Public Environmental Review
Environmental Impact Assessment Process Timelines

<table>
<thead>
<tr>
<th>Date</th>
<th>Progress stages</th>
<th>Time (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/06/12</td>
<td>Level of Assessment set</td>
<td></td>
</tr>
<tr>
<td>19/10/12</td>
<td>Final Environmental Scoping Document (ESD) approved</td>
<td>20</td>
</tr>
<tr>
<td>19/08/13</td>
<td>Environmental Review Document (ERD) released for public review</td>
<td>44</td>
</tr>
<tr>
<td>16/09/13</td>
<td>Public review period for ERD closed</td>
<td>4</td>
</tr>
<tr>
<td>22/01/14</td>
<td>EPA meeting and request for further information</td>
<td>19</td>
</tr>
<tr>
<td>24/02/14</td>
<td>Final Proponent response to ERD and issues raised at EPA meeting</td>
<td>5</td>
</tr>
<tr>
<td>28/03/14</td>
<td>Provision of the EPA Report to the Minister for Environment</td>
<td>5</td>
</tr>
<tr>
<td>02/04/14</td>
<td>Publication of EPA Report (three days after report to the Minister)</td>
<td>3 days</td>
</tr>
<tr>
<td>16/04/14</td>
<td>Close of appeals period</td>
<td>2</td>
</tr>
</tbody>
</table>

Timelines for an assessment may vary according to the complexity of the project and are usually agreed with the proponent soon after the level of assessment is determined.

In this case, the Environmental Protection Authority met its timeline objective in the completion of the assessment and provision of a report to the Minister.

Dr Paul Vogel
Chairman

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Assessment No. 1926
Summary and recommendations

This report provides the Environmental Protection Authority’s (EPA’s) advice and recommendations to the Minister for Environment on the revised proposal by Newmont Boddington Gold Pty Ltd (NBGPL) to extend the operating life of the Newmont Boddington Gold Mine (NBGM). The revised proposal includes the widening and deepening of the existing pits and construction of additional infrastructure including residue storage facilities and waste rock dumps.

Section 44 of the Environmental Protection Act 1986 (EP Act) requires the EPA to report to the Minister for Environment on the outcome of its assessment of a proposal. The report must set out:

- the key environmental factors identified in the course of the assessment; and
- the EPA’s recommendations as to whether or not the proposal may be implemented, and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject.

The EPA may include in the report any other advice and recommendations as it sees fit.

The EPA is also required to have regard for the principles set out in section 4A of the EP Act.

Key environmental factors and principles

The EPA decided that the following key environmental factors relevant to the proposal required detailed evaluation in the report:

a) Flora and vegetation;
b) Terrestrial fauna;
c) Hydrological processes;
d) Amenity; and
e) Offsets (Integrating factor).

There were a number of other factors which were relevant to the proposal, but the EPA is of the view that the information set out in Appendix 3 provides sufficient evaluation.

The following principles were considered by the EPA in relation to the proposal:

(a) The precautionary principle;
(b) The principle of intergenerational equity;
(c) The principle of the conservation of biological diversity and ecological integrity;
(d) Principles related to improved valuation, pricing and incentive mechanisms; and
(e) The principle of waste minimisation.
Conclusions

The EPA has considered the proposal by NBGPL to extend the operating life of the NBGM through widening and deepening of the existing pits and construction of additional infrastructure including residue storage facilities and waste rock dumps.

The EPA notes that as the area has been the subject of mining activity and associated approvals over more than 20 years. There is extensive knowledge of the terrestrial fauna, flora and vegetation, discharges to the environment, groundwater and surface water and rehabilitation as well as good knowledge of the impacts of the existing operations. These issues are currently managed by the departments of Parks and Wildlife (DPaW), Water (DoW), Environment Regulation (DER) and Mines and Petroleum (DMP).

Flora and vegetation

Impacts to flora and vegetation associated with the revised proposal would include clearing of up to 3,120 hectares (ha) of vegetation, 1,755 ha of which would consist of native vegetation. The EPA notes that the proponent has attempted to avoid and minimise impacts to flora and vegetation through the design of the proposal, including locating infrastructure in previously disturbed or plantation areas.

The location and authorised extent of clearing of native vegetation would be limited to the authorised extent being the 1,755 ha proposed by the proponent as defined within Table 2 of Schedule 1 of the recommended statement that the proposal can be implemented.

The EPA has also recommended a condition to ensure that weed and dieback management is carried out appropriately.

There would remain a significant residual impact to the EPA’s key environmental factor of flora and vegetation related to the clearing of 1,755 ha of native vegetation, and hence an environmental offset is to counterbalance those impacts.

Terrestrial fauna

Conservation significant species with the potential to be impacted by the proposal include the Brush-tailed Phascogale, Woylie, Chuditch, Baudin’s Black Cockatoo, Carnaby’s Black Cockatoo; and Forest Red-tailed Black Cockatoo.

The proponent has attempted to avoid and minimise impacts to fauna through locating infrastructure to minimise clearing of native vegetation as far as practicable, and to maintain east-west linkages between remnant vegetation.

Based on possible habitat types, the potential habitat for the Brush-tailed Phascogale is widespread in the area.

The EPA notes that direct impacts (i.e. vehicle strike, mortality during clearing) to the three species of Black Cockatoo as well as the Chuditch and Woylie, are unlikely. The cockatoo species are highly mobile and the two mammal species have been recorded mostly in the vegetation to the east of the project area.
However, there would remain a significant residual impact to the EPA’s key environmental factor of Terrestrial Fauna related to the loss of habitat from clearing of 1,755 ha of native vegetation, and an environmental offset is recommended to counterbalance those impacts.

**Hydrological processes**

The EPA notes that there are potential impacts to hydrological processes associated with both the current and proposed operations which would continue to be adequately managed by other regulatory processes. These include impacts to surface water quantity associated with diversion of drainage lines and the take of water from the Hotham River.

The EPA considers that the impacts to hydrological processes relevant to this assessment are related to a potential reduction in groundwater available to Groundwater-Dependent Ecosystems (GDEs) in the area including several swamps and potentially including the riparian vegetation associated with the Hotham River.

Dewatering operations to date have resulted in lowered upper bedrock groundwater levels in the areas surrounding the mine. Hydrological monitoring indicated there is little interconnectivity between the swamps and the upper bedrock aquifer which is being dewatered by the proposal. In relation to the Hotham River, groundwater modelling indicates that there is a lack of connectivity between surface groundwater systems supporting the Hotham River and the upper bedrock aquifer which is being dewatered.

Given the potential relationships between the groundwater systems in the area, the proponent has committed in the Public Environmental Review (PER) to manage groundwater drawdown through continuous refinement of the model with new data and monitoring of key GDEs and the Hotham River (NBGPL 2012b). In the event that impacts to GDEs of the Hotham River are identified by monitoring, the proponent has committed to developing contingency actions including supplementation and rehabilitation of GDEs as required.

The EPA considers that significant impacts to GDEs from this proposal are unlikely based on the existing knowledge of the regional hydrology and supports the proponent’s proposed management of groundwater. The EPA has therefore recommended that the existing commitment of the proponent becomes a condition of approval.

**Amenity**

Creation of the Waste Rock Dump (WRD) 12 for this proposal would require diversion of the Bibbulmun Track, a nationally significant recreational trail managed by the DPaW.

In order to ensure that operation of the Bibbulmun Track continues without any loss of recreational values, the EPA has recommended condition 8 requiring the proponent to prepare a management plan and achieve agreement with the DPaW regarding the realignment route, management actions and costs associated with the track prior to the commencement of construction on WRD 12.
Offsets

The EPA notes that the proponent has attempted to avoid, minimise and mitigate the impacts of the proposal in accordance with the Environmental Principles relevant to the proposal. However, the EPA considers that, following the implementation of all mitigation measures, the proposal would have significant residual impacts through the clearing of up to 1,755 ha of native vegetation which results in:

- loss of habitat for Carnaby's Cockatoo, Forest Red-tailed Black Cockatoo and Baudin's Black Cockatoo;
- fragmentation of Woylie and Chuditch habitat;
- loss of 618 ha of forest with conservation values currently vested in the Conservation Commission.

Consistent with current state policy, the EPA has therefore recommended condition 9 which requires the proponent to provide an agreed offset which addresses the significant residual impacts of the proposal.

Matters of National Environmental Significance (MNES)

The proposal potentially impacts Environment Protection Biodiversity Conservation Act 1990 (EPBC) listed threatened species being the:

- Woylie (*Bettongia penicillata ogilbyi*) – endangered;
- Chuditch (*Dasyurus geoffroii*) - vulnerable;
- Baudin’s Black Cockatoo (*Calyptorhynchus baudinii*) - vulnerable;
- Carnaby’s Black Cockatoo (*Calyptorhynchus latirostris*) - endangered; and
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – vulnerable.

Impacts from the proposal on the above-listed species are not expected to result in an unacceptable or unsustainable impact on the conservation status of listed species. There are, however, significant residual impacts in relation to the clearing of 1,755 ha of native vegetation which includes Black Cockatoo habitat, and will result in fragmentation of habitat for the Woylie and the Chuditch.

As noted above the EPA has recommended to the WA Minister for Environment that the location and authorised extent of clearing of native vegetation be limited to 1,755 ha within the development envelope and a recommended condition relating to offsetting for the impacts on Black Cockatoo species, Woylie and Chuditch.

Other advice

The EPA notes that the current plan for post-closure is that the pits would eventually form pit lakes, which would become a through-flow system with inputs from surface and groundwater and discharges to the environment.

The EPA has provided other advice about refinement of the groundwater model and development of contingency actions which are expected to be
addressed and managed by the DMP through the Mining Proposal and the Mine Closure Plan required under the *Mining Act 1978*.

The EPA has therefore concluded that it is likely that the EPA’s objectives would be achieved provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4 and summarised in Section 4.

**Recommendations**

That the Minister for Environment:

1. Notes that the proposal being assessed is to extend the operating life of the Newmont Boddington Gold Mine through widening and deepening of the existing pits and construction of additional infrastructure including residue storage facilities and waste rock dumps.

2. Considers the report on the key environmental factors as set out in Section 3.

3. Notes the proponent’s application of the avoidance and minimisation principles identified in this report;

4. Notes the EPA has concluded that that the proposal can be managed to meet the EPA’s environmental objectives, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4 and summarised in Section 5.

5. Imposes the conditions and procedures recommended in Appendix 4 of this report.

6. Notes the EPA’s other advice presented in Section 6 in relation to the following:
   
   - continuation of the existing Boddington Gold Environment Management Liaison Group (BGEMLG) which consists of representatives from a number of decision-making authorities and provides an important function in allowing appropriate input into determining and reviewing monitoring and management actions, including closure and rehabilitation outcomes; and
   
   - management of post-closure outcomes associated with discharge of pit lake water to the environment by the DMP.

