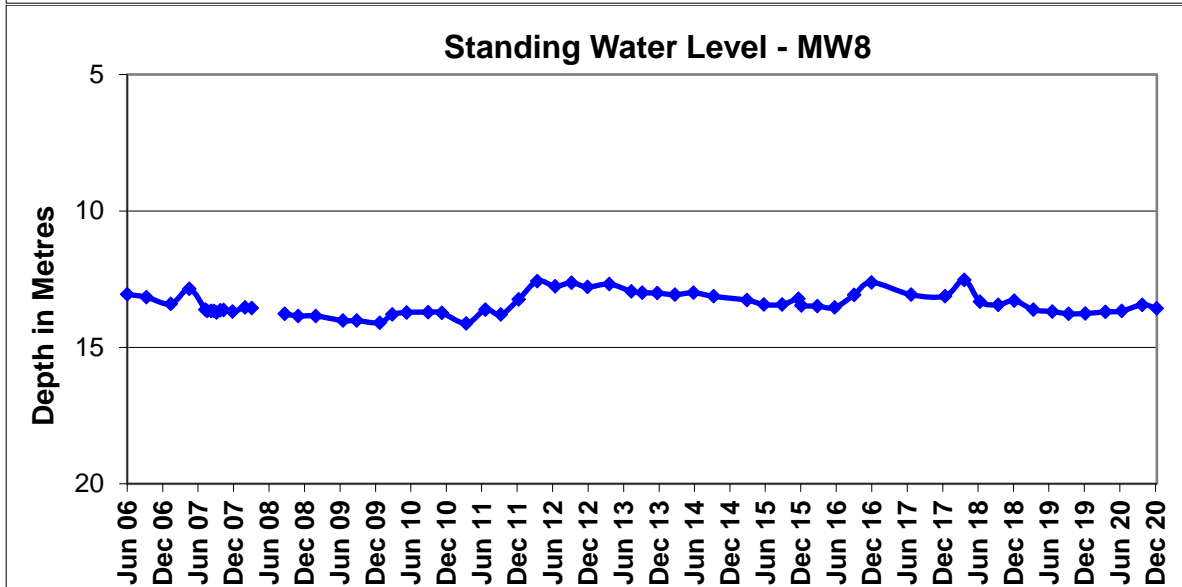
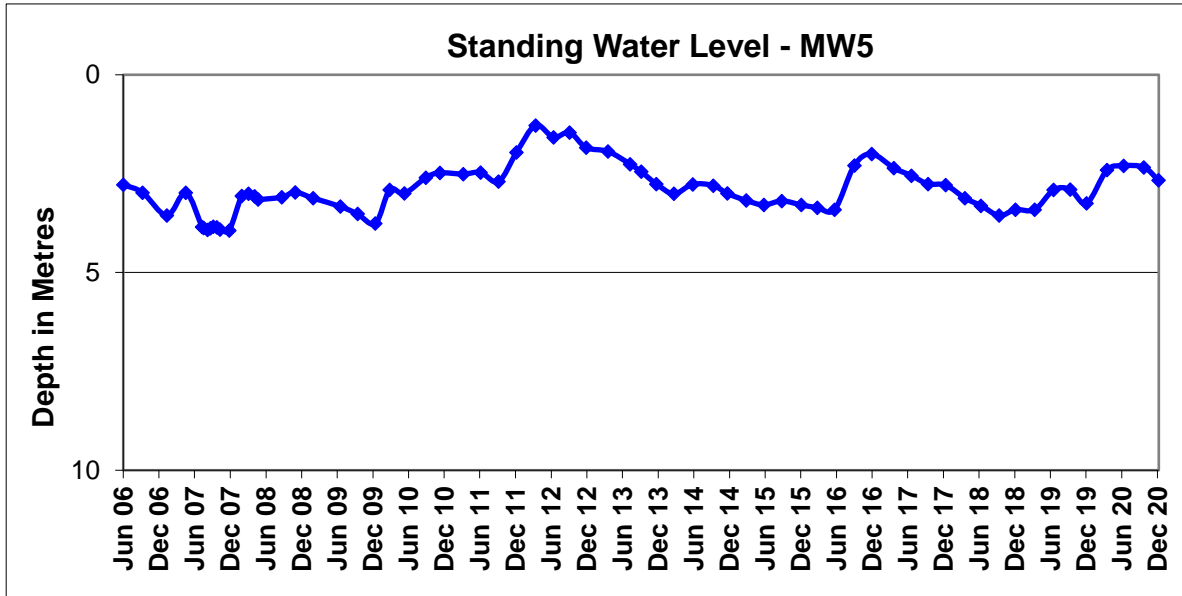
Appendix B

Deposited Dust Gauge Results- Quarterly rolling average [g/m²/month]



Appendix C





Minutes of the 63rd Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	17 th of February 2021 between 10:00AM- 11.00 AM		
Venue	Tarrawonga Training Room		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

1. Present and Apologies	<u>Present:</u> Mr David Ross (DR)- Independent Chairman, Mr Wade Hudson (WH)- GSC Representative Mr Lloyd Finlay (LF), NSC Representative, Mr Tian Oosthuizen (TOo), TCM, Mr Sebastien Moreno (SM)- TCM, Miss Madeleine Wright (MW), TCM, Mr Jacques Du Toit (JDT) – WHC GOC General Manager		
	<u>Apologies:</u> Mrs Rebecca Ryan (RR)- Community Representative, Mr Robert Hooke (RH), GSC Representative Mr David Moses (DM), GSC Representative Mrs Colleen Fuller (CF), Community Representative		

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2. Declaration of Pecuniary or Non-Pecuniary Interests	DR- declared that he has paid a fee for participation as Independent Chairman. DR also discussed members departing the CCC. LF declared that he leases WHC properties	DR to write a letter to both members who resigned and thanking them for their time and contribution to the TCCC.	
3. Previous Minutes Actions	Proceed with advertisement for new TCCC members.		
	SM- regarding 3- yearly Environmental Independent Audit report	SM- to prepare a presentation and outline findings of the Audits	Complete Detailed in section 6.
4. Business Arising	No update		
5. Mine Progress Report	TOo advised: <ul style="list-style-type: none"> - TRIFR = 0, All numbers tracking well with reference to safety - On track with Overburden and Coal - Rehabilitation – land form for CY20 finished. 		

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6. Environmental Monitoring report	<p>SM- Presented outcomes of the 3 yearly Audit.</p> <p>SM-</p> <ul style="list-style-type: none"> - Read and explained the Quarterly Environmental Report results. - Reiterated that trees planted in FY21 are thriving due to favourable weather conditions. - Advised MOD7 has been approved in February. - DPIE visited on the 16 February. 	SM – to advised link to access the Audit reports and Annual Reports	<p>Complete.</p> <p>Links to 2020 Audit reports and other documents:</p> <p>Independent Enviro Audit: https://whitehavencoal.com.au/Documents/Tarrawonga%20Mine/Environmental%20Management,%20Monitoring%20&%20Compliance/Independent%20Environmental%20Audits/TAR-Independent%20Environmental%20Audit%20Report%20-%202020.pdf</p> <p>Independent Biodiversity Audit: https://whitehavencoal.com.au/Documents/Tarrawonga%20Mine/Environmental%20Management,%20Monitoring%20&%20Compliance/Independent%20Environmental%20Audits/TAR-Independent%20Environmental%20Audit%20Report%20-%202020.pdf</p>
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<i>Agenda Item</i>	<i>Discussion and Description</i>	<i>Action and Accountability</i>	<i>Status/ Date</i>
			Independent%20Biodiversity%20Audit%20Report%202020.pdf Link to Annual Reviews: https://whitehavencoal.com.au/our-business/our-assets/tarrawonga-mine/ then follow > Environmental Management, Monitoring & Compliance > Annual Reviews
7. General business	DR – Discussed air quality committee with WH.	DR - to discuss further	
	DR – regarding the BTM Joint CCC asked about an alternative Meeting location.	WH – to confirm with GSC if Council meeting room will be available (i.e. Town hall or the Band Hall) for next BTM CCC	

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Agenda Item	Discussion and Description	Action and Accountability	Status/ Date
	<p>DR</p> <ul style="list-style-type: none"> - Discussed the preparation of the CCC Annual report, and the lack of CCC members despite the ongoing advertisement process. Will investigate if there is any interest for the Boggabri Chamber of Commerce representative to join the TCCC. - Advised discussion with DPIE regarding frequency of the TCCC meetings moving forward and potential to change to 6 monthly or annually meetings if members agree. 		
8.Complaints	SM – No complaints in this reporting period		
9. Next Meeting and Other Comments	<p>DR- advised next TCCC meetings dates:</p> <ul style="list-style-type: none"> - TCCC: 12th May 2021. - BTM CCC: 13th May 2021 – -TCCC: 11th August 2021 - TCCC: 27th October 2021 - BTM CCC: 28th October 2021 		

Tarrawonga Coal Mine Community Consultative Committee Meeting #64

Quarterly Environmental Monitoring Report
February 1 – April 30, 2021



Photo taken in April 2021 in a section of the Northern emplacement area that was rehabilitated in July 2020, showing promising ground cover growth..

This report has been prepared for the Community Consultative Committee (CCC) meeting to show Environmental monitoring performance at Tarrawonga Coal Mine (TCM) for the reporting period from February 1 2021 to April 30, 2021. Maps with all the monitoring locations are available in *Appendix A*.

Noise Monitoring

Attended noise monitoring was conducted at the “Bungalow” (TN4), “Barbers Lagoon” (TN3) and “Matong” (TN2) properties from 15th to the 14th of March 2021. The noise criterion for the mine is 35dB(A) Leq (15 min) for all operating times.

The results below show that noise emissions from the mine did not exceed the operational noise criterion at the “Barbers Lagoon”, “Bungalow” or “Matong” monitoring locations during the monitoring event during the entire monitoring period.

(See below summary tables extracted from 210330 RWDI report 2190007-T-07 (Q1 2021))

Table 4-1 : Comparison of noise levels between TN2 and 573b Coomalgalah

Date	Time	Noise Limits	TN2 Mine LAeq Noise Level (dB)	573b Coomalgalah Mine LAeq Noise Level (dB)	
		LAeq,15min	Measured Mine Contribution	Commensurate Mine Compliance Level	Exceedance
15/03/2021	20:54	35	<36 (I/A)	<27 (I/A)	0
16/03/2021	21:10	35	<32 (I/A)	<23 (I/A)	0
	21:26	35	<31 (I/A)	<22 (I/A)	0
	22:15	35	<27 (I/A)	<18 (I/A)	0
	22:20	35	<29 (I/A)	<20 (I/A)	0
	22:28	35	<29 (I/A)	<20 (I/A)	0
17/03/2021	11:17	35	<21 (I/A)	<12 (I/A)	0
	21:12	35	<32 (I/A)	<24 (I/A)	0
18/03/2021	09:03	35	<22 (I/A)	<13 (I/A)	0
	09:19	35	<21 (I/A)	<12 (I/A)	0
	09:34	35	<21 (I/A)	<12 (I/A)	0
	09:56	35	<30	<21	0
	10:11	35	<30	<21	0
	21:15	35	<26 (I/A)	<17 (I/A)	0
	21:31	35	<26 (I/A)	<17 (I/A)	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured LA90.

Table 4-3 : Summary of noise assessment at TN3

Date	Time	Noise Limits	TN3 Mine L_{Aeq} Noise Level (dB)		
		$L_{Aeq,15\ min}$	Measured Mine Contribution	Additional LF Penalty	Exceedance
15/03/2021	14:08	35	<27 (I/A)	-	0
	14:38	35	<28 (I/A)	-	0
	20:15	35	<30	-	0
	20:30	35	<30	-	0
	23:27	35	<30 (I/A)	-	0
16/03/2021	20:18	35	<20	-	0
	20:33	35	<20	-	0
	00:01	35	<20	-	0
17/03/2021	20:30	35	<30	-	0
	20:45	35	<30	-	0
	23:46	35	<30 (I/A)	-	0
	00:01	35	<29 (I/A)	-	0
18/03/2021	20:28	35	<25	-	0
	00:05	35	<20	-	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{A90} .

Table 4-5 : Summary of noise assessment at TN4

Date	Time	Noise Limits	TN4 Mine L_{Aeq} Noise Level (dB)		
		$L_{Aeq,15min}$	Measured Mine Contribution	Additional LF Penalty	Exceedance
15/03/2021	21:30	35	I/A (<30)*	-	0
	21:45	35	I/A (<30)*	-	0
	21:30	35	I/A (<30)*	-	0
16/03/2021	22:15	35	I/A (<30)*	-	0
	22:30	35	I/A (<30)*	-	0
17/03/2021	08:45	35	<36 (I/A)	-	0
	09:00	35	<40 (I/A)	-	0
18/03/2021	21:30	35	I/A (<30)*	-	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{A90} . Contributions with an * indicate that the mine noise was assessed using a low pass filter.

Noise from the mine must not exceed 45 dB(A) L1 (1 min) between 10 pm and 7 am. This is to minimise the potential for sleep disturbance as a result of individual loud noises from the mine. The results of the sleep disturbance monitoring show that the measured L1 (1 min) noise level did not exceed the sleep disturbance criterion.

Table 4-2 : Comparison of maximum noise events between TN2 and 573b Coomalgalah

Date	Time	Noise Limits	Noise Source	TN2 Mine L _{Amax} Noise Level (dB)	573b Coomalgalah Mine L _{Amax} Noise Level (dB)	
		L _{A1,1min}		Measured Level	Commensurate Mine Compliance Level	Exceedance
16/03/2021	22:15	45	-	I/A	-	0
	22:30	45	-	I/A	-	0
	22:45	45	-	I/A	-	0

Note: NM indicates a significant maximum noise event was not observed.
I/A indicates the mine was inaudible during the measurement period.

Table 4-3 : Summary of noise assessment at TN3

Date	Time	Noise Limits	TN3 Mine L _{Aeq} Noise Level (dB)		
		L _{Aeq,15 min}	Measured Mine Contribution	Additional LF Penalty	Exceedance
15/03/2021	14:08	35	<27 (I/A)	-	0
	14:38	35	<28 (I/A)	-	0
	20:15	35	<30	-	0
	20:30	35	<30	-	0
	23:27	35	<30 (I/A)	-	0
16/03/2021	20:18	35	<20	-	0
	20:33	35	<20	-	0
	00:01	35	<20	-	0
17/03/2021	20:30	35	<30	-	0
	20:45	35	<30	-	0
	23:46	35	<30 (I/A)	-	0
	00:01	35	<29 (I/A)	-	0
18/03/2021	20:28	35	<25	-	0
	00:05	35	<20	-	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{A90}.

Table 4-4 : Summary of maximum noise events at TN3

Date	Time	Noise Limits	TN3 Mine L _{Amax} Noise Level (dB)		
		L _{A1,1min}	Noise Source	Measured Level	Exceedance
15/03/2021	23:27	45	-	I/A	0
16/03/2021	00:01	45	-	NM	0
17/03/2021	23:46	45	-	I/A	0
	00:01	45	-	I/A	0
18/03/2021	00:05	45	-	NM	0

Note: NM indicates a significant maximum noise event was not observed.
I/A indicates the mine was inaudible during the measurement period.

The real time noise monitor located on the “Coomalgah” property remains a management tool so the noise criteria are not applicable at that site. Level of noise recorded at that location is managed according to the noise management plan and trigger action response plan.

Blast Monitoring

Blasting Results

Since 2006, there have been 1037 blasts (until 30/04/2021) at TCM.

The highest result for Overpressure was 111.6dB recorded at the ‘Tarrawonga’ monitor on the 06/03/2021.

The highest result for ground vibration was 1.01 mm/s recorded at the ‘Tarrawonga’ monitor on the 30/04/2021.

Table- 2: Max Peak Overpressure and Ground Pressure for the Quarter

Monitor Location	Date	Max. Peak Overpressure (dB)	Criterion (dB)	Date	Max. Peak Ground Pressure (mm/s)	Criterion (mm/s)
Tarrawonga*	06/03/21	111.6	N/A	30/04/21	1.01	N/A
Coomalgah	30/04/21	107.6	120	14/04/21	0.99	10

**Limit Not applicable according to EPL and PA11_0047 because project related property.*

Air Quality Monitoring

Dust Deposition Results

Table 3 shows deposited dust gauge results over 12 months. All the monitors are located on project related land; as such compliance criteria (4g/m²/month) do not apply. Overall deposited dust trends remain steady during the reporting period (refer graph in *Appendix B*)

MONTH	TEMPLEMORE (EB-4)	BOLLO CREEK STN (EB-5)	AMBARDI (EB-6)	TARRAWONGA (EB-7)	THUIN (EB-8)	PINE GROVE (EB-9)	TARRAWONGA MINE (EB-10)	TARRAWONGA MINE (EB-11)	TARRAWONGA MINE (EB-14)	TARRAWONGA MINE (EB-15)	JERALONG NORTH (EB-16)
Mar-20	1.7	+	2.2	2	6.2	2.9	8.3	4.1	2.8	4	2.3
April-20	2.2	3	7.7	0.7	15.9	0.8	2.5	1.9	1.5	3.8	5.2
May-20	3	2.5	1.4	2.4	3.2	1.2	4.4	2.4	2.3	4.4	4.2
Jun-20	3.1	2	1.1	1	2.7	1.5	1.9	2.5	1.8	5.3	2.7
Jul-20	1.3	2.8	0.9	2	3.2	0.8	0.9	2.7	1.5	3.4	1.2
Aug-20	1.1	1.8	1.1	0.5	1.8	0.7	1.9	2	1.2	3.7	0.8
Sep-20	1.4	19.9#	1.0	0.9	2.4	1.9	0.9	1.3	1.7	3.6	1.9
Oct-20	0.9	2.1	1.3	1.1	++	1.2	3.1	1.9	2.3	5.5	2.5
Nov-20	3.2	2.7	1.1	1.2	++	3.1	5	3.2	2.4	+	3
Dec-20	4.3	2.5	2	1.3	++	12.7#	3.7	4.3	2.6	+	1.6
Jan-21	6.7#	4.6#	1.1#	3.2	++	1.3		3.1	8.4	6.5	4.4
Feb-21	2.4	8.1#	2.8	1.4	++	1.1	3.6#	5.9#	4.4#	1.8	1
Mar-21	0.8	2.2	4.8#	1.5	++	1.2	5.4#	5.9#	11.1#	0.7	5.8#
Apr-21	12.6#	5	1.6	0.3	++	0.6	19.1#	3.7	0.5	0.7	3
12 MONTH ROLLING AVERAGE	3.2	2.6	1.4	1.3	++	1.3	4.4	2.9	2.5	3.4	2.2

Analysis done on these bottles concluded that they are contaminated, often with low ash/insoluble matter. Often noted on field sheets are bird droppings, insects and plant matter.

++ EB08 was decommissioned due to reshaping activities at the Southern Emplacement area.

+ bottles missing due to replacement after contamination or temporary civil/mining activities in the area.

¹DDG bottle on the fence line between TCM and BCM ROM.

Table 3 – Deposited Dust Gauge Results [g/m²/month]

High Volume Air sampler (PM10) Results

The High Volume Air Sampler (HVAS) installed at Coomalgah property monitors level of Particle Matter under 10 micron (PM₁₀). It operates for 24hr every 6 days. **Table 4** shows all the 24hr average values recorded for this quarter are below the 50µg/m³ criteria.

Table- 4: HVAS PM10 24 hr average levels for the Quarter

Date	24hr averaged PM10 (µg/m ³)	Criterion 24hr average (µg/m ³)	Comments
3/01/2021	6.4	50	Nil
9/01/2021	9.0		
15/01/2021	8.9		
21/01/2021	18.0		
27/01/2021	23.0		
2/02/2021	3.7		
8/02/2021	8.2		
14/02/2021	6.4		
20/02/2021	4.0		
26/02/2021	6.7		
4/03/2021	7.0		
10/03/2021	7.2		
16/03/2021	4.6		
22/03/2021	2.6		
28/03/2021	5.1		
3/04/2021	5.5		
9/04/2021	9.0		
15/04/2021	20.1		
21/04/2021	13.2		
27/04/2021	8.4		

Real-time Air monitoring (PM₁₀)

According to the current Air Quality and Greenhouse gas Management Plan, the real time air quality unit (TEOM) installed at the “Flixton” property monitors PM₁₀ levels in ambient air. It is an operational management tool and dust levels nearing or reaching the nominated criteria will trigger actions onsite to assess the source of dust and modify operations if it is determined to be related to Tarrawonga operations.



TEOM installed at Flixton property

Three portable dust (PM₁₀) monitors have improved the real-time dust monitoring network and assist the operation to mitigate any potential dust generated by the operation.



Portable and real-time dust monitor installed at TCM in November 2018

Water Monitoring

Groundwater

Routine groundwater monitoring was undertaken in March 2021 and showed in **Table 5** (refer to graphs in *Appendix C*).

