

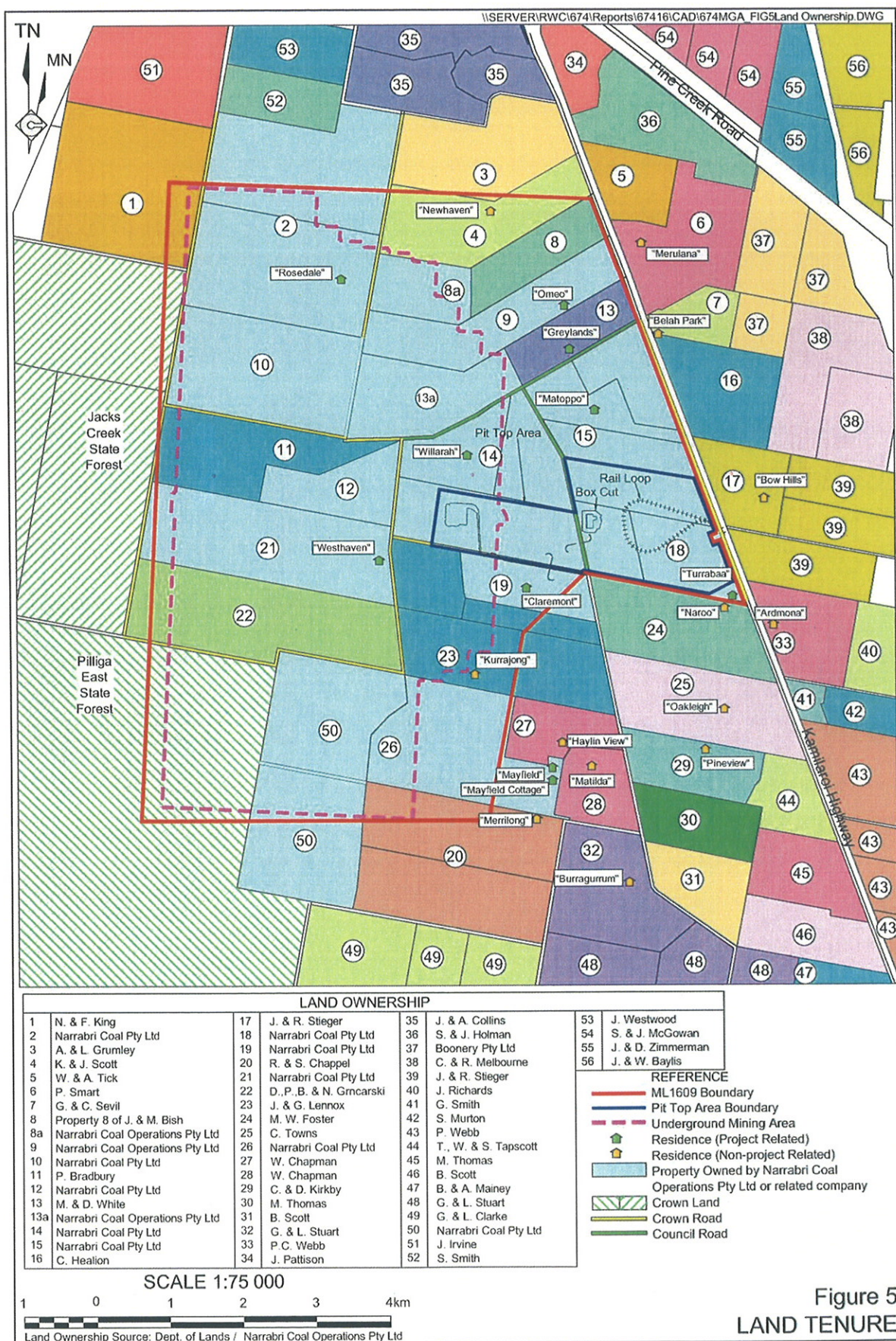


Figure 5: Land ownership and Location of Residences (Kurrajong under purchase by NCO)

Table 2: Predicted Scenario 1 (Current Vent Fan in Box-cut) Noise Levels – dB(A), $L_{eq}(15min)$

