

ASSESSMENT REPORT

DRAYTON COAL MINE East Pit Tailings Emplacement and Explosives Storage Facility Modification (MOD 2)

1. BACKGROUND

Anglo Coal (Drayton Management) Pty Limited (Drayton) operates the Drayton coal mine, located adjacent to Mt Arthur Coal Mine in the Hunter Valley of NSW, approximately 13 kilometres (km) south of Muswellbrook (see **Figure 1**).



Figure 1: Location of Drayton Coal Mine

The Drayton Coal Mine is an open-cut mine surrounded by mining, power generation and farming land uses. Liddell and Bayswater Power Stations are to the east and the Mount Arthur Coal Mine is to the west. The closest dwellings are about 1.3 km to the north in the Antiene rural-residential area.

The mine was approved by Muswellbrook Shire Council in 1980 and commenced production in 1983. It currently operates under a Ministerial project approval, granted 1 February 2008 (MP 06_0202). This approval allows Drayton to extract up to eight million tonnes of run-of-mine coal every year until 2017.

On 16 October 2009, the approval was modified (MOD 1) to allow an eight hectare extension of the mining disturbance footprint to the north to allow the extraction of about one million tonnes of coal. The approval included establishment of a new conservation area to provide an appropriate biodiversity offset for the additional disturbance.

2. PROPOSED MODIFICATION

On 12 July 2011, Drayton submitted an application seeking to modify the Minister's approval under section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). There are two elements of the proposed modification, which are described in detail in an environmental assessment (EA, see **Appendix A**) which accompanied the application. The proposed modifications are:

Wet Tailings Emplacement

Drayton proposes to emplace three million cubic metres of wet tailings in the mine's east-pit void (see **Figure 2**). This proposal includes construction of two new pipelines, one conveying wet tailings slurry from the existing Coal Treatment Unit (CTU) to the east pit void, the other conveying reclaimed water from the void to a mine-water supply dam. The wet tailings pipeline would be installed with a slurry pump at the CTU and a diesel or electric booster pump mid-pipeline. The EA estimates fine-tailings decant return to the CTU of 40% based on natural settlement of the wet tailings in the void.

Drayton is seeking this modification because it needs to more thoroughly wash its coal to meet modern clean-coal specifications. The new washing process produces tailings with higher water content. Drayton's overall CTU water make-up requirement will increase from 476 kL/day to 2,924 kL/day as a result of water being retained in the tailings in the new wash process.

Drayton already has approval to dispose dried tailings in the east pit void. The proposed modification would substitute the dried tailings with wet tailings. Drayton also has approval to allow Mac-Gen to emplace fly-ash from the Bayswater Power Station within the east pit void. Fly-ash emplacement will only take place at the conclusion of Drayton's use of the void for wet-tailings emplacement. There is no change to the approved final landform and rehabilitation.

Explosives Facility

Drayton is also proposing to construct a new 7,200 square metre Explosives Storage Facility in the southern part of the mine site (see **Figure 2**). The facility includes:

- three ammonium nitrate storage bins, with a combined capacity of 165 tonnes;
- two ammonium nitrate emulsion storage bins, with a combined capacity of 160 tonnes;
- 68,000 litre self-bunded diesel tank;
- 60,000 litre self-bunded canola tank;
- 20,000 litre potable water tank with pressure pump;
- storage containers for Gasser solution on bunded pallets; and
- storage containers for Companion solution on bunded pallets.

Drayton is seeking this modification because it presently sources explosives from the neighbouring Mt Arthur Coal mine via a private haul road. The explosives facility at Mt Arthur is approaching capacity and the Drayton mine now requires its own facility.

