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Introduction

1.1 Purpose of this Document

This Environment Effects Statement (EES) relates to the proposal by Crocodile Gold Corporation (CGC) owner of Stawell Gold Mines (SGM) to undertake open cut gold mining adjacent to the Stawell township in western Victoria, within the existing SGM mining license MIN 5260. This proposal is known as the Big Hill Enhanced Development Project (the Project).

This EES has been prepared by SGM as part of the impact assessment process under the Environment Effects Act 1978. The EES is required to enable a comprehensive evaluation of the environmental, social and economic effects of the proposal. It responds to the Scoping Requirements issued by the Department of Transport, Planning and Local Infrastructure (DTPLI).

The purpose of this document is to inform members of the public as well as the assessing and decision making authorities.

The document therefore:

- describes the proposed land use and development
- describes the approvals required for the proposed development and the conformity of the development with Government policies and strategies
- evaluates potential impacts on the environment (including bio-physical, social and economic impacts) during the construction, operation and rehabilitation stages of the Project
- describes the proposed approaches to the mitigation of potential adverse impacts and the enhancement of positive impacts of the Project
- describes the community consultation process associated with the EES, outlines responses to issues raised during the consultation and outlines the proposed community consultation process during mining operations.

This EES draws information and analysis from a number of technical studies conducted for the Project. These studies provide further detailed information on existing conditions, and evaluation of key environmental, social and economic issues associated with the proposal. The findings of these studies are detailed in Chapter 8 Environmental Impact Assessment. These documents have also been published as Technical Appendices to the EES.

1.2 Big Hill Enhanced Development Project Overview

SGM has operated at the current location for over 30 years, which has involved the progressive mining of gold in a series of above ground pits and extensive underground mining workings. The proposed Project aims to access a gold resource that lies within and beneath Big Hill, which is immediately adjacent to the current SGM operation and within the existing SGM licence area.

Exploration works have defined a resource of approximately 169,000 ounces of gold within the Big Hill and former Davis pit area. Of that, modelling in 2013 determined 121,000 ounces is located within approximately 85 metres of the surface and 108,000 ounces is estimated to be recovered by the Project after processing.
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1.2.1 Location

The majority of the Project would be undertaken in the area known as Big Hill, a ridgeline which rises approximately 40–50 metres above the town centre (Figure 1-1).

![Figure 1-1 Three dimensional representation of terrain at Stawell and surrounding area](image)

The Project site is predominantly located on unreserved Crown land less than one kilometre from the Stawell CBD, within the Northern Grampians Shire Council. Stawell is located approximately 240 kilometres northwest of Melbourne. The Stawell township is 70 kilometres southeast of Horsham, 30 kilometres northwest of Ararat and marks the western most point of the Victorian goldfields.

The Project would be confined to an area within the existing MIN 5260 licence boundary, which expires on 30 May 2020 (Figure 1-2).
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Figure 1-2   Big Hill Enhanced Development Project location plan
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1.2.2 Project Description

The Project area is approximately 65.6 hectares in area and with the exception of Mt Micke is bound by Crowlands Road to the north, Leviathan Road to the east, Albion Road to the south, Fisher Street to the west and Main Street to the northwest (Figure 1-3), and comprises the following elements:

- North and South Pits
- temporary waste rock stockpile (TWRS)
- haul road
- communications tower, fire watch building and access road
- sediment basins and drainage lines
- Mt Micke.

Vegetation within the Project area is highly modified, either through historical logging and mining activities, or current recreational uses. The site and surrounding land is described in more detail in Chapter 4.

In summary, the Project involves the open cut mining of two pits (North Pit and South Pit) (Figure 1-3). Ore will be trucked via an internal haul road to the existing licenced SGM processing facility, where tailings will be disposed to the existing tailings storage facility (TSF). The existing licenced TSF and SGM processing facility are integral to the Project, however, are not the subject of investigations or approvals as part of this EES. Waste rock generated from the Project is proposed to be stored as a temporary waste rock stockpile (TWRS) on adjacent previously disturbed land (from the former Davis Pit Overburden Dump area) and adjacent pasture land (owned by Grampians Wimmera Mallee Water (GWMWater)).

