Annual Qualified Persons Report for the Penny’s Find Gold Project, Australia, for the Year Ended 31 March 2014

LionGold Corp Ltd

Singapore

Effective date 31 March 2014

Prepared in accordance with the requirements of Singapore Exchange Practice Note 6.3

Qualified Persons:
Dr Simon Dominy
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APPENDICES

Appendix A
Checklist of assessment and reporting criteria, based on Table 1 of the 2012 JORC Code
1 EXECUTIVE SUMMARY

1.1 Report Scope and Basis
LionGold Corporation Ltd (“LionGold”) subsidiary Brimstone Resources Ltd (“Brimstone”) commissioned Snowden Mining Industry Consultants (“Snowden”) to compile a Qualified Persons Report (“QPR”) for Mineral Resources at the Penny’s Find project, which is part of the Golden Feather project.

1.2 Project Description
The Golden Feather project is owned and managed by Brimstone, a subsidiary of LionGold, and comprises three components which are subject to different ownership. The Penny’s Find project is a Joint Venture (“JV”) between Empire Resources Ltd (“Empire”) and Brimstone. The Mt McLeay project also forms part of the Golden Feather project and is a JV between Brimstone and Rubicon Resources Ltd (“Rubicon”). Additionally, the Penny’s Lake West project, which is held entirely by Brimstone, is also part of the Golden Feather Project. The tenements of the Golden Feather project surround the Penny’s Find gold deposit, which is located about 50 km northeast of Kalgoorlie, in the Eastern Goldfields region of Western Australia.

1.3 Geology and Mineralisation
Gold mineralisation within the Golden Feather project, including Penny’s Find, is interpreted to be shear-zone hosted, typical of the Eastern Goldfields Region around Kalgoorlie. The gold mineralisation at the Penny’s Find deposit has received the most attention to date and as such there is a better understanding of the mineralisation at this site compared to other sites within the Golden Feather project.

The gold mineralisation is primarily associated with shear zones which are interpreted to be splays off the Emu Fault. In some places (e.g. Penny’s Find), the mineralised shear zones are sub-parallel to the lithological contacts, however, at a larger scale the shear zones cross-cut the lithological units. Primary (i.e. fresh) mineralisation is generally hosted within quartz veins associated with sheared felsic volcanic and volcanioclastic rocks as well as sheared mafic volcanic rocks. Whilst mineralisation occurs in a variety of host-rocks, an association between the mineralised zones and graphitic shale is common and observed throughout the region. The graphitic shales are grey, with alternating dark graphite-rich and paler graphite-poor bands of varying thickness. These bands are strongly deformed proximal to the mineralised shear zone, resulting in tight small-scale folding, crenulation and fractures that are usually filled with veinlets of quartz and/or calcite.

Primary mineralisation at Penny’s Find is contained within a shear zone informally referred to as the Penny’s Find Shear Zone. Mineralisation has been intersected by drilling along an interval of about 500 m of the shear zone and remains open along strike to the north. The best mineralisation occurs in a 230 m section of the shear zone that trends north-northwest, dips towards the east and is close to or at the contact between volcanic rocks (hangingwall) and shale (footwall). The mineralised zone averages about 9 m thick and contains a number of mineralised quartz veins individually up to 2 m thick.

1.4 Mine Production
There is currently no mining at the Penny’s Find project.

1.5 Mineral Resources and Ore Reserves
The Mineral Resource estimate for the Penny’s Find project is summarised in Table 1.1 and has been classified and reported in accordance with the 2012 JORC Code. The resource has been reported above a 1 g/t Au cut-off grade and above 200 mRL (approximately 130 m below surface).
Table 1.1  Penny’s Find Mineral Resource, reported above a 1 g/t Au cut-off grade and less than 130 m below surface, as of 31 March 2014

<table>
<thead>
<tr>
<th>Category (JORC)</th>
<th>Mineral type</th>
<th>Gross attributable to licence</th>
<th>Net attributable to issuer (40%) *</th>
<th>Remarks [Total contained gold, oz Au]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tonnes (t)</td>
<td>Grade (g/t Au)</td>
<td>Tonnes (t)</td>
</tr>
<tr>
<td>Measured</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indicated</td>
<td>Gold</td>
<td>407,000</td>
<td>3.22</td>
<td>163,000</td>
</tr>
<tr>
<td>Inferred</td>
<td>Gold</td>
<td>237,000</td>
<td>2.60</td>
<td>95,000</td>
</tr>
<tr>
<td>Total</td>
<td>Gold</td>
<td>644,000</td>
<td>2.99</td>
<td>258,000</td>
</tr>
</tbody>
</table>

Note: Mineral Resources which are not Ore Reserves do not have demonstrated economic viability. No Ore Reserves are defined at Penny’s Find. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. It is uncertain if further exploration will result in upgrading the Inferred Mineral Resource to an Indicated or Measured Mineral Resource and Indicated Mineral Resources to Measured Mineral Resources. Tonnage is reported in metric tonnes (t) and rounded to the nearest 1,000 t. Grade as grammes per tonne gold (g/t Au) and rounded to the nearest 0.1 g/t Au. Contained gold in troy ounces (oz Au) and rounded to the nearest 100 oz Au. Brimstone is 100% held by LionGold, Brimstone owns 40% of Penny’s Find, thus the net attributable to LionGold is 40%.

1.6 Economic Analysis

There is no operating mine and so financial analysis is not appropriate.

1.7 Risk Assessment

The current Mineral Resource estimate is considered to have an overall risk rating of “medium”. Most of the issues can be improved through additional drilling, metallurgical test work, improved data management practices and adequate QAQC controls.

The metallurgical test work to date is considered to carry a “medium” risk as only two relatively small samples with very high gold grade have been tested. The high grade of these samples is not representative of the typical Penny’s Find mineralisation.

The lack of a robust drillhole database with adequate data validation protocols results in the drillhole database integrity carrying a “medium” risk. Currently all of the drillhole data is stored in numerous spreadsheets, which lack validation protocols.

The quality of the 2012-2013 assaying is compromised due to the presence of a bias in the standard assays, which suggests the primary laboratory may be overestimating the gold content of the samples. For this reason, the QAQC carries a “medium” risk. The impact of the potential bias on the Mineral Resource estimate has not been assessed.

1.8 Conclusions

The Penny’s Find gold deposit forms part of the Golden Feather project, which is located approximately 50 km northeast of Kalgoorlie in Western Australia. The tenements containing the Penny’s Find project are part of a JV between Brimstone (40%) and Empire (60%).

The gold mineralisation at Penny’s Find is associated with quartz-carbonate veining and alteration within a northwest striking shear zone. The mineralisation, which outcrops, dips steeply to the northeast and occurs over a strike length of some 500 m and is up to 9 m wide in places. Drilling has defined the mineralisation down to a vertical depth of approximately 300 m below surface.

There is one main mineralised shear zone that hosts the majority of the gold at Penny’s Find, with a number of minor mineralised shears present in the footwall and hangingwall of the main shear zone. The drilling has allowed a Mineral Resource to be estimated (Table 1.1) which has been classified as a combination of Indicated and Inferred Resources based on the guidelines of the 2012 JORC Code. The resource is deemed by the Competent Person to have reasonable prospects for eventual economic extraction via open-pit mining methods, however, a scoping study is required to review extraction options.
1.9 Recommendations

Key recommendations for Brimstone are:

- Given the issues with the standards in the 2012-2013 drilling, Brimstone should initially confirm the observed bias through further assaying of standard samples and pulp duplicates, using both SGS and an umpire laboratory. If confirmed, and if possible, re-assaying the sample pulps may be required.
- Compile a robust database of the current drilling and sampling data with appropriate database validation procedures.
- Twin some RC holes with diamond core drilling to validate the RC drilling. Additionally some of the historical, pre-2007, drilling could be twinned to validate the historical data with the aim of utilising this data in future resource updates.
- Additional drilling is required to update the Inferred portions of the resource to Indicated Mineral Resources.
- Further bulk density test work, especially on oxidized material.
- Undertake a scoping study to review production options for the Penny’s Find project.
- Further metallurgical test work on representative samples of the mineralisation is required.
2 INTRODUCTION

2.1 Aim and Scope of Report

LionGold Corporation Ltd ("LionGold") subsidiary Brimstone Resources Ltd ("Brimstone") commissioned Snowden Mining Industry Consultants Ltd ("Snowden") to compile a Qualified Persons Report ("QPR") for Mineral Resources at the Penny's Find project, which is part of the Golden Feather project, located approximately 50 km to the east of Kalgoorlie in Western Australia.

2.2 Use of Report

The Penny's Find Mineral Resource will be publically reported by LionGold to the Singapore Exchange (SGX).

2.3 Reporting Standard

The Mineral Resource has been reported in accordance with The JORC Code 2012 (JORC, 2012).

The SGX Mainboard rules require that a QPR be prepared in accordance with one of three allowable international public reporting standards. For this report, Snowden has adopted The JORC Code 2012 as the reporting standard. The JORC Code requires that a public report concerning a company's exploration targets, exploration results, Mineral Resources, or Ore Reserves must be based on, and fairly reflect, the information and supporting documentation prepared by a Competent Person ("CP"), as defined by the JORC Code. SGX Mainboard rules use the term qualified person, and provide a definition which is effectively equivalent to a Competent Person. In this report, whenever reference is made to a Competent Person as per the JORC Code, it is equivalent to a qualified person as per SGX Mainboard rules.

2.4 Report Authors and Contributors

Authors and contributors to this QPR are listed in Table 2.1.

Table 2.1 Persons who contributed to this QPR

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Employer</th>
<th>Independent of LionGold</th>
<th>Date of site visit</th>
<th>Professional designation</th>
<th>Contribution to QPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Simon Dominy</td>
<td>Executive Consultant</td>
<td>Snowden</td>
<td>Yes</td>
<td>No</td>
<td>FAusIMM(CP), FAIG(RPGeo), FGS(CG eo)</td>
<td>All Sections. Competent Person.</td>
</tr>
<tr>
<td>Mr John Graindorge</td>
<td>Principal Consultant</td>
<td>Snowden</td>
<td>Yes</td>
<td>No</td>
<td>MAusIMM(CP)</td>
<td>Reviewed the resource estimate under the supervision of the Competent Person.</td>
</tr>
<tr>
<td>Mr Terry Parker</td>
<td>Principal Consultant</td>
<td>Snowden</td>
<td>Yes</td>
<td>March 2013</td>
<td>FAusIMM(CP)</td>
<td>Undertook a site visit on behalf of Snowden.</td>
</tr>
<tr>
<td>Peter Ball</td>
<td>Consultant Geologist</td>
<td>DataGeo</td>
<td>Yes</td>
<td>March 2014</td>
<td>MAusIMM</td>
<td>Prepared the estimate.</td>
</tr>
<tr>
<td>Peter Spitalny</td>
<td>Geologist acting for Brimstone</td>
<td>Hanree</td>
<td>Yes</td>
<td>Numerous since June 2013</td>
<td>MAusIMM</td>
<td>Compilation of data for Snowden and DataGeo.</td>
</tr>
</tbody>
</table>

2.5 Qualified Persons Statement

The Competent Person responsible for preparation of this QPR is:

- Dr Simon C Dominy - Executive Consultant with Snowden UK

Dr Dominy has not visited the Penny's Find project. Mr Terry Parker of Snowden undertook a site visit during March 2013 as part of a property valuation for LionGold. Mr Parker verified the location of the tenements,
geology and evidence of drilling. There are no substantial changes between March 203 and the date of this report.

Dr Dominy is independent of LionGold and Brimstone.

Dr Dominy takes responsibility as a CP for all sections of this QPR.

Reliance on the QPR may only be assessed and placed after due consideration of Snowden’s scope of work. The QPR is intended to be read as a whole, and sections or parts thereof should therefore not be read or relied upon out of context. Unless otherwise stated, information and data contained in this QPR or used in its preparation was provided to Snowden by Brimstone.

The effective date of this QPR is 31st March 2014.

2.6 Basis of the Report

Unless otherwise stated, information and data contained in this report or used in its preparation was provided by Brimstone.
3 PROJECT DESCRIPTION

3.1 Project Overview

The Golden Feather project is owned and managed by Brimstone, a subsidiary of LionGold, and comprises three components which are subject to different ownership. The Penny’s Find project is a Joint Venture (“JV”) between Empire Resources Ltd (“Empire”) and Brimstone. The Mt McLeay project also forms part of the Golden Feather project and is a JV between Brimstone and Rubicon Resources Ltd (“Rubicon”). Additionally, the Penny’s Lake West project, which is held entirely by Brimstone, is also part of the Golden Feather project. The tenements of the Golden Feather project surround the Penny’s Find gold deposit, which is located about 50 km northeast of Kalgoorlie, in the Eastern Goldfields region of Western Australia (Figure 3.1).