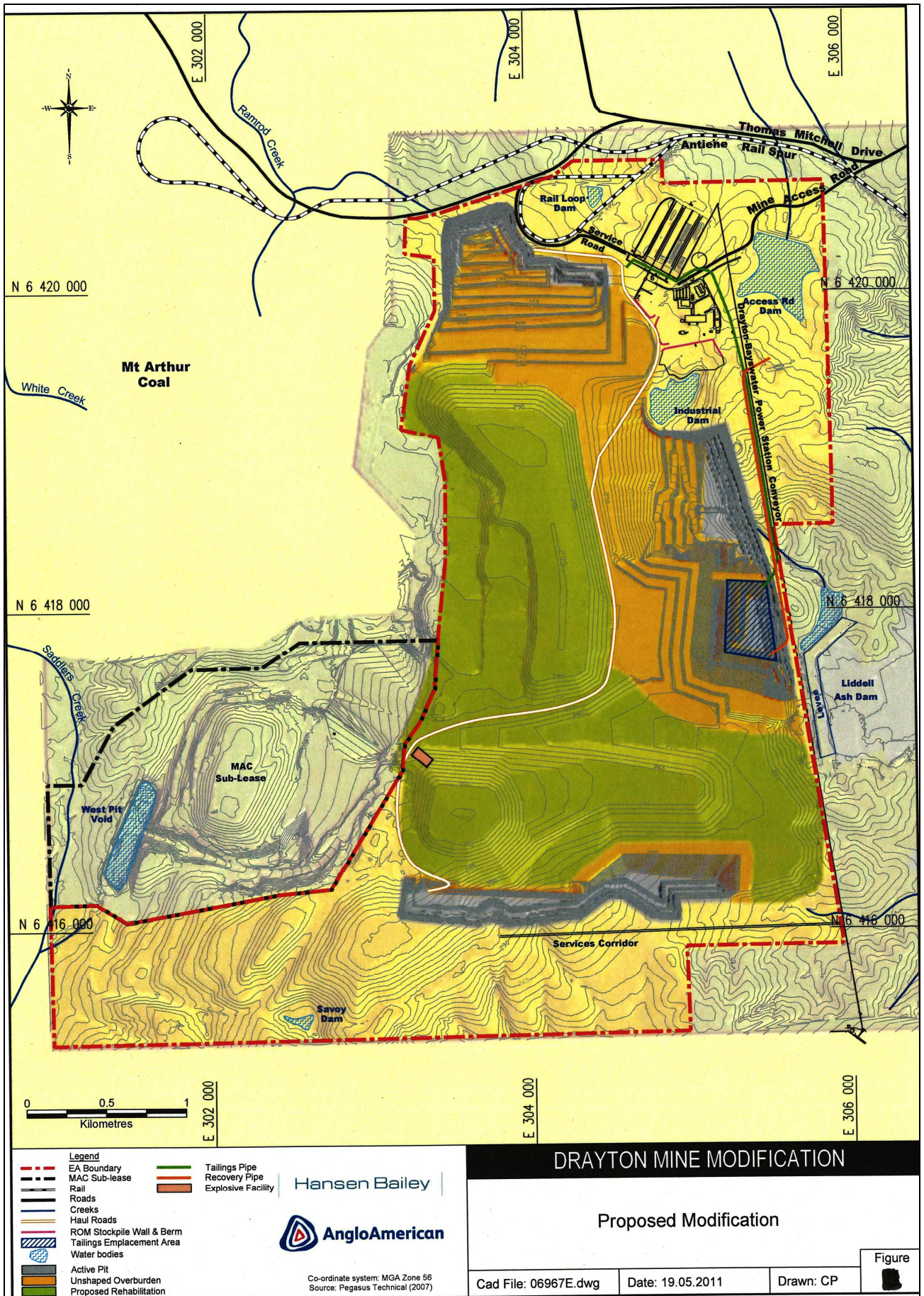


Figure 2: Proposed Modifications to Drayton Coal Mine

3. STATUTORY CONTEXT

3.1 *Approval Authority*

In accordance with clause 3 of Schedule 6A of the EP&A Act, section 75W of the Act as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A, continues to apply to transitional Part 3A projects.

The Minister has delegated his functions to determine modification applications under section 75W of the Act to the Department where:

- the relevant local council has not made an objection;
- there are less than 25 public submissions objecting to the proposal; and
- a political disclosure statement has not been made in relation to the application.

The terms of this delegation are met and, accordingly, the application is able to be determined by the Executive Director, Major Projects Assessment as the Minister's delegate.

3.2 *Section 75W – EP&A Act 1979*

The Department has considered the nature of the proposed modification and is satisfied that it can be characterised as a modification, under section 75W, to the approved project. The Department notes that:

- the proposed modification would not change the essential function or capacity of the mine for which approval has already been granted;
- there is no material change to overall surface disturbance;
- the east pit void is already approved for the disposal of dried tailings and fly-ash; and
- the approved rehabilitation design levels of the east pit void remain the same.

