

Overview of Operations (November – December 2011)

Operations Summary:

- RX1 equipment continued to be delivered (overburden digger, trucks, dozer, grader);
- Further reshaping and rehabilitation occurred on VD1;
- Production records on Coal were achieved (Modular unlocked);
- Continued rollout of digital two-way system, analogue radio decommissioned.

Environmental Monitoring Data (November – December 2011)

This monitoring data is provided for your perusal prior to the meeting. We will discuss any exceedances or elevated results since the last meeting by exception only.

1. Blasting Data (November – December 2011)

Blasting Criteria:

| Blast Impact Assessment Criteria | | | |
|---|--------------------------------------|-------------------------|---|
| 10. The Proponent shall ensure that blasts on site do not cause exceedances of the criteria in Table 8. | | | |
| <i>Table 8: Blasting impact assessment criteria</i> | | | |
| Location | Airblast overpressure (dB(Lin Peak)) | Ground vibration (mm/s) | Allowable exceedance |
| Residence on privately owned land | 120 | 10 | 0% |
| | 115 | 5 | 5% of the total number of blasts over a period of 12 months |
| Heritage sites, including Edinglassie and Rous Lench | 133 | 10 | 0% |

Blasting Summary:

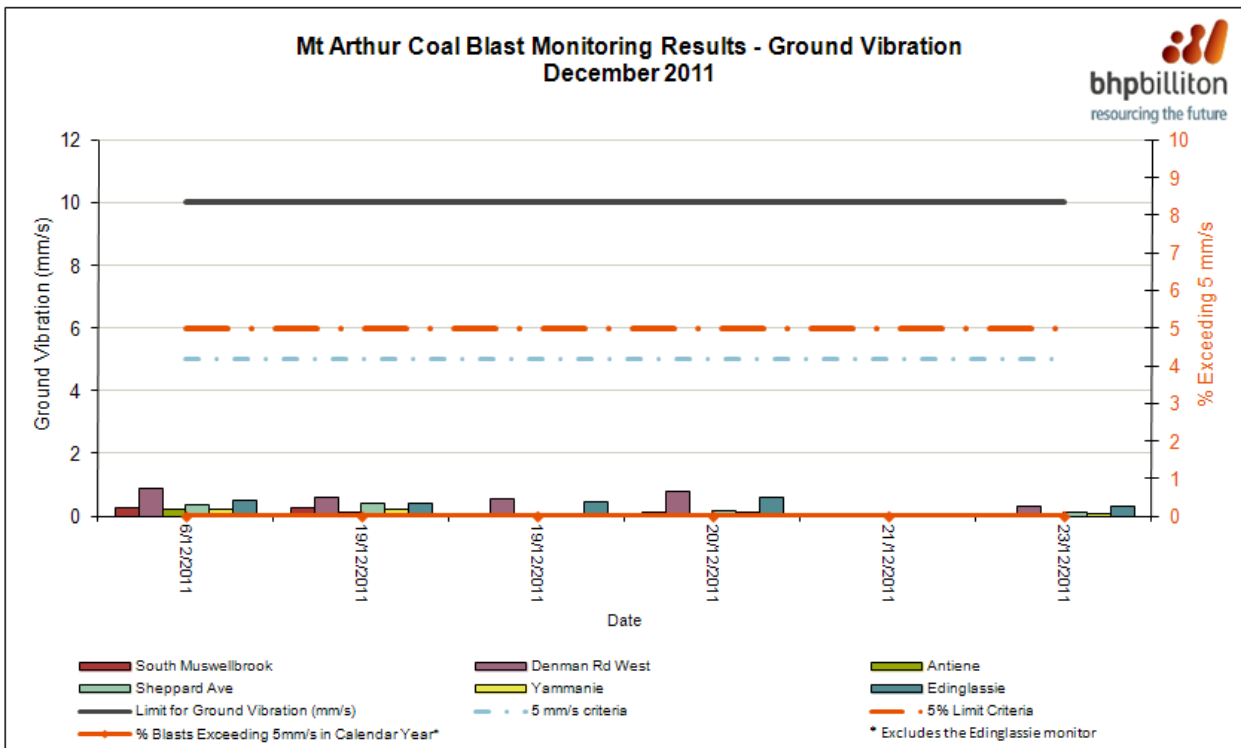
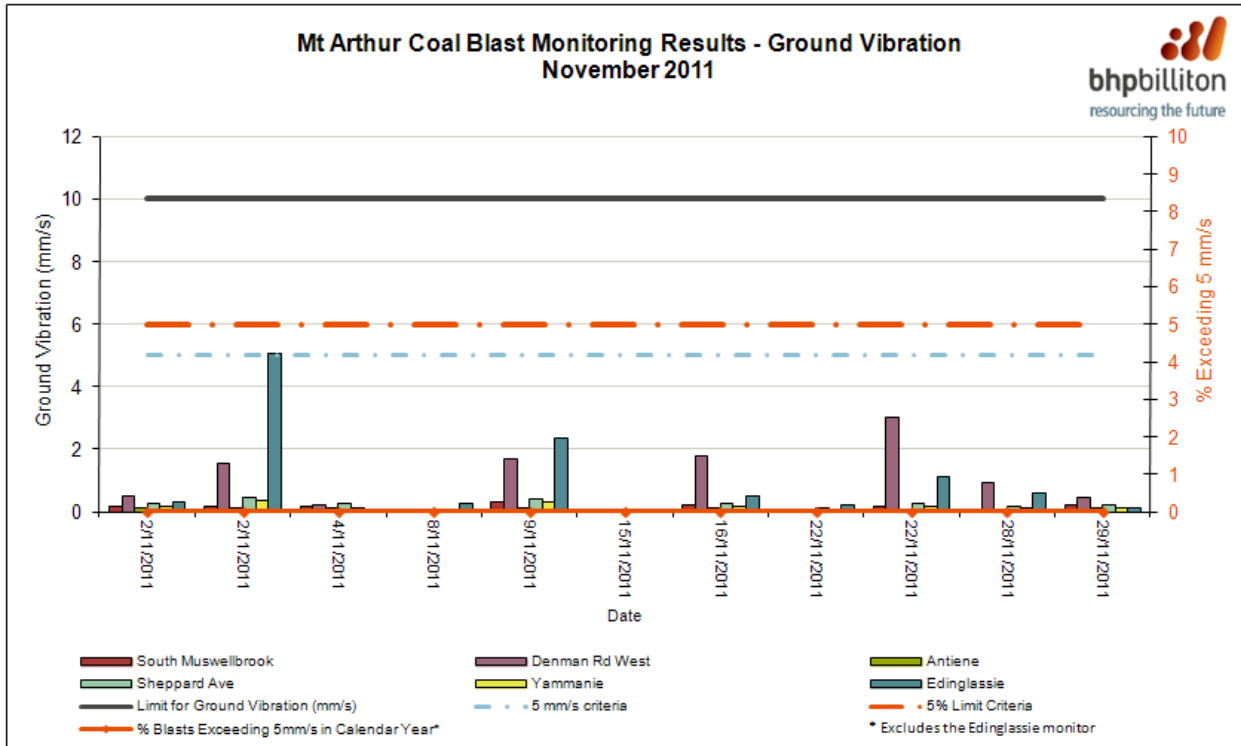
- All licensed blast monitoring stations recorded results below regulatory criteria for the November to December 2011 monitoring period.
- There was one road closure in the November to December 2011 monitoring period.
- There were 17 blasts fired in the November to December 2011 monitoring period.
- Forty blasts were delayed due to unfavourable weather conditions.
- Department of Planning and Infrastructure compliance officer visited site and inspected a blast in Calool Pit.

Blast Monitor Data Capture Rates:

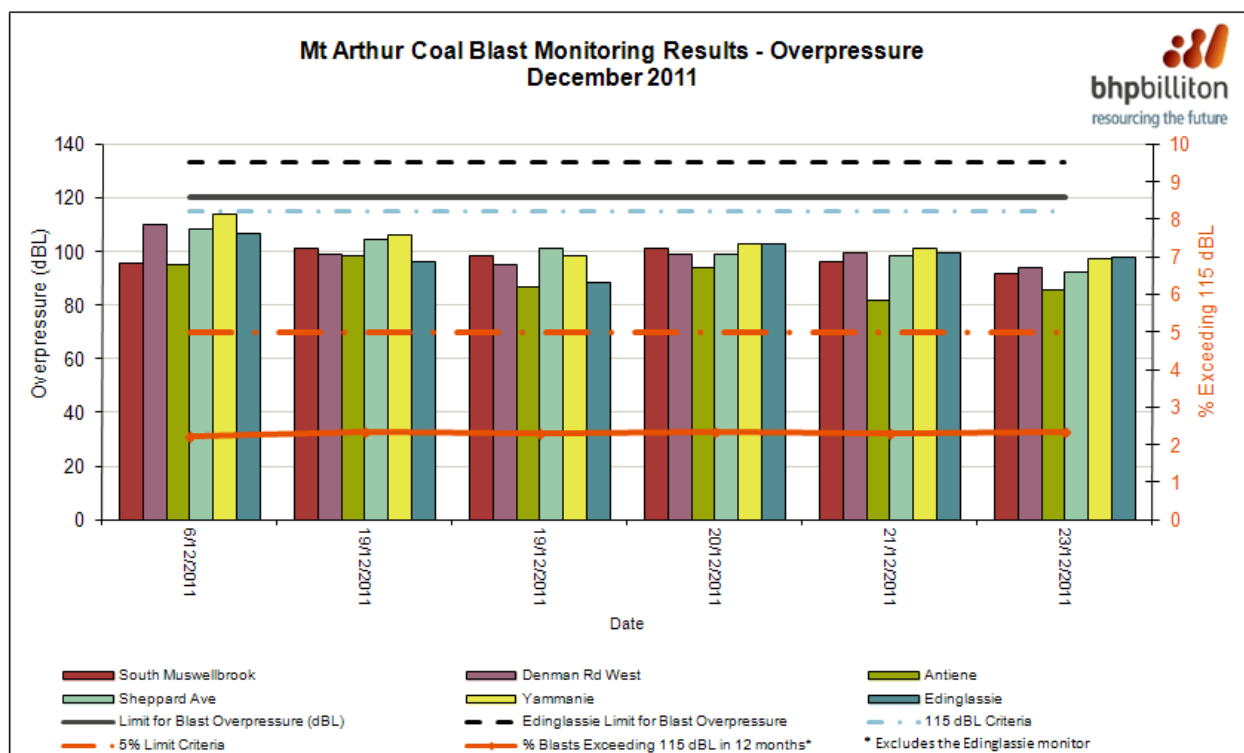
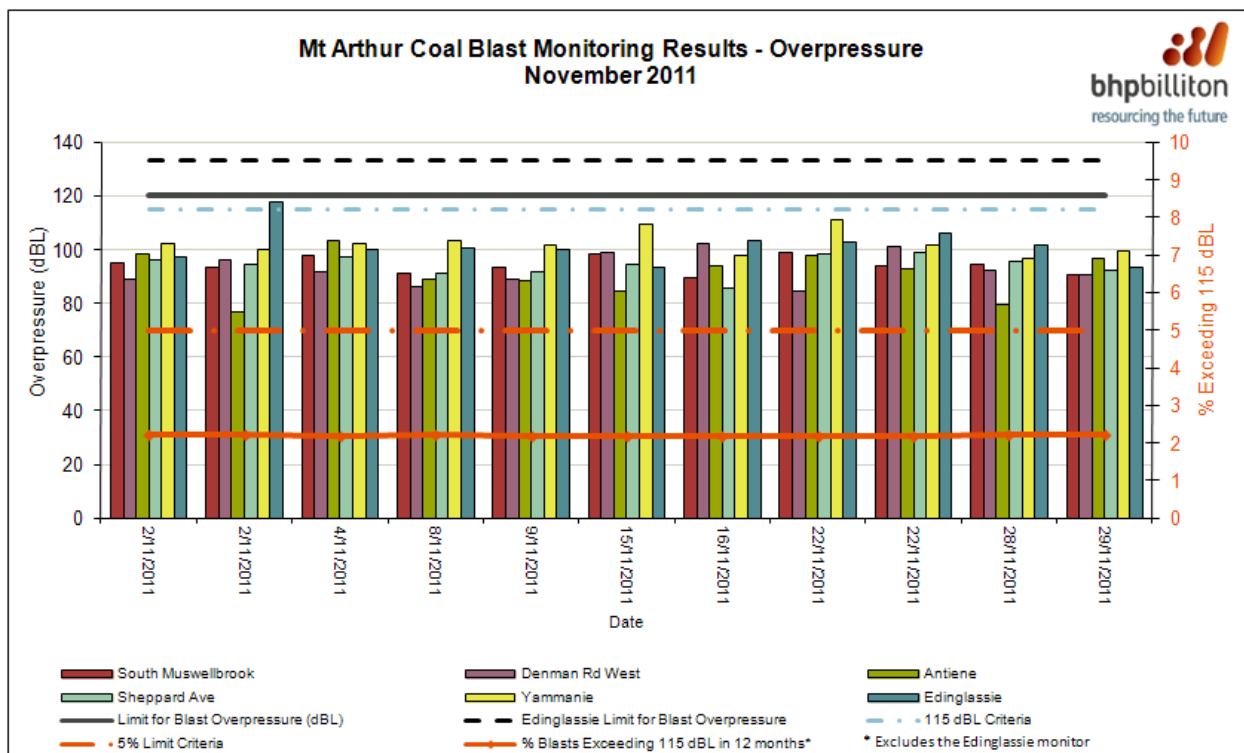
| | Antiene | Denman Road West | Edinglassie | Racecourse | South Muswellbrook | Yammanie |
|---------------|---------|------------------|-------------|------------|--------------------|----------|
| Nov-11 | 100% | 100% | 100% | 100% | 100% | 100% |
| Dec-11 | 100% | 100% | 100% | 100% | 100% | 100% |

Note. Data Capture Rate equals the number of blast results ÷ number of blasts

Ground Vibration



Overpressure



2. High Volume Air Sampling (HVAS) Data (November – December 2011)

HVAS Criteria:

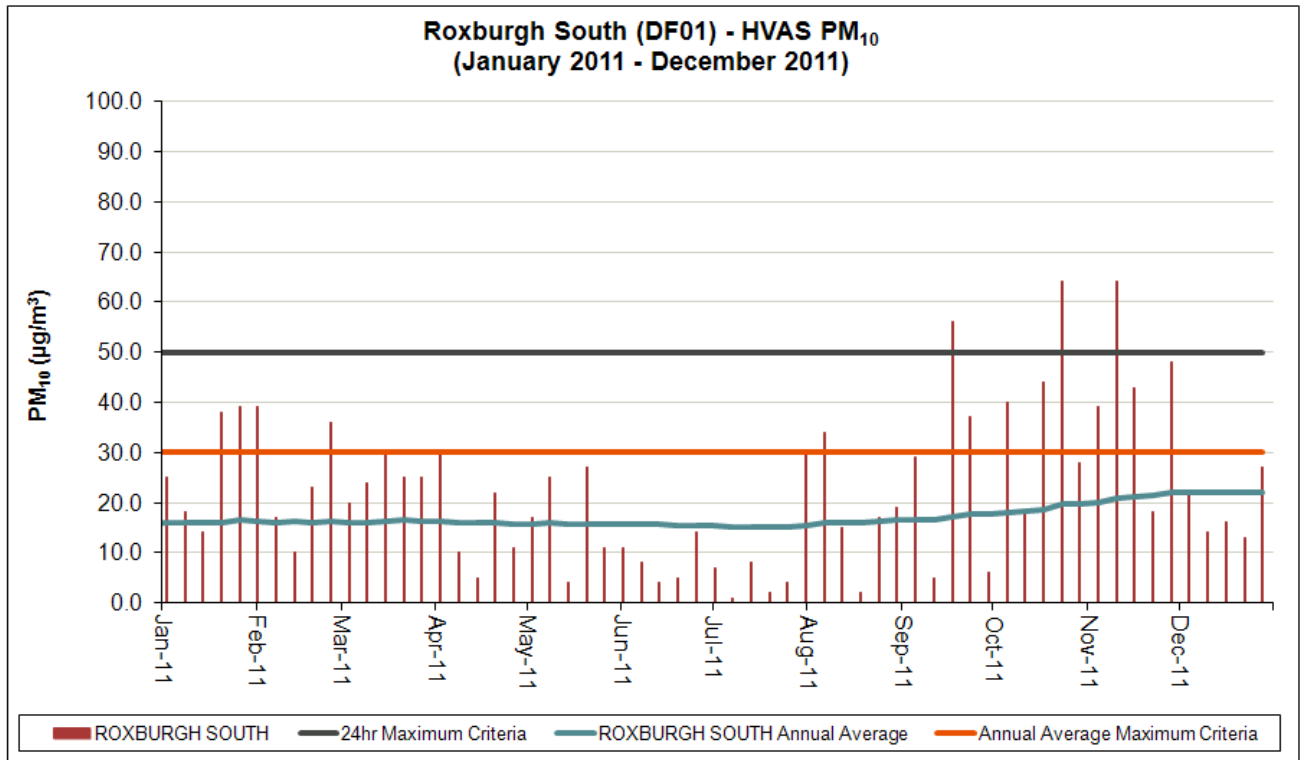
| Impact Assessment Criteria | | | |
|--|--|----------------------|--------------------|
| 20. | The Proponent shall ensure that the dust emissions generated by the Mt Arthur mine complex do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 9, 10 and 11 at any residence on privately owned land, or on more than 25 percent of any privately owned land, except where such exceedance is predicted in the EA. For these properties, the Proponent shall comply with the air quality predictions in the EA. | | |
| <i>Table 9: Long term impact assessment criteria for particulate matter</i> | | | |
| <i>Pollutant</i> | <i>Averaging period</i> | <i>Criterion</i> | <i>Basis</i> |
| Total suspended particulate (TSP) matter | Annual | 90 µg/m ³ | Total ¹ |
| Particulate matter < 10 µm (PM ₁₀) | Annual | 30 µg/m ³ | Total ¹ |
| <i>Table 10: Short term impact assessment criterion for particulate matter</i> | | | |
| <i>Pollutant</i> | <i>Averaging period</i> | <i>Criterion</i> | <i>Basis</i> |
| Particulate matter < 10 µm (PM ₁₀) | 24 hour | 50 µg/m ³ | Total ¹ |

HVAS Summary:

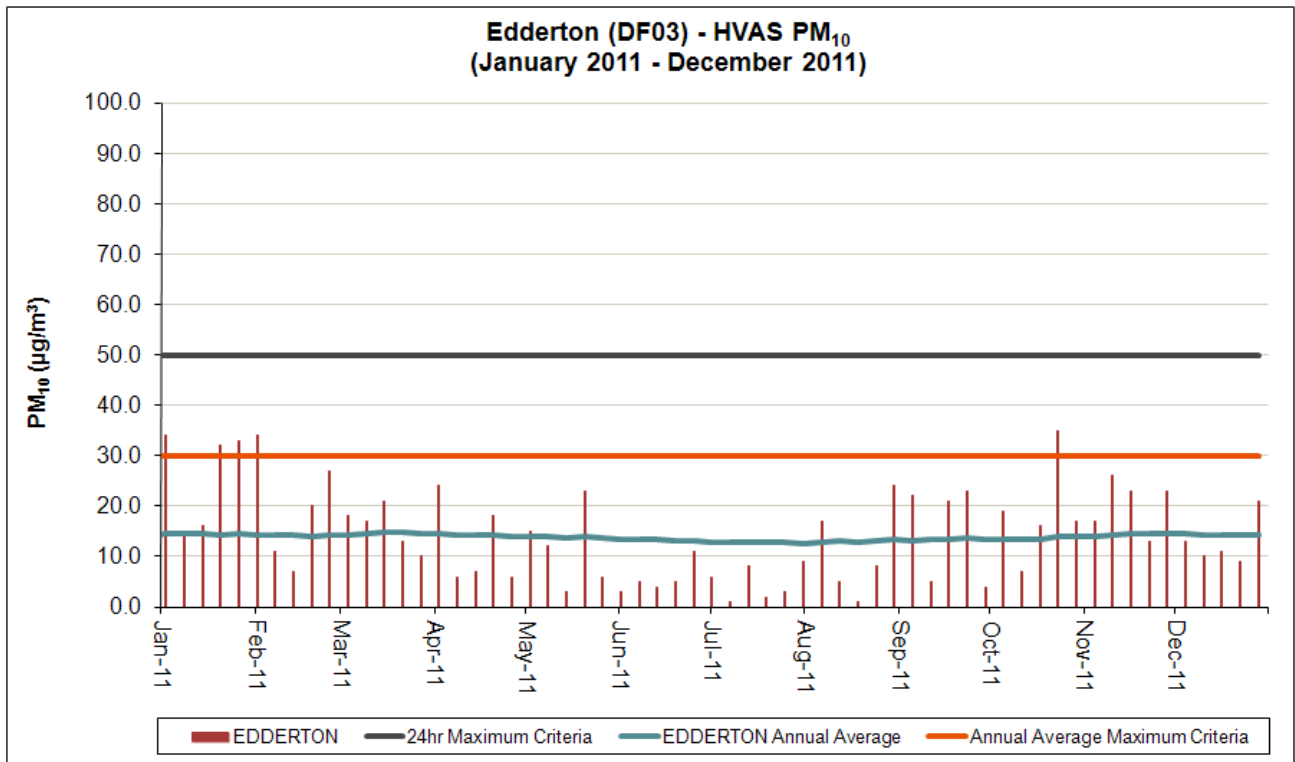
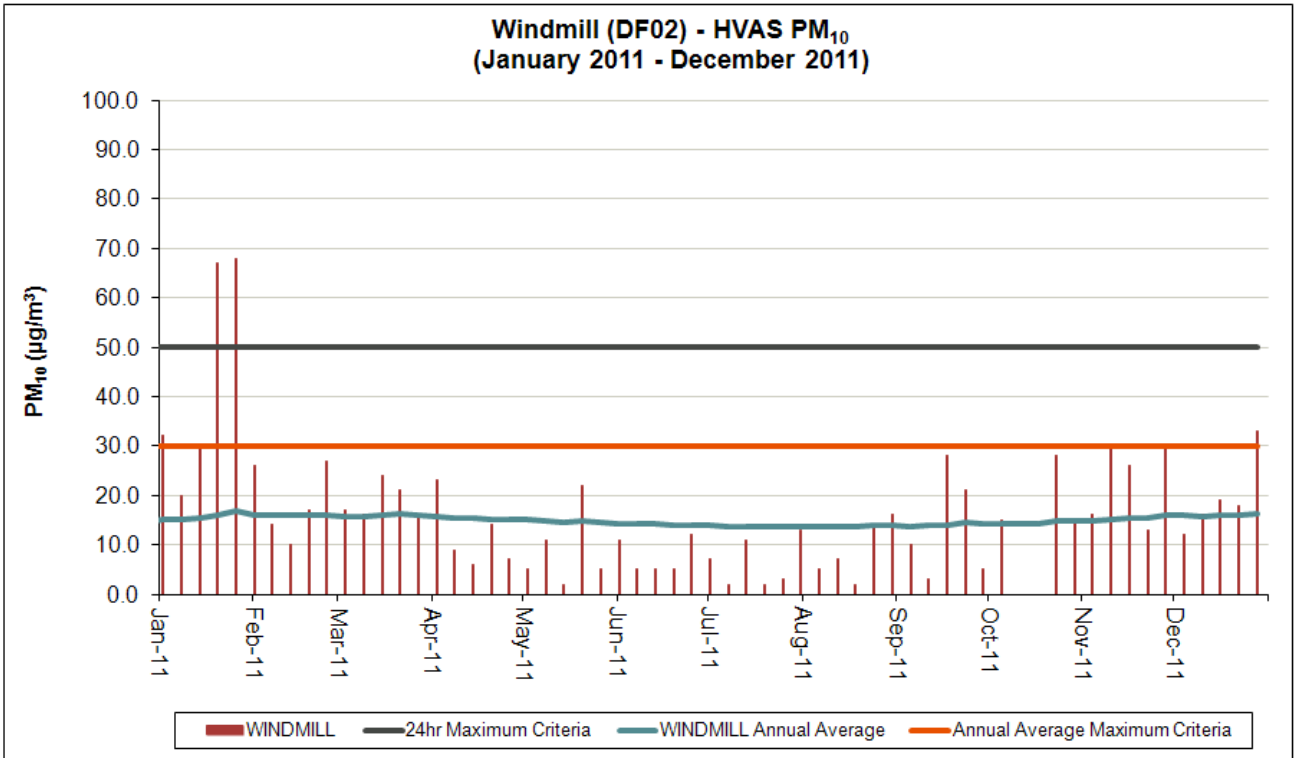
- There were no elevated results in the November to December 2011 monitoring period with the exception of:
 - **Roxburgh South (DF02), 10 November 2011** - This monitor is located to the west of the operation. The predominant wind direction on this day was from the north west. During approximately 5 per cent of the day was this monitor located downwind of Mt Arthur Coal's operation. Subsequently, this monitor was not significantly impacted by operations at Mt Arthur Coal on this day.
 - **Denman Road West (DF08), 16 November 2011** - This monitor is located to the north west of the operation. The wind direction for this day was variable with no one predominant wind direction. For 40 per cent of this day DF08 was upwind of the Mt Arthur Coal operation. Mt Arthur Coal's contribution was therefore determined to be below consent criteria.
- All HVAS monitoring locations currently have annual averages below relevant regulatory criteria. Please refer to the blue line in the HVAS figures below.
- Data capture rates were 100 per cent at all monitors except the Pistol Club (DF04). Two HVAS results were not obtained at the Pistol Club HVAS monitor in November due to a power supply issue which has now been resolved.