Figure 3.1 Penny’s Find project location plan

![Map of Penny's Find project location](image)

3.2 Tenure

Current tenement tenure details are provided in Table 3.1 and a map of the tenements is presented in Figures 3.1 and 3.2.
Table 3.1  Tenement tenure details

<table>
<thead>
<tr>
<th>Asset name/ Country</th>
<th>Issuer’s interest (%)</th>
<th>Development Status</th>
<th>License expiry date</th>
<th>License Area (ha)</th>
<th>Type of mineral, oil or gas deposit</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
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<td>E27/452, Western Australia</td>
<td>100</td>
<td>Exploration</td>
<td>17/08/2016</td>
<td>864</td>
<td>Gold</td>
<td>Penny Lake West project</td>
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<tr>
<td>P27/1711, Western Australia</td>
<td>51</td>
<td>Exploration</td>
<td>29/12/2014</td>
<td>29</td>
<td>Gold</td>
<td>Mt McLeay project</td>
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<tr>
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<td>51</td>
<td>Exploration</td>
<td>27/05/2016</td>
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<td>Gold</td>
<td>Mt McLeay project</td>
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<td>P27/1749, Western Australia</td>
<td>51</td>
<td>Exploration</td>
<td>27/05/2016</td>
<td>187</td>
<td>Gold</td>
<td>Mt McLeay project</td>
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<td>28/10/2017</td>
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<td>40</td>
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<td>28/06/2014</td>
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<td>Gold</td>
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<td>9/04/2016</td>
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<td>40</td>
<td>Exploration</td>
<td>9/04/2016</td>
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<td>Gold</td>
<td>Penny’s Find project</td>
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<td>Exploration</td>
<td>9/04/2016</td>
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<td>Gold</td>
<td>Penny’s Find project</td>
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<td>P27/1719, Western Australia</td>
<td>40</td>
<td>Exploration</td>
<td>9/04/2016</td>
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<td>Exploration</td>
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3.3  Tenure Conditions

The Penny’s Find project (Golden Feather) comprises 36 mineral tenements (59 km²) with 28 (43.3 km²) within the Penny’s Find Agreement including the Penny’s Find Mining Lease M27/156, 7 within the Mt McLeay JV (7.4 km²) and one fully-owned. The Mining Lease M27/156 was granted in 1991 and is validated as a “past act” under the Native Title Act and as such native title is suppressed to the extent of any inconsistency with the interests granted by the mining lease so long as the mining lease is in force.

Brimstone holds 100% of one 8.6 km² Exploration License E27/452 “Penny’s Lake” south west of the Penny’s Find Mining Lease and has agreements with Empire Resources Limited (Empire) and Rubicon Resources Limited (Rubicon) over adjacent tenements.
Penny's Find Agreement

In September 2010, unlisted Brimstone entered into a staged sale agreement with Empire to undertake exploration on and around the Penny's Find Gold deposit. Updated terms for this agreement were announced to the Australian Securities Exchange (ASX) on 7th February 2012. Brimstone has earned a majority interest in the Penny's Find Agreement and has complied with the expenditure requirements to earn 51%. On 13th March 2013 Brimstone advised Empire that Brimstone would not be proceeding to the next stage of expenditure to earn 75% and made steps to establish an exploration joint venture, according to the Agreement, and to bring the Penny's Find deposit into production. Discussions with Empire continue regarding the increase in Brimstone’s equity from 40% to 51% and the establishment of an exploration joint venture over the Empire tenements.

Mt McLeay JV

Brimstone has a 51% interest, and may earn up to 70%, in the Mt McLeay JV with Rubicon Resources Limited. Brimstone acquired this interest when Empire assigned their rights in the joint venture at the same time as the Penny's Find JV.

3.4 Access

Access to Penny's Find (and the entire Golden Feather project) from Kalgoorlie is via the sealed road to Kanowna (20 km) and then approximately 30 km along the unsealed Kurnalpi-Pinjin road which passes through the southern end of the project (Figure 3.2). An alternative, but longer, route is from Kalgoorlie via the Bulong Road, which is sealed for about half the distance to Penny's Find. Localised infrequent heavy rainfall can cause unsealed roads to be temporarily impassable.

3.5 Climate

The Penny's Find project is located in the Eastern Goldfields region of Western Australia and experiences a semi-arid climate in which rainfall is light and unreliable. The average annual rainfall at Kalgoorlie, about 50
km to the southwest, is 224 mm. Rainfall is more frequent during the months of May, June, July and August (i.e. mostly during winter) but seldom prolonged or heavy. The summer months are typically very dry but thunderstorms may result in localised heavy rain. Daytime temperatures during winter are mild however during the night temperatures can drop below 0°C. Daytime temperatures during the height of summer usually exceed 35°C and the nights are mild to warm with low humidity.

Exploration and mining in the region is able to be completed throughout all months of the year with the only impediment being the condition of unsealed gravel roads following the rare periods of isolated heavy rainfall.

3.6 Landforms and Soils

The area around and containing the Penny's Find project has a subdued topography. There are large areas of low-lying flat ground covered with red-brown loamy or clay soils. These low-lying areas are essentially broad flat valleys. Flanking these low lying areas are low hills typically not rising to more than 15 m above the valley floors and generally having gradual slopes. Some hills have steeper eroded scarps. Soils flanking the hills and on the hill slopes are colluvial loams with a high proportion of surficial lag, comprised of silicified and ferruginised saprolite or saprock. Soils on some hills are identical to those colluvial soils but there are remnants of a once regionally extensive lateritic duricrust preserved on some hills. These hills have ferruginous loamy soils with a high content of lateritic gravel. Pedogenic calcrete, forming continuous sheets half a metre thick or as discontinuous zones containing variable amounts and sizes of nodules, is common on hills and slopes.

3.7 Fauna and Flora

The natural fauna of the region comprise emus, kangaroos, a variety of reptiles and several species of parrots and birds of prey. The area is part of a pastoral station (Hampton Hill Station) that stocks sheep, however the numbers of sheep are greatly reduced due to heavy predation by wild dogs, which are numerous and have also reduced numbers of emus and kangaroos.

The natural fauna is part of the Eremaean Botanical Province, which is comprised of plants adapted to survive in an arid climate. The aridity of the climate of the region is greater than the vegetation cover would suggest, with large eucalypts forming an extensive open-woodland. The woodland is most abundant upon areas of deeper soils. Vegetation on hills is usually stunted and scrubby. Low lying areas subject to inundation following the infrequent heavy falls of rain are prone to water-logging and covered with a low, open scrub dominated by saltbush species.

3.8 Hydrology

The project area is north of, but close to the Roe Palaeodrainage. This palaeodrainage was active during the late Mesozoic to early Cenozoic eras and is in-filled with sediment. Its surface expression is a broad flat plain subject to inundation and containing the saline playa known as Lake Penny.

All current drainage in the area is ephemeral but during the brief periods following rare heavy rain, flow into Lake Penny. This brief surface flow is of freshwater, some of which is trapped by dams used to water stock.

All subsurface water in the region is saline to hypersaline.

3.9 Cultural Environment

The project area is subject to Native Title Agreements with the aboriginal group claiming traditional ownership of the land. This aboriginal group is referred to as the Central Land East Claim Group and they are represented by the Goldfields Land and Sea Council Aboriginal Corporation. Regional Standard Heritage Agreements and Tenement Specific Heritage Agreements for all tenements of the project area have been in place throughout the life of the tenements.

The project area is within Hampton Hill Station, which is primarily stocked with sheep. An effective working relationship exists between Brimstone and the station owners, with any required earthworks being performed by personnel of the station.
4 HISTORY

The project area is part of Western Australia’s Eastern Goldfields region, which contains the world-class Golden Mile Gold Deposit at Kalgoorlie-Boulder. Gold was originally discovered at Kalgoorlie in 1893 and led to a major gold-rush in the area.

4.1 Exploration

Gold was originally found at the Golden Feather project area in about 1895, as prospectors moved further away from the finds of Kalgoorlie and Kanowna in search of new gold deposits. There were discoveries of gold mineralisation at Penny’s Find, Garibaldi and at Brandy Find within the Golden Feather project.

Modern exploration of the region commenced in the late 1960s with base metal exploration by Australian Hanna Ltd (“Hanna”) followed by gold exploration from 1983 by companies including City Resources Ltd (“City Resources”), Esso Exploration Aust. Ltd (“Esso”), Black Swan Gold Mines Ltd (“Black Swan”), Defiance Mining NL (“Defiance”), Geopeko, Croesus Mining NL (“Croesus”), Cocks Mining NL (“Cocks Mining”), Hunter Exploration NL (“Hunter”), Heron Exploration NL (“Heron”), Rubystar Nominees Pty Ltd (“Rubystar”), White Gold Mining Ltd (which changed its name to Empire Resources Ltd (“Empire”) in November 2005) and Rubicon Resources Ltd. (“Rubicon”).

4.1.1 Historical

Penny’s Find project

Work by Hanna from 1968 to 1973 primarily targeted VMS style base metal mineralisation within the metasedimentary units of the Penny’s Find area, which are northwest of the current project area. Modern dedicated gold exploration work commenced in 1983 with a JV between City Resources and Esso which resulted in the implementation of a programme that included geological mapping, rock chip sampling, soil sampling, rotary air blast (“RAB”) drilling and reverse circulation (“RC”) drilling. This exploration programme was implemented over a broad area that includes the ground presently held as the Penny’s Find project and Mt McLeay project. Soil sample results highlighted the known mineralisation at the historic Penny’s Find workings, and also outlined numerous other areas of gold anomalism within the current project area.

Between 1987 and 1990 Black Swan and Defiance completed a more detailed surface geochemical sampling programme over the immediate vicinity of the historic Penny’s Find workings in an effort to locate extensions of the known mineralisation. From 1991 to 1994, Croesus carried out further gold exploration work at the site of the historic Penny’s Find workings, with activities including soil sampling and some additional RC drilling.

From 1996 to 2000, Cocks Mining and Hunter carried out gold exploration in the Penny’s Find area, comprising geological mapping and soil sampling, along with RAB and RC drilling (Doepel, 1998; Baxter, 2000). The soil sampling and RAB drilling outlined strike extensions to the mineralisation some 200 m south of the existing workings while RC drilling confirmed the continuity of the mineralisation at depth.

Between 2000 and 2006 Rubystar and White Gold carried out some limited soil sampling and RAB drilling on the project and Rubystar also completed an early resource estimate for the Penny’s Find deposit. By the time Empire began exploring the tenement, 49 holes had been drilled. During 2007 and 2008 Empire completed 7,249 m of RC drilling, 1,259 m of diamond core drilling and 5,867 m of RAB drilling on the Penny’s Find project (Ross, 2008). Much of this was completed at the Penny’s Find gold deposit and led to a resource estimate, prepared by DataGeo (DataGeo, 2007), for the Penny’s Find. Following this, Empire investigated the metallurgical characteristics of the mineralisation (AMMTEC, 2007) and a series of studies to design a mine to extract the Penny’s Find resource (Croeser, 2009). Empire also completed RAB drilling and air-core drilling within the broader project area in 2008 and 2009, along with some further RC drilling in 2010.

Mt McLeay project

Exploration within the tenements comprising the Mt McLeay project was partly achieved during the same times and by many of the same companies that explored the tenements of the Penny’s Find project, although the primary focus of most of the exploration to date was associated with the Penny’s Find. Heron completed soil sampling, RAB, air-core and RC drilling campaigns, mostly in the ground covered by the present tenements P27/1749 and P27/1979 (both part of the Mt McLeay project), between 1995 and 2007. This
resulted in the discovery of a mineralised zone west of the Garibaldi workings, informally referred to as the Garibaldi West prospect. It also resulted in the discovery of gold mineralisation north and south of the Brandy Find workings. At the time, the holder of the tenement containing the Brandy Find prospect did not grant access to the tenement, with the result that this prospect has never been drilled. Rubicon acquired the tenements in 2007 and formed a JV with Empire in 2008. Empire completed a RAB/air-core drilling campaign within the Mt McLeay project Tenements in 2009 and drilled three RC holes in the project area in 2010.

**Penny’s Lake West project**

The most significant previous exploration of the ground presently held by Brimstone as E27/452 (the Penny’s Lake West project) prior to Brimstone’s work, was by BHP Minerals Ltd (BHP) in the 1980’s. From 1983 to 1987, BHP held Exploration Licence E27/9, which covered an area of 127km² and followed the Roe Paleochannel, covering a broadly east west zone commencing about 14 km west of Penny’s Lake and extending about 12 km past Lake Penny towards the east. BHP used geophysical surveys to define the channel centre and edges. BHP drilled a series of mostly RC holes in traverses across the channel feature, drilling through to the basement but primarily targeting the sediments of the palaeochannel (Winer, 1986).

4.1.2 Exploration by Brimstone

Brimstone commenced on-ground exploration of the area in 2011, with initial work comprising regional soil sampling surveys, covering the entire Golden Feather project, to define drill-targets peripheral to the Penny’s Find Gold Deposit and to assist target definition in the Garibaldi and Brandy Find prospects.

