

7.0 ENVIRONMENTAL ASSESSMENT

This section contains a description of the existing environment and a comprehensive and relevant assessment of the potential environmental issues/impacts relevant to the Rocglen Extension Project, including cumulative impacts.

In terms of potential cumulative impacts, it is worth reiterating that the Project does not involve any change to the coal production rate or mining intensity, methods of coal extraction, hours of operation, coal handling and processing techniques, site servicing or general waste management. The only change to the current mine fleet will be the addition of one 1250 excavator in the pit to enable cleaner and more efficient mining of coal (smaller machine). This, along with the facts that the nearest operational mine site is approximately 15 km from Rocglen and the configuration of the Project has been refined to maximise the use of existing infrastructure and minimise expansion of the original Project Site, indicates that the Rocglen Extension Project poses minimal risk for significant cumulative impacts over and above those approved originally under PA 06_0198, particularly in relation to cumulative impacts associated with air quality, noise, blasting and vibration, traffic and visual amenity.

7.1 Land Resources

GSSE (2010a) assessed land resource issues associated with the Rocglen Extension Project as part of the *Soil Survey and Land Resource Assessment* contained in **Appendix G**. The findings of the soil survey, including recommended soil stripping and stockpiling methodology, are summarised in **Sections 3.12** and **5.4**. GSSE's assessment of land capability and agricultural suitability is summarised below.

7.1.1 Land Capability Assessment

The land capability assessment for the Project Site was conducted by GSSE (2010a) in accordance with the former NSW Soil Conservation Service's (now part of NSW Government's Land and Property Management Authority) rural land capability classification system. This system classifies land on the basis of an increasing soil erosion hazard and decreasing versatility of use. It recognises three types of land uses, being land suitable for cultivation, land suitable for grazing and land not suitable for rural production.

The system allows for land to be allocated into eight possible classes, as described in **Table 20**, with land capability decreasing progressively from Class I to Class VIII.

Table 20 – Rural Land Capability Classes

| Land Class | Land Capability | Land Definition |
|------------|---------------------------------|--|
| Class I | Regular Cultivation | No erosion control requirements |
| Class II | Regular Cultivation | Simple requirements such as crop rotation and minor strategic works |
| Class III | Regular Cultivation | Intensive soil conservation requirements such as contour banks and waterways |
| Class IV | Grazing, occasional cultivation | Simple practices such as stock control and fertiliser application |
| Class V | Grazing, occasional cultivation | Intensive soil conservation requirements such as contour ripping and banks |
| Class VI | Grazing only | Managed to ensure ground cover is maintained |
| Class VII | Unsuitable for rural production | Green timber maintained to control erosion |
| Class VIII | Unsuitable for rural production | Should not be cleared, logged or grazed |

Source: Soil conservation Service of NSW, 1986 (as cited in GSSE 2010a)

These capability classifications identify limitations on the use of the land as a result of the interaction between the physical resources and a specific land use. The method of land capability assessment takes into account a range of factors including climate, soils, geology, geomorphology, soil erosion, topography and the effects of past land uses.

GSSE (2010a) assessed the land capability within the Project Site during the field survey and using the laboratory analysis results of collected soil samples. The *Soils and Land Capability Assessment* prepared by Geoff Cunningham Natural Resource Consultants (2007a) for the original project application approved under PA 06_0198 was also used as a reference for pre-disturbance land capability.

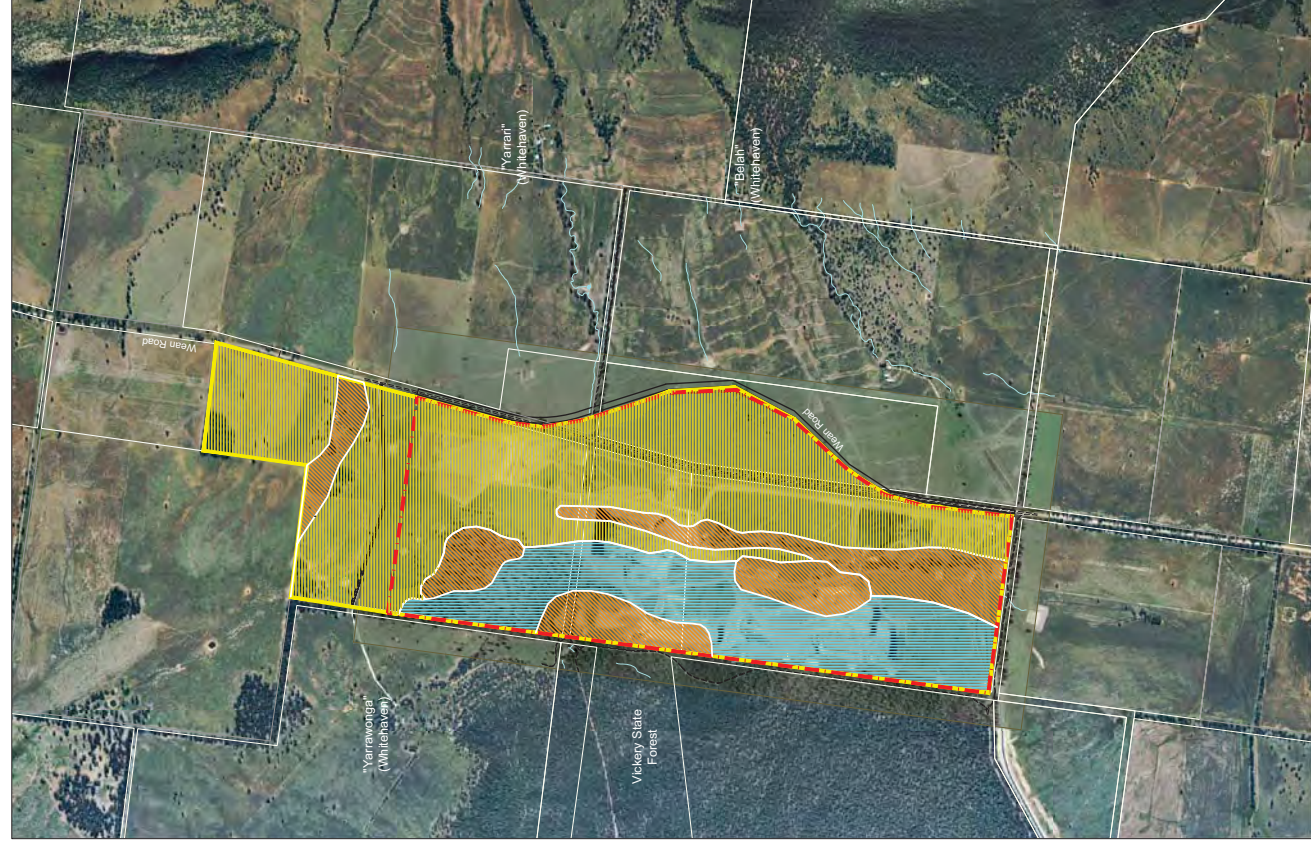
The pre-mining and post-mining rural land capability classes within the Project Site are illustrated on **Figure 22** and summarised in **Table 21**.