Location		Meteorological Condition						
		Lapse (calm)	Inversion ($^{\circ}C/100m$)			SE wind (3m/s)	Criterion dB(A)	Minimum Differential dB(A)*
			2	4	6			
R1	"Bow Hills"	24	31	33	34	22	35	-1
R2	"Ardmona"	<20	25	27	30	<20	35	-5
R3	"Naroo"	24	29	31	33	22	35	-2
R4	"Oakleigh"	<20	21	24	25	<20	35	-10
R5	"Pineview"	<20	<20	20	22	<20	35	-13
R6	"Matilda"	<20	23	27	28	<20	35	-7
R7	"Haylin View"	<20	25	28	30	<20	35	-5
R10	"Merrilong"	<20	25	28	29	<20	35	-6
R11#	"Kurrajong"	25	31	33	35	20	35	0
R13	"Newhaven"	25	28	30	32	29	35	-3
R15#	"Greylands"	27	30	32	34	31	35	-1
R16	"Belah Park"	20	24	25	28	26	35	-7
R18	"Merulana"	<20	21	23	25	20	35	-10
* Differential between the worst-case predicted noise level and the criterion. # Project related residence – Kurrajong under purchase by NCO.								

Table 3: Predicted Scenario 2 (Proposed West Mains and End of Panel 2 Vent Fans) Noise Levels – dB(A), $L_{eq}(15min)$

Location		Meteorological Condition						
		Lapse (calm)	Inversion ($^{\circ}C/100m$)			SE wind (3m/s)	Criterion dB(A)	Minimum Differential dB(A)*
			2	4	6			
R1	"Bow Hills"	25	31	33	35	21	35	0
R2	"Ardmona"	<20	24	27	29	<20	35	-6
R3	"Naroo"	24	28	31	34	21	35	-1
R4	"Oakleigh"	<20	20	24	25	<20	35	-10
R5	"Pineview"	<20	<20	<20	21	<20	35	-14
R6	"Matilda"	<20	22	24	26	<20	35	-9
R7	"Haylin View"	<20	24	26	29	<20	35	-6
R10	"Merrilong"	<20	22	23	25	<20	35	-10
R11#	"Kurrajong"	20	26	29	31	20	35	-4
R13	"Newhaven"	27	30	32	34	30	35	-1
R15#	"Greylands"	23	28	30	31	27	35	-4
R16	"Belah Park"	<20	24	25	29	20	35	-9
R18	"Merulana"	<20	20	21	22	<20	35	-13
* Differential between the worst-case predicted noise level and the criterion. # Project related residence – Kurrajong under purchase by NCO.								

The Department notes and supports the presentation of noise predictions based on a range of inversion strengths of 2, 4 and 6°C/100 m, rather than the more usually employed 3°C/100 m (see Tables 2 and 3). In addition, these predictions utilise a "rural" rather than "flat" terrain input into the model. Both model inputs will result in predicted noise impacts that are greater than would have been produced if the inputs used in the Stage 1 EA had been used instead. The Department therefore believes that the noise modelling used for the Stage 1 modification provides an improved accuracy of predictions when compared to those provided for Stage 1 project.

The Department is prepared to accept that the predicted modelled noise levels should apply at nearby residences, provided that a robust noise monitoring and management system is put in place. This would ensure that any variation to predicted noise levels is a consequence borne by the company, rather than residents by way of annoyance.

For mining operations in NSW, the Department recommends that noise mitigation measures (such as double glazing, building insulation and/or air conditioning) be offered for privately-owned residences if noise emissions from the mine are equal to or exceed the noise impact assessment criterion by 3 dB(A). For the Narrabri Mine, the Department has recommended a condition of approval that would require NCO to offer these measures to residents should project-related noise impacts at their home be equal to or exceed 38 dB(A).

In addition to these mitigation measures, residents whose properties experience project-related noise levels that are systemically greater than 40 dB(A) would be offered an option of either entering into a negotiated agreement with NCO or, at their request, requiring NCO to purchase their property. The conditions of approval recommended by the Department would require NCO to purchase their property on terms that would allow them to relocate to another property within the local region.

To ensure that noise impacts from the mine are well-managed and monitored, the Department has proposed conditions of approval that require NCO to:

- meet the existing noise impact assessment criterion of 35 dB(A) for the combined activities of Stage 1 and the proposed modification;
- be able to monitor its noise impacts in real-time;
- be able to monitor temperature inversions in real-time;
- produce and implement a "reactive" Noise Management Plan;
- undertake acoustic mitigation measures (such as double glazing, building insulation and/or air conditioning) at any privately-owned residence, should project-related noise impacts equal or exceed 38 dB(A); and
- purchase any privately-owned property on request should noise impacts generated by the mine exceed 40 dB(A).