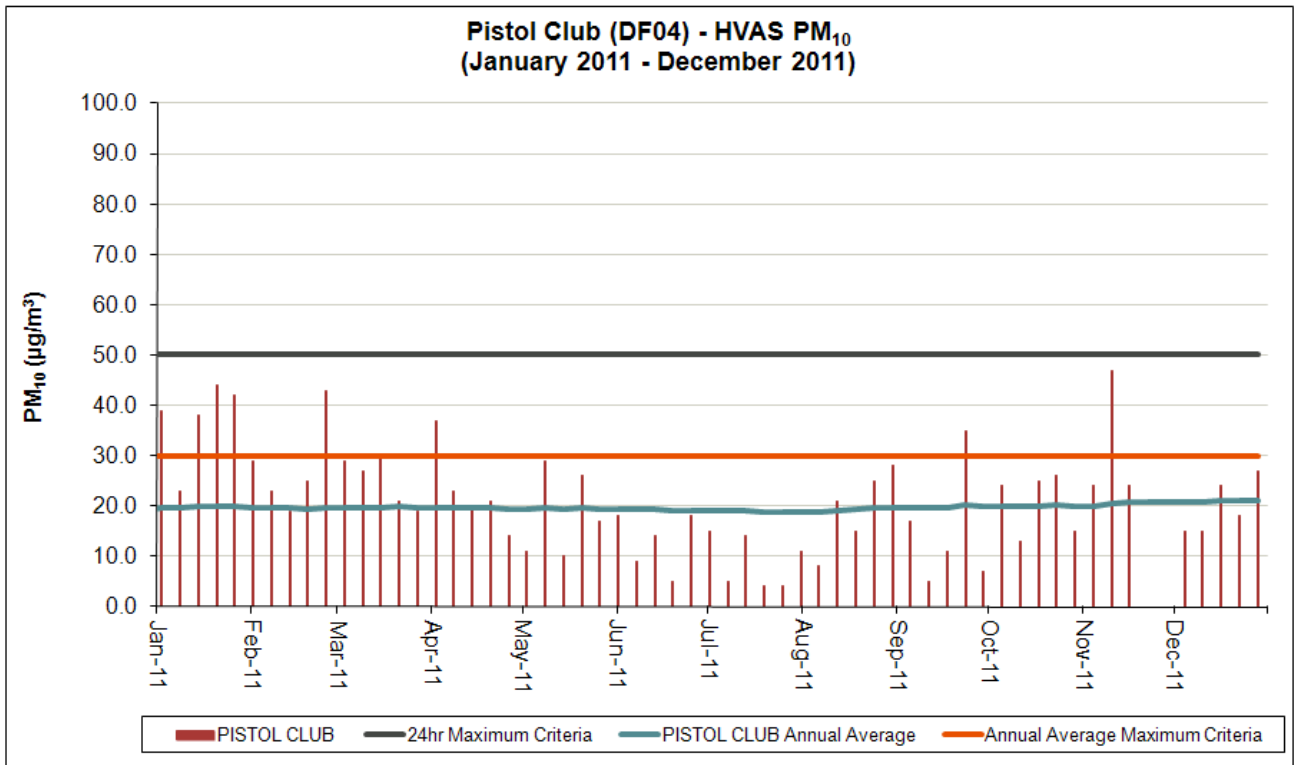
HVAS Data Capture Rates:

| | Roxburgh South | Windmill | Edderton | Pistol Club | Constable | Sheppard Avenue | South Muswellbrook | Denman Road West |
|---------------|----------------|----------|----------|-------------|-----------|-----------------|--------------------|------------------|
| Nov-11 | 100% | 100% | 100% | 60% | 100% | 100% | 100% | 100% |
| Dec-11 | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |



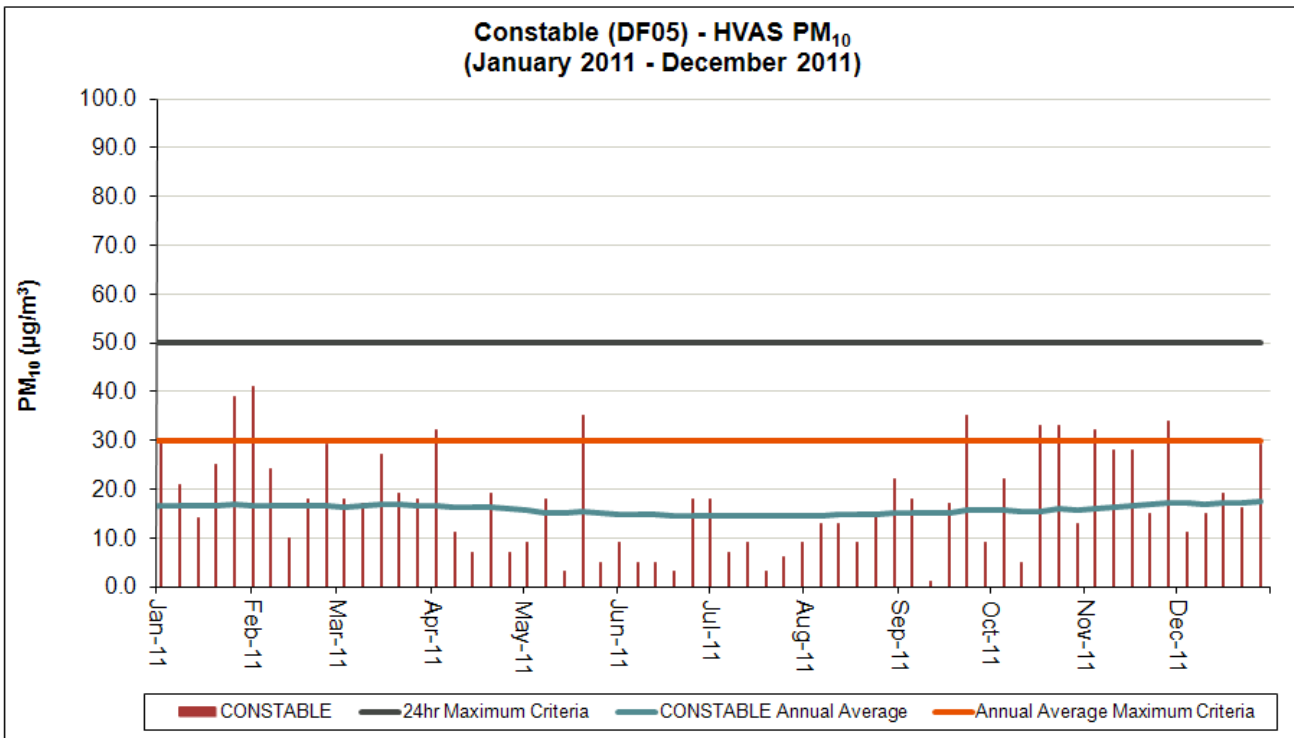
10 November 2011 - This monitor is located to the west of the operation. The predominant wind direction on this day was from the north west. During approximately 5 per cent of the day was this monitor located downwind of Mt Arthur Coal's operation. Subsequently, this monitor was not significantly impacted by operations at Mt Arthur Coal on this day.

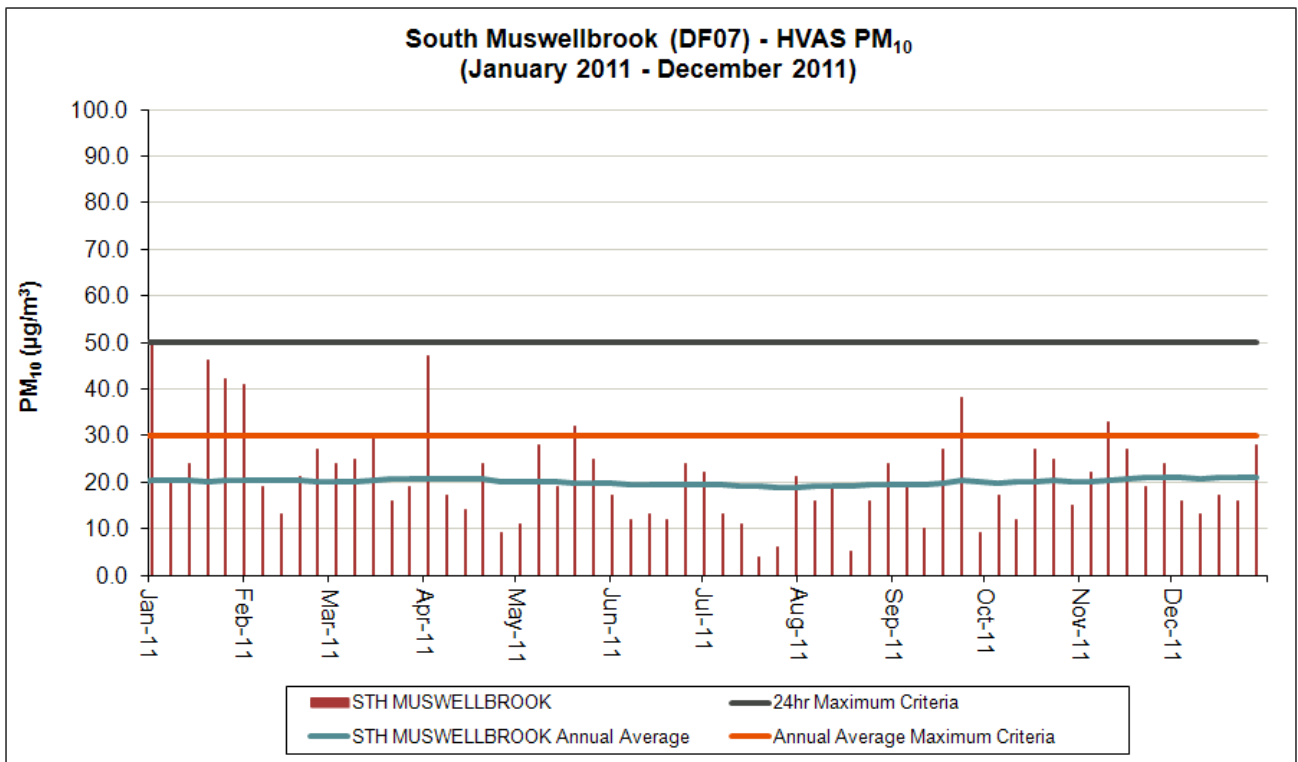
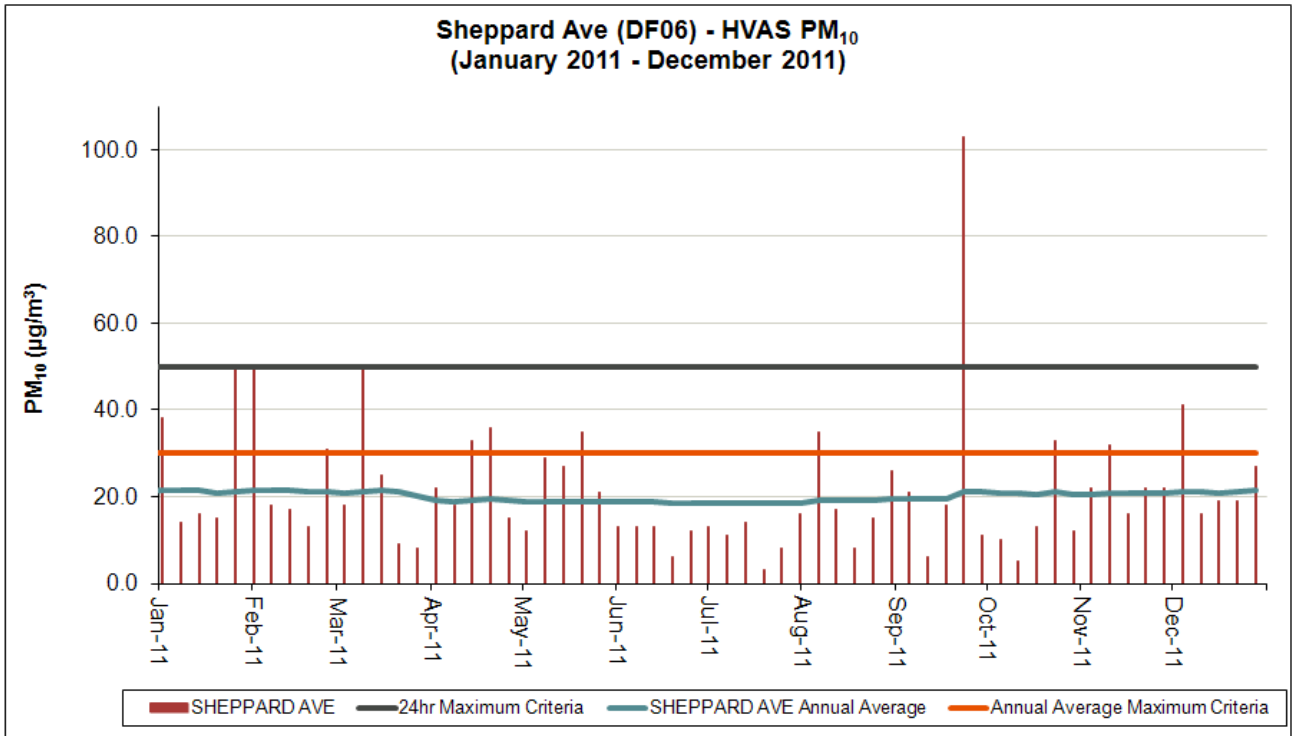


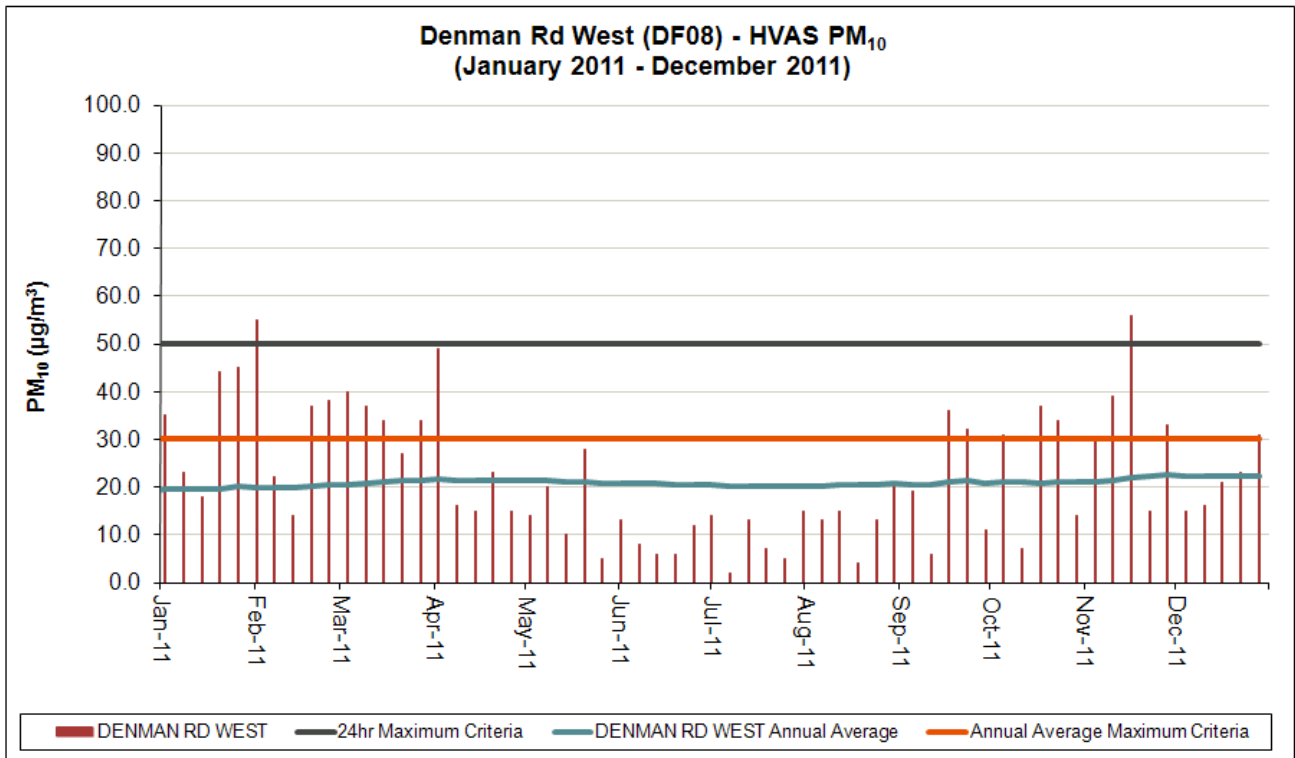


16 November 2011 - No result. The HVAS monitor did not run on this day as scheduled due to a power supply issue.

28 November 2011 - No result. The HVAS monitor did not run on this day as scheduled due to a power supply issue.







16 November 2011 - This monitor is located to the north west of the operation. The wind direction for this day was variable with no one predominant wind direction. For 40 per cent of this day DF08 was upwind of the Mt Arthur Coal operation. Mt Arthur Coal's contribution was therefore determined to be below consent criteria.

3. Real-time Air Quality Monitors

Real-time Air Quality Monitor Criteria:

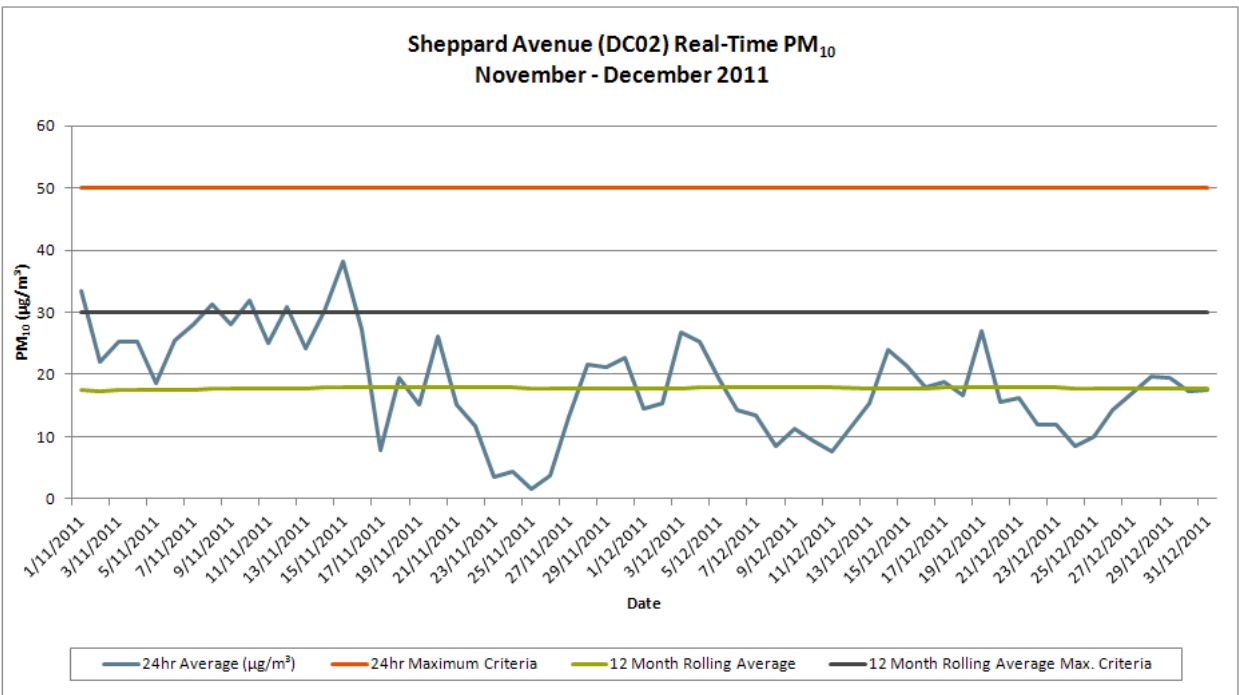
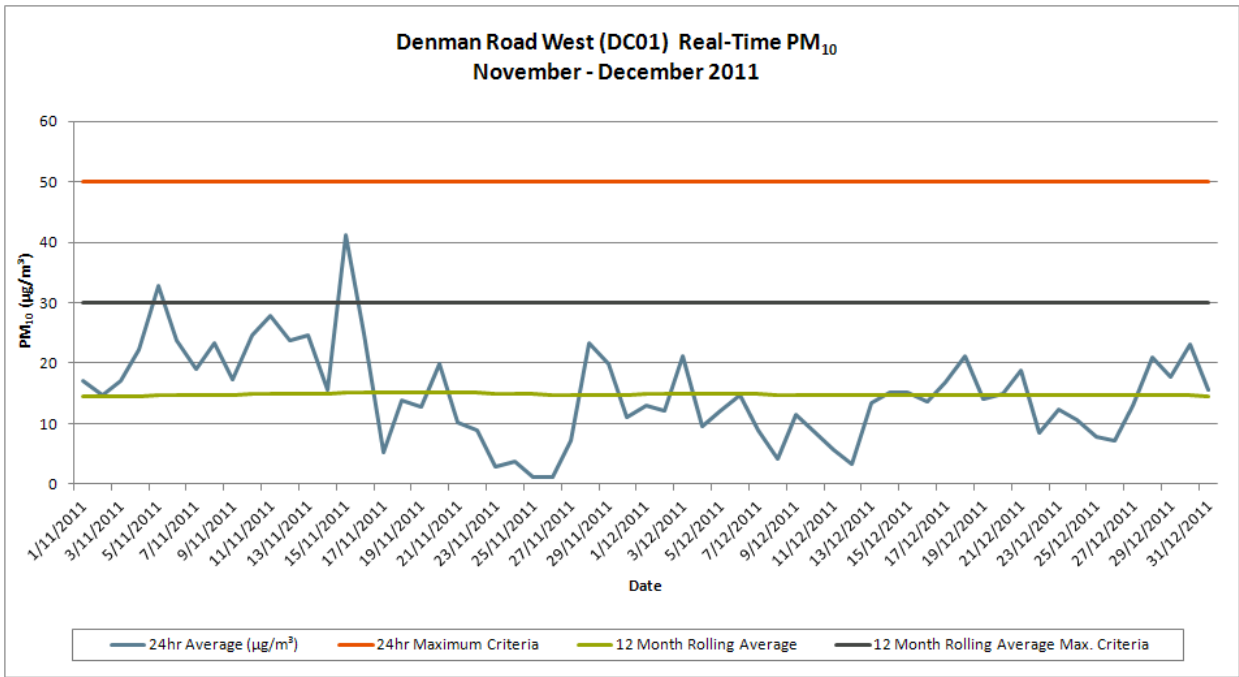
| Impact Assessment Criteria | | | |
|--|--|----------------------|--------------------|
| 20. | The Proponent shall ensure that the dust emissions generated by the Mt Arthur mine complex do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 9, 10 and 11 at any residence on privately owned land, or on more than 25 percent of any privately owned land, except where such exceedance is predicted in the EA. For these properties, the Proponent shall comply with the air quality predictions in the EA. | | |
| <i>Table 9: Long term impact assessment criteria for particulate matter</i> | | | |
| <i>Pollutant</i> | <i>Averaging period</i> | <i>Criterion</i> | <i>Basis</i> |
| Total suspended particulate (TSP) matter | Annual | 90 µg/m ³ | Total ¹ |
| Particulate matter < 10 µm (PM ₁₀) | Annual | 30 µg/m ³ | Total ¹ |
| <i>Table 10: Short term impact assessment criterion for particulate matter</i> | | | |
| <i>Pollutant</i> | <i>Averaging period</i> | <i>Criterion</i> | <i>Basis</i> |
| Particulate matter < 10 µm (PM ₁₀) | 24 hour | 50 µg/m ³ | Total ¹ |

