

Maules Creek Coal Mine Community Consultative Committee Meeting #33

Environmental Monitoring Report For the Q1 period, January – March 2021

Attended Noise Monitoring

Attended noise monitoring was undertaken at six locations during January, February and March 2021 by an independent acoustic consultant. The measured noise level (LAeq 15 minute) attributed to Maules Creek Coal Mine (MCCM) and applicable criteria for each location are shown in the tables below.

LAeq, 15minute GENERATED BY MCCM AGAINST OPERATIONAL NIGHT NOISE CRITERIA – JANUARY TO MARCH 2021.

Table 1 - January Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	12/01/2021 22:30	1.3	0	35	Yes	<20	Nil
NM2	12/01/2021 23:31	0.9	0	39	Yes	<25	Nil
NM3	12/01/2021 23:44	1.0	0	35	Yes	<25	Nil
NM4	12/01/2021 23:00	1.6	0	35	Yes	<25	Nil
NM5	12/01/2021 22:00	0.4	0	35	Yes	IA	Nil
NM6	13/01/2021 00:00	0.6	0	35	Yes	<20	Nil

Table 2 – February Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	11/02/2021 22:30	1.1	0.0	35	Yes	27	Nil
NM2	11/02/2021 23:31	1.0	0.0	39	Yes	25	Nil
NM3	11/02/2021 23:40	1.0	0.0	35	Yes	IA	Nil
NM4	11/02/2021 23:00	1.2	0.0	35	Yes	<20	Nil
NM5	11/02/2021 22:00	1.0	0.0	35	Yes	IA	Nil
NM6	11/02/2021 23:58	0.6	0.0	35	Yes	IA	Nil

Table 3 - March Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	25/03/2021 22:45	0.5	0.0	35	Yes	26	Nil
NM2	26/03/2021 00:15	0.5	0.0	39	Yes	<25	Nil
NM3	25/03/2021 23:38	0.3	0.0	35	Yes	IA	Nil
NM4	25/03/2021 23:45	0.4	0.0	35	Yes	<20	Nil
NM5	25/03/2021 22:15	0.4	0.0	35	Yes	27	Nil
NM6	26/03/2021 00:41	0.4	0.0	35	Yes	IA	Nil

- (1). Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
(2). Estimated or measured LAeq 15minute attributed to MCCM;
(3). NA in exceedance column means criterion is not applicable, either due to atmospheric conditions outside those specified in project Approval or due to property acquisition by MCC; and
(4). Indicates the application of a 2dB low frequency modifying factor.
IA/NM – Inaudible NM – Not measurable

During Q1 no measurements satisfied the conditions for further assessment when reviewed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry.

Maules Creek Coal (MCC) EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. The results for the LA1 monitoring are shown below. The results show that mine operations did not exceed the applicable LA1 criteria during attended noise monitoring in Q1 2021.

LA1, 1minute GENERATED BY MCC AGAINST OPERATIONAL NIGHT NOISE CRITERIA – JANUARY TO MARCH 2021.

Table 4 - January Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	12/01/2021 22:30	1.3	0	45	Yes	<20	Nil
NM2	12/01/2021 23:31	0.9	0	45	Yes	<25	Nil
NM3	12/01/2021 23:44	1.0	0	45	Yes	<25	Nil
NM4	12/01/2021 23:00	1.6	0	45	Yes	26	Nil
NM5	12/01/2021 22:00	0.4	0	45	Yes	1A	Nil
NM6	13/01/2021 00:00	0.6	0	45	Yes	<20	Nil

Table 5 – February Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	11/02/2021 22:30	1.1	0.0	45	Yes	33	Nil
NM2	11/02/2021 23:31	1.0	0.0	45	Yes	40	Nil
NM3	11/02/2021 23:40	1.0	0.0	45	Yes	1A	Nil
NM4	11/02/2021 23:00	1.2	0.0	45	Yes	<20	Nil
NM5	11/02/2021 22:00	1.0	0.0	45	Yes	1A	Nil
NM6	11/02/2021 23:58	0.6	0.0	45	Yes	1A	Nil

Table 6 - March Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	25/03/2021 22:45	0.5	0.0	45	Yes	<30	Nil
NM2	26/03/2021 00:15	0.5	0.0	45	Yes	<25	Nil
NM3	25/03/2021 23:38	0.3	0.0	45	Yes	1A	Nil
NM4	25/03/2021 23:45	0.4	0.0	45	Yes	<20	Nil
NM5	25/03/2021 22:15	0.4	0.0	45	Yes	30	Nil
NM6	26/03/2021 00:41	0.4	0.0	45	Yes	1A	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or wind speeds greater than 3 metres per second (at 10 metres);
 2. Estimated or measured LAeq,15minute attributed to MCCM;
 3. Estimated or measured LA1,1minute attributed to MCCM;
 4. NA in exceedance column means atmospheric conditions outside those specified in Project Approval and criterion is not applicable.
- 1A – Inaudible NM – Not measurable

Wind Direction during Attended Monitoring

Wind direction data is collected from the MCCM Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

Table 7 - Prevailing Wind Direction

Monitoring Date	Prevailing Wind Direction
January	SE
February	SSE
March	SE

Blast Monitoring

There were 26 blasts at MCCM during Q1 2021. All blast monitoring results recorded within the reporting period have complied with applicable overpressure and ground vibration limits specified in the respective approvals.

Table 8 - Blast Results Summary Quarter 1 2021

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	26	95.83	111.2	120	No
Vibration	mm/s		26	0.13	0.67	10	No

Air Quality

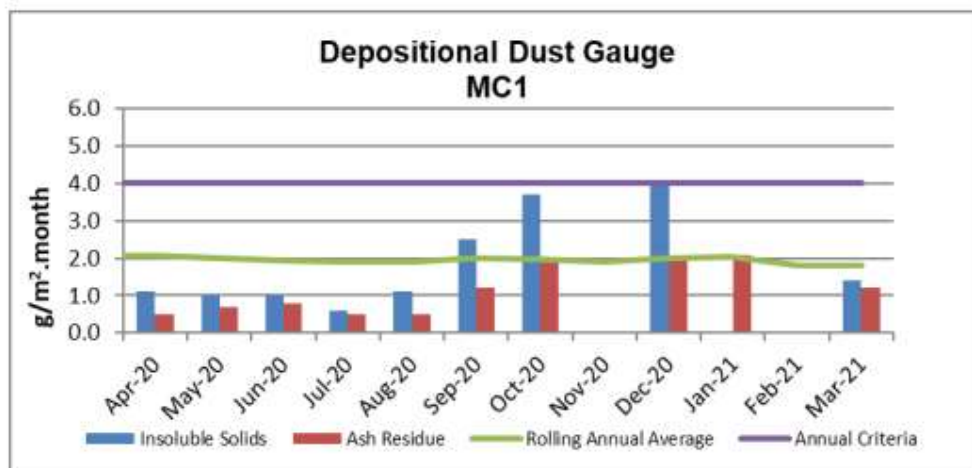
Total Depositional Dust

The 12 monthly rolling annual average remains below the relevant Project Approval criteria of $4\text{g}/\text{m}^2/\text{month}$ for the respective monitoring points.

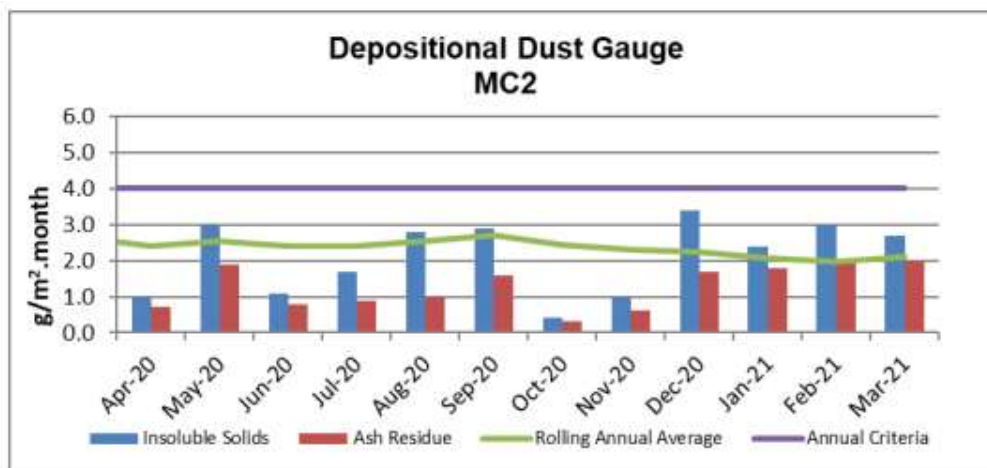
Table 9 – Deposited Dust Gauge Results [$\text{g}/\text{m}^2/\text{month}$]

MONTH	MC1	MC2	MC3	MC4
January-21	10.5	2.4	3.3	0.8
February-21	4.7 ^c	3.0	2.1	1.5
March-21	1.4	2.7	2.4	1.2
12 MONTH ROLLING AVERAGE	1.8	2.1	2.2	1.9

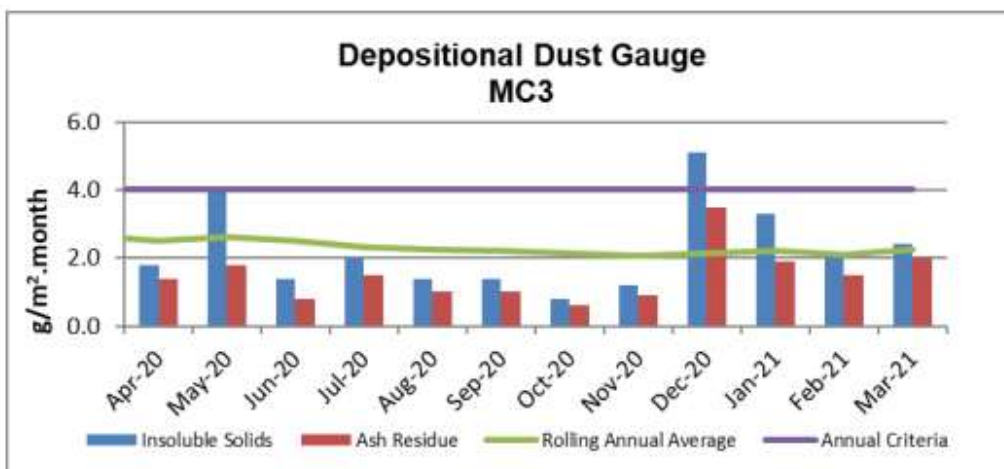
^c samples contaminated by bird dropping, decomposed insects or vegetable matter.



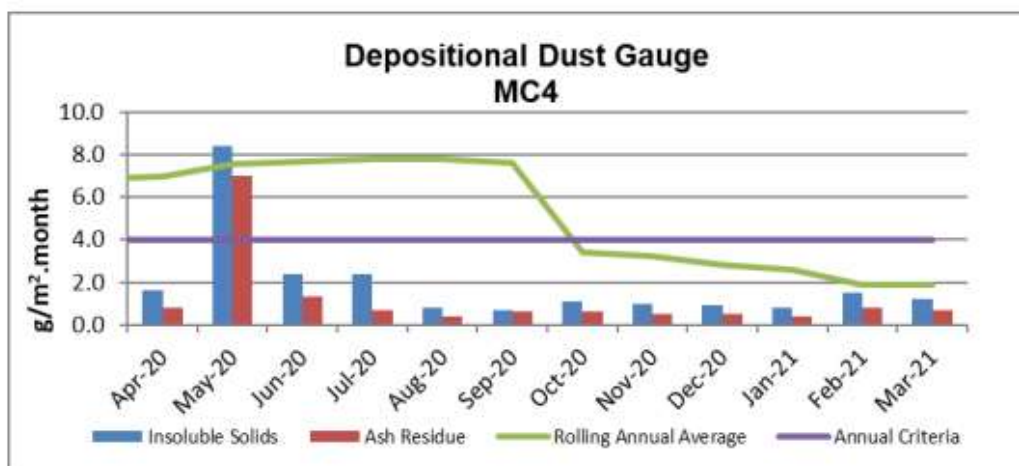
* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).



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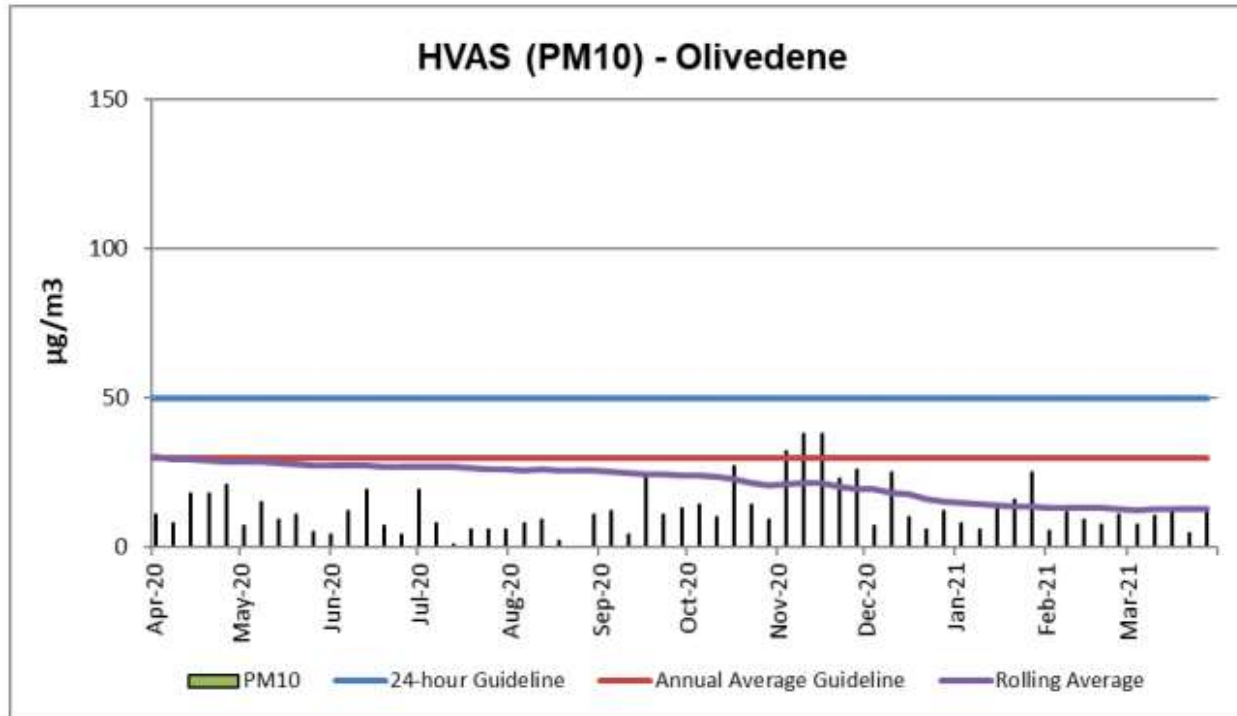


* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).

High Volume Air Sampling (HVAS)

The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road. During past 12 months there have been no exceedances of the 24 hour average of 50 $\mu\text{g}/\text{m}^3$.

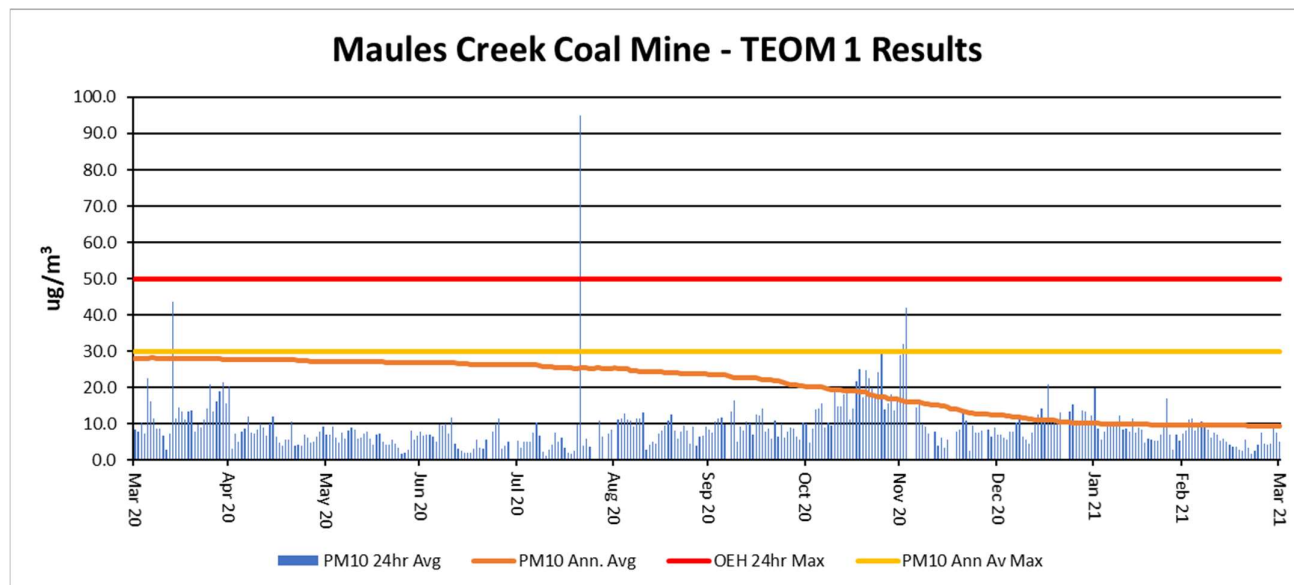
HVAS PM_{10} Rolling Annual Average at the end of Q1 2021 was **12.7 $\mu\text{g}/\text{m}^3$** , which is below the Annual Average Guideline of 30 $\mu\text{g}/\text{m}^3$.



TEOM - PM₁₀ Results

The annual rolling average for PM₁₀ at the Maules Creek Coal TEOM was **9.4 µg/m³**, which is below the Project Approval annual average criteria of 30µg/m³ as shown in the following figure. There have been no exceedances of the 24 hour average for Q1.

TEOM Result Figures – Particulate Matter PM₁₀µg/m³



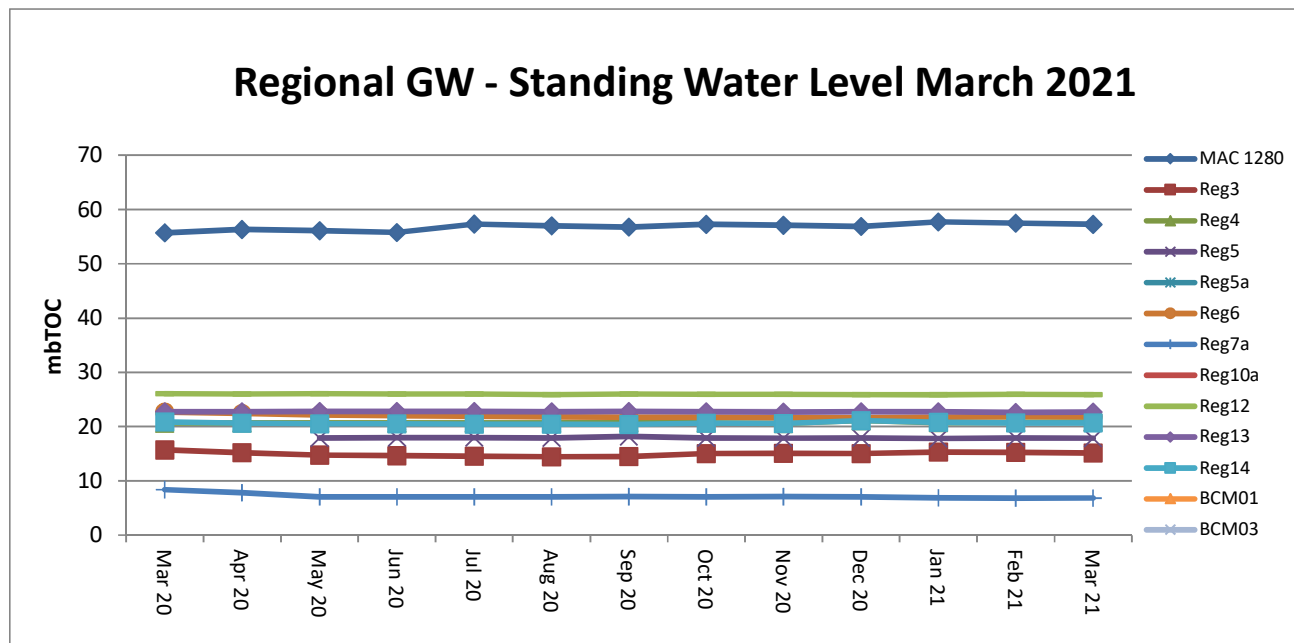
* Blank columns indicate sample periods where there was either power outage, maintenance or other related causes.

** Exceedances of the OE 24hr Maximum over the past 12 months have been non mine related and have been attributed to regional dust events. All previous exceedances have been discussed at CCC meetings.

