



Cowal Gold Mine – Addendum to the Land Management Plan

On 22 July 2014, Barrick (Cowal) Pty Ltd (Barrick) was granted approval by the NSW Minister for Planning to modify the Development Consent (DA 14/98) for the Cowal Gold Mine (CGM) Extension Modification under Section 75W of the *Environmental Planning and Assessment Act, 1979*. The CGM Extension Modification involves the continuation and extension of open pit mining and processing operations at the CGM for an additional operational life of approximately 5 years (i.e. to 2024).

Key aspects of the CGM Extension Modification (relevant to the Land Management Plan) include:

- modified rehabilitation principles and objectives of the CGM rehabilitation strategy, and modified rehabilitation concepts for the outer batters of the waste rock emplacements and tailings storage facilities (to incorporate rock armouring);
- the CGM's offset areas and the CGM's biodiversity offset strategy;
- the long-term land use strategy for the approved CGM; and
- recent flora survey and mapping of the CGM and surrounds.

The Addendum also incorporates relevant changes to maintain consistency with other updated environmental management plans relevant to the LMP and key administrative revisions associated with the modified Development Consent.

Accordingly, this Addendum to the Land Management Plan has been prepared to reflect the above, and has been prepared in consultation with the NSW Office of Environment and Heritage, NSW Office of Water, NSW Department of Primary Industries – Agriculture and the Bland Shire Council (as required by Condition 3.7 of the Development Consent [as modified on 22 July 2014]) .

COWAL GOLD MINE
ADDENDUM TO THE LAND MANAGEMENT PLAN



MAY 2015
Project No. HAL-02-07
Document No. 00679976

**ADDENDUM
Land Management Plan**

1. Replace reference to Development Consent Condition 3.10(A)(i), with Development Consent Condition 3.7 in regards to the preparation of the Land Management Plan.

2. Add the following after the last paragraph of Section 1.1:

The LMP forms a part of the CGM's Environmental Management Strategy prepared in accordance with Condition 9.1(a) of the Development Consent (as modified on 22 July 2014). A plan showing the CGM's environmental management system including the relationship between the environmental management plans and monitoring programmes required under the Development Consent is provided in Attachment 1.

Other CGM environmental management plans relevant to vegetation and biodiversity management include the Biodiversity Offset Management Plan (BOMP), Flora and Fauna Management Plan (FFMP), Compensatory Wetland Management Plan (CWMP) and Rehabilitation Management Plan (RMP).

The BOMP is relevant to the CGM's offset areas only (refer Section 5.5). The FFMP primarily relates to the management of flora and fauna within ML 1535 and Lake Cowal bird breeding areas (and also describes measures that are undertaken on Barrick-owned lands to conserve and enhance wildlife values). The CWMP is relevant to the Compensatory Wetland only (refer Section 5.3) and the RMP is primarily relevant to the rehabilitation of the CGM final landforms within ML 1535 (refer Section 9.1).

3. Replace the third paragraph of Section 3.1 with:

Vegetation communities that have been identified on Barrick-owned land include (Australian Museum Business Services, 2012) (Figure 3):

- Weeping Myall – Belah – Poplar Box Shrubland and Woodland;
- Spear Grass – Windmill Grass Grassland and Low Open Grassy Woodland;
- Inland Grey Box – Belah – Poplar Box Woodland;
- Mugga Ironbark – Dwyer's Red Gum – White Cypress Pine Woodland;
- Wallaby Grass – Spear Grass – Windmill Grass Grassland;
- Coolah Grass – Blue Grass Grassland;
- Sedgeland/Herbfield;
- River Red Gum Woodland and Forest;
- Dwyer's Red Gum – Black Cypress Pine –Woodland;
- Cropping; and
- Plantings.

The following threatened ecological communities listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the NSW *Threatened Species Conservation Act 1995* (TSC Act) have been recorded in areas on Barrick-owned land (Figure 3):

- Grey Box Woodlands Endangered Ecological Community (EEC) (EPBC Act);
- Weeping Myall Woodland EEC (TSC Act); and
- Weeping Myall Woodland EEC (TSC Act and EPBC Act).

4. Replace Figure 3 with Figure 3 attached.

5. Add the following after the last sentence of the first paragraph of Section 4.3:

As described in Section 5.5, grazing will be excluded from the Northern and Southern Offset Areas.