**Conditions**

Having considered the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by NBGPL to extend the operating life of the NBGM through widening and deepening of the existing pits and construction of additional infrastructure including residue storage facilities and waste rock dumps is approved for implementation. These conditions are presented in Appendix 4. Matters addressed in the conditions include the following:
a) preparation and implementation of a weed and disease monitoring and management plan;

b) monitoring and management of GDEs;

c) management of impacts to the recreational values of the Bibbulmun Track; and

d) offsetting of the significant residual impacts of the proposal including clearing of 1,755 ha of native vegetation, loss and fragmentation of habitat for conservation significant fauna species and the loss of State Forest with conservation values.
Contents

Summary and recommendations .............................................................. i
1. Introduction and background ............................................................. 1
2. The proposal ..................................................................................... 2
3. Key environmental factors and principles .......................................... 6
   3.1 Flora and vegetation .................................................................. 7
   3.2 Terrestrial fauna ....................................................................... 9
   3.3 Hydrological processes .............................................................. 11
   3.4 Amenity ................................................................................... 13
   3.5 Offsets (Integrating Factor) ....................................................... 14
   3.6 Environmental principles ......................................................... 17
4. Matters of National Environmental Significance (MNES) .................. 17
5. Conditions ....................................................................................... 19
   5.1 Recommended conditions ......................................................... 19
   5.2 Consultation ............................................................................. 20
6. Other advice ..................................................................................... 20
7. Recommendations ............................................................................. 22

Tables
Table 1: Summary of the proposal
Table 2: Location and extent of the physical and operational elements

Figures
Figure 1: Location of the proposal indicating regional context
Figure 2: Location of the proposal indicating local context and including an outline of the proposal footprint

Appendices
1. List of submitters
2. References
3. Summary of identification of key environmental factors
4. Recommended Statement that the proposal can be implemented and nominated Decision-Making Authorities
5. Summary of submissions and proponent’s response to submissions (CD)
1. Introduction and background

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for Environment on the key environmental factors and principles for the proposal by Newmont Boddington Gold Pty Ltd (NBGPL) to extend the operating life of the Newmont Boddington Gold Mine (NBGM). The proposal includes the widening and deepening of the existing pits and construction of additional infrastructure including residue storage facilities and waste rock dumps (WRDs).

Mining at the Boddington site commenced in 1987 and continued until 2001, when it was placed under care and maintenance. Operations recommenced in 2009. All current activities are approved under EP Act Ministerial Statement 591, which supersedes a number of Ministerial statements issued prior to 2002. The current approval proposes mining would cease around 2022.

The Newmont Boddington Gold Life of Mine Expansion Project was referred to the EPA on 15 May 2012. On 5 June 2012 the level of assessment for the proposal was determined as Public Environmental Review (PER) with a review period of four weeks. An Environmental Scoping Document (ESD) was prepared and endorsed by the EPA on 11 October 2012. The PER was released for public review from 19 August 2013 until 16 September 2013.

The proposal was also determined by the Commonwealth Department of the Environment (DotE) to be a controlled action on 2 July 2012. The proposal was considered likely to have a significant impact on three species of Black Cockatoo (Carnaby’s Black Cockatoo, Forest Red–Tailed Black Cockatoo and Baudin’s Black Cockatoo) listed under the Environment Protection Biodiversity Conservation Act 1999.

The proposal was originally referred with two potential options for Residue Disposal Areas (RDA), however a single option (construction of a new facility on the timber plantation area to the north of the mine) was selected during the assessment process and the final EPA assessment is based on this option.

Further details of the proposal are presented in Section 2 of this report. Section 3 discusses the key environmental factors and principles for the proposal. Matters of National Environmental Significance (MNES) are discussed in Section 4. The conditions to which the proposal should be subject, if the Minister determines that it may be implemented, are set out in Section 5. Section 6 provides other advice by the EPA and Section 7 presents the EPA’s recommendations.

Appendix 5 contains a summary of submissions and the proponent’s response to submissions and is included as a matter of information only and does not form part of the EPA’s report and recommendations. Issues arising from this process, and which have been taken into account by the EPA, appear in the report itself.
2. The proposal

The proponent, NBGPL, proposes to extend the life of the existing NBG M by widening and deepening the existing mine pits and constructing additional infrastructure including residue storage facilities and WRDs (NBGPL 2012a).

The expansion is a revised proposal and will result in a single new Ministerial Statement for the project. Existing Ministerial Statement 591 has been reviewed and relevant conditions and commitments of this statement are included in the recommended conditions detailed in Appendix 4.

The NBG M is located in the Shire of Boddington, about 12 kilometres (km) north-west of the town of Boddington and 120 km south-east of Perth (Figure 1). Surrounding land uses include State Forest, timber production, agriculture and mining.

The proposal includes widening and deepening of the Wandoo North and Wandoo South open pits, increased ore production requiring additional WRDs, an additional residue disposal area (RDA), increases in the size of stockpiles and ancillary infrastructure, and construction of additional water storage dams (Figure 2). The result would be an increase in the expected mine life of 19 to 24 years, with operations continuing up to 2041.

The main characteristics of the proposal relative to the existing operations are summarised in Tables 1 and 2 below. A detailed description of the proposal is provided in Section 3 of the PER (NBGPL 2013).

Table 1: Summary of the proposal

<table>
<thead>
<tr>
<th>Proposal title</th>
<th>Newmont Boddington Gold Life of Mine Expansion</th>
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<tbody>
<tr>
<td>Proponent name</td>
<td>Newmont Boddington Gold Pty Ltd</td>
</tr>
<tr>
<td>Short description</td>
<td>The proposal is for the continuation and expansion of the existing operations at the Newmont Boddington Gold Mine and includes:</td>
</tr>
<tr>
<td></td>
<td>• pit expansion (widening and deepening);</td>
</tr>
<tr>
<td></td>
<td>• increased ore production resulting in increased waste quantities;</td>
</tr>
<tr>
<td></td>
<td>• increase to existing stockpiles and development of ancillary infrastructure;</td>
</tr>
<tr>
<td></td>
<td>• expansion of waste rock dumps;</td>
</tr>
<tr>
<td></td>
<td>• construction of a new residue disposal area;</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td></td>
<td>• construction of new water storage areas.</td>
</tr>
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Table 2: Location and extent of the physical and operational elements

<table>
<thead>
<tr>
<th>Element</th>
<th>Location</th>
<th>Extent of current approval</th>
<th>Extent of this proposal</th>
<th>Total extent of proposal</th>
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</thead>
<tbody>
<tr>
<td>Development envelope</td>
<td>Figure 2</td>
<td>N/A</td>
<td>N/A</td>
<td>11,712 ha</td>
</tr>
<tr>
<td>Disturbance Footprint</td>
<td>Figure 2</td>
<td>3,680 ha (22 ha remaining to be cleared)</td>
<td>3,170 ha</td>
<td>6,850 ha</td>
</tr>
<tr>
<td>Clearing of Native vegetation</td>
<td>Figure 2</td>
<td>3,680 ha (22 ha remaining to be cleared)</td>
<td>1,755 ha</td>
<td>5,435 ha</td>
</tr>
<tr>
<td>Waste Rock Dumps</td>
<td>Figure 2</td>
<td>820 Mt</td>
<td>680 Mt</td>
<td>1,500 Mt</td>
</tr>
<tr>
<td>Mine Activities</td>
<td>Figure 2</td>
<td>Open Cut basement mining to approximately -125 m AHD</td>
<td>Open cut basement mining to approximately -252m AHD for the north pit and -432m AHD south pit</td>
<td>Open cut basement mining to approximately -252m AHD for the north pit and -432m AHD south pit</td>
</tr>
<tr>
<td>Water use</td>
<td></td>
<td>47 ML/day</td>
<td>No increase over existing operations</td>
<td>47 ML/day</td>
</tr>
</tbody>
</table>

AHD Australian Height Datum
ML Mega Litres
MT Million Tonnes

Table 1 incorporates modifications to the proposal made by the proponent following release of the PER. These include:

- the addition of historic disturbance associated with the Hedges Dam to the total disturbance footprint for the proposal and the Development Envelope as shown in Figure 1.

The potential impacts of the proposal initially predicted by the proponent in the PER document (NBGPL 2012a) and their proposed management are summarised in Table ES2 of the proponent’s document.

It should also be noted that the clearing component of the revised proposal is 1,755 ha of native vegetation however, when fully implemented, the existing and revised proposal would result in a total cleared area of native vegetation of no more than 5,435 ha.
Figure 1: Location of the proposal indicating regional context
Figure 2: location of the proposal indicating local context and including an outline of the proposal footprint
3. Key environmental factors and principles

Section 44 of the EP Act requires the EPA to report to the Minister for Environment on the key environmental factors relevant to the proposal and the conditions and procedures, if any, to which the proposal should be subject. In addition, the EPA may make recommendations as it sees fit.

The identification process for the key factors selected for detailed evaluation in this report is summarised in Appendix 3. The reader is referred to Appendix 3 for the evaluation of factors not discussed below. A number of these factors, such as Inland Waters Environmental Quality, and Rehabilitation and Closure are relevant to the proposal, but the EPA is of the view that the information set out in Appendix 3 provides sufficient evaluation.

It is the EPA’s opinion that the following key environmental factors for the proposal require detailed evaluation in this report:

- a) Flora and vegetation;
- b) Terrestrial fauna;
- c) Hydrological processes;
- d) Amenity; and
- e) Offsets (Integrating factor).

The above key factors were identified from the EPA’s consideration and review of all environmental factors generated from the PER document and the submissions received, in conjunction with the proposal characteristics set out in Tables 1 and 2 above.

Details on the key environmental factors and their assessment are contained in Sections 3.1 - 3.5. The description of each factor shows why it is relevant to the proposal and how it will be affected by the proposal, taking into consideration environmental impact management by the proponent. The assessment of each factor is where the EPA decides whether or not a proposal meets the environmental objective set for that factor.

Section 4 contains an assessment of MNES related to the proposal.

The following principles were considered by the EPA in relation to the proposal:

- a) The precautionary principle;
- b) The principle of intergenerational equity;
- c) The principle of the conservation of biological diversity and ecological integrity;
- d) Principles related to improved valuation, pricing and incentive mechanisms; and
- e) The principle of waste minimisation.
3.1 Flora and vegetation

The EPA’s environmental objective for this factor is to maintain representation, diversity, viability and ecological function at the species, population and community level.

The area considered for this assessment is the development envelope indicated in Figure 2 and adjacent areas of State Forest.

As the area has been the subject of mining activity and associated approvals over more than 20 years, there is extensive knowledge of the flora and vegetation in the area (Mattiske 2005). Surveys undertaken include regional, site-specific, and targeted Declared Rare Flora and Threatened flora surveys. The proponent has summarised these surveys in a review included in the PER, as well as conducting targeted surveys specific to this proposal.

Vegetation in the Boddington lease area ranges from completely degraded to excellent, with large areas of intact native forest ranging in condition from good to excellent. *Phytophthora cinnamomi* (dieback) is present in the proposed development envelope, with five known infestations and one area classified as ‘uninterpretable’ (NBGPL 2012a). Most of the spread of the disease appears to be associated with creek lines and water flow, with some attributable to a drainage pipe and vehicle movements. Over 100 weed species have been identified within the NBGM vegetation survey area, with many of these concentrated in areas of disturbance.

Local flora and vegetation types recorded in the area are generally well represented at a regional scale. Nine Priority flora species have been recorded in the survey area, however no Threatened flora species have been recorded on site (NBGPL 2012a).

Nine vegetation complexes have been defined in the area. Of these, the Michibin and Williams complexes have less than 30% of their pre-European extent remaining and have less than 10% retained within the conservation estate (Mattiske 2005).