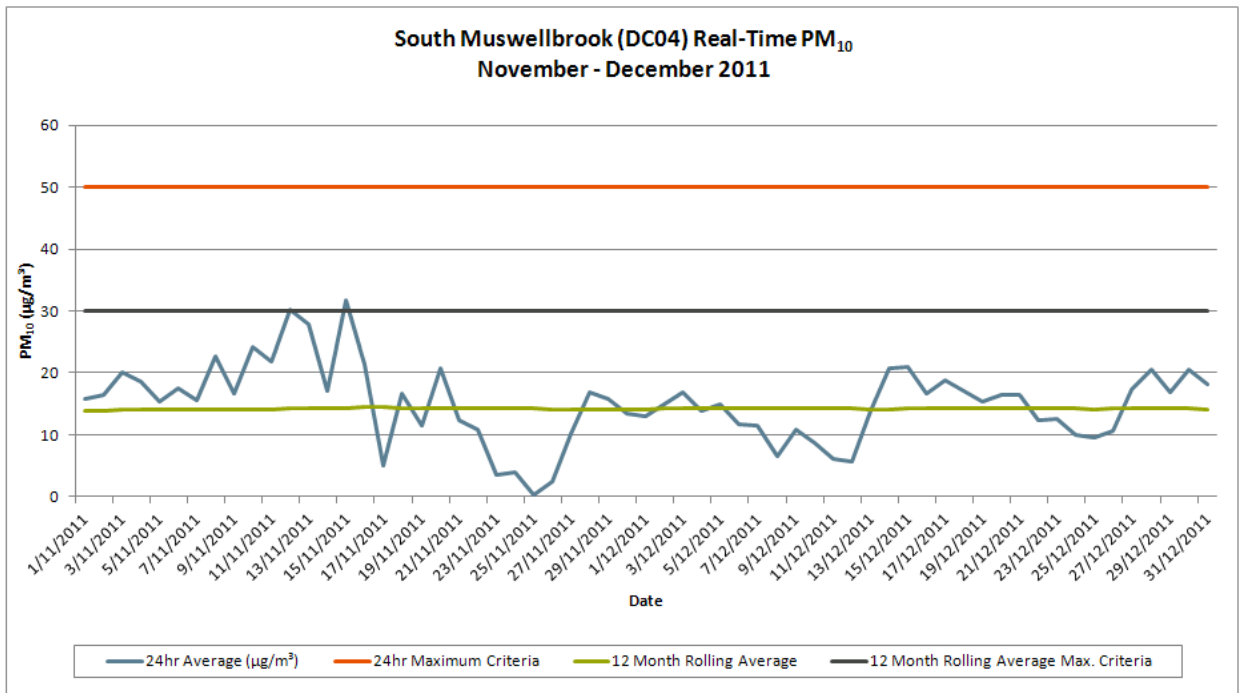
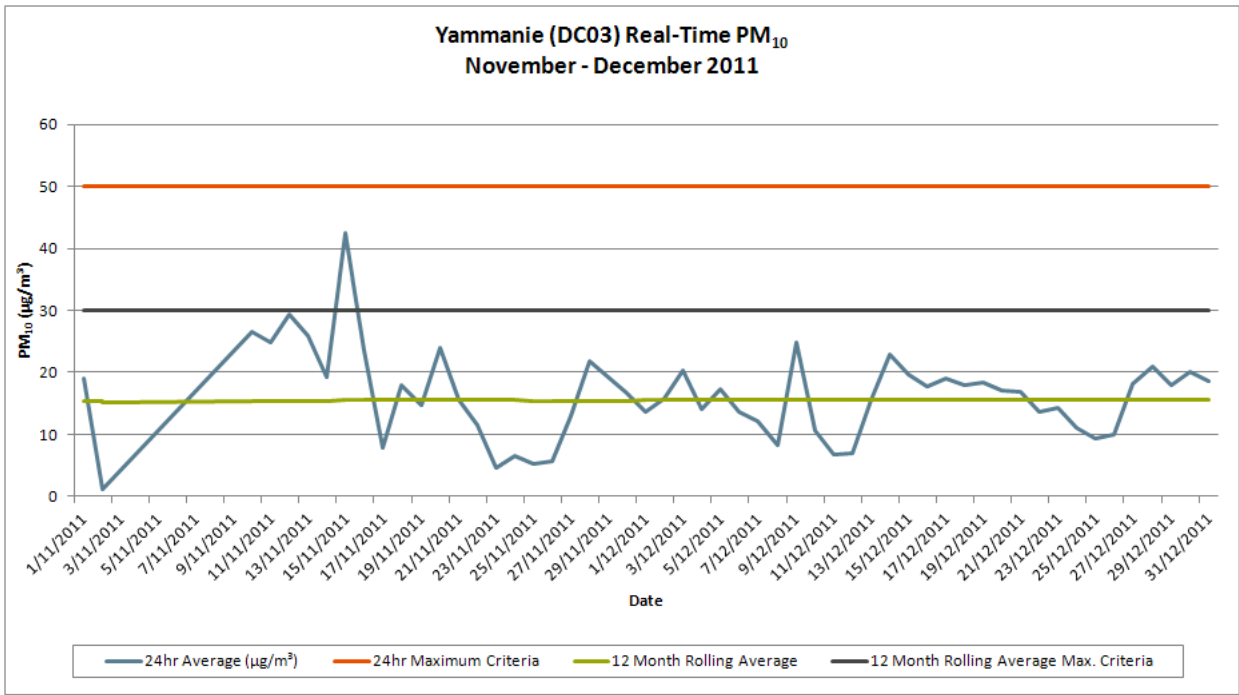
Real-time Air Quality Monitor Summary:

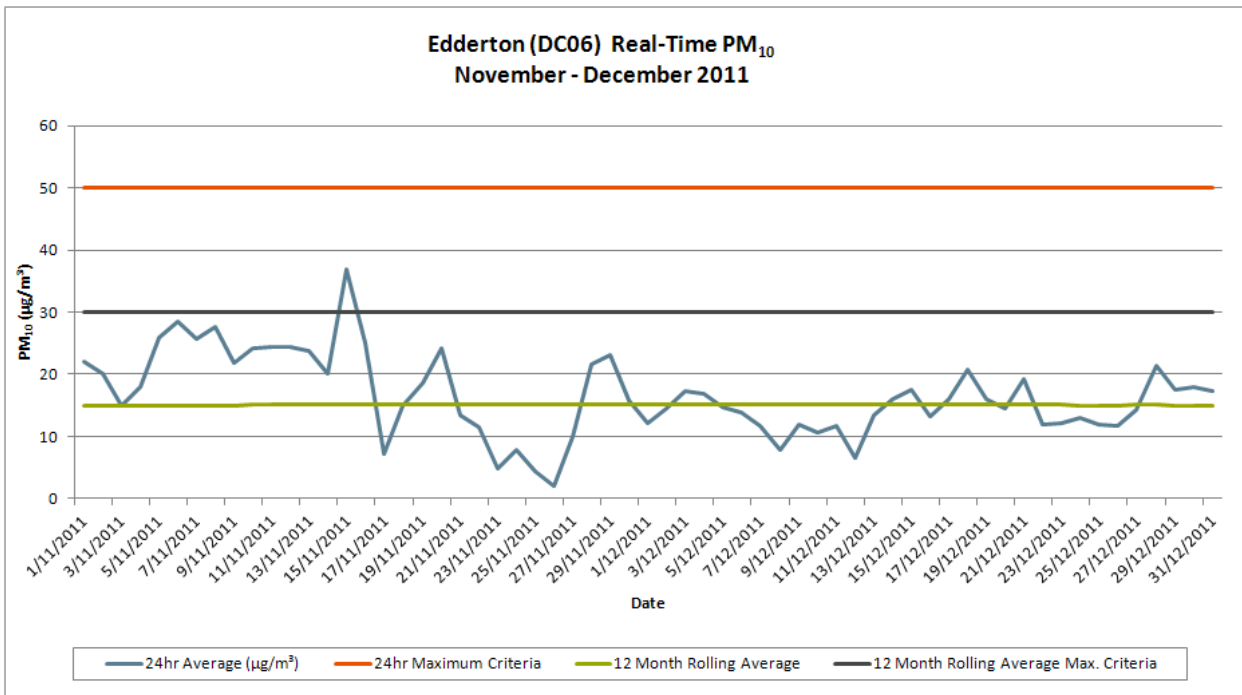
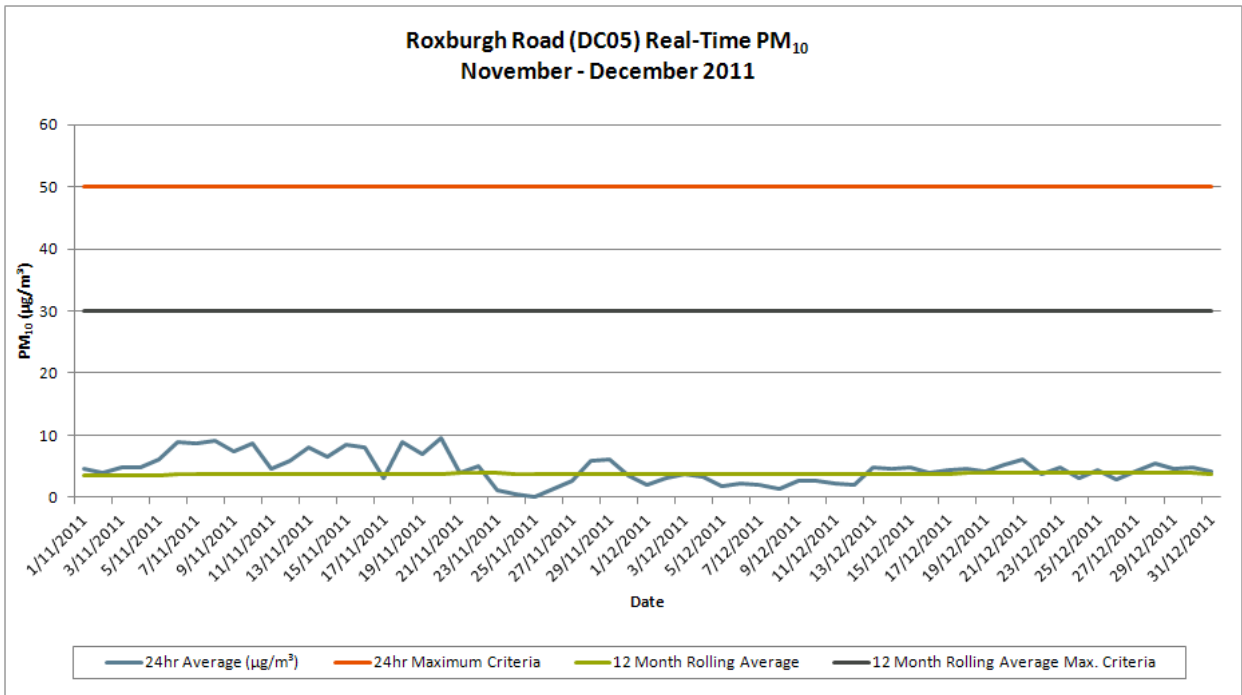
- All real-time air quality monitors currently have annual averages below relevant development consent criteria.
- All real-time air quality monitoring results were below the 24 hour average limit during the November to December 2011 monitoring period.
- Data capture rates were 100 per cent at all monitors except:
 - Roxburgh Road (DC05) – Data was not captured on 26 November 2011 due to an equipment issue which has now been resolved.
 - Sheppard Avenue (DC02) – Data was not captured on 12 December 2011 because of a power supply issue which has now been resolved.
 - Yammanie (DC03) – Data was not captured 3/11/2011 – 9/11/2011 due to an equipment issue which has now been resolved.

Real-time Air Quality Monitor Data Capture Rates:

| | Denman Road West | Sheppard Avenue | Yammanie | South Muswellbrook | Roxburgh Road | Edderton |
|--------|------------------|-----------------|----------|--------------------|---------------|----------|
| Nov-11 | 100% | 100% | 86.9% | 100% | 98.4% | 100% |
| Dec-11 | 100% | 98.4% | 100% | 100% | 100% | 100% |







4. Depositional Dust (November – December 2011)

Depositional Dust Criteria:

Table 11: Long term impact assessment criteria for deposited dust

| Pollutant | Averaging period | Maximum increase ² in deposited dust level | Maximum total ¹ deposited dust level |
|----------------|------------------|---|---|
| Deposited dust | Annual | 2 g/m ² /month | 4 g/m ² /month |

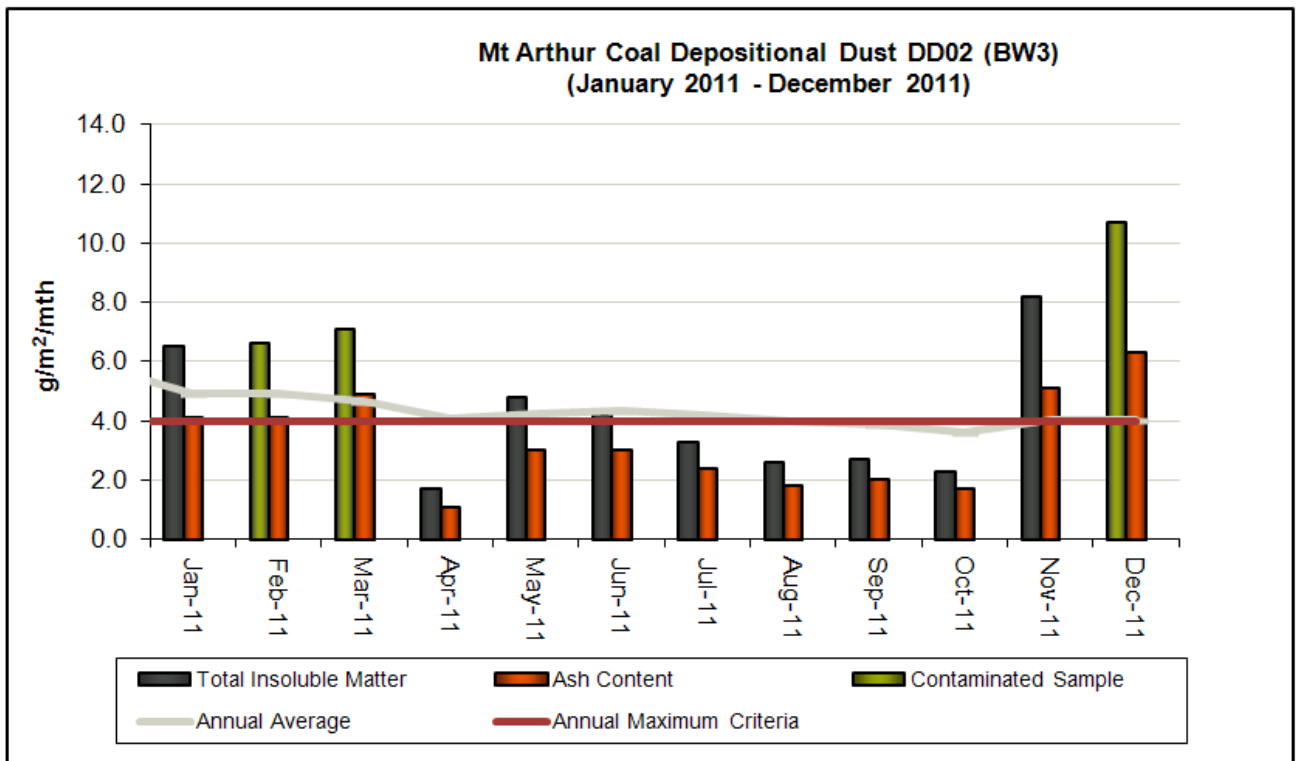
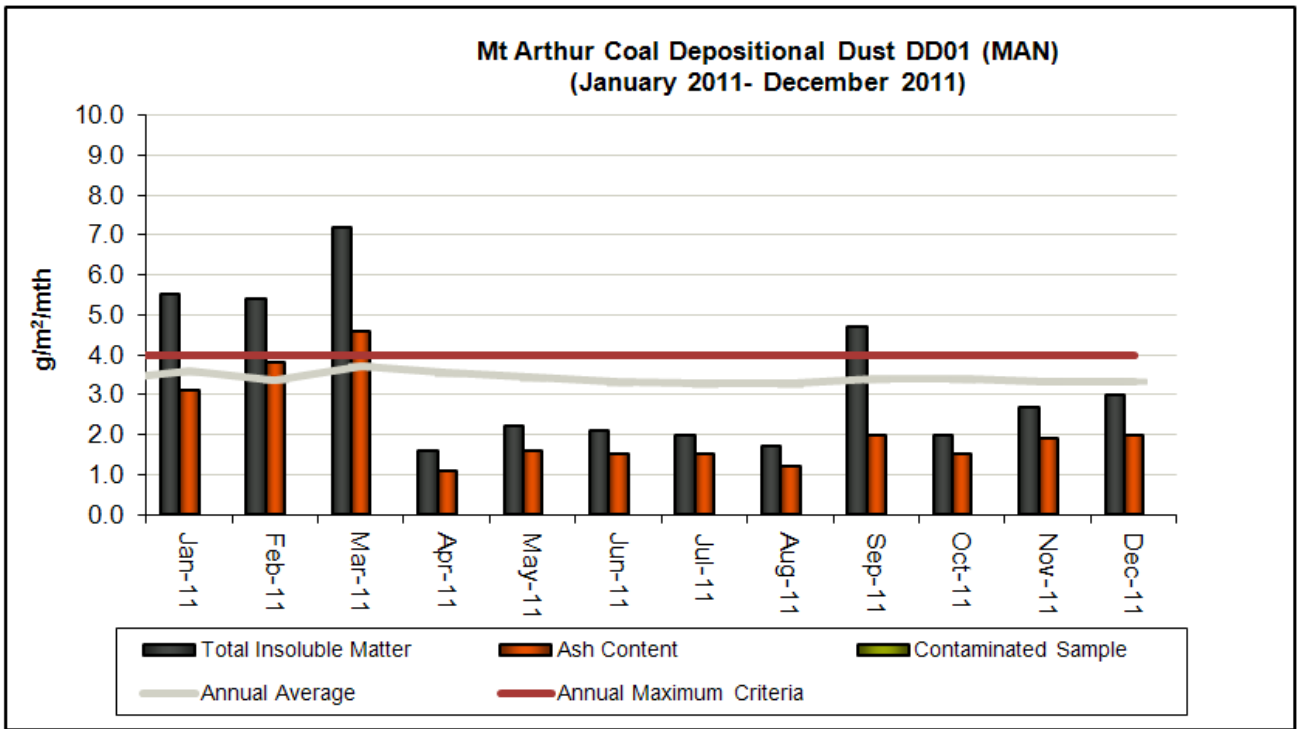
¹ Background concentrations due to all other sources plus the incremental increase in concentrations due to the mine complex alone.

² Incremental increase in concentrations due to the mine complex alone.

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.

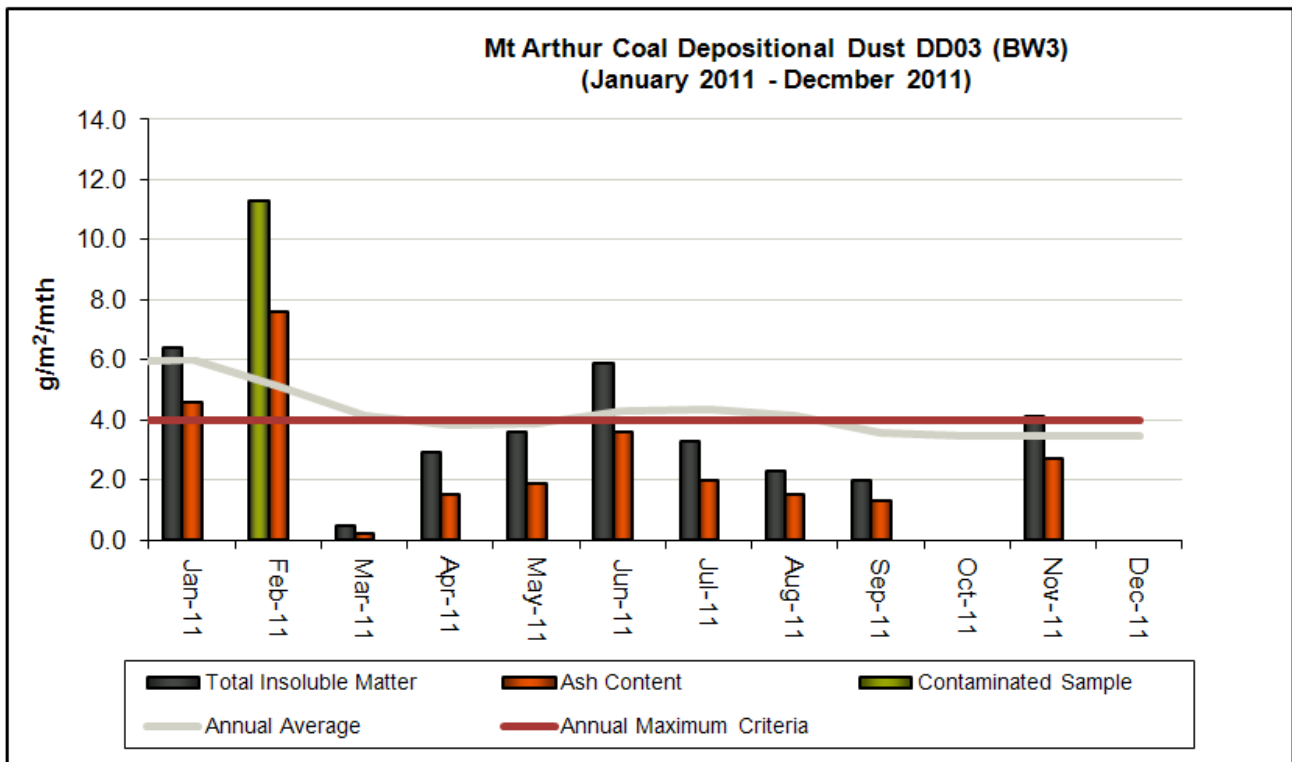
Depositional Dust Summary:

- No depositional dust gauge results recorded in the November to December 2011 monitoring period were above regulatory criteria with the exception of DD02, DD03, DD11, DD15 and DD16 in November and DD16 in December.
- DD11 and DD16 are located on Mt Arthur Coal owned land and are used for management purposes only; they are not representative of nearby privately-owned residences.
- The predominant wind direction for the month of November was from the east south east as shown on the November windrose (page 39). As DD02 and DD03 were upwind of the operation it was determined that Mt Arthur Coal's operations did not influence these elevated results. Using DD02 as an upwind monitor, Mt Arthur Coal's contribution to the DD15 result was determined to be below relevant consent criteria.
- The predominant wind direction for the month of December was from the west north west as shown on the December windrose (page 39). Using DD16 as an upwind monitor, Mt Arthur Coal's contribution to the DD01 result was determined to be below relevant consent criteria.
- All rolling annual averages were below relevant regulatory criteria, with the exception of DD16. DD16 is located on Mt Arthur Coal owned land and is used for management purposes only; it is not representative of nearby privately-owned residences.
- There was a 98 per cent data capture rate for depositional dust gauges during the November to December 2011 monitoring period. No result was obtained at DD03 in December. The independent monitoring contractor reported that the sample bottle and funnel were found broken in the stand.
- Contaminated depositional dust results for the November to December 2011 monitoring period were at:
 - DD09 November (excessive bird droppings and insects);
 - DD12 November (excessive bird droppings);
 - DD02 December (excessive bird droppings and insects);
 - DD13 December (excessive bird droppings and insects).