Table 5- Groundwater results Summary

Site	Date	SWL (mbgl)	pH (units)	Elect. Conductivity (µS/cm)
MW1	March 2020	7.36	8.0	3,520
	June 2020	7.42	7.8	3,490
	September 2020	7.27	8.16	3,260
	December 2020	6.8	7.9	3,510
	March 2021	6.75	7.97	3,390
MW2	March 2020	3.15	7.6	496
	June 2020	3.18	7.3	490
	September 2020	3.39	7.39	435
	December 2020	3.71	7.3	535
	March 2021	3.46	6.99	462
MW4	March 2020	10.46	7.7	3,600
	June 2020	10.57	7.4	3,530
	September 2020	10.38	7.3	3,380
	December 2020	10.35	7.4	3,640
	March 2021	15.66	7.62	2,182
MW5	March 2020	2.41	7.8	874
	June 2020	2.29	7.6	675
	September 2020	2.34	7.7	2,090
	December 2020	2.67	7.1	1,960
	March 2021	2.56	7.36	874
MW8	March 2020	13.76	Casing blocked	Casing blocked
	June 2020	13.71		
	September 2020	13.44		
	December 2020	13.57		
	March 2021	13.42		

Note: MW7 was decomissioned due to mine progression

Surface Water

Water storage onsite is expected to be sufficient for at least the next 12 months.

Since beginning of 2021, TCM has recorded 337.0mm of rain.

2020	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Rain (mm)	109.2	261.2	113.2	65.6	16.0	23.4	31.0	38.3	30.2	55.8	3	184.4	931.1
Cumulative (mm)	109.2	370.4	483.6	549.2	565	588.4	619.4	567.7	687.9	743.7	746.7	931.1	
2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Rain (mm)	58.4	115.4	141.2	22.0	-	-	-	-	-	-	-	-	337.0
Cumulative (mm)	58.4	173.8	315.0	337.0	-	-	-	-	-	-	-	-	

In March 23, TCM had an uncontrolled water released from the Licenced Discharge Point 3 (LDP3). TCM collected water samples during the discharge event and the results exceeded water quality criteria specified in the EPL12365. Relevant agencies were notified and EPA is currently conducting an investigation.

Rehabilitation and Clearing

Rehabilitation

TCM has ordered approximately 11,000 tubestock trees for rehabilitation purposes for CY21 to be planted on new rehabilitation areas and over pre-existing maintenance rehabilitation areas. TCM will spread native seeds during the rehabilitation campaign. This will include native groundcover species, shrubs and sub-shrub species as per the Rehabilitation Management plan.

In preparation for seed spreading and tree planting, topsoil placement activity is underway on the Southern Emplacement Area.

Clearing

Approximately 31.4Ha of vegetation were cleared between February and April 2021 under the supervision of a qualified ecologist and in accordance with the current MOP and Biodiversity Management Plan.

A microbat radio tracking program was successfully completed during the clearing campaign.



Strophurus intermedius captured and released safely during clearance supervision.



Ozimops petersi (inland free-tailed bat) with attached radio transmitter.

Complaints

No complaints have been recorded through the reporting period.

Environmental Management Plans

Management Plans

Following approval of Modification 7 of PA11_0047, TCM has conducted a review of all the Management Plans. Updated Management Plans will be submitted via DPIE portal for approval in May 2021 including, Air Quality Management Plan, Noise Management Plan, Blast Management Plan, Heritage Management Plan and Water Management Plan.

BTM Water Strategy

The BTM mines submitted an updated BTM Groundwater Model and report to DPIE in December 2020. The 3 mines are still awaiting on the determination.

Annual and Compliance Reporting

Annual Review and Annual Return Reports

The Annual Return was submitted to EPA on the 1st of March 2021.

The Annual Review was submitted to DPIE on the 26th of March 2021.

Annual Compliance EPBC statement

Next Annual Compliance EPBC statement will be submitted to DAWE in June 2021.

Annual National Pollutant Inventory (NPI) and Greenhouse Gas Emission (NGERs) Reports 2021

Next NPI and NGERs reports will be submitted in September and October 2021 respectively.

Audits- Compliance

In February, DPIE conducted a site inspection during vegetation clearing activities.

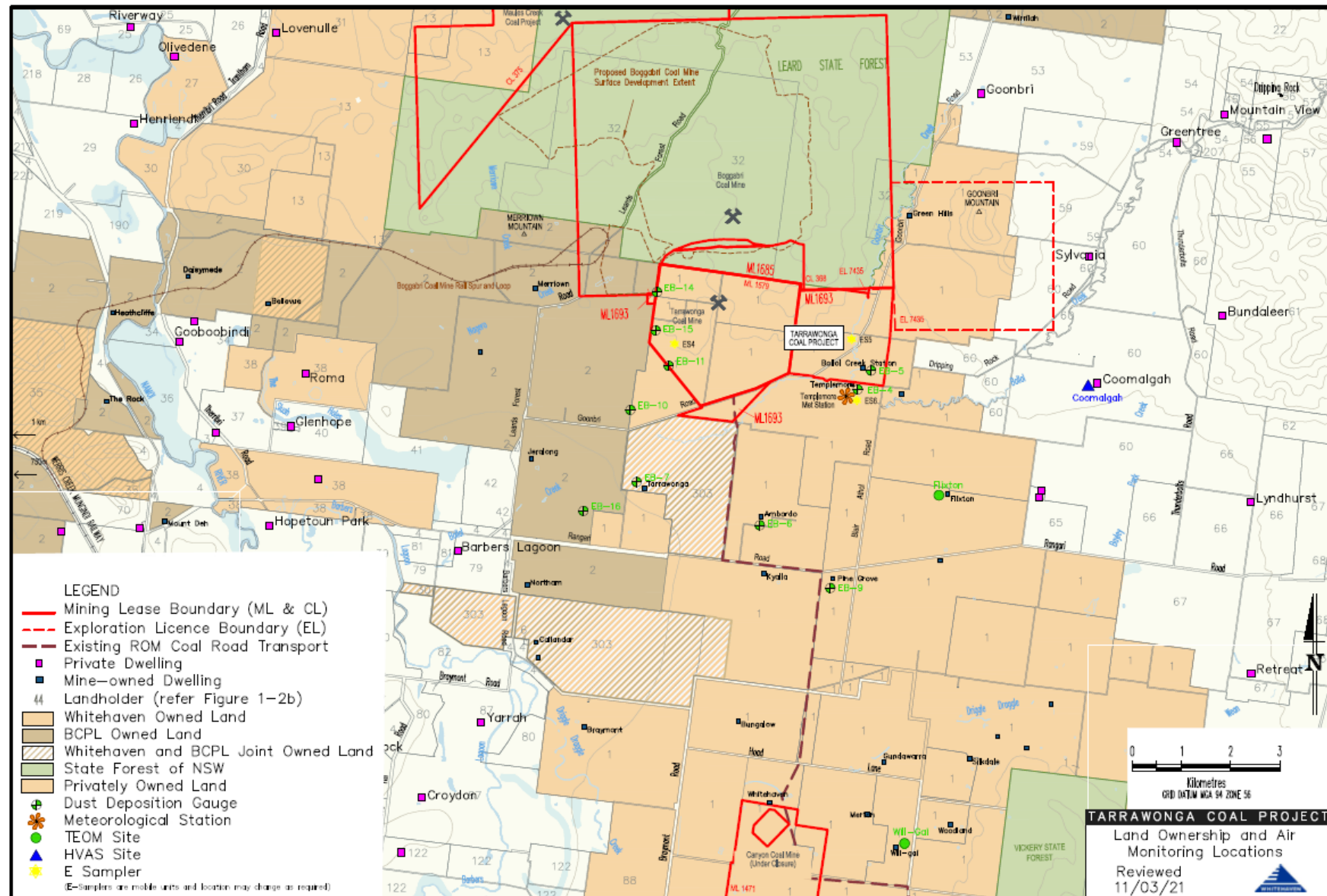
The NSW EPA also conducted a site inspection on the 14th of April 2021.

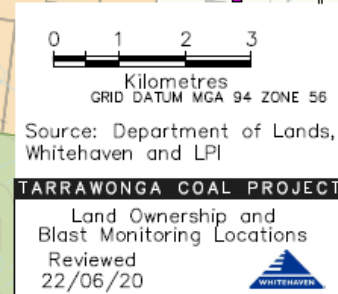
Approval and Licencing

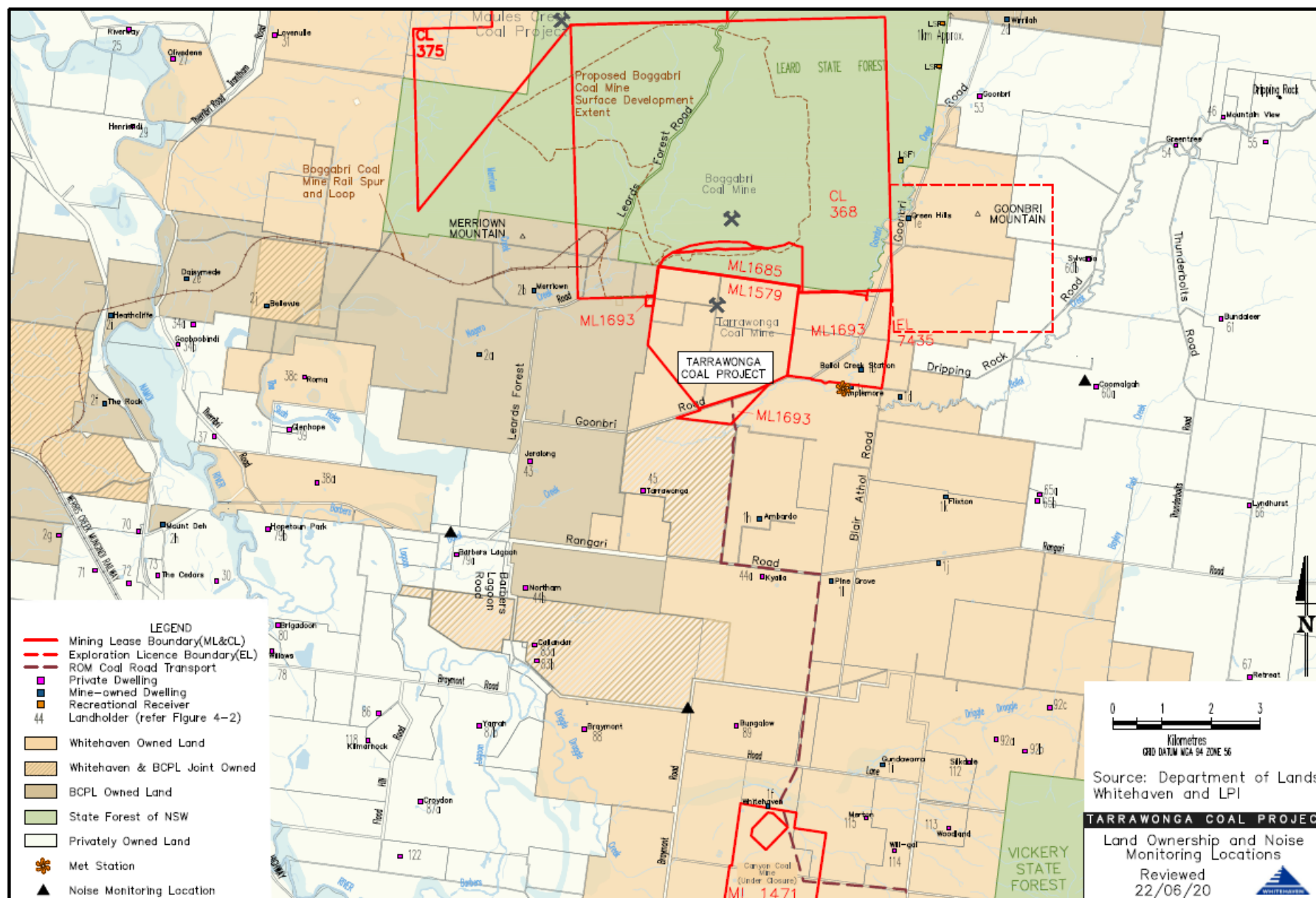
TCM received final determination and Approval of Modification (MOD7) of Project Approval (PA11_0047) regarding the Life of Mine, in February 2021.

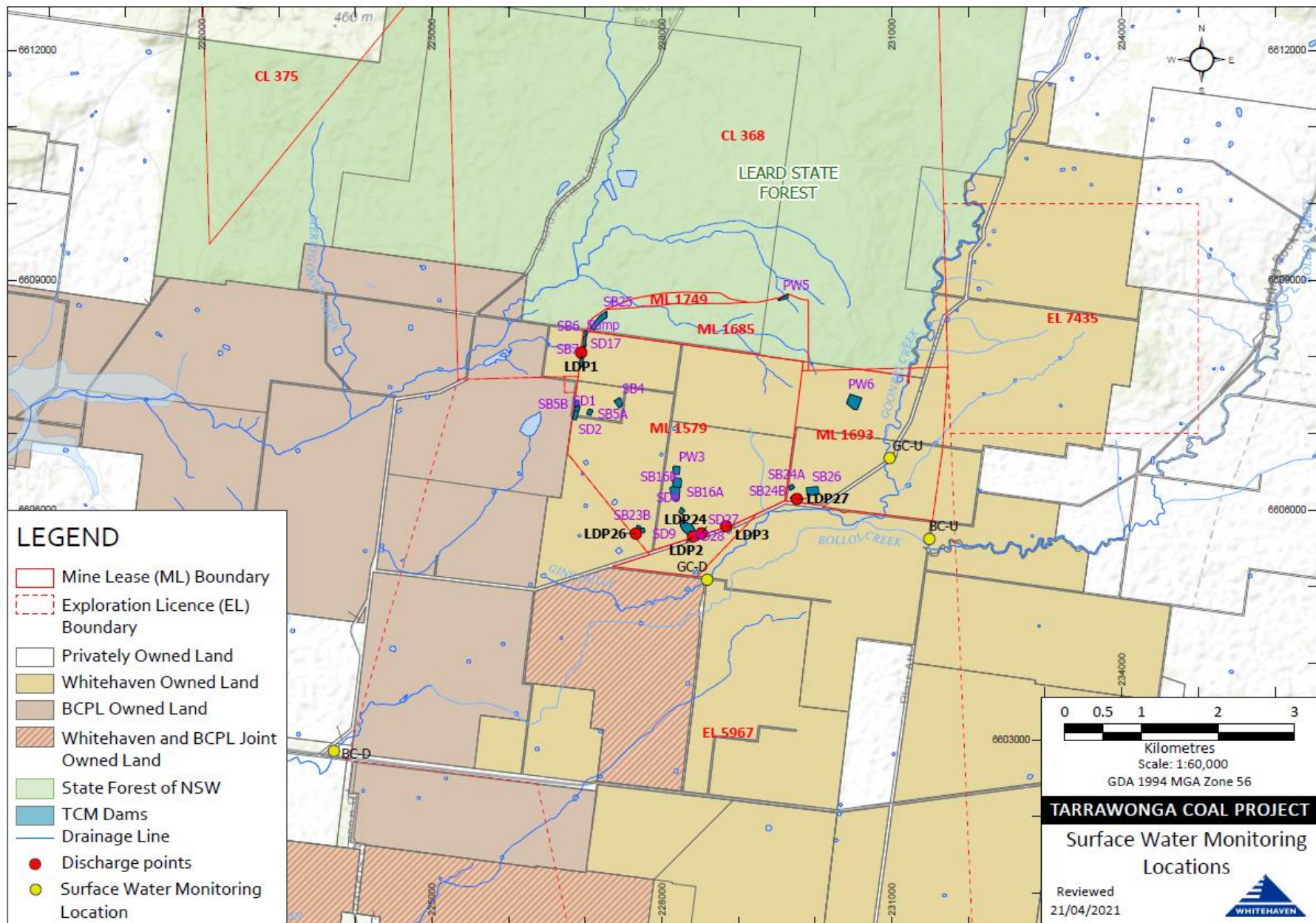
In March 2021, TCM submitted to DPIE a Modification 9 (MOD9-Waste Tyres Disposal) of PA11_0047.