Impacts to flora and vegetation associated with the proposal would include:

- clearing of up to 3,120 ha of vegetation for the pit expansion, WRDs, RDA and associated infrastructure. 1,755 ha of this clearing would consist of native vegetation, with the remainder being timber plantations and previously disturbed areas;

- spread of weeds and dieback as a result of vehicle movement and site disturbance associated with construction and mining activities; and

- potential impacts to groundwater dependent ecosystems, including the Hotham River, as a result of groundwater drawdown. This is discussed in Section 3.3 (Hydrological processes).

The EPA notes that the proponent has attempted to avoid and minimise impacts to flora and vegetation through the design of the proposal, including:

- locating infrastructure to avoid native vegetation;
• avoiding clearing within the Michibin and Williams vegetation complexes; and

• locating the new RDA predominantly within timber plantation areas.

The EPA also notes that the proponent has developed management frameworks under its existing approvals to minimise and mitigate impacts associated with the existing proposal. These include weed and dieback management, fire management and rehabilitation practices. The proponent’s management measures appear to have been effective to date, and would continue to be implemented in relation to this revised proposal. Threats related to the spread of weeds and dieback would require ongoing management to ensure that indirect impacts to flora and vegetation associated with the ongoing operations are minimised.

The EPA recommends that the location and authorised extent of clearing of vegetation is limited to the authorised extent as defined within Table 2 of Schedule 1 of the recommended Ministerial Statement that the proposal may be implemented (Appendix 4) and in Figure 2 of this report.

The EPA also recommends condition 6 requiring the proponent to prepare and implement a Weed and Disease Monitoring and Management Plan.

The EPA considers that the proponent has adequately demonstrated how it has avoided and minimised impacts to flora and vegetation through the design of the proposal and associated infrastructure. However there remains a significant residual impact to the EPA’s key factor of flora and vegetation related to the clearing of 1,755 ha of native vegetation, and an environmental offset is necessary to counterbalance those impacts. Further information on offsets is set out in Section 3.5 of this report.

Summary

Having particular regard to:

• the design of the proposal and location of project elements to minimise clearing of native vegetation;

• the proponent’s existing knowledge of the area and current success and experience in adequately managing indirect impacts to flora and vegetation; and

• the predicted residual impact of the proposal,

it is the EPA’s opinion that the proposal can be managed to meet the EPA’s objective for this factor provided that:

• vegetation clearing is limited to that authorised in Table 2 of Schedule 1 of the recommended statement that the proposal may be implemented (Appendix 4);

• recommended condition 6 (Appendix 4) is imposed requiring the proponent to prepare and implement implement a Weed and Disease Monitoring and Management Plan; and

• the proponent offsets the significant residual impacts of the proposal to flora and vegetation.
3.2 Terrestrial fauna

The EPA’s environmental objective for this factor is to maintain representation, diversity, viability and ecological function at the species, population and assemblage level.

The area considered for this assessment is the development envelope indicated in Figure 2, adjacent areas of State Forest, and adjacent areas of significant fauna habitat.

The project area and surrounding land have been the subject of a number of fauna studies and surveys over the life of the existing operations (Ninox 2003). There is a good knowledge of the fauna populations and habitats in the area. The proponent has conducted Level 2 vertebrate fauna surveys of all project areas not previously surveyed, including the new RDA location, and has undertaken a Black Cockatoo habitat assessment in the area to the east of the mine site.

Twenty three conservation significant terrestrial vertebrate fauna species are listed as potentially occurring in the area. These species comprise ten mammals, 11 birds (including seven migratory species) and two reptiles (NBGPL 2012a). Table 31 of the PER considers each of these species based on conservation significance, habitat preference and likelihood of occurrence. The table identifies three mammal species and three Black Cockatoo species which are of high conservation significance and are likely to be impacted by the proposal.

Conservation significant species with the potential to be impacted by the proposal include:

- Brush-tailed Phascogale;
- Chuditch;
- Woylie;
- Baudin’s Black Cockatoo;
- Carnaby’s Black Cockatoo; and
- Forest Red-tailed Black Cockatoo

The Brush-tailed Phascogale is listed as a Schedule 1 species (fauna that is rare or likely to become extinct) under the Wildlife Conservation Act 1950 (WC Act). Based on possible habitat types, the potential habitat for this species is widespread in the area.

The Chuditch is listed as a Schedule 1 species under the WC Act. Due to a need for large areas of habitat, the Chuditch is likely to be restricted in fragmented habitats. The species is therefore likely to be impacted by habitat fragmentation associated with this proposal.

The Woylie is highly restricted and is listed as a Schedule 1 species under the WC Act. It has been recorded within the development envelope to the east of the WRD. Potential impact to this species would include some clearing of habitat and fragmentation of existing habitat.
Carnaby's Black Cockatoo, the Forest Red-tailed Black Cockatoo and Baudin's Black Cockatoo all utilise the project area as foraging habitat. Carnaby's Black Cockatoo and the Forest Red-tailed Black Cockatoo also utilise the area as breeding habitat. The proponent has confirmed that it is avoiding clearing of Black Cockatoo breeding trees. Clearing associated with the proposal would therefore be likely to impact these species mainly through reduction of available local habitat.

The proponent has attempted to avoid and minimise impacts to fauna by locating infrastructure to minimise clearing of native vegetation as far as practicable, and to maintain east-west linkages between remnant vegetation.

The proponent also proposes to implement a Black Cockatoo Management Plan and a Terrestrial Fauna Management Plan, which include number of management actions such as establishing fauna access and egress structures across roads and pipelines and rehabilitating the site progressively using hollow-producing tree species (for Black Cockatoos) and *Gastrolobium* shrubs (for Woylies).

While the Brush-tailed Phascogale is likely to be impacted by clearing, the potential habitat of this species is widespread in the area. The EPA considers that it is unlikely that there would be a significant residual impact to the Brush-tailed Phascogale as a result of this proposal.

The EPA notes that direct impacts (i.e. vehicle strike, mortality during clearing) to the three species of Black Cockatoo as well as to the Chuditch and Woylie, are unlikely. The cockatoo species are highly mobile and the two mammal species have been recorded mostly in the vegetation to the east of the project area. No significant increase in vehicle movement is expected as a result of this proposal, and the proponent has implemented appropriate management actions to minimise these impacts.

The EPA also notes that the habitat types identified in the area, while fragmented, are generally widespread and that less than 10% of the suitable habitat for each fauna species within the mapped extent would be cleared for the proposal. The percentage of habitat to be cleared relative to the regional extent would be far lower (See figures 36 to 41 of the proponent’s PER document (NBGPL 2012a)) However, the loss and fragmentation of habitat resulting from the proposed clearing would still represent significant residual impact to the three species of Black Cockatoo, the Woylie, and the Chuditch.

The extent of clearing for the proposal would be limited to the authorised extent as defined in Table 2 of Schedule 1 of the recommended statement that the proposal may be implemented (Appendix 4).

The EPA considers that the proponent has adequately demonstrated how it has avoided and minimised impacts to the EPA’s key factor of terrestrial fauna through the design of the proposal and location of associated infrastructure. However, there remains a significant residual impact to terrestrial fauna related to the clearing of 1,755 ha of Black Cockatoo habitat and fragmentation of habitat for the Woylie and the Chuditch, and an environmental offset is necessary to counterbalance those impacts. Further information on offsets is set out in Section 3.5 of this report.
Summary

Having particular regard to:

- the proponent’s proposed design and management measures to avoid, minimise and mitigate impacts to fauna and habitat;
- the proponent’s existing knowledge of the area and current success and experience in adequately managing impacts to terrestrial fauna;
- the widespread distribution of habitat types identified in the project area; and
- the predicted residual impact of the proposal associated with clearing of 1,755 ha of native vegetation including breeding and foraging habitat for three species of Black Cockatoo, the Woylie, and the Chuditch,

it is the EPA’s opinion that the proposal can be managed to meet the EPA’s objectives for this factor, provided that:

- vegetation clearing is limited to that authorised in Table 2 of Schedule 1 of the recommended statement that the proposal may be implemented (Appendix 4); and
- the proponent offsets the significant residual impacts of the proposal to terrestrial fauna.

3.3 Hydrological processes

The EPA’s objective for this factor is to maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance are protected.

Interactions between the proposal and local hydrological processes are as follows:

- The diversion of surface water associated with earthworks and the location of infrastructure is unlikely to be significant and can be managed by the DMP.
- The take of surface water from the Hotham River for processing is managed under a licence issued by the Department of Water (DoW).
- The impacts to surface water quantity associated with diversion of drainage lines for construction of the RDA is managed by the DoW under the required bed and banks permits.
- Mining activities will result in groundwater drawdown.

It is unlikely that local groundwater users would be impacted by groundwater drawdown in this area. The EPA considers that the key impacts from changes to groundwater associated with this proposal are related to reduction in groundwater available to GDEs in the area.

The conceptual model for the NBGM project (figure 15 of the PER) identifies a shallow perched aquifer supporting a series of swamps overlying an upper bedrock groundwater system and a deep bedrock groundwater system.
The GDEs surrounding the NBGM are considered to include Pillow, Round and Boomerang swamps and potentially the riparian vegetation associated with the Hotham River (Mattiske 2010).

The hydrology and hydrogeology of the Boddington area has been studied throughout the life of the mine. NBGPL undertakes water monitoring for water quality and levels throughout the year in accordance with the existing approvals for the mine. Dewatering operations to date have resulted in lowered upper bedrock groundwater levels in the areas surrounding the mine compared to 1987 water levels. The total decrease in water at the centre of the mine operations is approximately 180 m.

There is considered to be little interaction between the swamps and the upper bedrock aquifer which would be impacted by the proposal. The swamps represent topographical low points where groundwater in the shallow groundwater system is perched on top of the clay layer and discharges to the surface of the swamps. These swamps are therefore considered not directly connected to the upper bedrock aquifer. Dewatering is also therefore unlikely to impact on the water levels and ecology of the swamps (NBGPL 2012a).

In relation to the Hotham River, the two metre drawdown contour of the upper bedrock groundwater system is currently four kilometres from the Hotham River at its closest point (NBGPL 2012b). The one metre drawdown contour of the upper bedrock groundwater system is expected to approach the Hotham River in about 2022, but is not expected to proceed further south after this time. Groundwater modelling indicates that there is a lack of connectivity between surface groundwater systems supporting the Hotham River and the upper bedrock aquifer which is being dewatered. The initial modelling indicates that abstraction impacts are not significant.

However, given the potential relationships of the groundwater systems in the area, the proponent has committed in the PER to manage groundwater drawdown through continuous refinement of the model with new data and monitoring of key GDEs and the Hotham River (NBGPL 2012b). In the event that impacts to GDEs of the Hotham River are identified by monitoring, the proponent has committed to developing contingency actions including supplementation and rehabilitation of GDEs as required.

The EPA considers that impacts to GDEs from this proposal are unlikely based on the existing knowledge of the regional hydrology, and that the proponent’s proposed management of groundwater and GDEs is likely to be appropriate. However, there remains a residual risk that the GDEs of the Hotham River may be impacted in the long term. Monitoring and management of groundwater is addressed as a proponent commitment in the existing Ministerial Statement 591. The EPA notes that the proponent’s proposed monitoring and management would not be required or assessed by any regulatory agency. The EPA has therefore recommended that the existing commitment of the proponent becomes a condition of approval. The EPA has recommended condition 7 to address monitoring and management of GDEs.

