Existing Conditions

4.1 Introduction
This section describes the location, land tenure (ownership) and current and allowed uses of the Project area, as well as an outline of the physical characteristics of the site. It also describes the nature of land use and development in the locality surrounding the Project area.

4.2 Project Location
The Project area (Figure 4-1) (excluding Mt Micke) is bound by Crowlands Road to the north, Leviathan Road to the east, Albion Road and Fisher Street to the west and Main Street to the northwest. The site is located less than 1 kilometre from the Stawell central business district (CBD).

Mt Micke is an existing waste rock stockpile from the mining of the Wonga Pit, located to the southeast of Big Hill.

The bulk of the mining activity would be undertaken in the area known as Big Hill, a ridgeline which rises approximately 40–50 metres to the northeast of the Stawell town centre.

4.3 Topography
The topography of the Project area rises to a height of 300 metres AHD at the top of Big Hill. There is a general fall to the northeast from a high point in the west. The natural surface slopes are relatively uniform with grades of approximately 3 per cent. The site is bounded by low ridges to the northwest and south, which form a shallow valley running northeast through the site. Wonga Pit is located at the top of this valley, with little or no catchment surrounding the feature.

4.4 Hydrology
The surface water runoff from the Project area flows naturally towards the northeast and is either collected in the water storage reservoirs or conveyed via open channel drains adjacent the water storage reservoirs. The runoff then discharges at a paddock adjacent to water storage reservoir 7 and continues to flow northeast. Creeks to the northeast drain into larger surface water features, such as Concongella Creek to the east of the site which is a tributary of the Wimmera River, and eventually discharges northwest towards the Murray Basin.

The portion of the site that falls to the southwest is generally bound by residential properties. This side of Big Hill is currently well vegetated and therefore runoff is considered as clean water runoff. Surface water runoff flowing southwest from Big Hill is collected into existing open drains along Scenic Road and eventually discharges into the local NGSC drainage network.
4 Existing Conditions

Figure 4-1  Big Hill Enhanced Development Project surrounding roads

4.5  Groundwater

The relevant aquifer in the vicinity of the Project is the water table aquifer which occurs within the pre- Cainozoic fractured bedrock.

This aquifer is reportedly of low to moderate productivity (Hydrogeology of Australia Map–BMR, 1987), which is confirmed in the Ballarat Vic Hydrogeological map of the Murray Basin (1:250 000 scale, 1994), which indicates the pre-Cainozoic fractured bedrock aquifer has a low permeability, with a hydraulic conductivity in the range of 0.1 to 15 metres per day and a storativity (a measure of the ability of water to move through the bedrock with changing aquifer levels) of 0.005 – 0.3. The bedrock underlying the Project area is also likely to have very low primary porosity but in some zones may have a high secondary porosity, in the form of faults and fractures.
4 Existing Conditions

Regional water levels are estimated to be approximately 200 metres AHD in the vicinity of Big Hill, with regional groundwater flow in a north to north westerly direction.

Approximately 2.5 kilometres southeast of Big Hill, a relatively thin Quaternary alluvial/colluvial aquifer (e.g. sediments of the Shepparton Formation) or Tertiary - Pliocene sands aquifer (e.g. sediments of the Parilla or Calivil Sands) is present overlying the fractured basement rock. Such an aquifer has been identified in the vicinity of the TSF (Rockwater, 2010). However, no alluvial sediments exist in the vicinity of the proposed pits.

An Environmental Audit Report (LanePiper 2008) noted there is a low chance of significant groundwater use, as the aquifer in this area is moderately saline and low yielding.

At Big Hill, some perched shallow groundwater may be present above the basement rock as a result of rainfall infiltration, particularly in the wetter months. A perched groundwater system, potentially created as a result of leaking reservoirs which are located adjacent to the proposed pits, may also exist; however, there are no data currently available to determine whether this is the case.

Due to dewatering activities related to underground mining, the local water table has been depressed significantly in the vicinity of the proposed open pit development. Dewatering of the Magdala Decline has reduced groundwater levels beneath Big Hill by over 1,000 metres.