Table 21 – Pre and Post-Mining Land Capability

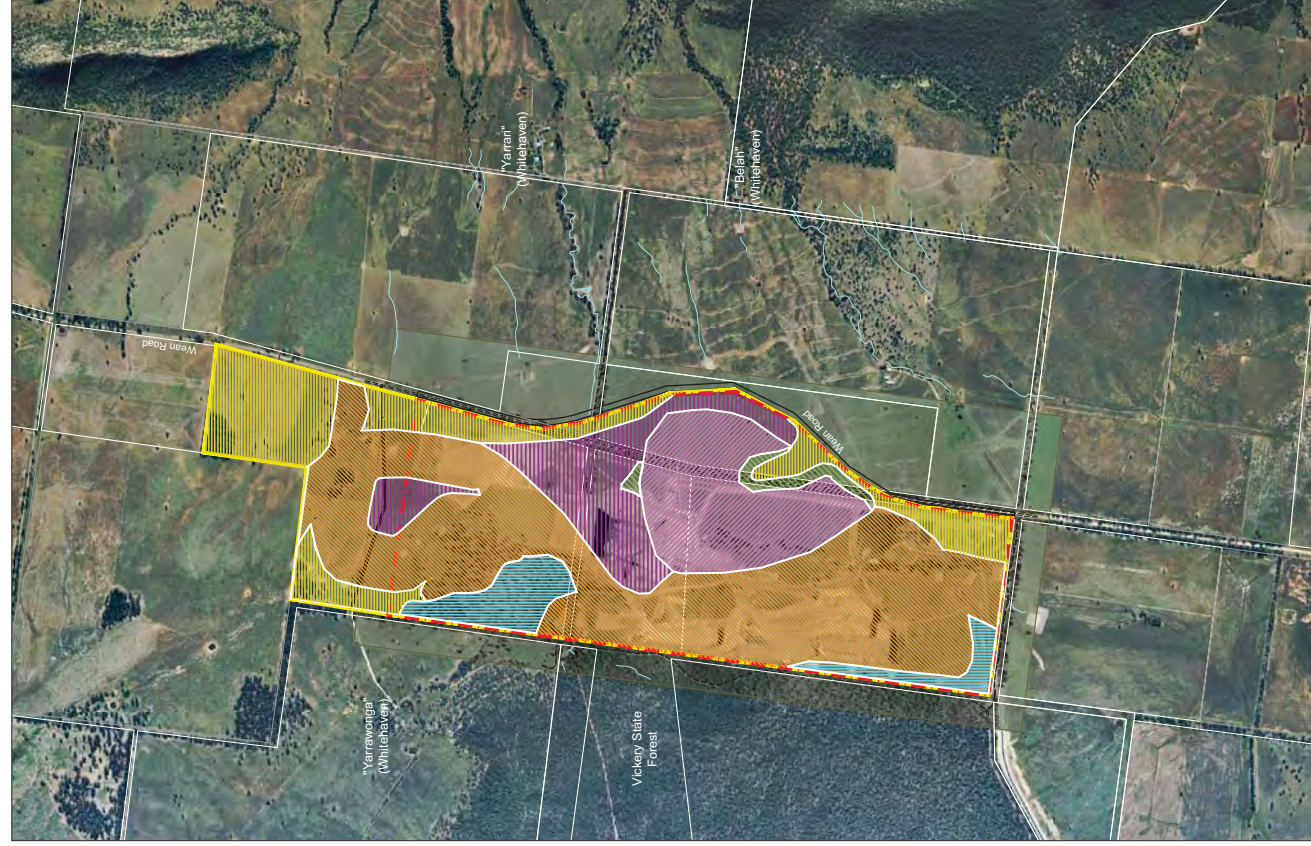
| Land Class | Pre-Mining Area | | Post-Mining Area | |
|---------------|-----------------|-------------|------------------|-------------|
| | Hectares | Percent (%) | Hectares | Percent (%) |
| Class I | 0 | 0 | 0 | 0 |
| Class II | 0 | 0 | 0 | 0 |
| Class III | 265 | 58 | 82 | 18 |
| Class IV | 0 | 0 | 57 | 12 |
| Class V | 102 | 22 | 29 | 6 |
| Class VI | 93 | 20 | 217 | 47 |
| Class VII | 0 | 0 | 68 | 15 |
| Class VIII | 0 | 0 | 7 | 2 |
| Totals | 460 | 100 | 460 | 100 |

Based on topographic, climatic and soils factors, GSSE (2010a) determined that the pre-mining land capability within the Project Site predominately comprised Class III land suitable for regular cultivation. Large areas have also been determined to be Class V land suitable for grazing with occasional cultivation and Class VI land suitable for grazing only.