A detailed description of the Project is found in Chapter 6 of this EES.
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Figure 1-3 Big Hill Enhanced Development Project site
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It is expected that the Project will involve approximately four years of mining. Waste rock from the TWRS and from Mt Micke or a suitable alternative will be used to progressively backfill and re-establish the Big Hill landform in approximately five years from commencement of the Project.

SGM will be seeking to vary its existing Work Plan (through a Work Plan Variation) to allow for open pit mining to proceed. The Project was referred to the Minister for Planning (the Minister) on 4 February 2013, under the provisions of the *Environment Effects Act 1978*. In a letter dated 23 April 2013, the Minister determined that an EES is required.

1.2.3 Project Purpose

The primary rationale for the Project is to fully utilise the last known commercially viable gold resource within the SGM Mining Licence area. The Project will prolong the mine life and will result in attendant benefits which will flow to SGM and the local community through employment and regional economic flow-on effects to the State. The Project proposes to reinstate Big Hill to its approximate current height (albeit with an altered topography as existing voids from past mining activity will not be reinstated) and provide enhanced community access and facilities.

The Project will improve public safety through the removal of old mining voids within the Project area and will also provide a safe, stable and sustainable landform which will be an ongoing community asset. The details of this rehabilitation are to be determined through a separate and subsequent process.

The Project would result in continued gold production after the planned closure of the SGM underground operations in 2014-15. In the event that the Project does not proceed, all mining and processing activity will cease during 2014-15. This process will involve consultation with the land owner (DEPI), Northern Grampians Shire Council (NGSC) and the community.

The objectives of the Project are to:

- provide SGM with an essential source of mill feed and cash flow which will enable processing to continue for a further four years
- extend gold mining operations at Stawell for about four years (plus an additional year to complete backfilling and rehabilitation, resulting in a total Project time of approximately five years).

In undertaking the Project, SGM aims to achieve complementary objectives of:

- providing a further four years of employment for 80 to 100 employees
- continuing to contribute to the local, regional and State economies through capital expenditure, multiplier benefits to local businesses and employment
- provide a rehabilitated surface area (Big Hill) and potential enhanced community facilities to the Stawell community post closure.
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1.3 Proposal Context

1.3.1 Population

As at 2011, the Stawell township was Northern Grampians Shire’s most populous centre with the township’s 5,736 residents comprising almost 50 per cent of the Shire’s population.

Based on place of enumeration data (i.e. a count of every person in Australia on Census night, based on where they were located on that night, which may or may not be the place where they usually live), since 1991, the population of Northern Grampian Shire has declined at 0.5 per cent per annum from 12,957 to 11,815 people. A trend of gradual decline in population is also evident for the Stawell township.

The Victorian Government publishes population projections at the statistical local area (SLA) level. The population of the Stawell SLA is projected to grow at a low rate of 0.1 per cent per annum to 2031. The population of Northern Grampians Shire as a whole is projected to remain relatively stable. In contrast, the population of Regional Victoria is projected to grow at 1.3 per cent per annum.

1.3.2 Site History

Stawell township

Stawell was first settled during the gold rush of 1853 and was named Pleasant Creek. The original settlement of Stawell was at Pleasant Creek (at the southern boundary of the existing urban area). The government proclaimed and renamed the settlement ‘Stawell’ in 1858 after Sir William Foster Stawell, an attorney-general in Victoria’s first legislative assembly (1856) who became the Chief Justice of Victoria in 1857. Around this time, shafts were being sunk around Big Hill and gold was found in the quartz there.

As alluvial gold at Pleasant Creek began to diminish in the 1860s, Stawell’s population and economic activity shifted northeast to the Big Hill area where a new settlement, known as Quartz Reefs developed at the foot of the hill. Over time, the original town site became known as Stawell West and the two areas were amalgamated into the borough of Stawell in 1869.

