AngloAmerican

DRAYTON SOUTH COAL PROJECT

Preferred Project Report

August 2013

Hansen Bailey
ENVIRONMENTAL CONSULTANTS

DRAYTON SOUTH COAL PROJECT

PREFERRED PROJECT REPORT

Prepared by:

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August 2013

For:

ANGLO AMERICAN METALLURGICAL COAL PTY LTD
201 Charlotte Street
Brisbane QLD 4000

PREFERRED PROJECT REPORT STATEMENT

Submission of Preferred Project Report

Under Section 75H(6) of the *Environmental Planning and Assessment Act 1979*

Prepared by	
Name	James Bailey
Qualifications	B. Natural Resources, MBA
Address	Hansen Bailey PO Box 473 SINGLETON NSW 2330
In Respect Of	Drayton South Coal Project
Proponent Name	Anglo American Metallurgical Coal Pty Limited
Proponent Address	201 Charlotte Street BRISBANE QLD 4000
Land to be Developed	See **Appendix A** of this Preferred Project Report.
Proposed Development	Development and operation of the Project and associated activities as outlined in **Section 2** of this Preferred Project Report.
Environmental Assessment	Refer to the *Drayton South Coal Project Environmental Assessment* (Hansen Bailey, 2012).
Certification	I certify that I have read and am aware of the terms of the *Expert Witness Code* of the Land & Environment Court of NSW. I further certify that I have prepared the contents of this Preferred Project Report, and to the best of my knowledge: • It is in accordance with Sections 75E and 75F of the *Environmental Planning and Assessment Act 1979*; • It contains all available information that is relevant to the Preferred Project Report of the activity to which the statement relates; and • The information contained in the statement is neither false nor misleading.
Signature	
Name	James Bailey
	Director
Date	August 2013

EXECUTIVE SUMMARY

The Drayton South Coal Project Environmental Assessment as prepared by Hansen Bailey Environmental Consultants (November 2012) on behalf of Anglo American Metallurgical Coal Pty Ltd was publicly exhibited for a period of six weeks between 7 November to 21 December 2012. Following public exhibition the Department of Planning & Infrastructure requested a formal response to submissions on 22 January 2013. Accordingly the Response to Submissions document was prepared and submitted to the Department of Planning & Infrastructure on 7 May 2013.

In early 2013 Anglo American completed further detailed design work for the infrastructure required to facilitate the Project. The outcomes of this work have resulted in minor amendments to the conceptual Project layout for which approval is being sought. In respect of the amendments proposed, the Director-General formally requested that a Preferred Project Report be prepared and submitted to support the Project.

The Minister for Planning & Infrastructure requested the Planning Assessment Commission to review the Drayton South Coal Project on 16 March 2013. On 21 May 2013 the Minister for Planning & Infrastructure announced that he has requested that the Planning Assessment Commission defer its review of the Drayton South Coal Project to allow the Department of Planning & Infrastructure to further consider the Response to Submissions and ensure that a thorough review of all of the issues can be undertaken, particularly with regard to the potential impacts on the nearby thoroughbred horse breeding studs.

As part of this review, the Department of Planning & Infrastructure engaged an independent third party review of the Project mine plan to investigate whether there was scope for any changes to further improve the outcomes for neighbouring stakeholders and the environment. Following this review the Department identified a range of potential improvements that could be made to the Project mine plan. Anglo American continued to work with the Department in this regard and agreed to include some of the recommended changes to the mine plan in order to improve the outcomes for neighbouring stakeholders and the environment. Accordingly the Department of Planning & Infrastructure confirmed that the required changes are to be included in the Preferred Project Report.

The amendments sought as part of the Preferred Project include:

- Minor amendments to the required infrastructure (collectively referred to as the amended infrastructure areas) including;
  - A modified alignment for a portion of the haul road and conveyor option within the transport corridor. This includes repositioning the required Macquarie Generation conveyor overpass and associated infrastructure to accommodate the modified alignment for the haul road and conveyor option;
  - An alternative alignment for the required discharge pipeline from the Houston Dam to the Hunter River; and
  - Subsequent revision of the Project Boundary to encompass the infrastructure amendments proposed above.

- Amendments to the Houston Visual Bund in order to align with the option proposed in the public submission received from Coolmore Australia;
- A revised conceptual final landform design to reduce the size of the final void, reduce the slope of the final highwall and provide a more natural landscape incorporating principles of micro-relief; and
- Amendments to the Project layout to ensure the set back from Saddlers Creek for the mine plan is at a minimum 40 metres in all areas from the northern most edge of the main haul road.

Given the minor nature of the amendments sought, many of the environmental and socio-economic aspects are deemed consistent with the impact assessments and associated mitigation and management measures provided in the Environmental Assessment.

This Preferred Project Report demonstrates that the infrastructure amendments proposed as part of the Preferred Project will improve safety performance, operational efficiency and reduce bulk earthwork requirements without causing significant environmental and socio-economic impacts. A summary of the key impacts resulting from the proposed infrastructure amendments are provided below.

When the changes proposed as part of the Preferred Project are considered together there will be a net decrease in the projected impacts to vegetation from that assessed in the Environmental Assessment. This includes a projected reduction in the area of listed Box-Gum Woodland Critically Endangered Ecological Community (-39 hectares) and non-listed derived native grassland (-14 hectares) that will be impacted by the Project.

As the Preferred Project will reduce the quantum of predicted impacts on biodiversity, the existing biodiversity offset package is deemed adequate.

The amended discharge pipeline alignment will result in an additional 7 hectares of disturbance when compared to the alignment in the Environmental Assessment. However, once the pipeline is installed, the topsoil material removed along this alignment and conserved will be reinstated and rehabilitated. In this regard, impact on Strategic Agricultural Land, other agricultural resources, enterprises and its associated production will be minimal and short-term in nature.

The Coolmore Option 4A visual bund as included in the Preferred Project presents a significant improvement for the Drayton South Coal Project by further minimising impacts on neighbouring stakeholders. The visual impact assessment undertaken for the Preferred Project Report has confirmed that the Coolmore Option 4A visual bund is effective at screening all views to the Project once constructed. Further the amended visual bund has been designed to enable its construction to be completed within 8 months which is a significant improvement from the Environmental Assessment design which was estimated to take 16 months to complete.

Finally the revised conceptual final landform proposed in this Preferred Project Report improves on the design that was initially presented in the Environmental Assessment as it significantly reduces the size of the final void, reduces the slope of the final highwall and provides a more natural landscape incorporating principles of micro-relief.

The water assessments undertaken for the revised final landform have confirmed that no material environmental impacts are predicted on the existing natural water regimes concluding that the quality of water migrating from the final void is not likely to have a measurable impact on the Hunter River. This is generally consistent with the predictions within the Environmental Assessment. With regard to Saddlers Creek water migrating from the final void is likely to contribute to a higher baseflow at a Total Dissolved Solids concentration lower than natural conditions. This is likely to improve the quality of the creek system.

Given the relative consistency of the amendments sought in this Preferred Project Report with the content presented in the Environmental Assessment and the minimal environmental and socio-economic impacts that will result from its operations when considered in the broader context of the Drayton Complex, it is deemed that the Preferred Project remains in the public interest.

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for
Anglo American Metallurgical Coal Pty Ltd

1 INTRODUCTION

This section provides an overview of the status of the Drayton South Coal Project (the Project) in the approvals process and explains the purpose of this Preferred Project Report (PPR).

1.1 BACKGROUND

The Drayton South Coal Project Environmental Assessment (EA) as prepared by Hansen Bailey Environmental Consultants (Hansen Bailey) (November 2012) on behalf of Anglo American Metallurgical Coal Pty Ltd (Anglo American) was publicly exhibited for a period of six weeks between 7 November to 21 December 2012. Additionally, a number of stakeholders were provided a 4 week extension to 18 January 2013. Following this, the Department of Planning & Infrastructure (DP&I) requested a formal response to submissions on 22 January 2013. The Response to Submissions document (RTS) was prepared and submitted to DP&I on 7 May 2013.

In early 2013 Anglo American completed further detailed design work for the infrastructure required to facilitate the Project. The outcomes of this work have resulted in minor amendments to the conceptual Project layout for which approval is being sought. In respect of the amendments proposed, the Director-General formally requested on 18 February 2013 that a PPR be prepared and submitted to support the Project.

The Minister for Planning & Infrastructure requested the Planning Assessment Commission (PAC) to review the Drayton South Coal Project on 16 March 2013. On 21 May 2013 the Minister announced that he has written to the PAC and requested that it defer its review of the Project to allow DP&I to further consider the RTS and ensure that a thorough review of all of the issues can be undertaken, particularly with regard to the potential impacts on the nearby thoroughbred horse breeding studs.

As part of this review, DP&I engaged an independent third party review of the Project mine plan to investigate whether there was scope for any changes to further improve the outcomes for neighbouring stakeholders and the environment. Following this review DP&I identified a range of potential improvements that could be made to the Project mine plan. Anglo American continued to work with DP&I in this regard and agreed to include some of the recommended changes to the mine plan as outlined in correspondence from DP&I received on 25 July 2013 and described in **Section 2**. As part of this correspondence DP&I confirmed that the PPR as requested by the Director-General on 18 February 2013 must also include a detailed description and assessment of the additional proposed changes to the mine plan.