According to the South Western Victoria Water Table Map (DCNR, 1995) and the SEPP GoV, groundwater in the region is likely to lie within Segment C (i.e. a TDS ranging between 3,000-3,501 milligrams per litre, and has the following beneficial uses:

- maintenance of ecosystems
- stock watering
- industrial water use
- primary contact recreation
- buildings and structures.

4.6 Geology

4.6.1 Regional Setting

SGM occurs within the Stawell Zone of the Lachlan Fold Belt, which is a Palaeozoic sequence of marine sediments overlying volcanic rocks.

The Stawell Zone was subjected to east-west compression during the Ordovician, which has resulted in predominantly north-northwest trending structures. This zone is bound by the Avoca Fault to the east and the Moyston-Woomdoo Fault to the west (Figure 4-2). SGM lies near the western margin of the Stawell Zone between the Moyston-Woomdoo Fault and the Coongee Fault, in what is known as the Stawell-Ararat Fault Zone.

The Stawell-Ararat Fault Zone is structurally complex because it was more intensely deformed than surrounding areas. The ore-grade gold mineralisation is found predominantly in a 1 kilometre wide unit of basalt surrounded by sulphide and iron enriched sedimentary rocks (termed ‘volcanogenics’). This structure is termed the ‘Magdala Dome’.
4 Existing Conditions

Ore formation was associated with hydrothermal fluid (hot, mineral-rich fluid) flow along major faults mostly located on the western flank of the Magdala Dome. Typically, gold is accompanied by sulphides (e.g. pyrite, arsenopyrite) in multiple layers. Big Hill geology and mineralisation can be broken into four main domains, known as Mariner’s, Allen’s, Iron Duke and Magdala Flank. All except Mariner’s and Allen’s are separated by faults.

The Stawell Granite intruded the Stawell-Ararat Fault Zone to the south of Big Hill during the Devonian and post-dates gold mineralisation.

Figure 4-2  Regional geological setting
4 Existing Conditions

4.6.2 Mineral Resource and Mineral Reserve Summary

A mineral resource is a natural occurrence or concentration of minerals that is potentially valuable, and for which reasonable prospects exist for eventual economic extraction. By contrast, the value of a mineral reserve more assured, as it is legally, economically and technically feasible to extract. Both mineral resources and mineral reserves can be categorised as indicated or inferred; and probable or proven respectively, depending on level of confidence. Mineral resources and reserves can also vary in terms of grade, which measures the concentration of metal in grams per tonne of ore.

All mineral resources and mineral reserves have been estimated in accordance with the Joint Ore Reserves Committee Code and have been reconciled to Canadian Institute of Mining Standards, as prescribed by National Instrument 43-101, a codified set of rules and guidelines for reporting and displaying information related to mineral properties owned by, or explored by, companies which report these results on stock exchanges within Canada.

A visual representation of the mineral resource and mineral reserves as defined on 31 December 2012 is shown in Figure 4-3.

![Figure 4-3 Cross section of Big Hill mineral resources and mineral reserves](image-url)
4 Existing Conditions

Table 4-1 and Table 4-2 summarise the Project’s and SGM remaining underground mineral resource and reserves by area respectively. The mineral resource estimates have been compiled such that they are exclusive of mineral reserves.

The Project’s mineral resources were estimated based on a gold price of AUD$1400 per ounce and a minimum grade of two grams per tonne.

Table 4-1  Summary of SGM mineral resource*

<table>
<thead>
<tr>
<th></th>
<th>Indicated</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tonnes (000’s)</td>
<td>Grade g/t Au</td>
<td>Ounces (000’s)</td>
<td>Tonnes (000’s)</td>
<td>Grade g/t Au</td>
</tr>
<tr>
<td>Underground</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magdala - above 1,250 metres AHD</td>
<td>449</td>
<td>3.42</td>
<td>49</td>
<td>717</td>
<td>3.63</td>
</tr>
<tr>
<td>Golden Gift - above 1,650 metres AHD</td>
<td>27</td>
<td>3.7</td>
<td>3</td>
<td>223</td>
<td>6.01</td>
</tr>
<tr>
<td>Sub-total Underground</td>
<td>476</td>
<td>3.43</td>
<td>53</td>
<td>941</td>
<td>4.19</td>
</tr>
<tr>
<td>Surface</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magdala</td>
<td>2830</td>
<td>1.84</td>
<td>167</td>
<td>46</td>
<td>1.15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3306</td>
<td>2.07</td>
<td>220</td>
<td>987</td>
<td>4.05</td>
</tr>
</tbody>
</table>

* All figures are rounded to 1,000 tonnes, 0.01g/tonne Au and 1000 ounces.