A rising water table, insufficient investment funds and poor returns led to the closure of the big reef mines in the 1920s. The town’s economy soon moved to wool processing which began in 1922. Mining recommenced in 1984 and the town at that time was Victoria’s largest producer of gold.

Mine site

Following the discovery of gold in Stawell in 1853 production from both alluvial sources and high-grade quartz reefs totalled an estimated 2.67 million ounces until the last mine closed in 1926. This historical mining is evidenced by numerous shafts as well as the Allens open cut.

The modern production era began in 1981, when a WMC/Central Norseman Gold joint venture reopened the Stawell Gold Mine. In the nine years, under WMC management, the mine produced approximately 336,000 ounces of gold.

MPI and Pittston acquired the mine in 1992. Under MPI management until June 2005, and subsequently Leviathan Resources to January 2007, before its acquisition by Perseverance Corporation, output increased and a total of 1.4 million ounces were produced. On 18 February 2008, SGM was acquired by Northgate Minerals Corporation. Early in 2010, during the tenure of Northgate Minerals, SGM celebrated the production of two million ounces since 1981.
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In October 2011, Northgate Minerals Corporation was acquired by Aurico Gold Inc., with the acquired Australian operations on-sold to Crocodile Gold Corporation in May 2012.

Mining operations and management

This Project is proposed to be undertaken in an area that has been subject to contemporary underground and open cut mining activities for the past 30 years. Underground mining operations at Stawell Gold Mines have been continuous since 1981 with the extraction of gold bearing ore from the Magdala and Golden Gift systems to a vertical depth of -1,200 metres AHD and -1,600 metres AHD respectively.

The Davis Open Cut operated from 1987 to 1989 and produced 154,525 tonnes for 8,992 recovered ounces of gold.

Current mining operations involve processing of ore 24 hours a day, seven days per week.

This Project represents an extension of current operations, which are subject to a range of established management protocols, including:

- Environmental Review Committee
- Complaints Register
- Environmental Management Systems
- Environmental Management Plan
- Health and Safety Plan.

1.4 Key Issues

SGM is aware that there are a number of key concerns associated with the Project and wishes to address these specifically in this EES. Two of these issues are the buffer distance between mining operations and adjoining residences and the potential amenity impacts associated with the mining of Big Hill. These issues are considered to be the most significant arising from the Project based on findings of the technical studies and community consultation undertaken as part of this EES.

1.4.1 Buffer Distance

The EPA Guideline 1518: Recommended separation distances for industrial residual air emissions 2013 suggests a separation distance of 250 metres between industrial land uses and sensitive land uses (e.g. residential) to protect residents from ‘unintended, industry-generated odour and dust emissions’. While the guideline recommends a separation distance of 250 metres;

In some instances, the appropriate separation distance may vary from that recommended … as a result of site-specific operational or environmental conditions.

While significant areas within 250 metres of the SGM Project area contain few or no sensitive land uses, areas to the west, north-west and south-west contain urban development with some residential properties within 40-100 metres of the pit boundaries. The Project involves progressive mining and rehabilitation in the North and South Pits, meaning potential impacts on adjacent residences will only occur at certain times during the Project. Rightly, mining within the 250 metres of the Project is an issue requiring careful consideration by SGM, regulatory authorities and adjacent landholders who may be potentially affected by the proposed mining and rehabilitation activities.
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At a general level, the detailed studies conducted for the EES suggest that:

- There will need to be a commitment by SGM to leading management and operational practices which, in many cases, will be restrictive in terms of optimised mine operation and add considerable costs to the operation but are essential to achieve regulatory compliance and fair and balanced outcomes in terms of amenity and community values.

- As the above management and operational commitments have been made by SGM through the measures outlined in the EES, an acceptable social outcome may be achievable despite the Project being closer than 250 metres to some sensitive land-uses.