Water Monitoring

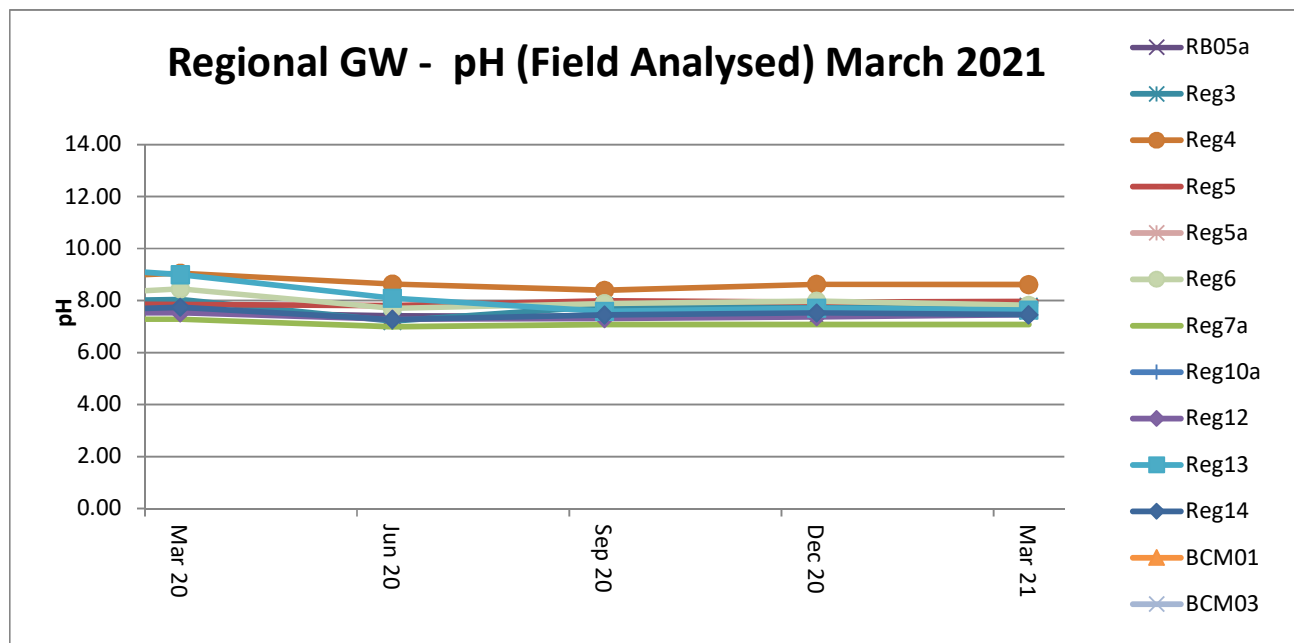
Groundwater

Groundwater monitoring results in open standpipe piezometers show levels to be relatively stable. The Regional bores were installed between Q4, 2013 and Q1, 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.



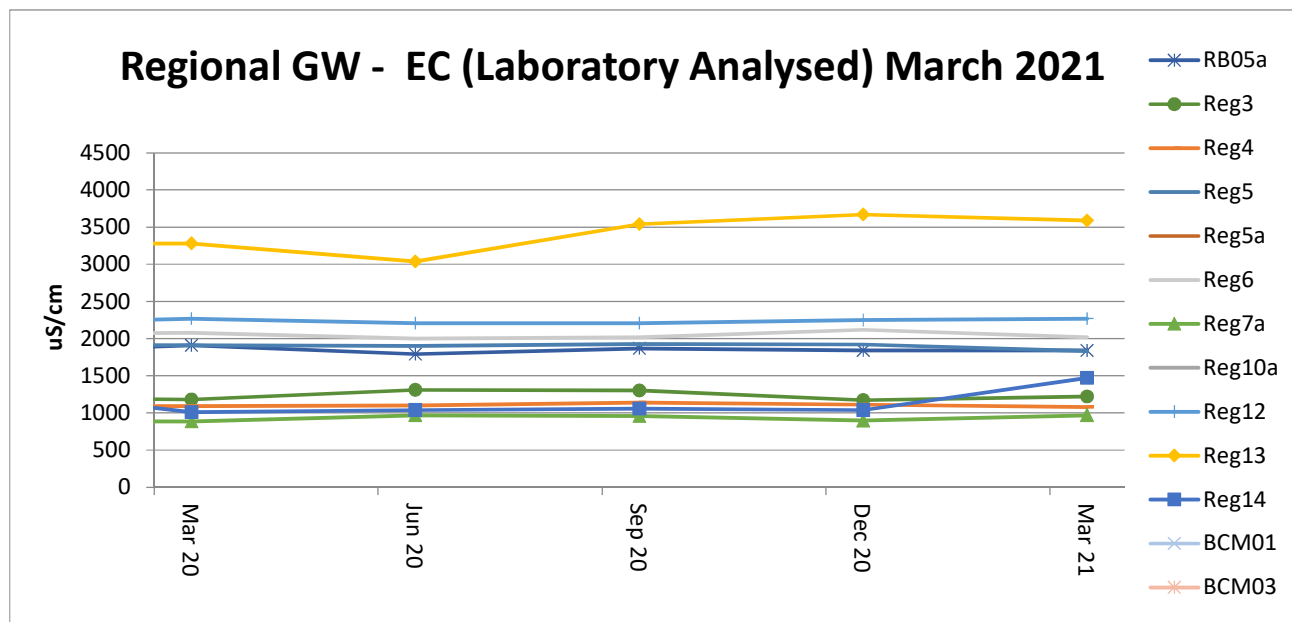
Acidity / Alkalinity (pH)

Over the past twelve months pH readings across the regional bores have remained static with very little fluctuation.



Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 $\mu\text{S}/\text{cm}$ to 2,500 $\mu\text{S}/\text{cm}$, with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,500 $\mu\text{S}/\text{cm}$ to 4,100 $\mu\text{S}/\text{cm}$. Within the last twelve months EC has remained static.

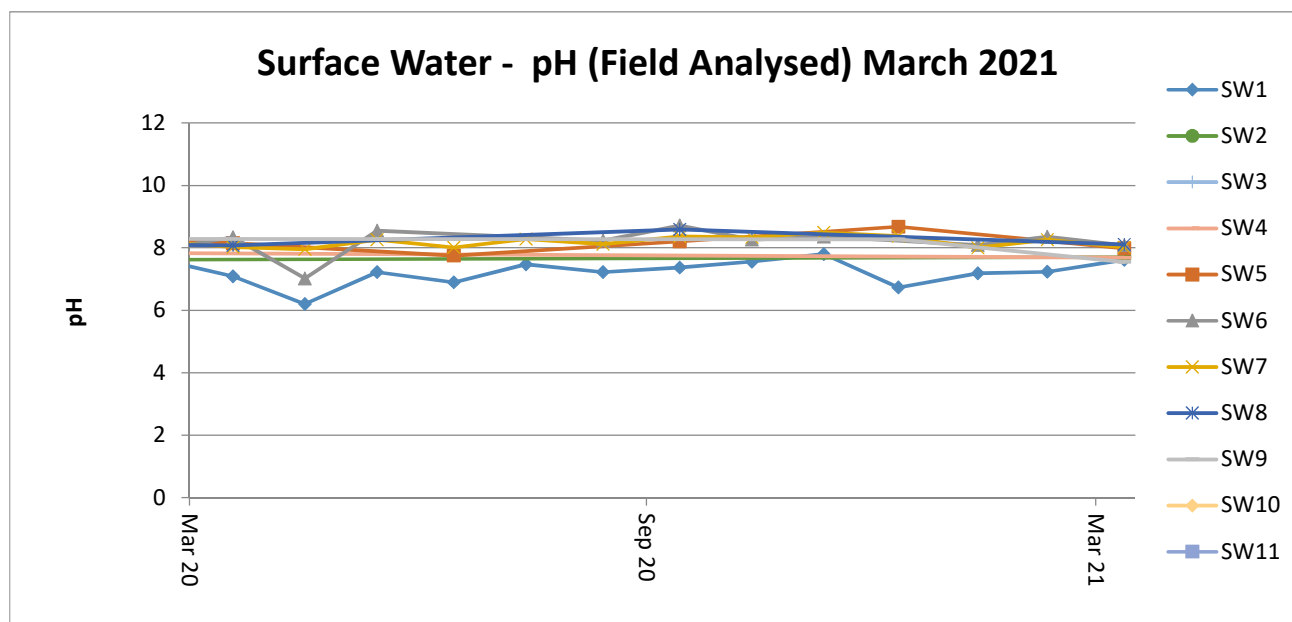


Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the figures below. There are eleven surface water monitoring points, of which eight were able to be sampled during Q1 2021.

Acidity / Alkalinity (pH)

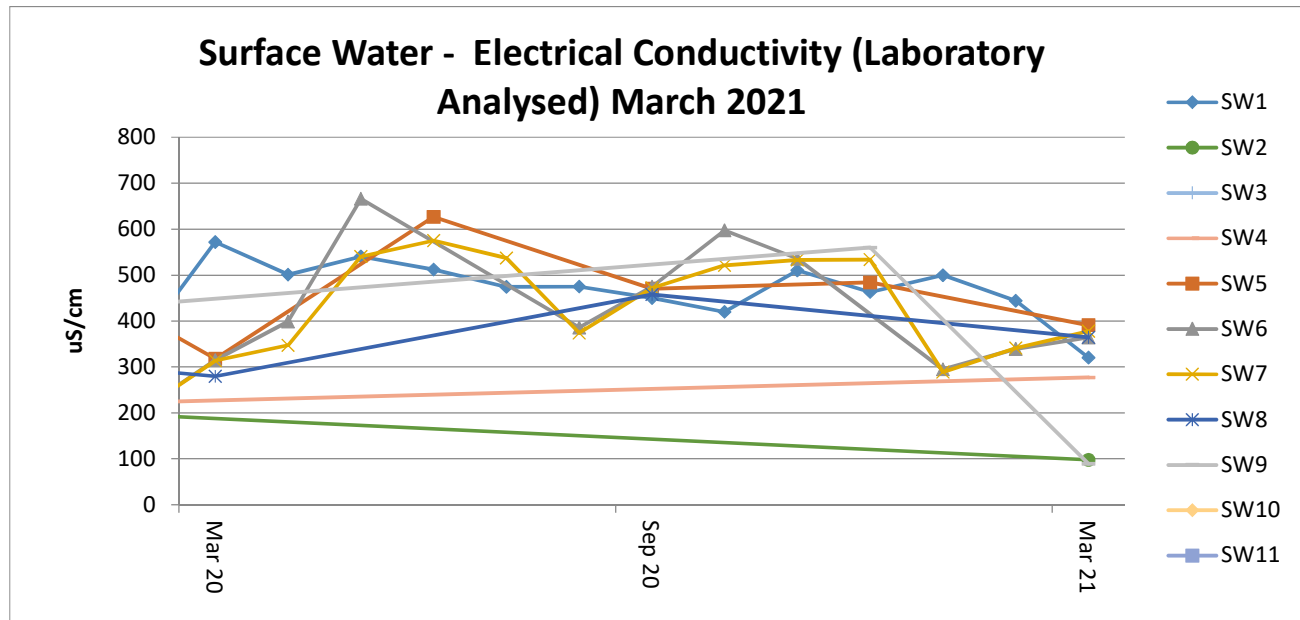
Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC range for Irrigation, Ecosystem Health and Recreation.



*0 values indicate no water to sample due to the creek being dry

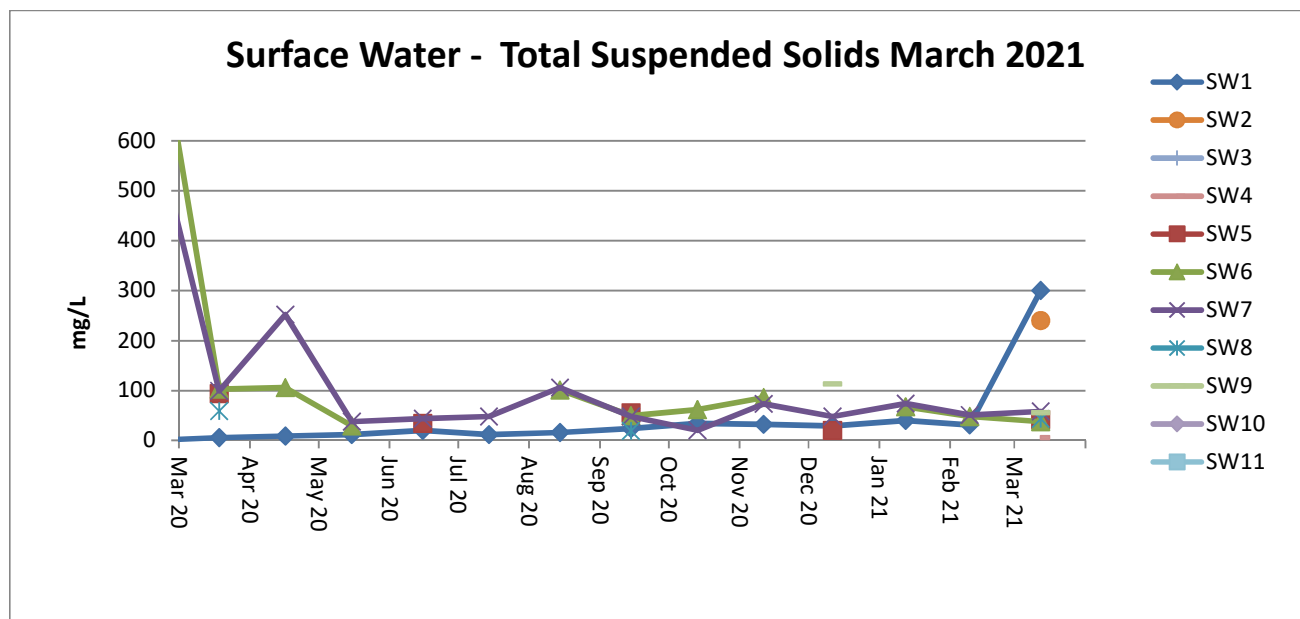
Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which are subject to regulated and variable flow regimes.



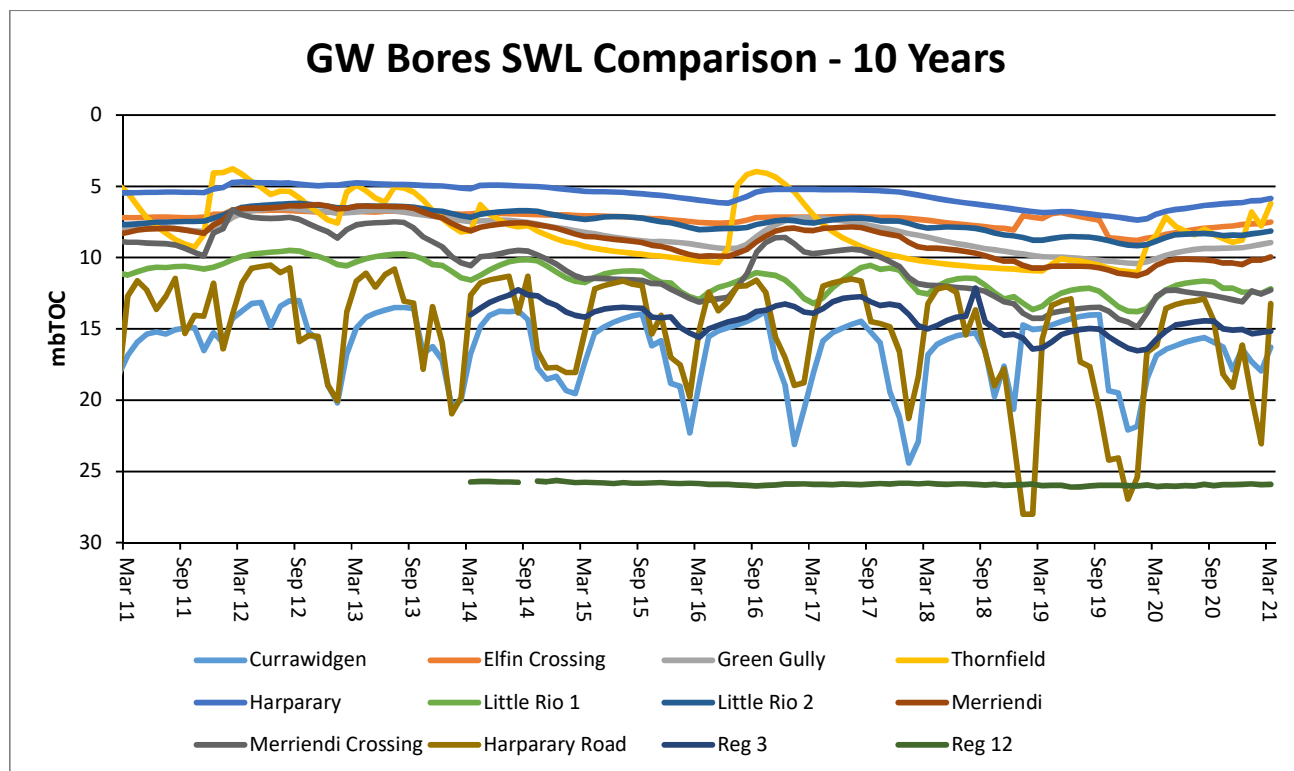
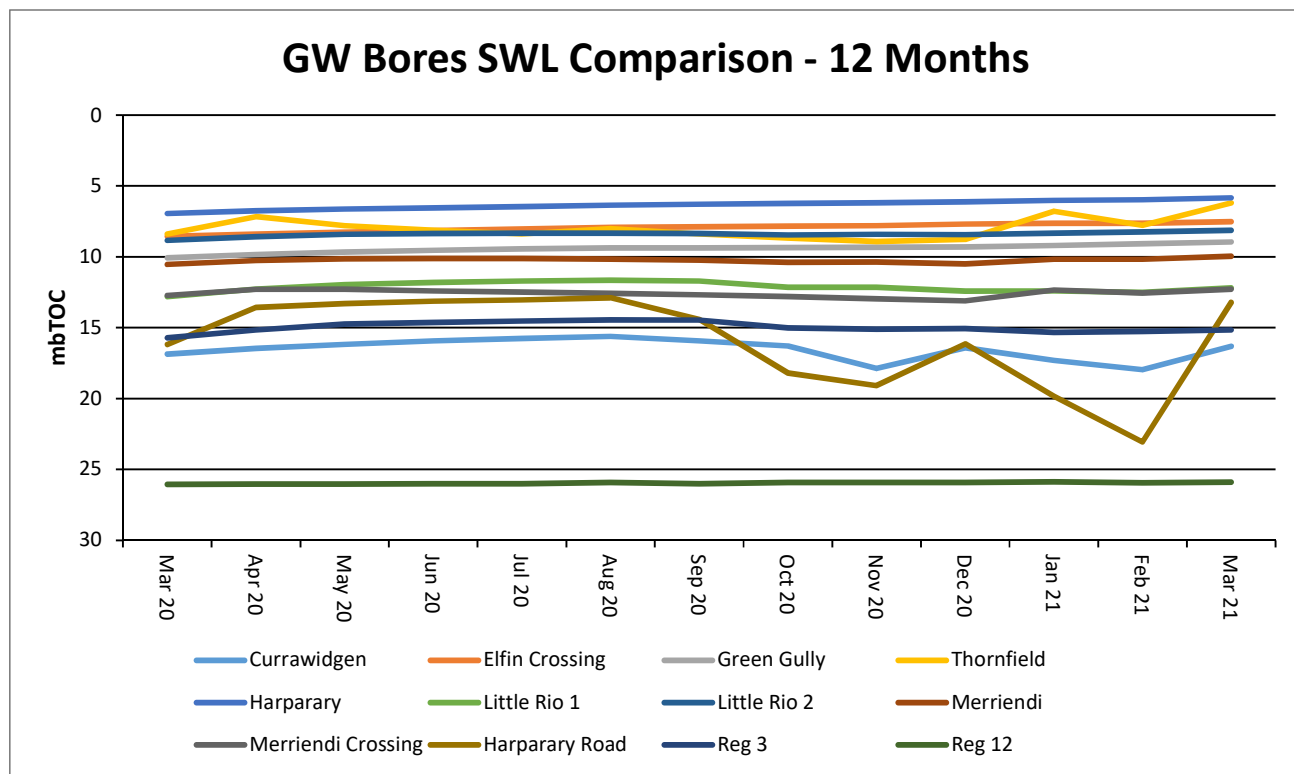
Total Suspended Solids (TSS)

Surface water TSS trends have remained generally consistent with historical results. SW5, SW6, SW7 and SW8 are historically variable as they are located along the Namoi River which is subject to regulated and variable flow regimes. There were elevated levels of TSS in Q1 due to significant rainfall events.



Regional Groundwater monitoring

Maules Creek Coal Mine monitors regional bores across the region.



Rehabilitation

Progressive rehabilitation works are ongoing. 70,000 trees will be planted in the rehabilitation areas over the coming months.

Feral Animal Management

During the most recent routine Whitehaven Offset Area Feral Animal Control program (March 2021) the results included:

- 51 out of total 75 pigs trapped were from the Maules Creek offset properties
- 420 out of a total 659 baits (1080) taken were from the Maules Creek offset properties

Weed Control

- Targeted seasonal weed control along Riparian areas for Green Cestrum

Threatened Flora

- Quarterly inspections undertaken for Tylophora and Pomaderris sites
- Some flowering Tylophora found in March however no follicles or seeds had developed

Fire Management

- Currently planning 2021 Autumn Ecological Burn Program

Fencing and Waste Management

- Fencing repairs have been undertaken due to wet weather damage.

