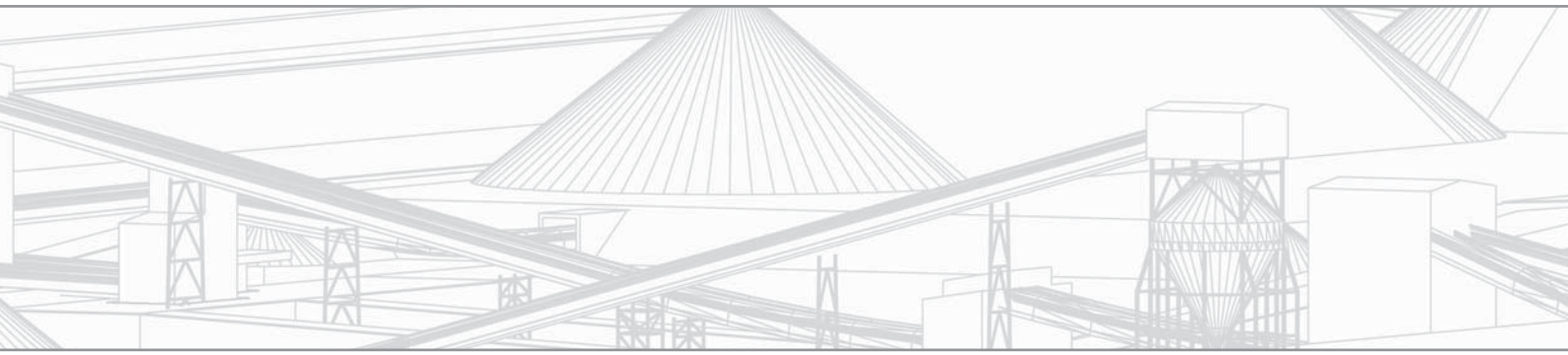

APPENDIX E

AIR QUALITY IMPACT ASSESSMENT

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27 March 2008

Dianne Munro
Hansen Bailey Pty Ltd
6/127-129 John Street
Singleton
NSW 2330

Dear Dianne,

Air quality assessment for Anvil Hill Coal Mine
Project Approval Modification to undertake "Early Works"

Introduction

Xstrata Mangoola Pty Ltd (Xstrata) is developing the Anvil Hill Coal Mine in accordance with the conditions set out in Project Approval 06_0014, referred to hereafter as the Project Approval. However, it has become necessary for Xstrata to undertake some "Early Works" (see later) on site. These works would allow Xstrata interim access to the site via the approved northern access road (see **Figure 1**) and the earlier scheduling of some approved works in parallel with the approved Wybong Road Upgrade works.

The Early Works relevant to this assessment include the following:

- Construction and use of the Northern Access Road and associated intersection with Wybong Road;
- Establishment of a temporary site office, associated amenities and compound;
- Excavation of a borrow pit for the supply of select material for civil works and disposal of unsuitable material;
- Establishment of a construction pad for the Coal Handling and Preparation Plant (CHPP); and
- Development of access roads.

The Department of Planning has identified dust as one of the key issues requiring assessment (see Director General Requirements issued 24 January 2008) and specifies that the assessment must include:

1. A description of the proposed modifications including the need for the modification
2. Consideration of relevant statutory provisions
3. An assessment of environmental issues including:
    a. a description of the existing environment
    b. an assessment of the potential impacts
    c. a description of the measures that would be implemented to avoid, mitigate, offset, manage and monitor the impacts
4. a conclusion justifying the modification, the suitability of the site and the benefits of the modification.

This letter report focuses on air quality issues in relation to conducting the Early Works in parallel with the Wybong Road Upgrade as forms an appendix to the Modification EA. It provides a description of the project from an air quality perspective and provides the information required by items 3(a) 3(b) and 3(c). The other issues (1, 2, and 4) are addressed in the main volume of the Modification EA.

Description of the early works

Figure 1 shows the location of the project and its main components namely:

- the northern access road,
- borrow pit and sediment dam,
- site compound, and
- CHPP pad, and
- Internal Access roads.