Brimstone completed two drilling campaigns in 2012, focussed upon the main zone of mineralisation at Penny’s Find. Drill-holes were planned to provide in-fill coverage of Empire’s drilling and to test mineralisation down-dip of intersections achieved by Empire’s drilling. A total of 3,241 m, comprised of 26 holes, were drilled by RC method. A total of 198.5 m of diamond drilling was also completed as a brief campaign immediately after the RC drilling, with diamond tails drilled off of existing RC hole.

Exploration by Brimstone in 2013 focussed upon fieldwork to evaluate the soil sampling results and mapping to assist interpretation of controls on the gold mineralisation and thus define and prioritise drilling-targets. This work was completed over most of the Golden Feather project area (Spitalny 2013a, 2013b, 2014a 2014b). A total of 85 rock-chip samples were collected during the mapping campaigns to identify mineralised zones and identify possible sources of soil geochemical anomalies.

4.2 Mining

No modern mining has taken place within the project area. Several shallow historical workings exist, including the Penny’s Find workings, which occur within the Penny’s Find project, and the Garibaldi and Brandy Find workings, which are both within the Mt McLeay project. Activity at these workings is believed to have ceased around 1900 and have a maximum depth of 18 m.

4.2.1 Production Statistics

Due to the age of the historical workings there are no documented records of gold production.
5 GEOLOGICAL SETTING
The Golden Feather project is contained within the Yilgarn Craton of Western Australia, which comprises rocks of Archaen age.

5.1 Regional Geological Setting
The Golden Feather project is situated within the Gindalbie Domain of the Kurnalpi Terrane (Figure 5.1), which is part of the Eastern Goldfields Superterrane of the Archaean Yilgarn Craton. The western boundary of the Kurnalpi Terrane is the Mt Monger Fault.

The Gindalbie Domain is comprised of a layered sequence of supracrustal rocks that have been deformed, metamorphosed and intruded by granitic rocks. The sequence comprises three main units. The basal unit consists of a tholeitic suite of basalt, komatite and calc-alkaline volcanic rocks and is the same basal unit that occurs in the adjacent Kurnalpi Domain (Dickens et al., 2006). This unit is unconformably overlain by a bimodal suite of mafic and felsic volcanic rocks (with sub-aqueous volcanogenic sandstone), referred to as the Gindalbie Volcanics (Barley et al., 2008). Both the basal suite and the Gindalbie Volcanics have been intruded by mafic to intermediate sills and dykes that are comagmatic with the Gindalbie Volcanics. The uppermost unit is separated from the underlying Gindalbie Volcanics by an unconformity and consists of (mostly) coarse clastic sedimentary rocks, which have been named the Penny Dam Conglomerate, after the outcrop at Penny Dam. The Penny Dam Conglomerate is described as occurring east of, and terminating against, the Emu Fault (Hall, 2007).

Deformation has occurred during several events and has resulted in complex re-folding of earlier folds and extensive shearing and faulting at local and regional scales. Gold mineralisation formed during a late deformational event but has been affected by deformation that post-dated gold mineralisation.

A major regional structure, arguably the most important with regards to gold mineralisation of the Penny’s Find project, is the Emu Fault. This is a major regional shear zone that extends about 200 km northwards to the Leonora region, where it merges with the Keith-Kilkenny Fault. The Emu Fault has a generally north-south trend and underlies several tenements (P27/1721, P27/1962, P27/2008, P27/1726, P27/1729 and P27/1922) in the eastern part of the project area. The Penny Dam Conglomerate does not occur west of the Emu Fault.
A lateritic weathering profile is well-developed throughout the region but is extensively eroded. Residual lateritic duricrusts are generally only preserved on the highest ground but the existence of some duricrusts at lower elevations suggests that the lateritic duricrusts formed upon an undulating surface or that there has been more than one episode of laterisation.

### 5.2 Local Geological Setting

The Golden Feather project area is dominated by a sequence of interbedded mafic, mafic volcanic and felsic rocks of approximately equal abundance, which have been metamorphosed to greenschist facies. The mafic units outcrop as rounded hills, often with large exposures of rock, while the felsic rocks tend to be more weathered and are consequently poorly exposed. A plan of the area showing the interpreted bedrock geology is presented in Figure 5.2.

The mafic rocks primarily comprise basaltic volcanic rocks along with some dolerite. The felsic rocks are typically interlayered and include volcanic, volcanioclastic and sedimentary rocks, including chert. The felsic association comprise several varieties of siliceous rocks including massive fine-grained equigranular siliceous rocks; fine-grained to aphanitic siliceous flow-banded cherty rocks; lapilli-tuff; agglomerate; shale and chert. The shale and chert units are quite distinctive and were used as marker units during mapping of the project area.

Structural observations suggest the presence of large scale folding within the broader project region and small scale folds have been observed during mapping. The broad regional distribution of rocks shown in Figure 5.2, forms patterns suggestive of multiple deformation events. The dominant trend of fold-axes is north-south but changes in orientation of the fold-axes suggest that another set of fold-axes trend approximately east-west. It is unclear which set of folds formed first.

Numerous northwest or north striking, discreet shears are observable in outcrops and have been interpreted to have a sinistral sense of displacement. These shear zones may host gold mineralisation and observations
at the Old Camp prospect in P27/2006 (Mt McLeay project) indicate that shearing was synchronous with emplacement of mineralised quartz veins. The shear zones appear to post-date the folding with the northerly and north-westerly trending shear zones interpreted to be the oldest. These shear zones or faults include the Emu Fault and the Penny’s Find Shear Zone which is interpreted to be a splay off the Emu Fault. It appears that the majority of the gold mineralisation in the project area is related to faults or shear zones of this group.

A set of faults trending approximately west-northwest has also been identified, cross-cutting the northerly shear zones, however, the exact nature of these faults is unclear and they are thought to be steeply dipping dip-slip faults. The youngest set of shear zones or faults, which are interpreted to be steeply dipping and to cross-cut the mineralisation at Penny’s Find, trend west-southwest and cross-cut all other shear zones or faults.

Quartz veins, some of which are contained within faults or shear zones, appear to be common within the Golden Feather project and are present as small linear rubbly outcrops or areas of coarse quartz-rich colluvium. Three distinct types of quartz veins occur; massive “bucky” quartz veins, laminated quartz veins and quartz breccia veins. The laminated quartz veins are associated with shear zones and have a clear association with gold mineralisation in the region.

5.2.1 Weathering

Within the project area, most of the originally extensive lateritic duricrust has been eroded. Depth to fresh-rock is variable and exceeds 80 m in some areas.

All the soils within the project have developed upon an undulating landscape subjected to lateritic weathering. Areas of relict lateritic duricrust are not common and are mostly located on high ground (e.g. parts of E27/410, E27/420 and P27/1723) although it also occurs on a low ridge, south of Penny’s Find. Within the tenements, soils developed within an erosional regime dominate and there appears to be two distinct palaeosurfaces. The older palaeosurface is undulating and elevated and resulted from erosion of the lateritic weathering profile to remove the duricrust and expose ferruginous or mottled zones of the upper saprolith. Soils developed on this surface often have a sub-surface hardpan comprising laminar or nodular pedogenic calcrete or a ferruginous hardpan or both. The soils in this setting are of variable depth and generally shallow, although in places, overlying clay-loam can be similar to underlying clay-rich saprolith. Ferruginous or calcareous hardpans are common in this setting.

The younger, more recent palaeosurface is flat, low-lying and crossed by braided streams and floodplains incised into sheetwash of varying depth. It overlies the middle part of the lateritic weathering profile, typically comprising pale, leached saprolite. Soil depth is variable and some soils, especially those within and flanking active drainage-channels, are composed of transported sediment. This recent palaeosurface is prone to flooding in the lower-lying areas and the soils remain damp for longer than those on the upper palaeosurface. Penny’s Find is located upon this more recent palaeosurface.
Figure 5.2  Interpreted geology of the Golden Feather project (Map 3 from Spitalny, 2014b)
5.3 Mineralisation

Gold mineralisation within the Golden Feather project, including Penny's Find, is interpreted to be shear-zone hosted, typical of the Eastern Goldfields Region around Kalgoorlie. The gold mineralisation at the Penny's Find deposit has received the most attention to date and as such there is a better understanding of the mineralisation at this site compared to other sites within the Golden Feather project.

The gold mineralisation is primarily associated with shear zones which are interpreted to be splays off the Emu Fault. In some places (e.g. Penny's Find), the mineralised shear zones are sub-parallel to the lithological contacts, however, at a larger scale the shear zones cross-cut the lithological units. Primary (i.e. fresh) mineralisation is generally hosted within quartz veins associated with sheared felsic volcanic and volcaniclastic rocks as well as sheared mafic volcanic rocks. Whilst mineralisation occurs in a variety of host-rocks, an association between the mineralised zones and graphic shale is common and observed throughout the region. The graphic shales are grey, with alternating dark graphite-rich and paler graphite-poor bands of varying thickness. These bands are strongly deformed proximal to the mineralised shear zone, resulting in tight small-scale folding, crenulation and fractures that are usually filled with veinlets of quartz and/or calcite.

Primary mineralisation at Penny's Find is contained within a shear zone informally referred to as the Penny's Find Shear Zone. Mineralisation has been intersected by drilling along an interval of about 500 m of the shear zone and remains open along strike to the north (Figure 5.3 and Figure 5.4). The best mineralisation occurs in a 230 m section of the shear zone that trends north-northwest, dips towards the east and is close to or at the contact between volcanic rocks (hangingwall) and shale (footwall). The mineralised zone averages about 9 m thick and contains a number of mineralised quartz veins individually up to 2 m thick.

The mineralisation is interpreted to have occurred late in the sequence of deformational events that affected the region. At Penny's Find the mineralisation is consistent with formation in a dilatational part of a shear zone, such as the Penny's Find Shear Zone. Dilation is associated with a bend of the shear zone (Figure 5.3 and Figure 5.4) which is largely controlled by the presence of a bulge of the mafic rocks, possibly caused by a cross-fold. This bulge is evident in plan-view (Figure 5.4) and cross-section (Figure 5.5 and Figure 5.6)

Within the dilatant zone, the shear zone has a thickness of 20 m or more and contains more than one auriferous quartz vein. Individual veins are up to 2 m thick, dip about 60° towards the northeast and are part of a stacked vein-set. North and south of the dilatant zone, the thickness of the shear zone decreases and the continuity and dip of the veins progressively changes, with veins becoming narrower, less frequent and dipping more steeply.

The section where primary mineralisation is best developed is open at depth and has a steep plunge towards the north (Figure 5.7). This shape of ore-shoot is typical of mineralisation that has formed in strike-slip shear zones. The intersections of highest grade define a high-grade core to the ore-shoot.

5.3.1 Alteration

Pervasive hydrothermal alteration is evident in mafic rocks at Penny's Find. The eroded collar of the main shaft of the historic workings at Penny's Find contains cuttings of rocks from the deepest drives. These fragments are primarily dark green chlorite-sericite-quartz schist with pseudomorphs of goethite-after-pyrite along with calcite and/or gypsum. The presence of chlorite, sericite, calcite and pyrite is suggestive of a propylitic alteration assemblage along with significant silicification.

5.3.2 Weathering and supergene alteration

Weathering of the near-surface mineralisation has resulted in zones of depletion along with supergene enrichment in the regolith. Secondary (supergene) gold mineralisation occurs in two distinct forms; steeply dipping and sub-horizontal.

The steeply-dipping supergene enrichment occurs as necks surrounding the mineralised shear zone, sometimes extending into the footwall, and includes broad intersections of high grades.

The sub-horizontal supergene gold mineralisation and drilling to-date suggests that it is confined to the hanging-wall and mostly in regolith overlying mafic rocks. The largest area is mostly north of the Kurnalpi-Pinjin Road and overlies the interpreted cross-fault shown in Figure 5.4. The thickness of this zone varies
from about 2 m to 13 m (Figure 5.5). Although a number of drill-holes have penetrated this zone and assays clearly indicate anomalous levels of gold, the grades show a high variability and there is significant uncertainty regarding the nature of this zone of supergene mineralisation at Penny’s Find.
Figure 5.3  Mineralisation and drilling at Penny’s Find (Map 4 from Spitalny, 2014b)
Figure 5.4 Interpreted geology at Penny’s Find (Map 5 from Spitalny, 2014b)
Figure 5.5 Cross-section 9510N (Penny’s Find local grid; left of image is southwest)
Figure 5.6 Cross-section 9535N (Penny’s Find local grid; left of image is southwest)
Figure 5.7  Long-section of Penny's Find Gold Mineralisation (from Spitalny, 2014b)
6 EXPLORATION ACTIVITIES

6.1 Exploration Overview

Exploration has been conducted sporadically at the Golden Feather project since the late 1960’s, with a number of different companies involved. Brimstone has digital or hard-copy records of most of the results of exploration completed in the Golden Feather project area, however, the earliest work predated the ready availability of hand-held GPS devices, with locations of data points based on various local-grids. For some of this data, such as the drilling completed by Esso, drill-hole (or other data) locations cannot be verified. Also, the locations recorded for Heron’s work in late 1990 and early 2000, are based on AMG coordinates and have not been re-surveyed as MGA (GDA 94 datum) coordinates.