Community Complaints

- Five complaints were received during Q1 CY2021.

Date	Method	Category	Nature Of Complaint	MCCM Response
09/02/2021	Phone	Noise	Complaint received from Landholder regarding noise from the mining operations	MCCM reviewed monitoring data and operational activities and provided a response to the Complainant.
10/02/2021	Phone	Lighting	Complaint received from Landholder regarding lighting impacts	Investigation undertaken into possible source of light, with review of lighting direction and intensity. Lighting plants were adjusted accordingly.
11/02/2021	Phone	Noise	Complaint received from Landholder regarding noise from the mining operations	MCCM reviewed monitoring data and operational activities and provided a response to the Complainant.
12/02/2021	Email	Noise	Complaint received from EPA regarding an noise complaint on the 10 th February 2021	MCCM received real time monitoring results, operational activities and management measures and provided a response to the Agency.
19/03/2021	Text	Noise	Complaint received from Landholder regarding noise from the mining operations	MCCM review monitoring data and operational activities and provided a response to the Complainant.

Maules Creek Coal Mine Community Consultative Committee Meeting #34

Environmental Monitoring Report For the Q2 period, April – June 2021

Attended Noise Monitoring

Attended noise monitoring was undertaken at six locations during April, May and June 2021 by an independent acoustic consultant. The measured noise level (LAeq 15 minute) attributed to Maules Creek Coal Mine (MCCM) and applicable criteria for each location are shown in the tables below.

LAeq, 15minute GENERATED BY MCCM AGAINST OPERATIONAL NIGHT NOISE CRITERIA – APRIL TO JUNE 2021.

Table 1 - April Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	14/04/2021 22:30	0.4	0.0	35	Yes	IA	Nil
NM2	14/04/2021 23:30	0.5	0.0	39	Yes	IA	Nil
NM3	14/04/2021 23:34	0.4	0.0	35	Yes	IA	Nil
NM4	14/04/2021 23:00	0.3	0.0	35	Yes	IA	Nil
NM5	14/04/2021 22:00	0.3	0.0	35	Yes	29	Nil
NM6	14/04/2021 23:57	0.5	0.0	35	Yes	IA	Nil

Table 2 – May Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	06/05/2021 22:40	0.9	0.0	35	Yes	<20	Nil
NM2	06/05/2021 23:45	0.4	0.0	39	Yes	<20	Nil
NM3	06/05/2021 23:33	0.4	0.0	35	Yes	<20	Nil
NM4	06/05/2021 23:13	0.4	0.0	35	Yes	<20	Nil
NM5	06/05/2021 22:08	0.9	0.0	35	Yes	<20	Nil
NM6	07/05/2021 00:15	0.9	0.0	35	Yes	<20	Nil

Table 3 - June Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	17/06/2021 22:30	0.4	0	35	Yes	NM	Nil
NM2	17/06/2021 23:30	0.4	0	39	Yes	NM	Nil
NM3	17/06/2021 22:00	0.4	0	35	Yes	IA	Nil
NM4	17/06/2021 23:00	0.3	0	35	Yes	NM	Nil
NM5	17/06/2021 22:00	0.4	0	35	Yes	26	Nil
NM6	17/06/2021 23:58	0.4	0	35	Yes	NM	Nil

(1). Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);

(2). Estimated or measured LAeq 15minute attributed to MCCM;

(3). NA in exceedance column means criterion is not applicable, either due to atmospheric conditions outside those specified in project Approval or due to property acquisition by MCC; and

(4). Indicates the application of a 2dB low frequency modifying factor.

IA/NM – Inaudible NM – Not measurable

During Q2 no measurements satisfied the conditions for further assessment when reviewed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry.

Maules Creek Coal (MCC) EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. The results for the LA1 monitoring are shown below. The results show that mine operations did not exceed the applicable LA1 criteria during attended noise monitoring in Q2 2021.

LA1, 1minute GENERATED BY MCC AGAINST OPERATIONAL NIGHT NOISE CRITERIA – APRIL TO JUNE 2021.

Table 4 - April Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	14/04/2021 22:30	0.4	0.0	45	Yes	IA	Nil
NM2	14/04/2021 23:30	0.5	0.0	45	Yes	IA	Nil
NM3	14/04/2021 23:34	0.4	0.0	45	Yes	IA	Nil
NM4	14/04/2021 23:00	0.3	0.0	45	Yes	IA	Nil
NM5	14/04/2021 22:00	0.3	0.0	45	Yes	32	Nil
NM6	14/04/2021 23:57	0.5	0.0	45	Yes	IA	Nil

Table 5 – May Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	06/05/2021 22:40	0.9	0.0	45	Yes	<20	Nil
NM2	06/05/2021 23:45	0.4	0.0	45	Yes	<25	Nil
NM3	06/05/2021 23:33	0.4	0.0	45	Yes	<25	Nil
NM4	06/05/2021 23:13	0.4	0.0	45	Yes	<20	Nil
NM5	06/05/2021 22:08	0.9	0.0	45	Yes	<20	Nil
NM6	07/05/2021 00:15	0.9	0.0	45	Yes	<20	Nil

Table 6 - June Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	17/06/2021 22:30	0.4	0	45	Yes	NM	Nil
NM2	17/06/2021 23:30	0.4	0	45	Yes	NM	Nil
NM3	17/06/2021 22:00	0.4	0	45	Yes	IA	Nil
NM4	17/06/2021 23:00	0.3	0	45	Yes	NM	Nil
NM5	17/06/2021 22:00	0.4	0	45	Yes	34	Nil
NM6	17/06/2021 23:58	0.4	0	45	Yes	NM	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or wind speeds greater than 3 metres per second (at 10 metres);
2. Estimated or measured LAeq,15minute attributed to MCCM;
3. Estimated or measured LA1,1minute attributed to MCCM;
4. NA in exceedance column means atmospheric conditions outside those specified in Project Approval and criterion is not applicable.

IA – Inaudible NM – Not measurable

Wind Direction during Attended Monitoring

Wind direction data is collected from the MCCM Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

Table 7 - Prevailing Wind Direction

Monitoring Date	Prevailing Wind Direction
April	SSE
May	SSE
June	WSW

Blast Monitoring

There were 25 blasts at MCCM during Q2 2021. All blast monitoring results recorded within the reporting period have complied with applicable overpressure and ground vibration limits specified in the respective approvals.

Table 8 - Blast Results Summary Quarter 2 2021

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	25	95.56	111.3	120	No
Vibration	mm/s		25	0.18	0.86	10	No

Air Quality

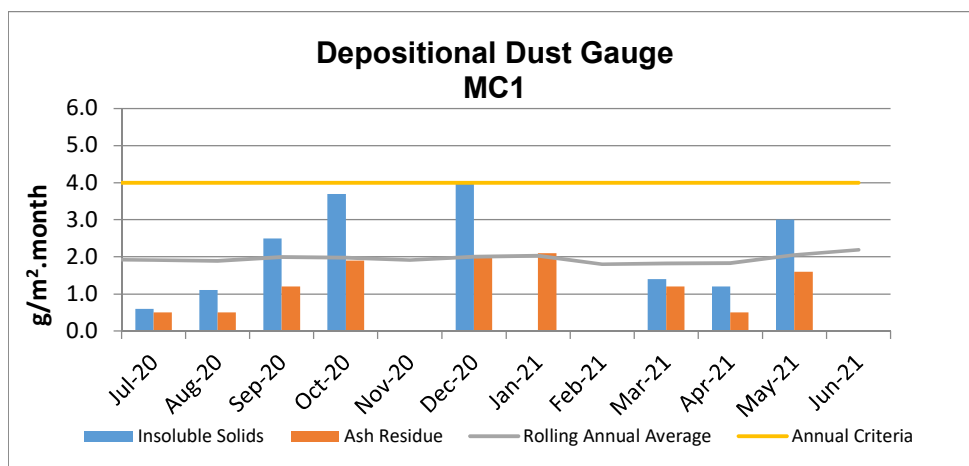
Total Depositional Dust

The 12 monthly rolling annual average remains below the relevant Project Approval criteria of $4\text{g/m}^2/\text{month}$ for the respective monitoring points.

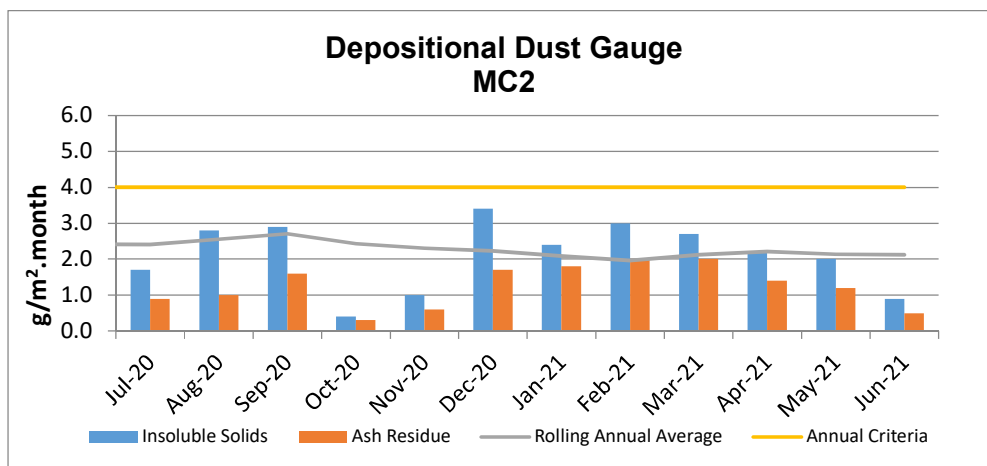
Table 9 – Deposited Dust Gauge Results [$\text{g/m}^2/\text{month}$]

MONTH	MC1	MC2	MC3	MC4
April-21	1.2	2.2	0.5	0.3
May-21	3.0	2.0	3.2	1.1
June-21	4.3c	0.9	0.9	0.2
12 MONTH ROLLING AVERAGE	2.2	2.1	2.0	1.0

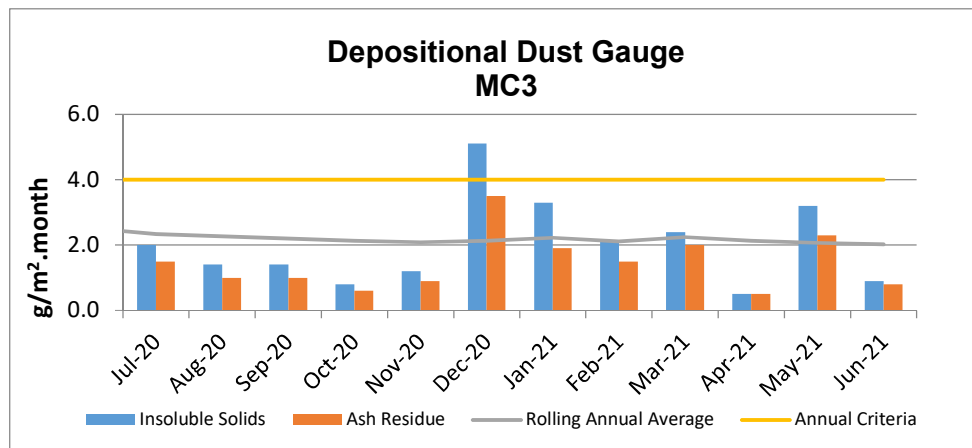
^c samples contaminated by bird dropping, decomposed insects or vegetable matter.



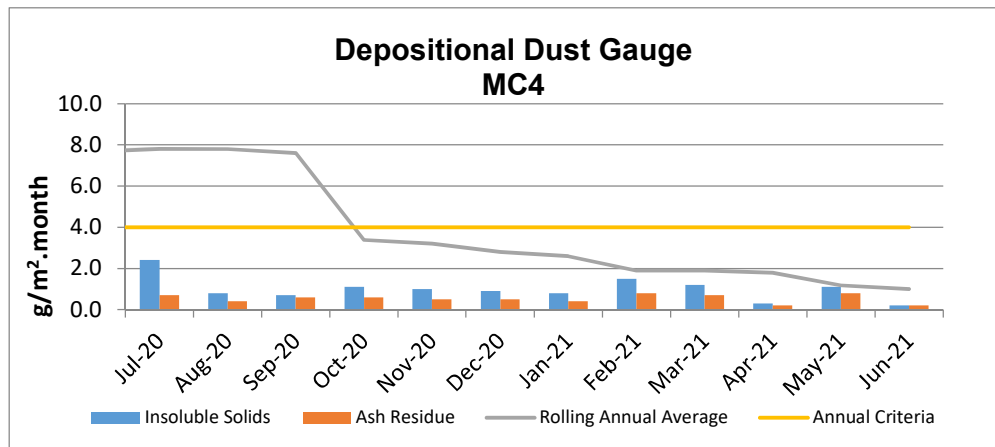
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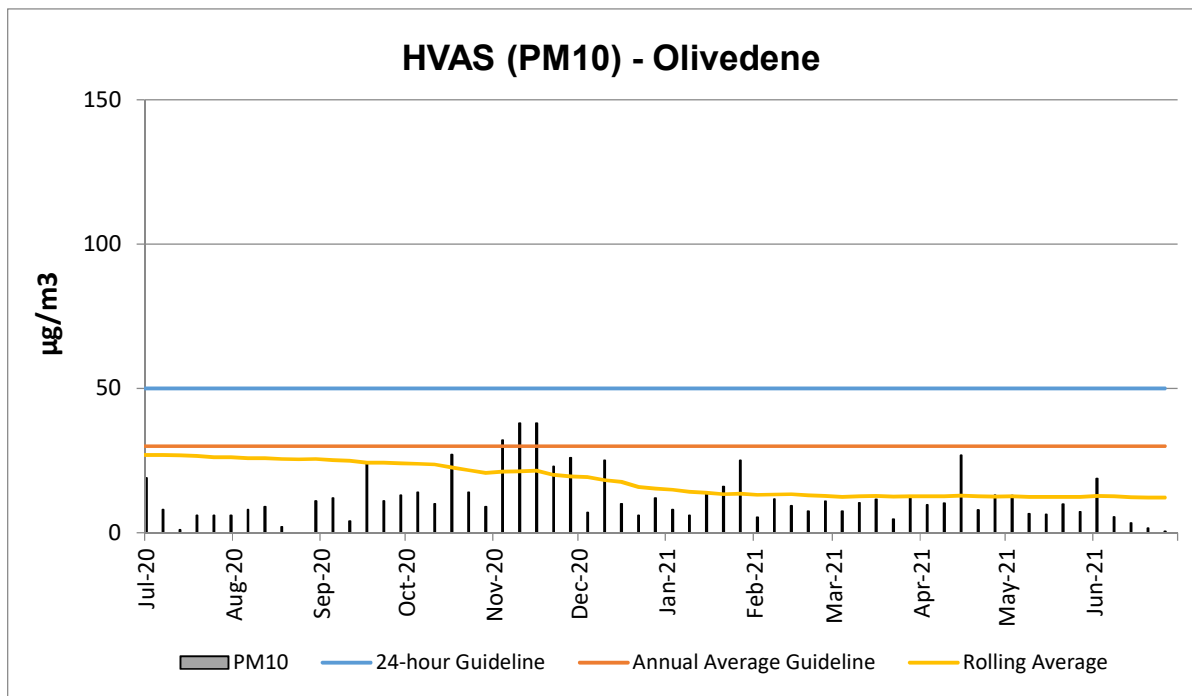


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High Volume Air Sampling (HVAS)

The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road. During past 12 months there have been no exceedances of the 24 hour average of 50 $\mu\text{g}/\text{m}^3$.

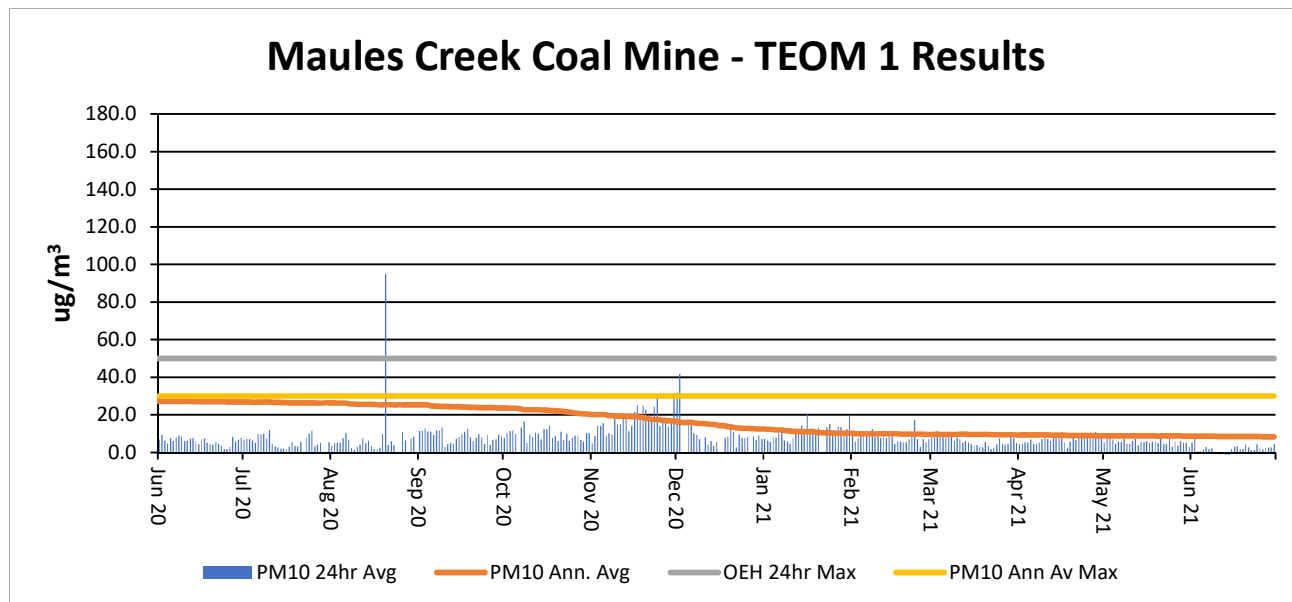
HVAS PM₁₀ Rolling Annual Average at the end of Q2 2021 was **12.2 $\mu\text{g}/\text{m}^3$** , which is below the Annual Average Guideline of 30 $\mu\text{g}/\text{m}^3$.



TEOM - PM₁₀ Results

The annual rolling average for PM₁₀ at the Maules Creek Coal TEOM was **8.4 µg/m³**, which is below the Project Approval annual average criteria of 30µg/m³ as shown in the following figure. There have been no exceedances of the 24 hour average for Q2.

TEOM Result Figures – Particulate Matter PM₁₀µg/m³



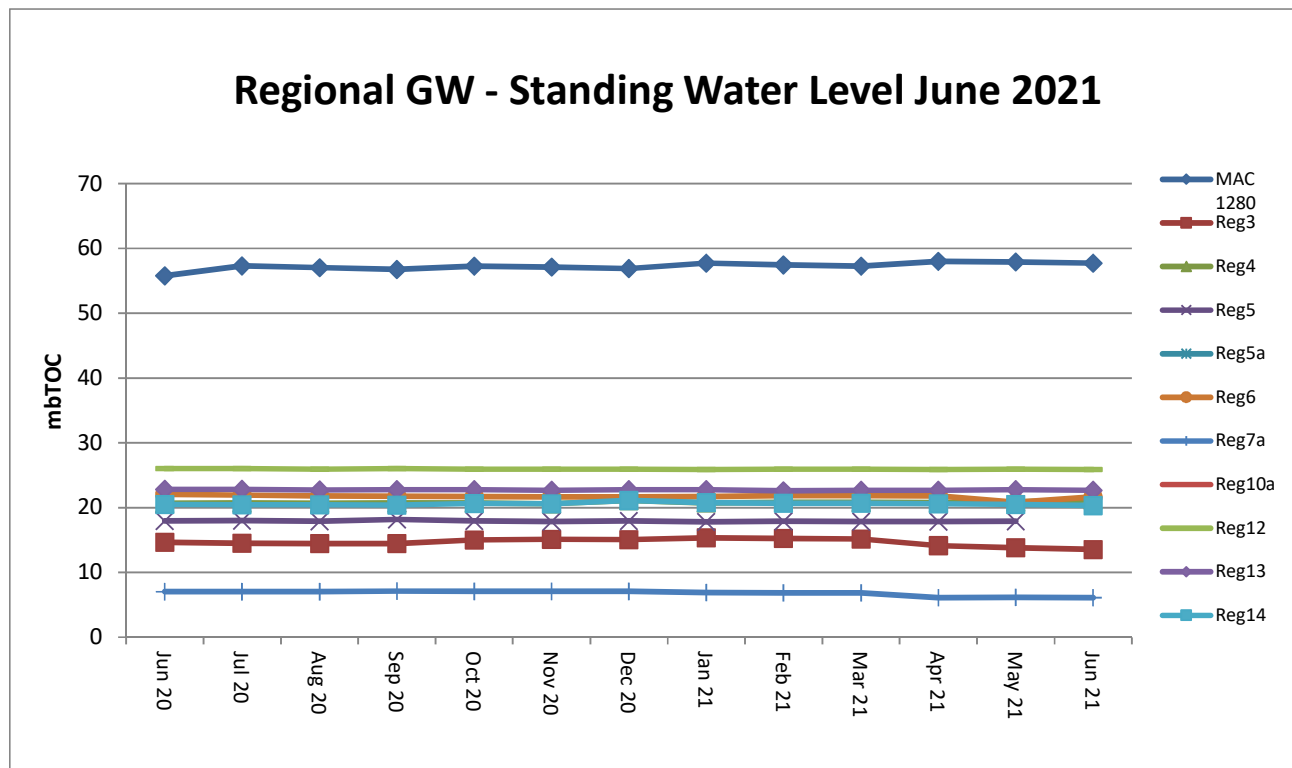
* Blank columns indicate sample periods where there was either power outage, maintenance or other related causes.