- There are some limited exceedances of regulatory criteria for air quality (which can mitigated to acceptable levels through real time management up to, and including, cessation of mining on extreme days) and noise at certain times during the Project.

- The Project may have some potential low level amenity or “nuisance” impacts despite a high level of regulatory compliance but it is not considered to pose any risk to human health.

- The progressive nature of mining and rehabilitation, and the significant periods when activity is “at depth” where potential impacts are well within compliance levels, means potential amenity issues and the small number of exceedances for noise which cannot be avoided, are of limited duration and at different times and locations throughout the Project.

- There is a demonstrable net economic benefit of the Project to the community of $38 million against which the minor exceedances against regulatory criteria for noise need to be carefully considered in assessing the benefits and costs of the Project.

1.4.2 Leading Practice Management and Mitigation

In addition to the significant changes made by SGM to reduce potential impacts when compared with the project proposed in the late 1990s (refer to Section 0), the company has committed to leading practice operating, management and mitigation measures in recognition of the proximity of the Project to the Stawell urban area. As a result, the proposal achieves a high level of compliance with regulatory requirements despite being less than 250 metres from adjacent residences.

Of particular importance is the decision by SGM to conduct mining and rehabilitation activities during daylight hours only, which has reduced potential amenity concerns considerably. The independent Social Impact Assessment (SIA) conducted as part of the EES concluded that, while the Project will result in some minor to moderate amenity or nuisance issues, it is not considered to create unacceptable social impacts.

Table 1-1 below summarises the leading operational and management practices adopted by SGM to achieve compliance within the 250 metre buffer. Those outlined in the table are over and above what are typically referred to as ‘best practice’ at other mine sites. Where possible, the leading practices have been benchmarked against whether they are utilised at other known mining operations. In the case of air quality, SGM has adopted a number of measures which have been benchmarked against data from the ‘NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and or Minimise Emissions of Particulate Matter from Coal Mining’ (Katestone Environmental Pty Ltd for the Office of Environment Heritage 2011). This benchmarking shows that the leading measures proposed by SGM are often not utilised at all, or rarely utilised, in the coal industry. In some cases, this may simply be because such measures are not required due to adequate separation distances between mining and sensitive land-uses but it also demonstrates that SGM is implementing measures over and above those typical of other such projects, in recognition of the Project’s proximity to the Stawell township.
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### Table 1-1  Summary of proposed practices outside of normal mining