Mineral reserves were estimated based on a gold price of AUD$1450 per ounce and variable minimum grades applied depending on reserve width, mining method and ground conditions. The value of the mineral reserve is greater than that of the mineral resource given the greater level of certainty relating to the geological extent and economic value of the mineral body.

Table 4-2  Summary of SGM mineral reserve*

<table>
<thead>
<tr>
<th></th>
<th>Proven</th>
<th></th>
<th></th>
<th>Probable</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tonnes (000’s)</td>
<td>Grade g/t Au</td>
<td>Ounces (000’s)</td>
<td>Tonnes (000’s)</td>
<td>Grade g/t Au</td>
<td>Ounces (000’s)</td>
<td>Tonnes (000’s)</td>
</tr>
<tr>
<td>Underground</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magdala above 1,250 metres AHD</td>
<td>6</td>
<td>2.80</td>
<td>1</td>
<td>140</td>
<td>2.97</td>
<td>13</td>
<td>146</td>
</tr>
<tr>
<td>Golden Gift above 1,650 metres AHD</td>
<td>37</td>
<td>4.70</td>
<td>6</td>
<td>37</td>
<td>4.70</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Sub-total Underground</td>
<td>43</td>
<td>4.43</td>
<td>6</td>
<td>140</td>
<td>2.97</td>
<td>13</td>
<td>183</td>
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<tr>
<td>Surface</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LG Stockpiles</td>
<td>120</td>
<td>0.80</td>
<td>3</td>
<td>120</td>
<td>0.80</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Sub-total Surface</td>
<td>120</td>
<td>0.80</td>
<td>3</td>
<td>120</td>
<td>0.80</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>43</td>
<td>4.43</td>
<td>260</td>
<td>1.97</td>
<td>16</td>
<td>303</td>
<td>2.32</td>
</tr>
</tbody>
</table>

* All figures are rounded to 1,000 tonnes, 0.01g/tonne Au and 1000 ounces.

The mineral resource model used in the work plan was updated and is current as at 2 August 2013. This represents an update to the reportable surface resource from 31 December 2012 (Table 4-3).
The August 2013 model update is the second resource estimate for the Big Hill area since 1998, and includes additional diamond geotechnical drilling undertaken early 2013. Drill spacing over the estimate area was approximately 20 by 25 metres. In addition to the new geotechnical diamond holes this estimate incorporates an updated geological interpretation of the ore deposits and associated updated resource estimation, review and update of historical void models, utilization of a pit shell at AUD$1400 gold price and an economic cut off for reporting of 0.44 grams per tonne. The August 2013 resource estimate is presented below in Table 4-3.

<table>
<thead>
<tr>
<th>Surface</th>
<th>Indicated</th>
<th></th>
<th>Inferred</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>tonnes (x1000)</td>
<td>grade g/t Au</td>
<td>ounces (x1000)</td>
<td>tonnes (x1000)</td>
</tr>
<tr>
<td>Big Hill</td>
<td>3274</td>
<td>1.7</td>
<td>179</td>
<td>265</td>
</tr>
</tbody>
</table>

The key difference between the indicated and inferred mineral resources is the level of confidence in the volume, grade and mineral content, with the former having a higher level of confidence. Consequently, Table 4-3 shows that SGM has a high level of confidence in the majority of the mineral resource.

The mineral resources reported have been prepared according to the guidelines set out under the requirements of National Instrument 43-101 and the JORC code. No mineral reserves have been estimated. Mineral resources that are not mineral Reserves do not have demonstrated economic viability.