6.2 Exploration Methods

Exploration methods used at the Golden Feather project, which contains the Penny’s Find project, includes:

- Diamond core drilling
- RC drilling
- RAB and air-core drilling
- Regional soil sampling and geological mapping
- Geophysical methods and remote sensing (regional)

6.2.1 Geological Mapping

Some localised, prospect-scale mapping was completed in the 1980’s at Penny’s Find and Brandy Find, with more mapping at Penny's Find in the late 1990’s. Brimstone completed a number of geological mapping campaigns in 2013 and 2014 (Spitalny 2013a, 2013b, 2014a, 2014b), which has assisted interpretation of the controls of gold mineralisation in the region.

6.2.2 Geophysics and Remote Sensing

In 2004, White Gold Mining obtained geophysical data and had it processed by Southern Geoscience Consultants Pty Ltd to produce a number of images from both aeromagnetic intensity data and radiometric data. The data was originally acquired by Fugro Airborne Surveys Pty Ltd during a fixed-wing airborne survey completed in 1989 (flight line spacing was 200m, flown at 60 m above the ground surface with flight lines oriented 090° to 270°). These images were used to interpret the regional geology, most recently by Brimstone in 2013 and 2014 (Spitalny 2013a, 2013b, 2014a and 2014b).

Additionally, Brimstone acquired 1:5000 scale orthophotos in 2012, covering the entire Golden Feather project, which were used to assist interpretation of the geomorphology of the project area.

6.2.3 Geochemistry

There have been several soil-sampling programmes completed over the area of the Golden Feather project during the project’s history. These surveys have primarily been used to define drilling targets. In 2011 and 2012 Brimstone completed soil-sampling surveys covering the entire Golden Feather project using Mobile Metal Ion (“MMI”) extraction techniques, with the samples being collected over several campaigns and using the same contractor for each campaign. Additionally, Brimstone completed two small soil sampling surveys in 2013, with samples assayed by conventional aqua regia digest. This was done in order to assist interpretation of the gold-in-soil anomalies defined by the MMI results which were inconclusive.

6.2.4 Drilling

Drilling at the Penny's Find project has been conducted using a variety of methods, including RAB, air-core, RC and diamond core methods. Few records exist of the earlier drilling, prior to 2007. The drilling campaigns are summarised in Table 6.1.
Table 6.1 Drilling campaigns at Penny’s Find (after DataGeo, 2014)

<table>
<thead>
<tr>
<th>Company</th>
<th>Date</th>
<th>Drilling method</th>
<th>Hole sequence</th>
<th>Number of holes</th>
<th>Drilled metres (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defiance</td>
<td>1986-1989</td>
<td>RC</td>
<td>PRC001 to 006</td>
<td>6</td>
<td>206.0</td>
</tr>
<tr>
<td>Black Swan</td>
<td>1989-1991</td>
<td>RAB</td>
<td>PRAB001 to 013</td>
<td>13</td>
<td>355.5</td>
</tr>
<tr>
<td>Black Swan</td>
<td>1989-1991</td>
<td>RC</td>
<td>PRC007 to 012</td>
<td>6</td>
<td>317.0</td>
</tr>
<tr>
<td>Croesus</td>
<td>1991-1994</td>
<td>RC</td>
<td>PRC013 to 023</td>
<td>11</td>
<td>490.5</td>
</tr>
<tr>
<td>Hunter</td>
<td>2000</td>
<td>RC</td>
<td>PRC024 to 027</td>
<td>4</td>
<td>360.0</td>
</tr>
<tr>
<td>Empire</td>
<td>2007</td>
<td>RC</td>
<td>PFR007-01 to 77</td>
<td>74</td>
<td>6,844.0</td>
</tr>
<tr>
<td>Empire</td>
<td>2007</td>
<td>DDH</td>
<td>PFD001 to 004</td>
<td>4</td>
<td>1,259.6</td>
</tr>
<tr>
<td>Brimstone</td>
<td>2012-2013</td>
<td>RC</td>
<td>RC2012-001 to 037</td>
<td>26</td>
<td>3,009.7</td>
</tr>
<tr>
<td>Brimstone</td>
<td>2013</td>
<td>DDH</td>
<td>RCD2012-028 &amp; 036</td>
<td>2</td>
<td>198.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>146</strong></td>
<td><strong>13,040.8</strong></td>
</tr>
</tbody>
</table>

Empire drilling (2007)

Empire completed 74 RC holes in 2007, which were drilled using a 135 mm hole diameter face-sampling hammer and bit. Additionally, Empire drilled four diamond core holes from surface. The diamond holes were drilled using a roller bit down to a depth of approximately 10 m to establish the collar and then HQ diamond core down to approximately 40 m downhole depth, followed by NQ diameter core to the end of the hole. The core recovery within the mineralised zone was greater than 97% (DataGeo, 2014).

All hole collars were surveyed by Empire, along with a contract surveyor, using differential GPS (“DGPS”). The contractor also measured the dip of the RC holes, and towards the latter part of the drilling also the azimuth. The diamond holes were surveyed downhole using a downhole camera, measuring both the dip and azimuth.

Brimstone drilling (2012-present)

Drilling by Brimstone was completed in 2012 and 2013 over two campaigns which were managed by BM Geological Services Pty Ltd (“BMGS”). The holes were drilled at steep angles (mostly 60°) towards the southwest and were focussed upon the main zone of mineralisation at Penny’s Find. Drill-holes were planned to provide in-fill coverage of Empire’s drilling and to test mineralisation down-dip of intersections achieved by Empire’s drilling.

A total of 26 RC holes (for 3,241 m) were drilled by Brimstone. The RC holes were drilled using a face-sampling hammer and bit with a hole diameter of 135 mm. After each metre, the drill rods were cleared of cuttings by blowing air down the hole via the outside return (i.e. between the rods and the drillhole wall) and the cyclone was scraped clean. Brimstone noted some wet RC samples due to ground water in-flow, however the wet samples were typically located within the hangingwall, above the mineralisation. Drill sample recovery was logged for each metre down-hole as being good, moderate or poor based on a visual assessment.

Two NQ diameter diamond core tails, totalling 198.5 m, were also drilled, averaging greater than 93% core recovery (DataGeo, 2014).

The collar location of all of the 2012-2013 drillholes, along with the four diamond holes drilled by Empire in 2007 and some of the 2007 RC holes, were surveyed by a contract surveyor using real-time kinematic GPS (“RTKGPS”). The surveying was completed based on the GDA94 Zone 51 grid datum. Downhole surveying was completed by the drilling contractor using a single-shot camera (measuring dip and azimuth), with the diamond core holes resurveyed using gyroscopic techniques.

6.2.5 Sampling

For the RC drilling (Brimstone and Empire), samples were collected from the cyclone using a rotary splitter, based on a 1 m sampling interval. Two samples, averaging approximately 2 kg to 3 kg each, were collected...
into separate calico bags for each metre. One sample was used as an “original” sample, with the other used as a duplicate sample. The bulk reject was placed into polythene bags.

Both the original and duplicate 1 m samples were assayed from the predicted zone of mineralisation. Composite samples were generated for intervals in the footwall and hangingwall of the predicted zones of mineralisation. The composite samples were created based on a 4 m composite interval, by spearing each of the four bulk rejects from the interval, producing a sample of approximately 2 kg to 3 kg. If the assay of the composite sample returned a grade greater than 0.1 g/t Au, the individual 1 m samples were submitted for assay.

The sampling interval for diamond core was based on the geological logging, with samples collected by cutting the core in half. Only the mineralised sections of the diamond core were sampled.

6.2.6 Sample Preparation and Chemical Analysis

Five laboratories have been used by Empire and Brimstone to assay drillhole samples from the Penny’s Find project, as follows (DataGeo, 2014):

- Genalysis Laboratory Services – Empire RC samples
- Kalassay laboratory (Kalgoorlie) – Empire RC samples
- ALS Chemex (Perth) – Empire RC samples and Brimstone umpire laboratory
- Ultra Trace (Perth) – Empire DDH samples
- SGS Australia (Perth) – Brimstone RC and DDH samples

The sample preparation scheme employed at each laboratory is broadly similar and for the RC samples comprises drying the sample in an oven and then pulverising the sample in its entirety to produce a pulp suitable for analysis. A 30-50 g sub-sample was then collected from the pulp using a riffle splitter (DataGeo, 2014). For the diamond core (half core), the sample was crushed prior to being pulverised.

All routine assaying of samples collected from RC and diamond core drilling, was done by lead collection fire assay, using a 30-50 g charge, with the gold content determined by either AAS (atomic absorption spectroscopy) or ICPOES (inductively coupled plasma optical emission spectroscopy).

6.2.7 Quality Assurance and Quality Control

There is no recorded information concerning quality control (“QC”) samples for drilling and sampling prior to 2007. It can be assumed that no QC was conducted prior to Empire’s work in 2007.

No QC samples were included in the sample batches submitted by Empire during the 2007 RC and diamond drilling campaigns. A limited amount of duplicate sampling was conducted by Empire after the drilling was complete, with a total of 27 duplicate samples collected (by riffle splitting from the bulk reject) from the mineralised zones in five RC drillholes. These samples were submitted to the ALS Chemex laboratory. The results indicate a reasonable agreement with the original samples (DataGeo, 2014).

Brimstone incorporated standards, duplicates and blanks into the sample batches for the RC and diamond drilling conducted in 2012-2013. The results were monitored by BMGS who were contracted by Brimstone to manage the drilling programmes. Three standards were used, sourced from Geostats Pty Ltd (“Geostats”) and ranging in expected value from 1.30 g/t Au up to 13.64 g/t Au, which were inserted into the sample stream at a rate of approximately one standard for every 20 to 25 samples. For mineralised intervals, duplicates of each individual 1 m RC interval were assayed.

6.2.8 Sample Security

There are no records on sample security with regard to historical, pre-Brimstone sampling. Snowden has no reason to question sample security.

On behalf of Brimstone, BMGS ensured that samples from the 2012-2013 drilling programmes were correctly sealed and labelled, and maintained secure custody of all samples leading up to and including submission of the samples to SGS in Perth, where the assays were performed.

6.3 QA/QC Results

Exploration completed at the Golden Feather project prior to Brimstone’s work in 2012-2013 did not incorporate QC strategies and hence the discussion that follows is limited to Brimstone’s results.
6.3.1 Blanks

Blanks were only submitted in the RC and diamond core sample batches and were not inserted into the sample stream of soil samples or rock-chip samples. Samples of un-mineralised crushed granite and un-mineralised crushed limestone were used as “blanks” and inserted into the sample sequence along with the individual one-metre samples and duplicates to detect any contamination between assays of consecutive samples. The insertion rate of blanks within the mineralised zones is better than 1:10.

A total of 140 blanks were assayed (Figure 6.1), of which 134 assayed at or below the level of detection (0.01 g/t Au). Of the six blanks that assayed higher than the detection limit, only one was higher than 0.10 g/t Au. This blank, which assayed 1.2 g/t Au, followed three reasonably high-grade samples with the sample immediately preceding the blank having a grade of 6.96 g/t Au.

Figure 6.1 Blanks control chart for 2012/13 Brimstone drilling (from DataGeo, 2014)

The results of the blanks samples indicates that very little contamination occurred during the laboratory sample preparation and assaying at the SGS laboratory in Kalgoorlie during 2012 and 2013.

6.3.2 Field Duplicates

A very limited number of field duplicates were collected during the soil sampling and rock chip sampling campaigns conducted by Brimstone. Due to the low number of field duplicate samples, no comment can be made with respect to the precision of the soil samples and rock chip samples.

During Brimstone’s RC drilling, two samples were collected into separate calico bags from the rotary splitter attached to the cyclone, for every metre. One of these bags was used as an “original” sample for the 1m interval, with the other used as a duplicate sample for the 1m interval. Within the mineralised zones, both the original and field duplicate were assayed for every metre. A total of 403 field duplicates were assayed, of which 148 returned grades at or near the detection limit for both the original and field duplicate. A scatterplot of the sample pairs with elevated gold grades is presented in Figure 6.2. The scatterplot suggests that there is a tendency for the field duplicate samples to return lower grades compared to the original sample, however, further analysis of the field duplicate results is required to confirm this apparent bias.
Figure 6.2  Scatterplot showing field duplicate results for 2012/13 Brimstone RC drilling (from DataGeo, 2014; low grade samples removed)

6.3.3 Standards

Standards were included in the RC and diamond core drilling programmes completed by Brimstone in 2012-2013. Three standards were used, G911-10, G999-4 and G903-7, all sourced from Geostats. No standards were included in the soil sampling and rock chip sampling batches. The standards, along with the results are summarised in Table 6.2. For the first drilling campaign, a single standard was used (G903-7) while for the second campaign there were two standards used (G911-10 and G999-4). Batches in which a standard sample assayed outside the acceptable range (defined as ±two standard deviations from the certified value) were re-assayed.