Based on the soil resources available within the Project Site and proposed post-mining landform (see **Sections 5.4** and **5.7**, respectively), GSSE (2010a) predicts that the post-mining land capability within the Project Site will predominately comprise Classes III, IV, V, VI and VII. In accordance with **Table 20**, these land classes range from being suitable for regular cultivation to unsuitable for rural production. There is also a small area around the eastern margin of the final void (highwall) determined to be Class VIII land.



PRE-MINING



POST-MINING

- LEGEND**
- Project Site Boundary
 - Mine Lease Boundary
 - Class III
 - Class IV
 - Class V
 - Class VI
 - Class VII
 - Class VIII

0 400 800m

7.1.2 Agricultural Suitability Assessment

The agricultural suitability assessment for the Project Site was conducted by GSSE (2010a) in accordance with the former NSW Agriculture and Fisheries' (now part of the I&I NSW) agricultural suitability classification system. The classification system is based upon the effects of climate, topography and soil characteristics, the cultural and physical requirements for various crops and pastures, and existing socio-economic factors including local infrastructure and geographic location. These factors combine to determine the productive potential of the land and its capacity to produce crops, pastures and livestock.

The system comprises the five classes listed in **Table 22**, which provide a ranking according to the land's productivity for a wide range of agricultural activities with the objective of determining the potential for crop growth within certain limits.

Table 22 – Agricultural Suitability Classes

| Land Class | Agricultural Suitability | Land Definition |
|------------|--|--|
| Class 1 | Highly productive land suited to both row and field crops | Arable land suitable for intensive cultivation where constraints to sustained high levels of agricultural production are minor or absent |
| Class 2 | Highly productive land suited to both row and field crops | Arable land suitable for regular cultivation for crops but not suited to continuous cultivation |
| Class 3 | Moderately productive lands suited to improved pasture and to cropping within a pasture rotation | Grazing land or land well suited to pasture improvement. It may be cultivated or cropped in rotation with pasture |
| Class 4 | Marginal lands not suitable for cultivation and with a low to very low productivity for grazing | Land suitable for grazing but not for cultivation. Agriculture is based on native or improved pastures established using minimum tillage |
| Class 5 | Marginal lands not suitable for cultivation and with a low to very low productivity for grazing | Land unsuitable for agriculture or at best suited only to light grazing |

Source: NSW Agricultural and Fisheries, 1990 (as cited in GSSE 2010a)

Again, GSSE (2010a) assessed the agricultural suitability within the Project Site during the field survey and using the laboratory analysis results of collected soil samples. The *Soils and Land Capability Assessment* prepared by Geoff Cunningham Natural Resource Consultants (2007a) for the original project application approved under PA 06_0198 was also used as a reference.

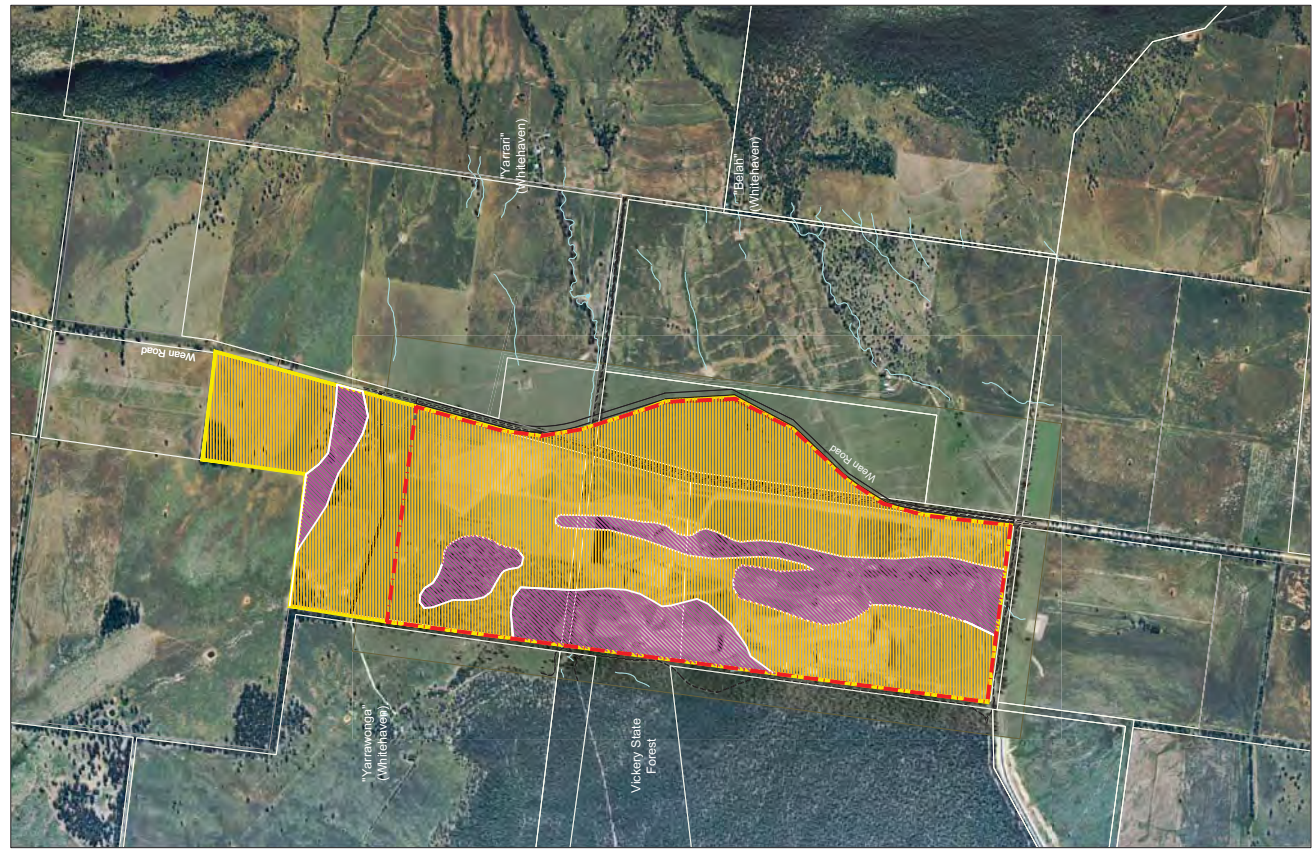
The pre-mining and post-mining agricultural suitability classes within the Project Site are illustrated on **Figure 23** and summarised in **Table 23**.