In addition to the requirements proposed by the Department, NCO has committed to a range of measures which give confidence that the mine can meet the relevant noise criteria and will allow it to monitor and respond to any noise issues in a timely manner. The development of a Noise Management Plan would outline the procedures and protocols to be employed to manage noise in a clear, consistent and transparent manner.

Conclusion

The key measures proposed (real-time noise monitoring and a "reactive" Noise Management Plan) would give NCO the tools and information to closely manage its operations in terms of acoustic impacts. Currently, NCO has no way of knowing the strength of inversions at its site, and no precise real-time knowledge of the noise levels being generated by its operations. In the future, this information would be available to NCO to implement "reactive" noise management measures, and adjust its operations to ensure continued compliance. With the proposed measures in place, noise impacts from the project could be controlled in a manner that would allow local residents and regulatory agencies to have confidence that the criterion would not be exceeded.

4.2 Aboriginal Heritage

In March 2007, NCO conducted an Aboriginal cultural heritage survey, in accordance with relevant DECCW guidelines and with the local Aboriginal community, of the land overlying proposed longwall panels 1-7.

The proposed modification seeks approval to construct the CHPP and install and operate pre-drainage infrastructure to remove gas and water from the coal seam prior to the commencement of longwall mining

activities. During the assessment of the Stage 1 project application, no Aboriginal objects were identified at the proposed CHPP site. Additionally, this site has been disturbed by Stage 1 construction activities. Effectively, there is no reasonable prospect of any physical Aboriginal cultural heritage being located at the CHPP site.

The location of proposed surface infrastructure associated with ventilation infrastructure and pre-drainage of longwall panels 1-3 and known Aboriginal sites is shown on Figure 6. The Department considers that the proposed surface infrastructure for the pre-drainage of longwalls 1-3 can be constructed in a way that avoids all known Aboriginal sites/objects. To achieve this outcome, the Department recommends that the company be required to:

- fence all known Aboriginal sites (or provide appropriate signage) overlying longwall panels 1-3, to prevent inadvertent damage by pre-drainage or construction activities; and
- apply the provisions of the existing Aboriginal Cultural Heritage Management Plan. This would mean that Aboriginal monitors would be present during all activities involving ground disturbance; procedures are in place should additional Aboriginal objects or human remains be located and that all workers would receive an induction about Aboriginal cultural heritage for the site.

4.3 Flora and Fauna

Flora

The proposed modification would involve additional surface disturbance of approximately 34.6 ha of primarily cleared agricultural land. This surface disturbance would be associated with ventilation shafts, pre-drainage boreholes, access tracks, electricity lines and gas/water pipelines.

Of the 34.6 ha proposed to be disturbed, a maximum of 3.4 ha consists of remnant native vegetation (see Figure 7). This includes:

- 0.9 ha of River She Oak/Belah/Inland Grey Box Forest (Riparian Forest);
- 1.7 ha of Inland Grey Box/Bimble Box/Blakeley's Red Gum Woodland (Inland Grey Box Woodland); listed as an Endangered Ecological Community (EEC) under the *Threatened Species Conservation Act 1975*; and
- 0.6 ha of White Cypress Forest (Callitris Forest).

Based on the findings of the recent survey and assessment conducted for the Stage 2 EA (which includes a much larger disturbance area than that proposed for the proposed modification), the disturbance area for the proposed modification:

- would be unlikely to significantly affect the lifecycle of a threatened flora species and/or population;
- would be unlikely to significantly affect the habitat of a threatened flora species, population or ecological community;
- would be unlikely to significantly affect the current disturbance regimes relevant to flora;
- would be unlikely to significantly affect habitat connectivity; and
- would not adversely affect critical habitat as no critical habitats are known to occur with the proposed modification area.

Fauna

Fauna surveys undertaken for the Stage 2 EA included the lands associated with the proposed Stage 1 modification. Unsurprisingly, these studies identified that native fauna were closely associated with remnant native vegetation. As a maximum of 3.4 ha of native vegetation would be cleared to accommodate the proposed additional infrastructure, there would be a minor impact to local fauna. The following threatened species were recorded in the area of longwall panels 1-3:

- Grey-crowned Babbler;
- Superb Parrot; and
- Glossy-black Cockatoo.