1.2 THE PROPONENT

The proponent is Anglo American for which the contact details are:

Anglo American Metallurgical Coal Pty Ltd

201 Charlotte Street, Brisbane QLD 4000

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1.3 DOCUMENT PURPOSE

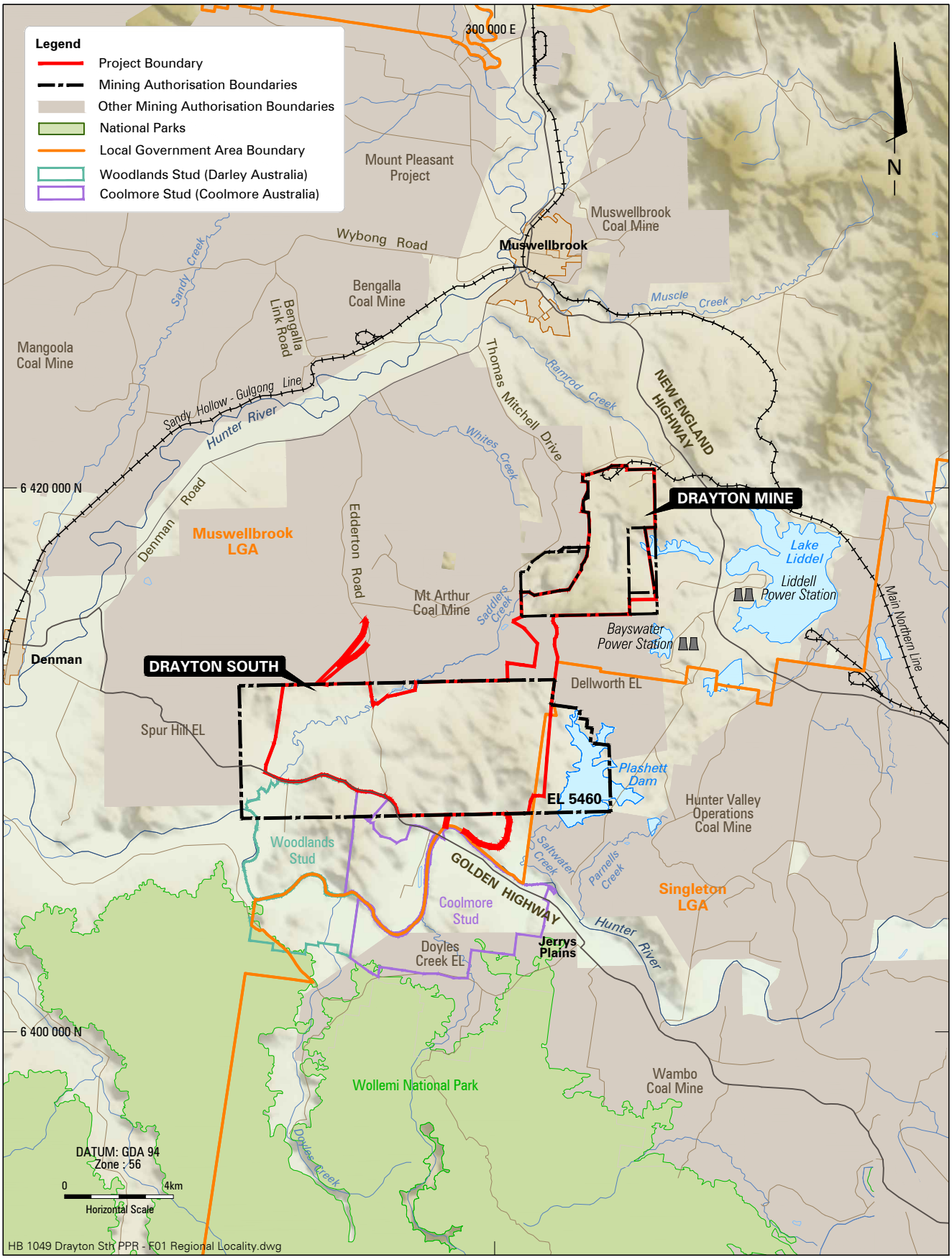
This PPR has been prepared by Hansen Bailey on behalf of Anglo American to support Major Project Application 11_0062 under section 75H(6) of the EP&A Act and to fulfil the prerequisites for a Preferred Project as requested by the Director-General on 18 February 2013 and in a subsequent letter on 25 July 2013. It proposes amendments to the conceptual Project layout for which approval is being sought (the Preferred Project) (see **Section 2**).

The amended Project Application Boundary (Project Boundary) is illustrated on **Figure 1**. The revised schedule of lands to which the PPR applies is provided in **Appendix A**.

1.4 DOCUMENT STRUCTURE

This PPR is structured as follows:

- **Section 2** provides a description of the amendments to the Project sought as part of the Preferred Project and a comparison of these changes with the EA;
- **Section 3** describes the regulatory framework relevant to the Preferred Project;
- **Section 4** details stakeholder engagement undertaken for the Preferred Project;
- **Section 5** assesses the predicted environmental and social impacts and outlines the management and mitigation measures proposed for the Preferred Project;
- **Section 6** provides a revised statement of commitments for the Preferred Project;
- **Section 7** provides a summary of the Preferred Project with consideration of all issues assessed as part of this PPR;
- **Section 8** lists abbreviations used within this PPR; and
- **Section 9** outlines all materials referenced within the PPR.



DRAYTON SOUTH COAL PROJECT
PREFERRED PROJECT REPORT

Regional Locality Plan

FIGURE 1

2 PREFERRED PROJECT DESCRIPTION

This section provides a description of the amendments sought as part of the Preferred Project and includes a comparison with the EA.

Following submission and public exhibition of the EA in late 2012, Anglo American has further evaluated and tested the functionality of the conceptual Project layout presented in the EA as part of the detailed engineering design phase. This work has resulted in the development of an optimised design for key infrastructure components required to facilitate the Project and amendments to the conceptual Project layout for which approval is being sought. Further to this, following a review of the Project mine plan by DP&I, Anglo American has agreed to make additional changes to the Project in order to improve the outcomes for neighbouring stakeholders and the environment.

The amendments sought as part of the Preferred Project (see **Figure 2**) include:

- Minor amendments to the required infrastructure (collectively referred to as the amended infrastructure areas) including;
  - A modified alignment for a portion of the haul road and conveyor option within the transport corridor. This includes repositioning the required Macquarie Generation conveyor overpass and associated infrastructure to accommodate the modified alignment for the haul road and conveyor option;
  - An alternative alignment for the required discharge pipeline from the Houston Dam to the Hunter River; and
  - Subsequent revision of the Project Boundary to encompass the infrastructure amendments proposed above.
- Amendments to the Houston Visual Bund in order to align with the option proposed in the public submission received from Coolmore Australia;
- A revised conceptual final landform design to reduce the size of the final void, reduce the slope of the final highwall and provide a more natural landscape incorporating principles of micro-relief; and
- Amendments to the Project layout to ensure the set back from Saddlers Creek for the mine plan is at a minimum 40 metres in all areas from the northern most edge of the main haul road.

The Preferred Project conceptual layout is illustrated in **Figure 3**. All of the other components of the Project remain consistent with the EA (refer to Section 4 of the EA main volume).

2.1 AMENDED INFRASTRUCTURE AREAS

2.1.1 Haul Road and Conveyor Option Alignments

A dedicated two-way heavy vehicle haul road will be constructed to allow for the haulage of coal from the Drayton South area to the existing Drayton Mine Coal Handling and Preparation Plant facilities. Following detailed design works, the haul road alignment within the transport corridor, as proposed in the EA, has been amended to provide an improved

design outcome. The radius (or tightness) of the horizontal curve in the haul road has been increased to significantly optimise efficiency and safety performance.

The proposed amendment to the haul road alignment also avoids complex terrain associated with a deep stormwater gully and related drainage complications, which would have otherwise required the implementation of substantial retaining and erosion controls. This has resulted in a significant reduction in bulk fill requirements from approximately 300,000 cubic metres (m^3) in the EA to 187,000 m^3 for the Preferred Project.

As described in the EA, if it is deemed economically feasible, an overland conveyor may be constructed to transfer coal from the Drayton South area to Drayton Mine. At this stage there is no definitive proposal or indicative timing proposed to proceed with this option. In order to maintain this option, the conveyor alignment within the transport corridor as proposed in the EA has been amended to coincide with the revised haul road alignment and to reduce the number of transfer points in the chainage.

The key design parameters for the haul road and conveyor option alignments sought as part of the Preferred Project and a comparison with the conceptual layout as presented in the EA is provided in **Table 1**.

As described in the EA, an overpass across the existing Macquarie Generation overland conveyor, which supplies coal to Bayswater Power Station from Mt Arthur Coal Mine, will be required to facilitate the haul road and conveyor option. The conveyor overpass and associated infrastructure, as proposed in the EA, has been repositioned approximately 0.25 km to the east to accommodate the revised haul road and conveyor option alignments.

The land required to accommodate the amended haul road and conveyor option alignments and associated infrastructure is situated on Lot 2 DP 1095515 and Lot 23 DP 225426, which are owned by Macquarie Generation (see **Figure 4**). Anglo American proposes to enter into an easement arrangement with Macquarie Generation over the land required to support operations during the life of the Project (see **Section 4.2**).

Consultation with Macquarie Generation regarding the proposed amendments is described in **Section 4.2**.

2.1.2 Discharge Pipeline Alignment

The surface water impact assessment undertaken for the Project (Appendix M of the EA) predicted that there will be an accumulation of water on site during the life of the Project. Under certain circumstances, there will be a need to discharge excess water into the Hunter River. These discharge events will be conducted in accordance with the Hunter River Salinity Trading Scheme (HRSTS) and the Drayton Complex water management plan.

The discharge pipeline alignment as proposed in the EA has been amended to avoid complex terrain and to allow water to be transferred by means of gravity feed from the Houston Dam to the Hunter River. The 600 millimetre diameter pipeline will be constructed of high-density polyethylene, placed in a shallow trench (approximately 1 metre (m) wide and 500 mm deep) and covered with fill material. Adequate surface water runoff and sediment controls will be installed along the pipeline alignment to prevent ponding of water and control

erosion. To allow for associated construction works, a 20 m wide corridor for the pipeline has been assessed, however, the direct disturbance area is predicted to be far less.

Discharge events will be controlled by a manually-operated closed gate valve at the base of the Houston Dam. The proposed discharge point at the confluence with the Hunter River will comprise of a head wall, non-return flap gate and an erosion protection mixing basin. A surface water monitoring station, capable of measuring electrical conductivity, total suspended solids, pH and flow, will be installed at the discharge point to ensure compliance with the requirements of the HRSTS.

The proposed pipeline and discharge point will be constructed in consultation with the NSW Office of Water and in accordance with *Guidelines for Outlet Structures* (NOW, 2010) and *Australian/New Zealand Standards 2033:2008 Installation of Polyethylene Pipes, 4130:2009 Polyethylene Pipes for Pressure Applications* and *4129:2008 Fittings for Polyethylene Pipes for Polyethylene Pipes for Pressure Applications*.

The key design parameters for the discharge pipeline alignment sought as part of the Preferred Project and a comparison with the conceptual layout as presented in the EA is provided in **Table 1**.

The land required to accommodate the amended discharge pipeline alignment is owned by Anglo American and is illustrated in **Figure 4**.