Table 23 – Pre and Post-Mining Agricultural Suitability

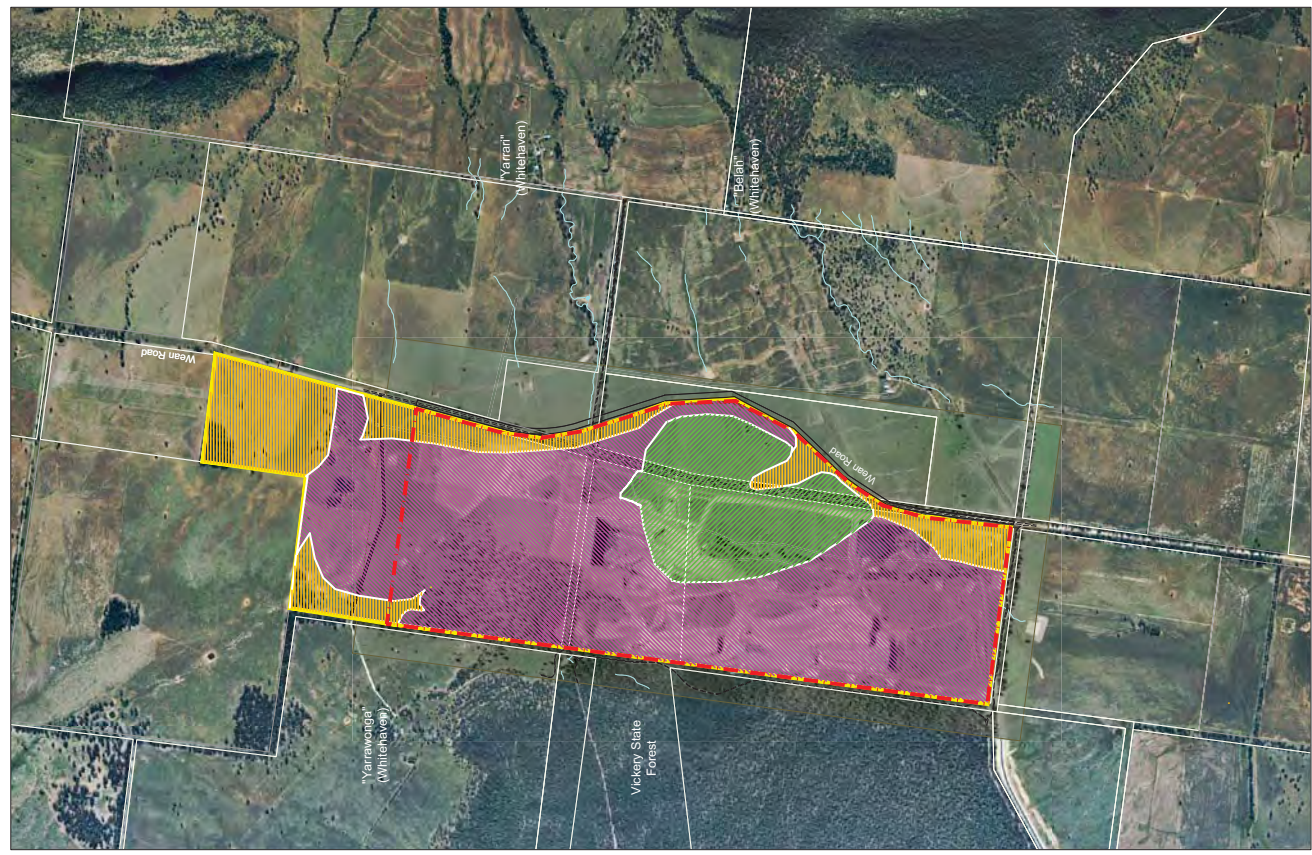
| Land Class | Pre-Mining Area | | Post-Mining Area | |
|---------------|-----------------|-------------|------------------|-------------|
| | Hectares | Percent (%) | Hectares | Percent (%) |
| Class 1 | 0 | 0 | 0 | 0 |
| Class 2 | 0 | 0 | 0 | 0 |
| Class 3 | 348 | 76 | 82 | 18 |
| Class 4 | 112 | 24 | 302 | 66 |
| Class 5 | 0 | 0 | 76 | 16 |
| Totals | 460 | 100 | 460 | 100 |



- LEGEND**
- Project Site Boundary
 - Mine Lease Boundary
 - Class 3
 - Class 4
 - Class 5



PRE-MINING



POST-MINING

GSSE (2010a) determined that the pre-mining agricultural suitability within the Project Site predominately comprised Class 3 land described as moderately productive and suited to grazing and pasture improvement. The remaining 112 hectares situated along minor drainage lines and hill slopes was determined as Class 4, which is marginal land not suitable for cultivation (minimum till pasture improvement may be possible for grazing enterprises).