Based on the findings of the recent survey and assessment conducted for the Stage 2 EA over a much larger area, the disturbance area for the proposed modification:

- would be unlikely to significantly affect the lifecycle of a threatened fauna species and/or population;
- would be unlikely to significantly affect the habitat of a threatened fauna species, population or EEC;
- would be unlikely to significantly affect the current disturbance regimes relevant to fauna;
- would be unlikely to significantly affect habitat connectivity; and
- would not adversely affect critical habitat as no critical habitats are known to occur with the proposed modification area.

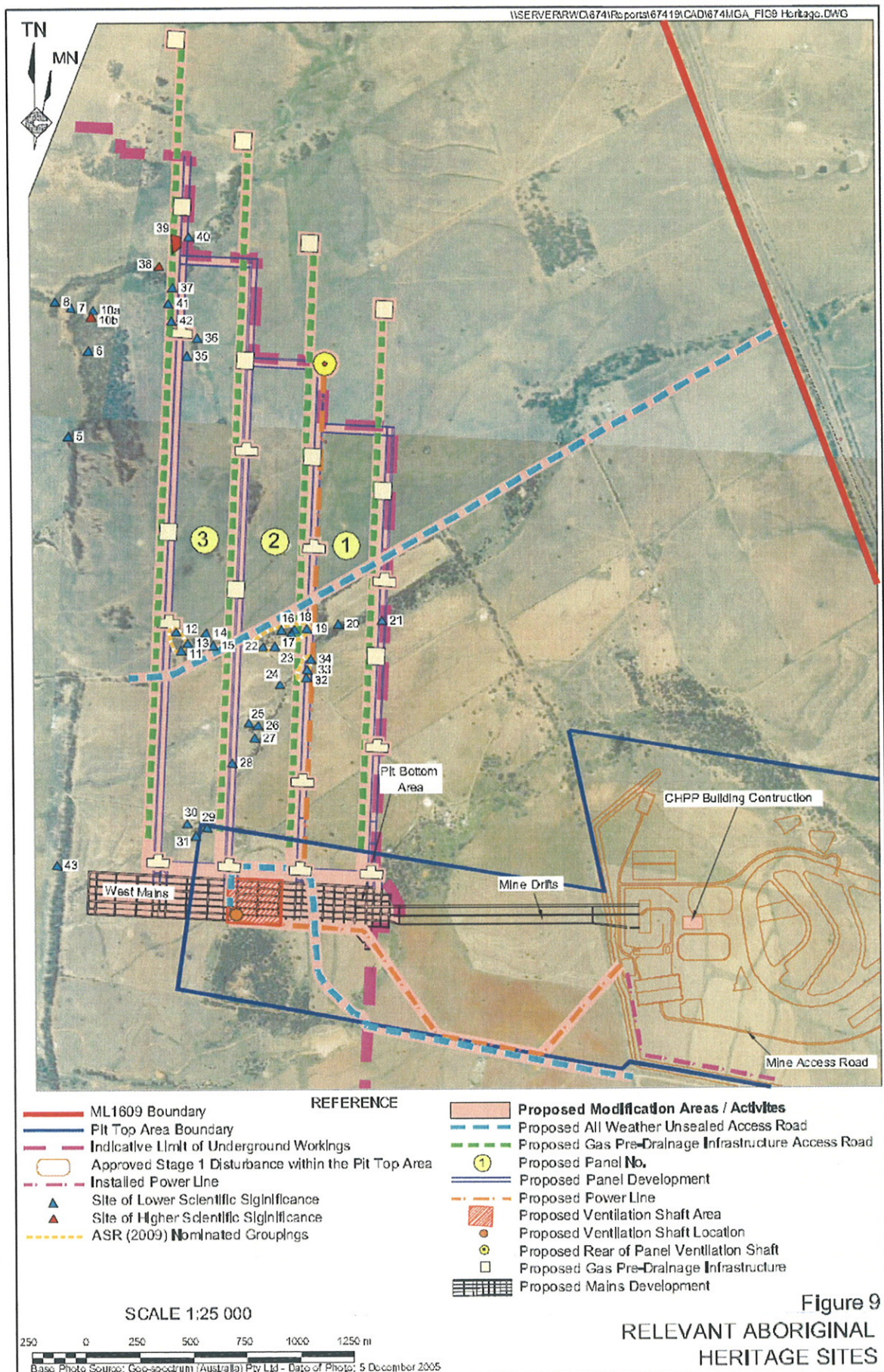


Figure 6: Aboriginal Cultural Heritage Sites