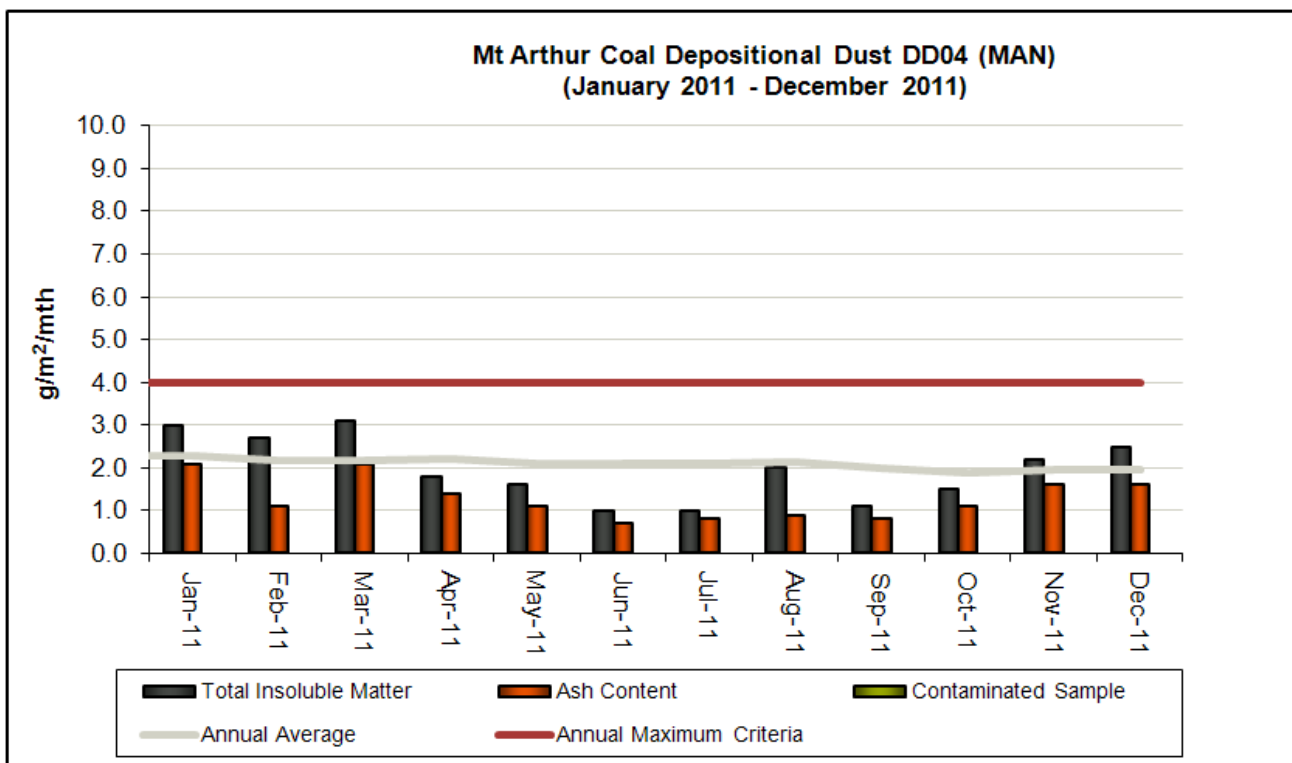
November – This monitor is located to the east of the mine. The predominant wind direction for November was east south east. As this monitor was upwind of the operation, Mt Arthur Coal's operations did not influence this elevated result.

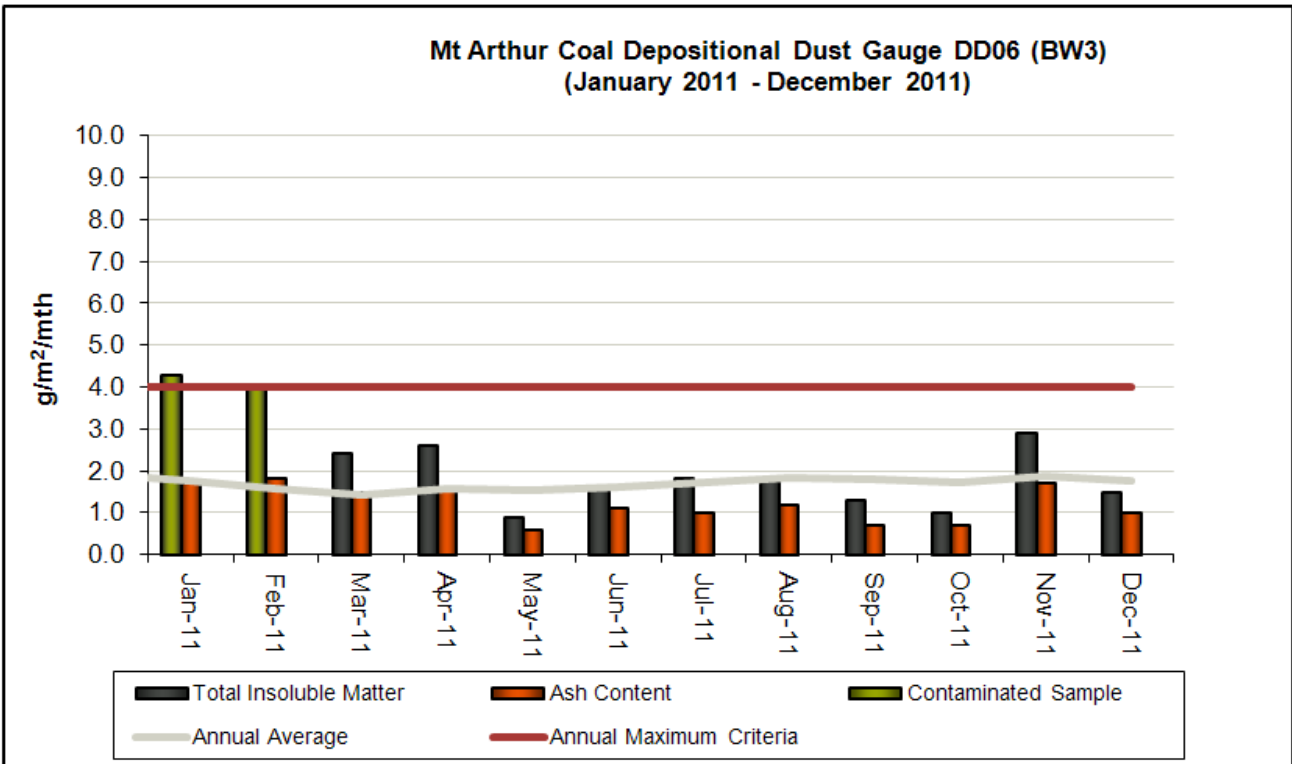
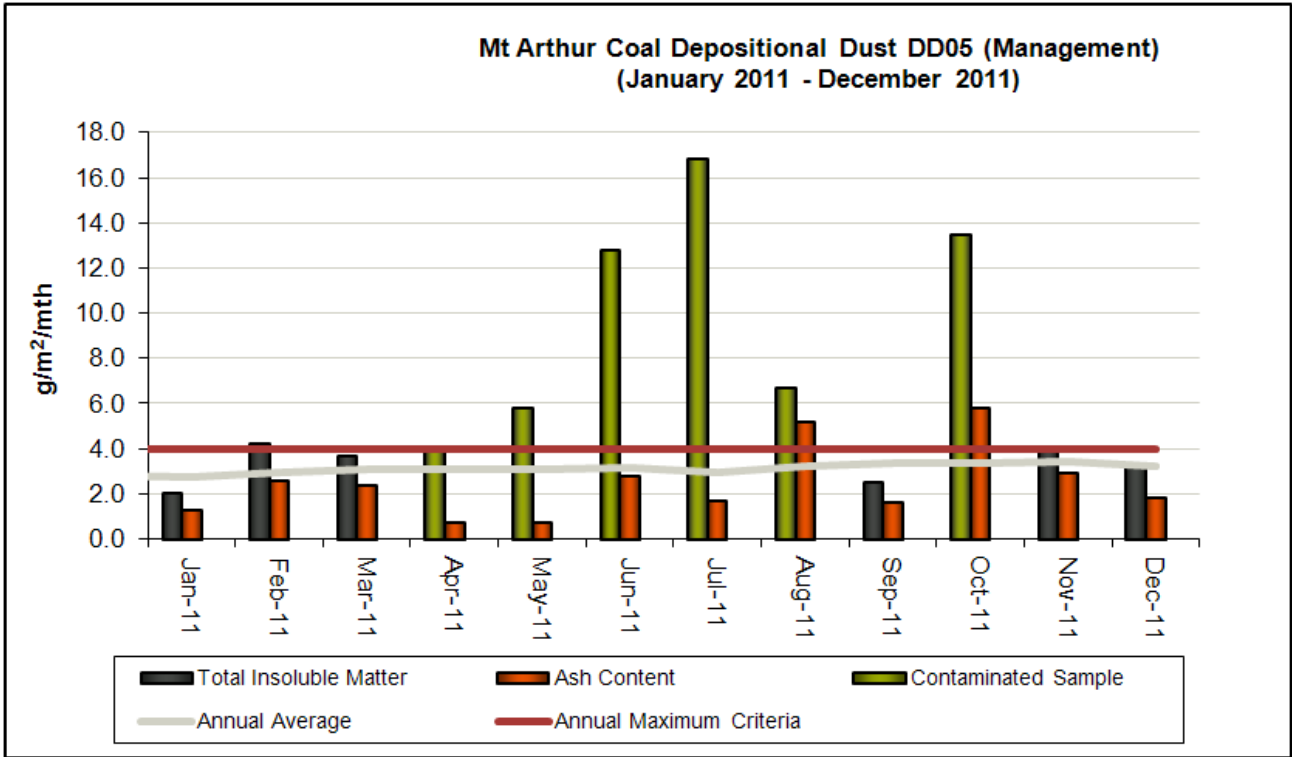
December - Independent contractor determined that the sample was contaminated with bird droppings and insects.

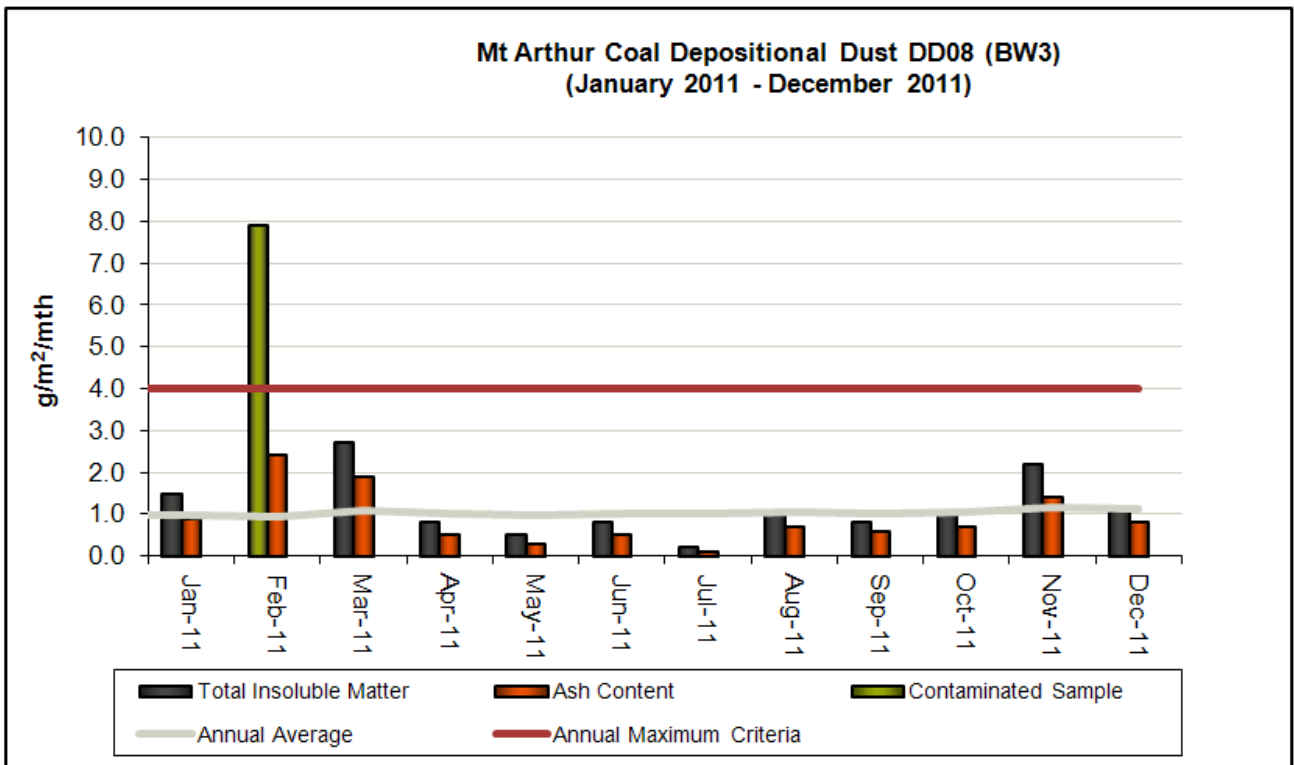
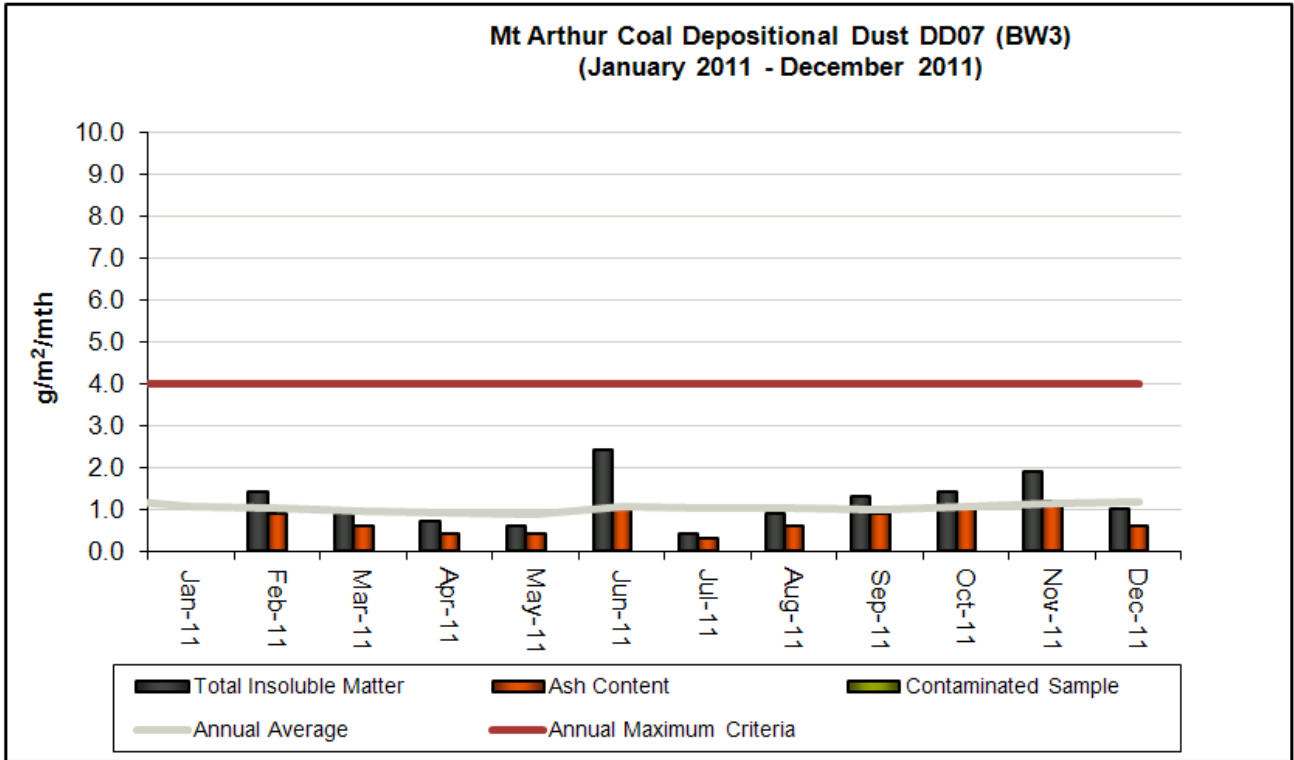


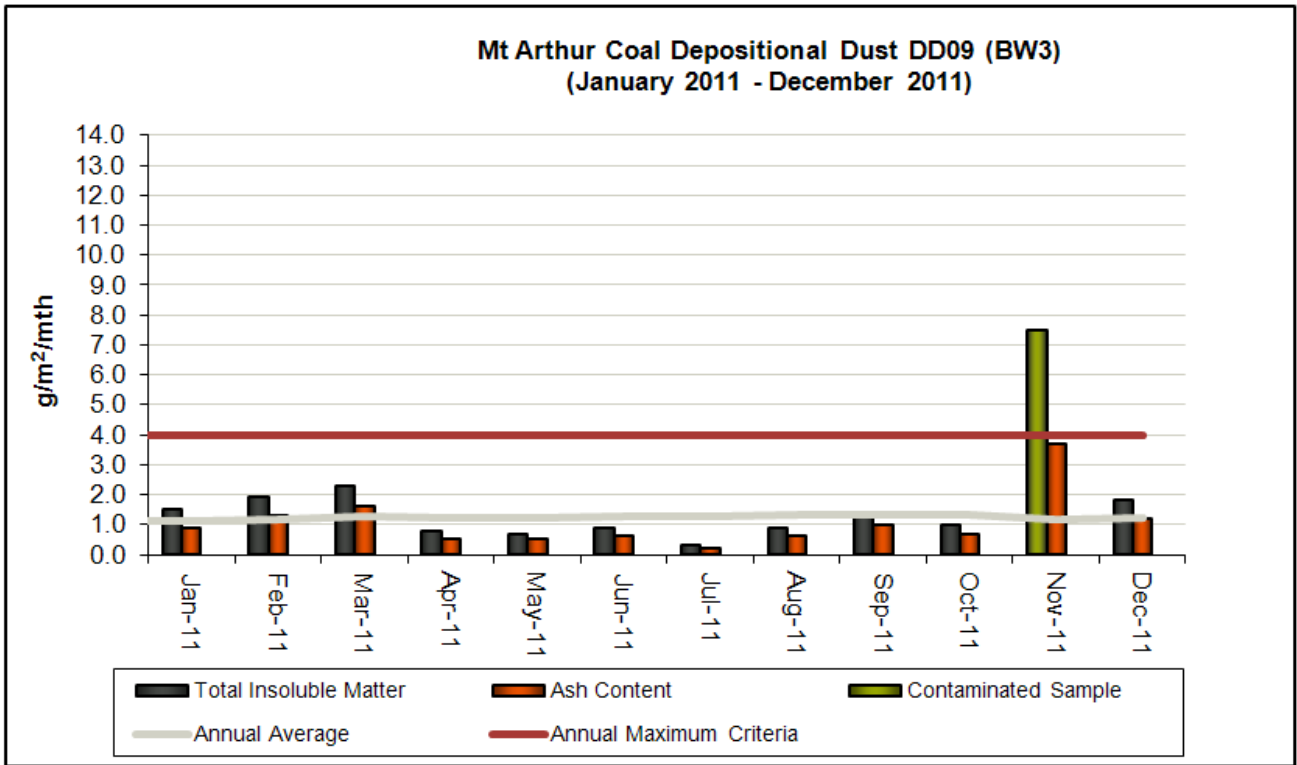
November - This monitor is located to the east of the mine. The predominant wind direction for November was east south east. As this monitor was upwind of the operation, Mt Arthur Coal's operations did not influence this elevated result.

December - No result was obtained. The independent monitoring contractor reported that the sample bottle and funnel were found broken in the stand.