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<tr>
<th>Practice</th>
<th>Normal Practice</th>
<th>SGM Modified Practice</th>
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<tr>
<td>Operational hours</td>
<td>Current SGM working hours and typical normal working hours for Australian mines are 24hrs/day, 365 days of the year.</td>
<td>62% reduction in working hours from current SGM operations to day time, week day only. Ensures no mining activity during night time and weekends to ensure compliance with night time and weekend noise limits.</td>
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<tr>
<td>Pit slope design</td>
<td>Aim is to provide the steepest possible wall angle for maximum depth, minimum material movement and greater flexibility in ramp width and placement to maximise mine efficiency.</td>
<td>Pit wall angles conservative to ensure no potential infrastructure issues. Inter-ramp slope angles will also be conservative to further reduce or eliminate risk of small scale failures. Conservative approach to address expressed public perception and concerns about the stability of the open pits close to residential areas. This will result in additional mining costs in order to alleviate public concerns.</td>
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<tr>
<td>Bench design</td>
<td>The objective of most mining operations is to maximise the working area available in the pit to ensure that excavation and ancillary equipment moves (unproductive time) are kept to a minimum and sufficient area is available for flexibility and segregation of activity on the pit floor. This allows for the maximum coverage of both grade control drilling and probe drilling for existing underground voids to enable simplified mining planning. Multiple benches are only used where there is a scheduling or other benefit, i.e. more ore can be accessed earlier, water inflows can be contained to a lower bench. Double benching is often used around the perimeter to allow for steeper inter-ramp angles and overall pit walls.</td>
<td>To ensure that optimum shielding of activities and maximum dust and noise containment is achieved, the pit floor is to be pushed as deep as possible with multiple benches in operation. The bulk of activity and excavation will occur as low in the pits as possible using the upper benches to shield closest residences from noise and dust generation. To achieve this, a significant amount of extra detail will need to be scheduled into the planning and operation of the pits, with equipment moves to upper benches and the creation of temporary ramps for extraction. The upper benches will be pulled down (excavator working below the material being removed) to maintain the maximum possible shielding for excavator while working. This is generally a less efficient way of working than the excavator sitting atop the bench digging and loading a truck on the bench below. The general inefficiency of using multiple benches for noise and dust mitigation as well as the sub-optimum scheduling of work in the North Pit adds considerable cost to the Project when compared to normal mining operations but enables compliance to be achieved.</td>
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<tr>
<td>Ramp width</td>
<td>Typical mining operations use dual ramp width where practical for maximum efficiency of haulage fleet, reduced trucking costs, accelerated schedules with reduced Project duration</td>
<td>Project to use single lane with passing bays to accommodate other mine design elements required to achieve regulatory compliance and to reduce overall pit footprint. The implication of this is a significant reduction in haulage efficiency and a non-optimised schedule for the North Pit but assists with complying with noise and dust requirements.</td>
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<tr>
<td>Truck selection</td>
<td>Typical truck size would normally be in the order of 100 tonnes for this type of mining operation. The relative cost of purchasing the fleet would also be proportional to the total operating hours and utilisation for the Project. Mid-life to older truck fleet would be appropriate for this Project in a less restricted environment due to low total (approximately 12,500 hours, around 25% of estimated equipment life) and low equipment utilisation (25%) over the life of the Project.</td>
<td>The Project has opted for larger trucks resulting in decreased vehicle movements at equivalent or lower noise emissions of smaller vehicles. Late model new or low hour trucks specified for Project, due to quieter running conditions of later generation engine and drive train systems.</td>
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<td>Excavator selection</td>
<td>Normally, excavator selection is matched to overall production rates, truck selection and bucket selection and width for dilution purposes. Excavator ranges in the 100–120 tonne range would typically be applied to this Project size to balance cost, efficiency and a suitable bucket dimension for dilution control.</td>
<td>Two excavators will be used from Year 2 and when mining commences in the South Pit. One of the excavators will be larger than normally used for this type of mining (190–200 tonne range) to ensure that sufficient force can be applied to the material for free dig as part of the commitment to reduce blasting requirements for amenity reasons.</td>
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<tr>
<td>Excavation controls</td>
<td>Typically, mining operations of this scale would use mark-ups and tapes to lay out dig perimeters with batter boards used to visually sight wall angles rather than more sophisticated approaches such as GPS which are normally reserved for much larger mines.</td>
<td>GPS guidance will be used on all primary excavation equipment (excavators and bulldozers) to ensure that planned mining dimensions are strictly adhered to and to ensure that waste rock generation is minimised.</td>
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<td>Staged mining (South Pit)</td>
<td>Staged mining approaches are often used in larger mining operations to even out the strip ratio and cash flows of the various stages of the final pit design. The practice is usually done when the total mining area available is significantly larger than what is required to maintain a practical mining schedule. A mining area of the size of the South Pit would not generally be subject to a staged mining approach due to the relatively small area available for each stage.</td>