Table 6.2 Summary standard results from 2012-2013 Brimstone drilling (after DataGeo, 2014)

<table>
<thead>
<tr>
<th>Standard ID</th>
<th>Certified value (g/t Au)</th>
<th>Certified standard deviation</th>
<th>Number of assays</th>
<th>Mean (g/t Au)</th>
<th>Standard deviation</th>
<th>Number outside ±2 standard deviation limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>G911-10</td>
<td>1.30</td>
<td>0.05</td>
<td>53</td>
<td>1.41</td>
<td>0.09</td>
<td>27</td>
</tr>
<tr>
<td>G999-4</td>
<td>3.02</td>
<td>0.17</td>
<td>50</td>
<td>3.09</td>
<td>0.29</td>
<td>8</td>
</tr>
<tr>
<td>G903-7</td>
<td>13.64</td>
<td>0.42</td>
<td>7</td>
<td>13.81</td>
<td>0.25</td>
<td>-</td>
</tr>
</tbody>
</table>

Control charts for standards G911-10 and G999-4 are provided in Figure 6.3. While the results for standard G999-4 are reasonable, the control chart shows a clear bias in the results for standard G911-10, with the laboratory (SGS Perth) reporting higher grades than expected. To assess this bias, Brimstone submitted five samples of each standard (G911-10 and G999-4) to both SGS in Perth and ALS Chemex in Perth for analysis. The results are shown in Figure 6.4 and show that ALS Chemex report grades commensurate with
the expected value and consistently lower than SGS, which again reports above the expected grade, especially for G911-10. The comparison between the two laboratories, whilst limited in terms of the number of samples, suggests that SGS have overestimated the grade of samples from the 2012-2013 drilling campaigns (i.e. Brimstone drilling), although this needs to be confirmed by further testing. The impact of this bias on the Mineral Resource estimate has not been assessed at this stage.
Figure 6.3  Control charts for standards G911-10 (top) and G999-4 (bottom) for Brimstone 2012-2013 drilling (from DataGeo, 2014)
Figure 6.4  SGS vs ALS Chemex standard assays for G911-10 (top) and G999-4 (bottom) (after Spitalny, 2014b)
7 MINERAL PROCESSING AND METALLURGICAL TESTING

7.1 Overview
Preliminary metallurgical test work was completed by AMMTEC Ltd (“AMMTEC”) in July 2007, from high grade material sourced from RC drilling at the Penny’s Find project.

7.2 Metallurgical Test Work
Empire conducted preliminary metallurgical test work in 2007 to assess the metallurgical characteristics of the gold mineralisation at the Penny’s Find project. Two samples were prepared, one composed of oxidised mineralisation and the other composed of fresh mineralisation. The samples were sourced from RC drilling. The oxide sample was prepared by spearing each of the four individual 1 m bulk samples of the 48 m to 52 m interval from drillhole PFRC07-01, creating a 12 kg composite sample. The fresh sample was similarly prepared by spearing each of the three individual 1 m bulk samples of the 78 m to 81 m interval from drillhole PFRC07-15, creating a 12 kg composite sample.

Each sample was submitted to AMMTEC, where they were crushed to 100% passing 3 mm, homogenised and then split into sub-samples which were used in the subsequent tests. The tests conducted for each sample included a head grade analysis using screen fire assaying, a grind establishment test and a gravity-leach test (AMMTEC, 2007).

The head grade analysis is based on screen fire assaying, screened at 106 µm, and shows that both samples are very high grade, relative to the average grade of the Penny’s Find mineralisation, with the oxide sample returning a calculated head grade of 32.1 g/t Au and the fresh sample returning a calculated head grade of 43.2 g/t Au (AMMTEC, 2007). The screen fire assay results also show that a considerable amount of the gold is reporting to the coarse fraction, suggesting that some coarse gold may be present.

The grind establishment test assessed the time required to mill each sample to 80% passing 75 µm. For the both samples, this was achieved after approximately 12 minutes of grinding.

The gravity-leach test was conducted on approximately 3 kg which was split from each sample and milled to a nominal 80% passing 75 µm. A 3 inch Knelson concentrator was used to assess the gold recovered by gravity concentration, followed by cyanide leaching of the tails to estimate the total gold recovery. Results indicated that total gold recovery for both the oxide and fresh samples was excellent. For the oxide sample, 60.5% of the gold was recovered by gravity concentration followed by amalgamation, while for the fresh sample, 71.9% of the gold was recoverable by gravity concentration followed by amalgamation. Total recovery after eight hours of leaching in a 0.1% cyanide solution was 90% for the oxide sample and 96.1% for the fresh sample, with 99.7% and 98.6% total recovery after 48 hours leaching for the oxide and fresh samples respectively. The gravity-leach test results are summarised in Table 7.1.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Grind size (µm)</th>
<th>Gold extraction (%)</th>
<th>Leach residue (g/t Au)</th>
<th>Calc’d head Au (g/t)</th>
<th>Reagent consumption NaCN (kg/t)</th>
<th>Lime (kg/t)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gravity 2 hrs</td>
<td>4 hrs</td>
<td>8 hrs</td>
<td>24 hrs</td>
<td>48 hrs</td>
</tr>
<tr>
<td>Oxide</td>
<td>P&lt;sub&gt;80&lt;/sub&gt; 75</td>
<td>60.5</td>
<td>74.7</td>
<td>80.6</td>
<td>90.0</td>
<td>98.2</td>
</tr>
<tr>
<td>Fresh</td>
<td>P&lt;sub&gt;80&lt;/sub&gt; 75</td>
<td>71.9</td>
<td>94.2</td>
<td>95.8</td>
<td>96.1</td>
<td>97.2</td>
</tr>
</tbody>
</table>

Note: Gravity recovery includes gold extraction by intensive leach of the amalgam tails

7.3 Mineral Processing Design
No mineral process design has been conducted due to the early exploration stage of the project.
8 MINERAL RESOURCES

8.1 Summary of Mineral Resources

The Mineral Resource estimate for the Penny’s Find deposit was prepared by DataGeo in April 2014. The Penny’s Find Mineral Resource, as at 31 March 2014, reported above a 1 g/t Au cut-off grade, is presented in Table 8.1. The resource is restricted to less than 130 m below surface based on the assumption that the resource will be exploited by open-pit mining methods. The Mineral Resource has been classified and reported in accordance with the 2012 edition of the JORC Code.

Table 8.1 Penny’s Find Mineral Resource, reported above a 1 g/t Au cut-off grade and less than 130 m below surface, as of 31 March 2014

<table>
<thead>
<tr>
<th>Category (JORC)</th>
<th>Mineral type</th>
<th>Gross attributable to licence</th>
<th>Net attributable to issuer (40%)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tonnes (t)</td>
<td>Grade (g/t Au)</td>
<td>Tonnes (t)</td>
</tr>
<tr>
<td>Measured</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indicated</td>
<td>Gold</td>
<td>407,000</td>
<td>3.22</td>
<td>163,000</td>
</tr>
<tr>
<td>Inferred</td>
<td>Gold</td>
<td>237,000</td>
<td>2.60</td>
<td>95,000</td>
</tr>
<tr>
<td>Total</td>
<td>Gold</td>
<td>644,000</td>
<td>2.99</td>
<td>258,000</td>
</tr>
</tbody>
</table>

Note: Mineral Resources which are not Ore Reserves do not have demonstrated economic viability. No Ore Reserves are defined at Penny’s Find. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. It is uncertain if further exploration will result in upgrading the Inferred Mineral Resource to an Indicated or Measured Mineral Resource and Indicated Minerals Resources to Measured Mineral Resources. Tonnage is reported in metric tonnes (t) and rounded to the nearest 1,000 t. Grade as grammes per tonne gold (g/t Au) and rounded to the nearest 0.1 g/t Au. Contained gold in troy ounces (oz Au) and rounded to the nearest 100 oz Au. Brimstone is 40% held by LionGold, the net attributable to LionGold is 40%.

8.2 General Description of Mineral Resource Estimation Process

The Penny’s Find Deposit consists of gold in a sheared quartz host with the mineralisation, which outcrops in places, moderately to steeply dipping towards the east. The shear zone is of variable thickness (averaging between 5 m and 10 m), strikes for 500 m and occurs to a maximum depth of 280 m, as supported by current drilling. There is some evidence of supergene enrichment in the near surface weathered horizon. Minor old workings are in evidence consisting of three shafts (maximum depth 18 m) and numerous shallow trenches. A total of 104 RC and diamond drillholes, containing 11,312 m, was used for the resource estimate.

A sectional interpretation of the shear zone plus associated footwall and hangingwall zones was generated based on the drilling and the mapped position of the shear. The sections are spaced between 10 m and 20 m apart along strike. In addition a minor, flat-lying "supergene" enrichment zone was interpreted in the central and southern parts of the project occurring to the east of the Shear zone.

The geological interpretation was modelled as solids and a block model generated using a parent block size of 5 m x 5 m x 5 m (RL). Gold grades were estimated by ordinary kriging using the drillhole data, compositied to 1 m downhole intervals. Top-cutting, along with search restrictions (for high grade samples), was used to control the influence of extreme grades on the local block grade estimates. A top-cut of 25 g/t Au was used for the main shear zone. For the minor mineralised domains, grade was either estimated using inverse distance weighting (power parameter of three) or assigned based on the average grade of the composites. The block grade estimates were validated globally and locally against the input drillhole composite data.

The resource estimate was classified, based on the guidelines of the 2012 JORC Code, as a combination of Indicated and Inferred Resources. The classification was based on the geological confidence, drillhole data density, data quality and grade continuity.

8.3 Mineral Resource Estimate

8.3.1 Mineral Resource Input Data

The deposit has been drilled from surface using RAB, RC and diamond core drilling. Only the RC and diamond core drilling completed after 2007 was used for the grade estimation, with a total of 104 RC and diamond holes containing 11,312 m of drilling used.
The drillhole data is stored in a series of Microsoft Excel spreadsheets, which were compiled by DataGeo for use in the resource estimate. DataGeo combined the numerous spreadsheets into four files – one for collar information, one for downhole survey data, one for the geological logging and one for the assay data.

Due to the lack of a centralised drillhole database, DataGeo conducted a brief audit of the assay data contained in the compiled database against the original information which was available (including some hard copies of drillhole logs). Approximately 25% of the data relevant to the Penny’s Find resource area were checked. The review found no errors in the drillhole data.

Some minor adjustments were made to the elevation of some drillhole collars based on observations during a site visit conducted by DataGeo. In several instances there were differences recorded in the database of approximately 2 m in elevation between neighbouring holes (less than 4 m apart) which were not possible from observations if the field, given the flat nature of the terrane. A minor adjustment was made, typically of less than 2 m, to the elevation of 25 drillholes (DataGeo, 2014).

The data was converted to a local coordinate grid (“Penny’s Find local grid”), which is rotated by 40° compared to the GDA94 Zone 51 grid.

A wireframe surface of the topography was constructed using the drillhole collar points.

### 8.3.2 Geological Interpretation

The Penny’s Find deposit consists of a moderately to steeply easterly dipping, north-south striking quartz-carbonate shear zone which host the majority of the gold mineralisation. There is also evidence of some narrow, steeply east-dipping gold enriched footwall and hangingwall zones, along with flat-lying zones of supergene enrichment. The shear zone is mineralised over a strike length of approximately 500 m, down to a depth of 280 m and has a true width within the main shear zone averaging between 5 m and 10 m. The mineralised shear zone is offset in places due to faulting. Based on the current drillhole information, the mineralisation remains open at depth although the shear zone becomes narrower at depth.

The interpretation of the mineralisation and weathering surfaces was carried out on 10 m to 20m spaced sections along the strike of the deposit, with the mapped position of the shear zone used to control the upper location of the interpretation. The main shear zone, along with the minor mineralised zones, was modelled as wireframe solids, using a combination of the geological logging and gold grade (0.2 g/t Au threshold). The interpretation was broken into four fault blocks, based on faulting interpreted from geological mapping, with the fault blocks labelled from #1 to #4, where #1 is the southernmost block and 4 is the northernmost block.

The weathering profile was interpreted as wireframe surfaces representing the base of complete oxidation and top of fresh rock. The interpretation of the weathering surfaces was based primarily on the geological logging of the drillholes.

A plan view and long-section of the mineralisation interpretation are provided in Figure 8.1 and Figure 8.2.
Figure 8.1 Plan view (local grid) showing mineralisation interpretation (light brown = main shear zone; dark brown = supergene mineralisation; red/blue = minor mineralised zones)

Figure 8.2 Long-section (local grid) showing mineralisation interpretation (light brown = main shear zone; dark brown = supergene mineralisation; red/blue = minor mineralised zones)
8.3.3 Data Analysis and Geostatistics

Only assay data from RC and diamond core holes drilled by Empire and Brimstone (i.e. after 2007) were used in the grade estimation. The data was composited within the mineralisation wireframes using a 1 m downhole interval, which is the dominant sample length. A minimum composite length of 0.8 m was applied with 23 composites which were less than 0.8 m removed.