6. Add the following after the last sentence of Section 4.4:

As described in Section 5.5, grazing will be excluded from the Northern and Southern Offset Areas.

7. Add the following new Section 5.5 ‘Biodiversity Offset Strategy’ after the end of Section 5.4:

5.5 BIODIVERSITY OFFSET STRATEGY

In accordance with Condition 3.4 of the Development Consent (as modified on 22 July 2014), a biodiversity offset strategy has been developed for the CGM which involves the conservation and management of two designated offset areas located on land owned by Barrick (i.e. the Northern and the Southern Offset Areas) (Figure 3).

The objectives for the biodiversity offset areas are to:

- secure the tenure of the offset areas for long-term conservation purposes (excluding the land within the electricity transmission line and gas pipeline easements);
- enhance flora and fauna habitats within the offset areas, including increasing the area of Myall woodland through regeneration and revegetation;
- establish native vegetation characteristic of a Eucalypt woodland in the previously cleared agricultural land comprising Spear Grass – Windmill Grassland within the Southern Offset Area; and
- improve the flora value of the land in the offset areas in the medium to long-term.

The CGM’s biodiversity offset strategy includes short, medium and long-term measures that will be implemented to achieve the offset objectives. These measures include:

- remnant vegetation enhancement (e.g. fencing, exclusion of grazing, soil erosion management);
- revegetation activities (which will consider the composition of surrounding threatened ecological communities);
- salvage and re-use of material from vegetation clearance works within ML 1535 for habitat enhancement;
- collection and propagation of seed for revegetation works;
- weed and pest control;
- erosion control;



- management of grazing (i.e. grazing will be excluded from the offset areas);
- access control; and
- bushfire management.

The CGM's BOMP provides a detailed description of the offset areas and the implementation of the CGM's biodiversity offset strategy.

8. Add the following after the last paragraph of Section 8.1 (Bushfire Management):

Any bushfire prevention or fuel management measures on Barrick-owned land will consider potential ecological impacts of the measures, and will be implemented outside the boundary of the offset areas, where practicable.

9. Replace Section 9 with the following (and insert new Figure 6 where indicated):

9. MINE REHABILITATION AND LONG-TERM LANDUSE STRATEGY

9.1 MINE REHABILITATION

The approved CGM rehabilitation philosophy is to operate as a non-intrusive land user and to create stable rehabilitated landforms that increase the areas of endemic vegetation in the mine area and the status of land-lake habitats (Barrick, 2013). This philosophy has led to the rehabilitation principles and objectives as described below.

The rehabilitation programme would be undertaken in accordance with the following general principles (Barrick, 2013):

- The rehabilitation of landforms is to be progressive and conducted in accordance with approved, verified plans.
- Final landforms are to be stable in the long-term and include native and/or endemic vegetation characteristic of remnant vegetation within the surrounding landscape.
- Endemic groundcover, understory, tree seeds and seedlings are to be cultivated and used in the rehabilitation programme.
- Rehabilitation concepts are to be flexible to allow for adjustments, based on investigations, to improve the rehabilitation programme.
- The annual rehabilitation programme and budget is to be prepared by a site team incorporating senior management representatives.

The rehabilitation objectives for the CGM would include (Barrick, 2013):

- The water quality of Lake Cowal is not detrimentally affected by the new landforms.
- Revegetating the new landforms with selected native and/or endemic vegetation that is suited to the physiographic and hydrological features of each landform, and which expand on the areas of remnant endemic vegetation in the surrounding landscape.
- Designing final landforms so that they are stable and include revegetation growth materials that are suited to the landform and support self-sustaining vegetation.

- The placement (wherever possible) of soils on final landforms to enable the progressive establishment of vegetation.
- The expansion of habitat opportunities for wetland and terrestrial fauna species. This includes the design and implementation of rehabilitation works at the New Lake Foreshore in a manner consistent with the NSW Wetlands Policy (Department of Environment, Climate Change and Water, 2010).
- The selection of revegetation species in accordance with accepted principles of long-term sustainability (e.g. genotypic variation, vegetation succession, water/drought tolerances).
- Grazing of land within ML 1535 to be excluded during operations and during rehabilitation of the site. At lease relinquishment, rehabilitated final landforms are conserved (with grazing excluded), with some areas suitable for grazing surrounding the rehabilitated final landforms.