Based on the soil resources available within the Project Site and proposed post-mining landform (see **Sections 5.4** and **5.7**, respectively), GSSE (2010a) predicts that the post-mining agricultural suitability will predominately comprise Class 4 land, including all the rehabilitated overburden emplacement areas. There are also smaller areas of Class 3 land, and the final void will be Class 5 land generally unsuitable for agriculture.

7.1.3 Management and Monitoring

In order to reduce the potential for degradation of lands within and adjoining the Project Site, the management strategies and mitigation measures detailed in **Section 5.4** for soil stripping and handling and **Section 5.7** for rehabilitation and mine closure will be undertaken.

Furthermore, as outlined in **Section 5.7.5**, on-going monitoring of the health and success of areas undergoing rehabilitation will be undertaken by Whitehaven, as well as periodic monitoring on rehabilitation areas by an independent and experienced professional.

7.2 Air Quality

PAEHolmes (2011) undertook an air quality assessment for the Rocglen Extension Project. The full assessment report is contained within **Appendix P**, with significant findings and recommendations summarised below.

7.2.1 Existing Environment

Coal mining operations generate fugitive dust emissions in the form of particulate matter described as total suspended particulate matter (TSP), particulate matter with equivalent aerodynamic diameters of 10 micrometres (μm) or less (PM_{10}) and particles with equivalent aerodynamic diameters of 2.5 μm and less ($\text{PM}_{2.5}$). In addition, combustion engines from vehicles release exhaust emissions including carbon monoxide (CO) and minor quantities of sulphur dioxide (SO_2) and nitrogen dioxide (NO_2).

The primary sources of particulate emissions during the operation of the Rocglen Coal Mine include:

- Mining activities, including vegetation clearing, soil stripping, handling and stockpiling, overburden ripping, handling and placement, and drilling and blasting activities;
- Coal processing area activities;
- Wind erosion of areas within the open cut, overburden emplacements and soil stockpiles;
- General movement of heavy vehicles on unsealed roads within the Project Site; and
- Transportation of coal between the Project Site and the Whitehaven CHPP.

PAEHolmes (2011) states that emissions of CO, SO_2 and NO_2 on open cut mines are too small and too widely dispersed to give rise to significant off-site concentrations. For this reason these pollutants have not been considered within the air quality assessment.

Under Rocglen's Air Quality Monitoring Program, Whitehaven operates a network of high volume air samplers (HVAS) and dust deposition gauges in the vicinity of the Project Site measuring 24-hour average concentrations of PM₁₀ on a six-day cycle and monthly averages of dust fallout levels. The locations of these monitoring sites are shown on **Figure 24**.

Dust Concentration

24-hour average concentrations of PM₁₀ on a six-day cycle have been measured at two HVAS monitoring sites within "Glenroc" (BA1) and "Roseberry" (BA2) between October 2008 and December 2009. Prior to being relocated to "Roseberry" in June 2009, the HVAS identified as BA2 was located within "Surrey", approximately 2 km southeast of "Roseberry". The results collected from these sites are shown on **Figure 25**, with a data point for each 24-hour average measured every sixth day.