Summary statistics are presented in Table 8.2 for composites greater than 0.8 m. The statistics show that most domains have a positively skewed distribution with a high coefficient of variation (CV = standard deviation divided by the mean).

Table 8.2 Summary statistics for composites >0.8 m length

<table>
<thead>
<tr>
<th>Mineralised zone</th>
<th>Domain</th>
<th>Number of composites</th>
<th>Minimum (g/t Au)</th>
<th>Maximum (g/t Au)</th>
<th>Mean (g/t Au)</th>
<th>Standard deviation</th>
<th>Coefficient of variation (CV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main shear</td>
<td>s1</td>
<td>627</td>
<td>0.005</td>
<td>73.1</td>
<td>3.94</td>
<td>8.48</td>
<td>2.15</td>
</tr>
<tr>
<td>Main shear</td>
<td>s2</td>
<td>19</td>
<td>0.005</td>
<td>5.59</td>
<td>0.57</td>
<td>1.28</td>
<td>2.26</td>
</tr>
<tr>
<td>Main shear</td>
<td>s3</td>
<td>8</td>
<td>0.15</td>
<td>2.96</td>
<td>1.26</td>
<td>0.99</td>
<td>0.79</td>
</tr>
<tr>
<td>Main shear</td>
<td>s4</td>
<td>10</td>
<td>0.12</td>
<td>6.62</td>
<td>3.54</td>
<td>2.47</td>
<td>0.70</td>
</tr>
<tr>
<td>Minor</td>
<td>s1f</td>
<td>65</td>
<td>0.005</td>
<td>9.73</td>
<td>0.68</td>
<td>1.41</td>
<td>0.29</td>
</tr>
<tr>
<td>Minor</td>
<td>s1h</td>
<td>2</td>
<td>0.14</td>
<td>0.62</td>
<td>0.38</td>
<td>0.24</td>
<td>0.63</td>
</tr>
<tr>
<td>Minor</td>
<td>s2f</td>
<td>12</td>
<td>0.02</td>
<td>2.58</td>
<td>0.47</td>
<td>0.78</td>
<td>1.65</td>
</tr>
<tr>
<td>Minor</td>
<td>s2h</td>
<td>11</td>
<td>0.16</td>
<td>1.53</td>
<td>0.85</td>
<td>0.58</td>
<td>0.69</td>
</tr>
<tr>
<td>Minor</td>
<td>s3f</td>
<td>4</td>
<td>0.04</td>
<td>1.63</td>
<td>0.42</td>
<td>0.65</td>
<td>1.14</td>
</tr>
<tr>
<td>Minor</td>
<td>s3h</td>
<td>6</td>
<td>0.04</td>
<td>0.97</td>
<td>0.34</td>
<td>0.32</td>
<td>0.92</td>
</tr>
<tr>
<td>Minor</td>
<td>s4h</td>
<td>8</td>
<td>0.45</td>
<td>0.56</td>
<td>0.51</td>
<td>0.06</td>
<td>0.11</td>
</tr>
<tr>
<td>Supergene</td>
<td>super</td>
<td>204</td>
<td>0.01</td>
<td>14.1</td>
<td>0.70</td>
<td>1.43</td>
<td>2.06</td>
</tr>
</tbody>
</table>

Due to the skewed nature of the gold grade distributions, top-cuts were applied to the composites to reduce the impact of extreme values on the local grade estimation. A visual assessment of the high grades suggests that they are randomly distributed throughout the mineralisation (i.e. there are no discrete, continuous high grade zones). The top-cut values were selected after reviewing log-probability plots for each domain along with assessing the impact of the top-cut on the mean grade and CV statistics. The top-cuts are outlined in Table 8.3.

Table 8.3 Top-cut values applied to composites

<table>
<thead>
<tr>
<th>Mineralised zone</th>
<th>Domain</th>
<th>Top-cut value (g/t Au)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main shear</td>
<td>s1</td>
<td>25</td>
</tr>
<tr>
<td>Main shear</td>
<td>s2</td>
<td>3</td>
</tr>
<tr>
<td>Minor</td>
<td>s1f</td>
<td>3</td>
</tr>
<tr>
<td>Supergene</td>
<td>super</td>
<td>3</td>
</tr>
</tbody>
</table>

8.3.4 Domaining

Grade estimation was restricted within the domains defined by the solids interpreted for the main shear zone, the minor footwall and hangingwall shear zones, and the supergene zones. Hard domain boundaries were used for all domains. The weathering surfaces, whilst coded in the model, were not used in the grade estimation.
8.3.5 Variography

A moderate northerly plunge was interpreted from a visual inspection of the assay data within the main shear.

Due to the low number of samples within some domains, meaningful variograms were only able to be generated for the main shear zone. Traditional semi-variograms were modelled in the major, semi-major and minor directions, using a 1 m lag spacing. The variogram model was interpreted within the main shear zone as per Table 8.4, based on a spherical model.

Table 8.4 Variogram model summary for main shear zone

<table>
<thead>
<tr>
<th>Direction</th>
<th>Dip→dip direction</th>
<th>Nugget value</th>
<th>Range (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>50→015</td>
<td>55%</td>
<td>20-30</td>
</tr>
<tr>
<td>Semi-major</td>
<td>70→105</td>
<td>55%</td>
<td>15</td>
</tr>
<tr>
<td>Minor</td>
<td>Perpendicular to dip plane</td>
<td>55%</td>
<td>5-10</td>
</tr>
</tbody>
</table>

There was some evidence of a second structure with ranges approximately double those listed in Table 8.4 and so a double spherical model was fitted with sill increments of 35% and 10% of the total variability.

8.3.6 Estimation

The block model was constructed using a parent block size of 5 mE by 10 mN by 5 mRL, which was selected based on the dominant drillhole spacing and geometry of the mineralisation. Sub-blocking to half the parent block size was used to ensure reasonable volume definition. The volume defined by the block model for each domain was validated against the volume of the wireframe solids.

Gold grades were estimated into the parent blocks by either ordinary kriging or inverse distance weighting (power parameter set to three), depending primarily on the number of samples. For domains with less than 10 samples, a default grade was applied based on the mean of the composites within the domain. The estimation parameters are summarised in Table 8.5.

Table 8.5 Estimation parameters

<table>
<thead>
<tr>
<th>Zone</th>
<th>Domain</th>
<th>Estimation technique</th>
<th>Top-cut g/t Au</th>
<th>Primary search radius (m)</th>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Along strike</td>
<td>Down-dip</td>
</tr>
<tr>
<td>Main</td>
<td>s1</td>
<td>OK</td>
<td>25</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Main</td>
<td>s2</td>
<td>IDW</td>
<td>3</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Main</td>
<td>s3</td>
<td>Composite mean</td>
<td></td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Main</td>
<td>s4</td>
<td>IDW</td>
<td></td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Minor</td>
<td>s1f</td>
<td>IDW</td>
<td>3</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Minor</td>
<td>s1h</td>
<td>Composite mean</td>
<td></td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Minor</td>
<td>s2f</td>
<td>IDW</td>
<td></td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Minor</td>
<td>s2h</td>
<td>IDW</td>
<td></td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Minor</td>
<td>s3f</td>
<td>Composite mean</td>
<td></td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Minor</td>
<td>s3h</td>
<td>Composite mean</td>
<td></td>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>
A restrictive search was used to reduce the local impact of extreme grades. Composites that were top-cut were restricted to a search of 15 m along strike by 10 m down dip by 5 m across the dip plane. A minimum of five samples and a maximum of 20 samples were used for the initial search. A secondary search using double the initial search radius and with a minimum of three samples, was applied for those block not estimated in the initial search. The minimum number of samples was further reduced to one and the search radius doubled again for a tertiary search. Any blocks not estimated after the third search, were left unestimated. Block discretisation in the X, Y and Z directions was set at 2 by 4 by 2.

### Validation

The block grade estimates were validated by comparing the global average of the block grade estimates with the input composite data. The results (Table 8.6) show that for the main domain the block grade estimates are within 11% of the input composite data.

### Table 8.6 Global validation comparing block grade estimates against input composites

<table>
<thead>
<tr>
<th>Domain</th>
<th>Estimation method</th>
<th>Average grade (g/t Au)</th>
<th>Number of composites</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Block model</td>
<td>Uncut composites</td>
<td>Top-cut composites</td>
</tr>
<tr>
<td>s1</td>
<td>OK</td>
<td>3.02</td>
<td>3.94</td>
<td>3.40</td>
</tr>
<tr>
<td>s2</td>
<td>IDW</td>
<td>0.59</td>
<td>0.57</td>
<td>0.44</td>
</tr>
<tr>
<td>s4</td>
<td>IDW</td>
<td>3.68</td>
<td>3.54</td>
<td>-</td>
</tr>
<tr>
<td>s1f</td>
<td>IDW</td>
<td>0.58</td>
<td>0.68</td>
<td>0.54</td>
</tr>
<tr>
<td>s2f</td>
<td>IDW</td>
<td>0.42</td>
<td>0.47</td>
<td>-</td>
</tr>
<tr>
<td>s2h</td>
<td>IDW</td>
<td>0.98</td>
<td>0.85</td>
<td>-</td>
</tr>
<tr>
<td>super</td>
<td>IDW</td>
<td>0.51</td>
<td>0.7</td>
<td>0.56</td>
</tr>
</tbody>
</table>

OK = ordinary kriging; IDW = inverse distance weighting (power parameter of 3)

Additionally, moving window average plots were generated for the main domain (i.e. domain s1) to ensure that the model reflects the trends of the input composite data. The grade trend plots show that while smoothed the model does reflect the input composite data (Figure 8.3).
Figure 8.3  Grade trend plots for main shear zone domain (s1) in the along strike direction (top) and vertical direction (bottom) (from DataGeo, 2014)
8.3.8 Bulk density

The bulk density of a total of 158 samples of fresh rock was measured, from two diamond drillholes drilled by Brimstone (RCD2012-028 and RCD2012-036). The results are summarised in Table 8.7, however, the methodology is not recorded.

Table 8.7 Bulk density measurements (after Spitalny, 2014a)

<table>
<thead>
<tr>
<th>Hole number</th>
<th>Sample type</th>
<th>Description</th>
<th>Number of samples</th>
<th>Minimum t/m³</th>
<th>Maximum t/m³</th>
<th>Mean t/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCD2012-028</td>
<td>Whole core</td>
<td>Quartz vein (± calcite, black shale)</td>
<td>5</td>
<td>2.60</td>
<td>2.76</td>
<td>2.66</td>
</tr>
<tr>
<td>RCD2012-028</td>
<td>Whole core</td>
<td>Altered mafic</td>
<td>46</td>
<td>2.73</td>
<td>2.91</td>
<td>2.79</td>
</tr>
<tr>
<td>RCD2012-028</td>
<td>Whole core</td>
<td>Black shale (± quartz-calcite veinlets)</td>
<td>25</td>
<td>2.70</td>
<td>2.82</td>
<td>2.75</td>
</tr>
<tr>
<td>RCD2012-036</td>
<td>Half core</td>
<td>Quartz vein (± calcite, black shale)</td>
<td>9</td>
<td>2.59</td>
<td>2.78</td>
<td>2.67</td>
</tr>
<tr>
<td>RCD2012-036</td>
<td>Half core</td>
<td>Altered mafic</td>
<td>57</td>
<td>2.72</td>
<td>3.02</td>
<td>2.84</td>
</tr>
<tr>
<td>RCD2012-036</td>
<td>Half core</td>
<td>Black shale (± quartz-calcite veinlets)</td>
<td>16</td>
<td>2.62</td>
<td>2.94</td>
<td>2.76</td>
</tr>
</tbody>
</table>

Bulk density values for the fresh rock were applied to the resource block model based on the sample information in Table 8.7. For the oxide and transitional zones, default values were applied based on experience with similar deposits in the Kalgoorlie area. The values applied are summarised in Table 8.8.

Table 8.8 Bulk density values applied to resource block model

<table>
<thead>
<tr>
<th>Zone</th>
<th>Bulk density value applied to model t/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxide</td>
<td>2.00</td>
</tr>
<tr>
<td>Transitional</td>
<td>2.20</td>
</tr>
<tr>
<td>Fresh mineralisation</td>
<td>2.66</td>
</tr>
<tr>
<td>Fresh host rocks</td>
<td>2.80</td>
</tr>
</tbody>
</table>

8.3.9 Classification

The Mineral Resource has been classified in accordance with the 2012 JORC Code. The classification scheme is based on the geological confidence, grade continuity, search pass, number of composites, number of drillholes and quality of the input data. The resource was classified as a combination of Indicated and Inferred Resources (Figure 8.4), based on the following:

- Blocks within the main shear zone (domains s1 to s4) and the southernmost minor footwall mineralised zone (domain s1f) which were estimated using a minimum of 10 samples from at least two drillholes that were no more than an average of 50 m from the block, were identified. A wireframe was constructed to define this zone which was classified as Indicated Mineral Resources.
- All other blocks/domains, including the supergene mineralisation, were classified as Inferred Mineral Resources.
8.3.10 Reported Mineral Resources

The Penny's Find Mineral Resource has been reported above a 1 g/t Au cut-off grade, based on the assumption that the mineralisation would potentially be mined by open-cut methods and that the ore would likely be hauled off site for treatment. Additionally, only material above an elevation of 200 mRL (approximately 130 m below surface) is included in the reported Mineral resource, as this was deemed to be the likely limits of open-pit mining.