### 4.7 Biodiversity

The vegetation type throughout the Project area is defined as Box Ironbark Forest and is highly modified, either through historic logging and mining activities, or current recreation uses. As a result, vegetation conditions have been assessed as ranging from poor to very good condition.

Flora and fauna surveys were undertaken in January 2012, January and July 2013, and additional targeted flora surveys in August, September and October 2013 (during which any additional fauna species identified were also recorded). During these surveys a total of 77 terrestrial fauna species were recorded, including two state-significant species. These were the Brown Treecreeper *Climacteris picumnus victoriae* and the Bearded Dragon *Pogona barbata*. A total of 21 state significant fauna species have previously been documented in the local area, some of which are known to prefer Box Ironbark Forest.

During the above-mentioned field surveys as well as a total of 227 flora species (150 native and 77 exotic) were recorded, including the state-significant Small-leaf Goodenia *Goodenia benthamiana*. A total of 46 state significant flora species have previously been recorded in the local area.
4 Existing Conditions

4.8 Land Tenure and Management

The Project will be predominantly located on unreserved Crown land located within Crown allotment 10E (see Figure 4-4), with some exceptions, namely:

- Crown allotment number 11 is freehold land
- Crown allotment numbers 10F, 11A, 11C and lot number 5 are freehold properties owned by GWMWater.
- Big Hill Road.

Within the Crown allotment 10E, apart from the mine ventilation shaft, above ground mine development and some memorials and a picnic facility, four small areas of land are developed for specific uses, namely:

- CA 10B a former Forest Commission Reserve, containing a DEPI fire watch building.
- CA 10C, a former Municipal Purposes Reserve leased to Shire of Stawell is now leased to Vencorp and houses the organisation’s radio communication facility.
- CA 10D a former Police & Emergency Services Reserve, is leased to the Victorian Police. It houses the State Mobile Radio Network (Telstra).
- CA 10G is leased by Optus Communications and contains a mobile telephone tower and three buildings. It houses the mobile telephone facilities for Optus, Telstra and Vodaphone.

Additionally, Crown allotment 10A is reserved for Reservoir purposes and Crown allotment 11B is reserved for Public purposes. Both land parcels are managed by GWMWater.

Unreserved Crown land, namely Crown allotment numbers 10E and 2015, are managed by the Department of Environment and Primary Industries (DEPI) under the Land Act 1958.

The Project area is located within SGM’s existing mine lease boundary (MIN 5260), which expires on 20 May 2020. This existing mining lease covers underground and surface operations and there is no separate agreement for above-ground mining on Crown land. Due to the presence of the MIN 5260 SGM have existing land tenure arrangements in place to undertake new works within the current MIN.
4 Existing Conditions

Figure 4-4  Land parcel information
4 Existing Conditions

4.9 Current Land Uses

4.9.1 Mining

The Project area includes areas of past and current mining operations relating to mining works undertaken in the area for more than 30 years (refer to Figure 4-5).

**Former Davis Pit**

The Davis Pit is located 200 metres southwest of the summit of Big Hill along the same ridgeline and was mined from 1987 to 1988 to a depth of 50 metres. During this time 154,525 tonnes of ore was mined for 8,992 ounces of gold. The former Davis Pit covers an area of approximately 3.4 hectares. Currently the Davis Pit is almost completely backfilled from waste rock from underground mining.

**Former Davis Pit overburden dump**

The former Davis Pit overburden dump is located directly adjacent to the Davis Pit. The area stored approximately 400,000 tonnes of low grade material that was reclassified as ore in 2005 (due to an increased gold price) and then used as a supplement feed for the processing plant. There currently remains about 120,000 tonnes mainly in batters around the current area that will be processed.

**Magdala decline**

The Magdala decline commenced in 1984 with the development of underground working that reached a depth of 1,626 metres AHD in 2012. The underground workings consist of approximately 180 kilometres of tunnels and have produced more than 2 million ounces of gold. The Magdala decline is serviced by vent shafts for both air intake and extraction. The ventilation system for the Magdala mine includes six shafts to the surface (five exhausts and one intake). The Magdala decline is the main passive intake for fresh air.