4. CONSULTATION

The Department made the EA publicly available on its website and received submissions from three agencies, a special interest group and a nearby landowner. Full copies of all submissions are included at **Appendix B**. A summary of the issues raised is provided below:

The **Office of Environment and Heritage** (OEH) does not object to the proposal and recommended approval conditions for bunded chemical storage in the explosives facility, a protocol for unexpected finds of Aboriginal objects during construction and erosion and sediment controls during construction. These matters are addressed, respectively, by the Preliminary Hazard Analysis, Response to Submissions, and an existing approval condition.

The **Division of Resources and Energy** (DRE) does not object to the proposal and recommends an approval condition requiring development of a tailings dewatering strategy for tailings disposal in the void. The Proponent agreed to this proposal in its Response to Submissions.

Muswellbrook Shire Council has reached agreement with the Proponent on several matters and does not object to the proposal. Drayton has agreed to:

- contribute to Council's costs for a Route and Upgrade Assessment of Thomas Mitchell Drive; and
- review the existing Mine Rehabilitation Plan and Mine Closure Plan in consultation with Council to include any updates that arise from the Council's recently adopted Mine Rehabilitation Policy.

These agreed provisions are included in proposed conditions of the modification instrument.

The **Construction, Forestry Mining and Energy Union** supports the modification, on the basis that it will have negligible additional impacts.

One submission was received from a member of the public, which objected to any further increase in the operation of the mine. The submission also raised issues with the findings of a recent independent review of environmental impacts at the person's residence. The proposed modification does not involve increased mining activity and does not affect any matter addressed in that independent review.

5. ASSESSMENT

The Department has assessed the merits of the proposed modification, and considered the:

- EA and Director-General's assessment report regarding the original project application;
- existing conditions of approval;

- documentation supporting the proposed modification;
- all agency and interest group submissions;
- relevant environmental planning instruments, policies and guidelines; and
- Requirements of the EP&A Act, including the objectives of the Act.

This assessment is summarised in Table 1 below.

Table 1 – Assessment of Key Issues

Issue	Consideration and Assessment	Conclusions & Recommendation
<i>Groundwater</i>	<ul style="list-style-type: none"> • The application was accompanied by a groundwater impact report prepared by Australasian Groundwater & Environmental Consultants Pty Ltd. • The report compared the composition of raw tailings and fresh fly-ash slurry; the latter already approved for disposal in the east pit void. Wet tailings are generally better 'quality' than the fresh fly-ash slurry: <ul style="list-style-type: none"> - total dissolved salts for the tailings is up to 4680 mg/L whereas for the fresh fly ash slurry it is about 5500 mg/L; - metals and minor elements are at similar concentrations in each material; and - pH of the tailings is between 7.62 - 7.68, whereas pH in the fresh fly ash slurry is highly alkaline - between 10 - 12. • The impact on groundwater from raw tailings disposal would be less than the impact of fly ash disposal, which is already approved. The proposal will also cause a slight drop of 10% in groundwater inflow to the east pit as a result of the high volume of wet tailings to be emplaced there. • OEH has not raised groundwater impact issues. 	<ul style="list-style-type: none"> • The Department is satisfied that the disposal of raw tailings in the east pit void will not create impacts additional to the approved disposal of fresh fly ash slurry.
<i>Surface water quality</i>	<ul style="list-style-type: none"> • The application was accompanied by a Water Management Impact Assessment prepared by Water Solutions. • The proposal will significantly reduce the risk of inundation in the existing north and south pits because of increased water demand in the mine's Coal Handling and Preparation Plant (demand increased from 476 kL/day to 2924 kL/day). This substantial increase reflects the need to ensure operational reliability for the new coal washing process. The existing facility does not require any make-up water, whereas the proposed arrangements may require 850 ML per year to achieve 90% operational reliability. This water would be sourced from the Drayton West Pit void (capacity of 1,000 ML), adjacent mines or power stations. In the unlikely event that sufficient water is not available, coal washing would be modified or curtailed. • Expected dam discharge for the rail loop dam will reduce by half (from 50% AEP to 25% AEP). All other dam discharge characteristics are expected to remain as approved. • OEH did not raise any issues with water management. 	<ul style="list-style-type: none"> • The Department is satisfied that the increased water demands for the new coal washing process generally reduce the risk of impacts on surface water quality away from the site. • No additional conditions required.
<i>Air quality</i>	<ul style="list-style-type: none"> • The application was accompanied by an air quality impact review prepared by PAE Holmes. • There will be no additional air quality impacts because the disposal activity involves wet tailings. Dust control measures must be implemented during construction work for the explosives facility according to the approved management plans. OEH has not raised any air quality issues. 	<ul style="list-style-type: none"> • The Department is satisfied that the proposed modification is unlikely to result in any increase in air quality impacts. • No additional conditions are required.
<i>Noise</i>	<ul style="list-style-type: none"> • The application was accompanied by a noise issues report prepared by Bridges Acoustics. The report reviewed potential noise impacts from an electric tailings pump at the CTU and a diesel booster pump mid-pipeline. • The report uses a conservative intrusive noise criterion of 25 dBA_{LAeq(15min)}, 10dBA less than the required criterion of 35 to 37 dBA_{LAeq(15min)}. This was to ensure that the new pumps are not audible at any noise sensitive receiver. • An unshielded electric tailings pump installed at the CTU with a sound pressure level of 90 dBA would produce a sound level of 18 dBA at the nearest residence. An unshielded and elevated diesel booster pump installed mid-pipeline with a sound pressure level of 104 dBA would produce a sound level of 31dBA at the nearest residence. If an electric booster pump is installed mid-pipeline, the impact would be 14 dBA less than for the diesel pump. • Any diesel booster pump should be installed so that it is not acoustically visible from any dwelling to ensure compliance with the conservative intrusive noise criterion. • OEH has not raised any noise impact issues. 	<ul style="list-style-type: none"> • The Department is satisfied that the new tailings pumping equipment would not have unacceptable noise impacts on sensitive noise receivers in the Antiene residential area.
<i>Aboriginal archaeology</i>	<ul style="list-style-type: none"> • OEH advises that the proposed explosives facility is located on a landform that is likely to yield Aboriginal objects. Similar landforms nearby have yielded significant volumes of evidence 	<ul style="list-style-type: none"> • Drayton agreed to OEH's requests in its Response to Submissions.