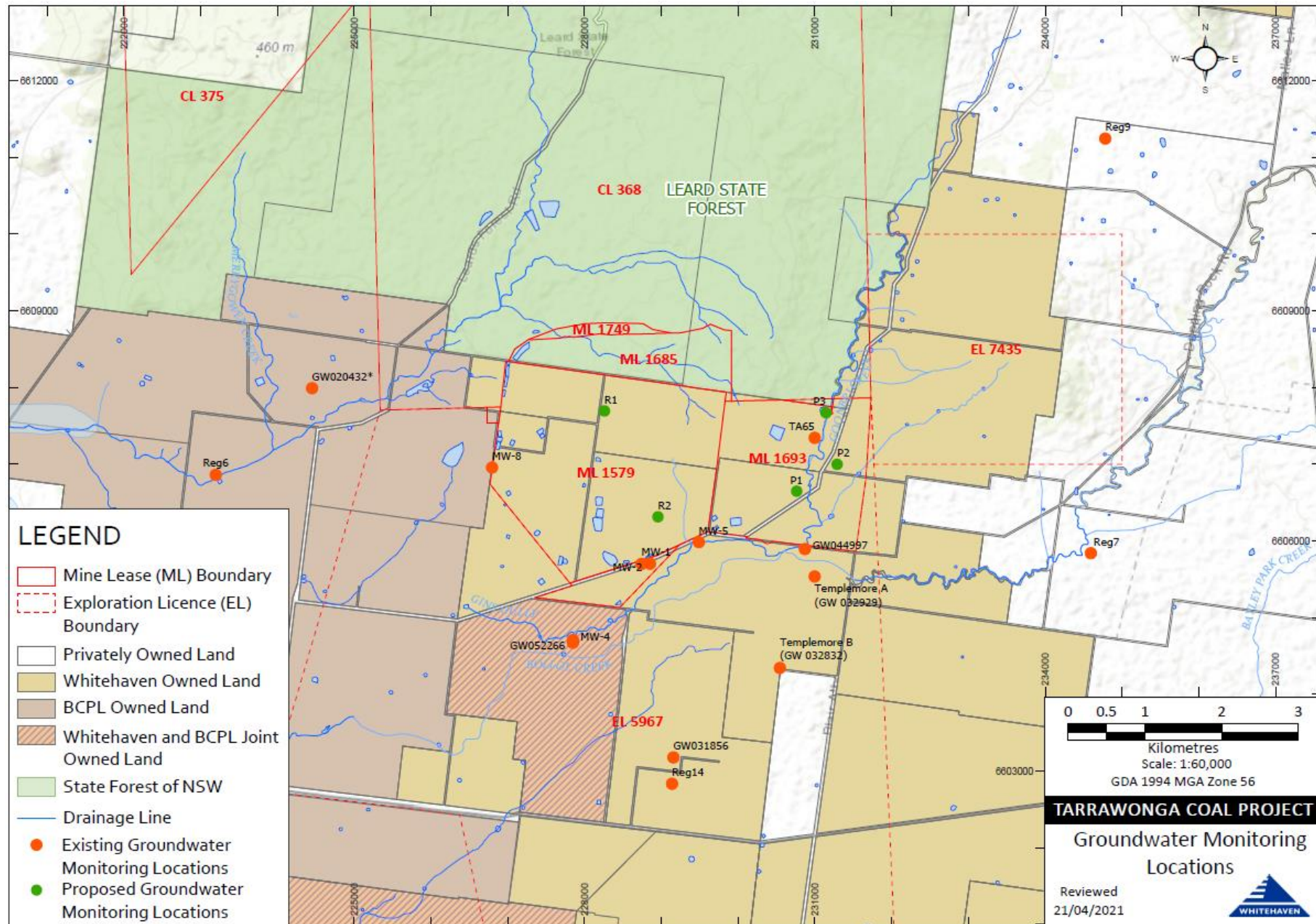
Appendix A





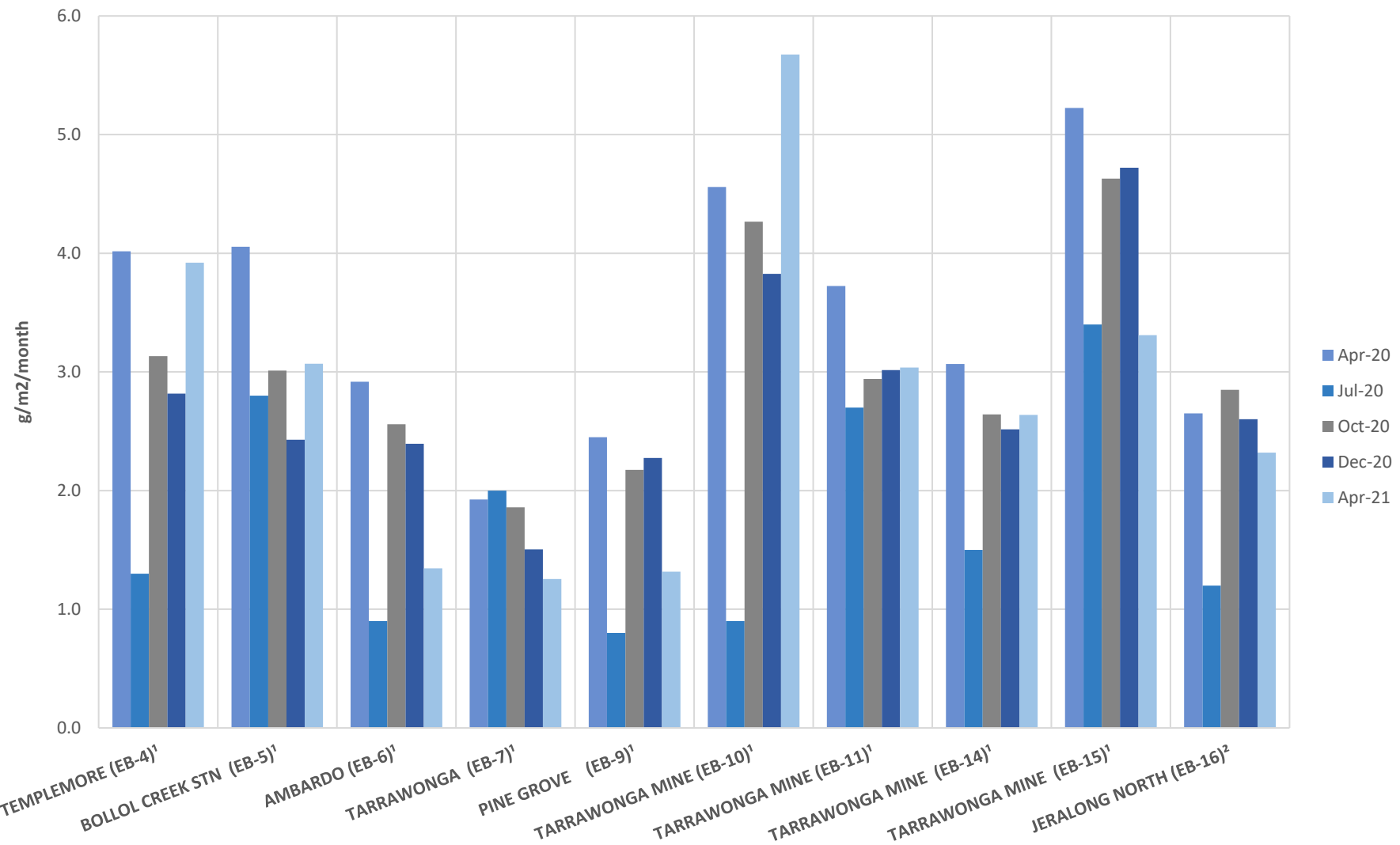






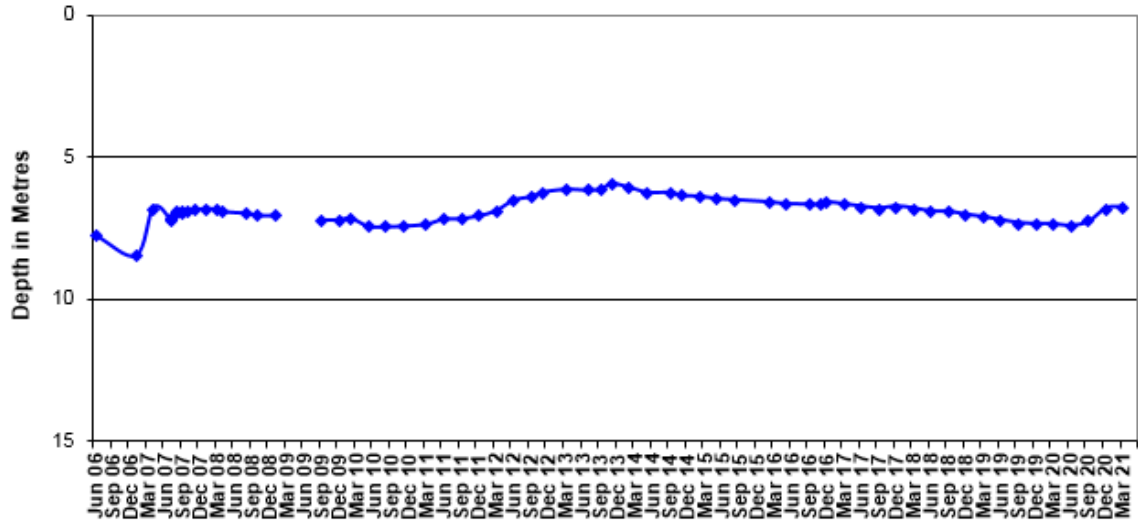
Appendix B

Deposited Dust Gauge Results- Quarterly rolling average [g/m²/month]

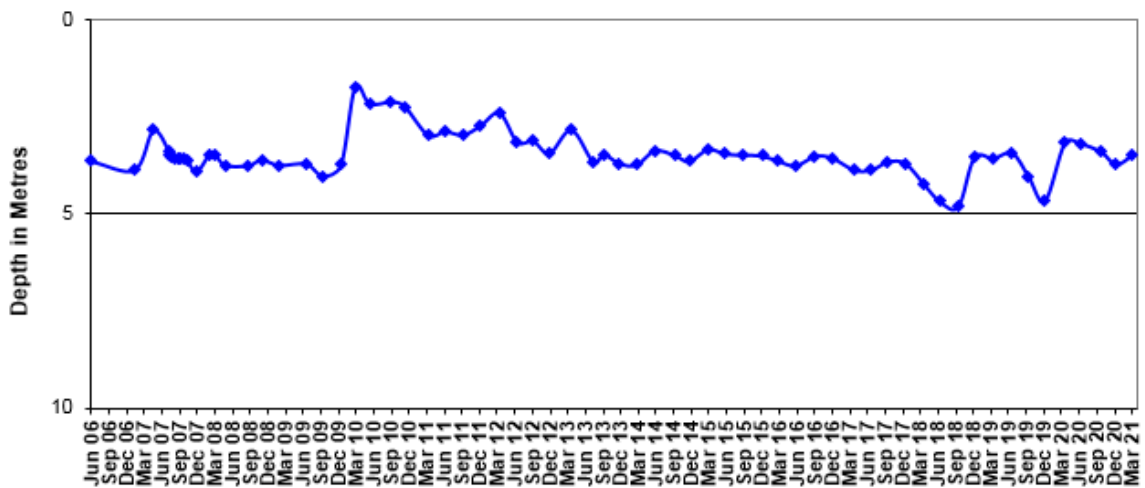


Appendix C

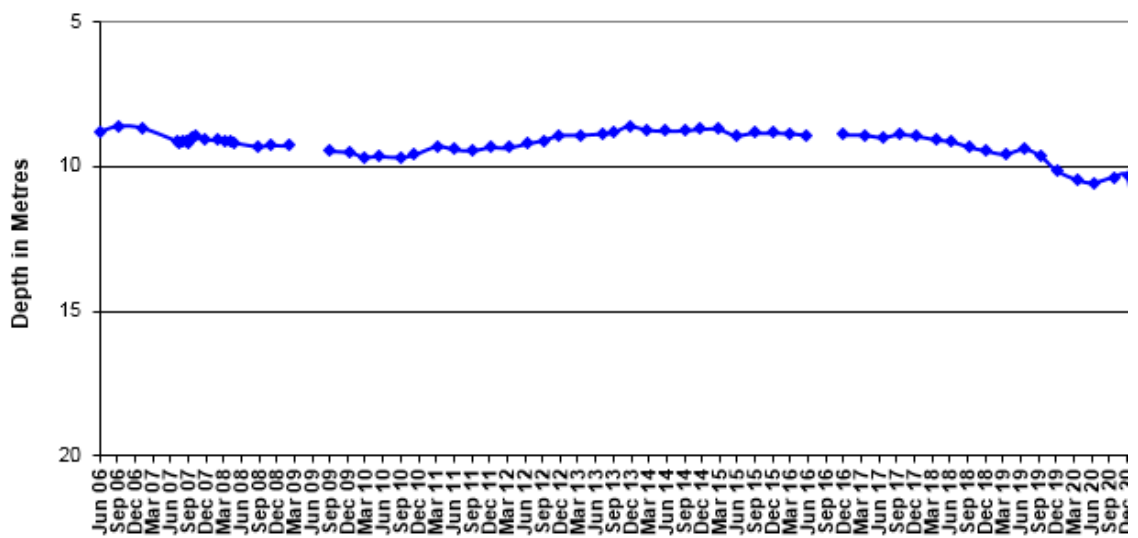
Standing Water Level - MW1

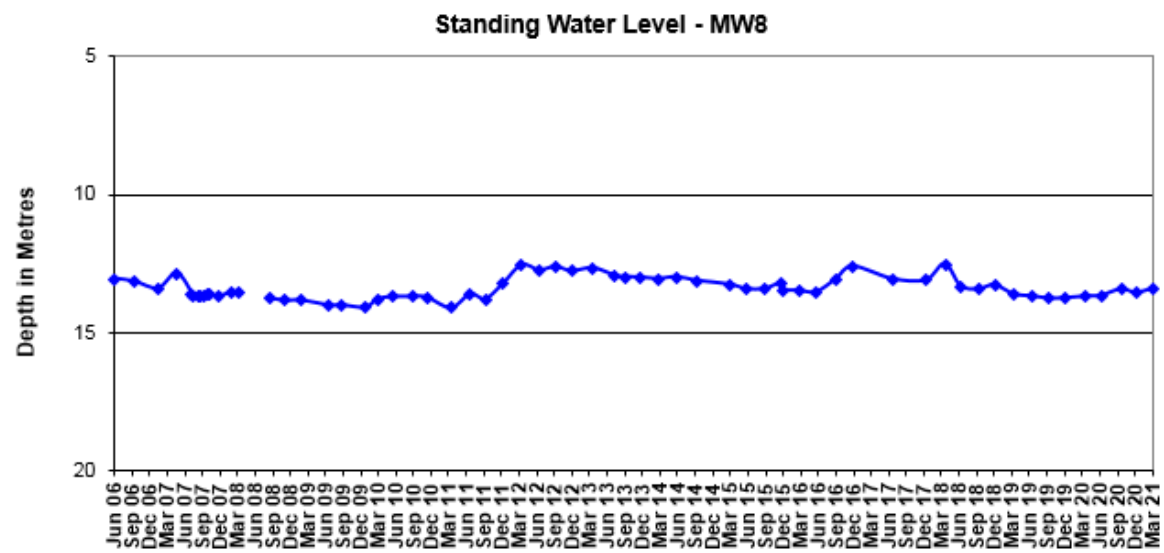
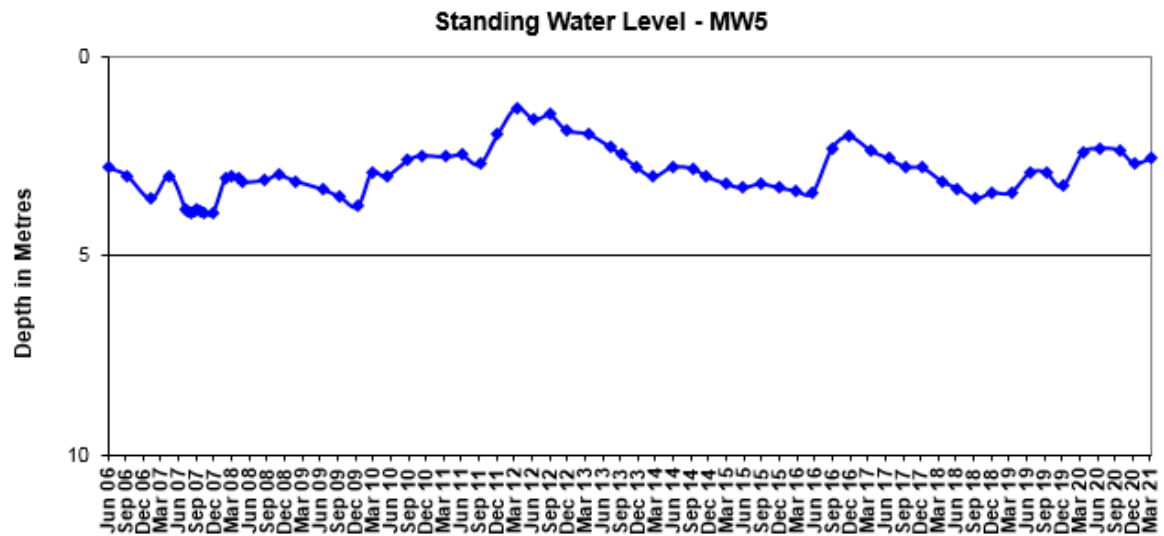


Standing Water Level - MW2



Standing Water Level - MW4





Minutes of the 64th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	12 th of May 2021 between 10:00AM- 11.45 AM		
Venue	Tarrawonga Training Room		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

1. Present and Apologies	<u>Present:</u> Mr David Ross (DR)- Independent Chairman, Mr Wade Hudson (WH)- GSC Representative Mr David Moses (DM)- GSC Representative Mr Lloyd Finlay (LF)- NSC Representative, Mrs Rebecca Ryan (RR)- Community Representative, Mr Jack Morrissey (JM)- GSC Representative Mr Tian Oosthuizen (TOo)- TCM, Mr Tony Dwyer (TD)- WHC, Mr Darren Swain (DS)- WHC, Mr Sebastien Moreno (SM)- TCM, Miss Madeleine Wright (MW)- TCM,		
	<u>Apologies:</u> Mrs Colleen Fuller (CF)- Community Representative		

Minutes of the 64th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

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Venue	Tarrawonga Training Room		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

2. Declaration of Pecuniary or Non-Pecuniary Interests	DR- declared that he is paid a fee for participation as Independent Chairman. DR also discussed members departing the CCC and the difficulties identifying potential replacements. LF declared that he leases WHC properties		
3. Previous Minutes Actions	Proceed with advertisement for new TCCC members.	DR- Chamber of Commerce member interested in joining TCCC and will have to fill the application form.	
	RR- regarding blasting and road closure. ~30min wait on the 27 April 2021. SM - advised that all the neighbours who have requested to are informed by email or sms prior to a blast. Anyone can be added to that list at any time. The general public can also check the WHC website for day and date of blast and if a road closure will be in place. TOo- added there is always a good reason	RR- To provide the details of the person who commented on the road closure wait, so SM can contact this person and add her to blast notification list if requested.	

Minutes of the 64th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

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Venue	Tarrawonga Training Room		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

	for delaying a blast. For example to meet environmental obligations or sometimes due to technical challenge on the ground but TCM always tries to minimize the time for a road closure.		
4. Business Arising	No update		
5. Mine Progress Report	TOo advised: <ul style="list-style-type: none"> - TRIFR = 2.65 as a result of an operator standing on a rock, LTI free = 897 days - Production impacted by rainfall in March but on track with Overburden and Coal for the Quarter and below budget. 		
6. Environmental Monitoring report	MW <ul style="list-style-type: none"> - Read and explained the Quarterly Environmental Report results. - Advised MOD9 was submitted in March. - Several EMPs are being updated - Annual Return and Review 2020 		

Minutes of the 64th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

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Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

	<p>were submitted in March</p> <ul style="list-style-type: none"> - BTM GW model was submitted and NRAR comments being reviewed. Model to be reviewed in 3 years and some of those comments to be addressed then. <p>TD</p> <ul style="list-style-type: none"> - Presented MOD9 (Waste tyres disposal) submission - Commitments for in pit tyres disposal include recording, monitoring and development of risk assessment. WHC will regularly assess technology and industry best practices to manage end of life large tyres and will use the waste hierarchy priority matrix to reuse as much as possible. At present, burial of tyres is the only feasible option for WHC. It is also a common practice across the mining industry. TCM received comments from 		
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Minutes of the 64th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	12 th of May 2021 between 10:00AM- 11.45 AM		
Venue	Tarrawonga Training Room		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

	<p>agencies including from NSC and is now awaiting determination from DPIE. EPA is the regulator for waste management matters but MOD9 is required prior to EPA assessment.</p> <p>DM- How many tyres in total?</p> <p>TD- More than 350 tyres will be buried over the life of mine.</p> <p>DR- Members of community raised concerns that MOD9 was not discussed at the February TCCC meeting.</p> <p>TD – It was an oversight. The draft MOD9 report was prepared in late 2020 but submitted to DPIE in March 2021. The wording referring to February TCCC was not updated before the submission.</p> <p>TOo- reiterated that any community concern should not wait for next CCC meeting and</p>		
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Minutes of the 64th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	12 th of May 2021 between 10:00AM- 11.45 AM		
Venue	Tarrawonga Training Room		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

	should be raised with TCM immediately. TCM would be happy to clarify any concern in a timely manner.		
7. General business	<p>DR- Asked if there was anything the community should be mindful of about the mining operation?</p> <p>TOo- There is no major change to expect in coming months. Rocglen mine crew will finish soon and will come over to assist TCM with rehabilitation. This will provide employment opportunity for those operators and accelerate TCM rehabilitation process.</p> <p>DR- Discussion around what can be changed in the next 12 months and what could be done during next CCC meeting CCC members showed interest in</p> <ul style="list-style-type: none"> - doing a tour of the rehabilitation areas - doing a mine tour - seeing a presentation of the blasting 	TCM - to organise a mine or rehab tour	

Minutes of the 64th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	12 th of May 2021 between 10:00AM- 11.45 AM		
Venue	Tarrawonga Training Room		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date
	processes - understand training/ education programs or opportunities		
8.Complaints	MW – No complaints in this reporting period		
9. Next Meeting and Other Comments	DR- advised next CCC meetings dates: -TCCC: 11 th August 2021 - TCCC: 27 th October 2021 - BTM CCC: 28 th October 2021		

Tarrawonga Coal Mine Community Consultative Committee Meeting #65

Quarterly Environmental Monitoring Report
May 1 – July 31, 2021



Photo taken in July 2021 in a section of the Northern Emplacement Area that was rehabilitated in July 2020, showing promising vegetation growth.

This report has been prepared for the Community Consultative Committee (CCC) meeting to show Environmental monitoring performance at Tarrawonga Coal Mine (TCM) for the reporting period from May 1 2021 to July 31, 2021. Maps with all the monitoring locations are available in *Appendix A*.

Noise Monitoring

Attended noise monitoring was conducted at the “Bungalow” (TN4), “Barbers Lagoon” (TN3) and “Matong” (TN2) properties from 7th to the 10th of June 2021. The noise criterion for the mine is 35dB(A) Leq (15 min) for all operating times.

The results below show that noise emissions from the mine did not exceed the operational noise criterion at the “Barbers Lagoon”, “Bungalow” or “Matong” monitoring locations during the monitoring event during the entire monitoring period.

(See below summary tables extracted from 210708 RWDI report 2190007-T-08 (Q2 2021))

Table 4-1: Comparison of noise levels between TN2 and 573b Coomalgalah

Date	Time	Noise Limits	TN2 Mine LAeq Noise Level (dB)	573b Coomalgalah Mine LAeq Noise Level (dB)	
		LAeq,15min	Measured Mine Contribution	Commensurate Mine Compliance Level	Exceedance
07/06/21	12:44	35	26	17	0
	13:04	35	27	18	0
	13:44	35	<25	<16	0
	14:01	35	<25	<16	0
	14:19	35	<25	<16	0
	21:12	35	29	20	0
	22:00	35	34	25	0
	22:15	35	<35	<26	0
	22:30	35	30	21	0
08/06/21	22:46	35	30	21	0
	22:22	35	38 ¹	29	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured LAeq.

Note ¹ Due to poor road conditions these measurements were taken approximately 1.1km closer to the mine on Dripping Rock Road

Table 4-3: Summary of noise assessment at TN3

Date	Time	Noise Limits	TN3 Mine L_{Aeq} Noise Level (dB)		
		$L_{Aeq, 15 \text{ min}}$	Measured Mine Contribution	Additional LF Penalty	Exceedance
07/06/21	15:06	35	<22	-	0
	15:22	35	<22	-	0
	15:37	35	<21	-	0
	15:53	35	<12 (I/A)	-	0
	16:08	35	<13 (I/A)	-	0
	16:23	35	<16 (I/A)	-	0
	19:40	35	<30	-	0
	19:55	35	<30	-	0
	23:15	35	<30	-	0
	23:30	35	<30	-	0
	23:45	35	<30	-	0
	00:00	35	<30	-	0
08/06/21	14:23	35	<31 (I/A)	-	0
	15:03	35	<29 (I/A)	-	0
	15:18	35	<31 (I/A)	-	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{A90} .

Table 4-5: Summary of noise assessment at TN4

Date	Time	Noise Limits	TN4 Mine L_{Aeq} Noise Level (dB)		
		$L_{Aeq,15min}$	Measured Mine Contribution	Additional LF Penalty	Exceedance
07/06/21	13:21	35	<26 (I/A)	-	0
	13:36	35	<26 (I/A)	-	0
	13:51	35	<25 (I/A)	-	0
	14:06	35	<26 (I/A)	-	0
	14:21	35	<26 (I/A)	-	0
	14:36	35	<26 (I/A)	-	0
	21:45	35	<30	-	0
	22:00	35	<30	-	0
	22:15	35	<30	-	0
	22:30	35	<30	-	0
	22:45	35	<30	-	0
08/06/21	22:12	35	<25	-	0
	22:29	35	<27	-	0
	22:44	35	<28	-	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{A90} .

Noise from the mine must not exceed 45 dB(A) L1 (1 min) between 10 pm and 7 am. This is to minimise the potential for sleep disturbance as a result of individual loud noises from the mine. The results of the sleep disturbance monitoring show that the measured L1 (1 min) noise level did not exceed the sleep disturbance criterion.

Table 4-2: Comparison of maximum noise events between TN2 and 573b Coomalgalah

Date	Time	Noise Limits	Noise Source	TN2 Mine L_{Amax} Noise Level (dB)	573b Coomalgalah Mine L_{Amax} Noise Level (dB)	
		$L_{A1,1min}$		Measured Level	Commensurate Mine Compliance Level	Exceedance
07/06/2021	22:00	45	Horn	45	36	0
	22:15	45	Horn	32	23	0
	22:30	45	Engine	36	27	0
	22:46	45	-	NM	-	0
08/06/2021	22:22	45	Engine	43	34	0

Note: NM indicates a significant maximum noise event was not observed.
I/A indicates the mine was inaudible during the measurement period.