** Exceedances of the OEH 24hr Maximum over the past 12 months have been non mine related and have been attributed to regional dust events. All previous exceedances have been discussed at CCC meetings.

Water Monitoring

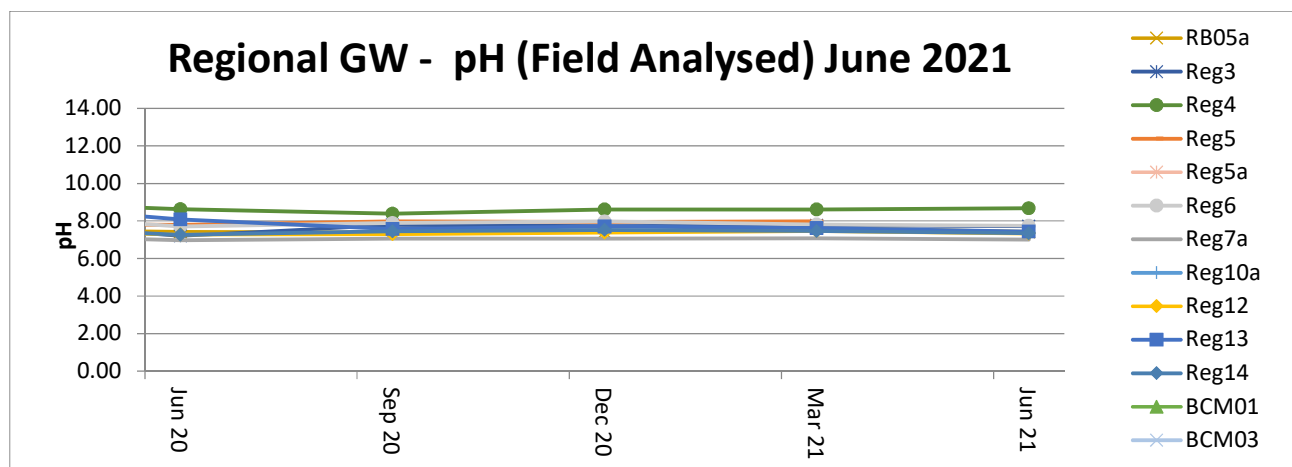
Groundwater

Groundwater monitoring results in open standpipe piezometers show levels to be relatively stable. The Regional bores were installed between Q4, 2013 and Q1, 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.



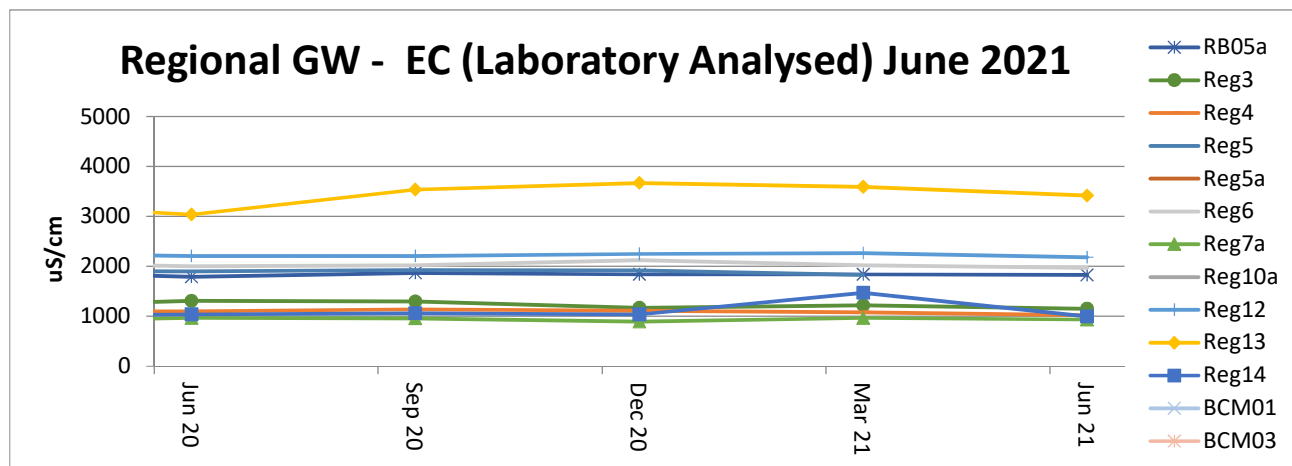
Acidity / Alkalinity (pH)

Over the past twelve months pH readings across the regional bores have remained static with very little fluctuation.



Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 $\mu\text{S}/\text{cm}$ to 2,500 $\mu\text{S}/\text{cm}$, with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,500 $\mu\text{S}/\text{cm}$ to 4,100 $\mu\text{S}/\text{cm}$. Within the last twelve months EC has remained static.

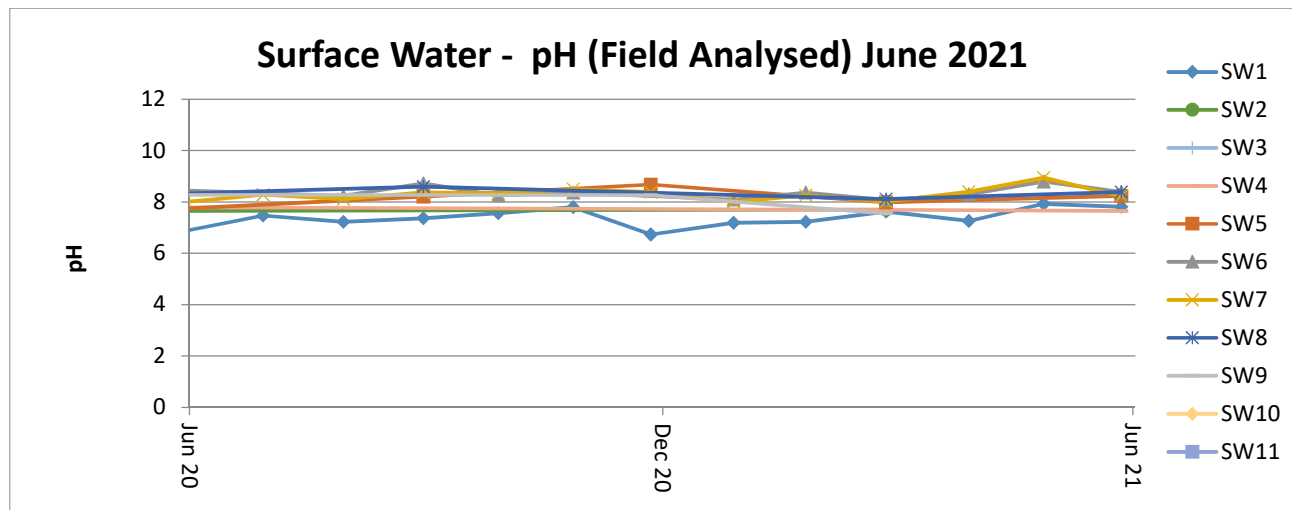


Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the figures below. There are eleven surface water monitoring points, of which eight were able to be sampled during Q2 2021.

Acidity / Alkalinity (pH)

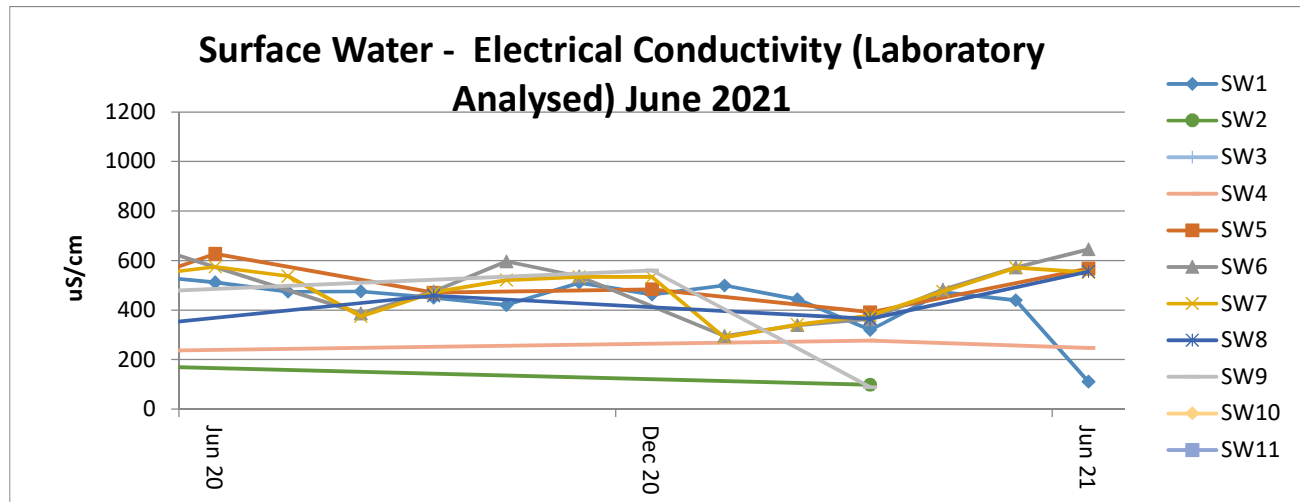
Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC range for Irrigation, Ecosystem Health and Recreation.



*0 values indicate no water to sample due to the creek being dry

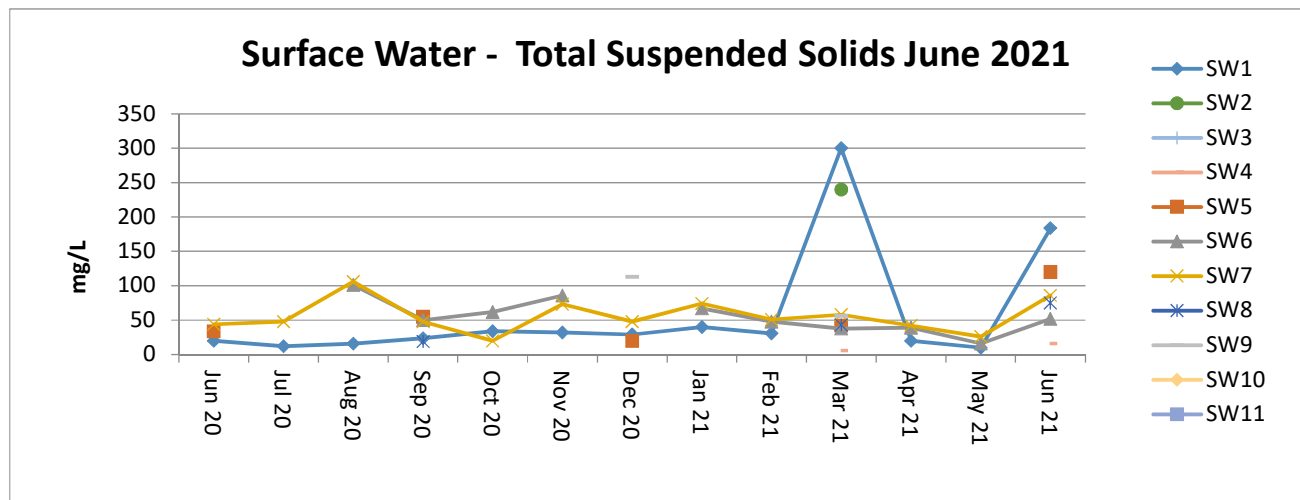
Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which are subject to regulated and variable flow regimes.



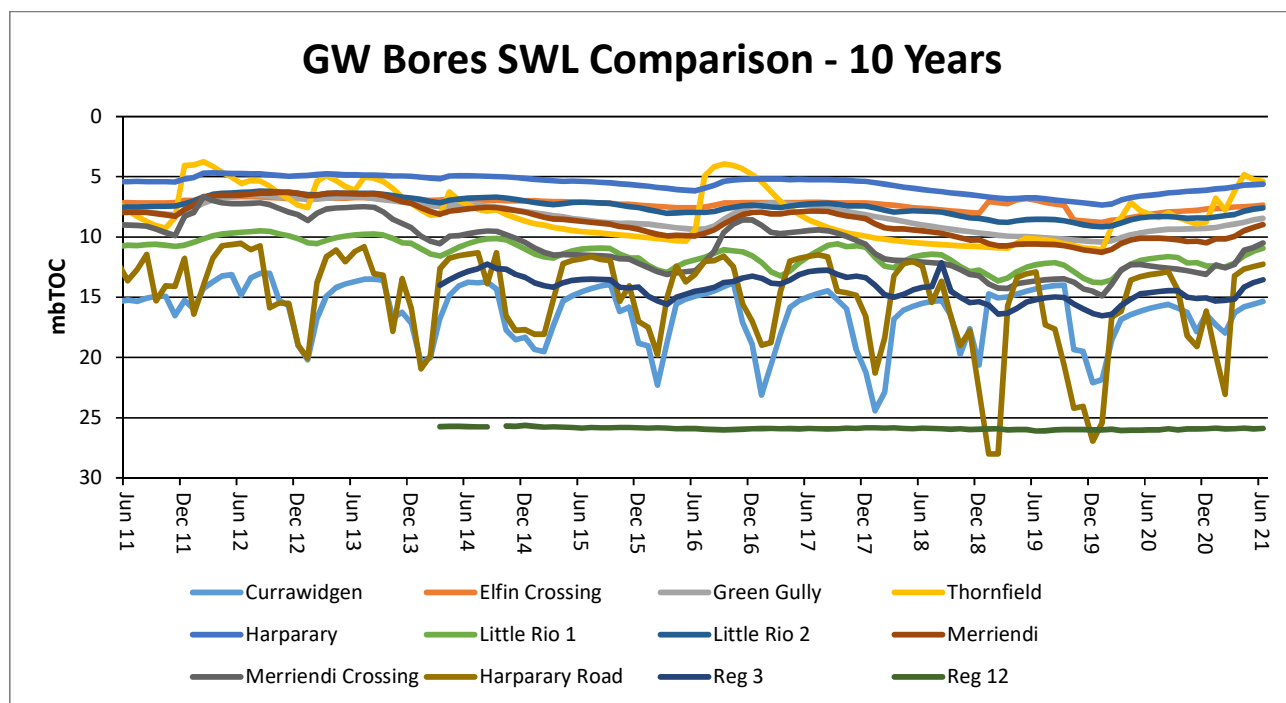
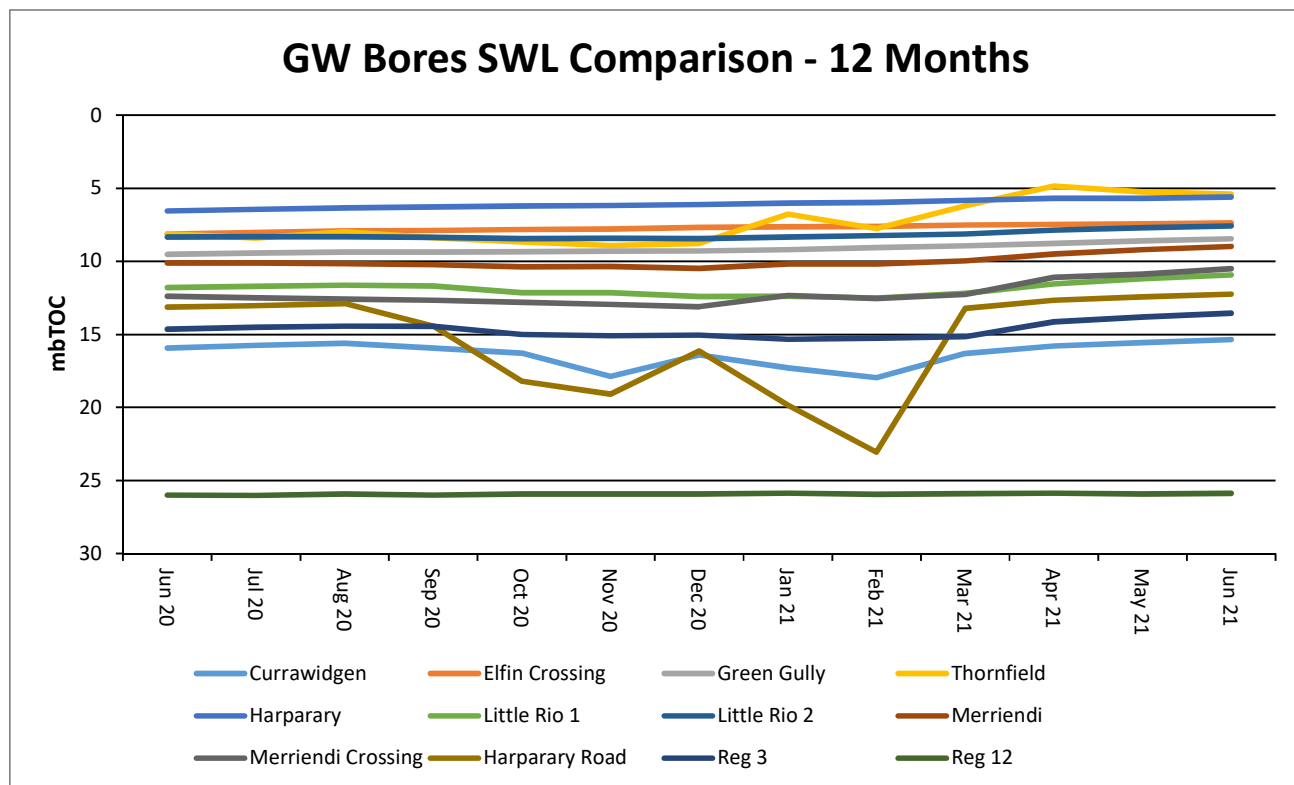
Total Suspended Solids (TSS)

Surface water TSS trends have remained generally consistent with historical results. SW5, SW6, SW7 and SW8 are historically variable as they are located along the Namoi River which is subject to regulated and variable flow regimes. There were elevated levels of TSS in Q2 due to significant rainfall events.



Regional Groundwater monitoring

Maules Creek Coal Mine monitors regional bores across the region.



Rehabilitation

Progressive rehabilitation works are ongoing. 40,000 trees have been planted in the rehabilitation areas over the previous quarter.

Feral Animal Management

The most recent routine Whitehaven Offset Area Feral Animal Control program (June 2021) saw the following results:

- 101 out of total 158 pigs trapped were from the Maules Creek offset properties
- 455 out of a total 771 baits (1080) taken were from the Maules Creek offset properties

Weed Control

- Targeted seasonal weed control for Patterson Curse and other broadleaf Weeds

Threatened Flora

- Quarterly inspections in May undertaken for Tylophora and Pomaderris sites
- Planning to plant additional 85 Pomaderris seedlings in August
- Maintenance of Threatened Flora Site fences

Habitat Augmentation

- Installed 172 Nest Boxes in June for Gliders, Parrots and Microbats.

Fire Management

- Currently planning 2021 Autumn Ecological Burn Program

Fencing and Waste Management

- Ongoing maintenance of Heritage Site fences

Community Complaints

- Three complaints were received during Q2 CY2021.

Date	Method	Category	Nature Of Complaint	MCCM Response
21/05/2021	Phone	Blast	Complaint received from Landholder regarding dust and potential fume following a blast event.	MCCM reviewed monitoring data and footage of the blast and provided a response to the Complainant
24/05/2021	Complaints Line	Noise and Lighting	Complaint received from local resident regarding mine noise and lighting.	MCCM reviewed monitoring data and operational activities and provided a response to the Complainant.
25/05/2021	Complaints Line	Noise	Complaint received from local resident regarding mine noise, phone and internet reception.	MCCM reviewed monitoring data and operational activities and provided a response to the complainant.

Maules Creek Coal Mine Community Consultative Committee Meeting #35

Environmental Monitoring Report For the Q3 period, July – September 2021

Attended Noise Monitoring

Attended noise monitoring was undertaken at six locations during July, August and September 2021 by an independent acoustic consultant. The measured noise level (LAeq 15 minute) attributed to Maules Creek Coal Mine (MCCM) and applicable criteria for each location are shown in the tables below.

LAeq, 15minute GENERATED BY MCCM AGAINST OPERATIONAL NIGHT NOISE CRITERIA – JULY TO SEPTEMBER 2021.