**Summary**

Having particular regard to:

- the existing knowledge of the regional hydrology;
• the upper bedrock groundwater system which is being dewatered to allow mining to occur is unlikely to be hydraulically connected to local swamps and the Hotham River; and
• the proponent’s proposed monitoring, management and contingency actions,

it is the EPA’s opinion that the proposal can be managed to meet the EPA’s objectives for this factor, provided that recommended condition 7 (Appendix 4) is imposed requiring the proponent to monitor and manage GDEs in the area.

3.4 Amenity

The EPAs objective for this factor is to ensure that impacts to amenity are reduced as low as reasonably practicable.

Creation of the WRD 12 (Figure 2) for this proposal would require diversion of the Bibbulmun Track, a nationally significant recreational trail managed by the Department of Parks and Wildlife (DPaW). Approximately two kilometres of the track would be diverted around the WRD. Construction and operation of the WRD potentially has noise impacts on the Mt Wells Hut which is located further north on the Bibbulmun Track.

The proponent has provided a preliminary indication of the potential realignment route, however the final realignment has not been determined and will be designed in consultation with stakeholders including the DPaW.

The proponent has committed to the following in relation to the realignment of the Bibbulmun track:
• provision of two years notice to the DPaW prior to relocating the track;
• maintenance of access along the existing alignment during realignment construction (i.e no closure of the track); and
• coverage of costs associated with the relevant surveys and relocation aspects of the realignment.

The proponent has not committed to relocation of the Mount Wells Hut as requested by the DPaW, unless noise levels can be demonstrated to be unacceptable at the hut. The proponent’s modelling indicates that the potential maximum noise levels at the Mount Wells Hut would be 36 dB around five years into use of WRD 12. There are currently no limits or guidelines applicable to noise levels in recreational areas. If unacceptable noise levels can be demonstrated the proponent has committed to paying costs associated with relocation of the hut.

In order that operation of the Bibbulmun Track continues without any loss of recreational values, the EPA has recommended condition 8 (Appendix 4) requiring the proponent to prepare a management plan and achieve agreement with the DPaW regarding the realignment route, management actions and costs associated with relocating the track prior to the commencement of construction on WRD 12. The condition also addresses the establishment of appropriate criteria to determine the acceptability of noise impacts on the Mount Wells Hut.
Summary
Having particular regard to the:

- recreational values and national significance of the Bibbulmun Track; and
- proponent’s proposed management actions for the realignment of the track,

it is the EPA’s opinion that the proposal can be managed to meet the EPA’s objectives for this factor, provided that recommended condition 8 (Appendix 4) is imposed requiring the proponent to consult with stakeholders and confirm agreed actions and management plans prior to the realignment of the Bibbulmun Track.

3.5 Offsets (Integrating Factor)
The EPA’s environmental objective for this factor is to counterbalance any significant residual environmental impacts or uncertainty through the application of offsets.

The proponent has mitigated the impacts of its proposal to significant environmental values through:

- avoiding clearing of approximately 1,200 ha of native vegetation by locating the RDA on a timber plantation;
- avoiding clearing native vegetation by expanding WRD Number 10 onto existing cleared farm land;
- avoiding clearing of Black Cockatoo breeding trees;
- minimising the risk of spread of weeds and dieback by closing access to forested areas during wet weather;
- minimising the impacts of fragmentation on terrestrial fauna by maintaining connectivity between the eastern and western sides of the proposal through fauna access and egress structures across roads and pipelines; and
- rehabilitating the site progressively using hollow producing tree species (for Black Cockatoos) and Gastrolobium shrubs (for Woylies).

Following the implementation of all mitigation measures, the proposal would have significant residual impacts through the clearing of up to 1,755 ha of native vegetation which results in:

- loss of habitat for Carnaby's Cockatoo, Forest Red-tailed Black Cockatoo and Baudin’s Black Cockatoo;
- fragmentation of Woylie and Chuditch habitat;
- loss of 618 ha of forest with conservation values currently vested in the Conservation Commission.
Loss and fragmentation of terrestrial fauna habitat

The clearing of up to 1,755 ha of native vegetation including habitat for conservation significant species for the proposal is considered significant due to the scale of loss of foraging habitat for the Black Cockatoo species, as well as further fragmentation of the native vegetation east and west of the proposal in an area that has already been fragmented by previous proposals. Progressive rehabilitation of the existing mining areas has shown to be effective for Black Cockatoos in recreating foraging habitat. The EPA has taken account of this success in recreating suitable habitat when determining an appropriate offset as it reduces the permanence of the loss of this habitat.

The temporary loss of foraging habitat is a significant issue for these species where overall foraging habitat is being reduced. While this is more prevalent on the Swan Coastal Plain, any loss of this habitat threatens the viability of these species. It is noted that the proponent has avoided clearing trees with nesting hollows. However, the loss of potential breeding habitat associated with the foraging habitat is significant because of the time lag associated with replanted trees maturing enough to develop hollows.

Fragmentation caused by the previous proposal will be increased as the current proposal further reduces existing corridors linking the eastern and western side of the forest. The EPA acknowledges that some mitigation will be applied (e.g. fauna egresses), however there will be isolation of the remnant vegetation to the east of the proposal.

The loss of conservation areas includes State Forest. Biodiversity conservation is one of the management purposes of State Forest. This loss is therefore considered significant. While the 618 ha of State Forest being lost is part of the 1,755 ha considered above, its status as State-owned land managed in-part for conservation purposes means there are additional environmental values impacted by the proposal that are not addressed by the two terrestrial fauna offsets.

These impacts have been considered together in designing an appropriate offset package. Three offsets have been developed to meet the requirements of the WA Environmental Offsets Policy (2011) and the EPA’s Position Statement 9.

In making a judgement about the adequacy of the offset the EPA has also considered the avoidance, minimisation and rehabilitation actions outlined above in reducing the significant residual impact.

The first offset involves placing at least 2,000 ha of good condition vegetation under a conservation covenant for protection. The area to be conserved will need to contain the values being impacted. These values include Black Cockatoo foraging habitat, as well as suitable habitat for Woylie and Chuditch. The proponent currently intends to locate the offset site close to the proposal providing a local and like-for-like offset as this will benefit the populations being impacted.

The area around the proposal site contains other mining interests over the land, therefore discussions with these stakeholders and the DMP would be required to come to an agreement over the use of the site.
There is a risk that the proponent may not reach agreement with other stakeholders over the land to be covenanted, therefore the EPA has recommended a condition that does not detail a specific area to be conserved, but contains a list of requirements to meet the conservation outcome. This will provide flexibility for the proponent to select other land parcels if the preferred site cannot be agreed upon. The condition also allows for land that is currently degraded to be rehabilitated to provide new habitat (net environmental benefit) for the species being impacted.

There is value in the recreation of habitat, particularly foraging habitat for Black Cockatoos. The proponent has already demonstrated its ability to recreate this type of habitat in its rehabilitation of previously mined areas. Since there is an increased risk associated with recreating habitat, if the proponent identifies areas containing degraded habitat, the proponent will need to demonstrate how this has been accounted for in determining how much benefit is likely to be generated.

The second offset is a combination of both protection and on-ground management. An area of Hotham Farm, which is owned by the proponent, would be placed under a conservation covenant, with areas (approximately 300 ha) that are currently degraded to be revegetated. The revegetation works will involve recreating habitat for Black Cockatoos and small mammals. Similar to the first offset, this offset is local and will help reduce the impacts near the proposal site.

The conservation covenants applied to both of these areas are expected to increase the security of the offset sites. It is expected that these covenants would remain in place in perpetuity. This may require the covenants to be renewed where time limits apply in the covenanting scheme. Should any development be proposed that would cause an impact to the conservation value of the offsets sites, the EPA expects that further actions will be required to offset both the new development as well as the loss that this offset provides for.

**Lands vested in the Conservation Commission**

The proponent has proposed a third offset which involves a land exchange for the area of the proposal located in the State Forest and vested in the Conservation Commission. This will involve the proponent ceding land to the Crown for incorporation into the State Forest. The total area of this land exchange should be based on providing no net loss of environmental value to the State Forest, while acknowledging that some of this value has been considered by the first two offsets. It is expected that this offset would be at least 618 ha (i.e. the area lost) for land that is the same condition and quality as the area being lost. The arrangements for this offset will be negotiated between the DPaW and the proponent.

The EPA believes that the proposed offsets described above adequately counterbalance the significant residual impacts of the proposal. The EPA has recommended condition 9 which addresses offsets for the significant residual impacts of the proposal.
Summary

Having particular regard to the significant residual impacts of the proposal through the clearing of up to 1,755 ha of native vegetation which results in:

- loss of habitat for Carnaby’s Cockatoo, Forest Red-tailed Black Cockatoo and Baudin’s Black Cockatoo;
- fragmentation of Woylie and Chuditch habitat;
- loss of 618 ha of forest with conservation values currently vested in the Conservation Commission,

it is the EPA’s opinion that the proposal can be managed to meet the EPA’s objective for this factor provided that recommended condition 9 is imposed, which addresses offsets for the significant residual impacts of the proposal.

3.6 Environmental principles

In preparing this report and recommendations, the EPA has had regard for the object and principles contained in s4A of the EP Act. Appendix 3 contains a summary of the EPA’s consideration of the principles.

4. Matters of National Environmental Significance (MNES)

This proposal was determined by the Commonwealth Department of the Environment (DotE) (formerly DSEWPaC) to be a controlled action on 2 July 2012. This is because the proposed action was considered likely to have a significant impact on three species of Black Cockatoo (Carnaby’s Black Cockatoo, the Forest Red-Tailed Black Cockatoo and Baudin’s Black Cockatoo) listed under the EPBC Act, due to clearance of potential future breeding habitat and existing foraging habitat for these species.

This proposal is being assessed by way of an accredited environmental assessment process under the bilateral agreement made under section 45 of the EPBC Act between the Commonwealth and the State of Western Australia. The bilateral agreement allows the Commonwealth Government Minister for the Environment to rely on the PER process of the State Government of WA in assessing this action under the EPBC Act.

The assessment report on the proposed action prepared by the EPA and provided to the WA Minister for Environment is forwarded to the Commonwealth Minister for Environment who then makes a decision as to whether or not the proposal should be approved under the EPBC Act. This is separate to any WA approval that may be required.

Surveys and investigations undertaken for the PER assessment identified several species protected under the EPBC Act as being present, or having the potential to be present, within or adjacent to the development envelope.

EPBC Act listed threatened species identified as having the potential to be impacted by the proposal are:
• Woylie (Bettongia penicillata ogilbyi) – endangered;
• Chuditch (*Dasyurus geoffroii*) - vulnerable;
• Baudin’s Black Cockatoo (*Calyptorhynchus baudinii*) - vulnerable;
• Carnaby’s Black Cockatoo (*Calyptorhynchus latirostris*) - endangered; and
• Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – vulnerable.

The Woylie is highly restricted and has been recorded within the development envelope to the east of the WRD. The Chuditch is also likely to be restricted in fragmented habitats. Impacts to these species would include some clearing of habitat and fragmentation of existing habitat.

The Carnaby’s Black Cockatoo is listed as Endangered under the EPBC Act, while the Forest Red-tailed Black Cockatoo and the Baudin’s Black Cockatoo are both listed as Vulnerable. All three utilise the project area as foraging habitat, and the Carnaby’s Black Cockatoo and the Forest Red-tailed Black Cockatoo also utilise the area as breeding habitat. Clearing associated with the proposal would therefore be likely to impact these species through reduction of available local habitat.