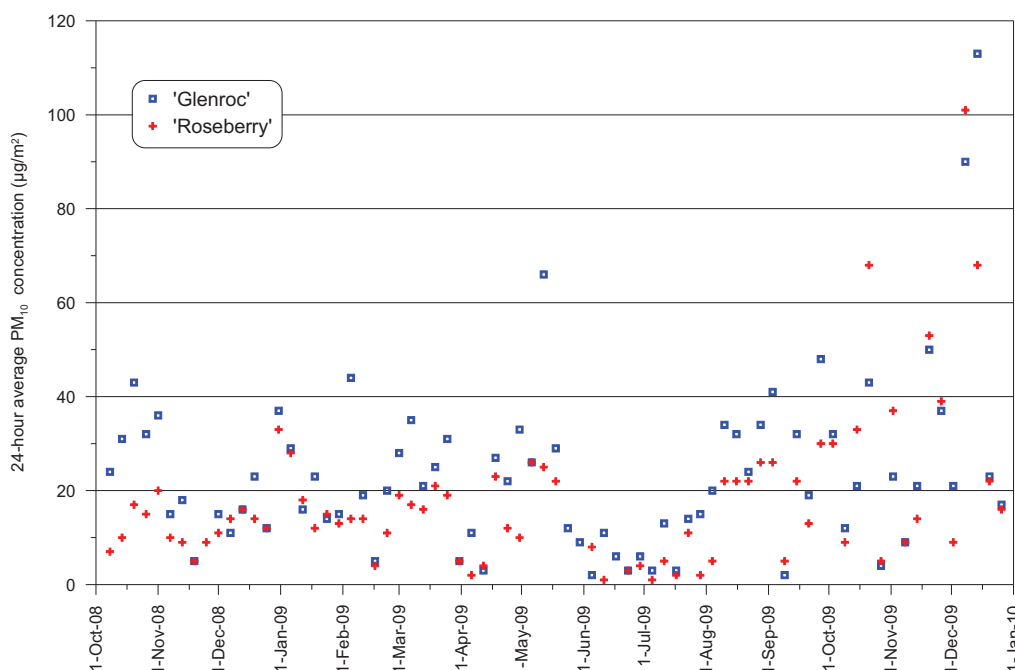


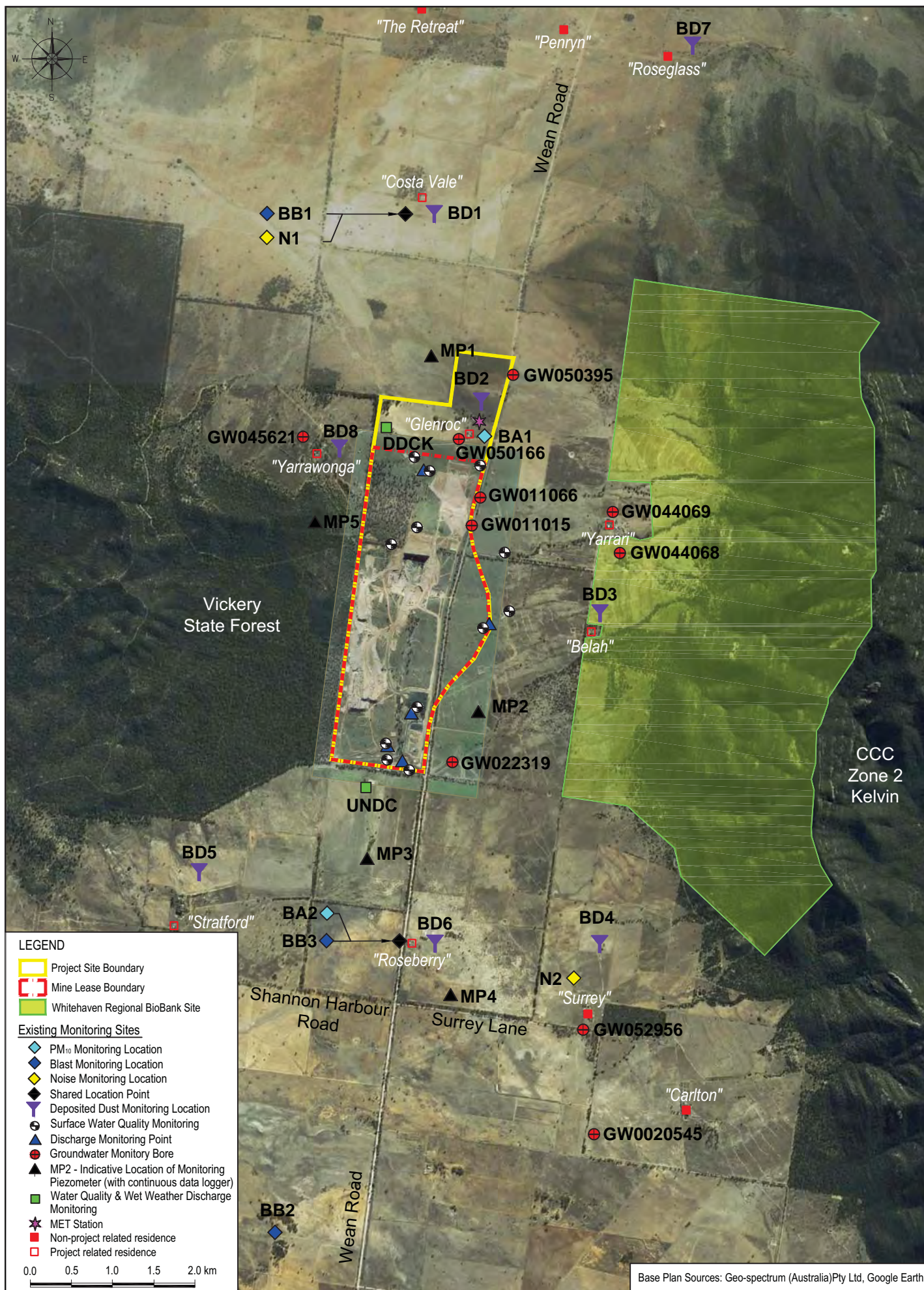
Figure 25 – PM₁₀ Monitoring Data 2008 to 2009

There are four occasions at "Roseberry" and three at "Glenroc" where the 24-hour average PM₁₀ level criterion of 50 µg/m³ (see **Section 7.2.2**) is exceeded. Two of these occur on the same day at both locations (8 and 12 December 2009) and can most likely be attributed to reported high winds and dust storms at this time, as well as bush fires in the nearby Kelvin Range. There are three other occasions when measurements exceed 50 µg/m³, namely the 12 May 2009 at "Glenroc" and the 21 October and 20 November 2009 at "Roseberry". These may be due to a combination of mining activity emissions or more localised effects such as farming activity or stock movements. It should also be noted that there were dust storms prevalent in the area in September and October 2009 which will have contributed to elevated levels.

PAEHolmes (2011) calculated the annual average for 2009 to be 24.3 µg/m³ at "Glenroc" and 19.4 µg/m³ at "Roseberry". These values are both below the annual average air quality criterion of 30 µg/m³ (see **Section 7.2.2**).

Dust Deposition

Dust deposition is monitored using gauges at eight locations in the vicinity of the Project Site (see **Figure 24**). The complete monthly data is presented in **Appendix P** and summarised in **Table 24**.



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Table 24 – Average Dust Deposition Levels

| Gauge | Average Dust Deposition Levels (g/m ² /month) | | |
|-------|--|---------|---------|
| | 2008 | 2009 | Average |
| BD1 | 1.3 | No data | 1.3 |
| BD2 | 1.0 | 1.6 | 1.3 |
| BD3 | 1.1 | 1.2 | 1.1 |
| BD4 | 1.2 | 1.0 | 1.1 |
| BD5 | 0.7 | 1.3 | 1.0 |
| BD6 | 1.0 | 1.2 | 1.1 |
| BD7 | 1.2 | 1.4 | 1.3 |
| BD8 | 1.1 | 1.3 | 1.2 |

It should be noted that measurements during a significant dust storm event in September 2009 have been removed from the annual averages calculated for 2009 as they are not representative of ambient levels likely to occur in the area.

It is difficult to determine if any trends are present given that only two complete years of data is available. Dust deposition levels in 2009 are slightly higher than 2008 at most gauges, which is expected given Rocglen mining operations commenced during that time.