Table 1 - July Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	19/07/2021 22:30	0.2	0.0	35	Yes	26	Nil
NM2	19/07/2021 23:30	0.2	0.0	39	Yes	IA	Nil
NM3	19/07/2021 22:00	0.1	0.0	35	Yes	IA	Nil
NM4	19/07/2021 23:00	0.2	0.0	35	Yes	IA	Nil
NM5	19/07/2021 22:00	0.1	0.0	35	Yes	23	Nil
NM6	20/07/2021 00:00	0.4	0.0	35	Yes	IA	Nil

Table 2 – August Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	03/08/2021 22:30	0.1	0.0	35	Yes	27	Nil
NM2	03/08/2021 23:30	2.1	0.0	39	Yes	IA	Nil
NM3	03/08/2021 23:45	2.8	0.0	35	Yes	IA	Nil
NM4	03/08/2021 23:00	0.2	0.0	35	Yes	IA	Nil
NM5	03/08/2021 22:00	0.2	0.0	35	Yes	25	Nil
NM6	03/08/2021 23:56	2.4	0.0	35	Yes	IA	Nil

Table 3 - September Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	08/09/2021 22:30	0.2	0.0	35	Yes	IA	Nil
NM2	08/09/2021 23:30	0.7	0.0	39	Yes	IA	Nil
NM3	08/09/2021 23:39	0.4	0.0	35	Yes	IA	Nil
NM4	08/09/2021 23:00	0.2	0.0	35	Yes	IA	Nil
NM5	08/09/2021 22:00	0.5	0.0	35	Yes	IA	Nil
NM6	08/09/2021 23:57	0.5	0.0	35	Yes	IA	Nil

(1). Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
(2). Estimated or measured LAeq 15minute attributed to MCCM;
(3). NA in exceedance column means criterion is not applicable, either due to atmospheric conditions outside those specified in project Approval or due to property acquisition by MCC; and
(4). Indicates the application of a 2dB low frequency modifying factor.
IA/NM – Inaudible NM – Not measurable

During Q3 no measurements satisfied the conditions for further assessment when reviewed for the applicability of low frequency modification factors in accordance with the EPA's Noise Policy for Industry.

Maules Creek Coal (MCC) EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. The results for the LA1 monitoring are shown below. The results show that mine operations did not exceed the applicable LA1 criteria during attended noise monitoring in Q3 2021.

LA1, 1minute GENERATED BY MCC AGAINST OPERATIONAL NIGHT NOISE CRITERIA – APRIL TO JUNE 2021.

Table 4 - July Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	19/07/2021 22:30	0.2	0.0	45	Yes	29	Nil
NM2	19/07/2021 23:30	0.2	0.0	45	Yes	1A	Nil
NM3	19/07/2021 22:00	0.1	0.0	45	Yes	1A	Nil
NM4	19/07/2021 23:00	0.2	0.0	45	Yes	1A	Nil
NM5	19/07/2021 22:00	0.1	0.0	45	Yes	27	Nil
NM6	20/07/2021 00:00	0.4	0.0	45	Yes	1A	Nil

Table 4 - August Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	03/08/2021 22:30	0.1	0.0	45	Yes	30	Nil
NM2	03/08/2021 23:30	2.1	0.0	45	Yes	1A	Nil
NM3	03/08/2021 23:45	2.8	0.0	45	Yes	1A	Nil
NM4	03/08/2021 23:00	0.2	0.0	45	Yes	1A	Nil
NM5	03/08/2021 22:00	0.2	0.0	45	Yes	30	Nil
NM6	03/08/2021 23:56	2.4	0.0	45	Yes	1A	Nil

Table 5 – September Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	08/09/2021 22:30	0.2	0.0	45	Yes	1A	Nil
NM2	08/09/2021 23:30	0.7	0.0	45	Yes	1A	Nil
NM3	08/09/2021 23:39	0.4	0.0	45	Yes	1A	Nil
NM4	08/09/2021 23:00	0.2	0.0	45	Yes	1A	Nil
NM5	08/09/2021 22:00	0.5	0.0	45	Yes	1A	Nil
NM6	08/09/2021 23:57	0.5	0.0	45	Yes	1A	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or wind speeds greater than 3 metres per second (at 10 metres);
 2. Estimated or measured LAeq,15minute attributed to MCCM;
 3. Estimated or measured LA1,1minute attributed to MCCM;
 4. NA in exceedance column means atmospheric conditions outside those specified in Project Approval and criterion is not applicable.
- 1A – Inaudible NM – Not measurable

Wind Direction during Attended Monitoring

Wind direction data is collected from the MCCM Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

Table 7 - Prevailing Wind Direction

Monitoring Date	Prevailing Wind Direction
July	W
August	W
September	WSW

Blast Monitoring

There were 28 blasts at MCCM during Q3 2021. All blast monitoring results recorded within the reporting period have complied with applicable overpressure and ground vibration limits specified in the respective approvals.

Table 8 - Blast Results Summary Quarter 3 2021

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	28	96.23	111.4	120	No
Vibration	mm/s		28	0.22	2.78	10	No

Air Quality

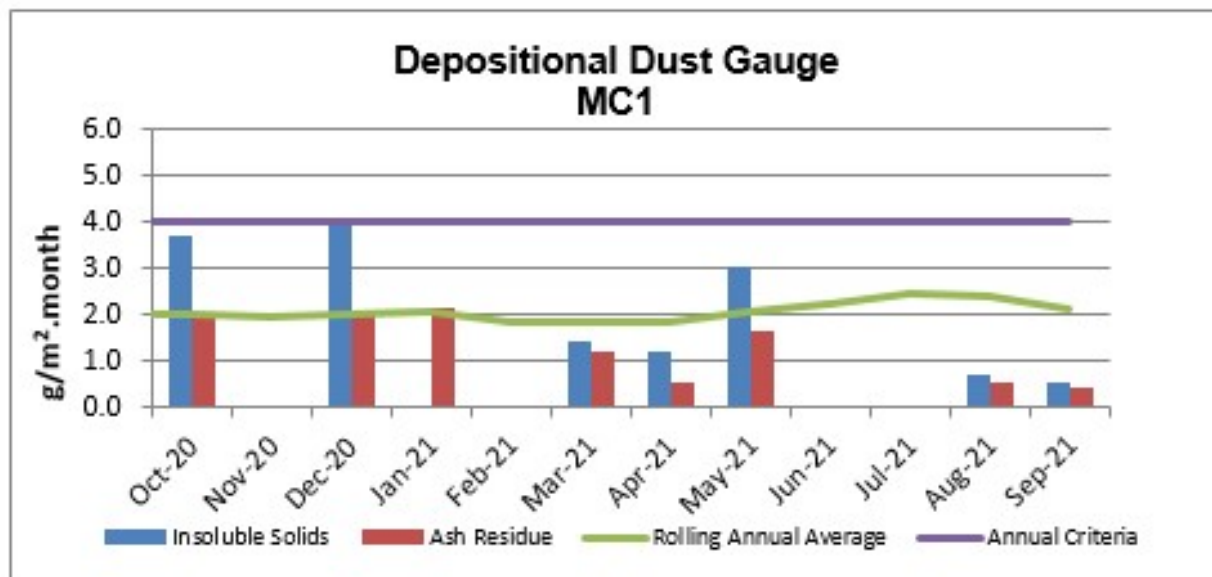
Total Depositional Dust

The 12 monthly rolling annual average remains below the relevant Project Approval criteria of $4\text{g/m}^2/\text{month}$ for the respective monitoring points.

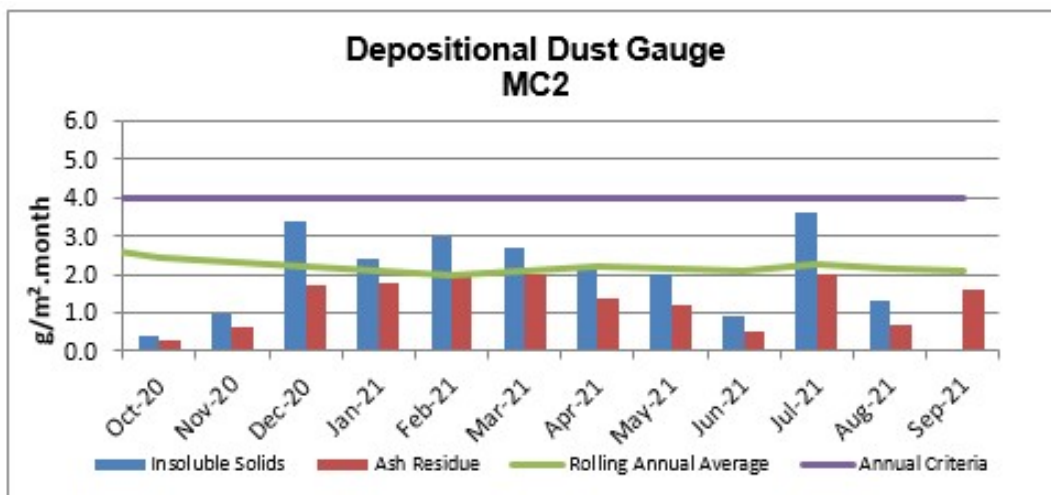
Table 9 – Deposited Dust Gauge Results [$\text{g/m}^2/\text{month}$]

MONTH	MC1	MC2	MC3	MC4
July-21	4.1c	3.6	0.7	3.8
August-21	0.7	1.3	0.3	2.6
September-21	0.5	6.2c	1.4	0.3
12 MONTH ROLLING AVERAGE	2.1	2.1	1.8	1.2

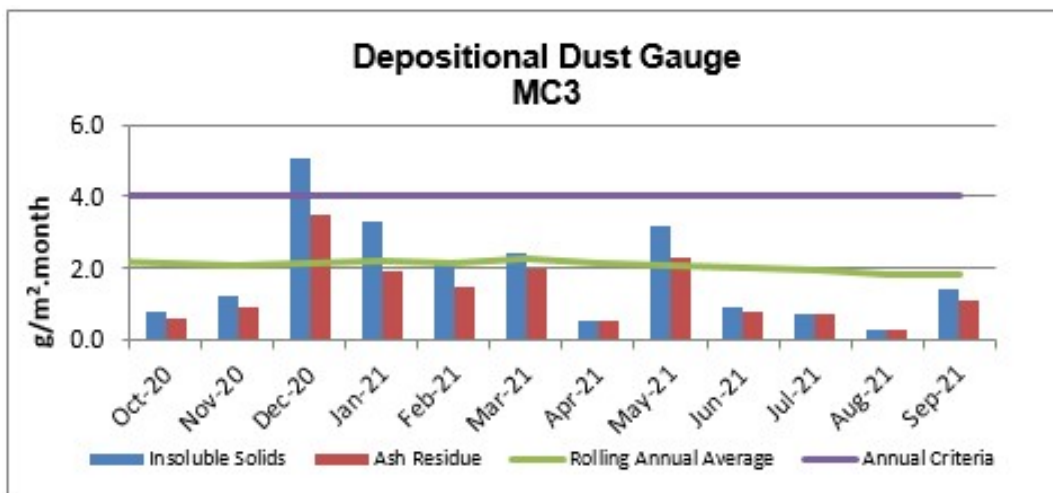
^c samples contaminated by bird dropping, decomposed insects or vegetable matter.



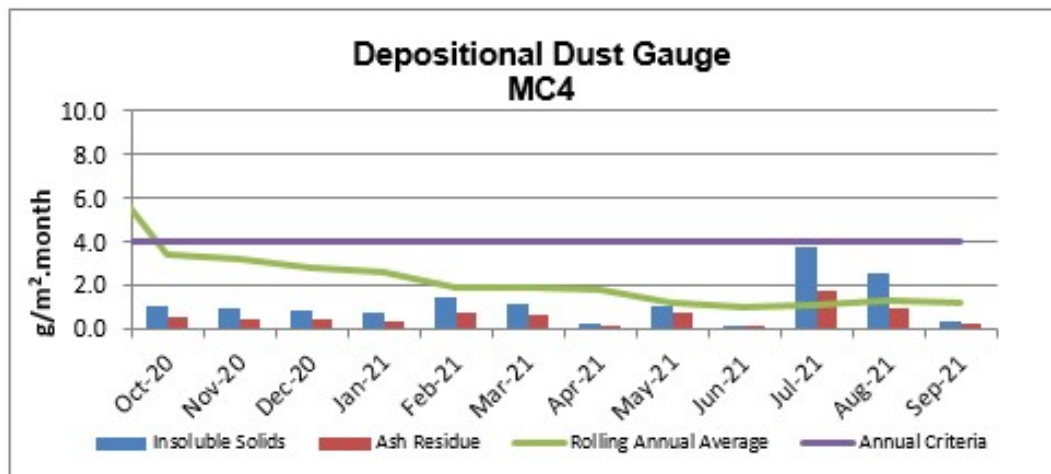
* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).



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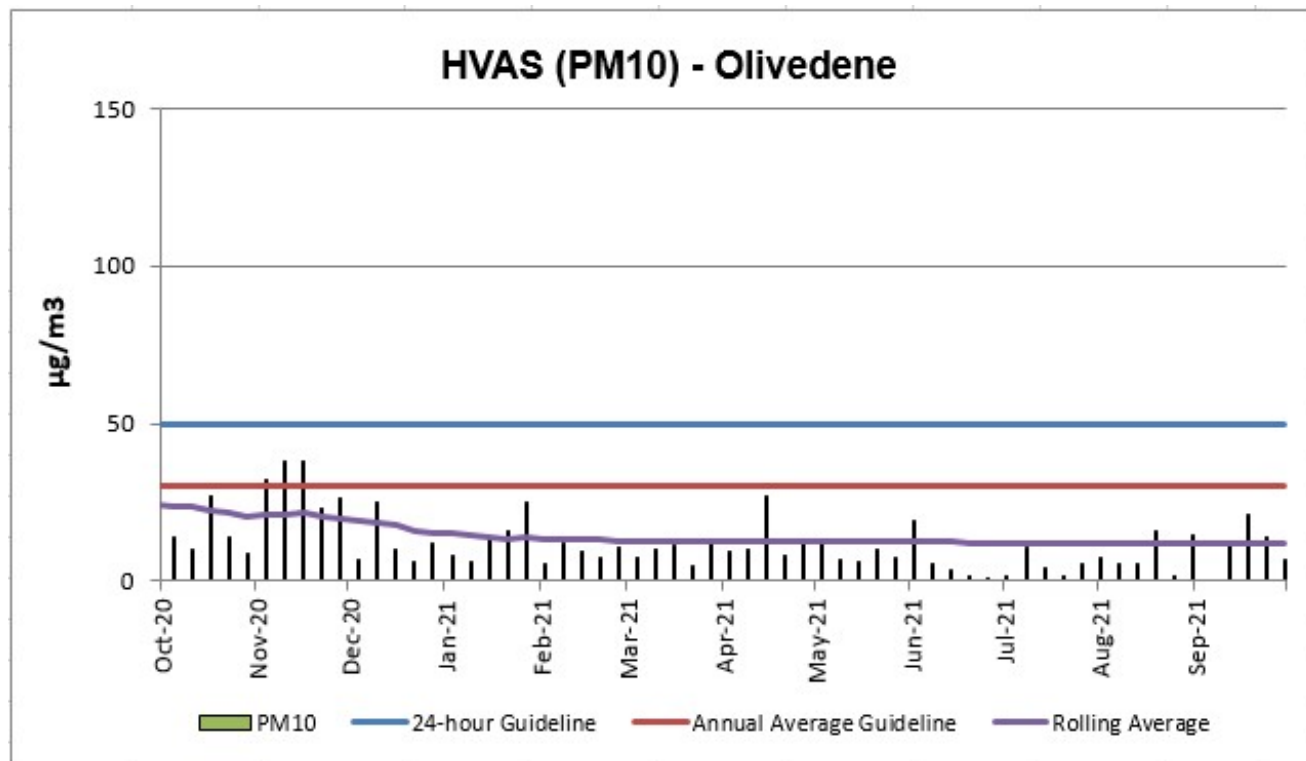


* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).

High Volume Air Sampling (HVAS)

The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road. During past 12 months there have been no exceedances of the 24 hour average of 50 $\mu\text{g}/\text{m}^3$.

HVAS PM₁₀ Rolling Annual Average at the end of Q3 2021 was **11.9 $\mu\text{g}/\text{m}^3$** , which is below the Annual Average Guideline of 30 $\mu\text{g}/\text{m}^3$.



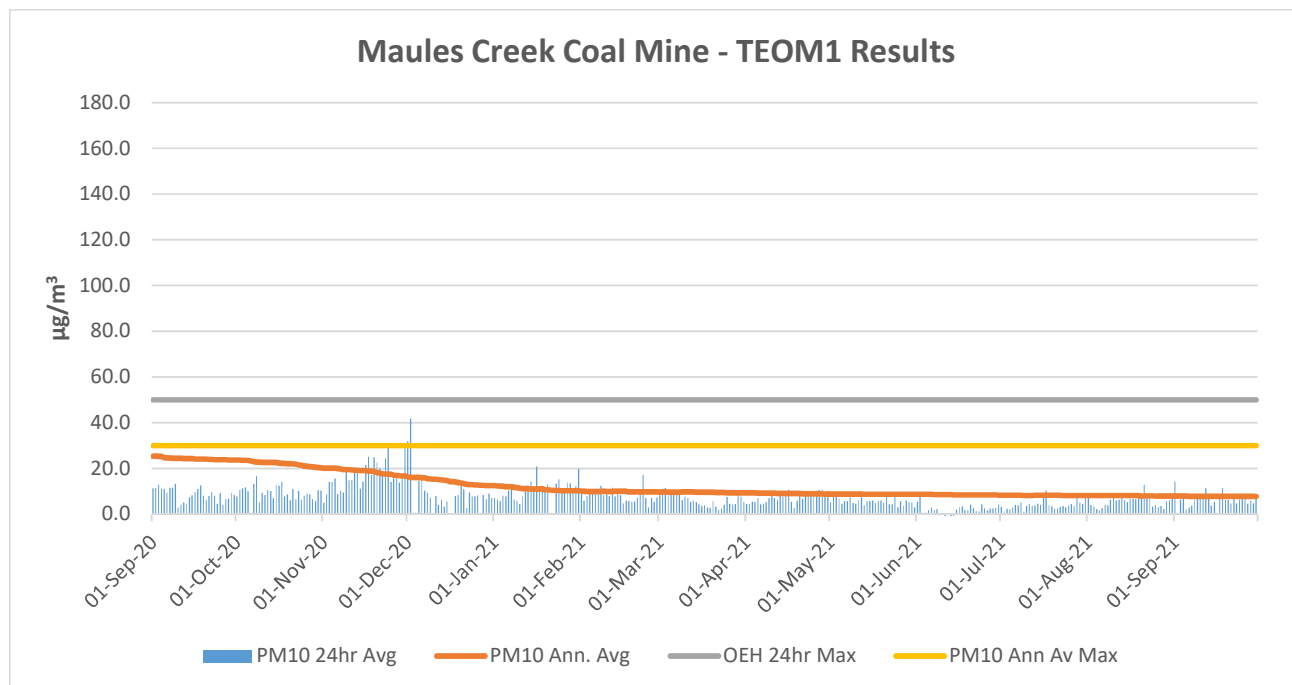
TEOM - PM₁₀ Results

The annual rolling average for PM₁₀ at the Maules Creek Coal TEOM was **7.7 µg/m³**, which is below the Project Approval annual average criteria of 30µg/m³ as shown in the following figure. There have been no exceedances of the 24 hour average for Q3.

TEOM Result Figures – Particulate Matter PM₁₀µg/m³

* Blank columns indicate sample periods where there was either power outage, maintenance or other related causes.