Consistent with the approved CGM Rehabilitation Proposal described in the *Cowal Gold Mine Extension Modification Environmental Assessment* (Barrick, 2013), rehabilitation concepts for the outer batters of the waste rock emplacements, tailings storage facilities' and the lake protection bund will be rock armoured with primary waste rock mulch to provide long-term slope stability, control surface water runoff downslope and reduce erosion potential.

CGM rehabilitation concepts and measures and the rehabilitation monitoring programme are described in detail in the CGM's Rehabilitation Management Plan. Progressive rehabilitation works and proposed soil stripping works and areas will be detailed in the MOP in accordance with the requirements of the Conditions of Authority for ML 1535 and the NSW Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy's (DRE's) (2013) *ESG3: Mining Operations Plan (MOP) Guidelines*.

9.2 LONG-TERM LANDUSE STRATEGY

In accordance with Development Consent Condition 3.8 (as modified on 22 July 2014), a long-term land use strategy has been developed for the CGM and is relevant to land within ML 1535, the Bland Creek Palaeochannel water supply pipeline and borefield, the Eastern Saline Borefield and Barrick-owned land outside ML 1535.

The long-term land use strategy provides a description of:

- the proposed long-term land uses;
- the potential environmental impacts associated with the proposed long-term land uses; and
- the long-term management measures (to mitigate potential environmental impacts).

The proposed long-term land uses described in this strategy are considered to:

- improve wildlife values within ML 1535 and around Lake Cowal in the long-term;
- be compatible with pre-mining and existing land uses in the Lake Cowal region; and
- be sustainable in the long-term.

As required by Development Consent Condition 3.8 (as modified on 22 July 2014), the long-term land use strategy has been developed in consultation with the NSW Office of Water, NSW Office of Environment and Heritage, BSC, CEMCC, and to the satisfaction of the Secretary of the NSW Department of Planning and Environment.

Proposed Long-term Land Uses

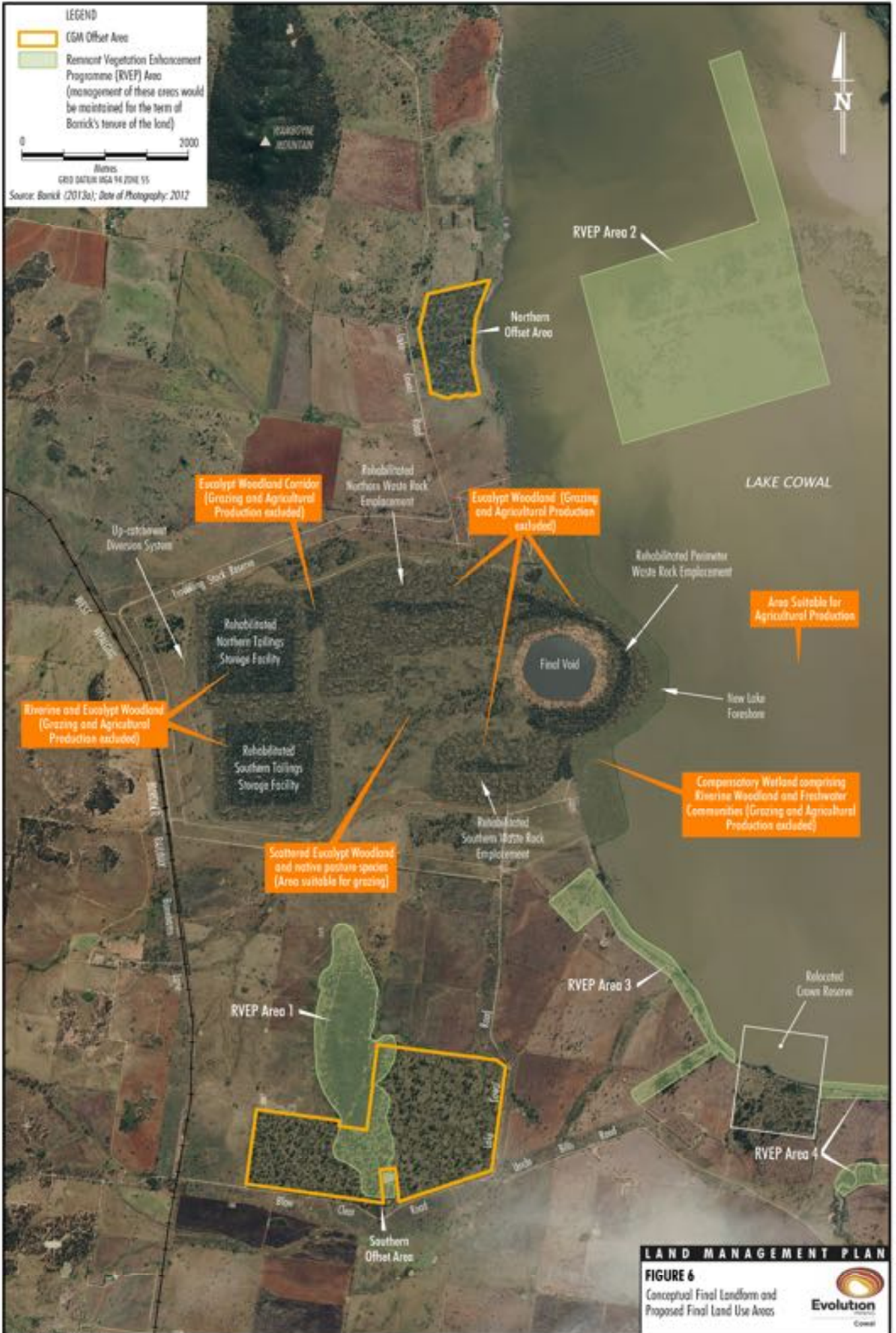
The land within ML 1535 is former cleared and semi-cleared farmland that was used for grazing of native and improved pastures by livestock. Prior to the development of the CGM, the original native tree cover within ML 1535 had largely been removed except for scattered individual trees or small stands and the tree cover on the former Cowal West Hill which had been retained due to its shallow soils and poorer grazing potential. The landscape surrounding the CGM (including Barrick-owned lands outside ML 1535) is predominantly used for agriculture (e.g. broad-acre cropping) and grazing over relatively large landholdings. Current (and historical) uses of Lake Cowal include commercial and recreational fishing when inundated, and agricultural production including grazing by livestock when dry.