Table 1
Environmental Assessment and Preferred Project Comparison

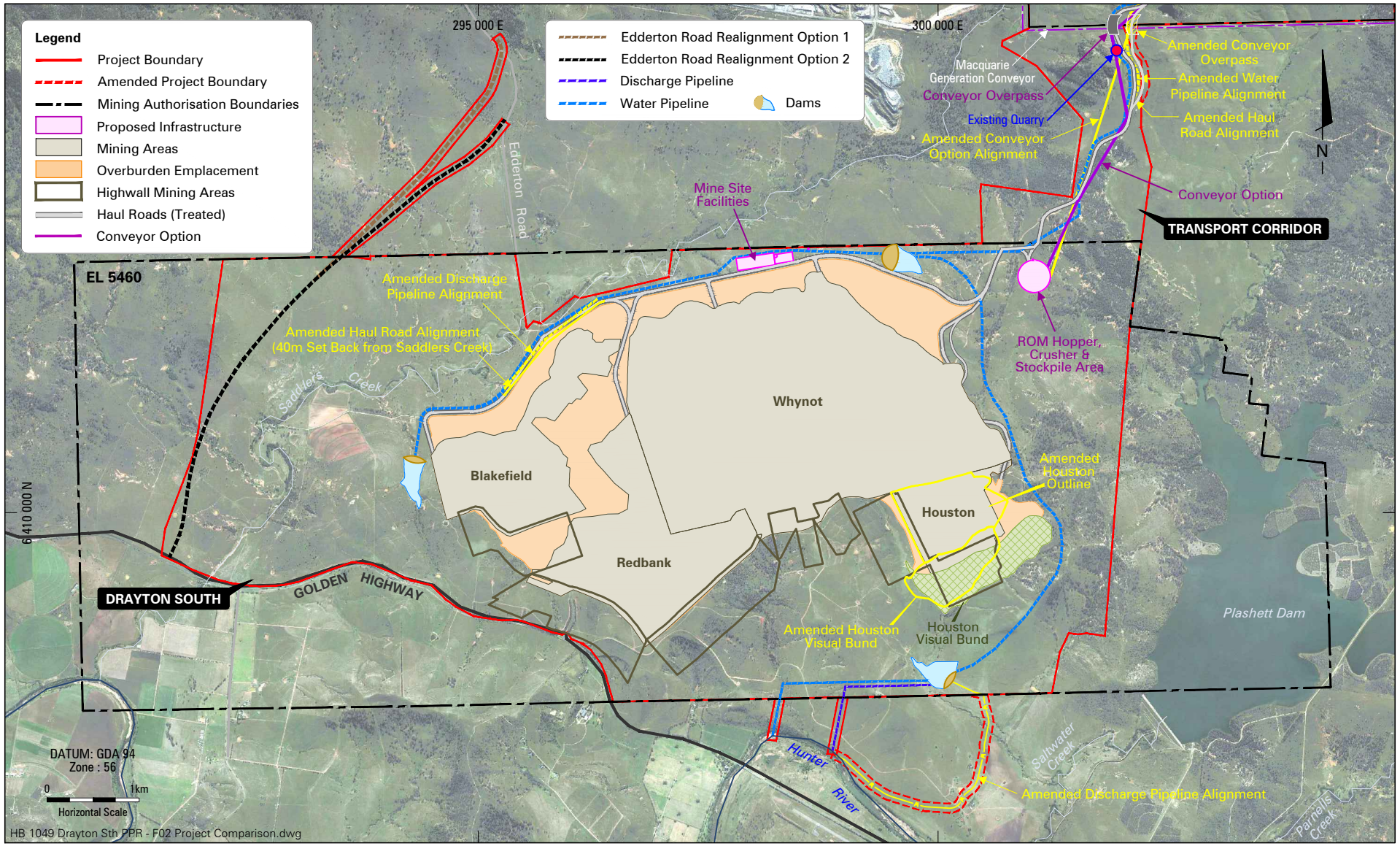
Infrastructure	Length (km)		Width (km)		Disturbance Area (ha)	
	EA	PPR	EA	PPR	EA	PPR
Haul Road	9.7	9.6	0.06	0.06	58	58
Conveyor Option	8.8	8.7	0.03	0.03	26	26
Discharge Pipeline	1.6	3.3	0.02	0.02	0*	7
Total					**84**	**91**

** Previous conceptual design in EA assumed pipeline would lie on the surface and not create disturbance.*

2.1.3 Construction Requirements

In order to facilitate the construction of the Project and amended infrastructure areas, access tracks and borrow pits will be required within the Drayton South area. Material from borrow pits will be utilised for the establishment of the Blakefield, Houston and Transfer Dams, which support the proposed water management system for the Drayton Complex.

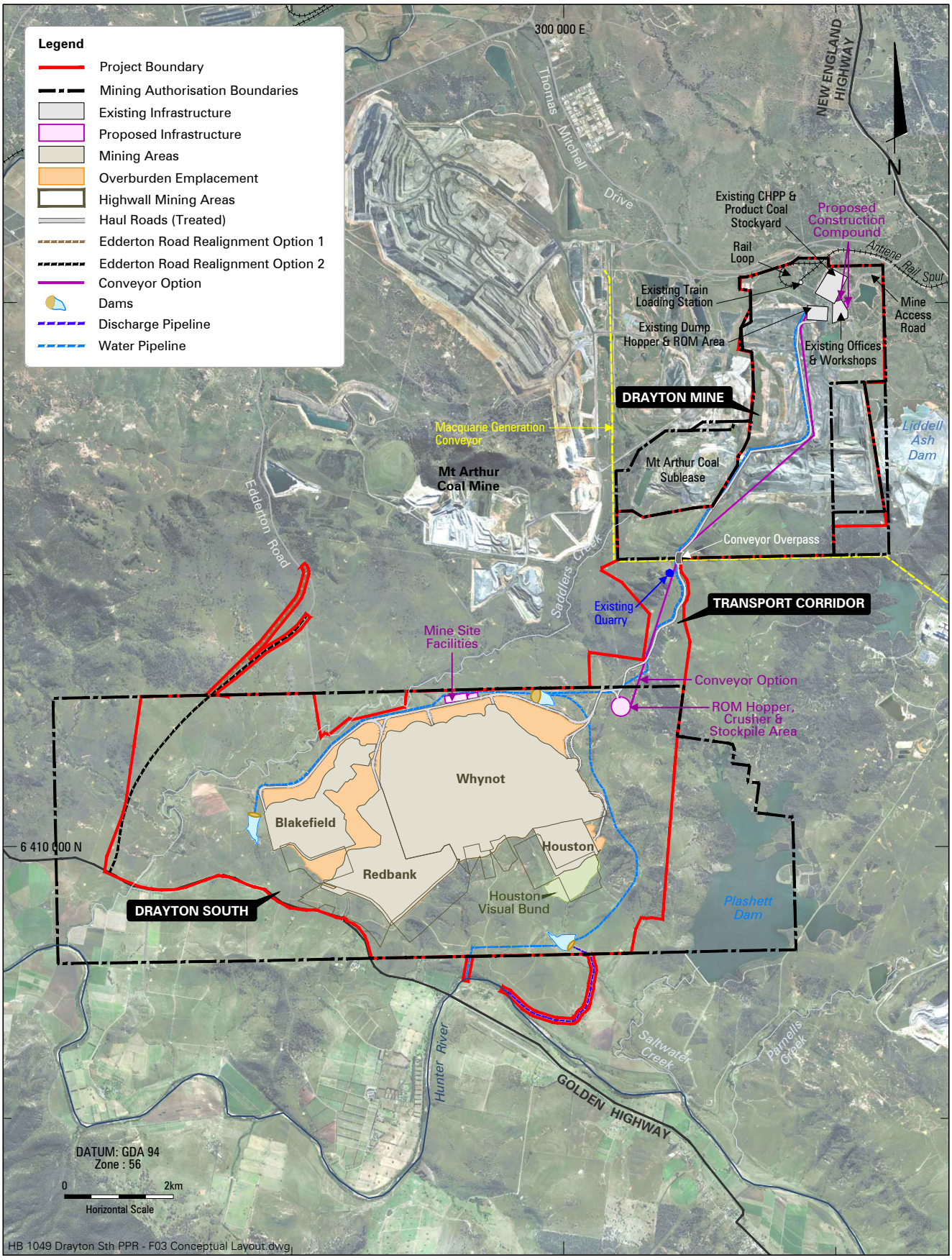
Once the extent of the required access tracks and borrow pits are delineated through the final detailed design phase, a due diligence assessment for these working areas will be undertaken prior to construction. Where necessary, the location of these working areas will be revised to avoid impacts on threatened ecological communities and Aboriginal archaeology.



DRAYTON SOUTH COAL PROJECT
PREFERRED PROJECT REPORT

Conceptual Project Layout (EA and Preferred Project Comparison)

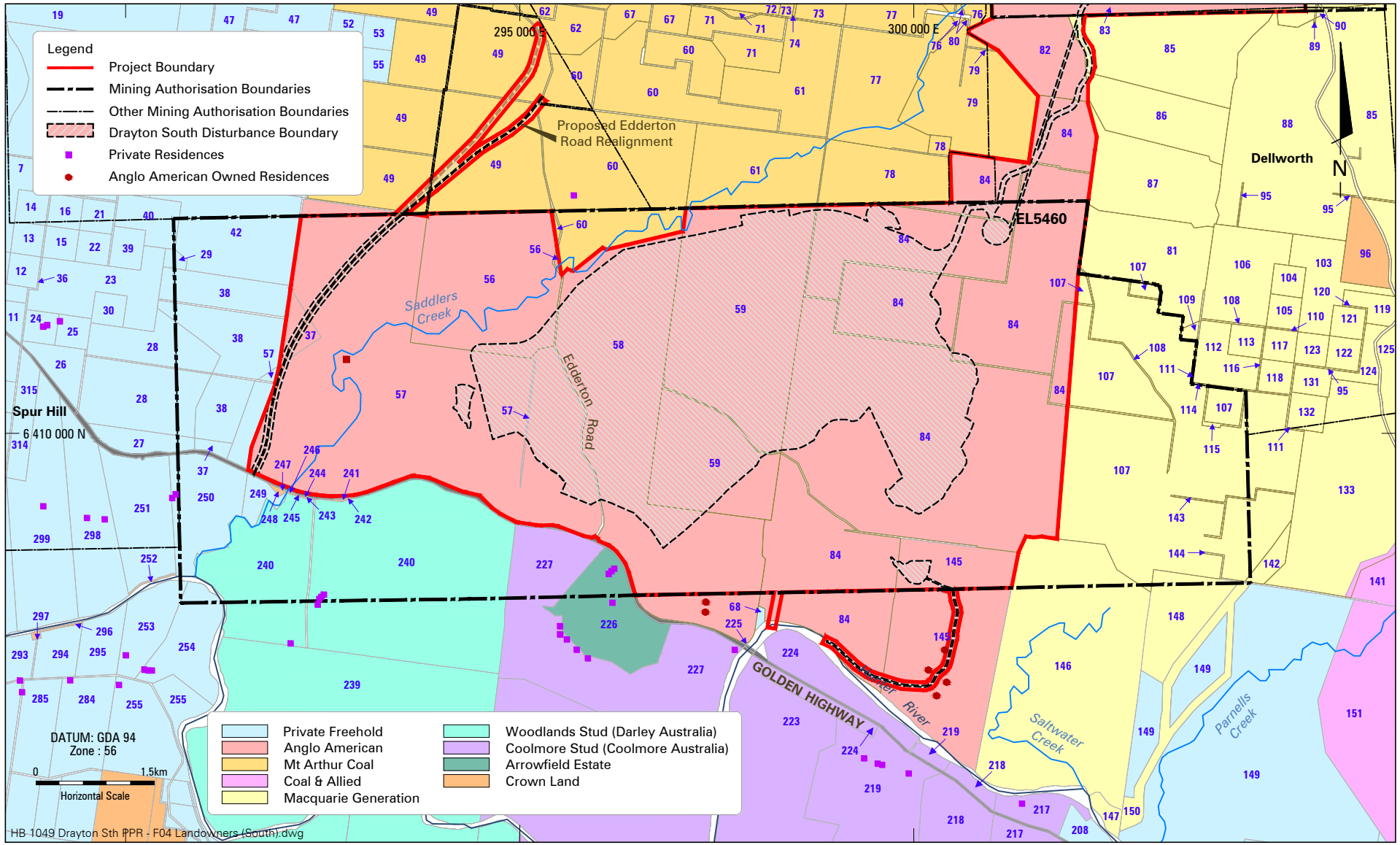
FIGURE 2



DRAYTON SOUTH COAL PROJECT
PREFERRED PROJECT REPORT

Conceptual Project Layout

FIGURE 3



DRAYTON SOUTH COAL PROJECT
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Land Ownership