<td>In order to reduce the time that the full South Pit area is in operation and reduce the noise and dust generation to residents along Fisher St, the South Pit will be mined as a two stage cut back approach. This will involve the first stage commencing at the beginning of the second year, with the second stage commencing approximately 12 months later. The primary purpose of this approach is to reduce the active footprint at the higher levels, with the result being greater noise and dust containment within the operating pit area. This approach to mining the South Pit will increase the operating cost of Stage 2 due to the mining fleet having to travel around the already excavated Stage 1 void. This is expected to add approximately 500 metres to the haulage distance with an associated cost increase in order to achieve amenity improvements.</td>
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<td>Excavation method</td>
<td>Normal practice is to conduct a light blast over all areas to provide consistency in material fracturing.</td>
<td>Blasting only where necessary and generally deeper in the pits, otherwise maximise rip and dig to minimise amenity concerns over blasting even though compliance with blasting regulations is achievable.</td>
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<td>Blasting</td>
<td>Standard blasts typically used at mine sites distant from sensitive land-uses</td>
<td>Blast management plan based on actual on-site monitoring and modelling of blasting to design a reduced blast mass to achieve compliance when blasting is at closest point to houses or commercial properties.</td>
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<td>Work areas</td>
<td>Unlimited work areas to maximise efficiency</td>
<td>Mining with staged cutbacks to reduce operational footprint and the overall impact for residents closest to the western boundary of the North and South Pits.</td>
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<tr>
<td>Haul roads sealed</td>
<td>No sealing of haul roads.</td>
<td>Sealing haul roads to reduce dust generation through the application of sealing agents and use of low silt content material specification on unsealed ramp sections.</td>
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<td>Waste rock stockpile design</td>
<td>The construction methodology usually employed would be to start the tipping operations close to the pit edge and work outwards using either a direct tip head approach or dumping short and pushing the tip face off with a bulldozer. Generally a windrow bund of at least half the truck tyre height would be maintained around the edge for safety</td>
<td>In order to minimise noise and dust to the maximum extent possible, the approach to the construction of the TWRS facility will be to start at the outer edge and work inwards and back toward the pit operations. The first section of the TWRS to be constructed will be a five metre high noise and dust bund around the outer perimeter. This section will be the first section raised as the facility is progressed in height. To minimise dust generation all tipping activity in the TWRS will be via paddock dumping. This will reduce the drop height of material being tipped from the equipment with associated dust reductions.</td>
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<td>Backfilling methodology</td>
<td>It is typically the waste rock stockpile that is the rehabilitated landform in open cut mining projects. This involves little to no engineering of the land form; benches and access tracks may be established for drainage purposes with contour ripping with or without topsoil applied. Over time these land forms settle (generally unmeasured) and minimal evidence of their construction techniques are evident. Back fill operations into a pit environment may be undertaken by pushing off from a high wall, or the wall maybe flattened off by pushing down. These methods, although good for bulk material movement, provide little compaction to the re-instated land form or provide little or no noise and dust containment.</td>
<td>The land form re-construction of both the North and South Pit areas is to consist of material placed by tip heights no greater than 20 meters. It is expected that two of these fill placement horizons will be used below the lower pit crest in both pits. The tip faces are to advance from opposite directions of the pit for each lift to ensure that similar compaction and settlement is applied across the entire area. Once the filling horizons are approaching the height of the lowest pit crest and shielding of placement activities is reduced, the filling methodology is to change to the same as that at the TWRS. This will entail the placement of material around the outer edge at the lowest contour first, with this outer section being built up to contain the noise and dust emissions from the paddock dumping activities. The equipment traversing the fill area for paddock dumping will apply compaction to the placed fill. Any settlement that occurs during filling will be remedied immediately.</td>
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<tr>
<td>Staged clearing</td>
<td>Generally widespread clearing would take place at the one time for efficiency reasons at more remote mine sites.</td>
<td>The clearing and grubbing of the pit operational area is to occur in four stages, to minimise the land disturbance at any one time, reduce potential for dust generation and allow for reduced visual impact.</td>
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<td>Noise attenuation equipment</td>
<td>Equipment with standard noise suppression common at sites not proximal to sensitive land uses.</td>
<td>Modification of mobile plant with best available noise attenuation/suppression equipment. Acoustic enclosures around the rock breaker. Use of ‘smart alarms’ rather than traditional reversing alarms.</td>
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<td>Watering</td>
<td>Watering sporadic and typically when conditions have already reached a point that suppression is needed.</td>
<td>Multiple water carts and full-time grader on site, with use of chemical dust suppressants to ensure dust management requirements are met. The use of fixed water sprays for some unsealed haul roads and waste rock stockpiles.</td>
</tr>
<tr>
<td>Management of waste rock moisture content</td>
<td>Nothing to a periodic visual inspection of ground moisture.</td>
<td>Regular measurements of stockpile moisture content to ensure optimal levels are maintained. The aim is to reduce dust generation and over application of water.</td>
</tr>
<tr>
<td>Monitoring and forecasting</td>
<td>Periodic monitoring of dust levels, with reporting and analysis on a monthly or quarterly basis. Forecasting limited to predictive models set-up prior to Project commencing.</td>
<td>Real-time monitoring and predictive forecasting tools to allow proactive environmental management before the onset of potential impacts. Ultimate cessation of mining in extreme conditions.</td>
</tr>
</tbody>
</table>