As described in the CGM's Flora and Fauna Management Plan and consistent with the CGM's rehabilitation objectives, rehabilitation of ML 1535 disturbance areas will aim to enhance and expand wildlife habitat values within ML 1535 and around Lake Cowal. Barrick also recognises that the former land use within ML 1535 included grazing of cleared and semi-cleared areas of predominantly native pastures by livestock. Therefore it is proposed that at lease relinquishment, land use within ML 1535 would include fenced rehabilitation areas with grazing excluded and areas suitable for agricultural production including commercial and recreational fishing of lake areas or managed grazing by livestock (Figure 6).

Barrick-owned land outside ML 1535 (with exception of the Northern and Southern Offset Areas) would continue to be used for farming/agricultural production by Barrick and/or licensees that sign agreements to conduct agricultural activities on Barrick-owned land. It is anticipated that areas of lakebed country would be available for commercial and recreational fishing when inundated, and may be used for cropping and/or managed livestock grazing when dry, consistent with existing and historical uses of Lake Cowal. As described in Section 5.4, the Remnant Vegetation Enhancement Programme Areas (Figure 6) would continue to be maintained for the term of Barrick's tenure of the land. As described in Section 5.5, the offset areas will be managed in accordance with the BOMP and will be secured for long-term conservation purposes (with grazing excluded).

Some infrastructure may be retained and transferred to local landholders for use following lease relinquishment including electricity infrastructure, water storages, pipelines, bores and associated pump stations, if agreed with the Division of Resources and Energy within the NSW Department of Trade and Investment, Regional Infrastructure and Services (DRE).

If it is agreed with the DRE and the ultimate landholder that the CGM's Bland Creek Palaeochannel Borefield, Eastern Saline Borefield and the saline groundwater bores within ML 1535 are retained for local use, the pipelines would remain in place (Barrick, 2013). Alternatively, if the infrastructure is not required for local use, the bores would be plugged, capped and decommissioned in accordance with relevant regulatory guidelines, the pump stations would be removed and the pipelines raised and dismantled for recycling (Barrick, 2013). Further detail of the proposed decommissioning procedures is provided in the CGM's Rehabilitation Management Plan.



A Social Impact Assessment was commissioned by Barrick and undertaken by URS (2013) to assess the impacts of the CGM to date on key social aspects (including amenity, community identity, economy, education, social infrastructure and the indigenous community) and to assess the potential impacts of closure of the CGM. Future social closure planning will continue to inform the long-term land uses, particularly in regard to the transfer of Barrick-owned infrastructure to local landholders post-mining.