FIGURE 4

2.2 HOUSTON VISUAL BUND

2.2.1 Background

The visual impact assessment undertaken by JVP Visual Planning and Design as part of the EA (see Appendix I of the EA) determined that views to the Project are largely screened from sensitive receivers due to existing topography, remanent vegetation and the establishment of tree screening. The exception is the views that will be available through an existing valley to the Houston and Whynot mining areas. To alleviate long term views of the Project, a visual bund will be constructed in the foreground of the Houston mining area to shield views of operations in the Houston and Whynot mining areas from receivers to the south.

The EA described three alternatives that were considered for the design of the Houston visual bund with the Option 3 visual bund being selected as the preferred option in the EA.

In response to the public exhibition of the EA, Coolmore Australia provided a fourth alternative visual bund that they indicated would be preferred should the Project proceed (the Coolmore Option 4 visual bund). This option was designed and proposed by Coolmore Australia in an attempt to achieve the following criteria:

- Reduced footprint of the bund;
- Reduced volume of material required to establish the bund;
- Reduced time required to construct the bund;
- Reduced environmental impacts as a result of dust and noise generation during its construction;
- Located further from Coolmore Stud; and
- Enable a sufficient strike length for the efficient and safe operation of a dragline and associated equipment within the Houston mining area.

Following due consideration and assessment of Option 4 (see Section 4.7.2 of the RTS) it was confirmed that this option does in fact offer the following advantages when compared to the Option 3 visual bund:

- Reduced footprint (with considerable reduction in extent of the footprint to the east);
- Reduced volume of material required to establish the bund;
- Reduced time required to construct the bund (eight months compared to 16 months);
- Reduced environmental impacts as a result of dust and noise generation (relative to the reduction in volume of material and time taken to build); and
- Enables a sufficient strike length for the efficient and safe operation of a dragline and associated equipment within the Houston mining area.

The disadvantages of Option 4, as outlined in the RTS, were with regard to the potential visual impacts that remain in some of the areas where the bund has been made smaller. These disadvantages were discussed in detail with Coolmore Australia as part of the ongoing working group process.

Following DP&I's review of the Project mine plan and the additional working group meetings held with Coolmore Australia, Anglo American committed to make further improvements to the Houston visual bund and the Project mine plan to mitigate the residual visual impacts identified in the RTS. The result is the Option 4A visual bund. The development of the Option 4A visual bund ensures that all views from critical viewing locations to the south of the Project, in particular Coolmore Stud, are shielded upon completion of the visual bund whilst affording improved micro-relief along the crest length and its interaction with existing topography.

Anglo American is committed to the construction of the Coolmore Option 4A visual bund as included in this PPR. Further details regarding the design and construction aspects for this option are provided in **Section 2.2.2**.

A comparison of the specifications for the EA Option 3 visual bund and the Coolmore Option 4A visual bund is provided in **Table 2**. This demonstrates that Option 4A as included in the Preferred Project is substantially smaller than Option 3 and would take half of the required time to construct.

Table 2
Alternative Visual Bund Design Specifications

Visual Bund Design Option	Volume (Mlcm)	Construction Period (Months)	Maximum Batter Height (m)	Crest Length (m)	Distance to Closest Private Receiver (km)
Option 3	16.6	16	77	1,750	2.8
Option 4A	7.7	8	79	1,095	2.8

2.2.2 Design and Construction

The Option 4A visual bund has been designed to fulfil the criteria provided in **Section 2.2.1** and to mitigate the residual visual impacts identified from the assessment of the Option 4 visual bund as presented in Section 4.7.2 of the RTS.

The Option 4A visual bund will involve a seven stage construction program (see **Table 3**) from Year 3 for a period of approximately eight months. It will be situated approximately 2.8 kilometres (km) from the nearest receiver in the south. Approximately 7.7 Million linear cubic metres (Mlcm) of overburden material extracted from the initial box cut within the Houston mining area will be required for its construction. The design provides for a maximum batter height of 79 m, a crest length of 1,095 m and a slope of approximately 14 degrees. Throughout stage 1, 3, 5 and 7, a dozer and trucks will be supporting construction activities on the southern face of the visual bund. All other stages of the construction of the visual bund have been designed to remain shielded behind the previous lifts.

Once constructed, the visual bund (in particular the crest line) will be shaped to create micro relief in line with the existing topography and landscape.

Table 3
Option 4A Visual Bund Construction Program

Stage	Construction Activity	Volume (Mlcm)	Time (Months)	Anticipated Visibility (Months)
1	Lift to RL 160 m	0.5	0.5	0.5
2	Backfill to RL 155 m	0.4	0.25	-
3	Lift to RL 180 m	1.1	1	1
4	Backfill to RL 175 m	1.1	1	-
5	Lift to RL 200 m	1.3	1.25	1.25
6	Backfill to RL 195 m	1.0	1	-
7	Lift to RL 220 m (crest line) and final shaping	2.3	3	3
Total		**7.7**	**8**	**5.75**

Initially the Option 4A visual bund will be constructed during daylight hours only until the Houston mining area reaches a depth of 12 m and the bund in front of the mining area reaches 15 m. From this point onwards, the construction hours will be 24 hours per day, seven days a week in order to establish and rehabilitate the bund in accordance with stakeholder expectations. This operational constraint has been adopted for the Project in order to avoid exceedances of the intrusive criteria for noise at receivers, as per the *Industrial Noise Policy* (EPA, 2000).

In the absence of potential noise impacts, works on the Option 4A visual bund could be undertaken 24 hours per day, seven days a week from the commencement of the construction program. This schedule would reduce the overall construction program by approximately two to four weeks. However, taking into consideration other environmental constraints associated with the construction of the visual bund, this schedule has not been proposed.

2.2.3 Project Concessions

As described above, in adopting the Coolmore Option 4A visual bund some minor changes were made to the design initially put forward by Coolmore Australia in its public submission. The changes mainly consisted of raising the crest of the bund by 5m to ensure the operation remains shielded from view, and undertaking some profiling of the crest to produce a more natural shape. Some redesign of the Houston mining area southern endwall was required to accommodate the revised bund position. This redesign resulted in a reserve loss, due to moving the southern endwall north by approximately 100m. The reserve loss was approximately 1.2 Mt which is in addition to the previous project concessions that are outlined in Section 4.16.7 of the EA.

2.3 CONCEPTUAL FINAL LANDFORM

As part of the review undertaken by DP&I an opportunity was identified to further optimise the final landform at Drayton South in order to reduce the size of the final void, reduce the slope of the final highwall and provide a more natural landscape incorporating principles of micro-relief. Accordingly Anglo American has made substantial revisions to the conceptual final landform design for the Project in order to incorporate the principles committed to in the RTS. The changes made outlines Anglo American's plans to establish a final landform that will emulate existing areas of the natural landscape by incorporating aspects of micro-relief and replicating natural features such as rolling hills in the rehabilitated landscape. In this regard a revised conceptual final landform for the Project has been developed and included as part of the Preferred Project (see **Figure 5**).

The conceptual landform now creates a natural looking landscape with ridges that transition from convex to concave slopes, small sub-watersheds containing water channels that merge into larger water channels that are designed with the required cross sectional profile and sinuosity to handle variable flows (see **Figure 6**).

The revised conceptual final landform offers the following improvements when compared to that which was presented in the EA:

- A significant reduction in the volume of the final void from 145Mm^3 (as presented in the EA) to 28Mm^3. This represents a reduction in size of 80%;
- Allowance for the progressive infilling of the central ramp to the Whynot mining area;
- Significant improvements to the treatment and reshaping of the highwall in the final void (effectively removing the highwall);
- A significant reduction in the catchment area draining to the final void area from 1,140 hectares (ha) (as presented in the EA) to 688 ha which represents a reduction of 40%. This has been achieved through redesigning the final landform in order to allow for large areas of the post-mining landform to drain back into natural catchments; and
- Re-design of the conceptual final landform as a whole to demonstrate how the principles of micro-relief, free rolling hills and other features that assist in emulating the natural landscape will be incorporated into the Project (see **Figure 7**).