Direct impacts to these species (i.e. vehicle strike, mortality during clearing) are unlikely given that cockatoo species are highly mobile and the two mammal species have been recorded mostly to the east of the project area.

The habitat types identified in the area, while fragmented, are widespread and less than 10% of the suitable habitat for each species within the mapped extent would be cleared for the proposal. The percentage of habitat to be cleared relative to the regional extent would be far lower.

Impacts from the proposal on the above-listed species are therefore not expected to result in an unacceptable or unsustainable impact on the conservation status of listed species. There are, however, significant residual impacts in relation to the clearing of 1,755 ha of Black Cockatoo habitat and fragmentation of habitat for the Woylie and the Chuditch.

The EPA has recommended to the WA Minister for Environment that the location and authorised extent of clearing of native vegetation be limited to 1,755 ha within the development envelope.

It should also be noted that the EPA has recommended condition 9 for offsets, in the form of habitat improvement activities and conservation covenants, to mitigate the significant residual impacts on the Woylie, Chuditch, and three species of Black Cockatoo.

The EPA is aware that the proponent has also used the Commonwealth’s Offsets Assessment Guide to develop an offsets package to meet the requirements of the *EPBC Act Environmental Offsets Policy 2012*. The hectares required and the amount of environmental benefit provided for these actions have been calculated by the proponent using the Commonwealth’s Offsets Assessment Guide.
In relation to conservation covenants the EPA has been advised by the Commonwealth that, should any development occur that would cause an impact to the conservation value of the offsets site, the EPBC Act Environmental Offset Policy (October 2012) also requires the person proposing to undertake the new development to develop an offsets package that compensates for both the impact of the new development and the impacts of the original action for which the offset was a condition of approval.

5. Conditions

Section 44 of the EP Act requires the EPA to report to the Minister for Environment on the key environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

5.1 Recommended conditions

Having considered the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by NBGPL to extend the operating life of the NBGM through widening and deepening of the existing pits and construction of additional infrastructure including residue storage facilities and waste rock dumps is approved for implementation. These conditions are presented in Appendix 4. Matters addressed in the conditions include the following:

a) preparation and implementation of a weed and disease management plan;

b) monitoring and management of GDEs;

c) management of impacts to the recreational values of the Bibbulmun Track; and

d) offsetting of the significant residual impacts of the proposal including clearing of 1,755 ha of native vegetation, loss and fragmentation of habitat for conservation significant fauna species and loss of State Forest with conservation values.

It should be noted that other regulatory mechanisms relevant to the proposal are:

- *Mining Act 1978* – Mining Proposal and Mine Closure Plan;
- *Rights in Water and Irrigation Act 1914* – Abstraction Licence (Take of Surface water) and Permit to Interfere with Bed and Banks;
- *Aboriginal Heritage Act 1972* – section 18 approval;
- *Environmental Protection Act 1986* – Part V Works Approval and Licence; and
5.2 Consultation

In developing the recommended conditions, the EPA consulted with the proponent, the DPaW, the Department of Environmental Regulation (DER), the DoW, the Department of Aboriginal Affairs (DAA) and the DMP in respect of matters of fact and matters of technical or implementation significance.

6. Other advice

Mine Closure and Pit Lake Discharge

The EPA notes that the proposed closure options would result in pit lakes which would form a through-flow system over time (NBGPL 2012c). The pit lakes would have inputs from groundwater and surface water and outputs to the adjacent Wattle Brook (Schlumberger 2013).

The EPA considers that, based on existing modelling, this scenario is likely to meet the EPA’s objectives for this factor. However, the EPA also considers that the proponent’s current groundwater model should continue to be refined during the operational stage of the proposal in order to confirm that the quality of water entering the environment will be consistent with ANZECC guidelines.

In the event that the refined model predicts that water entering the environment is likely to exceed water quality targets, the proponent should develop contingency actions which may include backfilling of pits and treatment of discharge water.

The EPA considers that refinement of the groundwater model and development of contingency actions can be managed by the DMP through the Mining Proposal and the Mine Closure Plan required under the Mining Act 1978. The Mine Closure Plan will be prepared consistent with the DMP/EPA Guidelines for Mine Closure Plans. The EPA recommends that the DMP should ensure that the proponent addresses the above matters to ensure that the EPA’s objectives for closure and rehabilitation are met.

Environmental Liaison Group

The Boddington Gold Environmental Management Liaison Group (BGEMLG) was established under a procedure contained within Ministerial Statement 591, which would be superseded by the recommended conditions in the event that this proposal is approved.

The BGEMLG consists of representatives from a number of decision-making authorities including the Office of the Environmental Protection Authority (OEPA), the DPaW, the DER, the DMP, and the DoW. The BGEMLG meets on a regular basis to review monitoring and management actions carried out by NBGPL and recommends future management actions.

While the EPA has not recommended a condition to enforce the continuing existence of this group, it is noted that the group is an effective management arrangement. It is also noted that the proponent intends to continue the operation of the group. The EPA considers that the BGEMLG provides an
important function in allowing the DPaW to have appropriate input into closure and rehabilitation outcomes in areas of the proposal which are in State Forest. The EPA recommends that the proponent commits to continuing the group within the Mining Proposal which is required under the *Mining Act 1978*, and that the defined role of the group include a strong emphasis on determining and reviewing the outcomes of closure and rehabilitation in consultation with the DPaW and the relevant stakeholders.
7. Recommendations
The EPA submits the following recommendations to the Minister for Environment:

1. That the Minister notes that the proposal being assessed is to extend the operating life of the Newmont Boddington Gold Mine through widening and deepening of the existing pits and construction of additional infrastructure including residue storage facilities and waste rock dumps;

2. That the Minister considers the report on the key environmental factors as set out in Section 3;

3. That the Minister notes that the EPA has concluded that it is likely that the EPA’s objectives would be met, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4 and summarised in Section 5;

4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report; and

5. That the Minister notes the EPA’s other advice presented in Section 6 in relation to the following:

   - continuation of the existing Boddington Gold Environment Management Liaison Group under the Mining Act 1978. The group consists of representatives from a number of decision making authorities and provides an important mechanism in allowing appropriate input into determining and reviewing monitoring and management actions, including closure and rehabilitation outcomes; and

   - management of post closure outcomes associated with discharge of pit lake water to the environment through the Mining Proposal and Mine Closure Plan required under the Mining Act 1978 by the DMP.
Appendix 1

List of submitters
Organisations:
Department of Aboriginal Affairs
Department of Environmental Regulation
Department of Mines and Petroleum
Department of Parks and Wildlife
Department of State Development
Department of Water
Department of the Environment (Commonwealth)
Conservation Council of Western Australia
Bibbulmun Track Foundation
Boddington Riding Club
Appendix 2

References


Appendix 3

Summary of identification of key environmental factors and principles
<table>
<thead>
<tr>
<th>Preliminary Environmental Factors</th>
<th>Proposal Characteristics</th>
<th>Government Agency and Public Comments</th>
<th>Identification of Key Environmental Factors</th>
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</thead>
<tbody>
<tr>
<td>LAND</td>
<td></td>
<td>Department of Parks and Wildlife</td>
<td>Flora and Vegetation is a key factor for this assessment and is addressed in Section 3.1 of the EPA's Report and Recommendations</td>
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<tr>
<td>Flora and Vegetation</td>
<td>Impacts to flora and vegetation associated with the proposal would include:</td>
<td>1. The impact on the following vegetation associations should be minimised as far as possible, as these units have conservation significance:</td>
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<td></td>
<td>• clearing of up to 3,120 ha of vegetation for the pit expansion, WRDs, RDA and associated infrastructure. 1,755 ha of this clearing would consist of native vegetation, with the remainder including timber plantations and previously disturbed areas;</td>
<td>• A (Tall shrubland to open heath of <em>Melaleuca lateritia</em>, <em>Hakea varia</em>, <em>Melaleuca vinimea</em>, and <em>Melaleuca incana</em> subsp. <em>Incana</em>);</td>
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<td></td>
<td>• spread of weeds and pathogens as a result of vehicle movement and site disturbance associated with construction and mining activities; and</td>
<td>• A2 (Low open woodland of <em>Melaleuca raphiophylla</em> over <em>Astartea scoparia</em> and low herbs); and</td>
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<td>• A3 (Open woodland of <em>Eucalyptus rudis</em>, <em>Eucalyptus patens</em> (Swan River Blackbutt) and <em>Eucalyptus wandoo</em> over <em>Melaleuca lateritia</em>, <em>Hakea varia</em>, <em>taxandria linerifolia</em> and <em>Hypocalymma angustifolium</em> over herbs and sedges).</td>
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<td>2. The proponent should consider using seed, or topsoil containing seed of <em>Templetonia drummondii</em> in rehabilitation. The proposal will clear 20 percent of <em>T. drummondii</em> individuals recorded in the survey areas. The impact on this species could be somewhat mitigated by using seed from individuals in areas proposed for clearing in the rehabilitation.</td>
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<tr>
<td>Preliminary Environmental Factors</td>
<td>Proposal Characteristics</td>
<td>Government Agency and Public Comments</td>
<td>Identification of Key Environmental Factors</td>
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<td>• potential impacts to groundwater dependent ecosystems, including the Hotham River, as a result of groundwater drawdown. This is discussed in Section 3 (Hydrological Processes) of this briefing note.</td>
<td>No comments were received in relation to this factor during the public review period.</td>
<td>A desktop assessment of the potential for subterranean fauna to occur in the vicinity of the proposal was undertaken in accordance with the ESD. The assessment concluded that it is unlikely that subterranean communities would occur in the project area on the basis of the geological setting and hydrogeological information. Short Range Endemic (SRE) habitat was assessed by the proponent in relation to the</td>
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<td>Preliminary Environmental Factors</td>
<td>Proposal Characteristics</td>
<td>Government Agency and Public Comments</td>
<td>Identification of Key Environmental Factors</td>
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<td>proposed disturbance associated with the proposal. Three habitat types within the proposal area have a potential to support SRE fauna. Clearing associated with these habitats would be as follows:</td>
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<td>• Melaleuca Swamp – less than 18% of available habitat within the proposal area;</td>
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<td>• Mallee Heath - less than 3% of available habitat within the proposal area, and</td>
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<td>• Heath and Rock Sheoak on Granite outcrops – no clearing proposed.</td>
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<td>Impacts to SRE species as a result of this proposal is not expected to be significant given the low impact to habitat associated with the proposal.</td>
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<tr>
<td>Preliminary Environmental Factors</td>
<td>Proposal Characteristics</td>
<td>Government Agency and Public Comments</td>
<td>Identification of Key Environmental Factors</td>
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</table>
| Terrestrial Fauna               | Impacts to Terrestrial Fauna associated with this proposal include loss of habitat through clearing of native vegetation. Conservation significant species with the potential to be significantly impacted by the proposal include:  
  • Woylie;  
  • Chuditch;  
  • Brush-tailed Phascogale;  
  • Baudin’s Black Cockatoo;  
  • Carnaby’s Black Cockatoo; and  
  • Forest Red-tailed Black Cockatoo | Department of Parks and Wildlife  
If the proposal is considered acceptable, a condition of approval should be applied requiring management measures for conservation significant fauna to be further developed and described in consultation with DPaW and to the satisfaction of the CEO.  
The environmental management plan appended to the PER and management measures included in the PER are not of adequate detail to provide confidence that the potential impacts to conservation significant species can be appropriately managed and mitigated. | Subterranean and Short Range Endemic Fauna are not considered to be a key environmental factor for this assessment.  
Terrestrial Fauna is a key factor for this assessment and is addressed in Section 3.2 of the EPA’s Report and Recommendations |
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<tr>
<th>Preliminary Environmental Factors</th>
<th>Proposal Characteristics</th>
<th>Government Agency and Public Comments</th>
<th>Identification of Key Environmental Factors</th>
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<tr>
<td>WATER</td>
<td>Interactions between the proposal and local hydrological processes are as follows:</td>
<td>No comments were received in relation to this factor during the public review period.</td>
<td>Hydrological Processes is a key environmental factor for this assessment and is addressed in Section 3.3 of the EPA's Report and Recommendations.</td>
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<td>• diversion of surface water by earthworks and location of</td>
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<td>• take of surface water from the Hotham River for</td>
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<td>• impacts to surface water quality from runoff and emissions; and</td>
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<td>• groundwater drawdown as a result of mining activities.</td>
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<td>Inland waters Environmental Quality</td>
<td>Potential impacts to water quality associated with the proposal include the following:</td>
<td>No comments were received in relation to this factor during the public review period.</td>
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<td>• Surface water runoff or discharge from residue disposal areas, waste</td>
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|                                  | rock dumps and other infrastructure;  
• Impacts to groundwater as a result of seepage from RDAs Part V of the EP Act; and  
• Discharge of water from pit lakes post closure. | and managed similar to the existing operations, which are currently being adequately managed under the required Works Approval and Licences under Part V of the EP Act;  
• Impacts to groundwater as a result of seepage from RDAs – this aspect of the proposal would be constructed and managed similar to the existing operations, which are currently being adequately managed under the required Works Approval and Licences under Part V of the EP Act; and  
• Discharge of water from pit lakes post closure would be managed by the Department of Mines and Petroleum under the *Mining Act 1978*. |
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<th>Preliminary Environmental Factors</th>
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<tbody>
<tr>
<td>AIR</td>
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<td>• Inland waters environmental quality is not considered to be a key factor for this assessment.</td>
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**AIR**