A description of the long-term land use areas is provided below.

Rehabilitation Areas

Rehabilitated final landforms including the waste rock emplacements, tailings storage facilities, final void, Compensatory Wetland, former process plant area (including decommissioned and rehabilitated contained water storages) and the former ore stockpile areas will be fenced with grazing excluded, with some areas suitable for grazing surrounding the rehabilitated final landforms (Figure 6).

In accordance with rehabilitation concepts provided in the *Cowal Gold Mine Environmental Impact Statement* (North Limited, 1998), a woodland corridor will also be provided between the rehabilitated Northern Waste Rock Emplacement and the rehabilitated Northern Tailings Storage Facility (Figure 6). Exclusion of grazing of these areas is proposed to protect revegetation and natural regeneration and to maintain the long-term stability of the final landforms. The outer boundary of the Compensatory Wetland will also be fenced to exclude grazing and agricultural production of the Compensatory Wetland area.

Permanent drainage features within ML 1535 including the Up-catchment Diversion System and drainage lines associated with the permanent catchment divide would remain to manage surface water runoff around the rehabilitated CGM area.

Areas Suitable for Grazing/Agricultural Production

The remaining areas of land within ML 1535 level with the natural ground surface disturbed by mining operations (e.g. former soil stockpile areas and former explosive storage areas) would be rehabilitated to include vegetation which expands on the areas of remnant endemic vegetation that currently exists in the region and include native pasture species. It is expected that once sufficiently mature vegetation communities have been established, these areas would be suitable for managed livestock grazing (Figure 6).

A suitable stocking rate for these areas would be determined in consultation with the relevant regulatory authorities based on the performance of the revegetation following closure of the mine. The relocated travelling stock reserve formed around the western boundary of ML 1535 (Figure 6) would be retained.

At lease relinquishment, areas of Barrick-owned land (with the exception of Compensatory Wetland and Northern and Southern Offset Areas) (Figure 6) will continue to be used for farming/agricultural production by Barrick and/or licensees that sign agreements to conduct agricultural activities on Barrick-owned land. It is anticipated that areas of lakebed country would be available for commercial and recreational fishing when inundated, and may be used for managed livestock grazing when dry, consistent with existing and historical uses of Lake Cowal.

Other Infrastructure

Surface infrastructure will mostly be decommissioned, dismantled and removed from site, and either transferred to another Barrick operation or sold. In accordance with Development Consent Condition 4.4(b) (as modified on 22 July 2014), a Strategy for Decommissioning of the Cowal Gold Mine Water Management Structures has been developed and is incorporated within the CGM Water Management Plan.

Some infrastructure may however be retained and transferred to regional landholders for use following mine closure (e.g. electricity infrastructure, water storages, pipelines, bores and associated pump stations) if agreed with the DRE and the ultimate landholder.

Further detail regarding decommissioning and rehabilitation of the infrastructure areas is provided in the CGM's RMP.

Long-term land uses would ultimately be subject to consultation with relevant regulatory authorities (including the NSW Department of Planning and Environment, DRE, NSW Office of Environment and Heritage, NSW Office of Water and NSW Department of Primary Industries) and key stakeholders including surrounding landholders.

Potential Environmental Impacts associated with Proposed Long-term Land Uses

Potential environmental impacts associated with the long-term land uses may include:

- failure of revegetation within grazed areas due to over grazing by livestock;
- increased potential for soil erosion within grazed areas;
- increased potential for spread of weeds and pests; and
- potential for final landform instability and damage to revegetation due to access by stray livestock and/or unauthorised access.

The potential environmental impacts of the long-term land uses are generally considered similar to the land use impacts that would have existed pre-mining. Notwithstanding, with the implementation of the long-term management measures described below (and implementation of the CGM LMP), the potential impacts of proposed land uses would be minimised.

Long-term Management Measures

The following management measures would be undertaken post-closure to facilitate implementation of the long-term land use strategy and mitigate potential environmental impacts:

- livestock management;
- maintenance of fencing surrounding rehabilitation areas;
- bushfire prevention and fuel management;
- weed and pest control;
- control of erosion and sedimentation;
- management of vehicle and unauthorised access; and
- monitoring of revegetation and regeneration including supplementary planting and/or seeding if necessary.

Implementation of these measures (in particular livestock management, bushfire management and any revegetation activities) will consider the composition of surrounding threatened ecological communities.