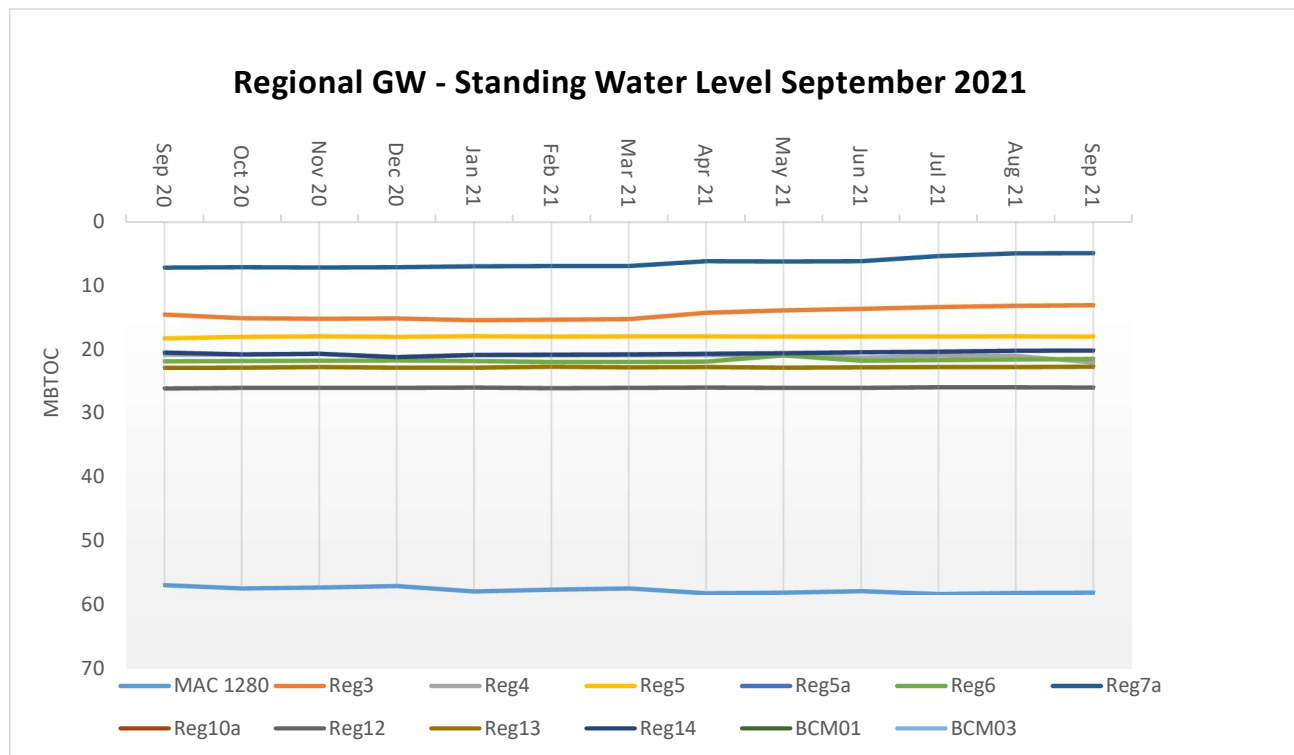
** Exceedances of the OEH 24hr Maximum over the past 12 months have been non mine related and have been attributed to regional dust events. All previous exceedances have been discussed at CCC meetings.



Water Monitoring

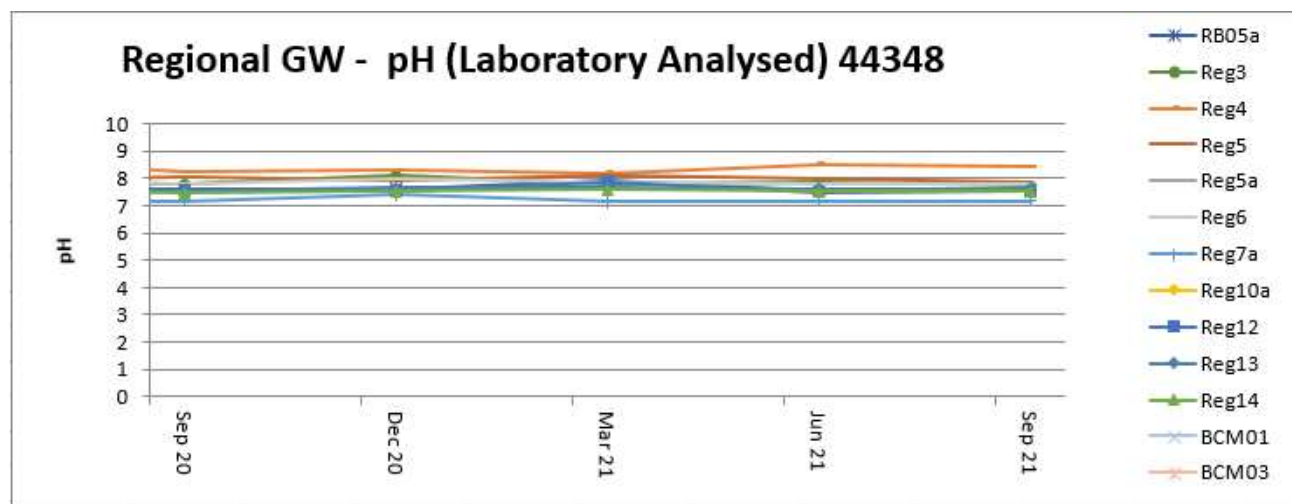
Groundwater

Groundwater monitoring results in open standpipe piezometers show levels to be relatively stable. The Regional bores were installed between Q4, 2013 and Q1, 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.



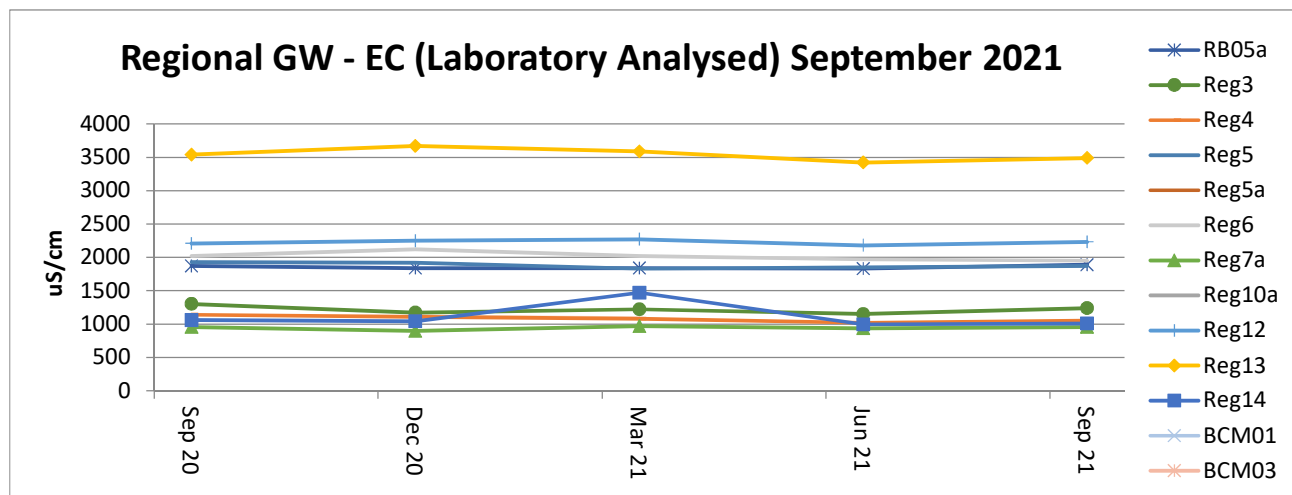
Acidity / Alkalinity (pH)

Over the past twelve months pH readings across the regional bores have remained static with very little fluctuation.



Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 $\mu\text{S}/\text{cm}$ to 2,500 $\mu\text{S}/\text{cm}$, with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,500 $\mu\text{S}/\text{cm}$ to 4,100 $\mu\text{S}/\text{cm}$. Within the last twelve months EC has remained static.

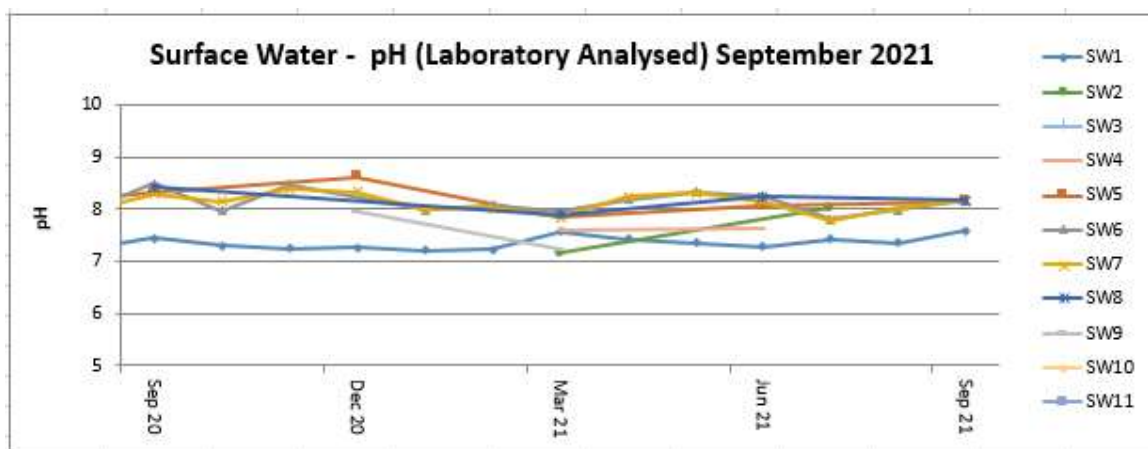


Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the figures below. There are eleven surface water monitoring points, of which **five** were able to be sampled during Q3 2021.

Acidity / Alkalinity (pH)

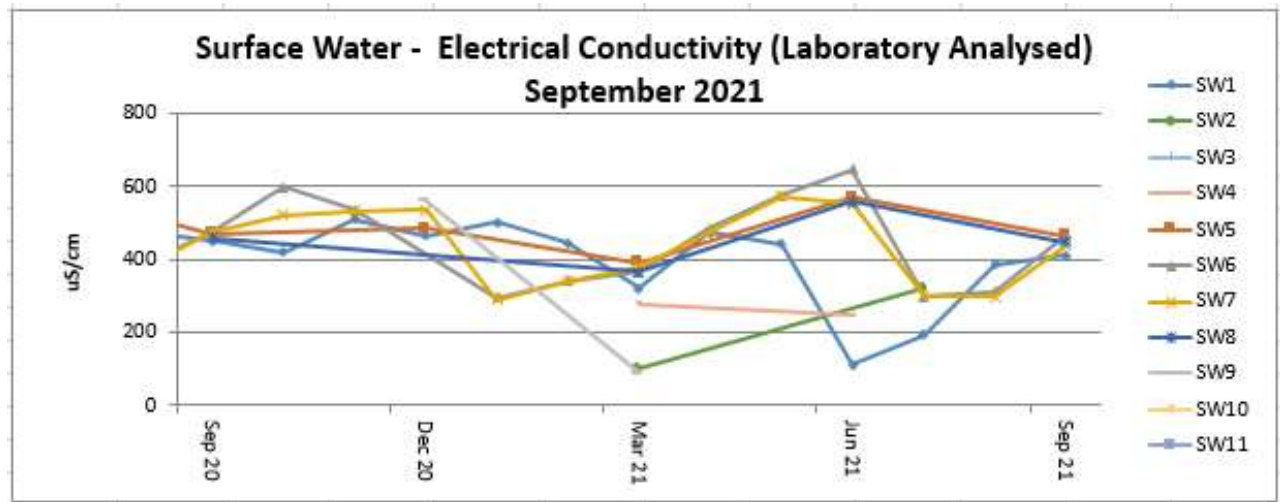
Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC range for Irrigation, Ecosystem Health and Recreation.



*0 values indicate no water to sample due to the creek being dry

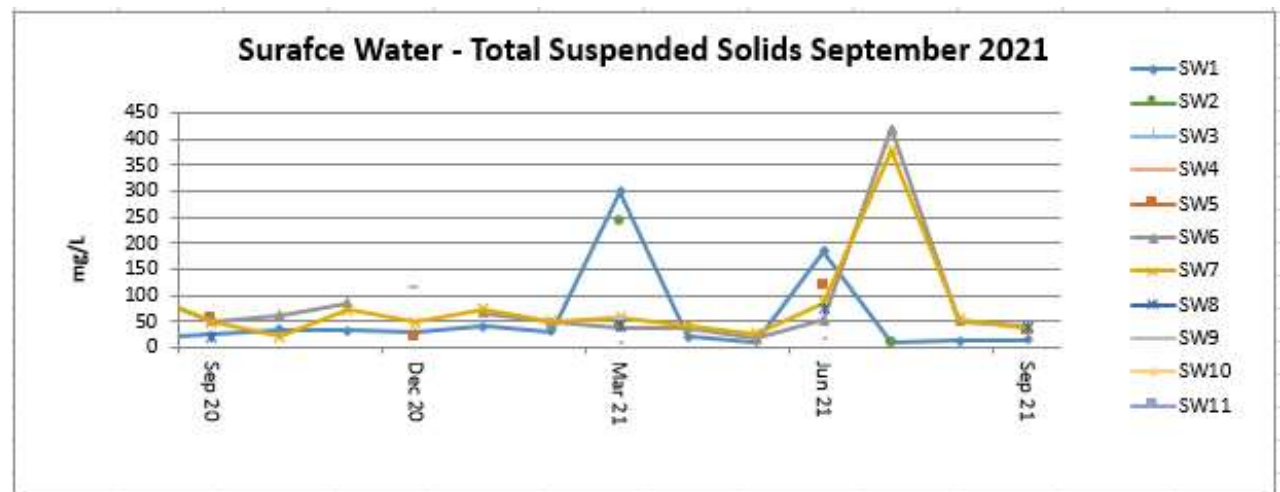
Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which are subject to regulated and variable flow regimes.



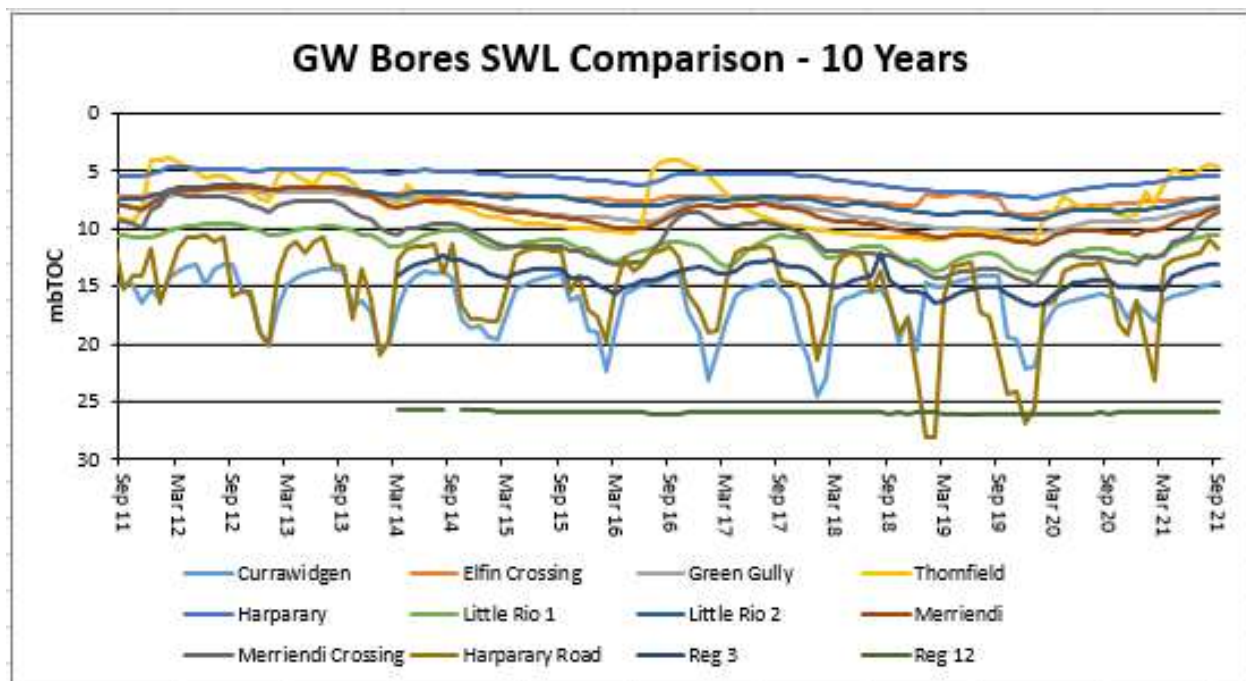
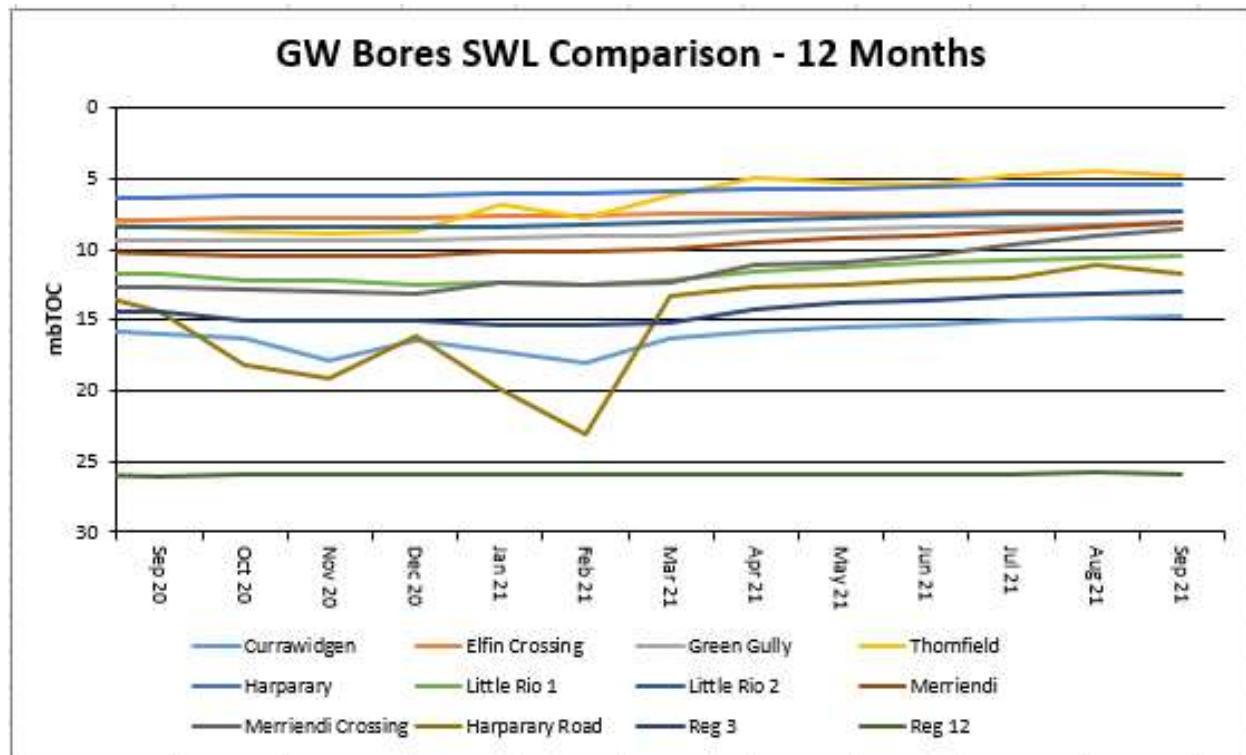
Total Suspended Solids (TSS)

Surface water TSS trends have remained generally consistent with historical results. SW5, SW6, SW7 and SW8 are historically variable as they are located along the Namoi River which is subject to regulated and variable flow regimes. There were elevated levels of TSS in Q3 due to significant rainfall events.



Regional Groundwater monitoring

Maules Creek Coal Mine monitors regional bores across the region.



Rehabilitation

Progressive rehabilitation works are ongoing. 70,000 trees have been planted in the rehabilitation areas over the previous quarter.

Feral Animal Management

Feral Animal control program in the Whitehaven Offset Areas is ongoing (September 2021)

Weed Control

- Targeted seasonal weed control for Patterson Curse and other broadleaf Weeds

Threatened Flora

- Quarterly inspections of Threatened species is ongoing
- Maintenance of Threatened Flora Site fences

Fire Management

- Currently planning 2021 Autumn Ecological Burn Program

Fencing and Waste Management

- Ongoing maintenance of Heritage Site fences

Community Complaints

- **Nine** complaints were received during Q3 CY2021.

Date	Method	Category	Nature Of Complaint	MCCM Response
5/7/2021	Text	Noise	Complaint received from Landholder regarding noise from the mining operations.	MCCM reviewed monitoring data and operational activities and provided a response to the Complainant.
6/7/2021	Email	Blast	Complaint received via the EPA in relation to a blast.	MCCM reviewed monitoring data and footage of the blast and provided all data to the EPA
10/7/2021	Text	Noise	Complaint received from Landholder regarding noise from the mining operations	MCCM reviewed monitoring data and operational activities and provided a response to the Complainant.
11/7/2021	Text	Driving	Complaint received from Landholder regarding Contractor driving behaviour in surrounding area.	MCCM discussed with Contractor and provided a response to the Complainant.
19/7/2021	Email	Blast	Complaint received from Local resident relating to vibration following a blast at MCCM.	MCC reviewed the monitoring data from a location in close proximity to complainant, this indicated compliance with blasting conditions. This information was provided to the resident.
29/7/2021	Email	Blast	Complaint received from Local resident relating to vibration following a blast at MCCM.	MCC reviewed the monitoring data from a location in close proximity to complainant, this indicated compliance with blasting conditions. This information was provided to the resident. Information was also provided to the EPA as the complainant had included the EPA in correspondence.
31/07/2021	Email	Blast	Complaint received from Local resident relating to vibration following a blast at MCCM.	MCC reviewed the monitoring data from a location in close proximity to complainant, this indicated compliance with blasting conditions. This information was provided to the resident. Information was also provided to the EPA.
20/08/2021	Email	Blast	Complaint received via the EPA in relation to a blast.	MCCM reviewed monitoring data and provided to the EPA.
13/09/2021	Phone	Community	Complaint received regarding inappropriate use of a UHF channel	MCC reviewed the complaint and found the communications were not coming from the MCCM.

Maules Creek Coal Mine Community Consultative Committee Meeting #36

Environmental Monitoring Report For the Q4 period, October – December 2021

Attended Noise Monitoring

Maules Creek Coal (MCC) engaged an independent acoustic consultant to conduct LAeq (15minutes) and LA1 (1 minute) attended noise monitoring at six monitoring locations on site. The monitoring was carried out over October – December 2021.