Table 4-4: Summary of maximum noise events at TN3

Date	Time	Noise Limits	TN3 Mine L _{Amax} Noise Level (dB)		
		L _{A1,1min}	Noise Source	Measured Level	Exceedance
07/06/21	23:15	45	Horn	36	0
	23:30	45	Horn	36	0
	23:45	45	Horn	36	0
	00:00	45	Horn	37	0

Note: NM indicates a significant maximum noise event was not observed.
I/A indicates the mine was inaudible during the measurement period.

Table 4-6: Summary of maximum noise events at TN4

Date	Time	Noise Limits	TN4 Mine L _{Amax} Noise Level (dB)		
		L _{A1,1min}	Noise Source	Measured Level	Exceedance
07/06/21	22:00	45	Horn	29	0
	22:15	45	Horn	29	0
	22:30	45	Horn	29	0
	22:45	45	Horn	29	0
08/06/21	22:12	45	-	NM	0
	22:29	45	-	NM	0
	22:44	45	-	NM	0

Note: NM indicates a significant maximum noise event was not observed.
I/A indicates the mine was inaudible during the measurement period.

The real time noise monitor located on the “Coomalgah” property remains a management tool so the noise criteria are not applicable at that site. Level of noise recorded at that location is managed according to the noise management plan and trigger action response plan.

Blast Monitoring

Blasting Results

Since 2006, there have been 1056 blasts (until 31/07/2021) at TCM.

The highest result for Overpressure was 132.2dB recorded at the ‘Tarrawonga’ monitor on the 25/05/2021. This high result was not reported, as this monitor resides on a mine owned property and compliance limits do not apply.

The highest result for ground vibration was 0.61 mm/s recorded at the ‘Coomalgah’ monitor on the 30/04/2021.

Table- 2: Max Peak Overpressure and Ground Pressure for the Quarter

Monitor Location	Date	Max. Peak Overpressure (dB)	Criterion (dB)	Date	Max. Peak Ground Pressure (mm/s)	Criterion (mm/s)
Tarrawonga*	25/05/21	132.2	N/A	25/05/21	0.51	N/A
Coomalgah	05/07/21	110.6	120	25/05/21	0.61	10

**Limit Not applicable according to EPL and PA11_0047 because project related property.*

Air Quality Monitoring

Dust Deposition Results

Table 3 shows deposited dust gauge results over 12 months. All the monitors are located on project related land; as such compliance criteria (4g/m²/month) do not apply. Overall deposited dust trends remain steady during the reporting period (refer graph in *Appendix B*)

MONTH	TEMPLEMORE (EB-4)	BOLLO CREEK STN (EB-5)	AMBARDI (EB-6)	TARRAWONGA (EB-7)	THUIN (EB-8)	PINE GROVE (EB-9)	TARRAWONGA MINE (EB-10)	TARRAWONGA MINE (EB-11)	TARRAWONGA MINE (EB-14)	TARRAWONGA MINE (EB-15)	JERALONG NORTH (EB-16)
Jun-20	3.1	2	1.1	1	2.7	1.5	1.9	2.5	1.8	5.3	2.7
Jul-20	1.3	2.8	0.9	2	3.2	0.8	0.9	2.7	1.5	3.4	1.2
Aug-20	1.1	1.8	1.1	0.5	1.8	0.7	1.9	2	1.2	3.7	0.8
Sep-20	1.4	19.9#	1.0	0.9	2.4	1.9	0.9	1.3	1.7	3.6	1.9
Oct-20	0.9	2.1	1.3	1.1	++	1.2	3.1	1.9	2.3	5.5	2.5
Nov-20	3.2	2.7	1.1	1.2	++	3.1	5	3.2	2.4	+	3
Dec-20	4.3	2.5	2	1.3	++	12.7#	3.7	4.3	2.6	+	1.6
Jan-21	6.7#	4.6#	1.1#	3.2	++	1.3		3.1	8.4	6.5	4.4
Feb-21	2.4	8.1#	2.8	1.4	++	1.1	3.6#	5.9#	4.4#	1.8	1
Mar-21	0.8	2.2	4.8#	1.5	++	1.2	5.4#	5.9#	11.1#	0.7	5.8#
Apr-21	12.6#	5	1.6	0.3	++	0.6	19.1#	3.7	0.5	0.7	3
May-21	10.5	6.5	0.5	0.7	++	1	14.5	4.5	0.8	2.5	4
Jun-21	2.2	4.2	0.3	0.2	++	0.4	3.3	1.9	0.5	3.3	3.2
Jul-21	12.9	12.5	0.2	0.3	++	0.2	6.6	2.3	0.7	1.6	3.2
12 MONTH ROLLING AVERAGE	5.4	4.7	1.2	1.1	++	1.2	7.2	3.0	1.1	3.8	3.1

Analysis done on these bottles concluded that they are contaminated, often with low ash/insoluble matter. Often noted on field sheets are bird droppings, insects and plant matter.

++ EB08 was decommissioned due to reshaping activities at the Southern Emplacement area.

+ bottles missing due to replacement after contamination or temporary civil/mining activities in the area.

¹DDG bottle on the fenceline between TCM and BCM ROM.

Table 3 – Deposited Dust Gauge Results [g/m²/month]

High Volume Air sampler (PM10) Results

The High Volume Air Sampler (HVAS) installed at Coomalgah property monitors level of Particle Matter under 10 micron (PM₁₀). It operates for 24hr every 6 days. **Table 4** shows all the 24hr average values recorded for this quarter are below the 50µg/m³ criteria.

Table- 4: HVAS PM10 24 hr average levels for the Quarter

Date	24hr averaged PM10 (µg/m ³)	Criterion 24hr average (µg/m ³)	Comments
3/05/2021	7.4	50	Nil
9/05/2021	3.4		
15/05/2021	4.9		
21/05/2021	11.8		
27/05/2021	4.5		
2/06/2021	27.8		
8/06/2021	3.9		
14/06/2021	1.2		
20/06/2021	1.2		
26/06/2021	0.7		
2/07/2021	1.2		
8/07/2021	4.2		
14/07/2021	2.8		
20/07/2021	3.1		
26/07/2021	3.7		

Real-time Air monitoring (PM₁₀)

According to the current Air Quality and Greenhouse gas Management Plan, the real time air quality unit (TEOM) installed at the “Flixton” property monitors PM₁₀ levels in ambient air. It is an operational management tool and dust levels nearing or reaching the nominated criteria will trigger actions onsite to assess the source of dust and modify operations if it is determined to be related to Tarrawonga operations.



TEOM installed at Flixton property

Three portable dust (PM₁₀) monitors have improved the real-time dust monitoring network and assist the operation to mitigate any potential dust generated by the operation.



Portable and real-time dust monitor installed at TCM in November 2018

Water Monitoring

Groundwater

Routine groundwater monitoring was undertaken in March 2021 and showed in **Table 5** (refer to graphs in *Appendix C*).

Table 5- Groundwater results Summary

Site	Date	SWL (mbgl)	pH (units)	Elect. Conductivity (µS/cm)
MW1	June 2020	7.42	7.8	3,490
	September 2020	7.27	8.16	3,260
	December 2020	6.8	7.9	3,510
	March 2021	6.75	7.97	3,390
	June 2021	6.9	7.84	3,480
MW2	June 2020	3.18	7.3	490
	September 2020	3.39	7.39	435
	December 2020	3.71	7.3	535
	March 2021	3.46	6.99	462
	June 2021	3.46	7.05	527
MW4	June 2020	10.57	7.4	3,530
	September 2020	10.38	7.3	3,380
	December 2020	10.35	7.4	3,640
	March 2021	9.56	7.26	3,530
	June 2021	9.53	7.26	3,250
MW5	June 2020	2.29	7.6	675
	September 2020	2.34	7.7	2,090
	December 2020	2.67	7.1	1,960
	March 2021	2.56	7.36	874
	June 2021	2.07	7.56	766
MW8	June 2020	13.71	Casing blocked	Casing blocked
	September 2020	13.44		
	December 2020	13.57		
	March 2021	13.42		
	June 2021	13.07		

Surface Water

Water storage onsite is expected to be sufficient for at least the next 12 months.

TCM undertook a trial to treat (flocculate) of sediment dam SB23B and released treated water from the Licence Discharge Point (LDP) 26 in accordance with the Water Management plan. Two (2) ML of suitable quality water (within EPL1265 limits) were discharged in July.

Since beginning of 2021, TCM has recorded 582.4mm of rain which is the equivalent to an average year rainfall.

2020	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Rain (mm)	109.2	261.2	113.2	65.6	16.0	23.4	31.0	38.3	30.2	55.8	3	184.4	931.1
Cumulative (mm)	109.2	370.4	483.6	549.2	565	588.4	619.4	567.7	687.9	743.7	746.7	931.1	

2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Rain (mm)	58.4	115.4	141.2	22.0	66.6	105	73.8	-	-	-	-	-	582.4
Cumulative (mm)	58.4	173.8	315.0	337.0	403.6	508.6	582.4	-	-	-	-	-	

Rehabilitation and Clearing

Rehabilitation

TCM has ordered approximately 11,000 tubestock trees for rehabilitation purposes for CY21, to be planted on new rehabilitation areas and over pre-existing maintenance rehabilitation areas. TCM will spread native seeds during the rehabilitation campaign. This will include native groundcover species, shrubs and sub-shrub species as per the Rehabilitation Management plan.

In preparation for spreading and tree planting, topsoil spreading and landshaping activities are underway on the Southern Emplacement Area. Rehabilitation activities are expected to begin as soon as the drainage system is completed.

Clearing

The next clearing campaign will take place between February and April 2022.

Complaints

One complaint was received in regards to a blast on the 7th of June. The complaint was received from a local farm worker regarding dust and potential fume following the blast event. Tarrawonga reviewed monitoring data and footage for the blast and provided a response to the complainant and the EPA. The EPA has started an investigation.

Environmental Management Plans

Management Plans

Following approval of Modification 7 of PA11_0047, TCM has conducted a review of all the Management Plans. Updated Management Plans were submitted via DPIE portal for approval in May 2021 including, Air Quality Management Plan, Noise, Management Plan, Blast Management Plan and Water Management Plan.

The Water Management Plan is being review by DPIE, but all the other updated management plans were approved and are available on WHC website.

BTM Water Strategy

The BTM mines submitted an updated BTM Groundwater Model and report to DPIE in December 2020. After consultation with DPIE, a final report will be provided to DPIE in August.

Annual and Compliance Reporting

Annual Review and Annual Return Reports

The Annual Review was submitted to DPIE on the 26th of March 2021 and information was requested by the DPIE on the 18th of June. This included requests for reference to attended noise compliance and rehabilitation results. Subsequently, TCM submitted an updated Annual Review 2020 to the satisfaction of DPIE and the report was uploaded to the WHC website on the 1st of July 2021.

Annual Compliance EPBC statement

The Annual Compliance EPBC statement was submitted to DAWE in June 2021.

Annual National Pollutant Inventory (NPI) and Greenhouse Gas Emission (NGERs) Reports 2021

TCM prepares the NPI and NGERs reports that will be submitted in September and October 2021 respectively.

Audits- Compliance

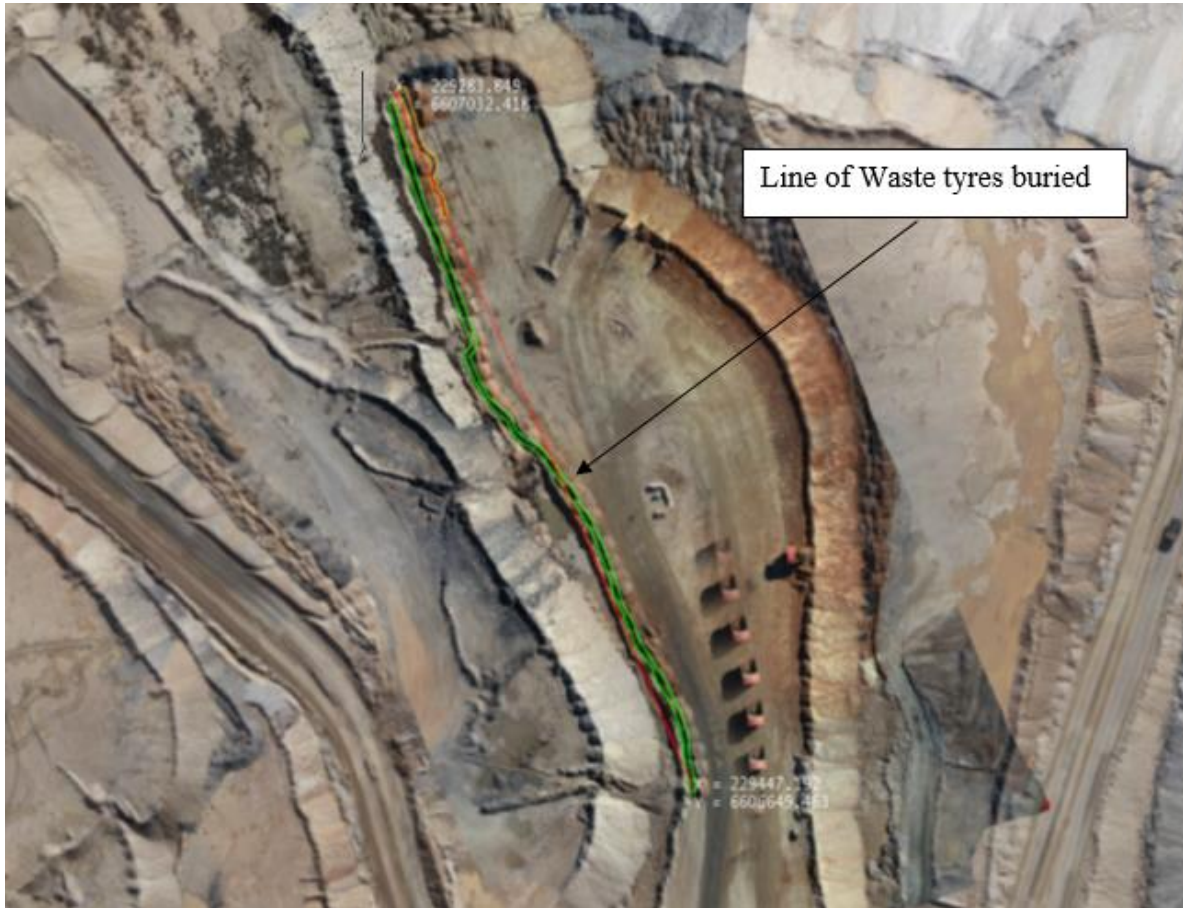
In June, an audit was conducted by an external consultant to verify implementation of Environmental Critical Controls.

Approval and Licencing

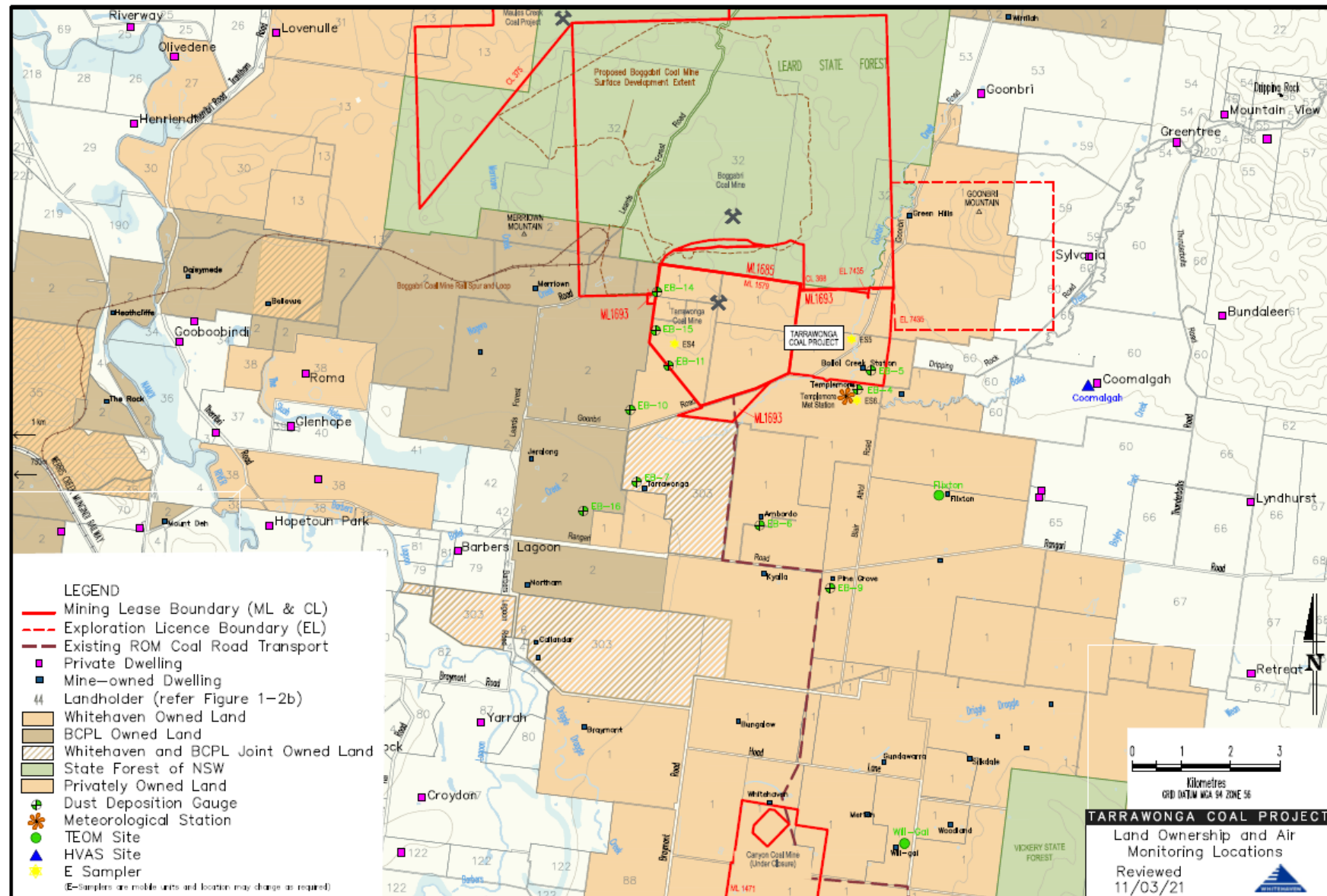
In March 2021, TCM submitted to DPIE a Modification 9 (MOD9-Waste Tyres Disposal) of PA11_0047 and approval was received in May 2021.

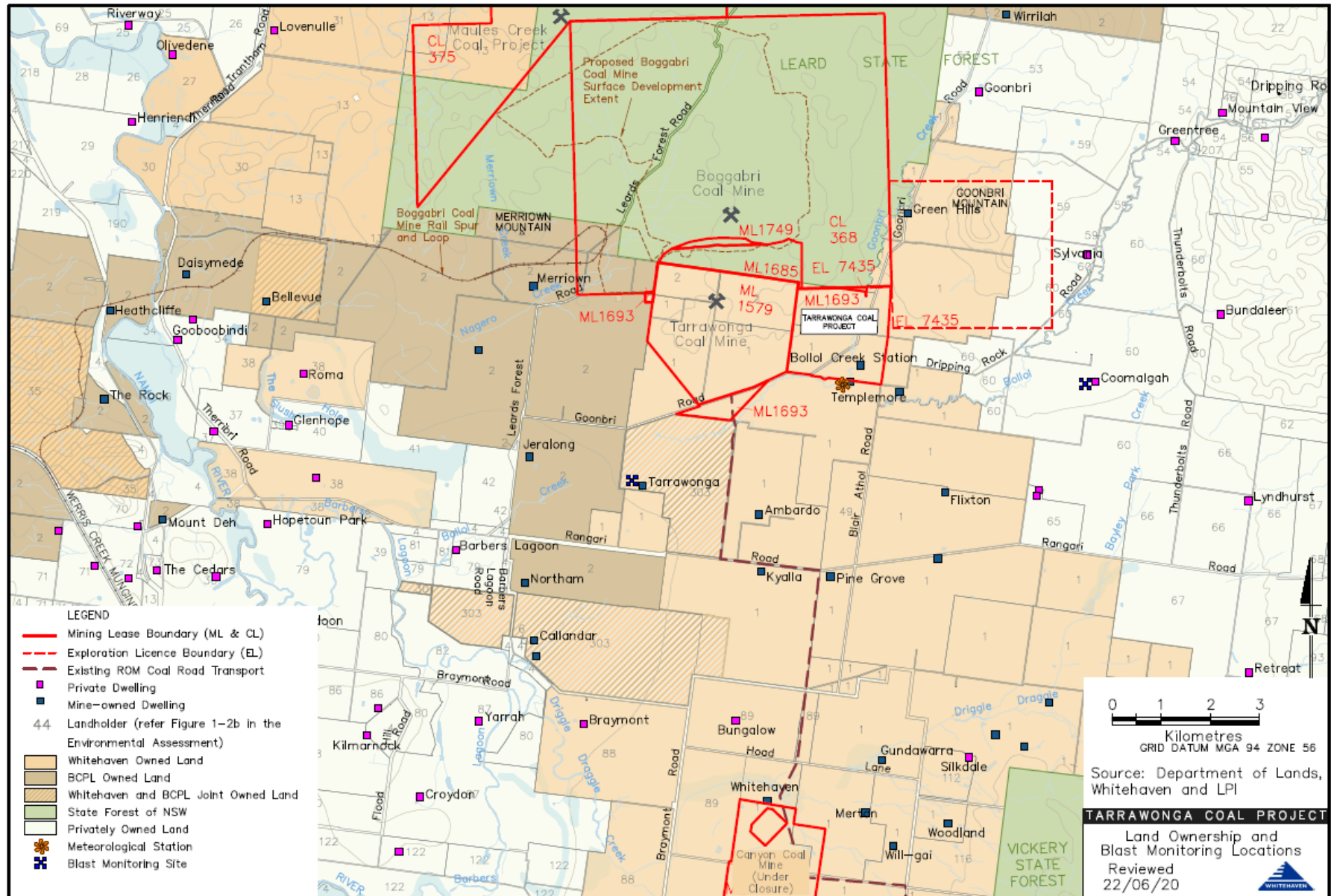
Subsequently, TCM submitted a variation of EPL12365 that includes conditions for in pit Waste Tyres disposal and received approval in June 2021. In-pit disposal of mine equipment end of life tyres began on the week starting the 2nd of August 2021 on the 300RL in accordance with the approvals. Approximately 353 tonnes of historical waste tyres were disposed and buried in pit as shown in the following images.