Notes: (M) Major reduction in impact; (m) moderate/minor reduction in impact; (-) not applicable
1 Introduction

These leading practice measures adopted by SGM have added considerable cost to the Project, which reflects their commitment to minimising potential amenity impacts on nearby residents. Adoption of these measures results in a Project which is highly compliant with regulations and achieves amenity outcomes not achievable using normal mining practices.

1.5 Previous Big Hill Development Project EES

During the late 1990s, SGM proposed a development to mine the same gold resource which is largely contained within Big Hill. The proposal was the subject of an EES in 1999 and was not ultimately supported by Government at that time because it ‘did not provide an acceptable balance of economic, social and environmental outcomes’.

This Project has many differences from that proposed in the 1999 EES. Growth in the gold price over the past decade means an enhanced approach to rehabilitation is now economically viable, allowing SGM to capitalise on the gold resource while addressing the primary concerns of the Independent EES Panel and the Minister which resulted in the 1999 proposal not being approved.

Table 1-2 provides a summary of the key Project component differences between the 1999 proposal and the current Project proposal. These are discussed in more detail in Chapter 5, Section 5.4.

Table 1-2 Key improvements to the proposed Project description

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Proposed 8 year timeframe poses an unacceptable social impact</td>
<td>Changes to the pit design and ore processing schedule means the Project will have approximately a five year timeframe with approximately four years for mining, and one year to complete earth moving and rehabilitation activities.</td>
</tr>
<tr>
<td>Loss of 9 ha of high quality Box Ironbark Forest</td>
<td>The Project description results in minimal loss of Box Ironbark or heathy forest. Waste rock will be temporarily stored in a single stockpile on the former Davis cut overburden dump and adjoining cleared grazing land so as to avoid clearance of Box Ironbark Forest.</td>
</tr>
<tr>
<td>Unfilled southern void would create a permanent and unacceptable safety hazard</td>
<td>All mined pit voids will be backfilled and re-contoured progressively throughout the Project to current topographic heights within about five years. Waste rock stored at the TWRS and Mt Micke or a suitable alternative will be used to backfill South Pit. This will improve public safety through the removal of historic mining voids and create a long term public open space asset for the Stawell community.</td>
</tr>
<tr>
<td>Tenuous link between the Big Hill resource and viability of extracting the underground resources</td>
<td>The economic benefits of the previous proposal were not considered strong enough to support continuation of underground mining, one of the key justifications for the proposal. This is no longer valid given the imminent closure of underground mining operations following the recovery of remnant ore reserves.</td>
</tr>
</tbody>
</table>
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1.6 Profile of the Proponent

CGC is a publically listed, Canadian company, which currently has three operating mines in the Northern Territory and Victoria, including Stawell Gold Mines. SGM is a wholly owned subsidiary of CGC and has been operating continuously in the local region for over 30 years. Although there have been a number of changes to the parent company owner during this time, this has not impacted greatly on the local workforce with many long term SGM employees transitioning with the company through these ownership changes. The Company also has high regard for the strong relationship SGM has with the Stawell community and surrounding region. CGC is committed to continuous improvement in its environmental and social performance while maintaining that positive relationship with the local community.