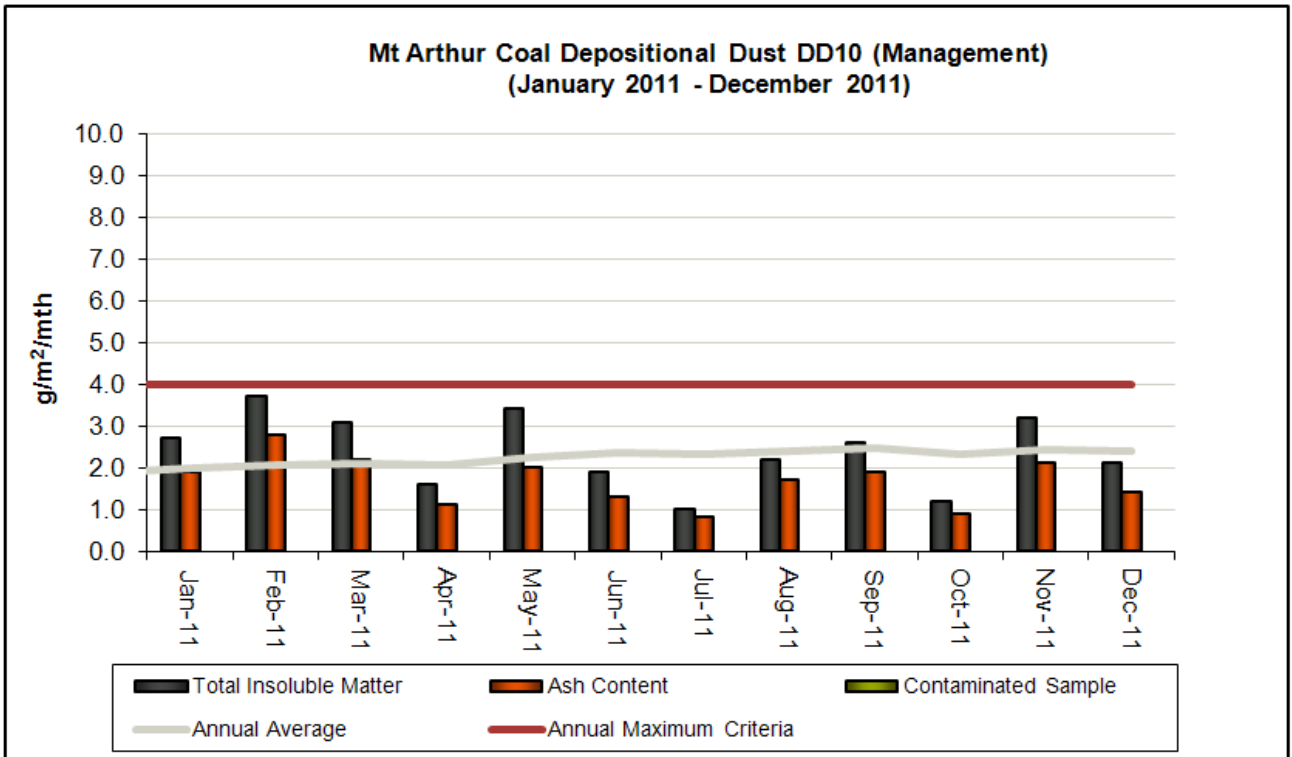


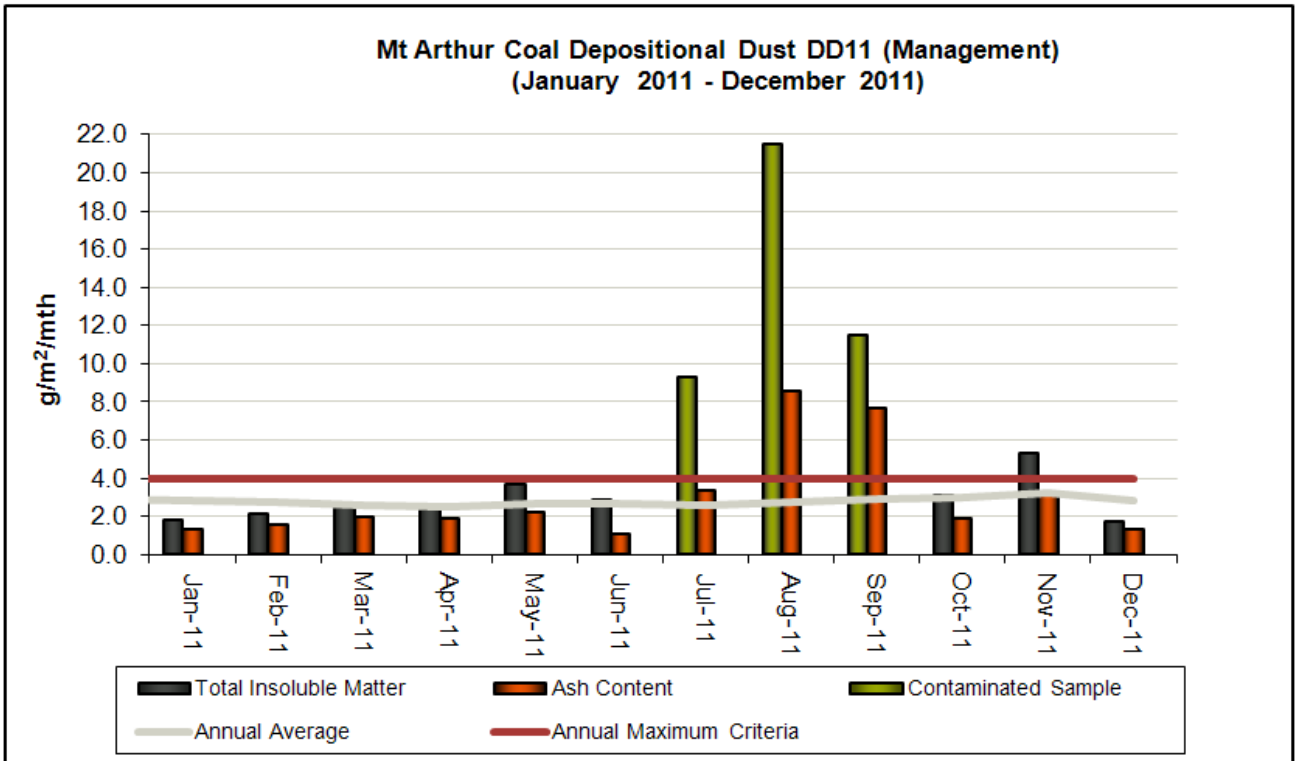




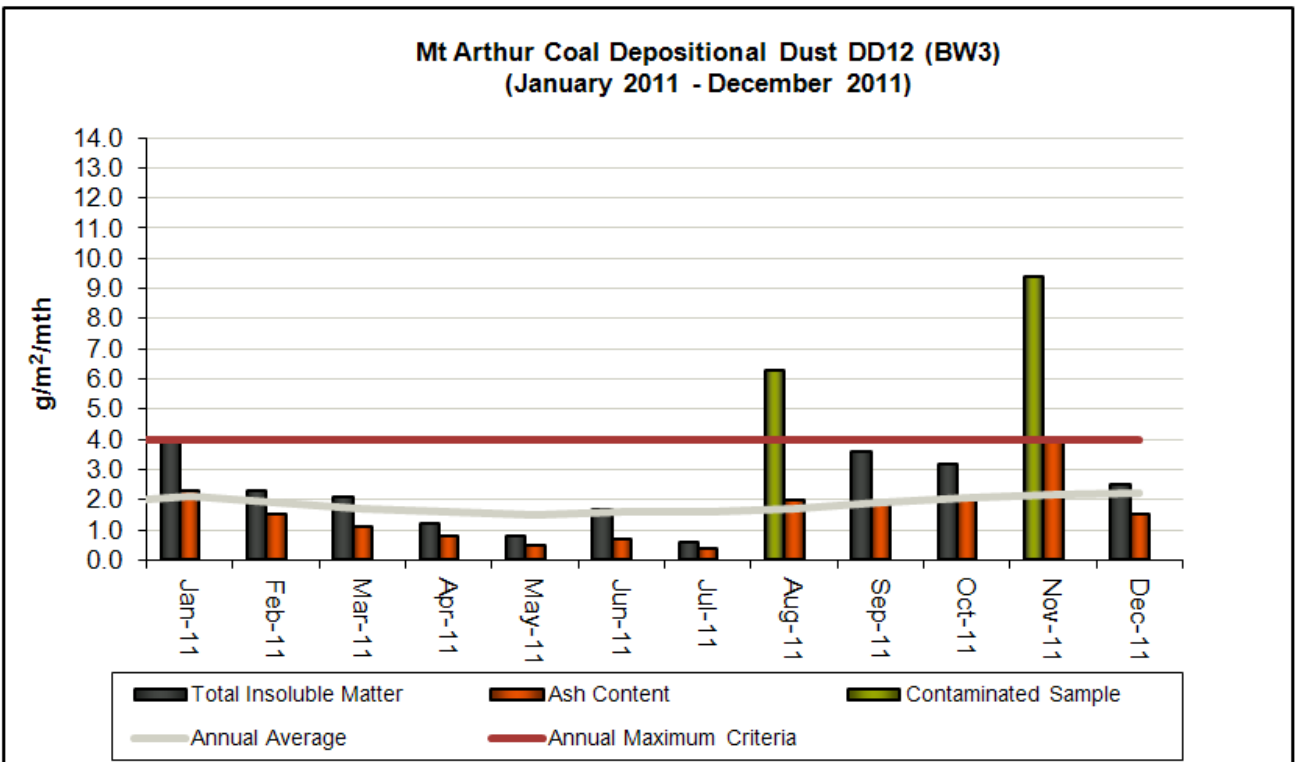


November - Independent contractor determined that the sample was contaminated with insects and bird droppings.

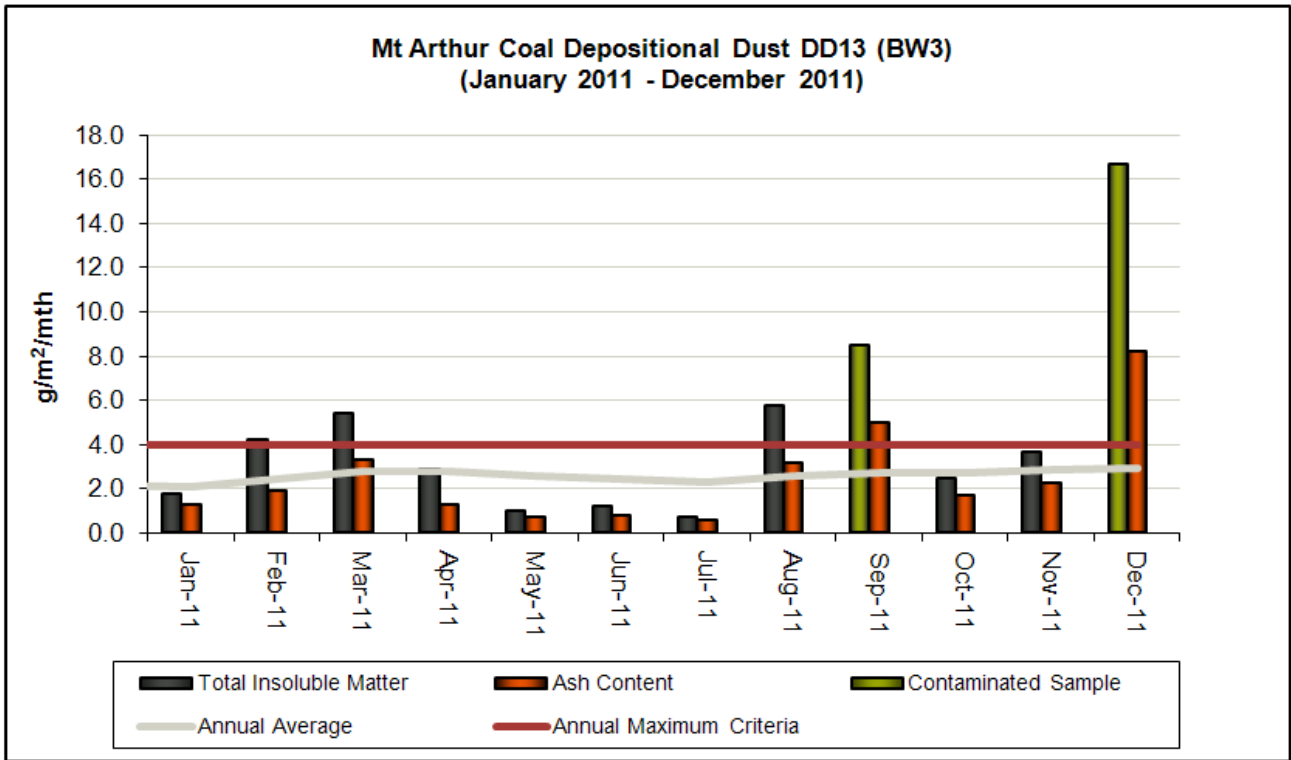




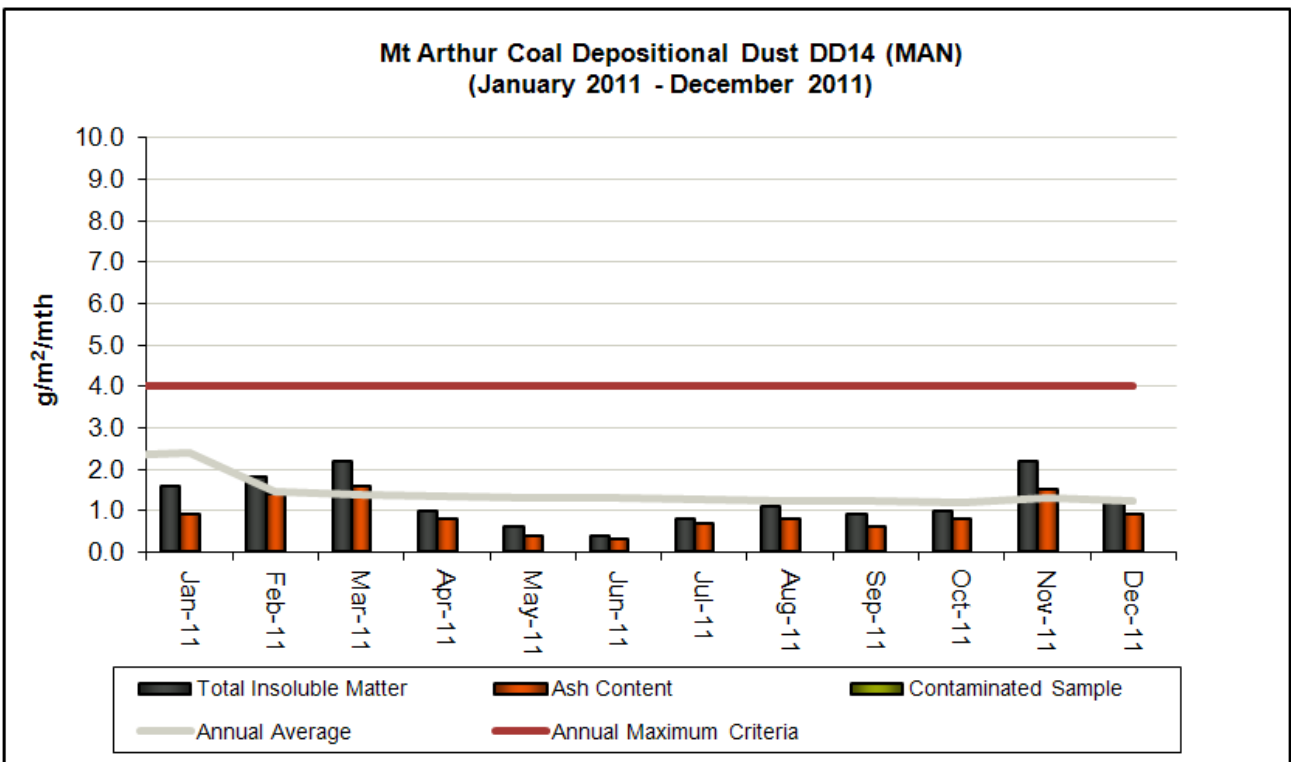
November - This monitor is located on Mt Arthur Coal owned land and is used for management purposes only; it is not representative of nearby privately-owned residences.

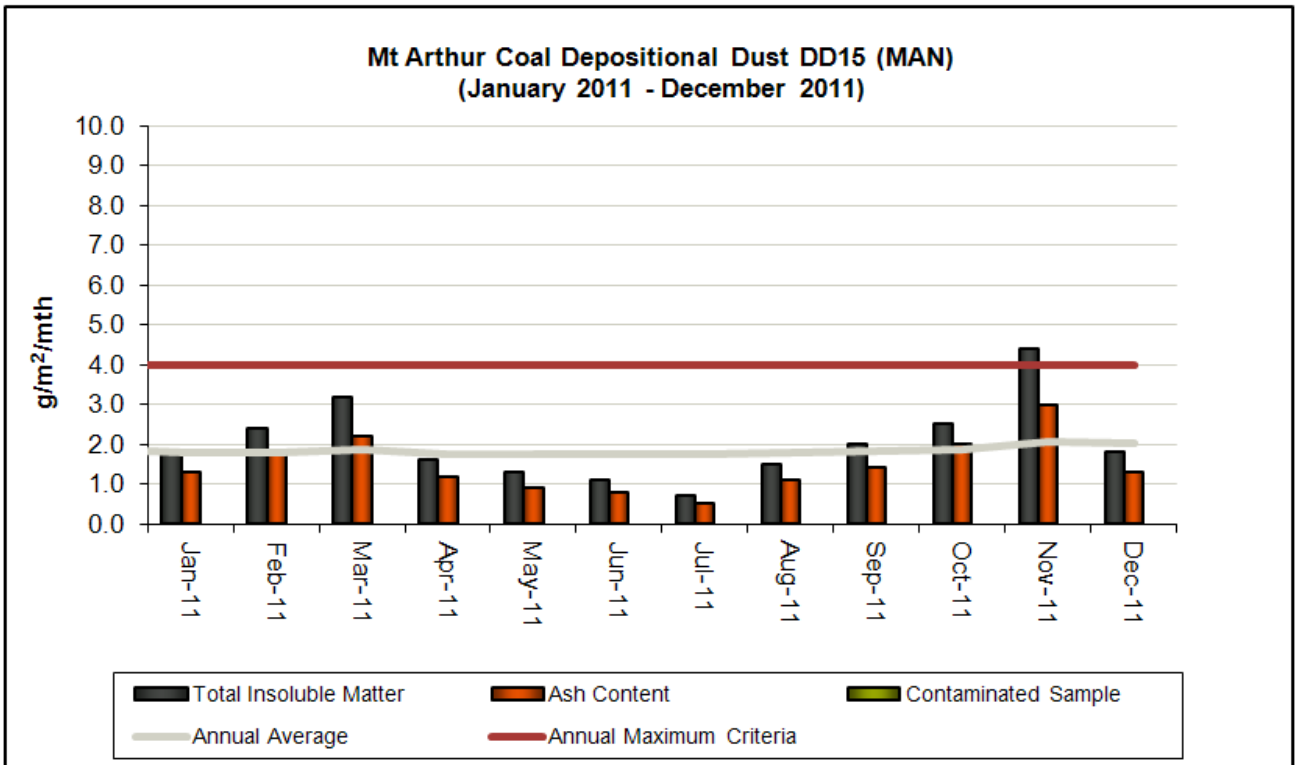


November - Independent contractor determined that the sample was contaminated with bird droppings.

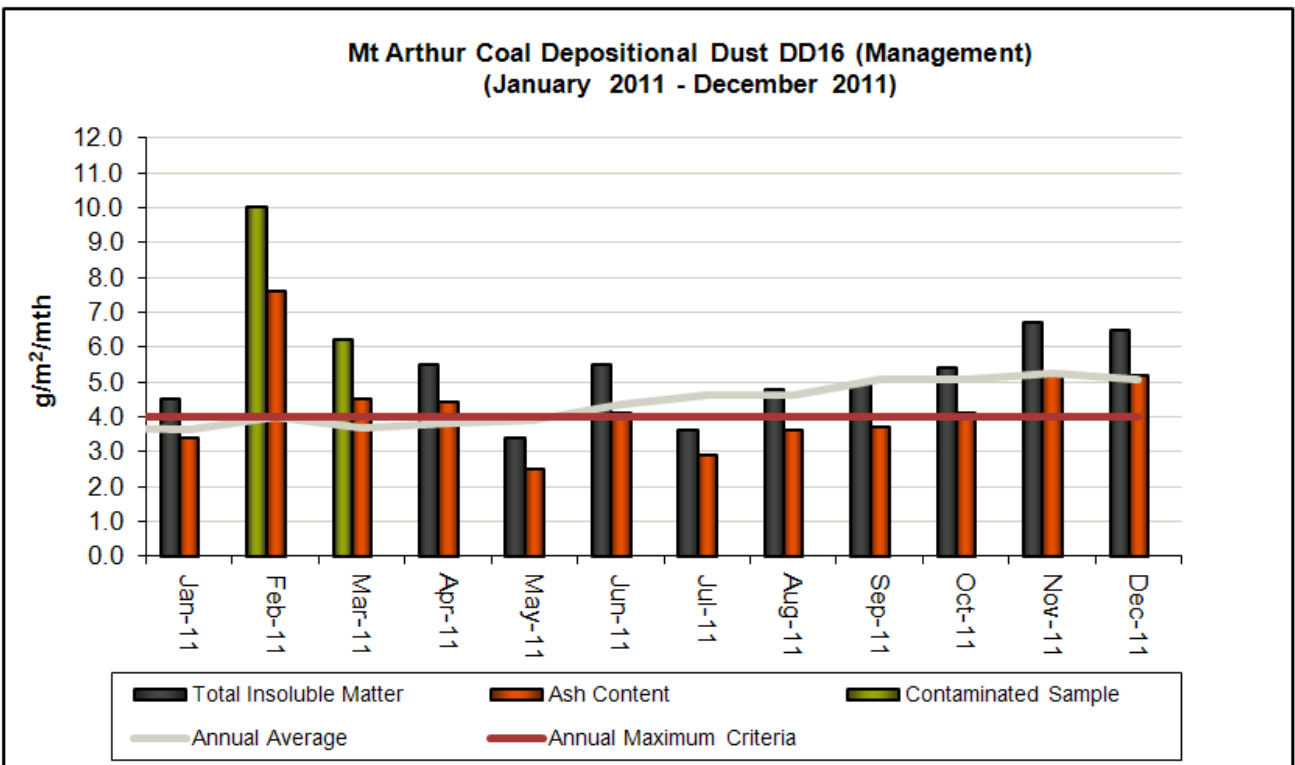


December - Independent contractor determined that the sample was contaminated with bird droppings and insects.





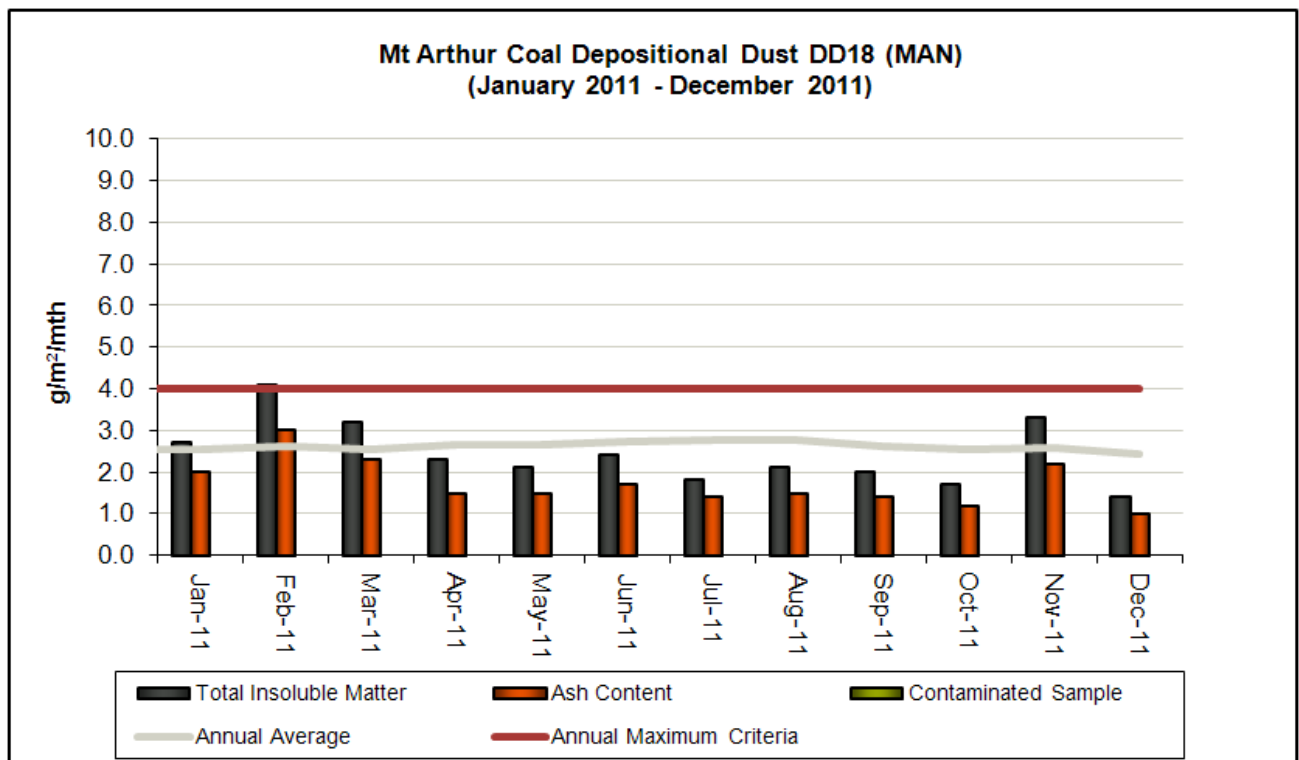
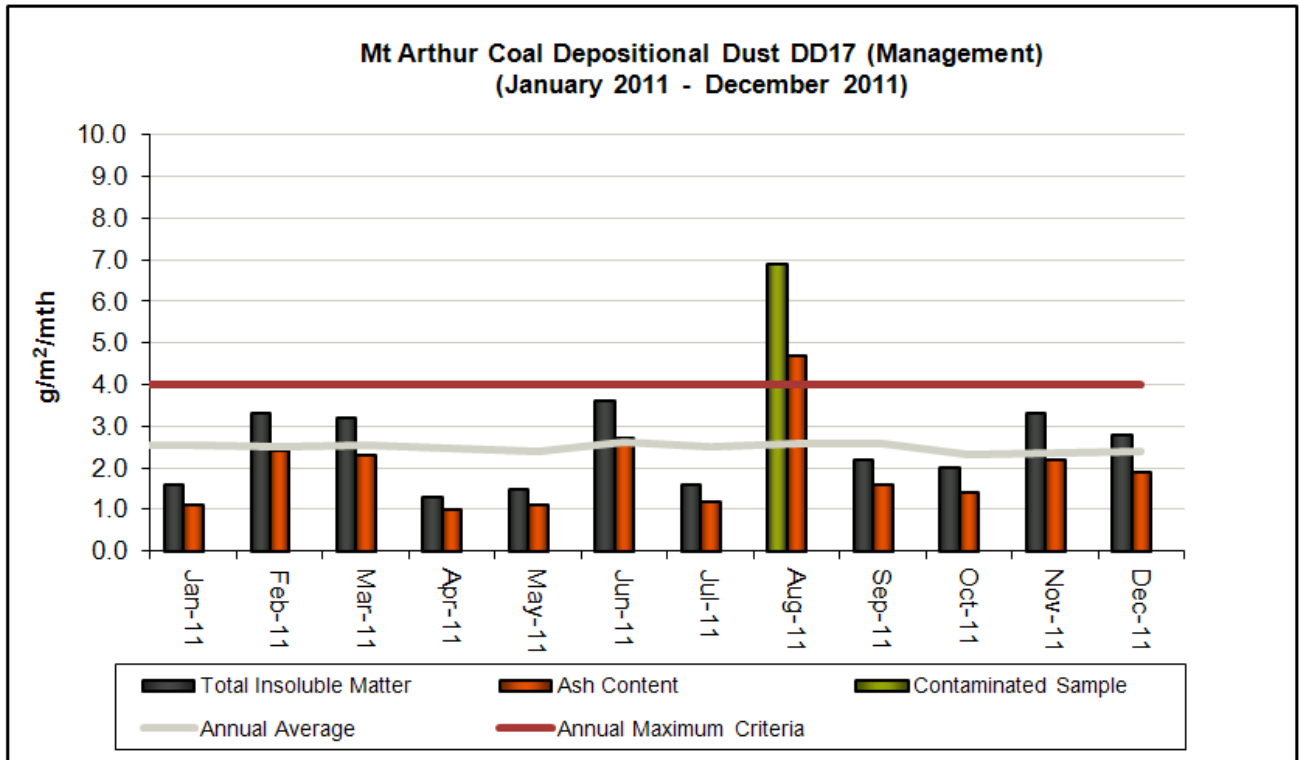
November - This monitor is located to the west of the mine. The predominant wind direction for November was east south east. Using DD02 as an upwind monitor, Mt Arthur Coal’s contribution was determined to be below relevant consent criteria.