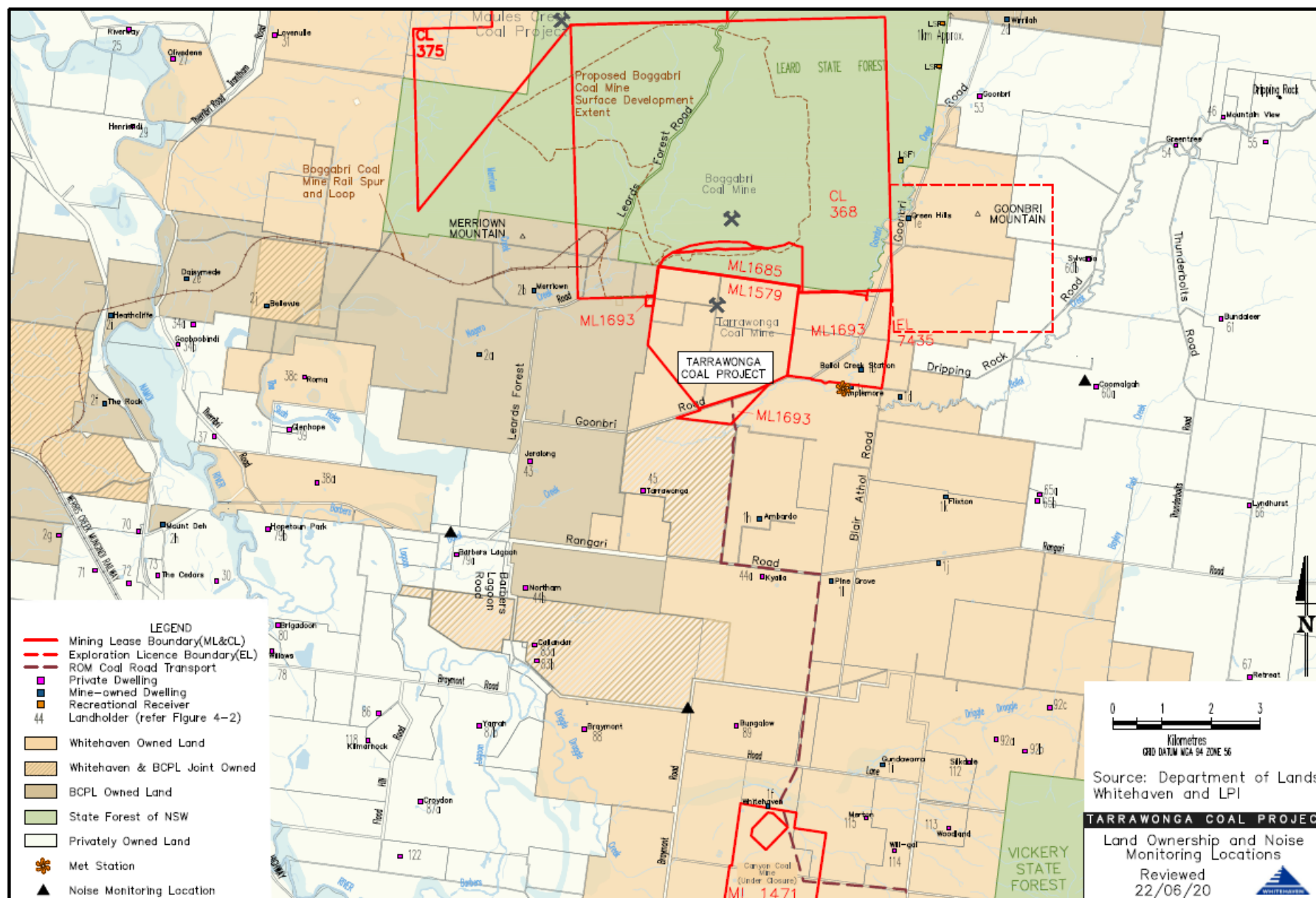


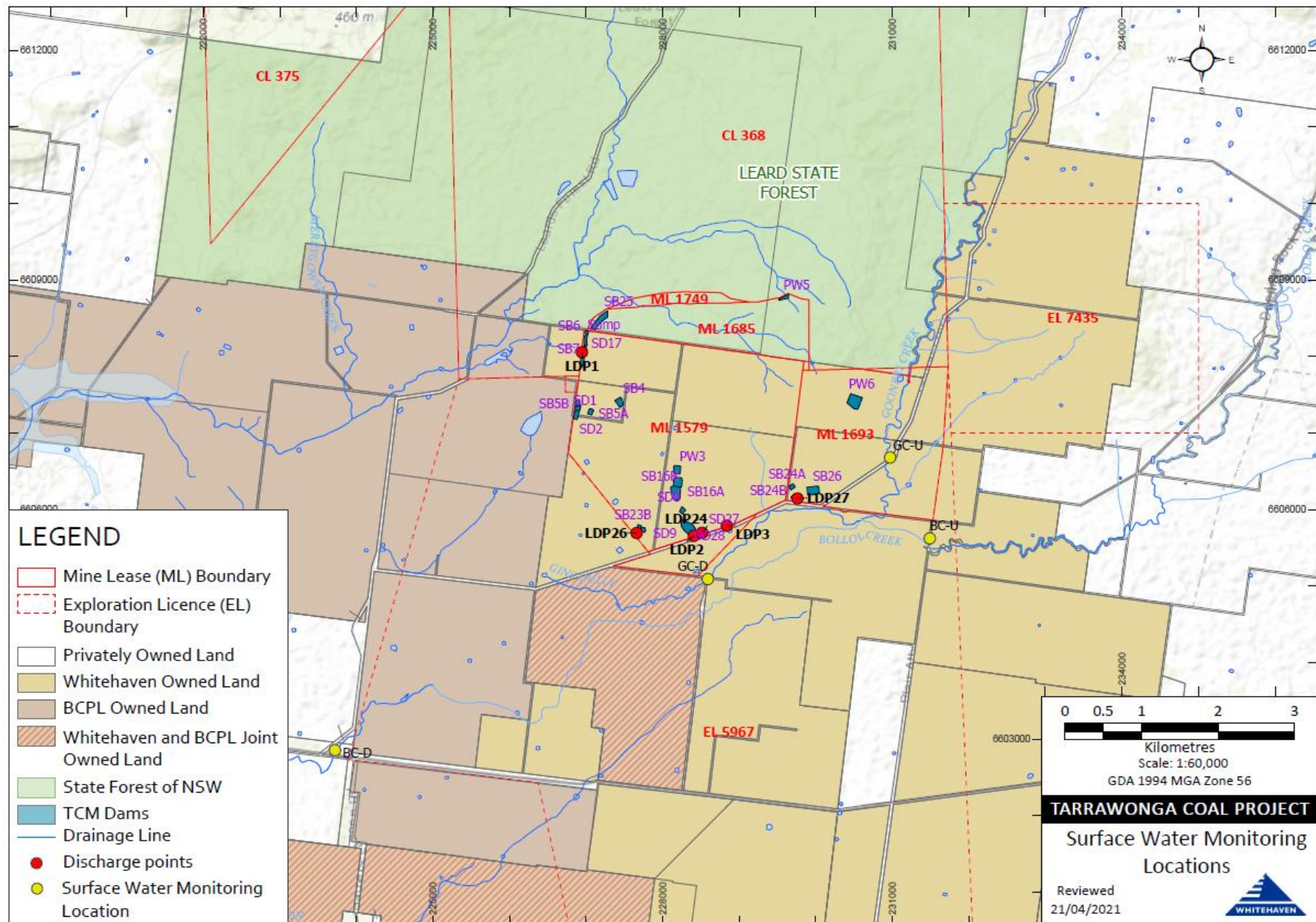


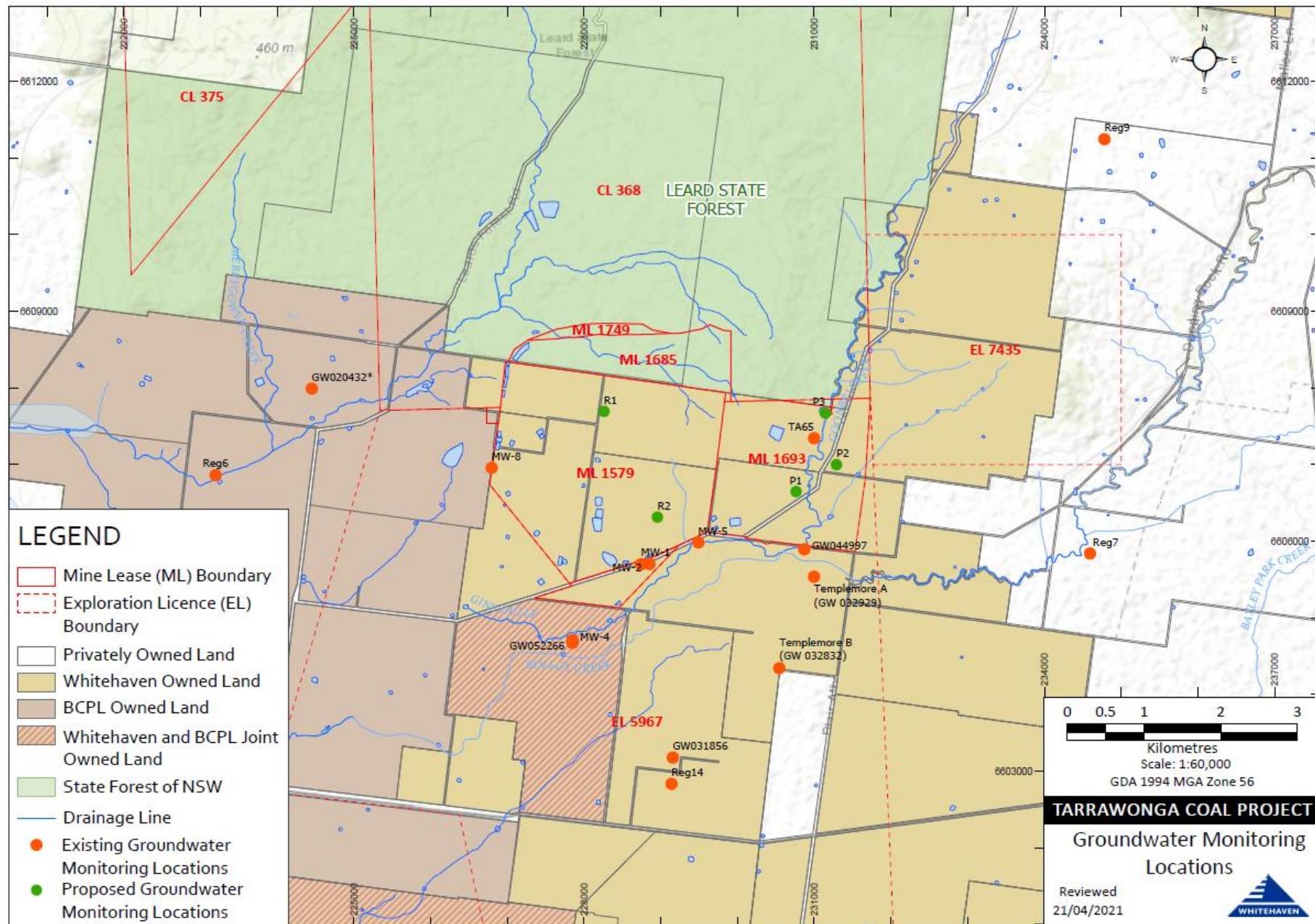
Appendix A





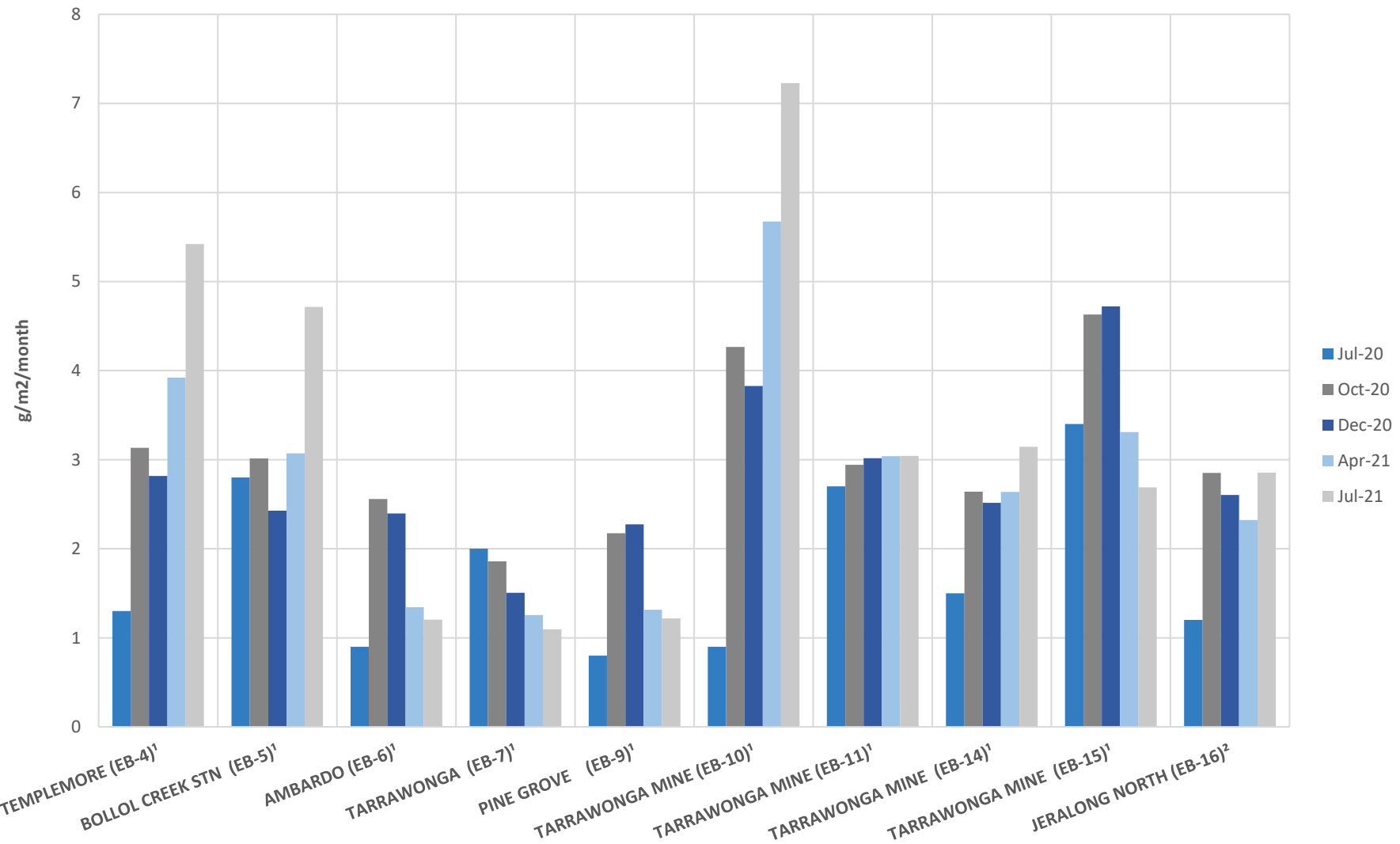




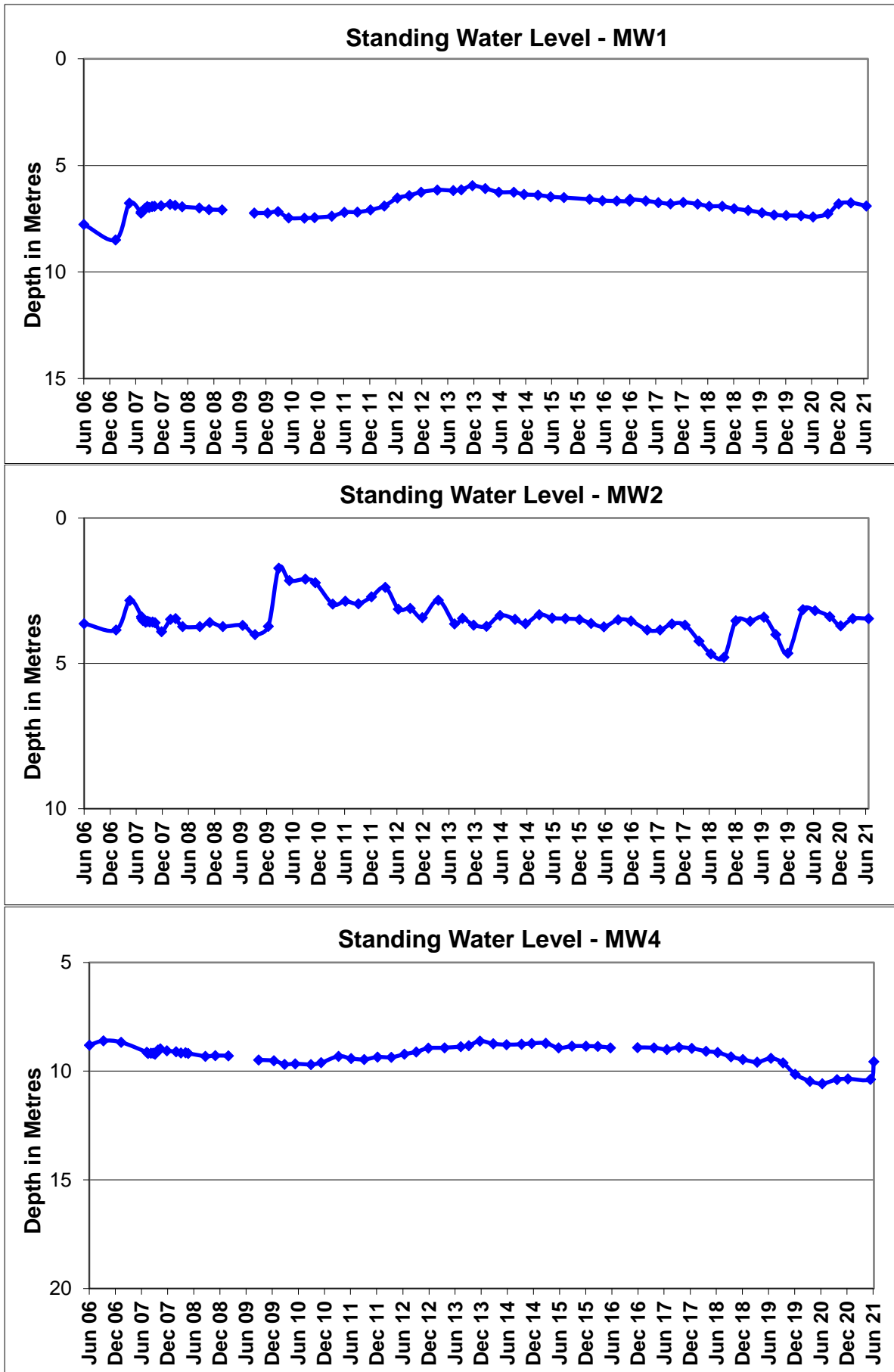


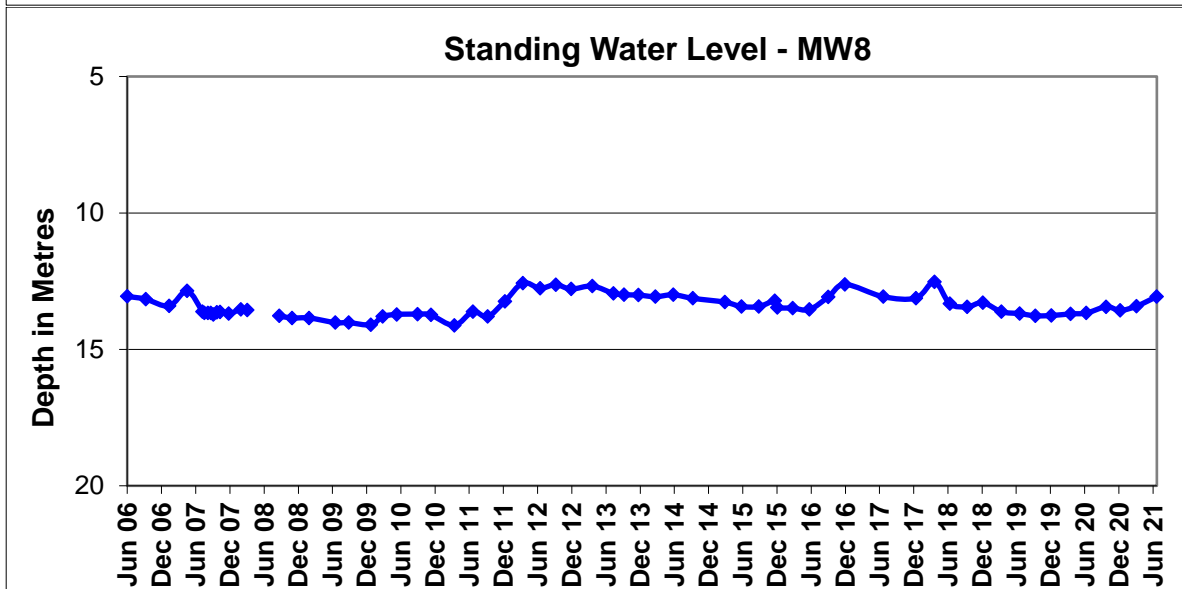
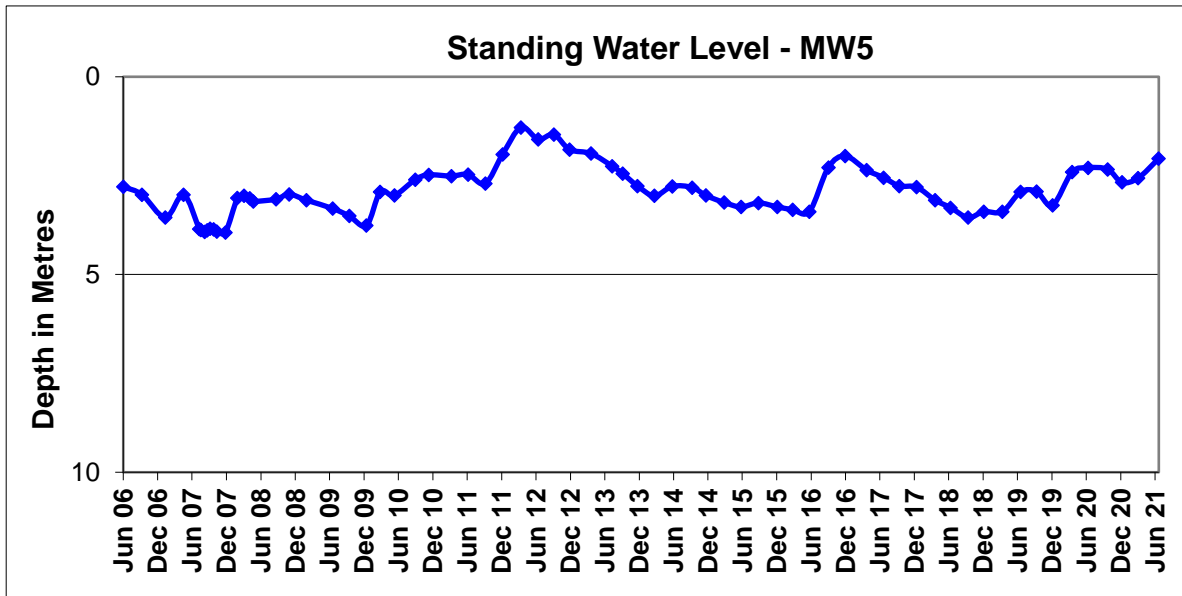
Appendix B