**Haul roads**

SGM operate current haul roads on site that connect the Magdala decline to the run-of-mine (ROM) pad, Mt Micke to the ROM pad and the Davis open cut and Davis overburden dump to the ROM pad.

**Processing plant**

The SGM processing plant uses a conventional ball milling, flotation and carbon in leach circuits, which use cyanide to leach the gold from oxidised material onto activated carbon. The current plant is capable of treating up to 850,000 tonnes per annum. The current processing plant is permitted and does not require changes for the Project.

**Run of mine (ROM) pad**

The ROM pad covers an area of approximately 6.25 hectares and is located immediately to the southeast of the Magdala portal next to the processing plant. The ROM pad is a storage area for ore before it is processed. The ROM pad sits directly adjacent to the processing plant primary crusher.

**Stores area**

The stores area contains the site warehouse and covers an area of 0.5 hectares. This area contains a warehouse and storage yard for all site deliveries and stock. The site fire system and fire water tanks are also located in this area.
4 Existing Conditions

**Wonga Pit & Wonga decline**
The original Wonga Pit was first mined in the 1860s. It was used as a community rubbish tip until 1980. After removal of the rubbish, mining recommenced in 1983 and ceased in 1985. A small cut back in the north of the pit was undertaken in 2010. The Wonga Pit provides access to the Wonga decline. The Wonga underground mine operated from 1985 to 1998 to a depth of 397 metres AHD. The existing pit covers an area of approximately 15 hectares and is approximately 55 metres deep.

**Mt Micke**
Mt Micke is the overburden stockpile from the Wonga Pit (named after the first site General Manager, Brian Micke). It is a low grade oxide stockpile located on the eastern side of the Wonga Pit covering approximately 10 hectares and containing an estimated two million tonnes of material.

**Tailings storage facilities (TSF)**
Since mining operations began at SGM in 1981 three TSFs have been constructed and operated, two of which have since been closed;
- Reserve tailings storage facility – decommissioned and rehabilitated
- TSF No. 1 – decommissioned and partially rehabilitated
- TSF No. 2 (referred elsewhere in this EES as the TSF) – operational.

All the TSFs listed above are constructed as earthen embankments with upstream sub-aerial deposition.

Since the initial construction of TSF No. 2, the original embankment has been raised and extended numerous times, with its current height up to 28 metres natural surface and a crest at 250 metres AHD.

TSF No. 2 has an approved work plan to operate, which includes approval for an embankment height to 253 metres AHD (MIN5260 Tailings Storage Facility No. 2 – Work Plan Variation for AHD253m AHD Lift, 2009). Tailings generated by the Project will require that the embankment be raised to the approved height of 253 metres AHD to provide sufficient storage.

On the basis that TSF No. 2 is already approved, constructed and operating as part of the existing operations, it is not intended that any further environmental assessment of these facilities be conducted as part of the assessment and approvals processes, and has not been included in the EES Scoping Requirement for the Project.

It is noted that the groundwater quality impacts that exist in the vicinity of TSF No. 2 were assessed as part of MIN5260 Tailings Storage Facility No. 2 – Work Plan Variation for AHD253m AHD Lift and any potential for increased impacts from the embankment raise considered.

No variation, augmentation or reconfiguration is required for any of the other existing facilities as a result of the Project.

As a result of groundwater quality impacts arising from TSF No. 2, SGM was issued a pollution abatement notices (PAN) under the EP Act by the EPA and the Earth Resources Regulation Victoria (ERRV) division of DSDBI. SGM are currently in compliance with these notices and an environmental audit of the facility is ongoing.

TSF No. 2 has a Groundwater Management Plan (URS, 2012) which was submitted to both EPA and ERRV (June 2012) and which aims to manage the known impacts on the surrounding environment.
4 Existing Conditions

Figure 4-5  Stawell Gold Mines former and current mining operations
4 Existing Conditions

4.9.2 Public Open Space
The northern part of the Project area is accessible to the public as an informal recreational reserve, known as Big Hill. Big Hill is used for passive recreation activities such as walking and jogging, and as a lookout to the Grampians.