All early works are within the approved disturbance boundary and on land owned by Xstrata. The junction of the Northern Access Road with Wybong Road is the closest activity to private residents. There is a buffer distance of at least 150 m (and in most cases much more) between the boundary of Xstrata's land with privately owned land.

Existing environment

The existing environment was described in detail in the air quality assessment that supported the Anvil Hill Environmental Assessment (EA). No significant new sources of dust have been introduced in the area since the EA was prepared, although wetter conditions are now more prevalent and so dust deposition and concentration levels are likely to be slightly lower than those reported in the EA.

The EA indicated that background dust deposition levels were such as to allow an increase of 2 g/m^2/month (annual average) without giving rise to levels above the Department of Environment & Climate Change (DECC) assessment criteria.

Background annual average PM_{10} levels were around 15 µg/m^3 and background TSP concentrations, 35 µg/m^3.

Estimating air quality effects

The likelihood that the proposed early works would become significant emissions sources of dust, and that the buffer distances would be too small to allow adequate dispersion of the emissions, can be assessed by examining the equipment proposed to be used and the area of exposed land expected to be created during the works.

The following summarises the indicative equipment which has been utilised for the purposes of assessment (on a weekly basis) and the duration of each component of the works, focusing on those aspects that have the potential to generate dust:

Wybong Road

- Culvert extension – five heavy vehicles and four light vehicles over eight weeks
- Road pavement extension – five heavy vehicles and four light vehicles over eight weeks

Northern Access Road

- Install sediment dams and convert existing dams into sediment control basins – four heavy vehicles and two light vehicles per week over two weeks
- Clear and grub vegetation – one heavy vehicle and two light vehicles over three weeks
- Cut for roadway – four heavy vehicles and two light vehicles over eight weeks
- Construct drainage – three heavy vehicles and two light vehicles over eleven weeks
- Construct road fill – six heavy vehicles, four light vehicles up to 12 weeks
- Mass haulage – seven heavy vehicles and three light vehicles over nine weeks
- Crushing – five heavy vehicles and three light vehicles over five weeks
- Construction of hard stand, reconditioning of Limvardy Road and site access haul road – four heavy vehicles and two light vehicles over one week
- Installation of site office complex – six heavy vehicles and four light vehicles over one week
- Pump and dam reconditioning – four heavy vehicles and two light vehicles over one week
- Crushing at borrow pit - five heavy vehicles and three light vehicles over eleven weeks.

The equipment and activities described above will be also utilised to undertake construction of the other aspects of the Early works including: site office and compound, internal access roads and CHPP pad.

The area of land disturbed as a result of extraction and emplacement at the borrow pit is estimated to be approximately 10 ha. The works are expected to take place over the period April to October 2008. Winds in this period would be predominantly from the west-northwest.

The deployment of this number of pieces of earthmoving equipment is significant but the equipment will be deployed to several locations across the approved disturbance area and the buffer distances to privately owned land is at least 150 m. The equipment inventory and work intensity is similar to that required for major road works that could take place in the Sydney built-up area.

Dust emissions from these works would be significantly less than those from the approved mining that will follow. Work would be confined to that defined in the Project Approval.

It will not be difficult, using standard dust control measures, to ensure that emissions are controlled to the level at which no adverse effects would occur on the remaining surrounding privately owned land.

The measures would include:

- The use of water carts to maintain all trafficked areas and all worked dusty areas in a damp condition,
- The use of clearly defined routes for traffic,
- The imposition of speed limits for all vehicles travelling on unsealed surfaces, and
- The early rehabilitation of disturbed land.

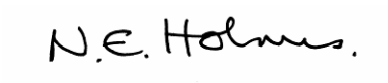
An update on the works should be regularly presented to the Community Consultative Committee and contacts provided so that any air quality issues that might arise can be dealt with promptly.

Environmental staff should undertake inspections of the project each working day. In addition, dust deposition, TSP and PM10 levels should be monitored at the existing monitoring locations for the duration of the works.