**Air Quality**

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<tr>
<th>Proposal Characteristics</th>
<th>Government Agency and Public Comments</th>
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| There is the potential for the proposal to create air emissions including dust, sulphur dioxide and carbon monoxide through mining and processing activities. | Conservation Council of Western Australia
The proponent should provide details regarding the environmental impacts of the additional electricity supply associated with the life of mine extension.

We understand the existing mine and processing plant are, in effect, powered by the coal-fired electricity from Bluewaters 1 and 2 near Collie. Extending the life of the mine may necessitate the extension of these arrangements.

If the extended period of operations can be powered from alternative sources of electricity, emissions could be significantly reduced as against the emissions currently associated with the electricity supply to this mine.

Information is required to evaluate the impact on WA’s greenhouse emissions profile from what is in effect the same as the addition of a new heavy industrial electricity load from the time when the mine was expected to close, to the time when this new proposal closes. |

| Dust and chemical compounds from point source emissions are required to be monitored and managed under the Part V licence required by the DER under the EP Act. Air quality associated with the existing operations is currently managed satisfactorily under Part V of the EP Act. No different or significantly greater impacts to air quality are anticipated as a result of the proposed expansion. |

| NBGPL has taken steps to minimise its use of electricity including updating of plant machinery with energy saving technology incorporated into plant |
### Preliminary Environmental Factors

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<th>Preliminary Environmental Factors</th>
<th>Proposal Characteristics</th>
<th>Government Agency and Public Comments</th>
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<td>People</td>
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<td>Amenity</td>
<td>Impacts to Amenity</td>
<td>Department of Parks and Wildlife and Bibbulmun Track Foundation</td>
<td>The EPA considers that management of air quality under Part V of the EP Act is appropriate to meet the EPAs objectives for this factor.</td>
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<td>Air Quality is not a key environmental factor for this assessment.</td>
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<td>diversion of the track;</td>
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<td>• Works to realign the</td>
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<td>• Newmont Boddington</td>
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<td>key environmental factor for this assessment and are addressed in section 3.5 of the EPAs Report and Recommendations.</td>
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<td>The proponent has</td>
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<td>conducted modelling and</td>
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<td>proposed Waste Rock Dump (WRD)12</td>
<td>track, including the potential relocation of the Mount Wells Hut should not result in a financial or management cost to the department.</td>
<td>impacts in line with the Noise Regulations.</td>
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<td>is constructed, a section of the Bibbulmun Track 2 km long would be diverted around the construction area. Diversion of the track would be implemented in such a way as to ensure continuous access to the track by recreational users. The diversion route has not yet been finalised. Noise would be generated by the proposal through construction activities, blasting and excavation, hauling and processing activities. The nearest residence is located within 3 km northeast of the proposal.</td>
<td>• It is recommended that the scenic and visual landscape values of the Bibbulmun Track be retained where possible, including the potential realignment. This can be achieved by retaining vegetation adjacent to the track and in the viewshed. For any realignment consideration needs to be given to visual impacts, and preferably choosing an area sufficiently away from this disturbance.</td>
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<td><strong>Bibbulmun Track Foundation</strong></td>
<td>• Newmont Boddington Gold should commit to relocating the Mt Wells campsite to ensure that the experience the Bibbulmun Track offers to its visitors is not impacted.</td>
<td>Noise impacts to residences related to the proposal are managed under the Noise Regulations to meet the EPA’s objective for this factor.</td>
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<td></td>
<td>• When relocating the Bibbulmun Track and the campsite consideration should be given to the impacts of air emissions, in particular dust.</td>
<td><strong>Impacts to Amenity associated with Noise (excluding impacts to the Bibbulmun Track) are not considered to be a key environmental factor for this assessment.</strong></td>
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<td>• The realignment of the Bibbulmun Track should ensure north-south connectivity of the track through the Newmont Boddington Gold and ALCOA tenements.</td>
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<td><strong>Department Environment Regulation</strong></td>
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<td>• The proponent should ensure that noise levels at the Bibbulmun Track meet an aspirational noise goal. Although assigned noise levels do not apply to the track, in accordance with EPA Guidance No. 8, the DER recommends an aspirational noise goal of</td>
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<td>45dB(A) (night-time) for the track due to its recreational value. The proponent should ensure that this aspirational noise goal can be met during the project life. This aspirational noise goal should also be considered when determining the realignment of the track.</td>
<td>- The proponent should demonstrate with adequate evidence that operational noise will be managed to comply with the assigned noise levels at all noise sensitive premises. - Consideration should be given to: - the provision of a recreational trail along the eastern border of land owned/occupied by Newmont Boddington Gold from the south east corner of the proposed conservation reserve to Albany Highway, and - extension of the existing trail which runs from Boddington to Tullis Bridge connecting with the rail reserve in state forest on the west side of the goldmine.</td>
<td>- The project area has been subject to previous heritage surveys. Additional Surveys were carried out to fill gaps in knowledge related to the current proposal. No new sites have been found.</td>
</tr>
<tr>
<td>Heritage</td>
<td>The proposal has the potential to impact indigenous heritage through physical disturbance to land, dewatering, discharges of surplus water and alteration of surface water</td>
<td>Department of Aboriginal Affairs \An Indigenous Heritage Management Plan is contained within the Environmental Management Plan appended to the PER document. The procedures and policies contained within this Plan are sound and if implemented should allow the proponent to manage heritage within the relevant land. Unfortunately the plan is not specific to the PER area and could be applied to any tenement in the state. The plan in</td>
<td>- The project area has been subject to previous heritage surveys. Additional Surveys were carried out to fill gaps in knowledge related to the current proposal. No new sites have been found.</td>
</tr>
<tr>
<td>Preliminary Environmental Factors</td>
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<td>drainage.</td>
<td>its current form would not inform personnel of the heritage values of the PER area and would not be of any use in personnel succession planning as the information is too general. An acknowledgement of known sites in the PER area and recommendations for their preservation or status under section 18 of the <em>Aboriginal Heritage Act (1972)</em> (the AH Act) could be presented in tabular form. This simple modification to the plan would ensure that it is useful to those operating within the PER area and would militate against the kind of information loss that ensues when personnel change.</td>
<td>identified as a result of additional surveys, however it was noted there is a potential for sub-surface artefactual material associated with stratified soils. The proponent is aware of their obligations to report any sites discovered during construction and obtain permits under Section 18 of the AH Act. This would involve consultation with Traditional Owners. <strong>Impacts to Indigenous Heritage associated with the proposal are not considered to be a key environmental factor for this assessment</strong> and can be managed under the AH Act.</td>
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### INTEGRATING FACTORS

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<th>Preliminary Environmental Factors</th>
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<tr>
<td>Offsets</td>
<td>Following the implementation of all mitigation measures, the proposal would have the following significant residual impacts:</td>
<td>A number of comments regarding the technical details of the offset package were raised by the Department of Parks and Wildlife and the Conservation Commission of Western Australia. These concerns were addressed during the finalisation of the recommended offset condition.</td>
<td>Offsets is considered to be a key integrating environmental factor for this assessment and is addressed in Section 3.5 of the EPA's report and recommendations.</td>
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<td>• clearing of up to 1,755 ha of foraging habitat for <em>Calyptorhynchus latirostris</em> (Carnaby's Cockatoo), <em>Calyptorhynchus banksii naso</em> (Forest red-tailed Black Cockatoo) and <em>Calyptorhynchus baudinii</em> (Baudin's Black Cockatoo);</td>
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<td>• fragmentation of the habitat of <em>Bettongia penicillata ogilbyi</em> (Woylie) and <em>Dasyurus geoffroii</em> (Chuditch); and</td>
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<td>• loss of up to 618 ha of State Forest with</td>
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<td>Rehabilitation and Closure</td>
<td>The proponent has prepared a Mine Closure Plan which was available with the environmental review document during the public review period. The Mine Closure plan will be assessed and approved by the Department of Mines and Petroleum (DMP). Preliminary Closure plans indicate that the north and south pits will slowly fill following closure, eventually discharging to Wattle Hollow Brook approximately 80 years post closure. It is anticipated that the pits will then merge and become a through flow system with inputs from groundwater and surface water and outputs to Wattle Hollow Brook and</td>
<td>No comments were received in relation to this factor during the public review period.</td>
<td>This proposal is subject to the <em>Mining Act 1978</em>. Rehabilitation and Closure was not identified as a key environmental factor by the EPA at the Environmental Scoping Stage of the proposal following advice from DMP that rehabilitation and closure could be managed through the mine planning process. In accordance with <em>Environmental Protection Bulletin 19</em> (EPA 2013), the EPA considers that Rehabilitation and Closure can be managed by the DMP through the Mine Plan required under the <em>Mining Act 1978</em>. The EPA has however provided other advice to ensure that continuous development of post-closure water modelling is addressed</td>
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| subsequently Thirty-four Mile Brook.  
Current modelling suggests that water quality discharged from the pits will be of similar quality to the receiving environment; however the model will require refinement during the operational and post closure stage to confirm these outcomes. | | within the Mine Plan. Rehabilitation and Closure is not considered to be a key environmental factor for this assessment. |
<table>
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<tr>
<th>PRINCIPLES</th>
<th>Principle</th>
<th>Relevant</th>
<th>If yes, Consideration</th>
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<tr>
<td>1. The precautionary principle</td>
<td>Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In application of this precautionary principle, decisions should be guided by – (a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and (b) an assessment of the risk-weighted consequences of various options.</td>
<td>YES</td>
<td>In considering this principle the EPA notes the following: • Investigations, including historical records and studies, of the biological and physical environment have provided background information to assess risks and identify measures to avoid or minimise impacts; • The assessment of these impacts and management is provided in section 3 of the EPAs report and Recommendations; and • Conditions have been recommended as considered necessary.</td>
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<td>2. The principle of intergenerational equity</td>
<td>The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.</td>
<td>YES</td>
<td>The proposal would result in the loss of native vegetation, including habitat for conservation significant species. Flora and Vegetation and Terrestrial Fauna are relevant environmental factors that have been discussed in the EPA’s Report and Recommendations and conditions have been recommended to ensure minimal impact. Mine Closure and Rehabilitation will be managed according to DMP/EPA Guidelines.</td>
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3. The principle of the conservation of biological diversity and ecological integrity