4.9.3 Historic Sites / Features

Monuments and memorials
Big Hill is the site of a number of memorial sites / features (Figure 4-6), as follows:

- The Pioneer Memorial Rotunda built in the 1930s to commemorate the first European settlers in the area
- The Pioneer Memorial Plantation was planted in 1939 to commemorate Stawell's European pioneers
- The Apex Arboretum and gates established in the 1950s
- The Quartz Reef Discovery monument unveiled in 1953 to commemorate the first discovery of quartz gold
- Water Supply Memorial built in 1975 to celebrate the 1875-81 water supply system
- Dane Memorial Seat erected in the 1950s in honour of Robert William Dane and his wife, prospectors on Big Hill in the 1850s.

These sites are discussed in more detail in Chapter 8, Section 8.4.

Moray graves
The graves of David Constable, his wife and brother-in-law are located to the southeast of GWMWater water storage reservoir 7. Constable supplied water to water carters who serviced the Stawell township from a dam located where the aforementioned reservoir is now located.

Other historic sites / features
Mining has been undertaken in the Big Hill area intermittently since the mid-nineteenth century and as such there are a number of historic mining features within the Project area. These are discussed in more detail in Chapter 8, Section 8.4.

The presence and location of any Aboriginal cultural heritage sites was assessed as part of a Cultural Heritage Management Plan under the Aboriginal Heritage Act 2006 (section 49). A field survey found no Aboriginal cultural heritage places were identified within the study area (refer to Chapter 8, Section 8.3.)
4 Existing Conditions

Figure 4-6  Big Hill historic sites / features
4 Existing Conditions

4.9.4 Water Infrastructure
A number of water infrastructure assets are located within and around the Project area, which may be grouped as follows:

- GWMWater raw water system
- GWMWater potable water system
- SGM raw and potable water supply
- AquaTower water treatment system.

These assets are described below.

**GWMWater raw water system**
GWMWater is the rural and urban water corporation providing water and waste water services to north western Victoria, including the township of Stawell (as shown in Figure 4-7).
4 Existing Conditions

Figure 4-7  GWMWater operational area
4 Existing Conditions

Raw water received from the Grampians catchment is stored in both Lake Bellfield and Lake Fyans (Figure 4-7). In low rainfall periods (summer), raw water is pumped due to the low storage levels in the lakes.

The main source of water for Stawell is delivered via gravity from a weir on the Fyans Creek, upstream of Lake Bellfield. Water is then piped 8.9 kilometres to a 940 metre tunnel through the Serra Range and then piped a further 24.2 kilometres to GWMWater raw water storage reservoir 4 (Kobram storage; 40 megalitres capacity), 6 (Centenary Storage; 110 megalitres capacity) and 7 (Moray Storage; 335 megalitres capacity). These storages also act as settling ponds prior to the water being transferred to the water treatment plant. The water treatment plant is owned and managed by AquaTower under an existing lease agreement with GWMWater.

The combined raw water storage provides sufficient storage to supply raw water without pumping during an average year of rainfall. The gravity supplied water is supplemented from Lake Fyans at times of low flow in the Fyans Creek. This occurs infrequently during the summer months. Water was sourced from Lake Fyans from February – April 2013, and prior to this, not since 2007.

The SGM raw water supply is sourced directly from water storage reservoir 4.
4 Existing Conditions

Figure 4-8 Grampians Wimmera Mallee Water and Aquatower (water treatment) facilities
4 Existing Conditions

GWMWater potable water system

Figure 4-9 provides an overview of the potable water supply system for the Stawell township.

A 375 millimetre diameter pressure pipeline conveys potable water from the treatment plant to water storage tank 1 (10 megalitres) which then services the majority of the town’s water supply. A separate pump, located in the Byrne St reserve, pumps potable water from water storage tank 1 to water storage tanks 2 and 3, with these tanks servicing elevated properties within the township.