When comparing the results for 2008 (before mining) and 2009 (during mining), it can be seen that the increase remains less than maximum criterion of 2 g/m²/month (see **Section 7.2.2**) and that there are no exceedances of the 4 g/m²/month cumulative criterion at any of the monitoring sites.

7.2.2 Assessment Criteria

Tables 25 and **26** present the air quality criteria nominated by PAEHolmes (2011) to be used in the assessment of emissions from the Rocglen Extension Project. These criteria are generally considered to reflect current Australian community standards for the protection of health and for protection against nuisance effects.

Table 25 – Air Quality Criteria for Particular Matter

| Pollutant | Averaging Period | Criteria | Comments |
|--|------------------|----------------------|---|
| Total Suspended Particulate Matter (TSP) | Annual mean | 90 µg/m ³ | <ul style="list-style-type: none"> NHMRC¹ criteria |
| Particulate Matter PM ₁₀ | 24-hour maximum | 50 µg/m ³ | <ul style="list-style-type: none"> DECCW Criteria NEPM² reporting goal, allows five exceedances per year for bushfires and dust storms DoP acquisition criteria, allows five exceedances per year |
| | Annual mean | 30 µg/m ³ | <ul style="list-style-type: none"> DECC criteria DoP acquisition criteria |

1 - National Health and Medical Research Council, 2 - National Environment Protection Measure

While the DECCW applies the maximum PM₁₀ levels to assess the potential for impacts from the Project, in more recent project approvals, the DoP has invoked requirements for acquisition, negotiated agreements and the like if the DECCW criterion for 24-hour maximum is exceeded on more than 5 days in any year (a 98.6 percentile level of compliance) or the annual average PM₁₀ DECCW criterion is exceeded.

In addition to potential health impacts, airborne dust also has the potential to cause nuisance effects by depositing on surfaces. **Table 26** shows the DECCW's maximum acceptable increase in dust deposition over the existing dust levels from an amenity perspective.

Table 26 – Air Quality Criteria for Dust Deposition

| Pollutant | Averaging Period | Maximum Increase in Deposited Dust Levels | Maximum Total Deposited Dust Levels |
|----------------|------------------|---|-------------------------------------|
| Deposited Dust | Annual | 2g/m ² /month | 4 g/m ² /month |

7.2.3 Potential Impacts

Modelling Scenarios

Dispersion modelling was undertaken by PAEHolmes (2011) to predict off-site air quality impacts as a result of the Rocglen Extension Project. Total dust emissions due to proposed mining operations were estimated by analysing the activities taking place at the site during three mine plan scenarios. While annual production remains constant throughout the life of the mine, the amount of overburden waste generated varies significantly from year to year, as does the surface area of exposed pit and emplacement areas. As mining progresses from north to south it was also necessary to capture a scenario at each end of this spectrum. As outlined in **Section 5.3** and illustrated on **Figure 15**, the three modelling scenarios are:

- Year 1 of expanded operation - representing the period when the in-pit mining activities are closest to the northern residences;
- Year 5 of expanded operation - representing the year when the expanded Northern Emplacement Area will reach its peak exposed surface area, and there will still be haulage and placement at that location; and
- Year 10 of expanded operation - representing the year when activities are close to the southern residences and the overburden extraction rate is at its peak.

The operations were represented by a series of volume sources located according to the location of activities for the modelled scenarios. Estimates of emissions for each source were developed on an hourly time step taking into account the activities that would take place at that location. Thus, for each source, for each hour, an emission rate was determined which depended upon the level of activity and the wind speed.

Background Levels

In order to assess the cumulative impacts of the Project, PAEHolmes (2011) estimated background dust levels using the air quality monitoring data discussed in **Section 7.2.1**. As there is only limited information for 2008 (prior to mining at Rocglen), a conservative estimate has been made using an average of 2008 and 2009 monitoring data.

For non-modelled dust sources, the uniform constant background levels are estimated to be:

- 53 µg/m³ for annual average TSP;
- 21 µg/m³ for annual average PM₁₀; and
- 1.2 g/m²/month for annual average dust deposition.

These are conservative estimates and are likely to be lower than this as they include current mining contributions.

Annual Average Model Predictions

Tables 27, 28 and 29 present the air quality modelling predictions for Years 1, 5 and 10 of the Rocglen Extension Project, respectively. Visual representations of these results in the form of isopleth maps can be found in **Appendix P**, which include the relevant background value as stated in the above sub-section, where appropriate.

Table 27 – Air Quality Modelling Predictions Year 1

| Property Identification | | Annual PM ₁₀ Rocglen (plus background) (µg/m ³) | Annual TSP Rocglen (plus background) (µg/m ³) | Dust Deposition (g/m ² /month) | |
|------------------------------|----------------------|---|--|--|------------|
| Name | Ownership | | | Rocglen Only | Cumulative |
| Criteria | | 30 | 90 | 2 | 4 |
| Non-mining background | | 21 | 53 | N/A | 1.2 |
| 1 "Roseglass" | Private | 2 (23) | 2 (55) | 0.02 | 1.2 |
| 2 "Costa Vale" | Whitehaven | 3 (24) | 4 (57) | 0.09 | 1.3 |
| 3 "Yarrowonga" | Whitehaven | 8 (29) | 10 (63) | 0.67 | 1.9 |
| 5 "Yarrari" | Whitehaven | 4 (25) | 5 (58) | 0.09 | 1.3 |
| 6 "Belah" | Whitehaven | 7 (28) | 7 (60) | 0.16 | 1.4 |
| 7 "Stratford" | Whitehaven | 1 (22) | 2 (55) | 0.04 | 1.2 |
| 8 "Roseberry" | Private ¹ | 2 (23) | 2 (55) | 0.05 | 1.3 |
| 9 "Surrey" | Private | 3 (24) | 3 (56) | 0.05 | 1.3 |
| 10 "Carlton" | Private | 2 (23) | 2 (55) | 0.04 | 1.2 |
| 11 "Wundurra Stud" | Private | 1 (22) | 1 (54) | 0.02 | 1.2 |
| 12 "Brolga" | Private | 1 (22) | 1 (54) | 0.01 | 1.2 |
| 13 "Braemar" | Private | 1 (22) | 1 (54) | 0.01 | 1.2 |

1 - "Roseberry" is subject to a negotiated private agreement between the landholder and Whitehaven.