*Conservation of biological diversity and ecological integrity should be a fundamental consideration.*

| YES | The proposal would result in impacts to conservation significant fauna species. These impacts have the potential to impact biological diversity and integrity. The proponent has committed to measures to minimize these impacts, including locating infrastructure to minimize clearing of native vegetation and habitat. Terrestrial Fauna is a relevant environmental factor that has been discussed in the EPA’s Report and Recommendations. |

4. Principles relating to improved valuation, pricing and incentive mechanisms

1. *Environmental factors should be included in the valuation of assets and services.*
2. *The polluter pays principles – those who generate pollution and waste should bear the cost of containment, avoidance and abatement.*
3. *The users of goods and services should pay prices based on the full life-cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste.*
4. *Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structure, including market mechanisms, which enable those best placed to maximize benefits and/or minimize costs to develop their own solution and responses to environmental problems.*

| YES | The proposal would require decommissioning and rehabilitation. The proponent should bear the cost of any potential pollution, containment, monitoring, management, decommissioning, rehabilitation and closure. |

5. The principle of waste minimisation

*All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.*

| YES | In considering this proposal, the EPA notes that all waste products created as a result of this proposal would be disposed of according to relevant regulations and legislation. |
Appendix 4

Identified Decision-making Authorities and
Recommended Environmental Conditions
Identified Decision-making Authorities

Section 44(2) of the EP Act specifies that the EPA’s report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This Appendix contains the EPA’s recommended conditions and procedures.

Section 45(1) requires the Minister for Environment to consult with decision-making authorities, and if possible, agree on whether or not the proposal may be implemented, and if so, to what conditions and procedures, if any, that implementation should be subject.

The following decision-making authorities have been identified for this consultation:

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<th>Final decision making authorities identified* for consultation</th>
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<tr>
<td>Decision making authority</td>
</tr>
<tr>
<td>1. Minister for Aboriginal Affairs</td>
</tr>
<tr>
<td>2. Minister for Water</td>
</tr>
<tr>
<td>4. Director General of Environment Regulation</td>
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<tr>
<td>5. Executive Director, Environment, Department of Mines and Petroleum</td>
</tr>
<tr>
<td>6. Director General Department of Mines and Petroleum</td>
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Note: In this instance, agreement is only required with DMAs #1, #2 and #3 since these DMAs are Ministers.
Newmont Boddington Goldmine

Proposal: The proposal is to continue to operate the existing Newmont Boddington Goldmine and associated infrastructure, and to expand the existing operations through widening and deepening of existing pits, and through construction of new waste dumps, residue disposal areas and associated infrastructure.

Proponent: Newmont Boddington Gold Pty Ltd
Australian Company Number 101 199 731

Proponent Address: Level 1, 388 Hay Street
SUBIACO WA 6008

Assessment Number: 1926

Previous Assessment Number: 1409

Previous Statement Number: 591 published on 8 May 2002

Report of the Environmental Protection Authority Number: 1506

This Statement authorises the implementation of the Proposal described and documented in Columns 1 and 2 of Table 2 of Schedule 1. The implementation of the Proposal is subject to the following implementation conditions and procedures and Schedule 2 details definitions of terms and phrases used in the implementation conditions and procedures.

The implementation of the Boddington Gold Mine proposal and the Hedges Gold Project (with respect to mining only) to which the above report of the Environmental Protection Authority relates are now subject to the following conditions which replace all previous conditions, commitments and procedures under Ministerial Statement 591.

1 Proposal Implementation

1-1 When implementing the proposal, the proponent shall not exceed the authorised extent of the proposal as defined in Column 3 of Table 2 in Schedule 1, unless amendments to the proposal and the authorised extent of the Proposal has been approved under the EP Act.
2 Contact Details

2-1 The proponent shall notify the CEO of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

3 Time Limit for Proposal Implementation

3-1 The proponent shall not commence implementation of the proposal after the expiration of five (5) years from the date of this statement, and any commencement, within this five (5) year period, must be substantial.

3-2 Any commencement of implementation of the proposal, within five (5) years from the date of this statement, must be demonstrated as substantial by providing the CEO with written evidence, on or before the expiration of five (5) years from the date of this statement.

4 Compliance Reporting

4-1 The proponent shall prepare and maintain a compliance assessment plan to the satisfaction of the CEO.

4-2 The proponent shall submit to the CEO the Compliance Assessment Plan required by condition 4-1 at least six (6) months prior to the first Compliance Assessment Report required by condition 4-6, or prior to implementation, whichever is sooner.

The compliance assessment plan shall indicate:

1) the frequency of compliance reporting;
2) the approach and timing of compliance assessments;
3) the retention of compliance assessments;
4) the method of reporting of potential non-compliances and corrective actions taken;
5) the table of contents of compliance assessment reports; and
6) public availability of compliance assessment reports.

4-3 The proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 4-1.

4-4 The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 4-1 and shall make those reports available when requested by the CEO.

4-5 The proponent shall advise the CEO of any potential non-compliance within seven (7) days of that non-compliance being known.

4-6 The proponent shall submit to the CEO the first Compliance Assessment Report by June 2015 addressing the twelve (12) month period from the date of
issue of this Statement and then annually from the date of submission of the first compliance assessment report.

The Compliance Assessment Report shall:

1) be endorsed by the proponent’s Chief Executive Officer or a person delegated to sign on the Chief Executive Officer’s behalf;

2) include a statement as to whether the proponent has complied with the conditions;

3) identify all potential non-compliances and describe corrective and preventative actions taken;

4) be made publicly available in accordance with the approved compliance assessment plan; and

5) indicate any proposed changes to the Compliance Assessment Plan required by condition 4-1.

5 Public Availability of Data

5-1 Subject to condition 5-2, within a reasonable time period approved by the CEO of the issue of this Statement and for the remainder of the life of the proposal the proponent shall make publicly available, in a manner approved by the CEO, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)) relevant to the assessment of this proposal and implementation of this Statement.

5-2 If any data referred to in condition 5-1 contains particulars of:

1) a secret formula or process; or

2) confidential commercially sensitive information;

the proponent may submit a request for approval from the CEO to not make this data publically available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publicly available.

6 Flora and Vegetation

6-1 The proponent shall ensure that there is no increase in the spread of diseases, no establishment of new environmental weed taxa and no more than 15% increase in the area occupied by environmental weeds or increase in percentage cover in infested areas above the baseline levels described in the Public Environmental Review document (2013) and associated appendices which is attributable to implementation of proposal.

6-2 The proponent shall prepare a Weed and Disease Monitoring and Management Plan in consultation with the Department of Parks and Wildlife to the requirements of the CEO for the proposal area, within six (6) months of this statement being issued.

6-3 The Weed and Disease Management Plan required pursuant to condition 6-2 shall:
1) when implemented, substantiate whether condition 6-1 is being met;
2) detail the monitoring methodology, proposed frequency and timing of monitoring, and location of monitoring sites which, when implemented, verify that condition 6-1 is being met;
3) identify criteria to trigger implementation of management and/or contingency measures to prevent the spread of weeds and diseases;
4) identify management and/or contingency measures to be implemented in the event that criteria identified pursuant to condition 6-3(3) have been exceeded.

6-4 The proponent shall implement the approved Weed and Disease Management Plan until otherwise agreed by the CEO.

6-5 In the event that monitoring pursuant to condition 6-3(2) indicates criteria defined pursuant to condition 6-3(3) are not being met, the proponent shall:
1) immediately implement management and/or contingency measures identified pursuant to condition 6-3(4) until criteria pursuant to condition 6-3(3) are being met, or until advised otherwise by the CEO; and
2) investigate the likely cause(s) of the criteria defined pursuant to condition 6-3(3) not being met; and
3) submit the findings of the investigation required pursuant to condition 6-5(2) to the CEO within twenty-eight (28) days of identification of the criteria defined pursuant to condition 6-3(3) not being met.

6-6 The proponent may review and revise the Weed and Disease Management Plan to the requirements of the CEO.

6-7 The proponent shall review and revise the Weed and Disease Management Plan as and when directed by the CEO.

6-8 The proponent shall implement the revisions of the Weed and Disease Management Plan required by conditions 6-6 and 6-7.

7 **Hydrological Processes**

7-1 The proponent shall ensure that the dewatering drawdown associated with the proposal does not cause long term adverse impact to the health and abundance of groundwater dependent vegetation.

7-2 The proponent shall prepare a Groundwater and Groundwater Dependent Vegetation Monitoring and Management Plan to the requirements of the CEO within twelve (12) months of this statement being issued.

7-3 The Groundwater and Groundwater Dependent Vegetation Monitoring and Management Plan required pursuant to condition 7-2 shall:
1) when implemented, substantiate whether condition 7-1 is being met;
2) identify all Groundwater Dependant Vegetation in the area with the potential to be impacted by the proposal, including the riparian vegetation associated with the Hotham River;
3) when implemented, verify that the Groundwater model prepared for the Public Environmental Review (2013) and described in Schlumberger 2013 reflects observed conditions and expected outcomes/impacts;

4) detail the monitoring methodology, proposed frequency and timing of monitoring, location of monitoring sites etc which, when implemented, verify that condition 6-1 is being met;

5) identify criteria associated with groundwater levels and groundwater dependent vegetation health to trigger implementation of management and/or contingency measures to prevent impacts to groundwater dependent vegetation; and

6) identify management and/or contingency measures to be implemented in the event that criteria identified pursuant to condition 7-3(5) are exceeded.

7-4 The proponent shall implement the approved Groundwater and Groundwater Dependent Vegetation Monitoring and Management Plan until otherwise agreed by the CEO.

7-5 In the event that monitoring pursuant to condition 7-3 indicates criteria pursuant to condition 7-3(5) have been exceeded the proponent shall:

1) immediately implement management and/or contingency measures, identified pursuant to condition 7-3(6) and continue implementation until criteria pursuant to condition 7-3(5) are being met, or until otherwise agreed by the CEO; and

2) submit details of management and/or contingency measures implemented pursuant to condition 7-5(1) to the CEO within twenty-eight (28) days of identification that criteria pursuant to condition 7-3(5) have been exceeded.