Conclusions

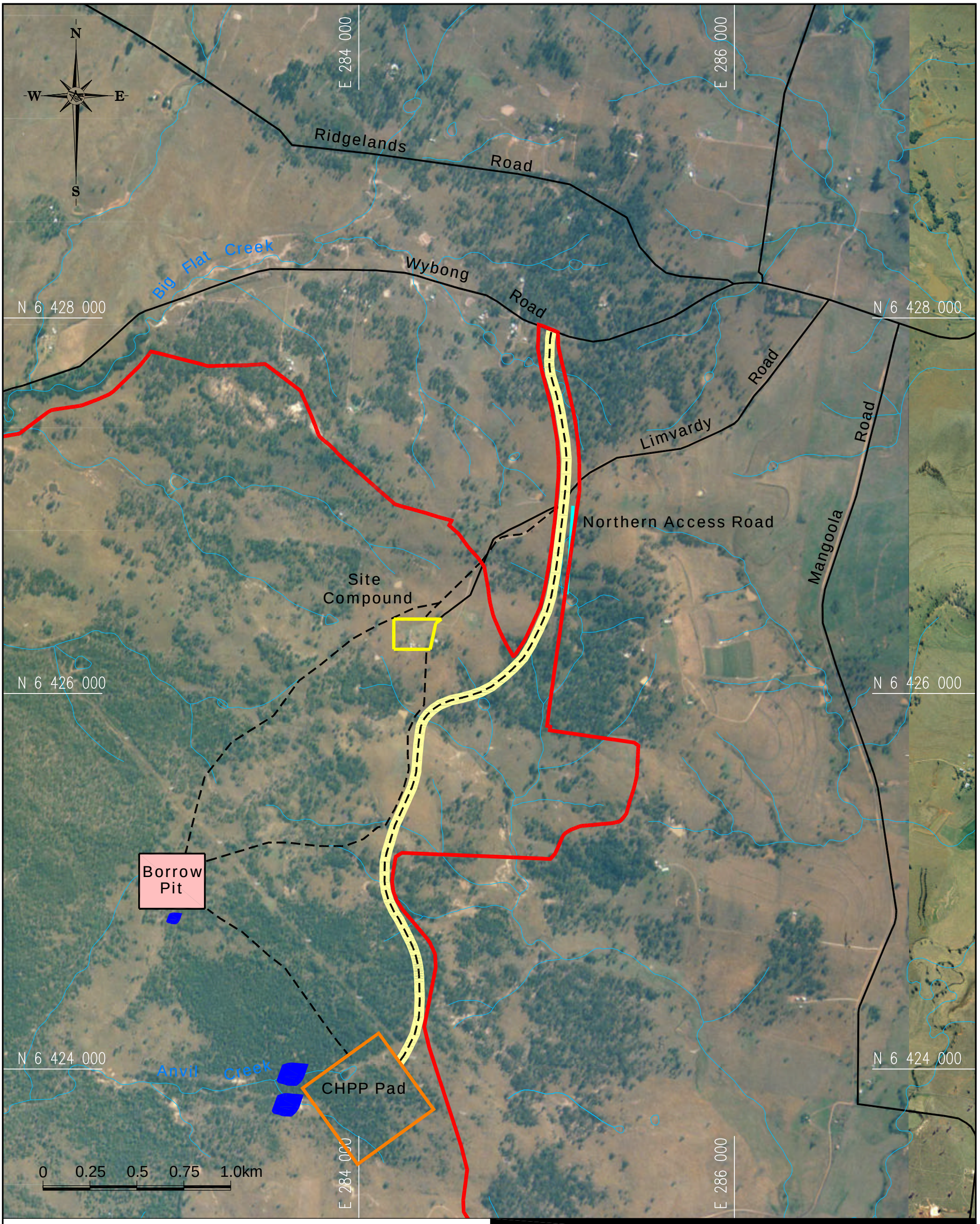
The works will inevitably lead to the emissions of dust. However, these will be easily controlled to a level sufficient to avoid off-site impacts on surrounding privately owned land by the application of standard dust control measures commonly applied in the construction industry.

Yours faithfully,
Holmes Air Sciences



Nigel Holmes PhD
Atmospheric Physicist

Figures



Hansen Bailey

xstrata coal

Source : Xstrata Mangoola (2008)
Co-ordinate System: MGA Zone 56

ANVIL HILL COAL MINE

Early Works Indicative Layout

Cad File: 02851N.dwg	Date: 08.04.2008	Drawn: JD	Figure 4