Reporting in accordance with The JORC Code (2012) requires the Competent Person (Qualified person in context of SGX reporting) to state that the Mineral Resources have "reasonable prospects for eventual economic extraction". Mineral Resources which are not Ore Reserves do not have demonstrated economic viability. No Ore Reserves are defined at and no economic studies have been completed as of 31st March 2014. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. It is uncertain if further exploration will result in upgrading the Mineral Resources to higher categories or Ore Reserves. The CPs believe that the Penny's Find resources have "reasonable prospects for eventual economic extraction" via open pit methods. The resources are reported to appropriate nominal cut-off grade, based on the CPs experience of other open pit operations in Western Australia.

The CPs believe the accuracy of the grade and tonnage estimate for Indicated Mineral Resources to be within ±20-30% globally based on general experience of this style of mineralisation. Similarly, the accuracy of the grade and tonnage estimate for the Inferred Mineral Resources is considered to be within ±50% globally based on general experience of this style of mineralisation.

The Penny's Find Mineral Resource, reported above a 1 g/t Au cut-off grade and above 200 mRL, is listed in Table 8.9.
Table 8.9  Penny’s Find Mineral Resource, reported above 1 g/t Au cut-off and above 200 mRL

<table>
<thead>
<tr>
<th>JORC classification</th>
<th>Tonnes (k)</th>
<th>Au (g/t)</th>
<th>Contained gold (troy oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicated</td>
<td>407,000</td>
<td>3.22</td>
<td>42,100</td>
</tr>
<tr>
<td>Inferred</td>
<td>237,000</td>
<td>2.60</td>
<td>19,800</td>
</tr>
<tr>
<td>Total</td>
<td>644,000</td>
<td>2.99</td>
<td>61,900</td>
</tr>
</tbody>
</table>

Note: Mineral Resources which are not Ore Reserves do not have demonstrated economic viability. No Ore Reserves are defined at Penny’s Find. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. It is uncertain if further exploration will result in upgrading the Inferred Mineral Resource to an Indicated or Measured Mineral Resource and Indicated Minerals Resources to Measured Mineral Resources. Tonnage is reported in metric tonnes (t) and rounded to the nearest 1,000 t. Grade as grammes per tonne gold (g/t Au) and rounded to the nearest 0.1 g/t Au. Contained gold in troy ounces (oz Au) and rounded to the nearest 100 oz Au. Brimstone is 100% held by LionGold, Brimstone owns 40% of Penny’s Find, thus the net attributable to LionGold is 40%. Small discrepancies may occur due to rounding.

The Mineral Resource has not been depleted for the small-scale historical mining, which is not considered material to the reported resource tonnage.

8.3.11 Production Reconciliation

No modern mining has taken place as such reconciliation with production is not applicable.
9 ORE RESERVES

There are currently no Ore Reserves at the Penny’s Find project.
10 MINING

There is currently no mining at the Penny’s Find project.
11 PROCESSING

There is currently no processing at the Penny’s Find project.
12 INFRASTRUCTURE

Infrastructure requirements have not been assessed at this stage due to the early exploration status of the project.
13 SOCIAL, ENVIRONMENTAL, HERITAGE AND HEALTH AND SAFETY MANAGEMENT

13.1 Social Management
Present activity is minimal on the project, with impact minimal. Appropriate protocols will be enacted once additional work is undertaken and/or the project passes into production.

13.2 Environmental Management
Brimstone performs all fieldwork in a manner compliant with industry best-practice, minimising environmental impact. Brimstone has rehabilitated all drilling sites from its drilling campaigns.

13.3 Heritage Management
Brimstone has negotiated Heritage Agreements with the Central East Native Title claimant group. These agreements have been signed by representatives of all stakeholders and an effective consultative relationship exists.

These agreements cover the Golden Feather project, except for M27/156, the tenement containing the Penny’s Find Gold Deposit. This tenement was granted in 1991, prior to the implementation of the Native Title Act and is recognised as “past act” under the Native Title Act and as such, native title is suppressed for this tenement and no Heritage Agreement with the Central East claimant group is required.

13.4 Health and Safety Management
Brimstone utilises a range of safety protocols for the completion of all fieldwork. These protocols are documented and made available to field personnel, who are instructed to follow them.

Field personnel are required to make twice-daily scheduled calls to a pre-arranged contact person during all fieldwork campaigns at the Golden Feather project. Although the Golden Feather project is not that far from Kalgoorlie, the area is sparsely populated and there is no mobile-phone coverage, so personnel performing prolonged fieldwork based from field camps are required to have a satellite phone. The satellite phone is used to make scheduled calls and is available for emergency calls. Additionally, field personnel have first-aid training and carry first aid equipment.
14 MARKET STUDIES AND CONTRACTS

There is no operating mine and as such no contracts in place to sell gold.
15 FINANCIAL ANALYSIS

There is no operating mine and so financial analysis is not appropriate.
16 RISK ASSESSMENT

16.1 Risk Rating Definitions

Project risks have been assessed on the basis of likelihood of occurrence, and on the consequence of an event occurring, resulting in a risk matrix which is used to define the level of management responsibility. The tables below (Table 16.1, Table 16.2 and Table 16.3) define the categories used in this report to assess likelihood, consequence and risk rating within the context of the Group.

Table 16.1 Categories and definitions used to assess likelihood

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Certain</td>
<td>Event is expected to occur in most circumstances (easily); more than 1 event every year</td>
</tr>
<tr>
<td>Likely</td>
<td>Event will probably occur in most circumstances (should); about or less than 1 event per year but more than 1 event per 5 years</td>
</tr>
<tr>
<td>Possible</td>
<td>Event might occur at some time (conceivably); less than 1 event per 5 years but more than 1 event per 10 years</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Event could occur at some time (conceivable but rare); about or less than 1 event every 10 years</td>
</tr>
<tr>
<td>Remote</td>
<td>Event might occur only in exceptional circumstances (theoretical) or is unlikely to occur</td>
</tr>
</tbody>
</table>

Table 16.2 Categories and definitions used to assess consequence

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>Very large financial loss (&gt;A$50M) of total assets; death or serious injury to multiple persons; major loss of plant resulting in &gt;6 months loss of production capability; toxic environmental release off-site with serious detrimental effect</td>
</tr>
<tr>
<td>Major</td>
<td>Major financial loss (A$20-50M) of total assets; death or serious injury to multiple persons; extensive loss of plant resulting in 3–6 months loss of production capability; off-site environmental release with detrimental effect or on-site release with detrimental effect</td>
</tr>
<tr>
<td>Moderate</td>
<td>High financial loss (A$10-20M) of total assets; serious injury to multiple persons; moderate loss of plant resulting in 1 week to 3 month loss of production capability; on-site environmental release contained with assistance without causing long-term detrimental effect</td>
</tr>
<tr>
<td>Minor</td>
<td>Medium financial loss (A$1-10M) of total assets; minor injury to one or two persons; minor loss of plant resulting in 1 day to 1 week loss of production capability; on-site environmental release immediately contained without long-term detrimental effect</td>
</tr>
<tr>
<td>Insignificant</td>
<td>Low financial loss (&lt;A$1M) of total assets; no injuries; less than one day loss of production capability; no environmental impact</td>
</tr>
</tbody>
</table>

Table 16.3 Risk rating

<table>
<thead>
<tr>
<th></th>
<th>Severe</th>
<th>Major</th>
<th>Moderate</th>
<th>Minor</th>
<th>Insignificant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Certain</td>
<td>High Risk</td>
<td>High Risk</td>
<td>High Risk</td>
<td>Medium Risk</td>
<td>Medium Risk</td>
</tr>
<tr>
<td>Likely</td>
<td>High Risk</td>
<td>High Risk</td>
<td>Medium Risk</td>
<td>Medium Risk</td>
<td>Low Risk</td>
</tr>
<tr>
<td>Possible</td>
<td>High Risk</td>
<td>High Risk</td>
<td>Medium Risk</td>
<td>Low Risk</td>
<td>Low Risk</td>
</tr>
<tr>
<td>Unlikely</td>
<td>High Risk</td>
<td>Medium Risk</td>
<td>Medium Risk</td>
<td>Low Risk</td>
<td>Low Risk</td>
</tr>
<tr>
<td>Remote</td>
<td>Medium Risk</td>
<td>Medium Risk</td>
<td>Low Risk</td>
<td>Low Risk</td>
<td>Low Risk</td>
</tr>
</tbody>
</table>

16.2 Risk Assessment – Mineral Resource Estimate

Table 16.4 shows the resource estimate risk for the Penny's Find deposit.
### Table 16.4  Risk Assessment for Penny's Find Mineral Resource estimate

<table>
<thead>
<tr>
<th>Factor</th>
<th>Risk</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drillhole database integrity</td>
<td>Medium</td>
<td>There is no centralised database and currently all of the drillhole data is stored in a number of spreadsheets.</td>
</tr>
<tr>
<td>Sample representivity</td>
<td>Medium</td>
<td>In-situ sample representivity is likely to be reasonable given the nature of the gold mineralisation. Localised occurrences of coarse gold are likely to lead to poor sample representivity.</td>
</tr>
<tr>
<td>Sample collection, preparation and assaying</td>
<td>Low-Medium</td>
<td>Drilling, sampling, sample preparation and assaying methods used were industry standard. All assaying is by lead collection fire assaying at commercial laboratories. Only RC and diamond core drilling data used in the resource estimate. The majority of the mineralised RC samples were reportedly dry.</td>
</tr>
<tr>
<td>QAQC</td>
<td>Medium</td>
<td>Historical data lacks adequate QAQC and has therefore been excluded from the resource estimate. Standards assayed during the 2012-2013 drilling by Brimstone show a positive bias of up to 10%. There is a risk that the gold content of these samples has been overestimated.</td>
</tr>
<tr>
<td>Bulk density</td>
<td>Low-Medium</td>
<td>Bulk density measurements from drill core show low variability within the fresh rock, however no bulk density test work has been completed on the oxide or transitional material and default values have been used for this material.</td>
</tr>
<tr>
<td>Geological interpretation</td>
<td>Medium</td>
<td>The main mineralised shear zone outcrops in some places which validates the interpretation of the main zone. The interpretation of the minor mineralised zones along with the supergene zones are based entirely on drilling and typically have limited sample information.</td>
</tr>
<tr>
<td>Grade estimate</td>
<td>Medium</td>
<td>The gold grade estimate has some uncertainty due to the moderate nugget effect, low number of samples for some domains and general data quality issues (e.g. QAQC). The current block size is appropriate for areas of closer spaced drilling. The application of OK for the main shear zone domain is appropriate with top-cutting used to control the impact of high grade samples. The application of inverse distance weighting with a power parameter of three may not provide enough smoothing in the block grade estimates given the moderate nugget effect and does not take into account data clustering. The grade of some domains is based on the composite mean grade.</td>
</tr>
<tr>
<td>Tonnage estimate</td>
<td>Low-Medium</td>
<td>The main mineralised shear zone is well defined by drilling along with the surface expression, however the minor mineralised zones and supergene mineralisation are poorly defined due to their discontinuous nature and subsequent lack of drilling.</td>
</tr>
<tr>
<td>Economic factors / reasonable prospects for economic extraction</td>
<td>Medium</td>
<td>No Ore Reserves are defined. The CP considers that the Penny’s Find Mineral resource has reasonable prospects for eventual economic extraction by open cut methods.</td>
</tr>
<tr>
<td>Metallurgy</td>
<td>Medium</td>
<td>Metallurgical test work to date is considered very preliminary and was completed on very high grade samples which may not be representative of the mineralisation.</td>
</tr>
<tr>
<td>Accuracy of the resource estimate</td>
<td>Medium</td>
<td>The QP believes the accuracy of the Indicated Resources to be within ±20-30% globally based general experience with this style mineralisation. The accuracy of the Inferred Resource is considered to be within ±50% globally based general experience with this style mineralisation.</td>
</tr>
<tr>
<td>Factor</td>
<td>Risk</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Social, legal, political and environmental risk</td>
<td>Low</td>
<td>These risks are considered to be low due to the stable and developed nature of Australia, which has a long history of gold mining, especially in the Kalgoorlie area. Exploration has taken place over the project area since the 1960's and the closeness of the project to the major mining township of Kalgoorlie allows for easy access to site for equipment and personnel.</td>
</tr>
<tr>
<td>Overall risk rating</td>
<td>Medium</td>
<td>The current Mineral Resource estimate is considered to have an overall risk rating of “medium”. Most of the issues can be improved through additional drilling, metallurgical test work, improved data management practices and adequate QAQC controls.</td>
</tr>
</tbody>
</table>
17 INTERPRETATION AND CONCLUSIONS

The Penny’s Find gold deposit forms part of the Golden Feather project, which is located approximately 50 km northeast of Kalgoorlie in Western Australia. The tenements containing the Penny’s Find project are part of a JV between Brimstone (40%) and Empire (60%).