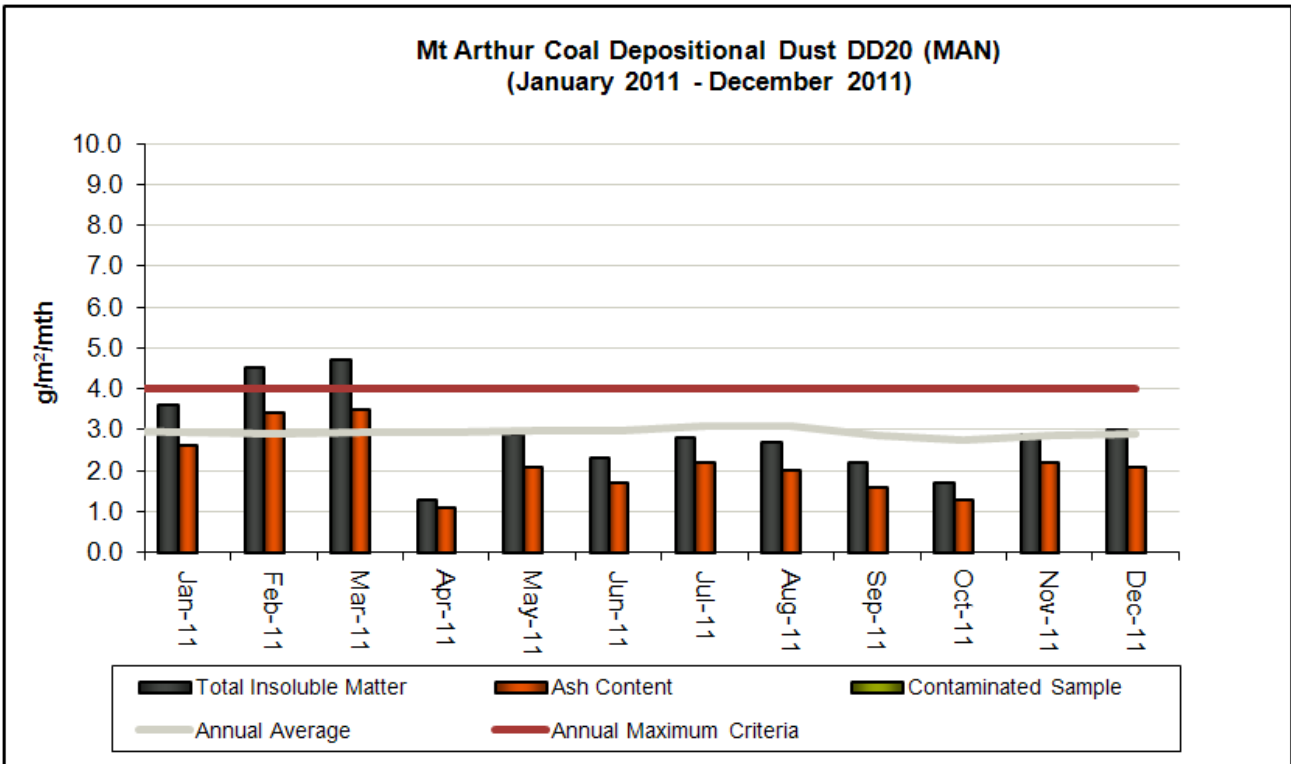
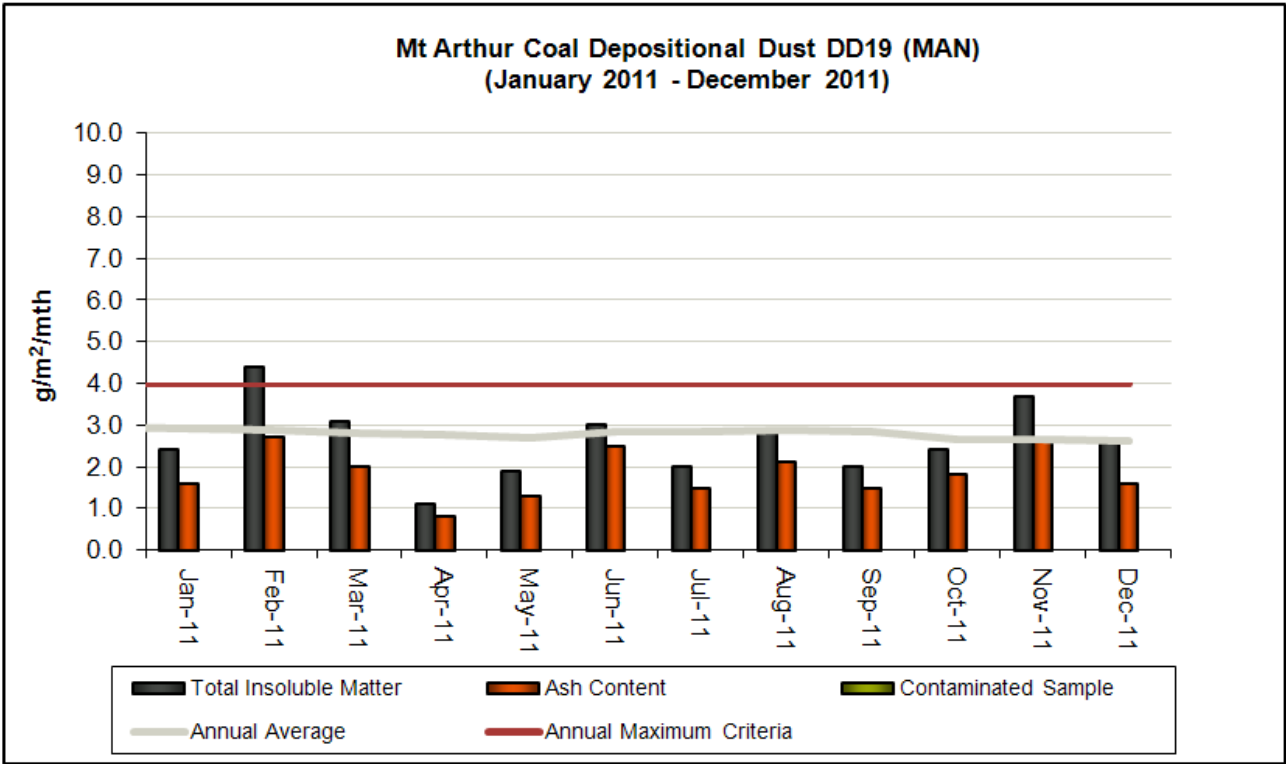


November – This monitor is located on Mt Arthur Coal owned land and is used for management purposes only; it is not representative of nearby privately-owned residences.

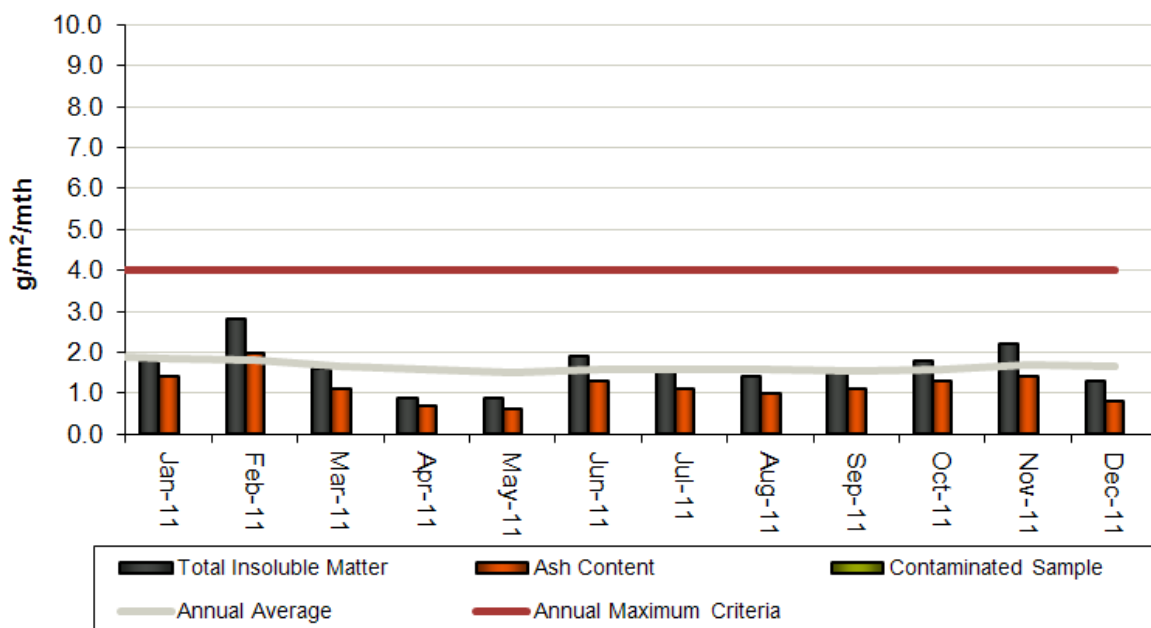
December – This monitor is located on Mt Arthur Coal owned land and is used for management purposes only; it is not representative of nearby privately-owned residences.

Annual Average– This monitor is located on Mt Arthur Coal owned land and is used for management purposes only, it is not representative of nearby privately-owned residences.





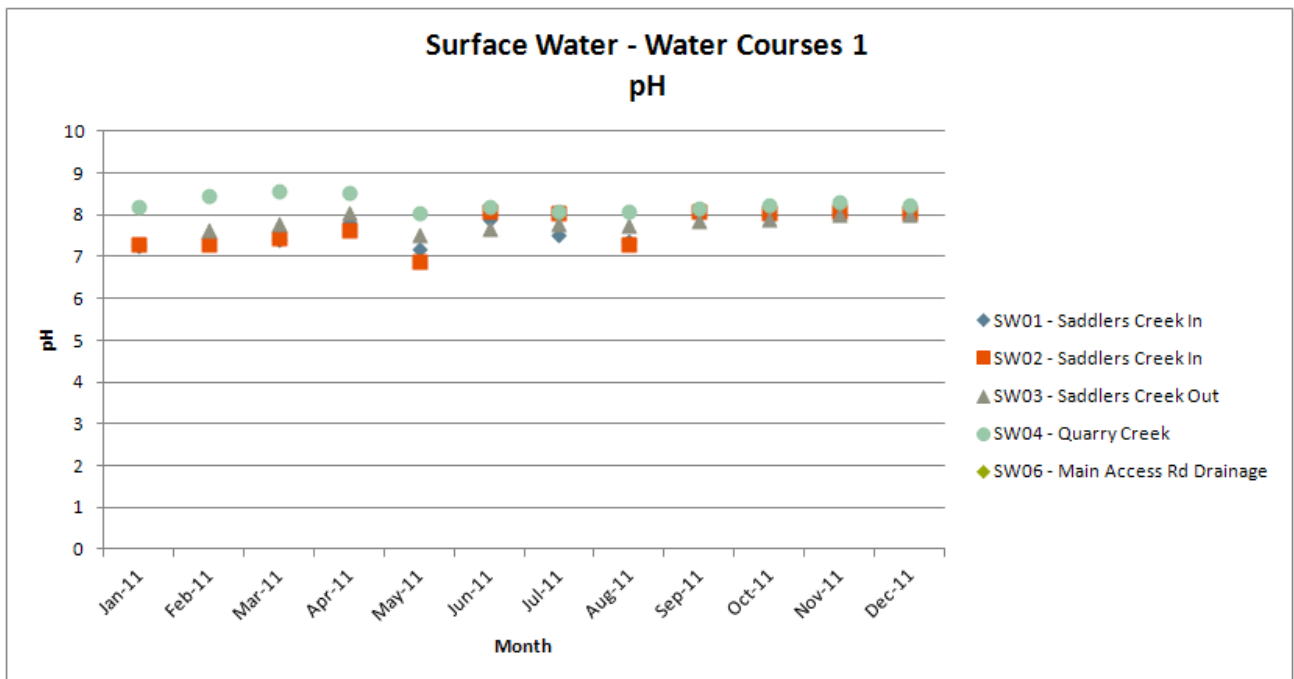
**Mt Arthur Coal Depositional Dust DD21 (MAN)
(January 2011 - December 2011)**

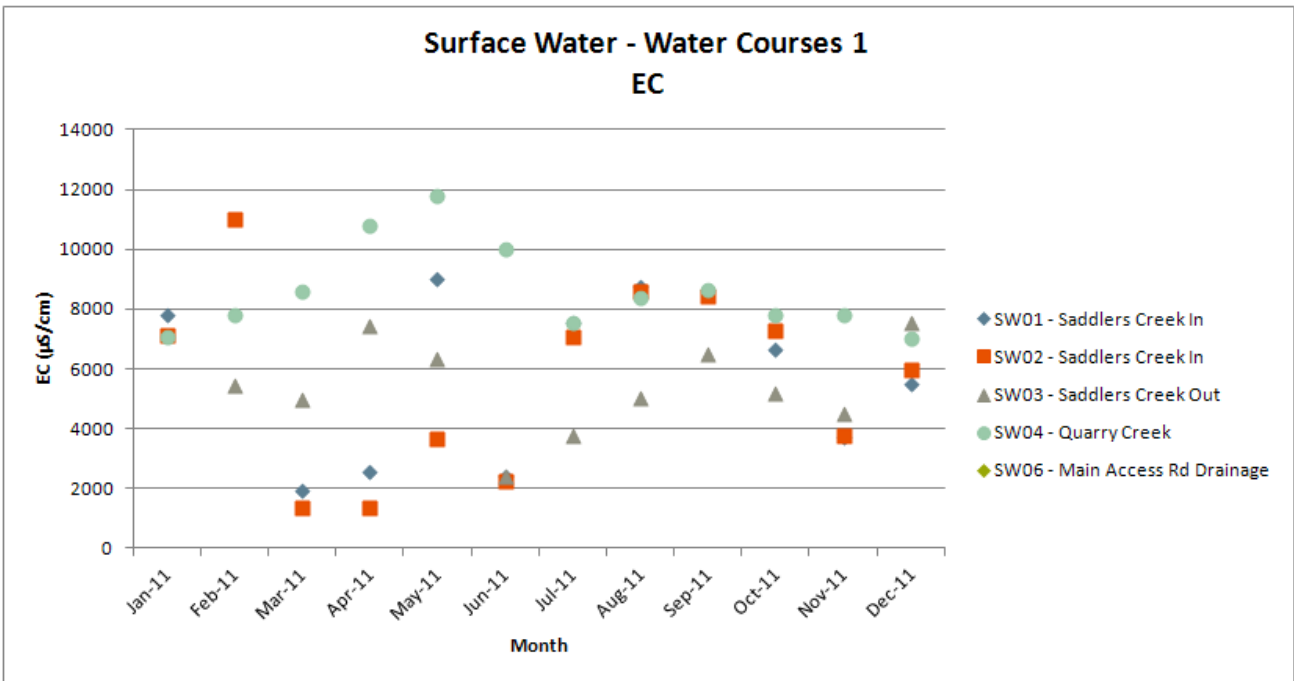
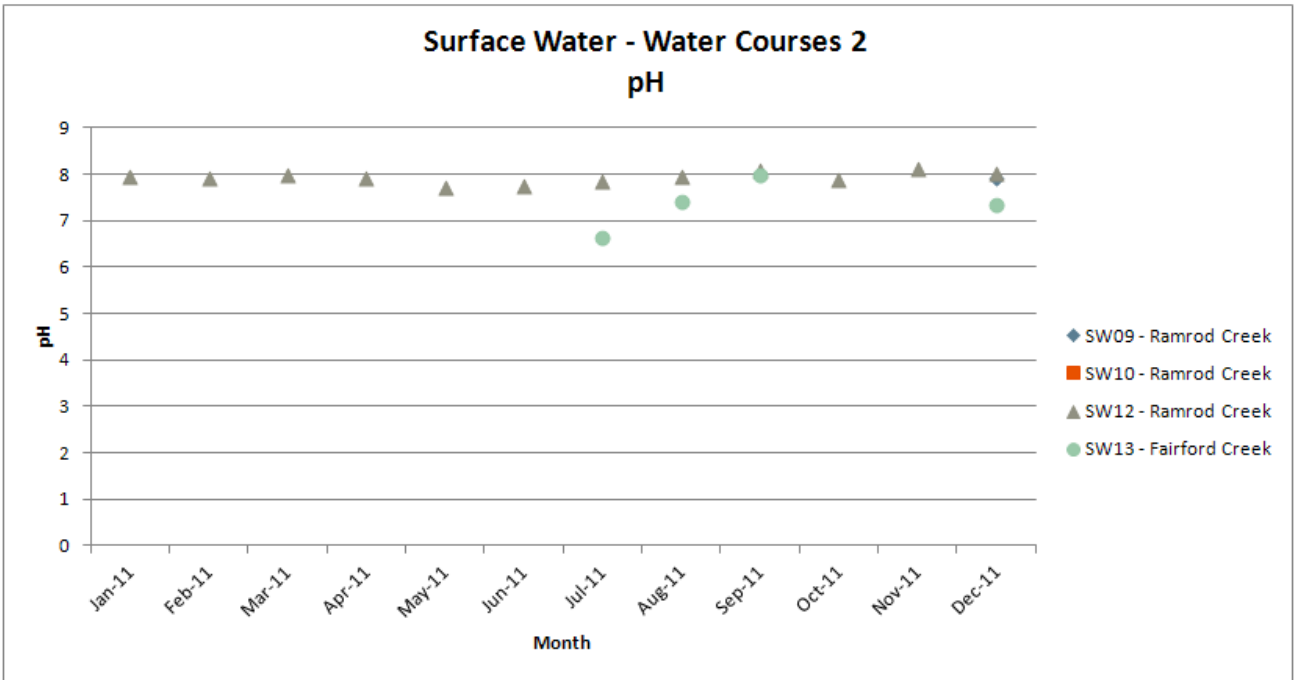


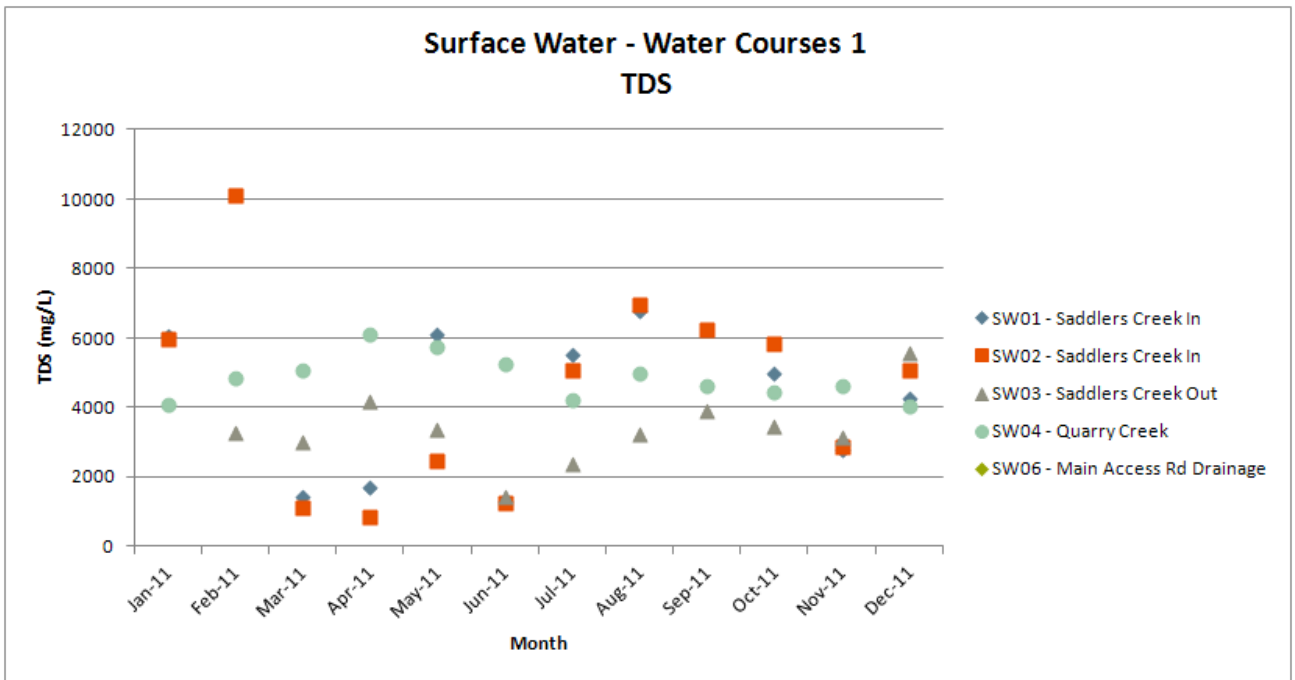
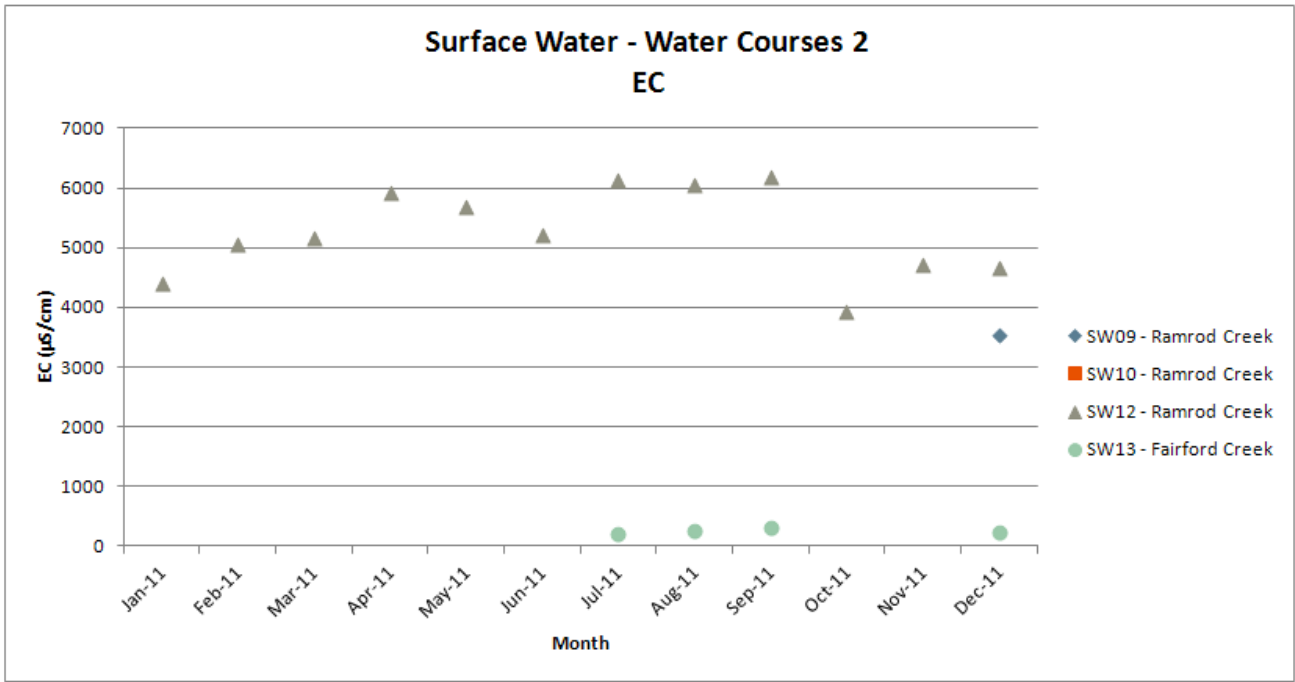
5. Surface Water Data (November – December 2011)