7-9 The proponent may review and revise the Groundwater and Groundwater Dependent Vegetation Monitoring and Management Plan to the requirements of the CEO;

7-10 The proponent shall review and revise the Groundwater and Groundwater Dependent Vegetation Monitoring and Management Plan as and when directed by the CEO.

7-11 The proponent shall implement the revisions of the Groundwater and Groundwater Dependent Vegetation Monitoring and Management Plan required by conditions 7-9 and 7-10.

8 Bibbulmun Track

8-1 The proponent shall ensure that there are no adverse impacts to the recreational values of the Bibbulmun Track as a result of the implementation of the proposal.

8-2 The proponent shall prepare a Bibbulmun Track Management Plan to the requirements of the CEO, on the advice of the Department of Parks and Wildlife, pursuant to the requirements of condition 8-1. This plan is to be
submitted no later than 18 months prior to the planned commencement of construction of Waste Rock Dump 12.

8-3 The Bibbulmun Track Management Plan required pursuant to condition 8-2 shall:

1) when implemented, substantiate whether condition 8-1 is being met;
2) identify in consultation with stakeholders the route of any planned track diversion;
3) identify appropriate noise and amenity criteria for areas along the track in proximity to operations and Mount Well’s Hut;
4) identify planned investigations for noise and amenity impacts to the Bibbulmun Track and Mount Wells Hut to verify that condition 8-1 will be met;
5) identify management and contingency measures, including realignment of the Bibbulmun Track and (if required) relocation of the Mount Wells Hut, to be implemented in the event that investigations pursuant to condition 8-3(4) indicate that criteria identified pursuant to condition 8-3(3) are likely to be exceeded.
6) identify arrangements to meet all costs associated with any diversion of the Bibbulmun Track and if required, relocation of Mt Wells Hut in consultation with the Department of Parks and Wildlife;

8-4 Prior to commencement of the construction of Waste Rock Dump 12 (Figure 1) the proponent shall implement the approved Bibbulmun Track Management Plan and continue implementation until rehabilitation earthworks associated with Waste Rock Dump 12 have been completed or until otherwise approved by the CEO.

8-5 The proponent may review and revise the Bibbulmun Track Management Plan to the requirements of the CEO, on the advice of the Department of Parks and Wildlife.

8-6 The proponent shall review and revise the Bibbulmun Track Management Plan as and when directed by the CEO, on the advice of the Department of Parks and Wildlife.

8-7 The proponent shall implement the revisions of the Bibbulmun Track Monitoring Plan required by conditions 8-5 and 8-6.

9 Offsets

9-1 To offset the significant residual impact to 1,755 ha of native vegetation which includes: Calyptorhynchus latirostris (Carnaby's Cockatoo) and Calyptorhynchus banksii naso (Forest Red-tailed Black Cockatoo) foraging and breeding habitat, Calyptorhynchus baudinii (Baudin’s Black Cockatoo) foraging habitat; fragmentation of Bettongia penicillata ogilbyi (Woylie) and Dasyurus geoffroii (Chuditch) habitat; and loss of 618 ha of forest with conservation values currently vested in the Conservation Commission, the proponent shall undertake an offset program in accordance with conditions 9-2 to 9-12.
9-2 Within one (1) year of the date of this Statement, the Proponent shall prepare a Land Offset Plan to the requirements of the CEO on advice of the Department of Mines and Petroleum.

9-3 The land subject to the Land Offset Plan identified in condition 9-2 shall contain at least 2,000 hectares of native vegetation in similar condition to the vegetation being impacted by the proposal, or as otherwise agreed by the CEO.

9-4 The Plan identified in condition 9-2 shall:

1) identify the area to be protected and managed for conservation;

2) if any of the vegetation in the area identified is in a degraded condition, identify improvement actions and a timeframe for the actions to be undertaken to improve the condition of native vegetation in that area;

3) demonstrate that individual land parcels are at least 90 hectares in area;

4) be located within fifty (50) kilometres of the proposal development envelope unless otherwise agreed by the CEO;

5) identify the environmental attributes of the land to be acquired which must contain:
   a) known foraging and breeding habitat for *Calyptorhynchus latirostris* (Carnaby's Cockatoo), *Calyptorhynchus banksii naso* (Forest red-tailed Black Cockatoo), and foraging habitat for *Calyptorhynchus baudinii* (Baudin's Black Cockatoo) within 6 kilometres of permanent drinking water;
   b) habitat for *Bettongia penicillata ogilbyi* (Woylie) and foraging and breeding habitat for *Dasyurus geoffroii* (Chuditch);

6) detail:
   a) the conservation activities identified in 9-4(2) that will be undertaken, with associated completion criteria;
   b) funding arrangements and timing of funding for conservation activities identified in condition 9-4(6a);
   c) monitoring requirements for activities identified in condition 9-4(6a);
   d) timing arrangements including an agreed end point for protection of land identified in condition 9-3;
   e) the role of the proponent.
9-5 In the event that condition 9-3 is unable to be implemented within the timeframe identified in condition 9-4(6d) the proponent shall identify a similar conservation benefit for the species identified in condition 9-1 as provided by the offset in condition 9-3 to be implemented and update the plan identified in condition 9-2 to the satisfaction of the CEO within three (3) months of the end of the timeframe identified in 9-4(6d).

9-6 The area identified in the approved Land Offset Plan shall be placed under a conservation covenant in consultation with the Department of Parks and Wildlife to the satisfaction of the CEO.

9-7 The proponent shall implement the approved Land Offset Plan identified in condition 9-2 until the CEO advises implementation may cease.

**Hotham Farm**

9-8 Within two (2) years of the date of this statement, the Proponent shall place a conservation covenant over 470 hectares of Hotham Farm in consultation with the Department of Parks and Wildlife to the satisfaction of the CEO.

9-9 The Proponent shall manage the land identified in condition 9-8 in accordance with the *Newmont Boddington Gold Overarching Offset Strategy* dated 15 November 2013.

9-10 The proponent shall implement the offset identified in condition 9-8 until the CEO advises implementation may cease.

**Lands vested in the Conservation Commission**

9-11 Within twelve (12) months of the date of this Statement, the proponent shall prepare a Land Exchange Plan, for the approval of the CEO on advice of the Director General of the Department of Parks and Wildlife. The Land Exchange Plan shall include:

1) details of land to be ceded to the State for incorporation into the conservation reserve system and vesting in the Conservation Commission of Western Australia;

2) total amount of land to be ceded;

3) a requirement that the total area to be ceded be based on providing an equivalent value to the forest area vested in the Conservation Commission being removed, with a minimum of at least 618 hectares; and

4) a proposed timeframe for the ceding of land to occur.

9-12 The proponent shall implement the approved Land Exchange Plan identified in condition 10-1.

**10 Legacy Offset**

10-1 The proponent shall implement the offset previously committed to in the now superseded Statement 591 (provide land to the State) as described in Schedule 3 of this Statement to the satisfaction of the CEO within two years of this statement being issued.
### Schedule 1

#### Table 1 Summary of the proposal

<table>
<thead>
<tr>
<th>Proposal Title</th>
<th>Newmont Boddington Gold Life of Mine Expansion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proponent Name</td>
<td>Newmont Boddington Gold Pty Ltd</td>
</tr>
<tr>
<td><strong>Short Description</strong></td>
<td>The proposal is for the continuation of the existing operations and for an expansion of the existing operations at the Newmont Boddington Goldmine and includes:</td>
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<td>• pit expansion (widening and deepening);</td>
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<td>• increased ore production resulting in increased waste quantities;</td>
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<tr>
<td></td>
<td>• increase to existing stockpiles and development of ancillary infrastructure;</td>
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<tr>
<td></td>
<td>• expansion of waste rock dumps;</td>
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<tr>
<td></td>
<td>• construction of a new residue disposal area;</td>
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<tr>
<td></td>
<td>• construction of new water storage areas.</td>
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<tr>
<td>The regional location is shown in Figure 1.</td>
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</table>

#### Table 2: Location and authorised extent of the physical and operational elements

**Physical Elements**

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development envelope</td>
<td>Figure 2</td>
<td>11,712 ha</td>
</tr>
<tr>
<td>Disturbance Footprint</td>
<td>Figure 2</td>
<td>Clearing of no more than 6,850 ha of vegetation within the 11,712 ha development envelope</td>
</tr>
<tr>
<td>Clearing of Native vegetation</td>
<td>Figure 2</td>
<td>Clearing of no more than 5,435 ha of native vegetation within the 11,712 ha development envelope.</td>
</tr>
<tr>
<td>Waste Rock Dumps</td>
<td>Figure 2</td>
<td>1,500 Mt over life of proposal</td>
</tr>
<tr>
<td>Mine Activities</td>
<td>Figure 2</td>
<td>Open cut basement mining to approximately -252 AHD for the north pit and -432 AHD south pit</td>
</tr>
</tbody>
</table>

**Operational Elements**

<table>
<thead>
<tr>
<th>Element</th>
<th>Total extent of proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mine Life</td>
<td>Continued operations until 2041</td>
</tr>
<tr>
<td>Water use</td>
<td>47 ML/day</td>
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</table>
Figure 1 – Location of the proposal indicating regional context
Figure 2: Location of the proposal indicating local context and including an outline of the proposal footprint
### Schedule 2

<table>
<thead>
<tr>
<th>Abbreviations</th>
<th>Term</th>
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<tbody>
<tr>
<td>CEO</td>
<td>The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the <em>Environmental Protection Act 1986</em>, or his delegate.</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Authority</td>
</tr>
<tr>
<td>EP Act</td>
<td><em>Environmental Protection Act 1986</em></td>
</tr>
<tr>
<td>ha</td>
<td>hectares</td>
</tr>
<tr>
<td>ML</td>
<td><em>Mega Litres</em></td>
</tr>
<tr>
<td>Mt</td>
<td><em>Million Tonnes</em></td>
</tr>
<tr>
<td>AHD</td>
<td><em>Above Height Datum</em></td>
</tr>
</tbody>
</table>
Schedule 3

Legacy Offset

1. The proponent shall identify in consultation with the Department of Parks and Wildlife and provide to the State, for incorporation into the conservation reserve system:
   • Preferably land of comparable conservation value and approximately equal to the area of State Forest affected by BGM mining (North Pit and South Pit as shown in Figure 1 of Schedule 1 of this statement) and the F1 Residue Disposal Area as shown in Figure 1 of Schedule 1 of this statement, or
   • Land of comparable conservation value and approximately equal to the area of State Forest affected by the F1 Residue Disposal Area as shown in Figure 1 of Schedule 1 of this statement.
Notes
The following notes are provided for information and do not form a part of the implementation conditions of the Statement:

- The proponent for the time being nominated by the Minister for Environment under section 38(6) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal unless and until that nomination has been revoked and another person is nominated.

- If the person nominated by the Minister, ceases to have responsibility for the proposal, that person is required to provide written notice to the Environmental Protection Authority of its intention to relinquish responsibility for the proposal and the name of the person to whom responsibility for the proposal will pass or has passed. The Minister for Environment may revoke a nomination made under section 38(6) of the *Environmental Protection Act 1986* and nominate another person.

- To initiate a change of proponent, the nominated proponent and proposed proponent are required to complete and submit *Post Assessment Form 1 – Application to Change Nominated Proponent*.

- The General Manager of the Office of the Environmental Protection Authority was the Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986* at the time the Statement was signed by the Minister for Environment.
Appendix 5

Summary of Submissions and Proponent’s Response to Submissions