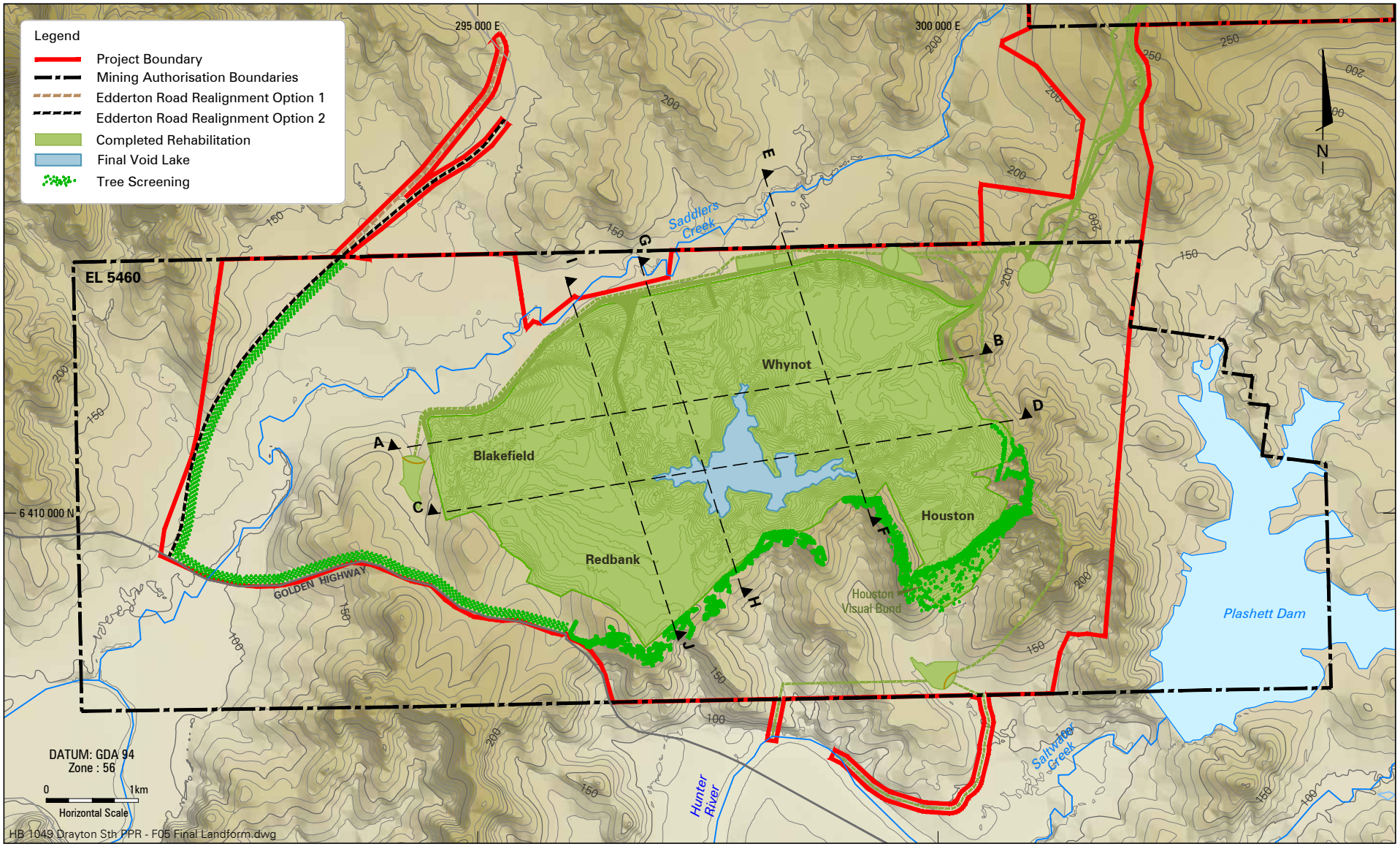
2.4 SADDLERS CREEK SET BACK

Following DP&I's review of the Project mine plan, Anglo American has committed to make relevant amendments to the conceptual Project mine plan to ensure that it is set back from Saddlers Creek in all areas by at least 40m from the northern most edge of the main haul road.

In accordance with *Management of Stream / Aquifer Systems in Coal Mining Developments, Hunter Region* (DIPNR, 2005) active mining is not permissible within 40 m of a Schedule 2 stream, which is represented primarily by third order and higher streams draining into primary catchment rivers systems. Saddlers Creek has been conservatively classified as a Schedule 2 stream and as such requires a buffer of 40 m from the mining area to the bank of the stream. The conceptual mine plan for the Preferred Project as presented in this PPR (see **Figure 3**) provides the necessary buffer for the Saddlers Creek stream bank.

It is noted that some ancillary infrastructure will be required to be installed in some areas within 40m of Saddlers Creek including sediment and erosion control works as well as some power lines and parts of access roads. These will be designed and constructed in accordance with the relevant requirements of NOW and DP&I.

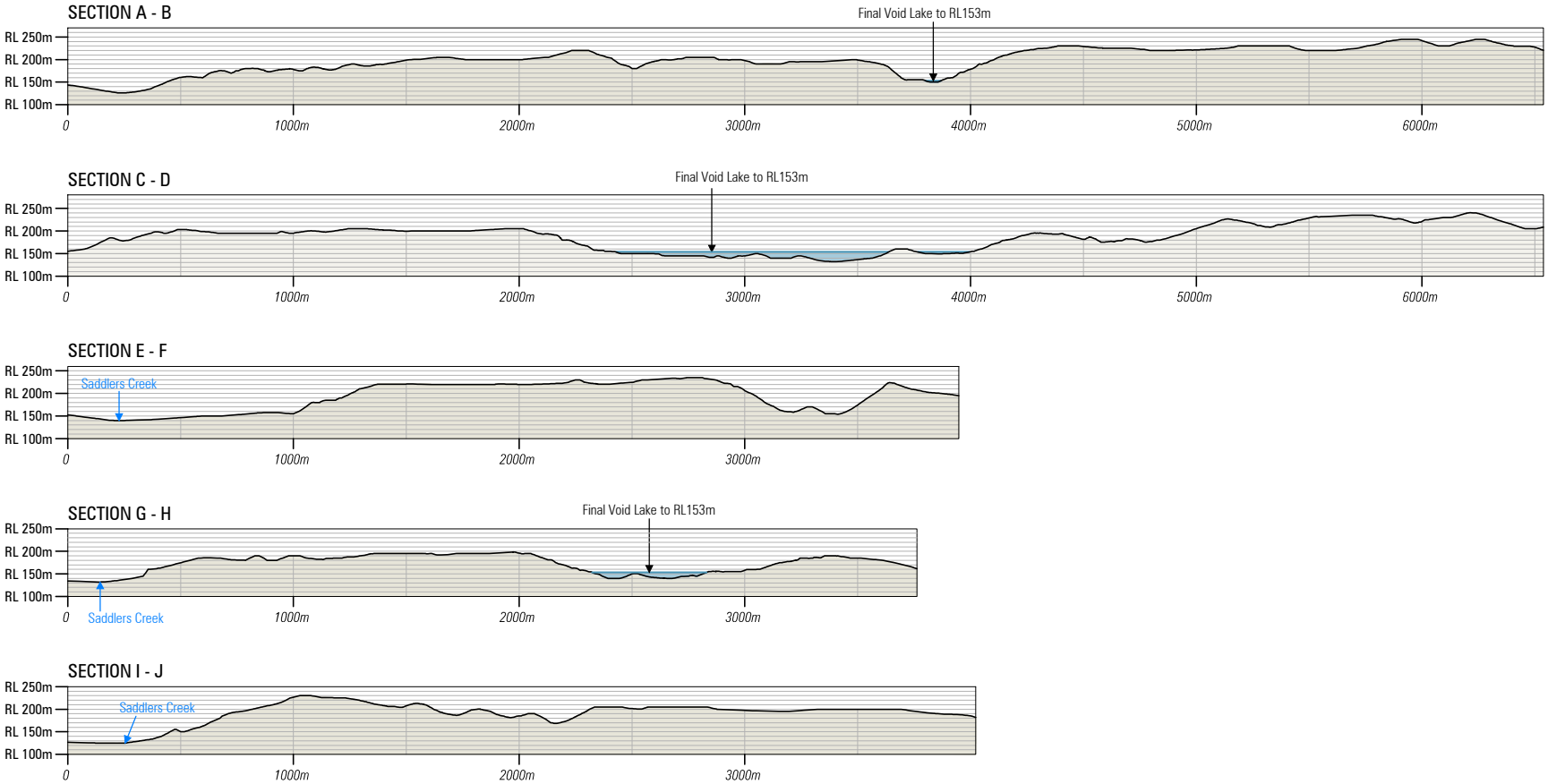
Modelling undertaken as part of the surface water impact assessment for the Project (see Appendix M of the EA) determined that the conceptual mine plan and all related infrastructure is located outside of the 100 year Average Recurrence Interval flood extent of Saddlers Creek. In this regard, no impacts on the Project are expected as a result of flooding from Saddlers Creek.



DRAYTON SOUTH COAL PROJECT
PREFERRED PROJECT REPORT

Conceptual Drayton South Final Landform

FIGURE 5



HB 1049 Drayton Sth PPR - F06 Final Landform Sections.dwg

DRAYTON SOUTH COAL PROJECT
PREFERRED PROJECT REPORT

Conceptual Drayton South Final Landform Cross-Sections

FIGURE 6

DRAYTON SOUTH COAL PROJECT
PREFERRED PROJECT REPORT

Conceptual Drayton South 3D Final Landform

FIGURE 7

3 REGULATORY FRAMEWORK

This section sets out the regulatory framework as relevant to the Preferred Project under NSW and Commonwealth legislation.

3.1 STATE LEGISLATION

3.1.1 Environmental Planning and Assessment Act 1979

On 2 March 2011, Anglo American submitted a major project application under section 75E of the EP&A Act for approval of the Project. Anglo American is currently seeking minor amendments to the conceptual Project layout (the Preferred Project) under section 75H(6) of the EP&A Act for which approval is being sought. The following section outlines the applicable regulatory processes under the EP&A Act for the Preferred Project.

Given the Preferred Project does not materially change the major project application, all residual requirements and approvals applicable under the EP&A Act will remain consistent with that presented in the EA.

Applicability of Part 3A

Clause 6 of *State Environmental Planning Policy (Major Development) 2005* (SEPP Major Development) states that "*development that is in the opinion of the Minister of a kind listed in Schedule 1 or 2 is declared to be a project to which Part 3A of the EP&A Act applies*".

On 9 March 2011, the Director-General as delegate for the Minister for Planning and Infrastructure advised that he had formed the opinion, for the purposes of clause 6(1) of the SEPP Major Development, that the Project is development "*for the purpose of mining that is coal mining"*, as listed in Schedule 1 and accordingly is declared to be a Project to which Part 3A of the EP&A Act applies for the purposes of section 75B of the EP&A Act.

On 3 August 2011, the Director-General of DP&I issued his Environmental Assessment Requirements (EARs) for the Project.

Part 3A of the EP&A Act was repealed on 1 October 2011. However, the savings and transitional provisions enacted under Schedule 6A of the EP&A Act declare certain projects to be "*transitional Part 3A projects*" *"if its EARs were issued within two years of the repeal date"*. As the EARs for the Project were issued to Anglo American within the repeal date, the Project is a "*transitional Part 3A project*" to which the provisions of Part 3A (as in force immediately prior to its repeal or as amended by regulation) will apply.

Preferred Project Report

In respect of the amendments proposed in **Section 2**, DP&I formally requested by letter on 18 February 2013 and in a subsequent letter on 25 July 2013, that a PPR be prepared under section 75H(6) of the EP&A Act.