Deposited Dust Gauge Results- Quarterly rolling average [g/m²/month]



Appendix C





Minutes of the 65th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	18 th of August 2021 between 10:00AM- 11.05 AM		
Venue	Via Zoom.		
<i>Agenda Item</i>	<i>Discussion and Description</i>	<i>Action and Accountability</i>	<i>Status/ Date</i>
1. Present and Apologies	<u>Present:</u> Mr David Ross (DR)- Independent Chairman, Mr Lloyd Finlay (LF)- NSC Representative, Mrs Rebecca Ryan (RR)- Community Representative, Mr Jack Morrissey (JM)- GSC Representative Mr David Moses (DM)- GSC Representative Mr Tian Oosthuizen (TOo)- TCM, Mr Darren Swain (DS)- WHC, Mr Sebastien Moreno (SM)- TCM, Miss Madeleine Wright (MW)- TCM		
	<u>Apologies:</u> Mrs Colleen Fuller (CF)- Community Representative Mr Wade Hudson (WH)- GSC Representative		
2. Declaration of Pecuniary or Non-Pecuniary Interests	DR- declared that he is paid a fee for participation as Independent Chairman. LF declared that he leases WHC properties		

Minutes of the 65th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	18 th of August 2021 between 10:00AM- 11.05 AM		
Venue	Via Zoom.		
<i>Agenda Item</i>	<i>Discussion and Description</i>	<i>Action and Accountability</i>	<i>Status/ Date</i>
3. Previous Minutes Actions	Proceed with advertisement for new TCCC members.	<p>DR- Chamber of Commerce member interested in joining TCCC and will have to fill the application form – this remains, but is challenging due to Covid restrictions.</p> <p>RR to provide the details of the person who commented on the road closure wait, so SM can contact this person and add her to blast notification list if requested, action from previous CCC meeting.</p>	
4. Business Arising	No update		
5. Mine Progress Report	<p>TOo advised:</p> <ul style="list-style-type: none"> - TRIFR = 1.98 as a result of an operator with a minor ankle injury, LTI free = 995 days - Production impacted by rainfall in July but on track with Overburden and Coal for the Quarter and below 	<p>TOo to produce a presentation on blasting procedure.</p> <p>TOo to take members on a tour of the site, including mining and rehabilitation areas.</p>	

Minutes of the 65th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

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<i>Agenda Item</i>	<i>Discussion and Description</i>	<i>Action and Accountability</i>	<i>Status/ Date</i>
	<p>budget.</p> <ul style="list-style-type: none"> - Discussion surrounding increased Covid measures including mask wearing and limited people per four square meters. TCM has also increased processes surrounding visitors and contractors access to site, and some are being turned around and work being postponed. Where possible Office staff are limiting site presence to minimise interaction. 		
6. Environmental Monitoring report	<p>SM</p> <ul style="list-style-type: none"> - Read and explained the Quarterly Environmental Report results. - Mentioned a large overpressure event at privately own property Tarrawonga. (No limit applies) <p>DR asked about internal investigations regarding this overpressure. SM confirmed that internal investigation does occur regardless of compliance limits. SM</p>		

Minutes of the 65th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

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Venue	Via Zoom.		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

	<ul style="list-style-type: none"> - Discussed the water management challenge on site, and rainfall being above median for the previous year and for this year. This has triggered TCM to treat water and release offsite in accordance with relevant approvals and management plans <p>DR asked what the forecast is for spring. SM discussed the BOM forecast for spring indicating above median rainfall expected due to a negative Indian Ocean Dipole.</p> <p>SM</p> <ul style="list-style-type: none"> - Discussed the disposal of approx. 353 tonnes of tyres in the pit. <p>DM asked about the depth of the tyres. TOo advised that tyres will be approx. 70 metres below the final level. JM asked what the length of the line of tyres buried is. SM could not recall the length but discussed the licence and approval conditions that had to be met for burial. JM asked if monitoring will continue after</p>		
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Minutes of the 65th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	18 th of August 2021 between 10:00AM- 11.05 AM		
Venue	Via Zoom.		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date

	<p>the burial.</p> <p>SM advised burial will be conducted in accordance with EPL requirements and the mine will assess alternative to in pit disposal practice every two years.</p> <p>DR reiterated the action on the BTM CCC, to provide any updates regarding the discussion and investigation into alternatives to in pit disposal.</p>		
7. General business	<p>RR asked if WHC is lobbying for any vaccinations to workforce and in the area.</p> <p>DS advised that this is included in the letter from WHC that was sent out in the week prior.</p> <p>RR discussed the recent false positive in BCM and regarding the panic buying in the community, being such a small community.</p> <p>RR hoped that WHC will get on the front foot with notification and community awareness if this situation was to occur again.</p>		

Minutes of the 65th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

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Venue	Via Zoom.		
<i>Agenda Item</i>	<i>Discussion and Description</i>	<i>Action and Accountability</i>	<i>Status/ Date</i>
	<p>DS appreciated the comment, to be taken on board by WHC.</p> <p>SM advised of his departure from WHC and that this will be his last CCC meeting.</p> <p>DR thanked SM for his time and contribution to TCM CCC and TCM in general.</p> <p>No other general business from community members.</p>		
8.Complaints	SM – discussed in the environmental report, one complaint received regarding fume which is still under investigation.		
9. Next Meeting and Other Comments	<p>DR- advised next CCC meetings dates:</p> <ul style="list-style-type: none"> - TCCC: 27th October 2021 - BTM CCC: 28th October 2021 <p>DR discussed this possibly being moved back into November if Covid will allow face to face meetings, if this is okay with</p>		

Minutes of the 65th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	18 th of August 2021 between 10:00AM- 11.05 AM		
Venue	Via Zoom.		
Agenda Item	Discussion and Description	Action and Accountability	Status/ Date
	community members. No comments or aversion to this from any members.		

Tarrawonga Coal Mine Community Consultative Committee Meeting #65

Quarterly Environmental Monitoring Report
August 1 – October 31, 2021



Photo taken in July 2021 in a section of the Northern Emplacement Area that was rehabilitated in July 2020, showing promising vegetation growth.

This report has been prepared for the Community Consultative Committee (CCC) meeting to show Environmental monitoring performance at Tarrawonga Coal Mine (TCM) for the reporting period from August 1 2021 to October 31, 2021. Maps with all the monitoring locations are available in *Appendix A*.

Noise Monitoring

Attended noise monitoring was conducted at the “Bungalow” (TN4), “Barbers Lagoon” (TN3) and “Matong” (TN2) properties from 13th to the 16th of September 2021. The noise criterion for the mine is 35dB(A) Leq (15 min) for all operating times.

The results below show that noise emissions from the mine did not exceed the operational noise criterion at the “Barbers Lagoon”, “Bungalow” or “Matong” monitoring locations during the monitoring event during the entire monitoring period.

(See below summary tables extracted from 211008 RWDI report 2190007-T-08 (Q4 2021))

Table 4-1: Comparison of noise levels between TN2 and 573b Coomalgalah

Date	Time	Noise Limits	TN2 Mine L _{Aeq} Noise Level (dB)	573b Coomalgalah Mine L _{Aeq} Noise Level (dB)	
		L _{Aeq} 15min	Measured mine contribution	Commensurate Mine Compliance Level	Exceedance
13/09/2021	09:26	35	26	17	0
	09:42	35	26	17	0
	09:58	35	<30	<21	0
	10:14	35	<30	<21	0
	11:30	35	<35	<26	0
	21:26	35	31	22	0
	21:42	35	33	24	0
	22:00	35	31	22	0
	22:16	35	30	21	0
	22:32	35	28	19	0
14/09/2021	22:47	35	25	16	0
	12:24	35	<30	<21	0
	21:24	35	<20	<11	0
	22:00	35	<9 (I/A)	<0 (I/A)	0
	22:15	35	<18	<9	0

Date	Time	Noise Limits	TN2 Mine LAeq Noise Level (dB)	573b Coomalgalah Mine LAeq Noise Level (dB)	
		LAeq 15min	Measured mine contribution	Commensurate Mine Compliance Level	Exceedance
	22:30	35	<6 (I/A)	<0 (I/A)	0
	22:46	35	<6 (I/A)	<0 (I/A)	0
15/09/2021	10:31	35	<28	<19	0
	10:49	35	<26	<17	0
	11:04	35	<26	<17	0
	21:09	35	<19	<10	0
	21:25	35	<14 (I/A)	<5 (I/A)	0
	22:00	35	<20	<11	0
	22:17	35	<18	<9	0
	22:33	35	<9 (I/A)	<0 (I/A)	0
	22:49	35	<7 (I/A)	<0 (I/A)	0
16/09/2021	12:01	35	<25	<16	0
	13:46	35	25	16	0
	14:02	35	<27	<18	0
	14:19	35	<26	<17	0
	21:21	35	20	11	0
	21:39	35	24	15	0
	22:00	35	<25	<16	0
	22:17	35	23	14	0
	22:48	35	22	13	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured LAeq.

Table 4-3: Summary of noise assessment at TN3

Date	Time	Noise Limits	TN3 Mine L _{Aeq} Noise Level (dB)		
		L _{Aeq,15 min}	Measured mine contribution	Additional LF Penalty	Exceedance
13/09/2021	20:35	35	<11 (I/A)	-	0
	20:50	35	<7 (I/A)	-	0
	23:22	35	<7 (I/A)	-	0
	23:38	35	<6 (I/A)	-	0
	23:55	35	<6 (I/A)	-	0
	00:10	35	<7 (I/A)	-	0
	20:25	35	20	-	0
14/09/2021	23:25	35	27	-	0
	23:45	35	23	-	0
	00:00	35	24	-	0
	00:19	35	<25	-	0
	14:05	35	<15 (I/A)	-	0
15/09/2021	20:04	35	<20	-	0
	20:20	35	<20	-	0
	23:31	35	21	-	0
	23:47	35	22	-	0
	00:02	35	<21	-	0
	00:18	35	26	-	0
	11:36	35	<20 (I/A)	-	0
16/09/2021	11:58	35	<16 (I/A)	-	0
	12:22	35	<24 (I/A)	-	0
	12:46	35	<23 (I/A)	-	0
	13:04	35	<21 (I/A)	-	0
	13:34	35	<17 (I/A)	-	0
	20:15	35	19	-	0
	20:32	35	<9 (I/A)	-	0
	23:26	35	<30	-	0
	23:45	35	<30	-	0
	00:15	35	<30	-	0
	00:00	35	<30	-	0

Note: Where mine noise was inaudible throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured LA90.

Table 4-2: Comparison of maximum noise events between TN2 and 573b Coomalgalah

Date	Time	Noise Limits L _{A1,1min}	Noise source	TN2 Mine L _{Amax} Noise Level (dB)	573b Coomalgalah Mine L _{Amax} Noise Level (dB)	
				Measured Level	Commensurate Mine Compliance Level	Exceedance
13/09/2021	22:00	45	Engine	37	28	0
	22:16	45	Engine	40	31	0
	22:32	45	Engine	39	30	0
	22:47	45	Engine	34	25	0
14/09/2021	22:00	45	-	I/A	-	0
	22:15	45	-	NM	-	0
	22:30	45	-	I/A	-	0
	22:46	45	-	I/A	-	0
15/09/2021	22:00	45	-	NM	-	0
	22:17	45	-	NM	-	0
	22:33	45	-	I/A	-	0
	22:49	45	-	I/A	-	0
16/09/2021	22:00	45	-	NM	-	0
	22:17	45	Engine	31	22	0
	22:48	45	Engine	35	26	0

Note 1: NM indicates a significant maximum noise event was not observed.

Note 2: I/A indicates the mine was inaudible during the measurement period.

Table 4-4: Summary of maximum noise events at TN3

Date	Time	Noise Limits	TN3 Mine L_{Amax} Noise Level (dB)		
		$L_{A1,1min}$	Noise source	Measured Level	Exceedance
13/09/2021	23:22	45	-	I/A	0
	23:38	45	-	I/A	0
	23:55	45	-	I/A	0
	00:10	45	-	I/A	0
14/09/2021	23:25	45	Horn	34	0
	23:45	45	-	NM	0
	00:00	45	-	NM	0
	00:19	45	-	NM	0
15/09/2021	23:31	45	-	NM	0
	23:47	45	-	NM	0
	00:02	45	-	NM	0
16/09/2021	23:26	45	-	NM	0
	23:45	45	-	NM	0
	00:00	45	-	NM	0
	00:15	45	-	NM	0

Note 1: NM indicates a significant maximum noise event was not observed.

Note 2: I/A indicates the mine was inaudible during the measurement period.

Table 4-5: Summary of noise assessment at TN4

Date	Time	Noise Limits	TN4 Mine L_{Aeq} Noise Level (dB)		
		$L_{Aeq,15min}$	Measured mine contribution	Additional LF Penalty	Exceedance
13/09/2021	09:17	35	<15 (I/A)	-	0
	09:36	35	<15 (I/A)	-	0
	10:08	35	<17 (I/A)	-	0
	21:36	35	20	-	0
	21:53	35	19	-	0
	22:13	35	22	-	0
	22:31	35	20	-	0
	22:48	35	21	-	0
	23:04	35	19	-	0
14/09/2021	10:35	35	<13 (I/A)	-	0
	10:53	35	<14 (I/A)	-	0
	11:09	35	<21 (I/A)	-	0
	21:20	35	<12 (I/A)	-	0
	22:01	35	<9 (I/A)	-	0
	22:16	35	<10 (I/A)	-	0
	22:36	35	<8 (I/A)	-	0
	22:52	35	<10 (I/A)	-	0
	09:34	35	<17 (I/A)	-	0
	11:05	35	<20 (I/A)	-	0
15/09/2021	21:28	35	<8 (I/A)	-	0
	21:44	35	<8 (I/A)	-	0
	22:00	35	<8 (I/A)	-	0
	22:18	35	<8 (I/A)	-	0
	22:34	35	<7 (I/A)	-	0
	22:49	35	<7 (I/A)	-	0
16/09/2021	09:34	35	<14 (I/A)	-	0
	21:29	35	<8 (I/A)	-	0
	21:45	35	<10 (I/A)	-	0
	22:00	35	23	-	0
	22:16	35	23	-	0
	22:39	35	25	-	0
	22:58	35	26	-	0

Note: Where mine noise was inaudible (I/A) throughout the entire measurement, it is assumed that the contribution is less than 10dB below the measured L_{Aeq}

Table 4-6: Summary of maximum noise events at TN4

Date	Time	Noise Limits L _{A1,1min}	TN4 Mine L _{Amax} Noise Level (dB)		
			Noise source	Measured Level	Exceedance
13/09/2021	22:13	45	-	NM	0
	22:31	45	-	NM	0
	22:48	45	-	NM	0
	23:04	45	-	NM	0
	22:01	45	-	I/A	0
14/09/2021	22:16	45	-	I/A	0
	22:36	45	-	I/A	0
	22:52	45	-	I/A	0
	22:00	45	-	I/A	0
15/09/2021	22:18	45	-	I/A	0
	22:34	45	-	I/A	0
	22:49	45	-	NM	0
	22:00	45	-	NM	0
16/09/2021	22:16	45	-	NM	0
	22:39	45	-	NM	0
	22:58	45	-	29	0

Note 1: NM indicates a significant maximum noise event was not observed.

Note 2: I/A indicates the mine was inaudible during the measurement period.

Noise from the mine must not exceed 45 dB(A) L₁ (1 min) between 10 pm and 7 am. This is to minimise the potential for sleep disturbance as a result of individual loud noises from the mine. The results of the sleep disturbance monitoring show that the measured L₁ (1 min) noise level did not exceed the sleep disturbance criterion.

The real time noise monitor located on the “Coomalgah” property remains a management tool so the noise criteria are not applicable at that site. Level of noise recorded at that location is managed according to the noise management plan and trigger action response plan.

Blast Monitoring

Blasting Results

Since 2006, there have been 1072 blasts (until 27/10/2021) at TCM.

The highest result for Overpressure was 116.3dB recorded at the ‘Tarrawonga’ monitor on the 30/08/2021. This high result was not reported, as this monitor resides on a mine owned property and compliance limits do not apply.

The highest result for ground vibration was 1.40 mm/s recorded at the ‘Coomalgah’ monitor on the 17/09/2021.

Table- 2: Max Peak Overpressure and Ground Pressure for the Quarter

Monitor Location	Date	Max. Peak Overpressure (dB)	Criterion (dB)	Date	Max. Peak Ground Pressure (mm/s)	Criterion (mm/s)
Tarrawonga*	30/08/2021	116.3	N/A	03/09/2021	0.58	N/A
Coomalgah	30/08/2021	113.4	120	17/09/2021	1.4	10

**Limit Not applicable according to EPL and PA11_0047 because project related property.*

Air Quality Monitoring

Dust Deposition Results

Table 3 shows deposited dust gauge results over 12 months. All the monitors are located on project related land; as such compliance criteria (4g/m²/month) do not apply. Overall deposited dust trends remain steady during the reporting period (refer graph in *Appendix B*)

MONTH	TEMPLEMORE (EB-4)	BOLLOL CREEK STN (EB-5)	AMBARDO (EB-6)	TARRAWONGA (EB-7)	PINE GROVE (EB-9)	TARRAWONGA MINE (EB-10)	TARRAWONGA MINE (EB-11)	TARRAWONGA MINE (EB-14)	TARRAWONGA MINE (EB-15)	JERALONG NORTH (EB-16)
Aug-20	1.1	1.8	1.1	0.5	0.7	1.9	2	1.2	3.7	0.8
Sep-20	1.4	19.9#	1.0	0.9	1.9	0.9	1.3	1.7	3.6	1.9
Oct-20	0.9	2.1	1.3	1.1	1.2	3.1	1.9	2.3	5.5	2.5
Nov-20	3.2	2.7	1.1	1.2	3.1	5	3.2	2.4	+	3
Dec-20	4.3	2.5	2	1.3	12.7#	3.7	4.3	2.6	+	1.6
Jan-21	6.7#	4.6#	1.1#	3.2	1.3		3.1	8.4	6.5	4.4
Feb-21	2.4	8.1#	2.8	1.4	1.1	3.6#	5.9#	4.4#	1.8	1
Mar-21	0.8	2.2	4.8#	1.5	1.2	5.4#	5.9#	11.1#	0.7	5.8#
Apr-21	12.6#	5	1.6	0.3	0.6	19.1#	3.7	0.5	0.7	3
May-21	10.5	6.5	0.5	0.7	1	14.5	4.5	0.8	2.5	4
Jun-21	2.2	4.2	0.3	0.2	0.4	3.3	1.9	0.5	3.3	3.2
Jul-21	12.9	12.5	0.2	0.3	0.2	6.6	2.3	0.7	1.6	3.2
Aug-21	1.9	37.5#	0.8	0.9	1.8	47.7#	2.4	4.2	1.4	4.9
Sep-21	5.9	2.8	0.4	0.4	0.4	68.1#	1.7	3.1#	0.6	0.4
Oct-21	Awaiting October results. Below rolling average will be to September									
12 MONTH ROLLING AVERAGE	6.0	4.8	1.1	1.0	1.1	9.3	3.1	3.5	2.3	2.9

Analysis done on these bottles concluded that they are contaminated, often with low ash/insoluble matter. Often noted on field sheets are bird droppings, insects and plant matter.