A. LAeq, 15minute; GENERATED BY MCCM AGAINST OPERATIONAL DAY NOISE CRITERIA; OCTOBER – DECEMBER 2021.

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LAeq (15minute) criteria of 35dB and the EPA's Noise Policy for Industry compliance guidelines.

Table 1 - October Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	19/10/2021 22:30	0.9	0.0	35	Yes	27	Nil
NM2	19/10/2021 23:46	0.6	0.0	39	Yes	<25	Nil
NM3	19/10/2021 23:37	0.7	0.0	35	Yes	1A	Nil
NM4	19/10/2021 23:00	0.5	0.0	35	Yes	<25	Nil
NM5	19/10/2021 22:00	0.6	0.0	35	Yes	28	Nil
NM6	20/10/2021 00:13	0.4	0.0	35	Yes	<20	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

Table 2 – November Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	03/11/2021 22:30	0.4	0	35	Yes	1A	Nil
NM2	03/11/2021 23:30	0.7	0	39	Yes	1A	Nil
NM3	03/11/2021 23:28	0.7	0	35	Yes	1A	Nil
NM4	03/11/2021 23:00	0.2	0	35	Yes	1A	Nil
NM5	03/11/2021 22:00	0.6	0	35	Yes	1A	Nil
NM6	03/11/2021 23:56	0.9	0	35	Yes	1A	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

Table 3 - December Noise Monitoring

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LAeq dB ²	Exceedance dB ³
NM1	15/12/2021 22:30	0.3	0.0	35	Yes	23	Nil
NM2	16/12/2021 00:00	0.5	0.0	39	Yes	<20	Nil
NM3	15/12/2021 23:37	0.4	0.0	35	Yes	1A	Nil
NM4	16/12/2021 00:30	0.2	0.0	35	Yes	<20	Nil
NM5	15/12/2021 22:01	0.5	0.0	35	Yes	<25	Nil
NM6	16/12/2021 01:00	0.1	0.0	35	Yes	1A	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

B. LA1, 1minute; GENERATED BY MCC AGAINST OPERATIONAL NIGHT NOISE CRITERIA; October – December 2021.

MCC's EPL 20221 also has a '1 Minute - Night' criteria (LA1) that applies from 10pm to 7am Monday to Saturday & 10pm to 8am Sundays and Public Holidays. Results are shown on tables 4-6.

The results show that MCCM is within EPL 20221 compliance limits, that operations did not exceed the applicable LA1 (1minute) criteria of 45dB.

Table 4– October Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	19/10/2021 22:30	0.9	0.0	45	Yes	29	Nil
NM2	19/10/2021 23:46	0.6	0.0	45	Yes	30	Nil
NM3	19/10/2021 23:37	0.7	0.0	45	Yes	1A	Nil
NM4	19/10/2021 23:00	0.5	0.0	45	Yes	<25	Nil
NM5	19/10/2021 22:00	0.6	0.0	45	Yes	31	Nil
NM6	20/10/2021 00:13	0.4	0.0	45	Yes	<20	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

Table 5 – November Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	03/11/2021 22:30	0.4	0	45	Yes	IA	Nil
NM2	03/11/2021 23:30	0.7	0	45	Yes	IA	Nil
NM3	03/11/2021 23:28	0.7	0	45	Yes	IA	Nil
NM4	03/11/2021 23:00	0.2	0	45	Yes	IA	Nil
NM5	03/11/2021 22:00	0.6	0	45	Yes	IA	Nil
NM6	03/11/2021 23:56	0.9	0	45	Yes	IA	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

Table 6 – December Noise Monitoring – Night

Location	Start Date and Time	Wind Speed m/s	Rainfall mm	Criterion dB	Criterion Applies ¹	MCCP LA1,1min dB ²	Exceedance dB ³
NM1	15/12/2021 22:30	0.3	0.0	45	Yes	28	Nil
NM2	16/12/2021 00:00	0.5	0.0	45	Yes	<20	Nil
NM3	15/12/2021 23:37	0.4	0.0	45	Yes	IA	Nil
NM4	16/12/2021 00:30	0.2	0.0	45	Yes	<20	Nil
NM5	15/12/2021 22:01	0.5	0.0	45	Yes	<25	Nil
NM6	16/12/2021 01:00	0.1	0.0	45	Yes	IA	Nil

Notes:

1. Noise emission limits do not apply during periods of rainfall or winds greater than 3 metres per second (at a height of 10 metres);
2. Site-only LAeq,15minute attributed to MCCP, including modifying factors if applicable; and
3. NA in exceedance column means criterion was not applicable due to atmospheric conditions outside those specified in project approval.

Wind Direction during Attended Monitoring

Wind direction data is collected from the Maule's Creek Coal Mine (MCCM) Automated Weather Station (AWS). Wind data for the duration of the attended monitoring assessment, recorded at the MCCM AWS is presented in the table below.

Table 7 - Prevailing Wind Direction

Monitoring Date	Prevailing Wind Direction
October	SW
November	SSE
December	SE

Blast Monitoring

There were 21 blasts at MCCM during Q4 2021. All blast monitoring results recorded within the reporting period have complied with applicable overpressure and ground vibration limits specified in the respective approvals.

Table 8 – Blast Results Summary

Parameter	Units	Frequency	Number	Average	Max	100% Limit	Exceedance (Yes / No)
Noise	dB (Lin Peak)	All	21	95.81	114.9	120	No
Vibration	mm/s		21	0.20	1.52	10	No

Air Quality

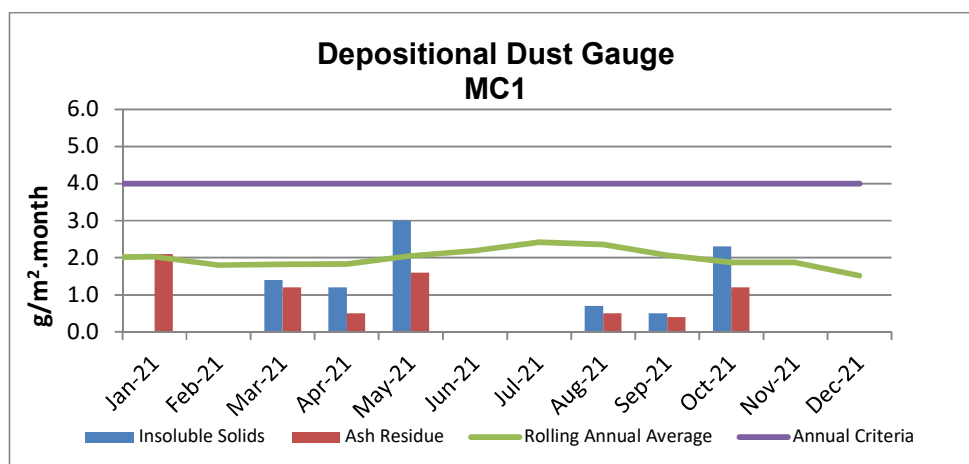
A. Total Depositional Dust

The 12 monthly rolling annual average remains below the relevant Project Approval (PA 10_0138) criteria of 4g/m²/month for the respective monitoring points.

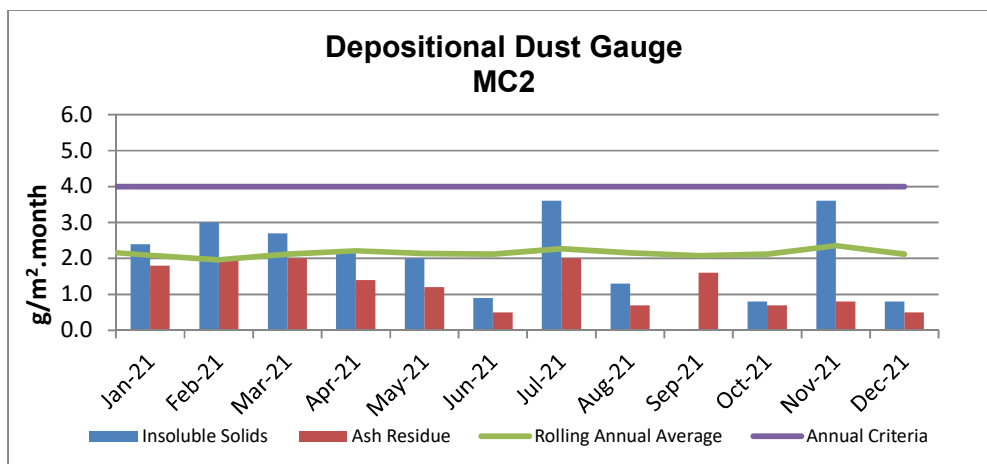
Table 9 – Deposited Dust Gauge Results [g/m²/month]

MONTH	MC1	MC2	MC3	MC4
October-21	2.3	0.8	1.0	0.3
November-21	12.9c	3.6	1.6	0.6
December-21	6c	0.8	2.1	1.1
12 MONTH ROLLING AVERAGE	1.5	2.1	1.6	1.2

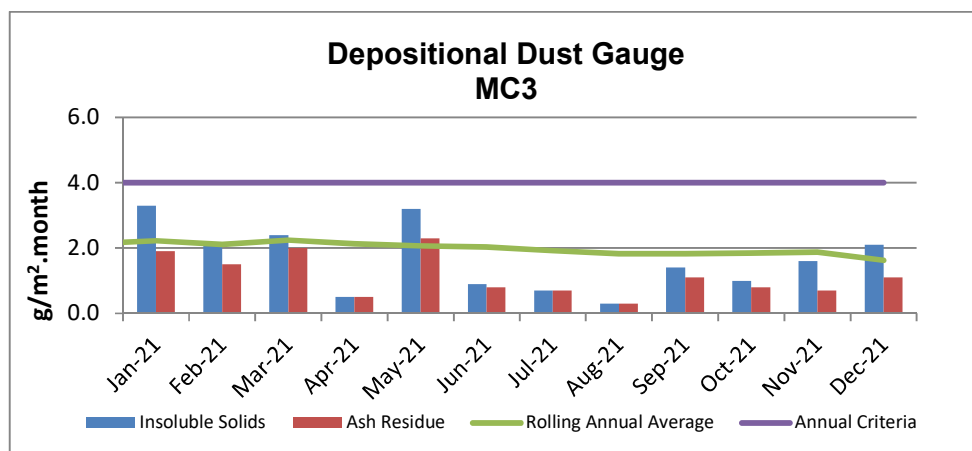
^c samples contaminated by bird dropping, decomposed insects or vegetable matter.



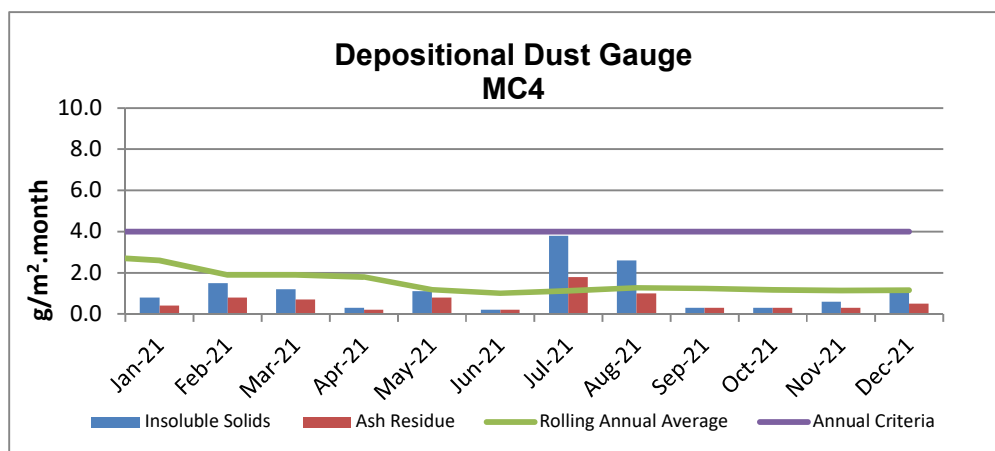
* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).



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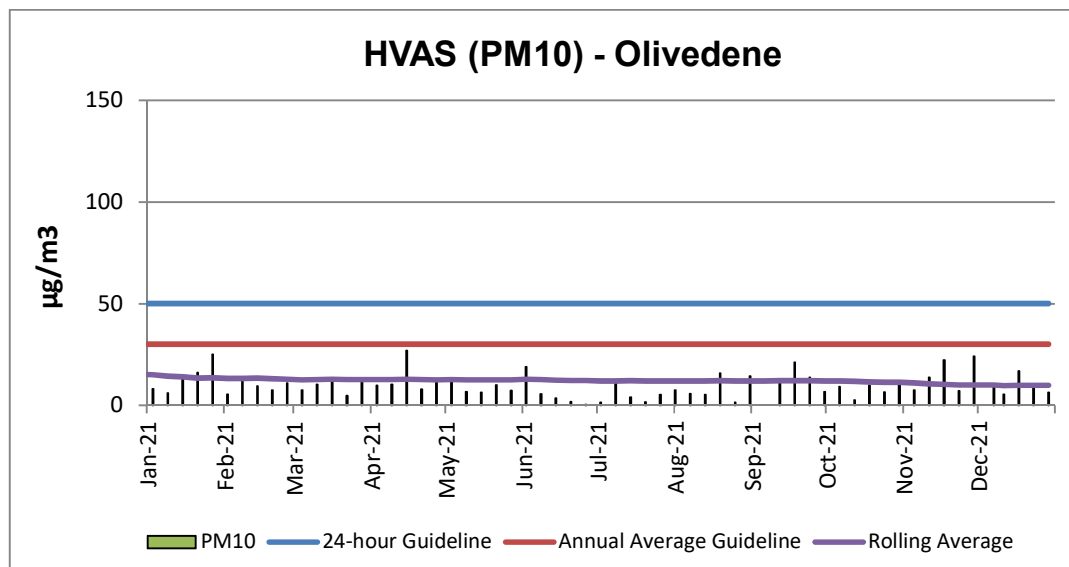


* Blank cells indicate sample periods where the sample has been contaminated and excluded from the results tables due to contaminated material (insect larvae, bird droppings, vegetation etc.).

B. High Volume Air Sampling (HVAS)

The HVAS monitor is located on the property 'Olivedene,' a mine owned property on Therribri Road. During past 12 months, there have been no exceedances of the 24-hour average of 50 $\mu\text{g}/\text{m}^3$.

HVAS PM₁₀ 2021 Rolling Annual Average was **9.8 $\mu\text{g}/\text{m}^3$** , which is below the Annual Average Guideline of 30 $\mu\text{g}/\text{m}^3$.



C. TEOM - PM10 Results

The annual rolling average for PM10 at the Maules Creek Coal TEOM was **6.6 $\mu\text{g}/\text{m}^3$** , which is below the Project Approval annual average criteria of 30 $\mu\text{g}/\text{m}^3$ as shown in the following figure. There have been no exceedances of the 24 hour average for Q4.

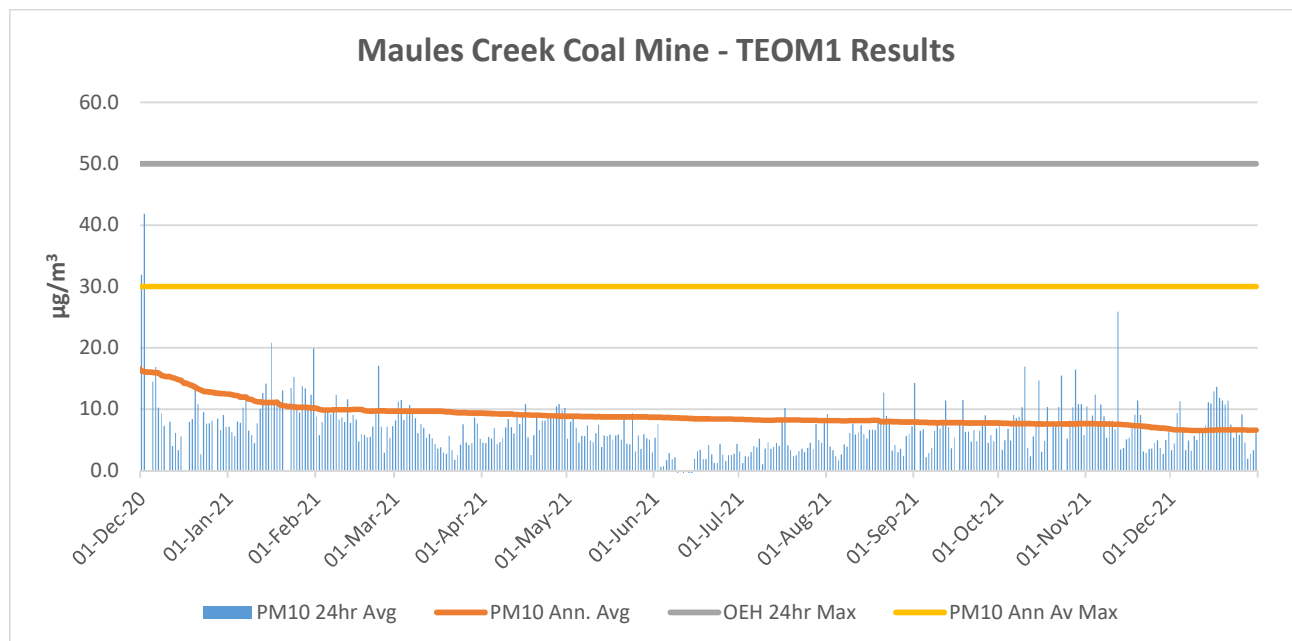


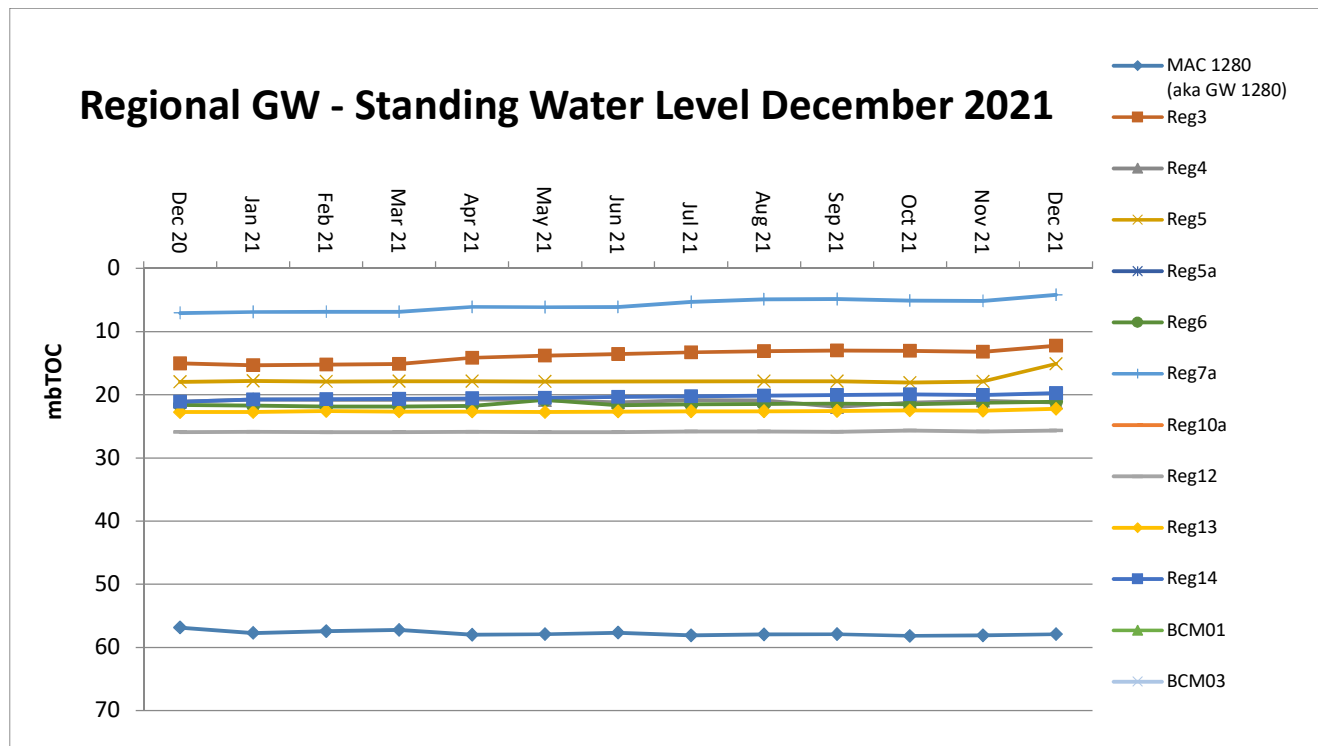
Figure 1 - TEOM Result – Particulate Matter PM₁₀ $\mu\text{g}/\text{m}^3$

* Blank columns indicate sample periods where there was either power outage, maintenance or other related causes.