Table 28 – Air Quality Modelling Predictions Year 5

| Property Identification | | Annual PM ₁₀ Rocglen (plus background) (µg/m ³) | Annual TSP Rocglen (plus background) (µg/m ³) | Dust Deposition (g/m ² /month) | |
|------------------------------|----------------------|---|--|--|------------|
| Name | Ownership | | | Rocglen Only | Cumulative |
| Criteria | | 30 | 90 | 2 | 4 |
| Non-mining background | | 21 | 53 | N/A | 1.2 |
| 1 "Roseglass" | Private | 2(23) | 2(55) | 0.03 | 1.2 |
| 2 "Costa Vale" | Whitehaven | 3(24) | 3(56) | 0.10 | 1.3 |
| 3 "Yarrowonga" | Whitehaven | 7(28) | 9(62) | 0.89 | 1.9 |
| 5 "Yarrari" | Whitehaven | 4(25) | 4 (57) | 0.10 | 1.9 |
| 6 "Belah" | Whitehaven | 7(28) | 7(60) | 0.19 | 1.4 |
| 7 "Stratford" | Whitehaven | 2(23) | 2(55) | 0.06 | 1.2 |
| 8 "Roseberry" | Private ¹ | 3(24) | 3(56) | 0.08 | 1.3 |
| 9 "Surrey" | Private | 3(24) | 3(56) | 0.08 | 1.3 |
| 10 "Carlton" | Private | 2(23) | 2(55) | 0.05 | 1.2 |
| 11 "Wundurra Stud" | Private | 1(22) | 1(54) | 0.03 | 1.2 |
| 12 "Brolga" | Private | 1(22) | 1(54) | 0.01 | 1.2 |
| 13 "Braemar" | Private | 1(22) | 1(54) | 0.02 | 1.2 |

1 - "Roseberry" is subject to a negotiated private agreement between the landholder and Whitehaven.

Table 29 – Air Quality Modelling Predictions Year 10

| Property Identification | | Annual PM ₁₀ Rocglen (plus background) (µg/m ³) | Annual TSP Rocglen (plus background) (µg/m ³) | Dust Deposition (g/m ² /month) | |
|------------------------------|----------------------|---|--|--|------------|
| Name | Ownership | | | Rocglen Only | Cumulative |
| Criteria | | 30 | 90 | 2 | 4 |
| Non-mining background | | 21 | 53 | N/A | 1.2 |
| 1 "Roseglass" | Private | 2(23) | 2(55) | 0.03 | 1.2 |
| 2 "Costa Vale" | Whitehaven | 3(24) | 3(56) | 0.07 | 1.3 |
| 3 "Yarrawonga" | Whitehaven | 6(27) | 7(60) | 0.50 | 1.7 |
| 5 "Yarrari" | Whitehaven | 5(26) | 5(58) | 0.11 | 1.3 |
| 6 "Belah" | Whitehaven | 8(29) | 9(62) | 0.20 | 1.4 |
| 7 "Stratford" | Whitehaven | 2(23) | 2(55) | 0.07 | 1.3 |
| 8 "Roseberry" | Private ¹ | 3(24) | 4(57) | 0.10 | 1.3 |
| 9 "Surrey" | Private | 4(25) | 4(57) | 0.10 | 1.3 |
| 10 "Carlton" | Private | 3(24) | 3(56) | 0.06 | 1.3 |
| 11 "Wundurra Stud" | Private | 1(22) | 2(55) | 0.03 | 1.2 |
| 12 "Brolga" | Private | 1(22) | 1(54) | 0.02 | 1.2 |
| 13 "Braemar" | Private | 1(22) | 1(54) | 0.02 | 1.2 |

1 - "Roseberry" is subject to a negotiated private agreement between the landholder and Whitehaven.

In summary, the modelled predictions for the expanded operations indicate acceptable air quality impact at all privately-owned residences throughout the life of the mine. Specifically, **Tables 27, 28 and 29** show:

- **Predicted annual average PM₁₀ concentrations** – predicted annual PM₁₀ concentrations from the Rocglen operations in Years 1, 5 and 10, respectively, including the estimated background of 21 µg/m³, should not exceed the DECCW's 30 µg/m³ criterion at any of the nearest residences;
- **Predicted annual average TSP concentrations** – predicted annual average TSP concentrations from the Rocglen operations in Years 1, 5 and 10, respectively, including the estimated background of 53 µg/m³, should not exceed the DECCW's 90 µg/m³ criterion at any of the nearest residences;
- **Predicted annual average dust deposition for Rocglen only** – predicted annual average dust deposition rates for Rocglen operations alone in Years 1, 5 and 10, respectively, should not exceed the 2 g/m²/month criterion at any of the nearest residences; and
- **Predicted annual average cumulative dust deposition** – predicted annual average dust deposition rates for Rocglen operations in Years 1, 5 and 10, respectively, including the estimated background of 1.2 g/m²/month, should not exceed the 4 g/m²/month criterion at any of the nearest residences.

Incremental 24-Hour Average PM₁₀ Concentrations

Table 30 lists the predicted maximum 24-hour average PM₁₀ concentrations at nearby residences. As highlighted in red, "Yarrawonga" and "Belah" are the only residences predicted to exceed the DECCW's criterion of 50 µg/m³.