+ bottles missing due to replacement after contamination or temporary civil/mining activities in the area.

¹DDG bottle on the fenceline between TCM and BCM ROM.

Table 3 – Deposited Dust Gauge Results [g/m²/month]

High Volume Air sampler (PM₁₀) Results

The High Volume Air Sampler (HVAS) installed at Coomalgah property monitors level of Particle Matter under 10 micron (PM₁₀). It operates for 24hr every 6 days. **Table 4** shows all the 24hr average values recorded for this quarter are below the 50µg/m³ criteria.

Table- 4: HVAS PM₁₀ 24 hr average levels for the Quarter

Date	24hr averaged PM ₁₀ (µg/m ³)	Criterion 24hr average (µg/m ³)	Comments
01/08/2021	9.2	50	Nil
07/08/2021	2.4		
13/08/2021	2.5		
19/08/2021	11.5		
25/08/2021	2.2		
31/08/2021	8.5		
06/09/2021	25.4		
12/09/2021	0.1		
18/09/2021	18.5		
24/09/2021	10.4		
30/09/2021	3.6		
6/10/2021	9.0		
12/10/2021	3.9		

Real-time Air monitoring (PM₁₀)

According to the current Air Quality and Greenhouse gas Management Plan, the real time air quality unit (TEOM) installed at the “Flixton” property monitors PM₁₀ levels in ambient air. It is an operational management tool and dust levels nearing or reaching the nominated criteria will trigger actions onsite to assess the source of dust and modify operations if it is determined to be related to Tarrawonga operations.



TEOM installed at Flixton property

Three portable dust (PM₁₀) monitors have improved the real-time dust monitoring network and assist the operation to mitigate any potential dust generated by the operation.



Portable and real-time dust monitor installed at TCM in November 2018

Water Monitoring

Groundwater

Routine groundwater monitoring was undertaken in March 2021 and showed in **Table 5** (refer to graphs in *Appendix C*).

Table 5- Groundwater results Summary

Site	Date	SWL (mbgl)	pH (units)	Elect. Conductivity (µS/cm)
MW1	June 2020	7.42	7.8	3,490
	September 2020	7.27	8.16	3,260
	December 2020	6.8	7.9	3,510
	March 2021	6.75	7.97	3,390
	June 2021	6.9	7.84	3,480
	September 2021	8.14	7.57	3,530
MW2	June 2020	3.18	7.3	490
	September 2020	3.39	7.39	435
	December 2020	3.71	7.3	535
	March 2021	3.46	6.99	462
	June 2021	3.46	7.05	527
	September 2021	3.42	6.97	615
MW4	June 2020	10.57	7.4	3,530
	September 2020	10.38	7.3	3,380
	December 2020	10.35	7.4	3,640
	March 2021	9.56	7.26	3,530
	June 2021	9.53	7.26	3,250
	September 2021	9.48	7.62	3,100
MW5	June 2020	2.29	7.6	675
	September 2020	2.34	7.7	2,090
	December 2020	2.67	7.1	1,960
	March 2021	2.56	7.36	874
	June 2021	2.07	7.56	766
	September 2021	1.84	7.7	1,810
MW8	June 2020	13.71	Casing blocked	Casing blocked
	September 2020	13.44		
	December 2020	13.57		
	March 2021	13.42		
	June 2021	13.07		
	September 2021	12.7		

Surface Water

Water storage onsite is expected to be sufficient for at least the next 12 months.

TCM has continued to treat (flocculate) sediment dam SD9 and release treated water from the Licence Discharge Point (LDP) 2 in accordance with the Water Management plan. Fourteen (14) ML of suitable quality water (within EPL1265 limits) was discharged in September with more to be discharged at the beginning of November.

Since beginning of 2021, TCM has recorded 732mm of rain which is the equivalent to an average year rainfall.

2020	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Rain (mm)	109.2	261.2	113.2	65.6	16.0	23.4	31.0	38.3	30.2	55.8	3	184.4	931.1
Cumulative (mm)	109.2	370.4	483.6	549.2	565	588.4	619.4	567.7	687.9	743.7	746.7	931.1	
2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Monthly Rain (mm)	58.4	115.4	141.2	22.0	66.6	105	73.8	41.8	18.3	54.2	-	-	732.0
Cumulative (mm)	58.4	176.8	317.4	339.6	406.2	511.2	585	626.8	683	-	-	-	

Rehabilitation and Clearing

Rehabilitation

TCM has ordered approximately 11,000 tubestock trees for rehabilitation purposes for CY21, to be planted on new rehabilitation areas and over pre-existing maintenance rehabilitation areas. TCM has recently spread native seeds over the SEA (along the entrance to the mine) and more will be spread in the coming weeks as the rehabilitation landform is completed. The seed mix includes native groundcover species, shrubs, sub-shrubs and canopy species as per the Rehabilitation Management plan. It also includes oats and Japanese millet as a sterile cover crop to establish groundcover to prevent erosion.

In preparation for seeding and tree planting, topsoil spreading and landshaping activities are underway on the Northern Emplacement Area.

Clearing

The next clearing campaign will take place between February and April 2022.

Complaints

No complaints received for the reporting period.

Environmental Management Plans

Management Plans

Following approval of Modification 7 of PA11_0047, TCM has conducted a review of all the Management Plans. Updated Management Plans were submitted via DPIE portal for approval in May 2021 including, Air Quality Management Plan, Noise, Management Plan, Blast Management Plan and Water Management Plan.

The Water Management Plan is still under review, but all the other updated management plans were approved and are available on the WHC website.

BTM Water Strategy

The BTM mines submitted an updated BTM Groundwater Model and report to DPIE in December 2020. After consultation with DPIE, a final report was provided to DPIE in August.

The BTM Noise Management Strategy has also been reviewed and will be submitted by MCCM in the coming weeks.

Annual and Compliance Reporting

Annual Review and Annual Return Reports

Next Annual Review and Return reports to be commenced in the new year.

Annual Compliance EPBC statement

The Annual Compliance EPBC statement was submitted to DAWE in June 2021.

Annual National Pollutant Inventory (NPI) and Greenhouse Gas Emission (NGERs) Reports 2021

The TCM NPI and NGERs reports were submitted in September and October 2021 respectively.

Audits- Compliance

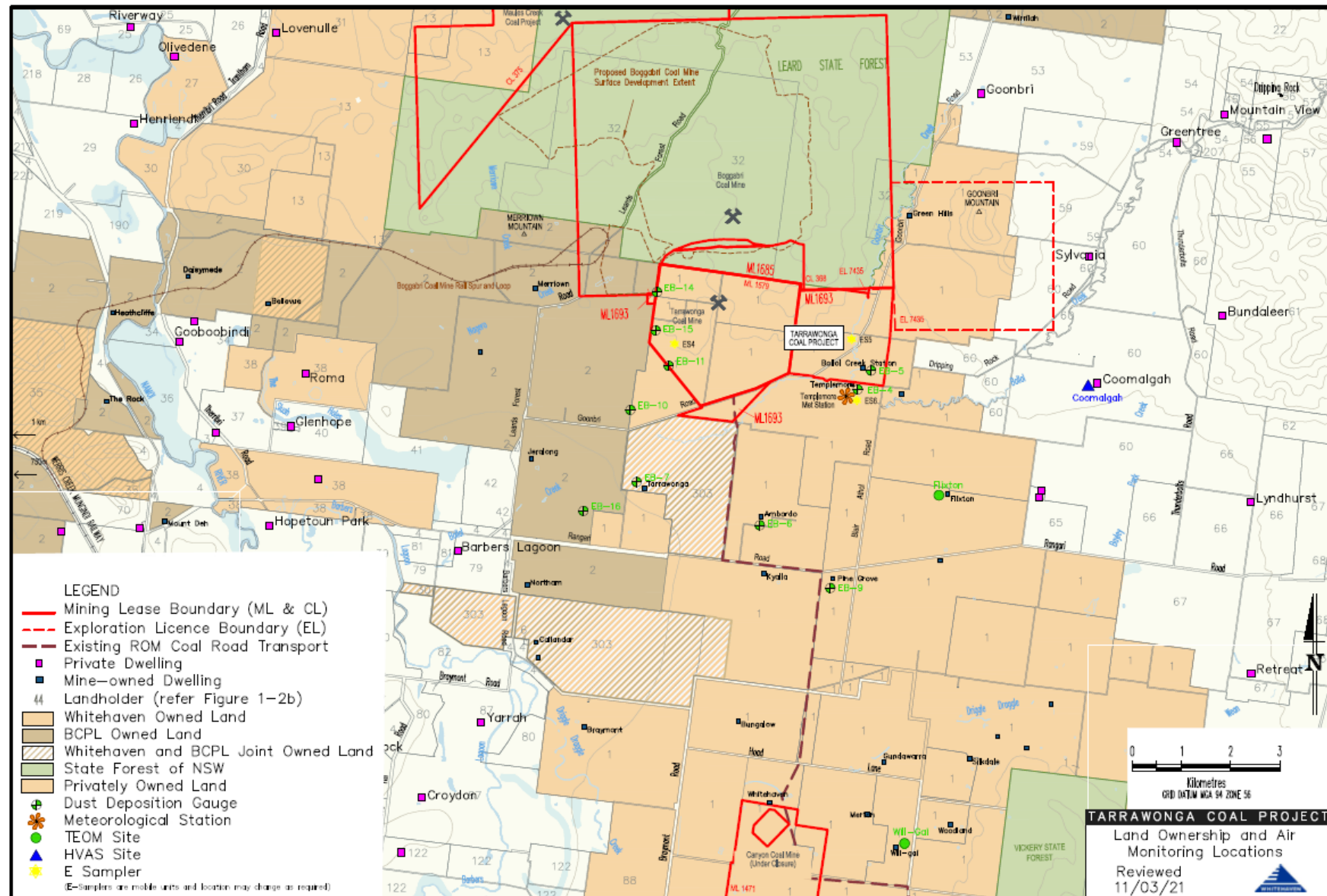
The EPA have requested that TCM complete a water management system audit by a certified external contractor/consultant. Preparations for this are currently underway.

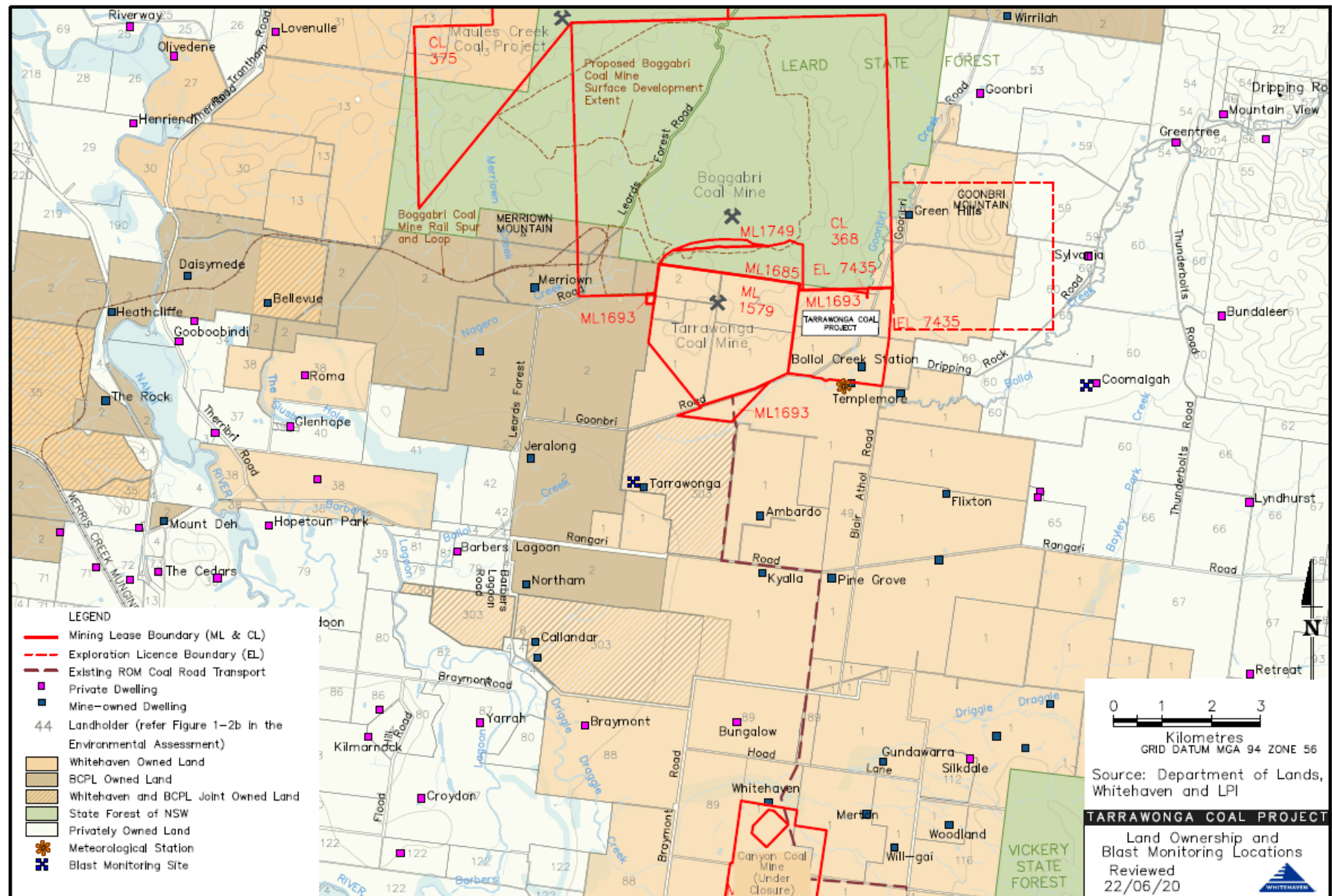
TCM is corresponding with the EPA regarding water management on site.

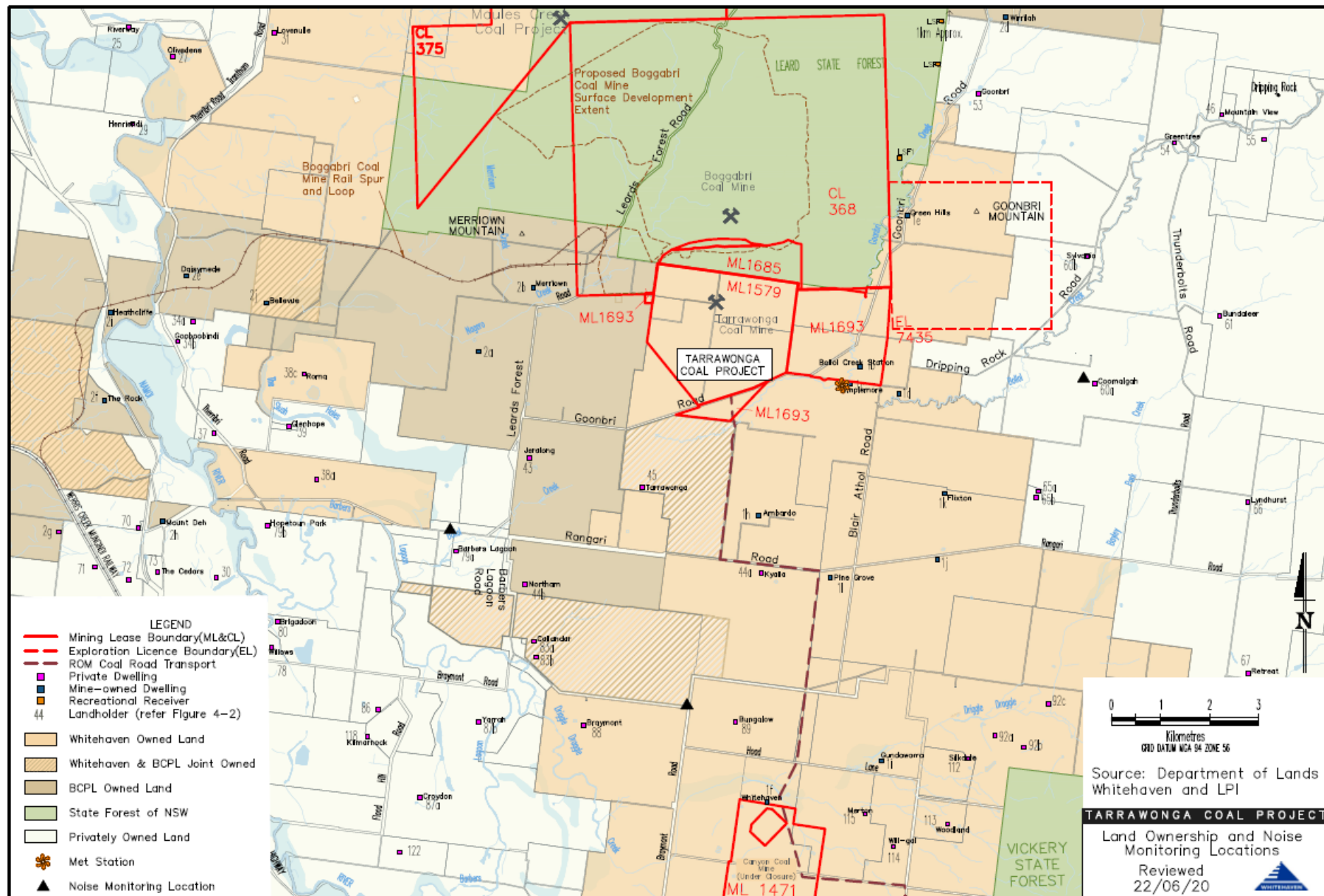
Approval and Licencing

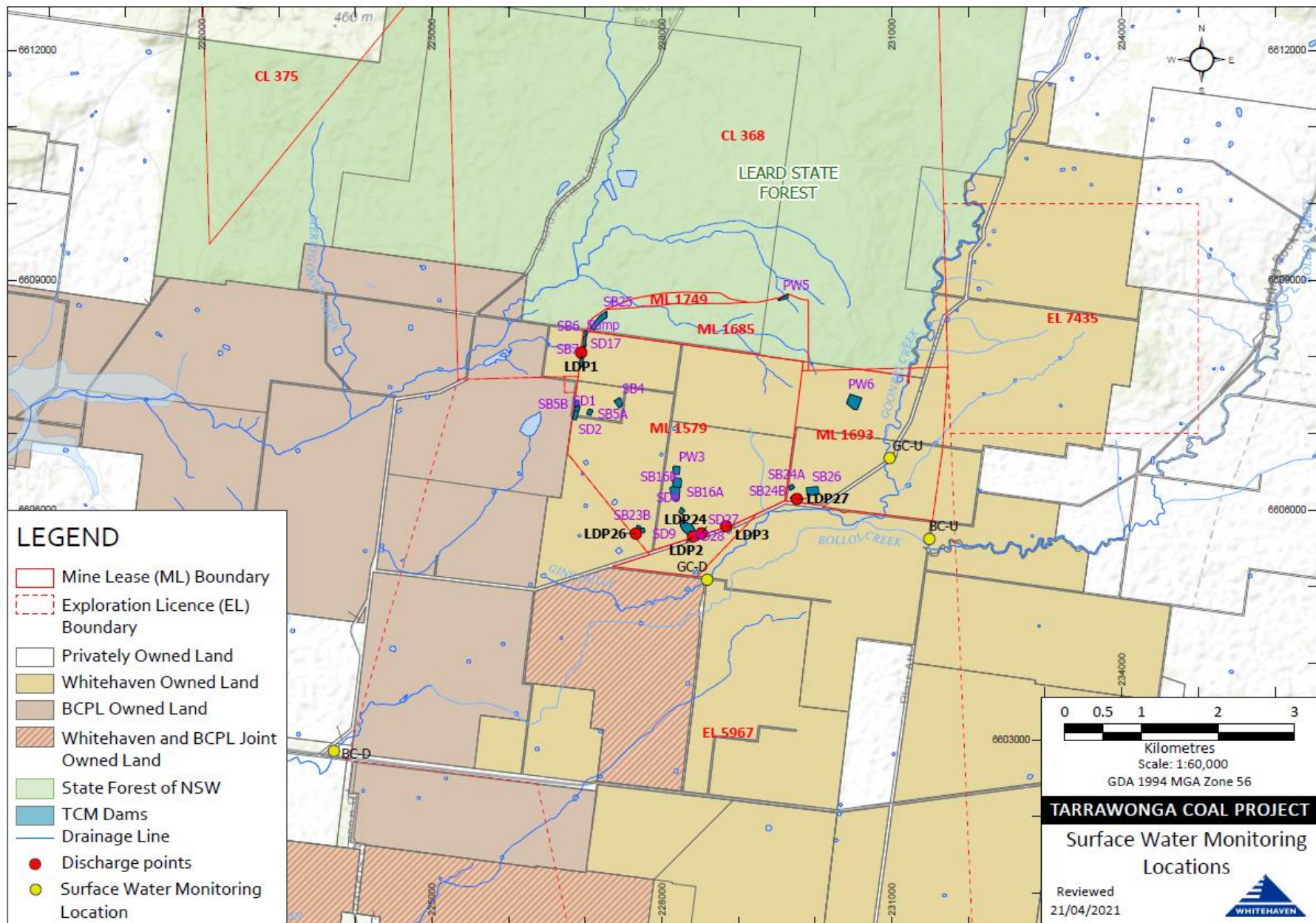
TCM is currently undergoing a review of the planned rehabilitation for CY21 and CY22. This will result in more cumulative rehabilitation being achieved by the end of CY22. We plan to submit a letter requesting a minor amendment in the coming weeks.