Water Monitoring

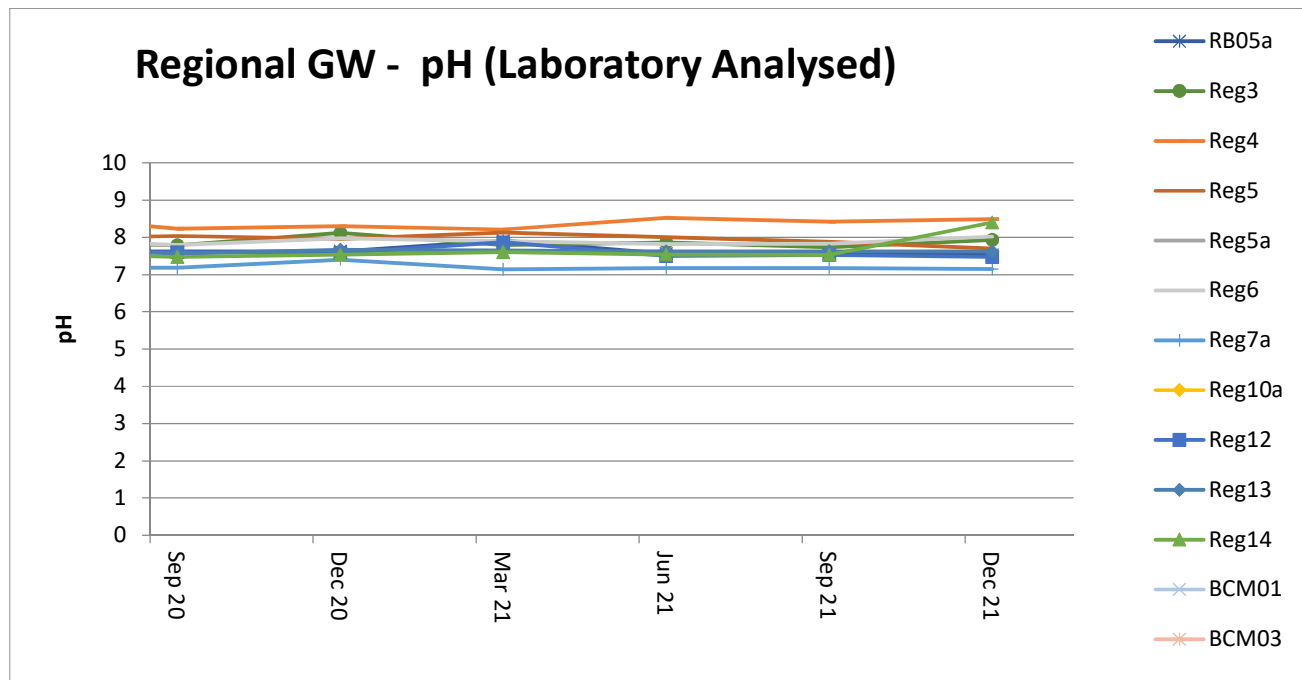
A. Groundwater

Groundwater monitoring results in open standpipe piezometers show levels to be relatively stable. The Regional bores were installed between Q4, 2013 and Q1, 2014. BCM01, BCM03, Reg10 are shallow bores which have remained dry since construction in 2013.



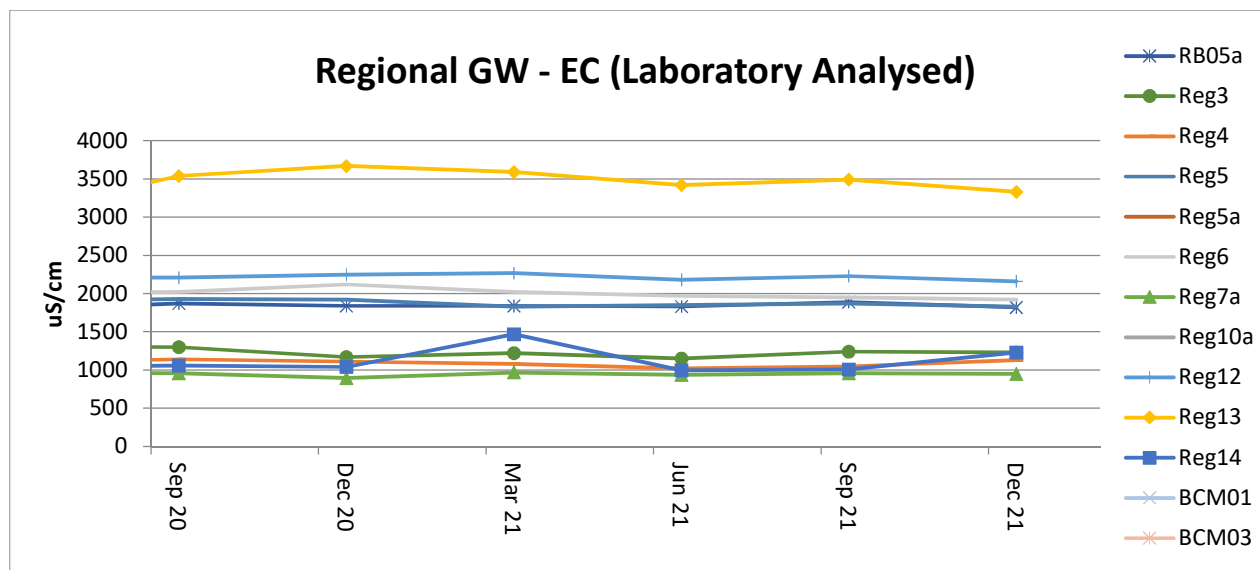
Acidity / Alkalinity (pH)

Over the past twelve months pH readings across the regional bores have remained static with very little fluctuation.



Electrical Conductivity

Laboratory Electrical Conductivity (EC) levels are all within historic groundwater EC range of 500 $\mu\text{S}/\text{cm}$ to 2,500 $\mu\text{S}/\text{cm}$, with the exception of monitoring bore Reg13 which has a historic groundwater EC range of 2,500 $\mu\text{S}/\text{cm}$ to 4,100 $\mu\text{S}/\text{cm}$. Within the last twelve months EC has remained static.

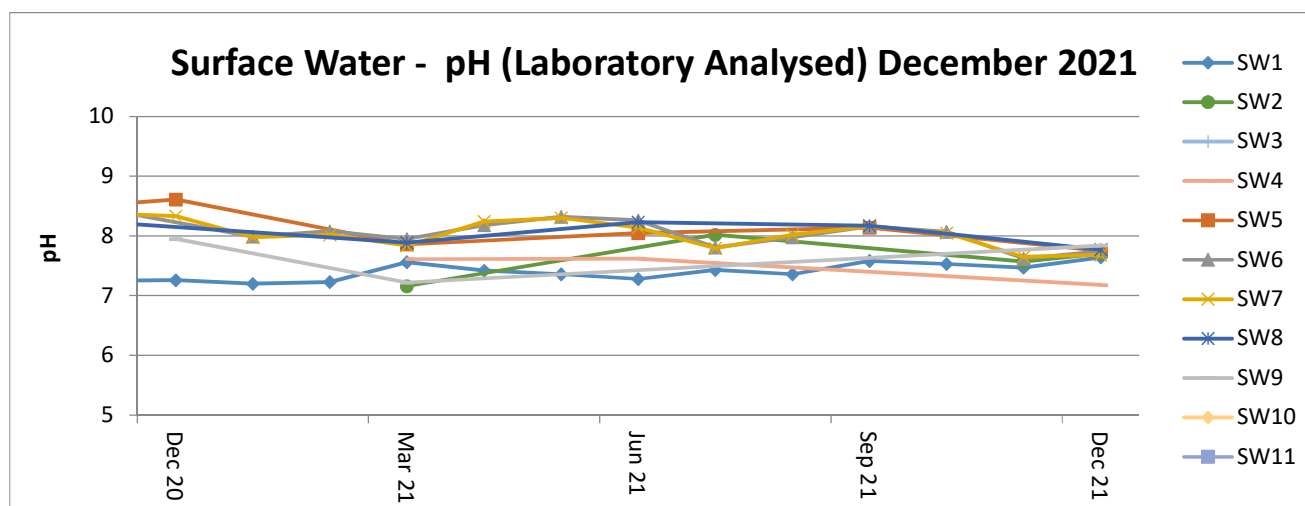


B. Surface Water – Creeks and Rivers

Routine surface water monitoring is conducted in surrounding creeks and rivers on a monthly basis. Results for parameters including pH, EC and Total Suspended Solids (TSS) are shown in the figures below. There are eleven surface water monitoring points, of which a maximum of **eight** sites were able to be sampled during Q4 2021.

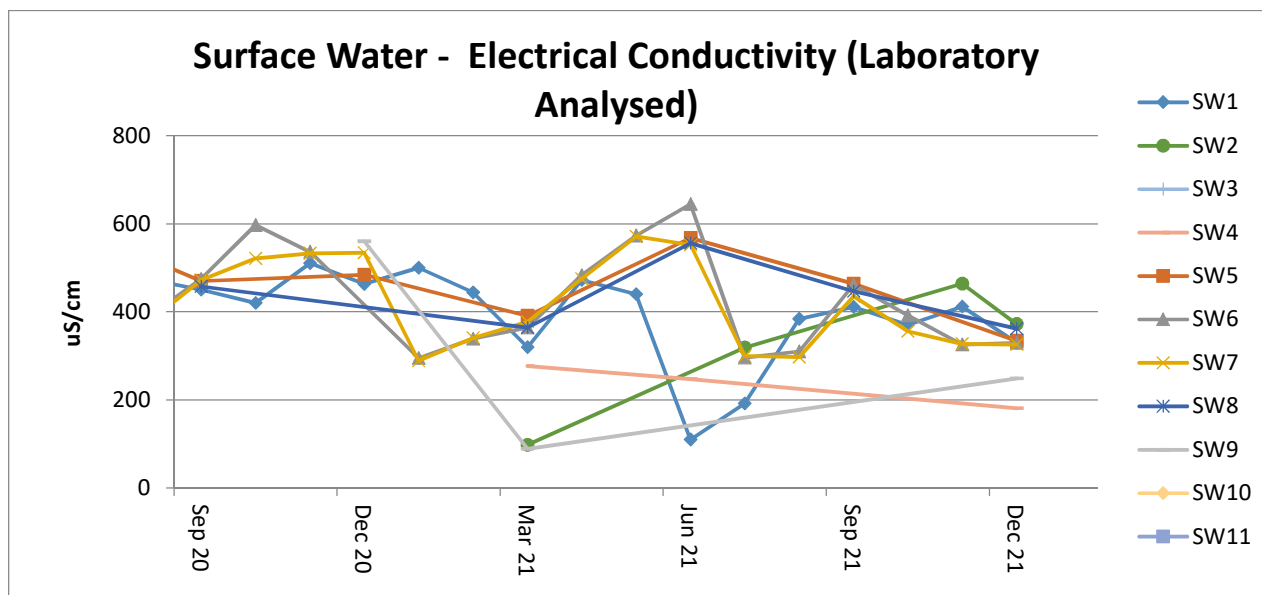
Acidity / Alkalinity (pH)

Monitoring results for pH in creeks and rivers surrounding MCCM are all trending within the ANZECC range for Irrigation, Ecosystem Health and Recreation.



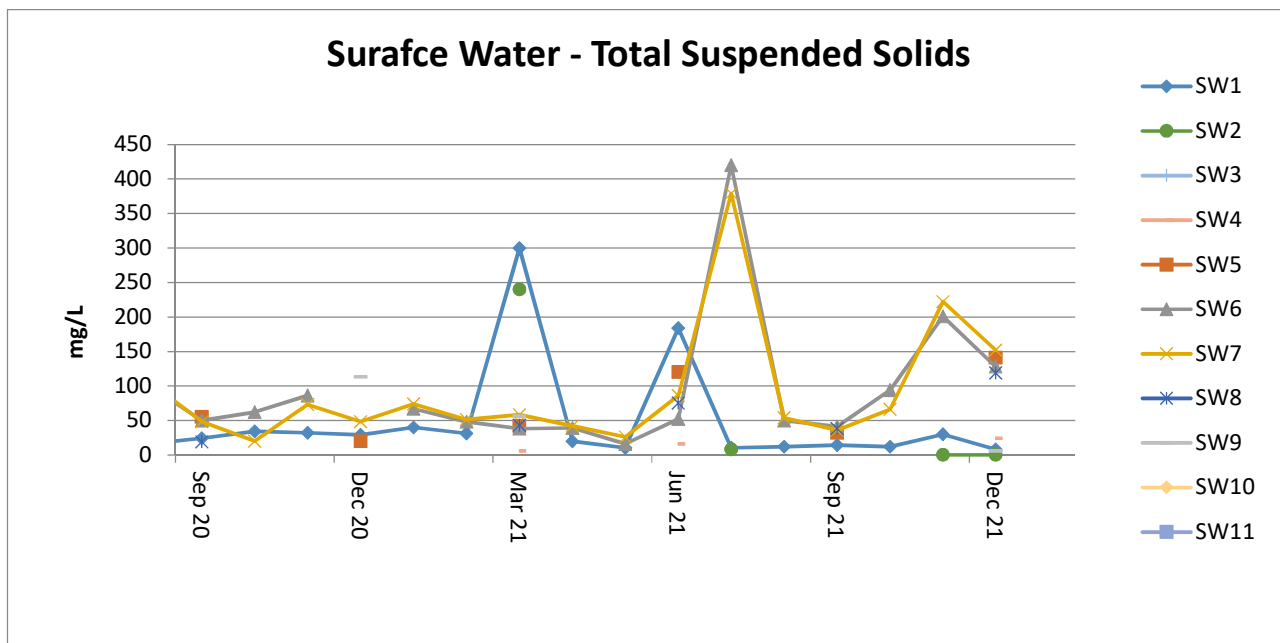
Electrical Conductivity

Surface water EC trends have remained consistent with SW5, SW6, SW7 and SW8 all historically variable. SW5, SW6, SW7 and SW8 are points along the Namoi River which are subject to regulated and variable flow regimes.



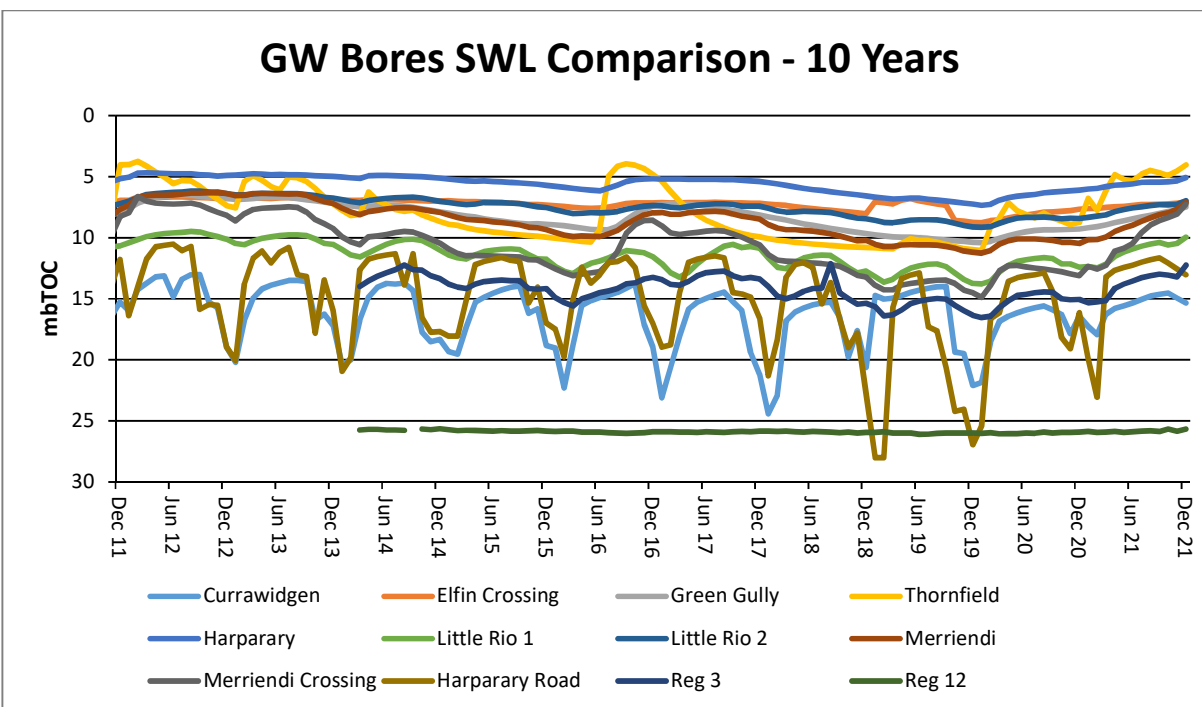
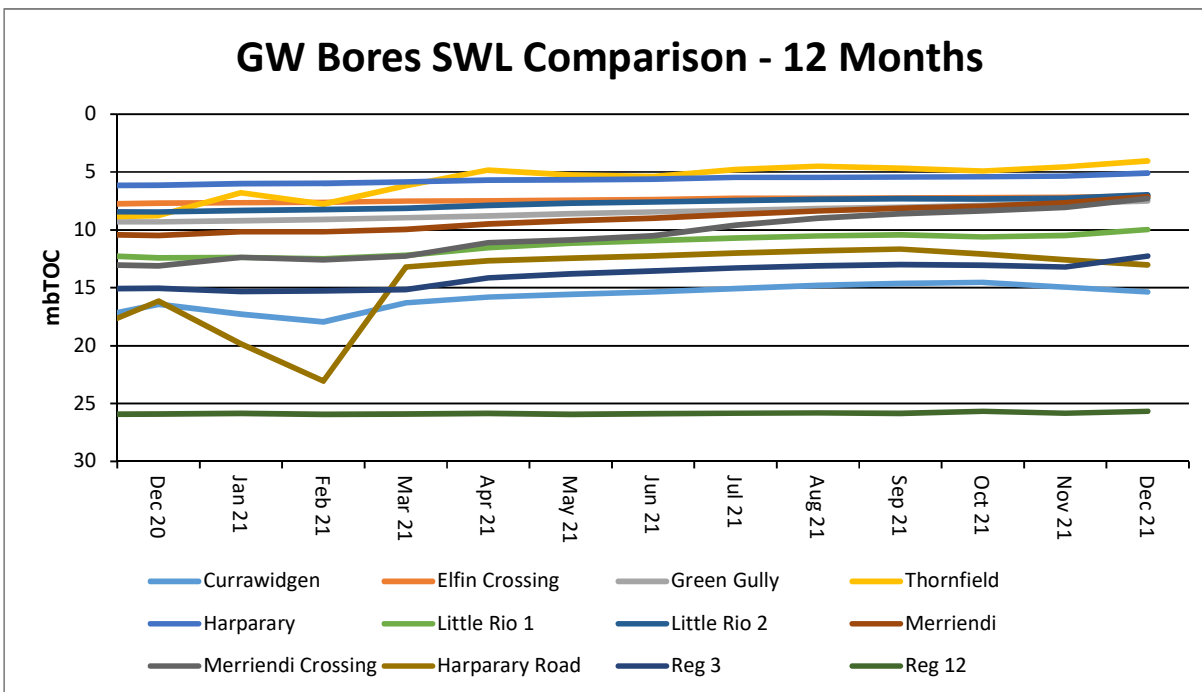
Total Suspended Solids (TSS)

Surface water TSS trends have remained generally consistent with historical results. SW5, SW6, SW7 and SW8 are historically variable as they are located along the Namoi River which is subject to regulated and variable flow regimes. The Q3 results were elevated due to significant rainfall events, as demonstrated on the graph below TSS levels have since decreased



Regional Groundwater monitoring

Maules Creek Coal Mine monitors regional bores across the region.



Rehabilitation

Progressive rehabilitation works are ongoing. 70,000 trees have been planted in the rehabilitation areas over the previous quarter.

Feral Animal Management

Most recent routine Whitehaven Biodiversity Feral Animal Control program (December 2021) was constrained due to flooding, the results included:

- 3 out of total 10 pigs trapped were from the Maules Offset properties; and,
- 203 out of total 374 baits (1080) taken were from the Maules Offsets properties.

Weed Control

- Targeted seasonal weed control is ongoing.

Flooding

- Namoi River flooding inundated parts of the Kelso and Olivedene properties;

Fencing Maintenance

- Post rainfall, integrity of fences have been inspected and maintenance to be undertaken.

Community Complaints

- **Four** complaints were received during Q4 CY2021.

Date	Method	Category	Nature Of Complaint	MCCM Response
7/10/2021	Email	Community	Complaint received via email regarding Gunnedah based employees and contractors frequenting a Boggabri Hotel.	MCCM reviewed information on whom may have been visiting the Hotel and provided feedback to the Complainant.
14/10/2021	Email	Blast	Complaint received via the EPA in relation to a blast fired on the 7th October 2021.	MCCM reviewed data and provided to the EPA.
25/10/2021	Email	Blast	Complaint received from Local resident relating to vibration following a blast at MCCM.	MCC reviewed the monitoring data from a location in close proximity to complainant, this indicated compliance with blasting conditions. This information was provided to the resident. Information was also provided to the EPA as the complainant had included the EPA in correspondence.
29/11/2021	Phone Call	Community	Complaint received regarding inappropriate use back roads to Maules Creek Mine	MCC reviewed the complaint and found the roads in question were not being used by MCCM employees.