Section 75H(6) states:

> *(6) The Director-General may require the proponent to submit to the Director-General:*
>
> *(a) a response to the issues raised in those submissions, and*

(b) a preferred project report that outlines any proposed changes to the project to minimise its environmental impact, and

(c) any revised statement of commitments.

As required by section 75H(6)(b) and DP&I's requirements issued on 18 February 2013 and 25 July 2013, this PPR outlines the proposed changes as sought by the Preferred Project and provides a comparison to the Project as presented in the EA.

Director-General's Environmental Assessment Requirements

The Director-General's EARs for the Project were issued on 3 August 2011 under section 75F of the EP&A Act. A supplementary requirement was later issued on 30 April 2012 by the Director-General under section 75F(3) of the EP&A Act requiring the preparation of an agricultural impact statement having regard to the *Strategic Regional Land Use Plan – Upper Hunter* (SRLUP) (DP&I, 2012). These requirements were addressed in the EA for the Project and considered further in the preparation of this PPR.

As part of the consultation process undertaken for the PPR (see **Section** 4), DP&I indicated that the existing EARs for the Project will not be modified in consideration of the Preferred Project.

3.1.2 NSW Environmental Planning Instruments

Strategic Regional Land Use Plan – Upper Hunter

The SRLUP for the Upper Hunter region was released in September 2012 with the objective of introducing additional approval requirements for mining developments located on "*Strategic Agricultural Land*" (SAL). Proposed mining developments that are located on SAL are subject to an independent preliminary assessment process known as the "Gateway Process". The scientific panel administering the Gateway Process must award a "Gateway Certificate" before a proposal will be allowed to proceed to the planning approvals process under the EP&A Act.

Chapter 11 of the SRLUP states that the Gateway Process will apply to all new mines, as well as expansions of existing mines to areas outside of existing mining leases. However, the Gateway Process will not apply to any mine expansions that occur entirely within the boundaries of existing mining leases.

The Gateway Process will be implemented through an amendment to *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.* This amendment is yet to be enacted.

The SRLUP is relevant to the assessment of the Project due to the supplementary EAR issued on 30 April 2012 requiring an agricultural impact statement, which includes a focussed assessment of the impacts on SAL having regard to the *"gateway criteria"*. Subsequently, this requirement has been considered in the preparation of this PPR.

3.2 COMMONWEALTH LEGISLATION

3.2.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) prescribes the Commonwealth's role in environmental assessment, biodiversity conservation and the management of protected areas of national significance. The EPBC Act is administered by the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) and provides protection for listed Matters of National Environmental Significance (MNES). If a proposed action is likely to have a significant effect on one or more MNES, the action is deemed to be a "*controlled action*" and the approval of the Minister for Sustainability, Environment, Water, Population and Communities must be obtained before a controlled action can be carried out.

On 11 April 2011, the Project was referred to the Minister given its potential to impact on MNES. Subsequently on 12 May 2011, the Minister declared the Project to be a controlled action under the EPBC Act. Given the Minister's decision, the Project was subject to an impact assessment under Part 8 of the EPBC Act in accordance with the accredited assessment process prescribed under the EP&A Act.

Section 156A of the EPBC Act allows the proponent to request the Minister to accept a variation to the "*original proposal*". Section 156B provides that the Minister may only accept a variation where the "*character of the varied proposal is substantially the same as the character of the original proposal*".

When considering whether the varied proposal is substantially the same as the original proposal, the Minister must have regard to the nature of the activities constituting the controlled action and the impacts of the action on MNES. The variation to the proposed action involves assigning a modified alignment for a portion of the haul road and conveyor option within the transport corridor and the discharge pipeline from the Houston Dam to the Hunter River. It also involves the reduction of the size of the Houston visual bund. All other proposed changes are within the existing disturbance limits as assessed in the EA. The amended infrastructure components were included in the original proposal and the amended alignments are not radically different. As discussed in **Section 5.1**, the impacts on species and ecological communities listed under the EPBC Act are not significantly altered by the variation to the proposal. Therefore, the character of the varied proposal is substantially the same as the character of the original proposal.

4 STAKEHOLDER ENGAGEMENT

This section provides a summary of the stakeholder engagement undertaken for the Preferred Project by Anglo American and Hansen Bailey. The stakeholder engagement program included consultation with State and Commonwealth government agencies and neighbouring land owners and industries as relevant.

4.1 REGULATORY ENGAGEMENT

In respect of the amendments proposed in **Section 2**, DP&I formally requested on 18 February 2013 that a PPR be prepared under section 75H(6) of the EP&A Act for the amended infrastructure areas (see **Appendix B**).

As part of the consultation process, DP&I indicated that the EARs would not be modified as a result of the requirement to prepare a PPR.

Notification of the proposed amendments was provided to SEWPaC on 8 May 2013. As discussed in **Section 3.2.1**, the character of the varied proposal (the Preferred Project) is substantially the same as the character of the original proposal (the Project).

Throughout DP&I's review of the Project mine plan, Anglo American continued to consult with the Department and agreed to include some of the recommended changes to the mine plan as outlined in correspondence from DP&I received on 25 July 2013 (see **Section 2**).

4.2 INDUSTRY ENGAGEMENT

Extensive consultation has been undertaken with Macquarie Generation regarding the proposed infrastructure amendments as sought by the Preferred Project. This has been facilitated through regular joint working group meetings, which have allowed both parties to develop collaborative plans that can be accommodated under current and proposed operations.

Anglo American has entered into discussions with Macquarie Generation regarding an agreement for the access and development of an easement over the land required to support operations during the life of the Project. On 7 January 2013, Anglo American provided draft principles for the agreement over the relevant land (see **Section 2.1.1**) to Macquarie Generation for their consideration.

Anglo American is committed to ongoing consultation with Macquarie Generation to ensure a commercial agreement between the two parties is effective prior to the commencement of construction activities for the Preferred Project.

4.3 COMMUNITY ENGAGEMENT

Notification of the amended infrastructure areas as sought by the Preferred Project was provided to neighbouring land owners, including Coolmore Australia, Darley Australia and United Pastoral Pty Ltd (Arrowfield Estate), on 8 May 2013.

Two additional working group meetings were also held with Coolmore Australia on 13 May 2013 and 11 June 2013 to discuss the Coolmore Option 4 visual bund design. Feedback from these meetings was used to refine the visual bund design presented in the RTS to develop the Coolmore Option 4A visual bund as presented in this PPR in order to ensure that all residual views to the Project are screened entirely.

Anglo American is committed to ongoing consultation with the community, including neighbouring land owners, regarding the Preferred Project in its entirety.

5 IMPACTS, MANAGEMENT AND MITIGATION

This section describes the environmental and social impacts of the Preferred Project and the measures that will be implemented to mitigate and manage these impacts.

The EA provided a comprehensive assessment of environmental and socio-economic aspects relevant to the Project. A review of the EA was undertaken as part of the PPR to identify if the Preferred Project significantly altered the outcomes of the impact assessments supporting the major project application. The review identified that there is the potential for aspects of the Preferred Project, in particular with relation to the amended infrastructure areas, to impact on ecology, Aboriginal archaeological and cultural heritage, soil and land capability and agriculture. As such, relevant impact assessments have been undertaken to address these aspects (see **Section 5.1** to **5.4**).

In addition to the above it was also deemed appropriate to undertake an additional analysis of the potential visual impacts associated with the Coolmore Option 4A visual bund and to include a relevant surface water and groundwater assessment for the proposed changes to the final landform and resultant final void (see **Section 5.5** to **5.7**).

Given the minor nature of the amendments sought as part of the Preferred Project, all remaining environmental and socio-economic aspects are deemed consistent with the impact assessments and associated mitigation and management measures provided in the EA.

5.1 ECOLOGY

5.1.1 Background

An ecology impact assessment for the PPR was undertaken by Cumberland Ecology as an addendum to Appendix J of the EA and is provided in full in **Appendix C**. The purpose of the assessment was to characterise the biodiversity values within the amended infrastructure areas and revised Houston visual bund, assess the potential impacts on these values and verify the adequacy of the offset package as presented in the EA to compensate for these impacts.

5.1.2 Method

The ecology impact assessment undertaken for the EA (see Appendix J), comprehensively characterised the biodiversity values within the Drayton South area. As such, the addendum for the PPR draws largely upon a review of existing information and the results of the field surveys conducted for the Project as part of the EA.

To supplement the previous assessment, a field survey of the amended infrastructure areas was completed in February 2013. This survey verified vegetation mapping and assessed the presence of flora and fauna and their habitat.

5.1.3 Impact Assessment

The amended infrastructure areas required to facilitate the Preferred Project will result in the disturbance of up to 18 ha of vegetation, including 2 ha of Central Hunter Box-Ironbark EEC and 16 ha of non-listed derived native grassland. This is comparable to the areas proposed to be disturbed by this infrastructure in the EA. The Preferred Project also includes amendments to the Houston visual bund and the mine set back from Saddlers Creek; these amendments will decrease the overall Project disturbance footprint, including a 39 ha reduction in the area of listed Box-Gum Woodland CEEC estimated to be impacted. Subsequently when considered together there will be a net decrease in the projected impacts to vegetation from that assessed in the EA. This includes a projected reduction in the area of Box-Gum Woodland (-39 ha) and non-listed derived native grassland (-14 ha) that will be impacted by the Project.

Table 4 provides a summary of the vegetation communities that will be directly impacted as a result of the Preferred Project and a comparison with the EA. **Figure 8** illustrates the spatial distribution of the vegetation communities within the Drayton South area and the areas that will be directly impacted by the Preferred Project.

The Preferred Project will not directly impact on threatened flora no threatened fauna species were recorded in the amended infrastructure areas.

All other direct and indirect impacts associated with the Preferred Project remain consistent with those described and assessed in the EA.