Issue	Consideration and Assessment	Conclusions & Recommendation
	<ul style="list-style-type: none"> of Aboriginal occupation. • OEH recommends an approval condition to ensure that any new Aboriginal object identified during surface disturbing work is appropriately assessed for significance and registered with OEH. 	
Hazards	<ul style="list-style-type: none"> • The application was accompanied by a Preliminary Hazard Analysis prepared by Hansen Bailey. The analysis specifies procedures and standards for handling potentially dangerous materials and other site hazards. • The proposed explosives facility is sufficiently distant (4 km) from the nearest residence. Handling of explosive material would be in accordance with the relevant standards. Other site risks have been correctly identified and are adequately managed. 	<ul style="list-style-type: none"> • Drayton has committed to undertake the modified project in accordance with the recommendations of the Preliminary Hazard Analysis. • No additional conditions required.
Rehabilitation and final landform	<ul style="list-style-type: none"> • The proposal does not change the approved rehabilitation and final landform arrangements. Once the pit is filled with fly-ash from Macquarie Generation, the void will be capped with inert material and rehabilitated in accordance with the approved closure plan. 	<ul style="list-style-type: none"> • No additional conditions required.

6. RECOMMENDED CONDITIONS

The Department has drafted recommended conditions for the modification. The recommended conditions include new requirements for Drayton to prepare and implement noise, blast and air quality management plans. Drayton has reviewed and accepted these conditions.

7. CONCLUSION

The Department has assessed the modification application, EA, Preliminary Hazard Analysis, submissions on the proposal, and Drayton's response to submissions in accordance with the relevant requirements of the EP&A Act, including the objects of the EP&A Act and the principles of ecologically sustainable development.

The Department is satisfied that the proposed modification is in the public interest and should be approved, subject to conditions.

8. RECOMMENDATION

It is RECOMMENDED that the Executive Director, as delegate of the Minister for Planning and Infrastructure:

- **consider** the findings and recommendations of this report;
- **determine** that the proposed modification is within the scope of section 75W of the EP&A Act;
- **approve** the modification application, subject to conditions, under section 75W of the EP&A Act; and
- **sign** the attached notice of modification (see **Appendix C**).

Howard Reed

Howard Reed 15.2.12
A/Director Mining and Industry Projects

Chris Wilson
Chris Wilson
Executive Director, Major Projects Assessment 17.2.12

APPENDIX A – ENVIRONMENTAL ASSESSMENT

APPENDIX B – COPY OF ALL SUBMISSIONS

APPENDIX C – PROPOSED MODIFICATION INSTRUMENT AND CONSOLIDATED APPROVAL