- Water storage tank 1 – a 10 megalitre steel tank that provides water to the low elevation (head) part of the Stawell township. This tank is surrounded by an historic, non-serviceable concrete lined dam.
- Water storage tanks 2 and 3 – these tanks provide water to the high elevation (head) part of the Stawell township. These tanks have a combined storage volume of 0.6 megalitres and are constructed of concrete and steel.

A gravity sewer runs along the rear of the Main Street residences along the northern edge of the Project area, stopping at the boundary of the North Pit.

SGM raw and potable water supply

SGM has a raw water reservoir located at the corner of Reefs Road and Leviathan Road. This storage is supplied by a pipeline connected to GWMWater raw water storage reservoir 6. This water is used for dust suppression and ore processing.

The SGM potable water tank is located on Leviathan Road and is supplied by the GWMWater potable water storage tank 2.
4 Existing Conditions

**AquaTower (water treatment) facility**

Raw water stored in water storage reservoir 4, 6 and 7 is processed at the potable water treatment plant owned and operated by AquaTower located adjacent to Crowlands Road near the intersection with Caroline Street (Figure 4-4). This facility is owned and operated under a 25 year lease agreement with GWMWater. This agreement has been in place for 10 years.

4.9.5 Communications Tower

A communications tower is located on or near the highest AHD of Big Hill. This asset is owned by Crown Castle International Pty Ltd (CCI) who have a lease agreement with the landholder (DEPI). The CCI lease agreement has “Resumption” clauses that exclude “mining”.

The following organisations currently have lease agreements with CCI:

- Telstra
- Optus
- Vodafone
- National Broadband Network
- United Christian Broadcast.

Powercor and Telstra currently supply fixed services to these assets.

This tower, with a base at 302 ADH and a height of 34.5 metres, supplies mobile phone coverage and radio links to the Stawell regional area. There are a number of Atco buildings which house the service provider’s equipment at the base of the tower. The United Christian Radio Service has a small fabricated steel tower which it uses to broadcast to the Stawell community.

4.9.6 Fire Watch Tower

A fire watch building is situated alongside the communications tower on the top of Big Hill. This asset is owned by DEPI and has uninterrupted views of the Grampians National Park.

It consists of a rectangular building 2.7 metres x 2.4 metres x 4.2 metres high and has radio and weather monitoring equipment attached to it.

4.9.7 AARNet Fiber Optic Cable

AARNet own a fibre optic cable which supplies the University of Ballarat Stawell Campus with state of the art data and communication capabilities.

The path of fibre optic cable intersects the top of Big Hill, Stawell and runs through the northern pit.

4.9.8 Power Reticulation

Power reticulation is supplied to the existing communications tower, fire watch building and associated infrastructure from a combination of overhead and buried services.

An overhead power line adjacent to Reefs Road currently services mine ventilation infrastructure, which will become redundant once underground mining ceases.
4 Existing Conditions

4.9.8.1 Gas Mains
Medium and low pressure gas mains are located on Main Street. Geotechnical modelling undertaken by SGM indicates that this infrastructure will not be affected by the Project. Discussions with Tenix have confirmed that this infrastructure will not require relocation.

4.9.9 Roads
Three sealed roads traverse the site. These roads are known as Big Hill Road, Reefs Road and Scenic Drive and are not gazetted roads. Big Hill Road provides public access to the top of Big Hill, while Reefs Road and Scenic Drive provide access from the top of Big Hill to Leviathan Road and Fisher Street respectively.

4.9.10 Residential Properties
Residential areas are located to the northwest along Fisher Street and to the north along Upper Main Street and Crowlands Road.

The footprint of the Project encroaches on two residential properties located to the west of the pit outline located on Main Street. These properties will need to be acquired by SGM prior to the commencement of the Project.

4.9.11 Commercial Land Use
A data and electrical supplies retailer at 200–202 Main Street is the only commercial land use adjoining the Project area.

4.9.12 Grazing Pasture Land
The Project area includes land owned by GWMWater (allotment 5), currently used for sheep grazing (Figure 4-4).
4 Existing Conditions

Figure 4-10  Existing service infrastructure