5.1.4 Mitigation and Management

Given the nature of works associated with the Preferred Project, the suite of mitigation and management measures presented in the EA (see Section 8.7 of the EA) are considered to be appropriate, including (but not limited to):

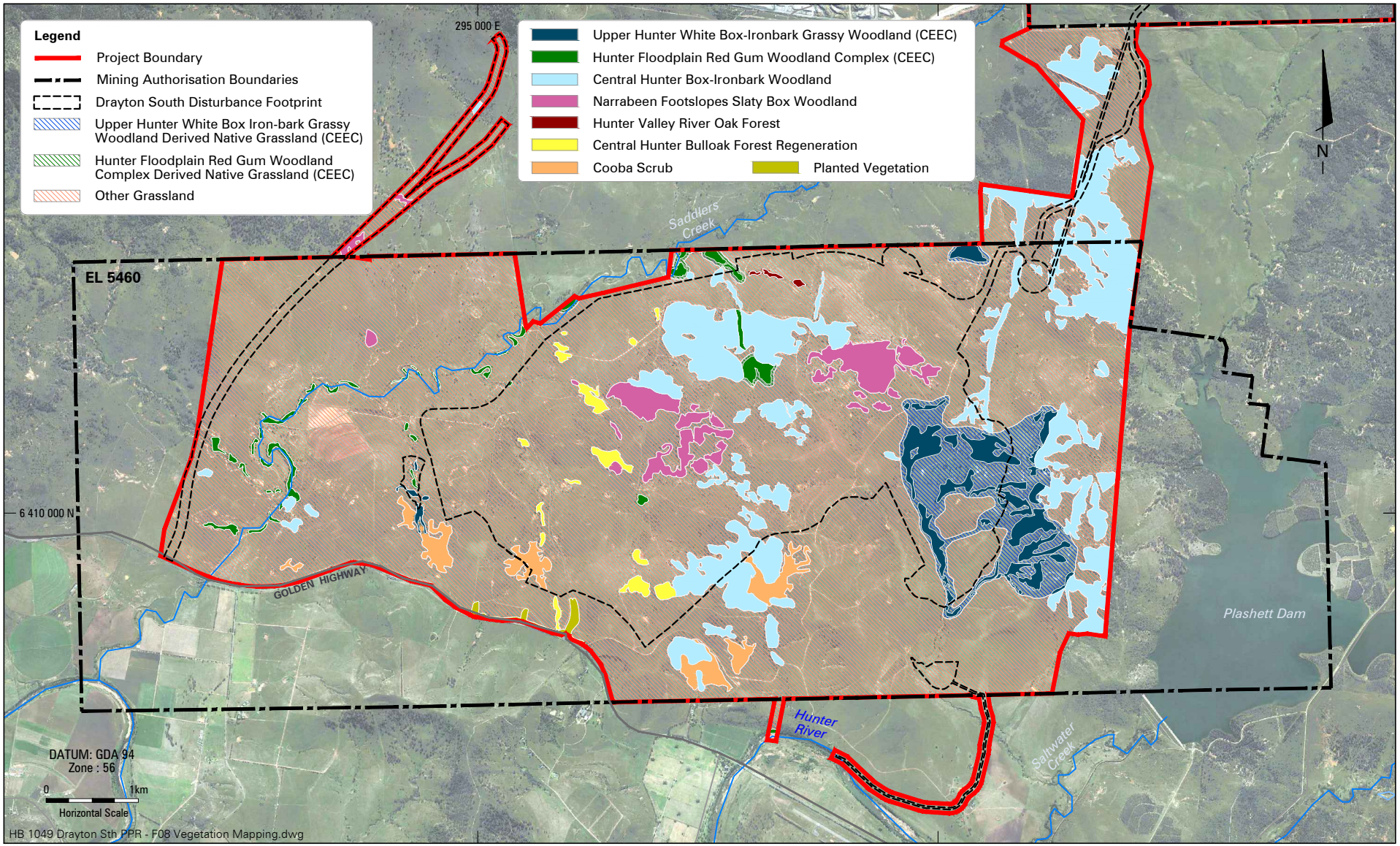
- Vegetation clearing protocols;
- Soil conservation;
- Erosion and sediment controls;
- Ecological monitoring program; and
- Ongoing management of environmental and noxious weeds.

The biodiversity offset package presented in the EA (see Section 8.8 of the EA) aims to address the ecological impacts of the Project in a strategic and meaningful way that will deliver a real biodiversity outcome. As the Preferred Project will further reduce the quantum of predicted impacts on biodiversity, no further offsets are considered necessary.

Table 4
Vegetation Communities

Vegetation Community	Status (TSC, EPBC Act)	EA (ha)		Preferred Project (ha)		Net Difference (ha)	
		Total Area	Area within Disturbance Footprint	Total Area	Area within Disturbance Footprint	Total Area	Area within Disturbance Footprint
Central Hunter Bulloak Forest Regeneration	-	26	25	26	25	0	0
Hunter Valley River Oak Forest	-	2	2	2	2	0	0
Central Hunter Box-Ironbark Woodland	EEC	479	181	479	181	0	0
Hunter Floodplain Red Gum Woodland	EEC, CEEC	40	11	40	11	0	0
Narrabeen Footslopes Slaty Box Woodland	VEC	100	98	100	98	0	0
Upper Hunter White Box-Ironbark Grassy Woodland	EEC, CEEC	94	63	94	44	0	-19
Cooba Scrub	-	65	9	65	9	0	0
Planted Vegetation	-	9	0	9	0	0	0
Derived Native Grassland - Hunter Floodplain Red Gum Woodland Complex	EE, CEEC	10	4	10	4	0	0
Derived Native Grassland - Upper Hunter White Box-Ironbark Grassy Woodland	EEC, CEEC	159	103	159	83	0	-20
Other Grassland	-	3,613	1,432	3,643	1,418	30	-14
Total		**4,597**	**1,928**	**4,627**	**1,875**	**30**	**-53**

VEC Vulnerable Ecological Community; EEC Endangered Ecological Community; CEEC Critically Endangered Ecological Community



DRAYTON SOUTH COAL PROJECT
PREFERRED PROJECT REPORT

Vegetation Communities

FIGURE 8

5.2 ABORIGINAL ARCHAEOLOGY AND CULTURAL HERITAGE

5.2.1 Background

An Aboriginal archaeological and cultural heritage impact assessment for the PPR was undertaken by AECOM as an addendum to Appendix K of the EA and is provided in full in **Appendix D**. The purpose of the assessment was to characterise the archaeological resource within the amended infrastructure areas, assess the potential impacts on Aboriginal heritage and recommend measures to mitigate and manage these impacts.

5.2.2 Method

The Aboriginal archaeological and cultural heritage impact assessment undertaken for the EA (see Appendix K), comprehensively characterised the Aboriginal archaeological resource and cultural heritage values (scientific and social) of the Drayton South area. As such, the addendum for the PPR draws largely upon a review of existing information and the results of the field surveys conducted for the Project as part of the EA.

To supplement the previous assessment, an Aboriginal Heritage Information Management System (AHIMS) database search and a field survey of the amended infrastructure areas was completed in February 2013. This survey verified the presence of archaeological sites and areas of known or potential Aboriginal cultural value.

5.2.3 Impact Assessment

The amended infrastructure areas required to facilitate the Preferred Project will not directly impact any known Aboriginal archaeological sites, including AHIMS registered sites. While no additional surface archaeology was identified in the field survey, it was determined that a portion of the amended discharge pipeline alignment is situated on land that is predicted to be archaeologically sensitive given its proximity to the Hunter River and Saltwater Creek (see predictive model in Appendix K of the EA).

All other direct impacts associated with the Preferred Project remain consistent with those described and assessed in the EA.

5.2.4 Mitigation and Management

Where deemed appropriate within the broader archaeological test and salvage excavations planned for the Project, a program of subsurface test excavation will be undertaken where the discharge pipeline occurs in areas of high subsurface archaeological potential. Details for the excavation program will be addressed within the Aboriginal cultural heritage management plan, which will be prepared upon Project Approval.

5.3 SOIL AND LAND CAPABILITY

5.3.1 Background

An assessment of the potential soil and land capability impacts resulting from the Preferred Project was undertaken by Hansen Bailey. The purpose of the assessment was to characterise the soil types and land capability within the amended infrastructure areas and assess the potential impacts on soil resources.

5.3.2 Method

The soil and land capability impact assessment undertaken by Environmental Earth Sciences for the EA (see Appendix Q), comprehensively characterised the available soil resource and its associated land capability within the Drayton South area. As such, the assessment for the PPR draws largely upon a review of existing information and the results of the field surveys conducted for the Project as part of the EA.

5.3.3 Impact Assessment

The land over which the amended infrastructure areas are proposed and the associated predominant soil types and land capability characteristics are outlined in **Table 5**. A detailed description of each soil type is provided in Section 8.15 of the EA.

Table 5
Soil Types and Land Capability

Amended Infrastructure Areas	Soil Types		Land Capability
Amended haul road and conveyor option alignment	1	Mottled Pedaric Brown Sodosol Complex	VI, VII
	2	Pedaric Brown Dermosol Complex	
Amended discharge pipeline alignment	2	Pedaric Brown Dermosol Complex	VI
	3	Brown Vertosol Complex	

The area of land required to be disturbed by the amended haul road and conveyor option alignment will remain unchanged from the EA.

The amended discharge pipeline alignment will result in an increase of 7 ha to the area of land required to be disturbed when compared to the EA. However, once the pipeline is installed, the topsoil material collected along this alignment and conserved will be reinstated and rehabilitated. In this regard, the short-term impact on the soil resource will be minimal.

All other direct impacts associated with the Preferred Project remain consistent with those described and assessed in the EA.

5.3.4 Mitigation and Management

Given the nature of works associated with the amended infrastructure areas, the suite of mitigation and management measures presented in the EA (see Section 8.15 of the EA) are considered to be appropriate, including (but not limited to):

- Soil stockpile conservation (i.e. free draining, seeded, fertilised and treated for weeds prior to re-spreading);
- Seedbed preparation; and
- Erosion and sediment controls.

5.4 AGRICULTURE

5.4.1 Background

An assessment of the potential agricultural impacts resulting from the Preferred Project was undertaken by Hansen Bailey. The purpose of the assessment was to verify the presence of SAL as defined in the SRLUP, characterise the agricultural domains and enterprises within the amended infrastructure areas, assess the potential impacts on the land and its agricultural production and recommend measures to mitigate and manage these impacts.

5.4.2 Method

The agricultural impact statement undertaken by Scott Barnett & Associates for the EA (see Appendix R), comprehensively characterised the agricultural domains and enterprises within the Drayton South area and quantified its associated production. It also provides an assessment against the SRLUP having regard to the gateway criteria. As such, the assessment for the PPR draws largely upon a review of existing information and the results of the field surveys conducted for the Project as part of the EA.

5.4.3 Impact Assessment

Strategic Agricultural Land

A small portion of the land associated with the amended discharge pipeline alignment represents mapped Biophysical Strategic Agricultural Land (BSAL) (approximately 3 ha) and equine and viticulture critical industry clusters (CIC) (approximately 6 ha) as illustrated in Map 6 of the SRLUP. As the mapping of SAL is triggered, this land has been assessed against the gateway criteria stipulated in the SRLUP.