A detailed description of the long-term management measures that would be implemented in the long-term will be provided in a Mine Closure Plan, or final MOP, which will be prepared in consultation with the DRE and other relevant regulatory agencies and key stakeholders, including surrounding landholders.

The long-term management measures would be implemented for the period following mine closure until the lease relinquishment criteria (including rehabilitation completion criteria) have been met (as provided in the CGM RMP).

10. Replace Section 12 with the following:

An Annual Review will be prepared in accordance with the requirements of Condition 9.1 of the Development Consent (as modified on 22 July 2014) and will be submitted to the Secretary of the NSW Department of Planning and Environment by the end of July each year, or as otherwise agreed with the Secretary. Development Consent Condition 9.1 is reproduced below:

9.1 Environmental Management

b) Annual Review

By the end of July each year, or as otherwise agreed with the Secretary, the Applicant shall review the environmental performance of the development to the satisfaction of the Secretary. This review must:

- (i) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the next year;*
- (ii) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the:*
 - the relevant statutory requirements, limits or performance measures/criteria;*
 - the monitoring results of previous years; and*
 - the relevant predictions in the EIS;*
- (iii) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;*
- (iv) identify any trends in the monitoring data over the life of the development,*
- (v) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and*
- (vi) describe what measures will be implemented over the next year to improve the environmental performance of the development.*

The Annual Review will report on the following aspects relevant to this LMP:

- a summary of weed and pest control works conducted during the previous calendar year and the works proposed for the next reporting period;
- results of remnant vegetation enhancement programme monitoring;
- a description of the effectiveness of the remnant vegetation enhancement programme measures; and

- a description of any bushfire management measures conducted on Barrick-owned lands.

In accordance with Condition 9.4(a)(vii) of the Development Consent (as modified on 22 July 2014) the Annual Review will be made publicly available on Barrick's website.

Review of this LMP

In accordance with Condition 9.1(c) of the Development Consent (as modified on 22 July 2014), this LMP will be reviewed, within three months of the submission of:

- an Annual Review under Condition 9.1(b);
- an incident report under Condition 9.3(a);
- an audit under Condition 9.2(a);
- an Annual State of the Environment Report under Condition 9.2(b);
- the approval of any modification to the conditions of the Development Consent; or
- any direction of the Secretary under Condition 1.1(c).

Where this review leads to revisions of the LMP, then within four weeks of the review, the revised LMP will be submitted for the approval of the Secretary of the Department of Planning and Environment (unless otherwise agreed with the Secretary).

This LMP will be made publicly available on Barrick's website (www.barrick.com), in accordance with Condition 9.4(a)(iii) of the Development Consent (as modified on 22 July 2014). A hard copy of the LMP will also be kept at the CGM.

11. Insert the following references into Section 13:

Australian Museum Business Services (2012) *Cowal Gold Mine and Surrounds Flora Survey*.

Barrick (Cowal) Limited (2013) *Cowal Gold Mine Extension Modification Environmental Assessment*.

Department of Environment, Climate Change and Water (2010) *New South Wales Wetlands Policy*.

Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy (2013) *ESG3: Mining Operations Plan (MOP) Guidelines September 2013*.

URS Australia Pty Ltd (2013) *Barrick Cowal Gold Mine Social Impact Assessment 2013*.

12. Revise the List of Figures in the Table of Contents as follows:

Figure 3 Vegetation Communities within the CGM and the Wider Locality
Figure 6 Conceptual Final Landform and Proposed Final Land Use Areas

13. Add the following after the List of Appendices in the Table of Contents of the LMP:

LIST OF ATTACHMENTS

Attachment 1 CGM Environmental Management System

14. Insert the following Revision Status Register to the front page of the Land Management Plan:

Revision Status Register

Section/Page/ Annexure	Revision Number	Amendment/Addition	Distribution	DP&E Approval Date
All	LMP01-U (October 2003) Document No. 685074	Original Land Management Plan (LMP).	DLWC, NSW Agriculture, BSC and DoP	October 2003
Addendum	Addendum dated May 2015 Document No. 00679976	Revised to reflect the approved CGM Extension Modification and the Development Consent as modified on 22 July 2014.	OEH, NOW, DPI (Agriculture), BSC and DP&E	21 March 2016

15. Add the following Attachment 1 (CGM Environmental Management System) after the last page of the LMP.