Further detail about the proponent’s relevant experience in developing and operating projects as well as its health, safety and environmental policies is provided in Chapter 6.

1.7 EES Structure

This EES document is prefaced by an executive summary which provides an outline of the proposal and key findings of the impact assessment studies.

Chapter 2, Evaluation Approach Used in this EES, describes the general approach to the assessment of environment effects undertaken in this document.

Chapter 3, Statutory Assessment and Approvals Process, describes the approvals required in order for the Project to proceed and the legislative framework in which it is set.

Chapter 4, Existing Conditions, describes the existing activities, land tenure and use within the Project area.

Chapter 5, Project Alternatives, describes the alternatives to undertaking the proposed Project (including not proceeding with the Project) that have been considered.

Chapter 6, Project Description, describes the open pit mining and waste rock stockpiling process in detail and illustrates how it integrates with the existing operations and facilities from a technical perspective.

Chapter 7, Community Consultation and Engagement Process, describes the communication and engagement activities undertaken to stakeholders understand and contribute to the Project’s processes, progress and outcomes.

Chapter 8, Environmental Impact Assessment, assesses the Project-related potential impacts on the existing environment and how these effects will be managed. Areas of study include:

- flora and fauna
- cultural heritage
- historic heritage
- noise
- blasting
- air quality
- greenhouse gas
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- geotechnical
- potable water
- surface water
- groundwater
- waste rock management
- traffic and transportation
- visual and landscape
- health
- economic
- social.

Chapter 9 Hazard and Risk, describes the risk assessment framework that was used to assess potential risks of the Project and provides a summary of these risks during the life of the Project as well as following closure of the mine.

Chapter 10, Rehabilitation, provides details on the rehabilitation program developed for the Project.

Chapter 11, Environmental Management, describes the existing environmental framework and environmental management plan and monitoring proposed to mitigate any potential impacts of the Project.

Appendices to the Main Report are as follows:
- Appendix A — Letter from Minister for Planning – Need for Environment Effects Statement (23 April 2013)
- Appendix B — Environment Effects Statement Scoping Requirements
- Appendix C — Letter from the Commonwealth Minister for Environment – EPBC Act Referral (9 December 2013)
- Appendix D — Stawell Gold Mines – Draft Work Plan Variation Table of Contents
- Appendix E — Environment Effects Statement Consultation Plan
- Appendix F — Initial Consultation Summary
- Appendix G — Temporary Lookout Concept Drawings

A set of technical appendices contain the detailed studies prepared by various specialists and consultants for the EES as follows:
- Technical Appendix 1 — Land Use and Infrastructure Planning Report
- Technical Appendix 2 — Flora and Fauna Assessment
- Technical Appendix 3 — Cultural Heritage Management Plan
- Technical Appendix 4 — Historic Heritage Assessment
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- Technical Appendix 5 — Acoustic Assessment
- Technical Appendix 6 — Blasting Assessment
- Technical Appendix 7 — Air Quality Assessment
- Technical Appendix 8 — Energy Use and Greenhouse Gas Assessment
- Technical Appendix 9 — Geotechnical Investigation
- Technical Appendix 10 — Predicted Dust Impacts on GWMWater Reservoir - Stawell
- Technical Appendix 11 — Surface Water Assessment
- Technical Appendix 12 — Groundwater Assessment
- Technical Appendix 13 — Traffic Impact Assessment
- Technical Appendix 14 — Landscape Visual Impact Assessment
- Technical Appendix 15 — Health Impact Assessment
- Technical Appendix 16 — Economic Impact Assessment
- Technical Appendix 17 — Social Impact Assessment
- Technical Appendix 18 — Risk Report
- Technical Appendix 19 — Rehabilitation Plan.