With regard to assessing the potential impacts of a proposal on BSAL and water, Table 2 of the SRLUP requires consideration as to:

> *"Whether the proposal would significantly reduce the agricultural productivity of the land based on a consideration of:*
>
> *a) Impacts on the land through surface area disturbance and subsidence;*
>
> *b) Impacts on:*
>
> *(i) Soil fertility*
>
> *(ii) Rooting depth, or*
>
> *(iii) Soil profile materials and thickness*
>
> *c) Increases in land surface microrelief or soil salinity, or significant changes to soil pH, and*
>
> *d) Impacts on Highly Productive Groundwater, including the provisions of the Aquifer Interference Policy and the advice of the Minister for Primary Industries (note that the Minister for Primary Industries must take into account the advice of the Commonwealth Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development in providing advice in this stage)"*

In response to item (a) to (c), the amended discharge pipeline alignment will disturb approximately 3 ha of BSAL. However, once the pipeline is installed, the topsoil material removed along this alignment and conserved, will be reinstated and rehabilitated. In this regard, the amended discharge pipeline alignment is unlikely to significantly reduce the agricultural productivity of BSAL through impacts to soil fertility, rooting depth, soil profile material and thickness or increases in land surface microrelief, soil salinity and pH.

In response to item (d), the amended discharge pipeline alignment is not associated with the take of water from the Hunter River and will only be installed approximately 500 mm below the surface. In this regard, the amended discharge pipeline alignment will not reduce the agricultural productivity of BSAL through impacts to highly productive groundwater.

With regard to assessing the potential impacts of a proposal on CICs, Table 2 of the SRLUP requires consideration as to:

> *"Whether the proposal would lead to significant impacts on the critical industry cluster through:*
>
> *a) Surface area disturbance*
>
> *b) Subsidence*
>
> *c) Reduced access to agricultural resources*
>
> *d) Reduced access to support services and infrastructure*
>
> *e) Reduced access to transport routes, or*
>
> *f) Loss of scenic and landscape value"*

In response to item (a), the land along the amended discharge pipeline alignment is mapped as equine and viticulture CIC. This land has been verified as not meeting the definition of the equine or viticulture CIC as outlined in Table 1 of the SRLUP. Furthermore, the amended discharge pipeline alignment is not directly situated on land utilised for the operations of Woodlands Stud, Coolmore Stud or Arrowfield Estate, or interrelated with these enterprises' thoroughbred horse breeding and grape/wine production. In this regard, the amended discharge pipeline alignment will not impact the equine or viticulture CIC through surface area disturbance.

In response to item (b), the amended discharge pipeline alignment is not associated with highwall mining methods and as such will not impact the equine or viticulture CIC through subsidence.

In response to item (c), the amended discharge pipeline alignment is not directly situated on land utilised for the operations of Woodlands Stud, Coolmore Stud or Arrowfield Estate and as such will not impact the equine or viticulture CIC through reduced access to land resources.

Water from the Hunter Regulated River Water Source is another key resource relied upon by the equine and viticulture CICs. The amended discharge pipeline alignment is not associated with the take of water from the Hunter River and as such will not impact the equine or viticulture CIC through reduced access or availability to water resources.

In response to item (d), the amended discharge pipeline alignment does not support infrastructure pertaining to agricultural activities nor is it interrelated with its thoroughbred horse breeding and grape/wine production. In this regard, the amended discharge pipeline alignment will not impact the equine or viticulture CIC through reduced access to support services and infrastructure.

In response to item (e), the amended discharge pipeline alignment is not associated with key transport routes utilised by existing thoroughbred horse breeding or viticulture enterprises, including the Golden Highway and Edderton Road. In this regard, the amended discharge pipeline alignment will not impact the equine or viticulture CIC through reduced access to transport routes.

In response to item (f), the amended discharge pipeline alignment is situated at ground level and will be shielded by foreground features, including existing vegetation and infrastructure. Installation of the pipeline will involve the use of small mobile equipment, such as a backhoe and light vehicles, which may be visible for a short period of time to receivers in the south. In this regard, the amended discharge pipeline alignment does not significantly compromise the scenic and landscape settings of the equine or viticulture CIC in the medium to long-term.

Agricultural Enterprises and Production

The land to which the amended infrastructure areas apply, and its associated agricultural domains, are outlined in **Table 6**.

Table 6
Agricultural Domains

Amended Infrastructure Areas	Agricultural Domains	
Amended haul road and conveyor option alignment	C	Area being lower to mid slopes, requiring soil conservation works/minimum tillage techniques to establish improved pastures or grazed as unimproved pasture
	D	Area being steeper slopes, not suited to any cultivation due to erosion risk, restricted to native pasture or aerial semi-improved pasture improvement
Amended discharge pipeline alignment	B	Area being creeks flats and lower slopes suited to occasional fodder cropping or pasture improvement or grazed as unimproved pasture
	C	Area being lower to mid slopes, requiring soil conservation works/minimum tillage techniques to establish improved pastures or grazed as unimproved pasture

The predominant agricultural land use within the Drayton South area, and hence the amended infrastructure areas, is associated with cattle grazing with the major enterprise being beef cattle breeding for weaner and domestic markets.

The area of agricultural land to be disturbed by the amended haul road and conveyor option alignment will remain unchanged from the EA.

The amended discharge pipeline alignment will result in an increase of 7 ha to the area of disturbance when compared to the EA. However, once the pipeline is installed, the topsoil material collected along this alignment and conserved will be reinstated and rehabilitated. In this regard, the short-term impact on agricultural land and its capacity to support ongoing cattle production will be minimal.

All other direct impacts associated with the Preferred Project remain consistent with those described and assessed in the EA.

5.4.4 Mitigation and Management

Given the nature of works associated with the amended infrastructure areas, the suite of mitigation and management measures presented in the EA (see Section 8.16 of the EA) are considered to be appropriate, including (but not limited to):

- Soil conservation;
- Seedbed preparation;
- Erosion and sediment controls;
- Stock crossings (where required); and
- Ongoing management of environmental and noxious weeds.

5.5 VISUAL

5.5.1 Background

An assessment of the potential visual impacts resulting from the Preferred Project was undertaken by Hansen Bailey. The purpose of the assessment was to assess the visual impacts of the Preferred Project, in particular the revised Coolmore Option 4A visual bund and recommend measures to mitigate and manage these impacts.

5.5.2 Method

To ascertain the effectiveness of the Coolmore Option 4A visual bund, the revised design was incorporated into the existing three dimensional computer models for the Project. This was then used to develop a range of photomontages from four critical viewing locations relevant to Coolmore Stud including:

- DS03 Jerrys Plains – Golden Highway;
- DS05 Coolmore Stud – Ellerslie Residences;
- DS06 Coolmore Stud – Oak Range Road (Top); and
- DS08 Coolmore Stud – Batty Hill.

5.5.3 Impact Assessment

The Coolmore Option 4A visual bund as included in the Preferred Project presents a significant improvement for the Project by further minimising impacts on neighbouring stakeholders.

Following due consideration and assessment of the Coolmore Option 4A visual bund it can be confirmed that this option provides the following advantages when compared to the visual bund presented in the EA (Option 3):

- Reduced footprint (with considerable reduction in extent of the footprint to the east);
- Reduced volume of material required to establish the bund (7.7 Mlcm compared to 16.6 Mlcm);
- Reduced time required to construct the bund (eight months compared to 16 months);
- Reduced environmental impacts as a result of dust and noise generation (relative to the reduction in volume of material and time taken to build); and
- Complete screening of all residual Project views from critical view points to the south.

The photomontages as developed for each of the four critical viewing locations relevant to Coolmore Stud using the Option 4A visual bund are shown on **Figures 9** to **12** with a relevant analysis of the predicted visual impacts provided in the sections below.

DS03 Jerrys Plains – Golden Highway

As shown on **Figures 9a** to **9d**, the Coolmore Option 4A visual bund is effective at screening all views to the Project from this location. When compared to the visual bund presented in the EA (Option 3) it is noticeably smaller and does not extend as far to the east. From this location it is anticipated that the construction of the Coolmore Option 4A visual bund will be visible for approximately 5.25 months (compared to 11.3 months as predicted for Option 3 in the EA) as the construction of stages 1 & 2 will be screened by existing topography (refer to **Table 3** for anticipated visibility for each of the staged lifts).

The photomontages shown in **Figures 9a** to **9d** demonstrate that the implementation of progressive rehabilitation also further minimizes the areas of disturbance that would be visible during its construction.

DS05 Coolmore Stud – Ellerslie Residences

As shown on **Figures 10a** to **10d**, the Coolmore Option 4A visual bund is effective at screening all views to the Project from this location. When compared to the visual bund presented in the EA (Option 3) it is noticeably smaller and does not extend as far to the east. From this location it is anticipated that the construction of the Coolmore Option 4A visual bund will be visible for approximately 5.25 months (compared to 11.3 months as predicted for Option 3 in the EA) as the construction of stages 1 & 2 will be screened by existing topography.

The photomontages shown in **Figures 10a** to **10d** demonstrate that the implementation of progressive rehabilitation also further minimizes the areas of disturbance that would be visible during its construction.

DS06 Coolmore Stud – Oak Range Road (Top)

As shown on **Figures 11a** to **11d**, the Coolmore Option 4A visual bund is effective at screening all views to the Project from this location. When compared to the visual bund presented in the EA (Option 3) it is noticeably smaller and does not extend as far to the east. From this location it is anticipated that the construction of the Coolmore Option 4A visual bund will be visible for approximately 5.75 months (compared to 11.3 months as predicted for Option 3 in the EA).

The photomontages shown in **Figures 11a** to **11d** demonstrate that the implementation of progressive rehabilitation also further minimizes the areas of disturbance that would be visible during its construction.

DS08 Coolmore Stud – Batty Hill

As shown on **Figures 12a** to **12d**, the Coolmore Option 4A visual bund is effective at screening all views to the Project from this location. From this location it is anticipated that the construction of the Coolmore Option 4A visual bund will be visible for approximately 4.25 months (compared to 11.3 months as predicted for Option 3 in the EA) as the construction of stages 1, 2, 3 & 4 will be screened by existing topography.

The photomontages shown in **Figures 12a** to **12d** demonstrate that the implementation of progressive rehabilitation also further minimizes the areas of disturbance that would be visible during its construction.

5.5.4 Mitigation and Management

Given the nature of works and changes proposed by the revised Houston visual bund (Coolmore Option 4A), the suite of visual mitigation and management measures proposed in the EA (see Section 8.6 of the EA) are considered to be appropriate, including (but not limited to):

- Establishment and progressive rehabilitation of the Houston visual bund (from Year 3);
- Establishment of required tree screens and plantings;
- Progressive rehabilitation of all Project related disturbance;
- Use of compatible tones for buildings and cladding; and
- Ongoing consultation with all stakeholders surrounding the site.