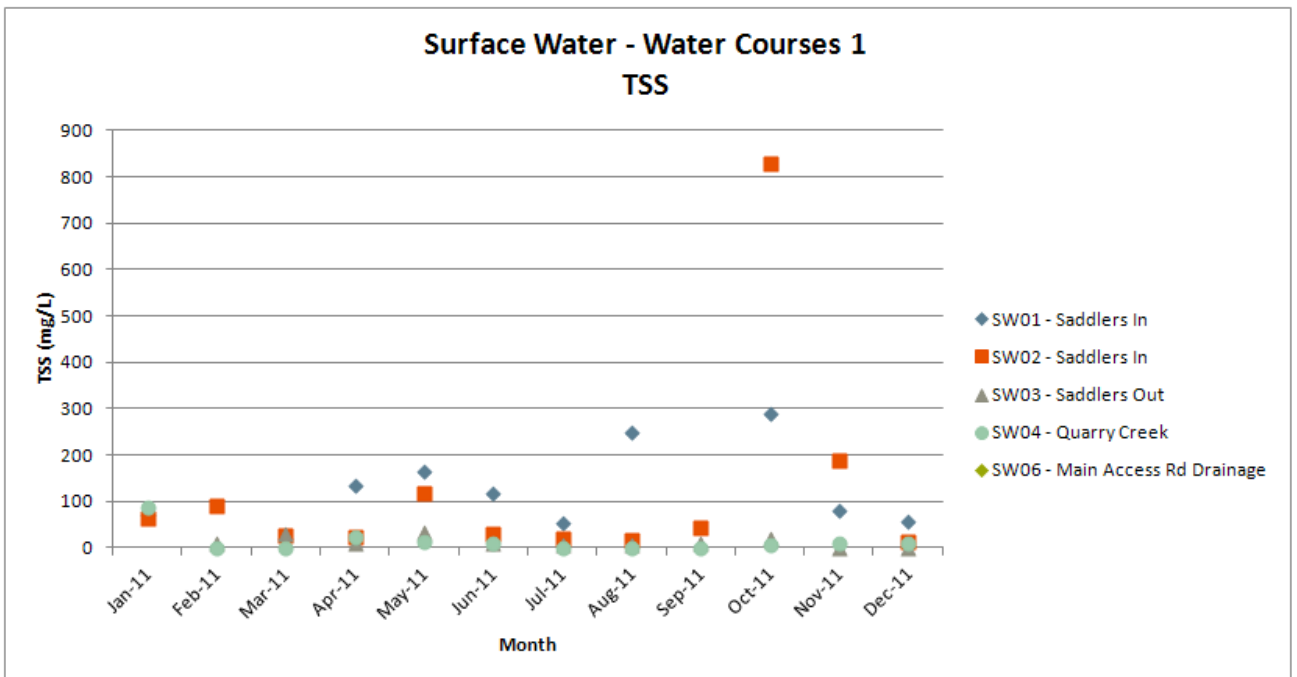
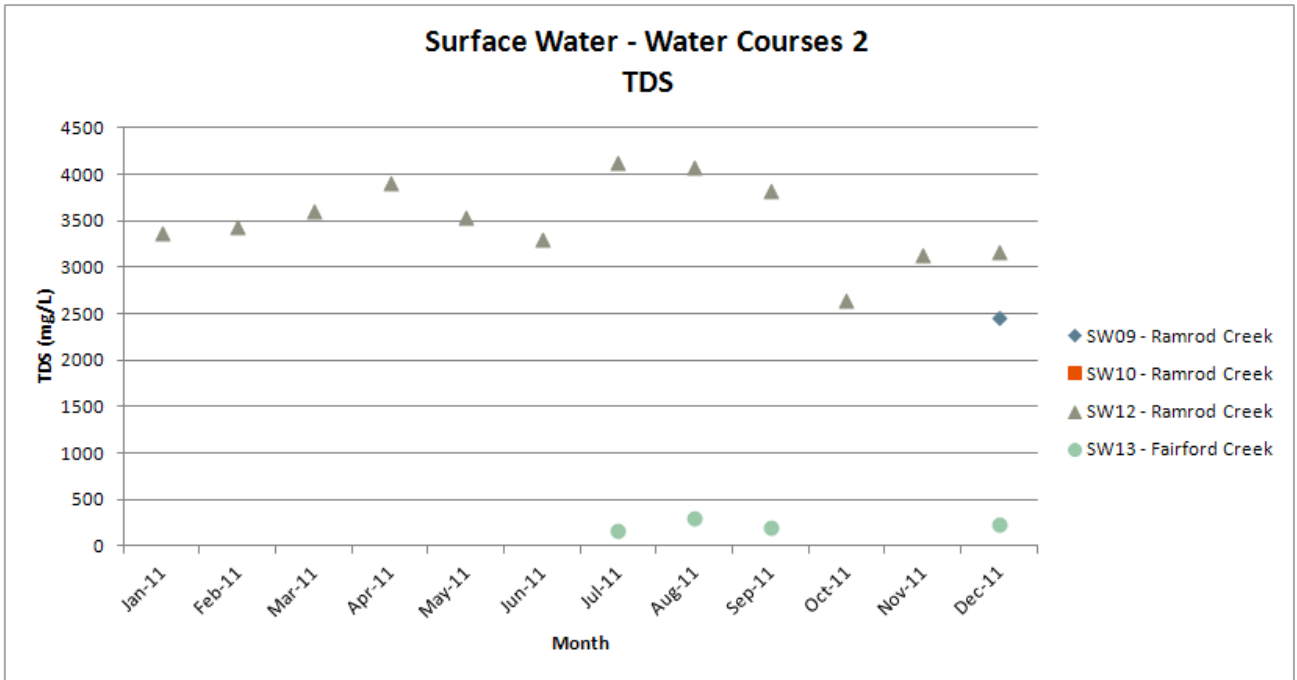
Surface Water Summary:

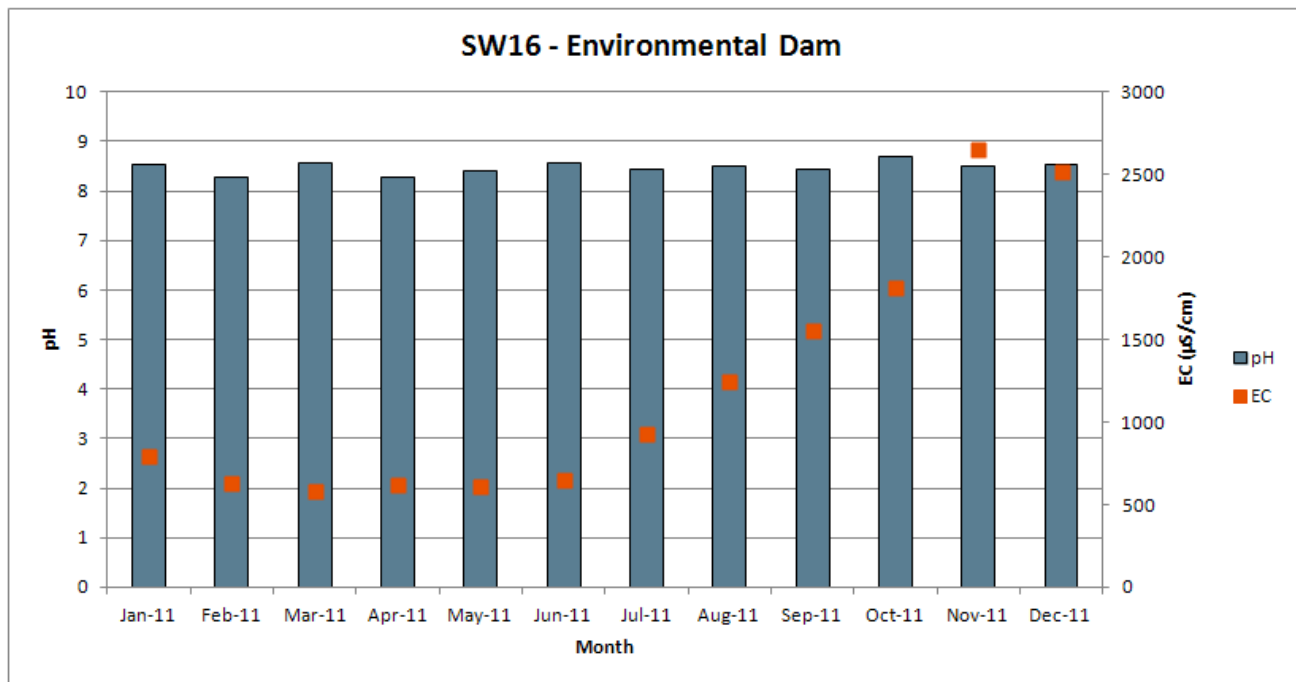
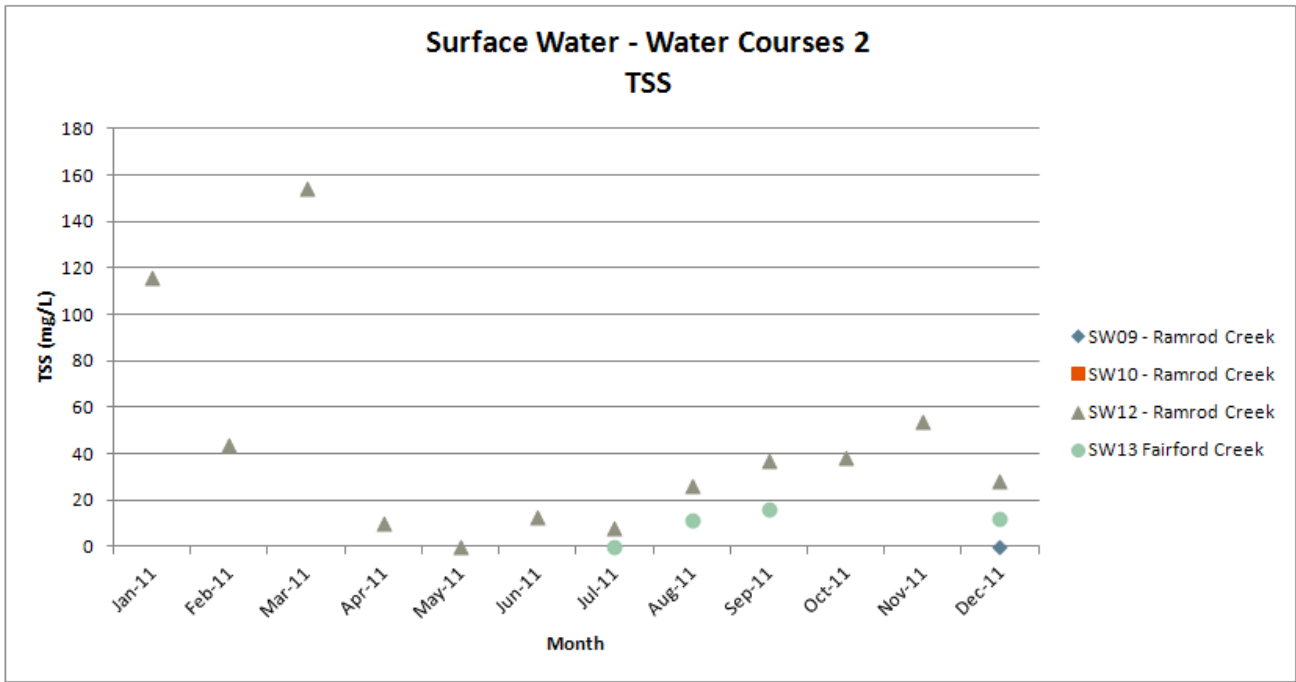
- There were no significant variations in the sampling period with the exception of a gradual increase in electrical conductivity (EC) at SW16.
- The gradual increase in EC at SW16 (the Environmental Dam) is due to increased pumping of water from the active mining area into the Environmental Dam. In conjunction with this there has been a deliberate decrease in water volume at the Environmental Dam to allow for more storage capacity.











6. Noise Data (November – December 2011)

Noise Criteria:

| Monitor Location | Day (LAeq(15min)) Limit | Evening (LAeq(15min)) Limit | Night (LAeq(15min)) Limit |
|---------------------------|-------------------------------|-----------------------------------|---------------------------------|
| Yammanie (NC03) | 39 | 38 | 37 |
| Sheppard Avenue (NC02) | 41 | 40 | 39 |
| South Muswellbrook (NC04) | 39 | 39 | 39 |
| Denman Road West (NC01) | 37 | 36 | 35 |

Noise Summary:

An exceedance is deemed to have occurred when eight high noise periods or more are identified for an assessment time period (day/evening/night) at a single unattended monitoring location during a rolling four week period. A high noise period is when more than 10 per cent of LP directional noise $L_{Aeq, 15 \text{ minute}}$ samples in the time period exceeds the limit by more than 2dB in suitable meteorological conditions.

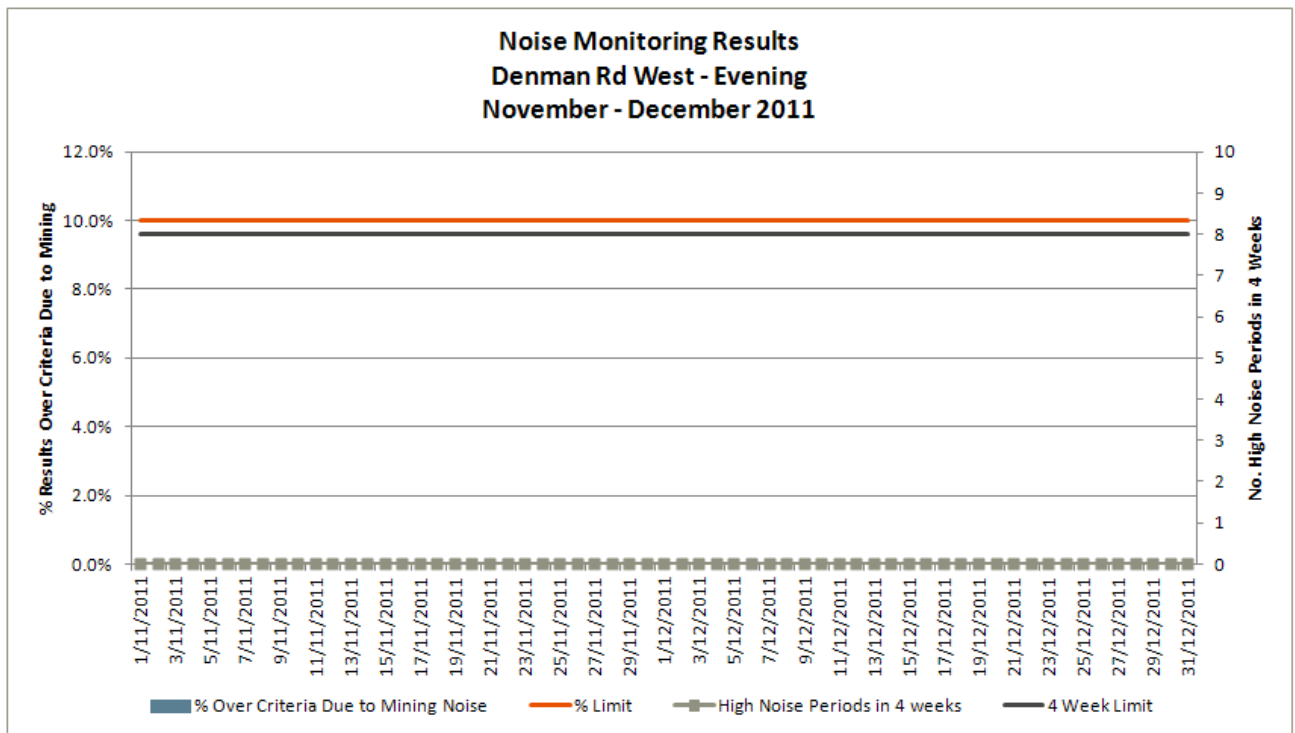
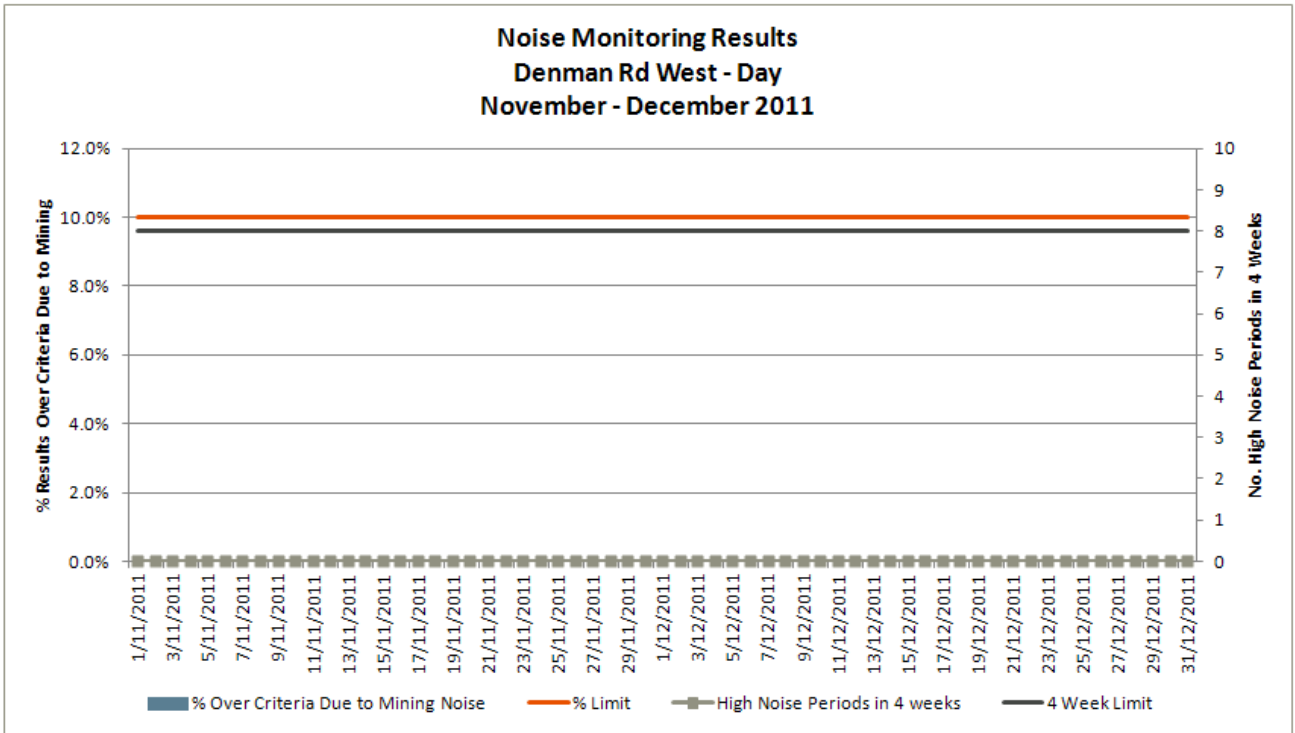
High noise periods were not recorded at any monitor with the exception of Denman Rd West where one high noise night was recorded. The number of high noise periods in four weeks remained under the limit of eight for all monitors during all noise periods (day, evening and night).

Noise data capture rates were 100 per cent at all monitors with the exception of Sheppard Avenue (NC02) which suffered hardware issues followed by software issues from 8 November 2011 to 28 December 2011. These issues have now been resolved.

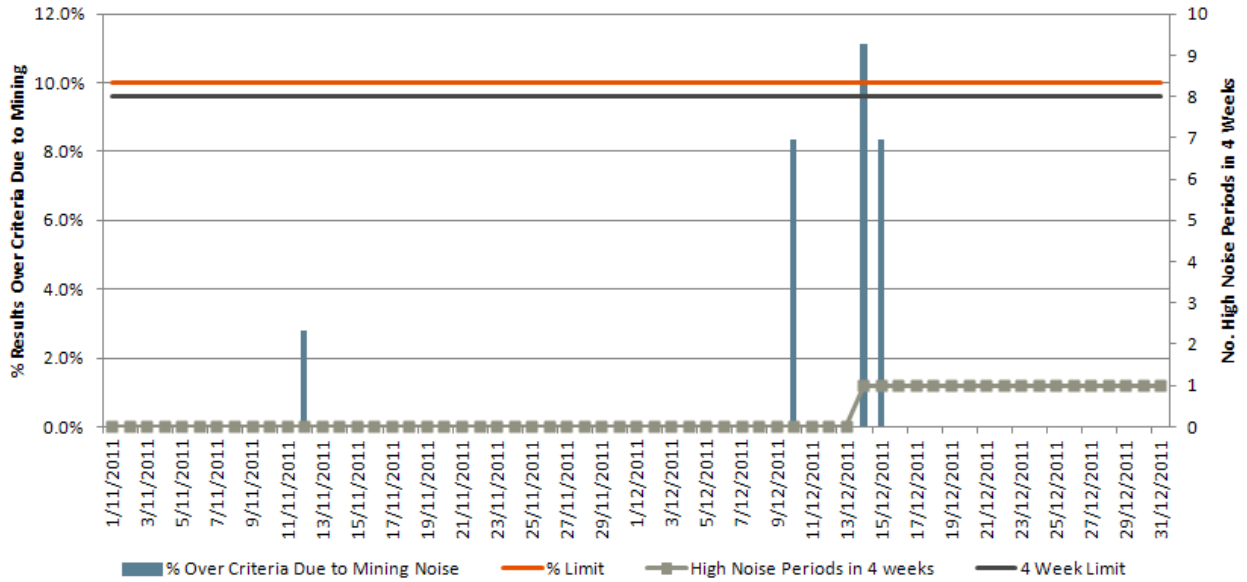
Noise Monitor Data Capture Rates:

| | Denman Road West | Sheppard Avenue | Yammanie | South Muswellbrook |
|---------------|------------------|-----------------|----------|--------------------|
| Nov-11 | 100% | 23% | 100% | 100% |
| Dec-11 | 100% | 12% | 100% | 100% |

Denman Rd West (NC01)

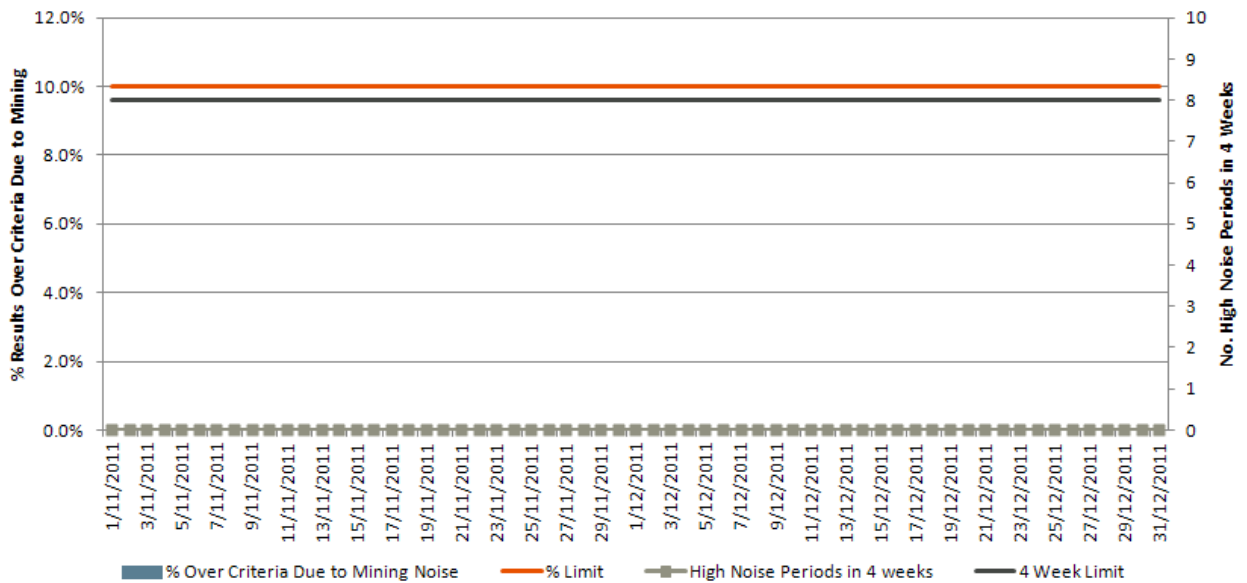


**Noise Monitoring Results
Denman Rd West - Night
November - December 2011**

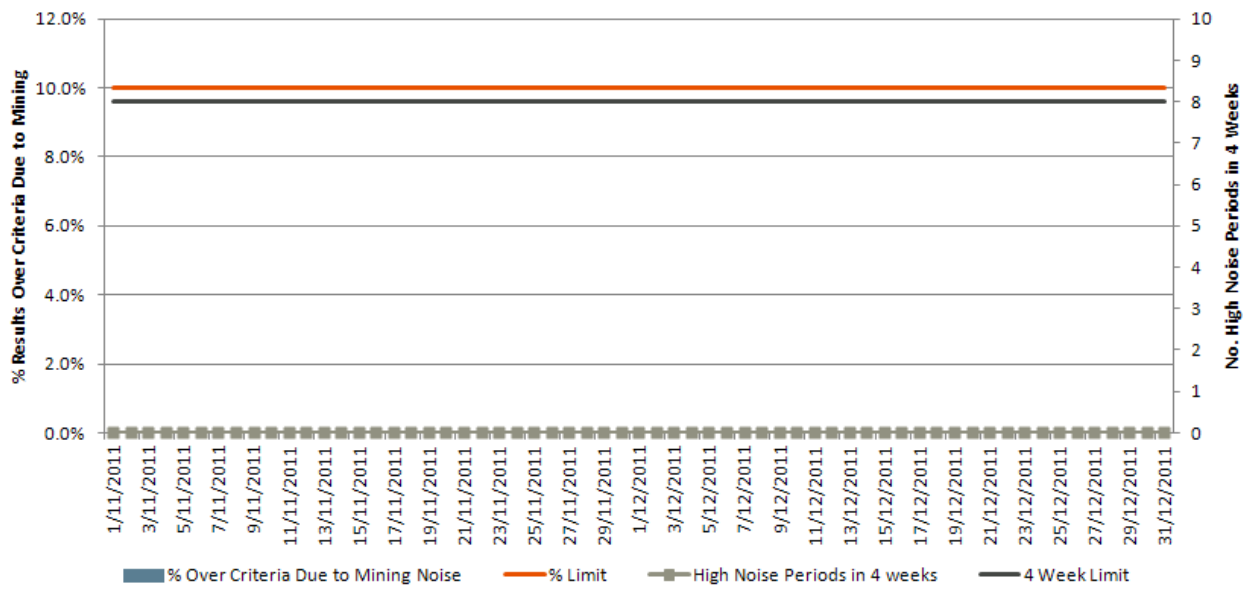


Sheppard Avenue (NC02)