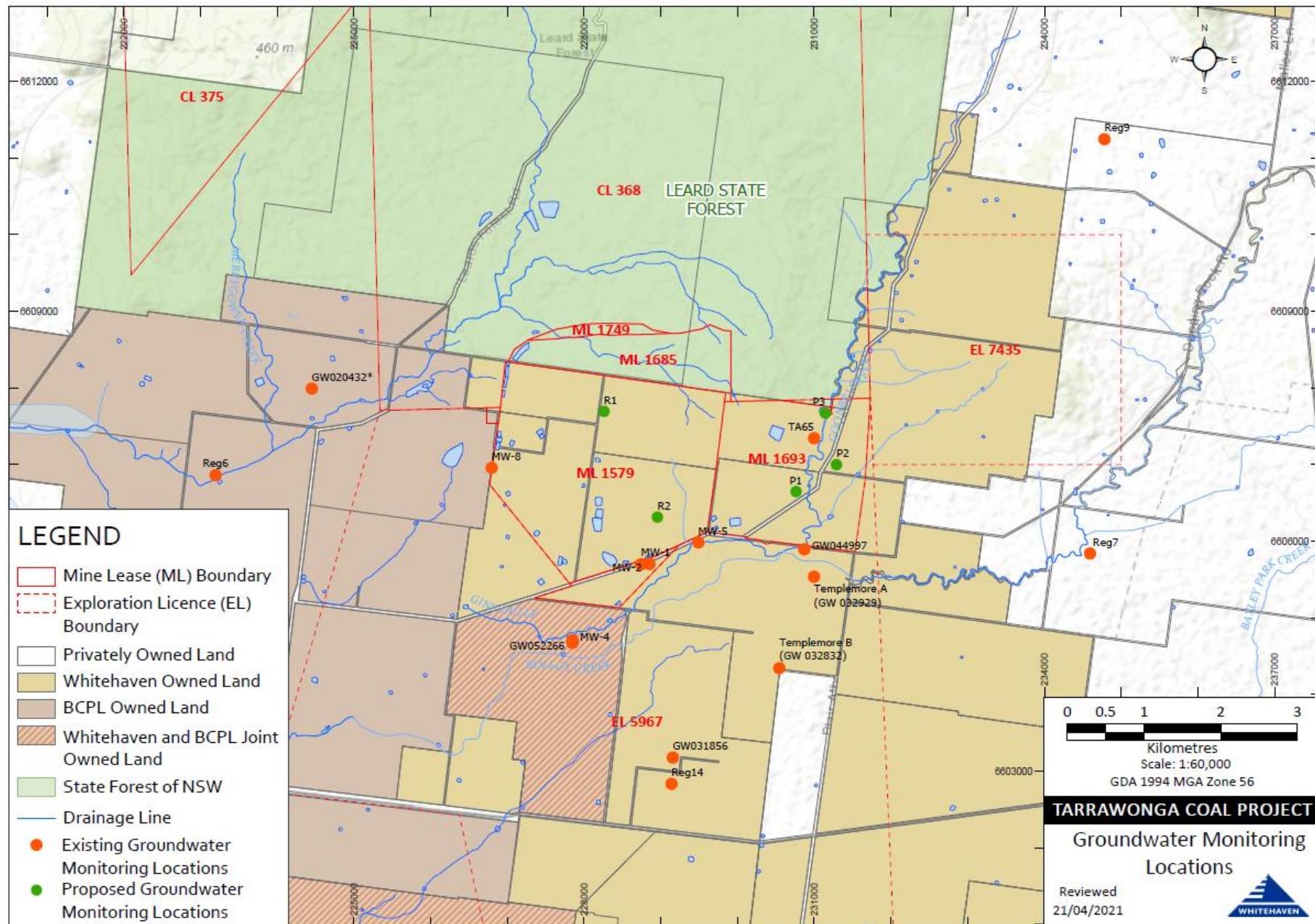
Appendix A





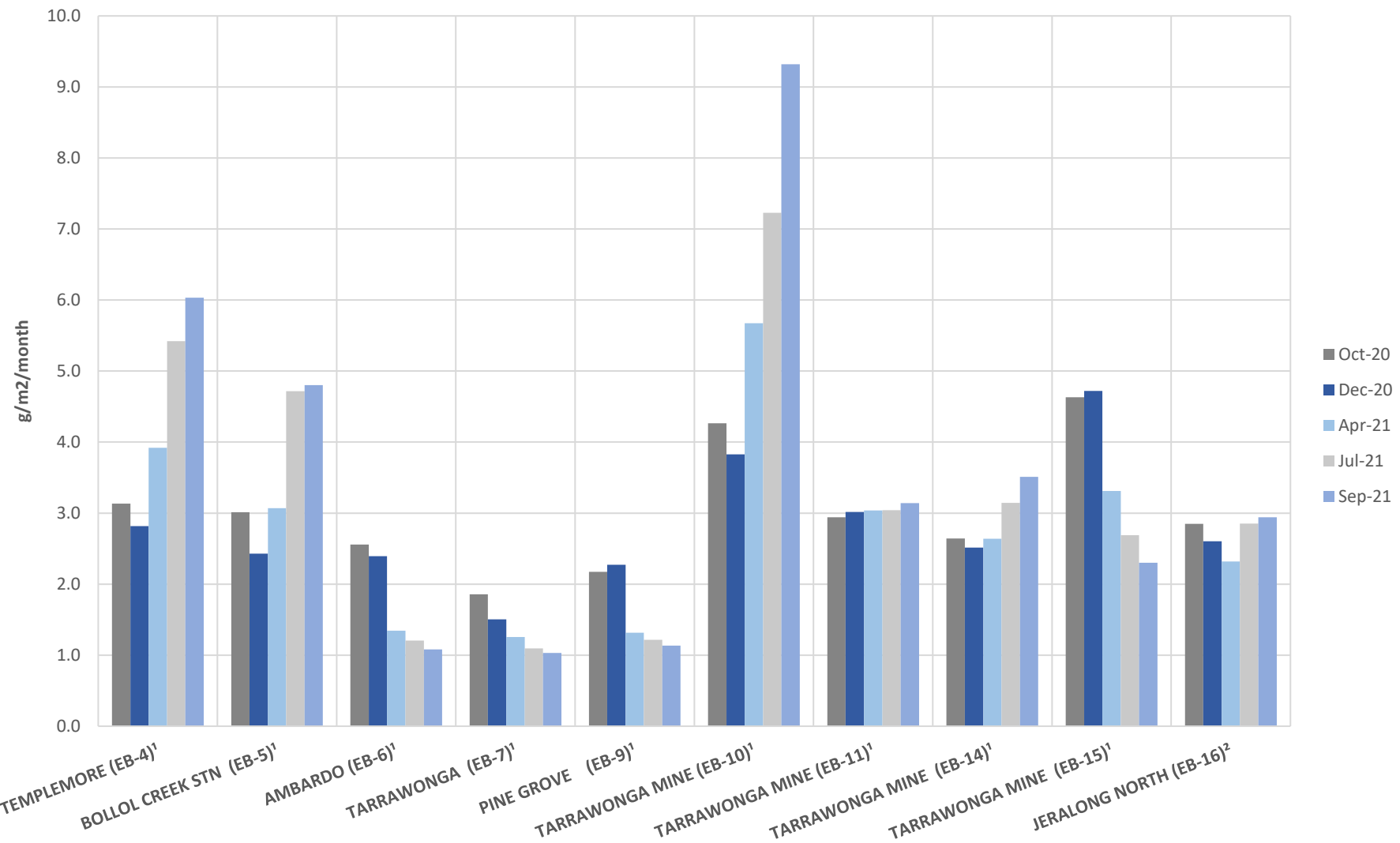




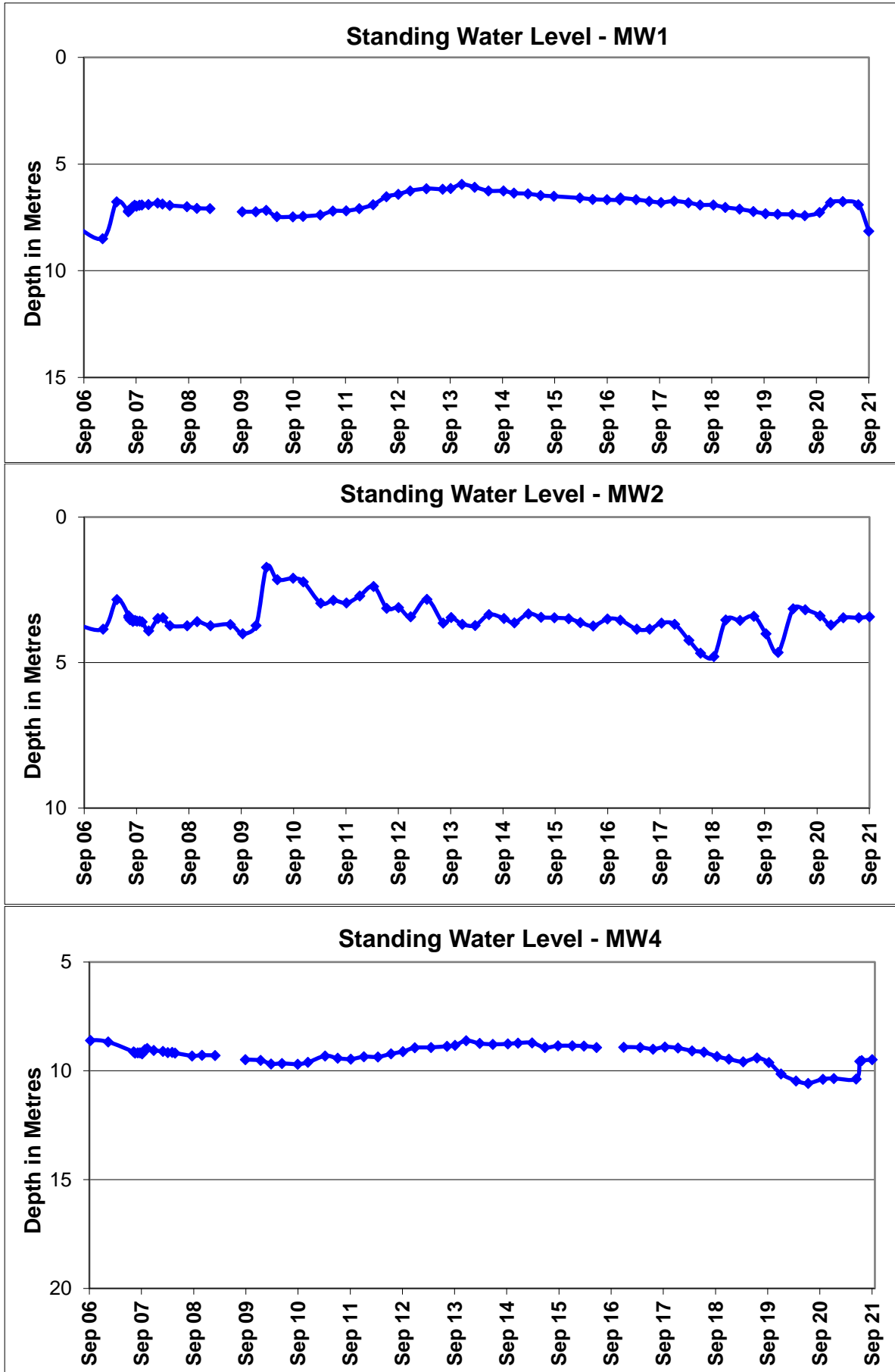


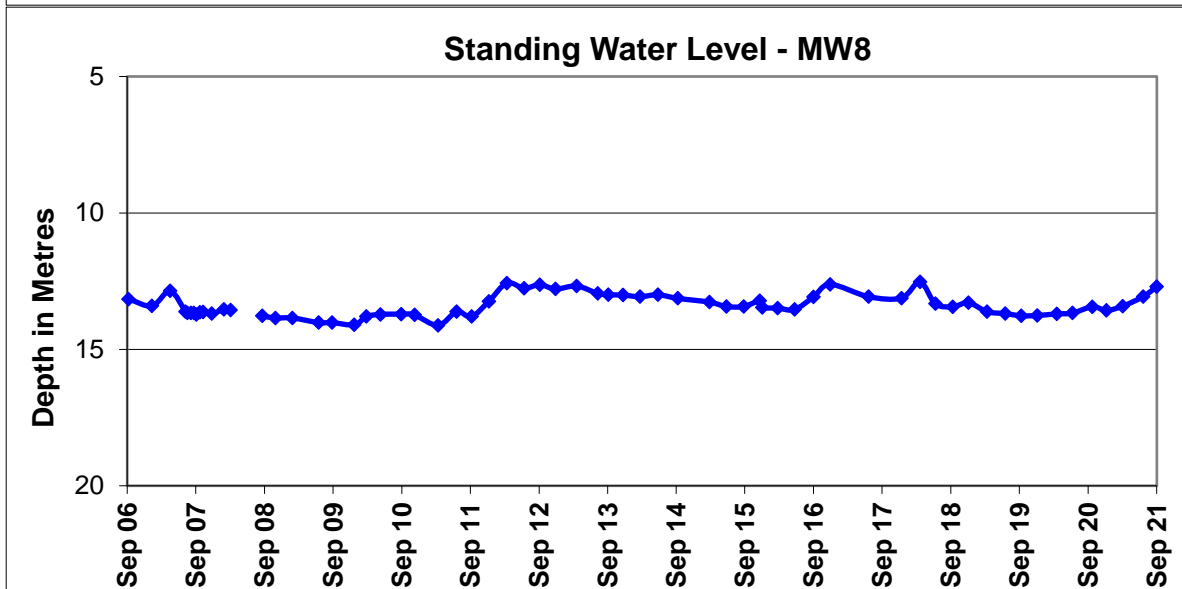
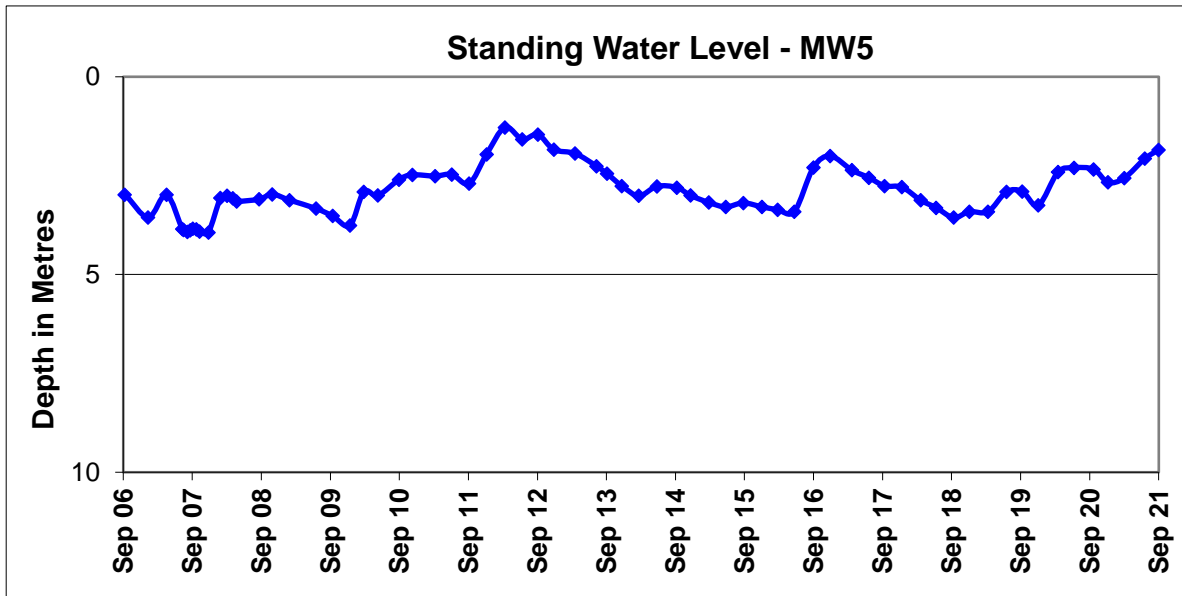
Appendix B

Deposited Dust Gauge Results- Quarterly rolling average [g/m²/month]



Appendix C





Minutes of the 66th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	3 rd of November 2021 between 10:00AM- 11.15 AM		
Venue	Tarrawonga Coal Mine Training Room.		
<i>Agenda Item</i>	<i>Discussion and Description</i>	<i>Action and Accountability</i>	<i>Status/ Date</i>
1. Present and Apologies	<u>Present:</u> Mr David Ross (DR)- Independent Chairman, Mrs Colleen Fuller (CF)- Community Representative Mr Wade Hudson (WH)- GSC Representative Mr David Moses (DM)- GSC Representative Mr Tian Oosthuizen (TOo)- TCM Mr Gregg McEllister (GM)- TCM Mr Darren Swain (DS)- WHC, Ms Megan Martin (MM)- TCM		
	<u>Apologies:</u> Mr Lloyd Finlay (LF)- NSC Representative, Mrs Rebecca Ryan (RR)- Community Representative Ms Madeleine Wright (TCM)		
2. Declaration of Pecuniary or Non-Pecuniary Interests	DR- declared that he is paid a fee for participation as Independent Chairman.		

Minutes of the 66th Meeting of the Tarrawonga Coal Mine Community Consultative Committee (TCCC)

Meeting Held	3 rd of November 2021 between 10:00AM- 11.15 AM		
Venue	Tarrawonga Coal Mine Training Room.		
<i>Agenda Item</i>	<i>Discussion and Description</i>	<i>Action and Accountability</i>	<i>Status/ Date</i>
3.	GM delivered a presentation on blasting.		
4. Previous Minutes Actions	<p>Proceed with advertisement for new TCCC members. Advertisement placed on website and in Green flyer and Gunnedah Times.</p> <p>DS planning on attending next CoC meeting and said he will raise this to see if any members might want to join the TCCC.</p>	<p>DR/DS- Chamber of Commerce member interested in joining TCCC and will have to fill the application form</p> <p>DS to raise this to see if any members might want to join the TCCC.</p> <p>RR to provide the details of the person who commented on the road closure wait, so MM can contact this person and add her to blast notification list if requested, action from previous CCC meeting.</p>	
5. Business Arising	No update		

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6. Mine Progress Report	<p>TOo advised:</p> <ul style="list-style-type: none"> - TRIFR = 3.7 as a result of an operator injured while tipping a load, LTI free = 1070 days - Production impacted by wet weather, below budget on OB due to reduced cast blasts and dozer push but ROM coal is on track. Current coal price is having a positive effect. - Topsoil on SEA has been placed. Areas to be rehabilitated by end of Dec 31 described and rehabilitation to be completed in 2022 laid out. - In pit disposal of tyres completed for CY2021 and in line with requirements. 	<p>TOo to take members on a tour of the site, including mining and rehabilitation areas.</p> <p>CF requested more information on rehabilitation including updates. MM will provide more information during the site tour and answer any questions. Rehab updates in the quarterly report can be enhanced with more information and photographs including a summary of spring rehab monitoring.</p>	<p>Site tour to occur at next CCC meeting.</p> <p>Site tour will include a tour of the rehabilitation. Next quarterly report will contain enhanced rehab information.</p>
7. Environmental Monitoring report	<p>MM</p> <ul style="list-style-type: none"> - Read and explained the Quarterly Environmental Report results. - Weather is expected to include higher than average rainfall into 2022 following La Nina event becoming more likely. 		

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8. General business	<p>DS provided information on WHC's stakeholder investment strategy. This includes \$200,000 to be spent in the community across all the affected LGAs. It includes community reps from all LGAs including some council members. The criteria for spending this money are that it is to promote health, education and must have a whole community benefit. Next meeting 22nd Nov and next round of funds to be awarded in February.</p> <p>DR and DS discussed the LF Environmental Trust. It has been difficult in the past to get applications for funding.</p> <p>CF indicated that regardless of the Council election outcome she would be interested in remaining on the CCC as a community representative.</p> <p>CF asked about whether there had been any communication received by WHC on the</p>		
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Agenda Item	Discussion and Description	Action and Accountability	Status/ Date
	Namoi Regional Air Quality committee. Would WHC consider sending a letter to the Minister? No other general business from community members.	DS to take the issue to WHC's corporate team.	
9.Complaints			
10. Next Meeting and Other Comments	DR- advised next CCC meetings dates: - TCCC: 23 rd February 2022	Next CCC meeting to start earlier (9am) to accommodate the site tour.	