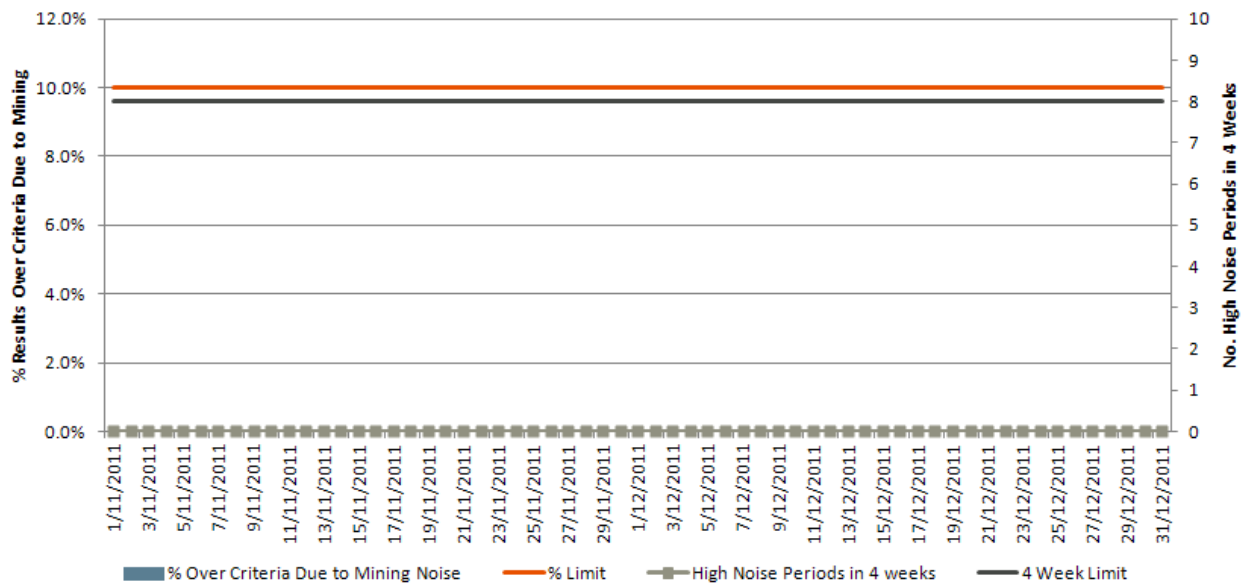
**Noise Monitoring Results
Sheppard Ave - Day
November - December 2011**



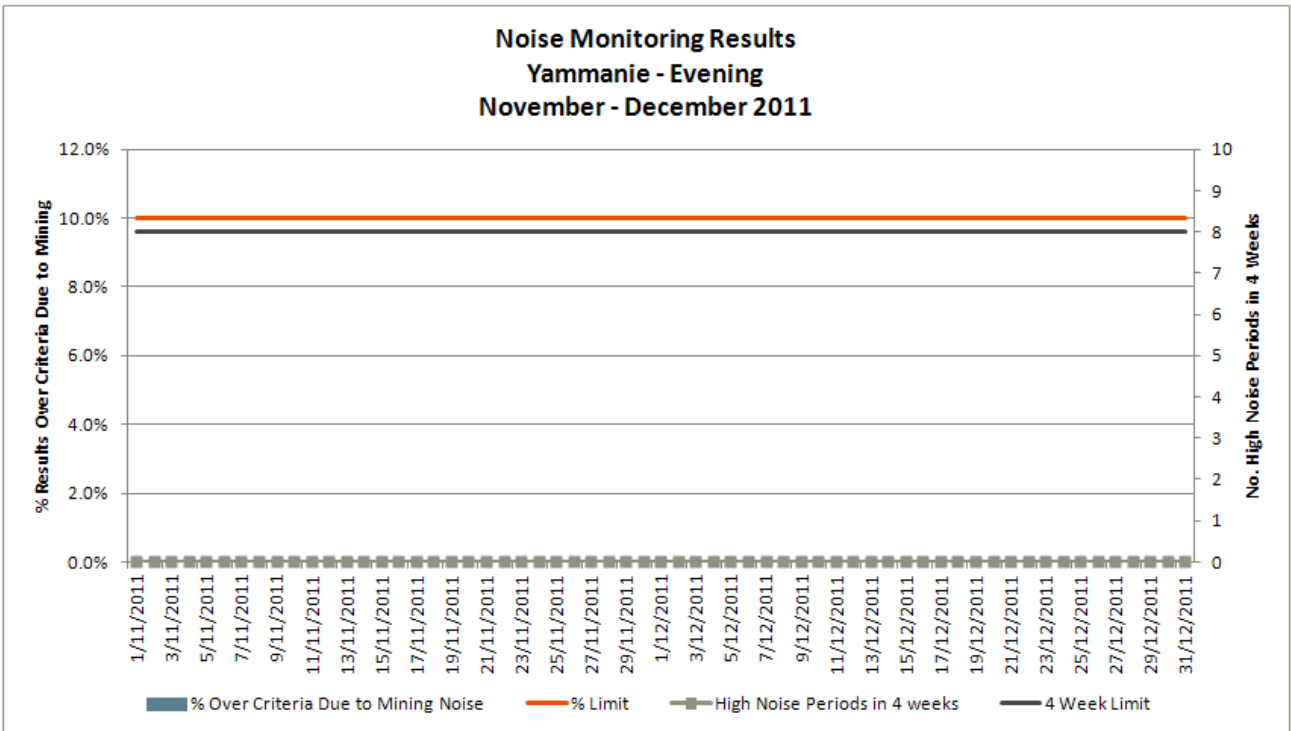
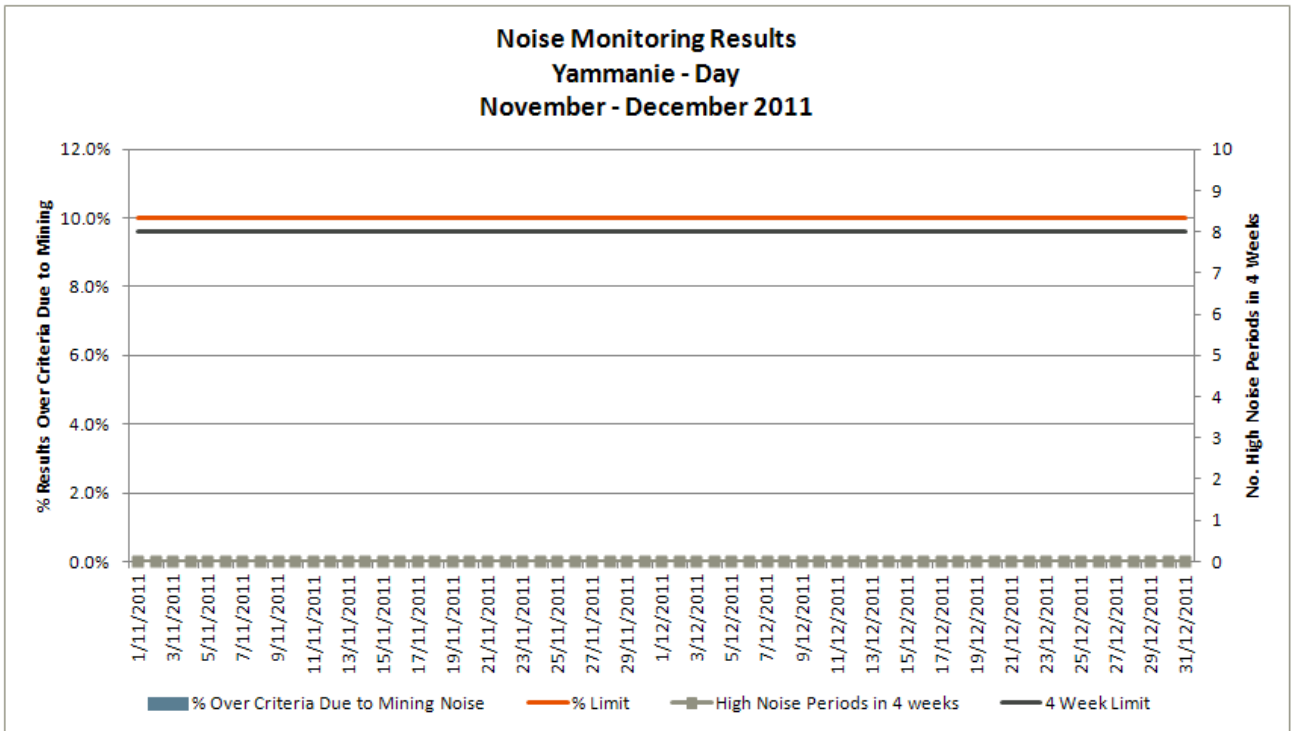
**Noise Monitoring Results
Sheppard Ave- Evening
November - December 2011**



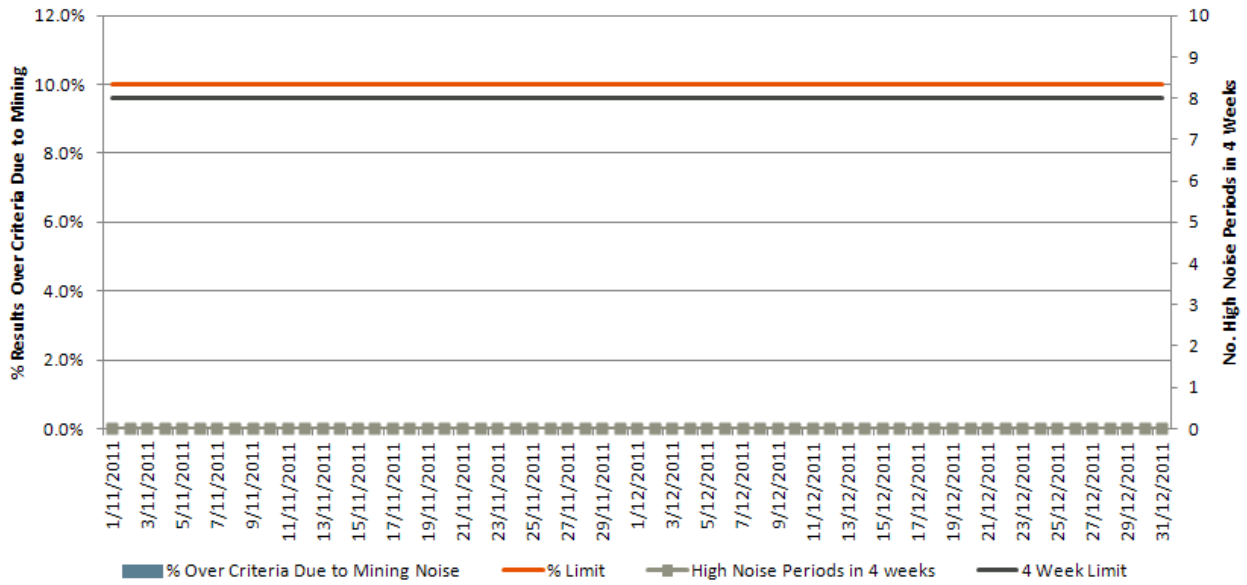
**Noise Monitoring Results
Sheppard Ave - Night
November - December 2011**



Yammanie (NC03)

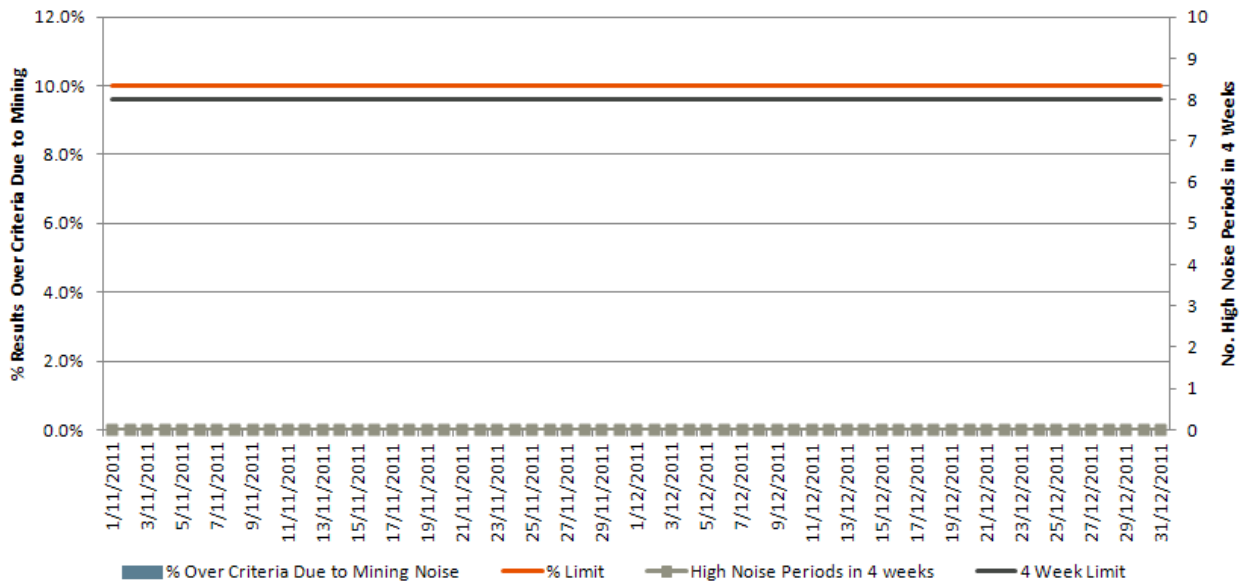


**Noise Monitoring Results
Yammanie - Night
November - December 2011**

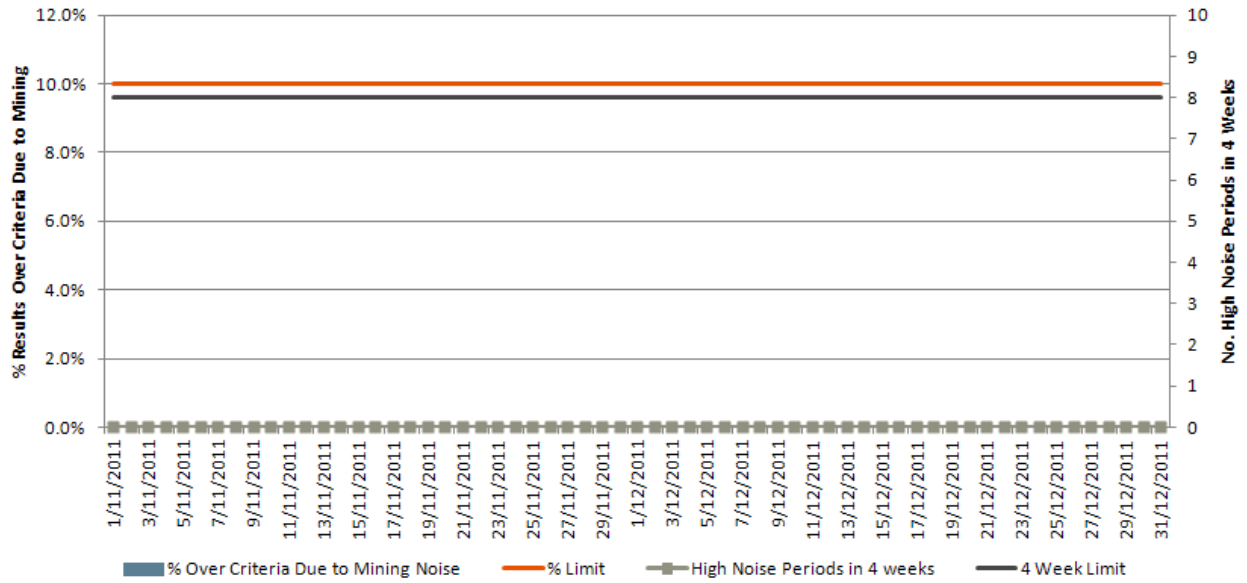


South Muswellbrook (NC04)

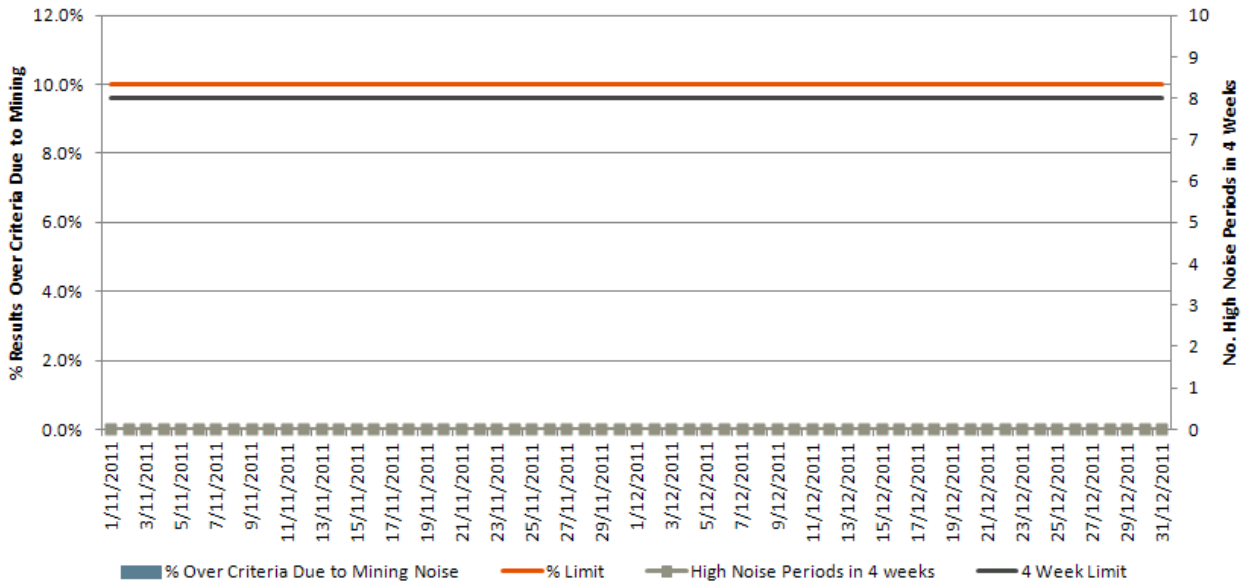
**Noise Monitoring Results
South Muswellbrook - Day
November - December 2011**



Noise Monitoring Results South Muswellbrook - Evening November - December 2011



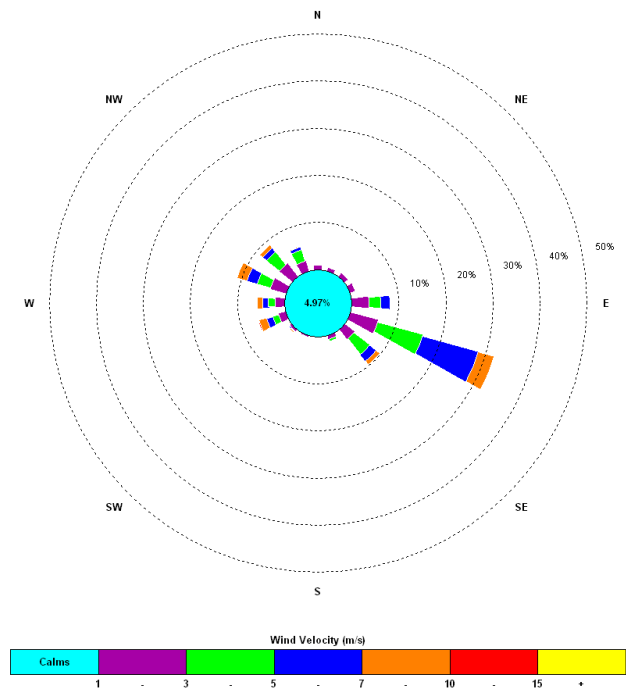
Noise Monitoring Results South Muswellbrook - Night November - December 2011



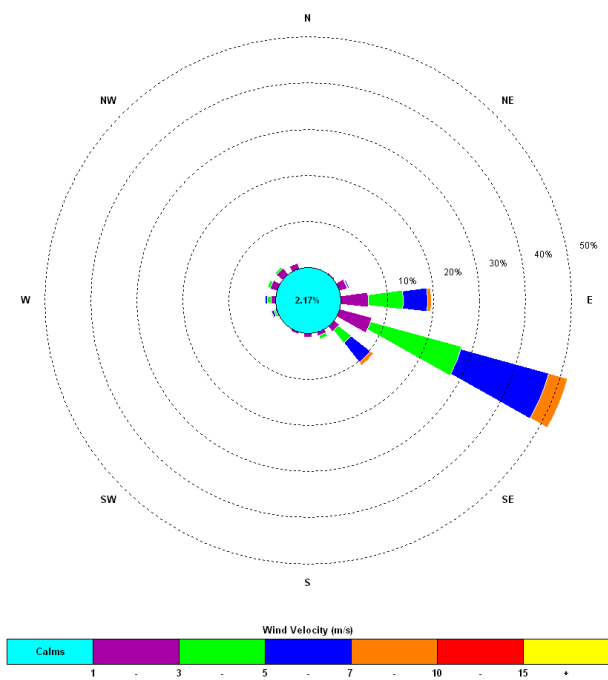
Weather Data (November – December 2011)

Monthly windroses for Mt Arthur Coal Industrial Area meteorological station

November



December



| | Temperature 2m (°C) | | | Windspeed (m/s) | | | Sigma Theta | | | Solar Radiation (W/m ²) | | | Rainfall (mm) | No. of days rain >1mm |
|----------------------|------------------------|---------|------|--------------------|---------|------|----------------|---------|-------|--|---------|--------|------------------|--------------------------------|
| | Min | Average | Max | Min | Average | Max | Min | Average | Max | Min | Average | Max | | |
| January ^a | 12.7 | 23.7 | 41.5 | 0.1 | 4.3 | 11.4 | 1.8 | 14.7 | 99.5 | 0.0 | 414.1 | 1844.8 | 37.8 | 15 |
| February | 12.5 | 23.7 | 38.9 | 0.0 | 4.2 | 11.1 | 2.5 | 15.4 | 97.1 | 0.0 | 341.5 | 1740.4 | 49.8 | 8 |
| March | 13.5 | 21.2 | 34.0 | 0.1 | 3.6 | 10.7 | 2.8 | 15.8 | 98.1 | 0.0 | 296.5 | 1568.0 | 46.8 | 7 |
| April | 8.5 | 17.0 | 26.9 | 0.1 | 3.4 | 14.9 | 2.6 | 14.4 | 96.5 | 0.0 | 248.3 | 1373.3 | 54.4 | 7 |
| May | -0.4 | 11.6 | 24.0 | 0.1 | 3.1 | 11.2 | 2.3 | 15.5 | 99.3 | 0.0 | 192.1 | 1123.0 | 80.8 | 6 |
| June | 1.7 | 10.4 | 19.9 | 0.1 | 4.7 | 13.1 | 2.3 | 11.0 | 93.2 | 0.0 | 177.1 | 1041.7 | 126.8 | 11 |
| July | 0.9 | 9.3 | 18.8 | 0.1 | 4.3 | 16.2 | 2.5 | 12.8 | 91.5 | 0.1 | 182.8 | 1055.2 | 10.8 | 2 |
| August | 1.4 | 10.5 | 23.6 | 0.1 | 3.2 | 11.7 | 2.3 | 14.9 | 102.7 | 0.0 | 210.0 | 1206.6 | 54.6 | 6 |
| September | 2.9 | 13.5 | 28.9 | 0.1 | 4.0 | 16.8 | 1.9 | 15.5 | 101.1 | 0.0 | 320.7 | 1513.5 | 89.0 | 6 |
| October | 4.1 | 15.0 | 27.7 | 0.0 | 3.4 | 11.3 | 1.9 | 16.7 | 99.4 | 0.0 | 332.5 | 1650.2 | 77.4 | 9 |
| November | 5.7 | 19.0 | 28.9 | 0.1 | 4.1 | 12.0 | 1.9 | 15.4 | 102.9 | 0.0 | 335.8 | 1682.6 | 162.2 | 7 |
| December | 8.4 | 17.0 | 28.0 | 0.0 | 4.3 | 9.3 | 0.0 | 13.8 | 96.4 | 0.0 | 343.3 | 1840.5 | 27.4 | 6 |

^a Rainfall data sourced from Denman Road West meteorological station due to problem with the rainfall sensor at the Industrial Area meteorological station. The Denman Rd West meteorological station is not operated in accordance with Australian Standards