The gold mineralisation at Penny’s Find is associated with quartz-carbonate veining and alteration within a northwest striking shear zone. The mineralisation, which outcrops, dips steeply to the northeast and occurs over a strike length of some 500 m and is up to 9 m wide in places. Drilling has defined the mineralisation down to a vertical depth of approximately 300 m below surface.

There is one main mineralised shear zone that hosts the majority of the gold at Penny’s Find, with a number of minor mineralised shears present in the footwall and hangingwall of the main shear zone. The drilling has allowed a Mineral Resource to be estimated (Table 1.1) which has been classified as a combination of Indicated and Inferred Mineral Resources based on the guidelines of the 2012 JORC Code. The resource is deemed by the QP to have reasonable prospects for eventual economic extraction via open-pit mining methods, however, a scoping study is required to review extraction options.

The current Mineral Resource estimate is considered to have an overall risk rating of “medium”. Most of the issues can be improved through additional drilling, metallurgical test work, improved data management practices and adequate QAQC controls.
18 RECOMMENDATIONS

Key recommendations for Brimstone are:

- Given the issues with the standards in the 2012-2013 drilling, Brimstone should initially confirm the observed bias through further assaying of standard samples and pulp duplicates, using both SGS and an umpire laboratory. If confirmed, and if possible, re-assaying the sample pulps may be required.
- Compile a robust database of the current drilling and sampling data with appropriate database validation procedures.
- Twin some RC holes with diamond core drilling to validate the RC drilling. Additionally some of the historical, pre-2007, drilling could be twinned to validate the historical data with the aim of utilising this data in future resource updates.
- Additional drilling is required to update the Inferred portions of the resource to Indicated Mineral Resources.
- Further bulk density test work, especially on oxidised material.
- Undertake a scoping study to review production options for Penny’s Find.
- Further metallurgical test work on representative samples of the mineralisation is required.
19 REFERENCES


Spitalny, P., 2013a, The Golden Feather project (including Penny’s Find); project review and recommendations, unpublished internal report prepared by P. Spitalny for Brimstone Resources, August 2013.

Spitalny, P., 2013b, Brimstone Resources Ltd Penny’s Lake West project Western Australia 2013 Annual Report E27/452 Period ending 17th August 2013, unpublished internal report prepared by P. Spitalny for Brimstone Resources.


20 DATE AND SIGNATURE PAGES

I, Dr Simon C Dominy, do hereby consent to the public reporting of the Penny's Find gold project Mineral Resource and release of the Qualified Persons Report entitled “Annual QPR for the Penny's Find Gold Project, Australia for the Year Ended 31 March 2014”. I have given and have not withdrawn prior to lodgement, my written consent to be named in any Announcement as a person responsible for this Mineral Resources statement and to the inclusion of this statement in the form and context in which it appears.

I certify that I have read the Qualified Persons Report and that it fairly and accurately represents the work for which I am responsible.

Based on the requirements of the Singapore Exchange Practice Note #6.3, I am a Qualified Person. I am also a Competent Person as defined by the JORC Code (2012), having five years of experience that is relevant to the style of mineralisation and type of deposit described in the report, and to the activity for which I am accepting responsibility.

Dated: 28th May 2014

Simon C Dominy
FAusIMM(CP), FAIG(RPGeo), FGS(CGGeol)
21 GLOSSARY OF TERMS

**Alteration**
A physical or chemical change to original rock minerals

**Archaean**
Period of time between 2.5 billion years ago and 4 billion years ago

**Basalt**
Fine-grained volcanic igneous rock composed primarily of plagioclase and pyroxene

**Breccia**
A coarse-grained rock composed of broken, angular rock fragments in a fine-grained matrix

**Carbonate**
A type of mineral composed of various elements combined with carbon and oxygen in the form CO₃

**Dip**
Geological measurement – the angle at which bedding or a structure is inclined from the horizontal

**Dolerite**
Medium-grained volcanic igneous rock composed primarily of plagioclase and pyroxene

**Fault**
A fracture plane in the rock which may displace rock units

**Felsic**
Silica and aluminium rich igneous rocks (>65% SiO₂) dominated by the minerals quartz, feldspar and plagioclase

**Footwall**
Zone or rock below a geological feature

**Granite**
Coarse-grained, felsic igneous plutonic rock composed primarily of feldspar, plagioclase and quartz

**Graphitic shale**
A fine grained sedimentary rock with graphite (carbon). Sometimes referred to as “black shale”

**Greenstone**
Generic term for mafic/ultramafic volcanic rocks regionally metamorphosed to greenschist facies

**Hangingwall**
Zone or rock above a geological feature

**Laterite**
Iron oxide rich soil layer derived from weathering of rocks under strongly oxidising conditions

**Mafic**
Magnesium and iron rich igneous rocks relatively poor in silica, dominated by the minerals pyroxene, olivine and amphiboles

**Metamorphism**
Change in minerals and/or texture due to changes in temperature and pressure over geological time

**Nugget effect**
A term that describes the grade variability between samples at small distances apart (less than a few cm). A low nugget effect (<20%) indicates minimal grade variability, whereas a high nugget effect (>70%) indicates that grade is highly variable over short distances and potentially relatively unpredictable. Pure nugget effect (100%) indicates almost random grade distribution.

**Pyrite**
An iron sulphide mineral (FeS₂)

**Quartz**
The mineral silicon dioxide (SiO₂)

**Regolith**
Layer of unconsolidated, weathered material (e.g. soil, alluvial material) above the bedrock

**Saprolite**
Weathered rock, formed in situ

**Shear zone**
A plane (up to 10s of metres wide) along which ductile deformation (shearing) has occurred

**Silcrete**
Weathered, hard, resistant, near surface material cemented by silica

**Stockwork**
A network of veins

**Strike**
The direction of bearing of a bed or layer of rock in the horizontal plane

**Sulphides**
A type of mineral composed of metal or metals combined with sulphur

**Supergene**
Weathering/oxidation of primary oxide minerals due to the circulation of meteoric (i.e. surface) water and movement of the water table over time

**Ultramafic**
Igneous rocks with very low (<45%) silica content with high magnesium and iron content, dominated by the minerals olivine and pyroxene
Variogram
A graphic representation of the spatial continuity between samples within a domain. The variogram allows the nugget effect to be modelled and the sphere of influence of samples (the range)

Vein
A relatively thin (millimetres up to 10 m scale) sheet of quartz or other minerals which fill a fracture cutting across pre-existing rocks

Weathering
The process by which rocks are broken down and decomposed by the action of wind, rain, changes in temperature, plants and bacteria.
Appendix A

Checklist of assessment and reporting criteria, based on Table 1 of the 2012 JORC Code
Section 1 Sampling techniques and data

(Criteria in this section apply to all succeeding sections)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>JORC Code explanation</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sampling techniques</strong></td>
<td>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulsed to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</td>
<td>The deposit has been drilled and sampled by diamond coring, reverse circulation (RC) and rotary air blast (RAB) methods with holes on variable spacings over a 500m strike length, the closest being a 20mE x 10m N grid. The total length of the 104 RC and diamond holes used in mineral resource estimate is 11,312 m. The RC samples are collected from the cyclone of the rig with some split to smaller samples using a rotary splitter attached to the cyclone or spear sampled from the bulk rejects to produce a composite sample. RC drilling collected samples at 1m intervals down hole. Diamond core was collected into core trays. The diamond core was HQ sized near surface and NQ sized in the mineralised zones. Core was half-core sampled.</td>
</tr>
<tr>
<td><strong>Drilling techniques</strong></td>
<td>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</td>
<td>Diamond drilling (4 surface collared holes and 2 tails to RC holes) is mostly NQ sized through the mineralised zone, the surface holes totalled 1,259 m and the two tails 198m. The core was not orientated. The RC holes were all 135 mm diameter and drilled with a face sampling bit, the total number of holes is 100 and the totalled 9,855 m.</td>
</tr>
<tr>
<td><strong>Drill sample recovery</strong></td>
<td>Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</td>
<td>The core recovery is in excess of 95%. The RC sample recovery is recorded descriptively as good, medium or poor (work done by Empire by weighing samples indicated that good recovery was in excess of 75% and poor recovery was usually less than 25%, this occurred mostly in wet ground). For RC drilling the collar was sealed and air pressure was used to maximise return. The cyclone was cleaned between samples. No assessment has been made of grade v RC sample recovery but based on the descriptive assessment the majority of mineralisation was returned dry and thus usually with good recovery. The competency of the core demonstrates that there should be minimal potential for sampling bias.</td>
</tr>
<tr>
<td><strong>Logging</strong></td>
<td>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.</td>
<td>Core and chips have been geologically logged recording lithology, mineralisation, veining, alteration, weathering and some geotechnical features (core only) like RQD. The geological logging is appropriate to the style of the Deposit. The entire length of all diamond and RC holes, apart from surface casing, has been logged.</td>
</tr>
<tr>
<td><strong>Sub-sampling techniques and sample preparation</strong></td>
<td>If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique.</td>
<td>All core halved using a mechanical saw. RC bulk rejects are collected from the cyclone into a plastic bucket and then transferred to a sample bag. 1 m samples split using a rotary splitter attached to the cyclone. The cyclone was cleaned with air and any loose material scrapped off between samples.</td>
</tr>
</tbody>
</table>
### Criteria | JORC Code explanation
--- | ---
Quality control procedures adopted for all sub-sampling stages to maximise representativeness of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. | Composite samples (4 m) are taken from the bulk reject using a spear. All samples (approximately 2.5 kg to 3 kg for the RC samples and 1/2 NQ core up to 1 m long) are submitted to a commercial accredited laboratory facility for the preparation of samples using industry standard practices of drying, crushing and pulverising to allow sub-sampling by riffle or rotary splitter to a 30 g to 50 g charge size.

Quality of assay data and laboratory tests | The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.

Verification of sampling and assaying | The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.

Location of data points | Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.

Data spacing and distribution | Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied.

Orientation of data in relation to geological structure | Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and discussed.

| Commentary |
--- | ---
All drillhole samples were assayed by lead collection fire assay with gold determined by AAS or ICP-OES finish. No QAQC was conducted on drilling prior to 2007. Empire did not include standards or blanks with their routine samples submitted to the laboratory. Some pulp duplicates were tested at an umpire laboratory. Brimstone included standards and blanks at rates of approximately 1 QC sample to 12 routine samples or better. Whilst there was some evidence of bias of the lower grade standard (1.3 g/t Au) the majority of results can be considered acceptable.

No specific twinning programme has been conducted to validate historical drilling or the RC drilling. Primary logging data was recorded directly into electronic spreadsheets and checked against expected codes. Assay information in electronic form from the laboratories was merged with sample interval data based on sample number. No specific validation procedures are documented. No adjustments were made to the assay data.

The collar positions were surveyed by contractors after the completion of the 2012 drilling using RTKGPS on the GDA 94 Zone 51 Datum and AHD. This survey included some of the 2007 drill collars which confirmed the location of these holes in the 2007 data set. The orientation and dip at the start of the hole was recorded for all holes. Downhole survey information was recorded by single shot camera that measured dip only for most RC holes with the exception of later part of the 2007 RC programme where azimuth was also measured. The diamond tails were measured for dip and azimuth using a gyroscopic inclinometer. The regional grid is GDA94 Zone 51 and the deposit is laid out on a local grid with a 40° rotation. The topographic surface was generated from contouring the drill hole collar points and applying observations of the site to assist in control.

Drill spacing varies in the deposit from 10 mN to 20 mE to in excess of 50 m. The drillhole spacing is sufficient to determine the degree of geological and grade continuity for the classification applied to the resource (Indicated and Inferred). For mineral resource estimate a 1 m composite length was chosen, which is the dominant sample length.

The holes are drilled mostly to the west to intersect the relatively steeply east dipping north-south orientated mineralisation.
### Criteria | JORC Code explanation | Commentary
--- | --- | ---
Sample security | The measures taken to ensure sample security. | The chain of custody adopted by operators of the project appears appropriate and is based on responsibility and documentation.
Audits or reviews | The results of any audits or reviews of sampling techniques and data. | A brief audit of assay records in the data spreadsheets by DataGeo in 2014 revealed no data errors.

### Section 3 Estimation and reporting of Mineral Resources

(Criteria listed in Section 1, and where relevant in Section 2, also apply to this section)

| Criteria | JORC Code explanation | Commentary |
--- | --- | ---
Database integrity | Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used. | There is no dedicated database storage system in place. Data from logging, sample submission and the assay laboratory is combined in many spreadsheets. These were combined and a database compiled for the resource estimate. Key holes utilised in the mineral resource assessment were review and checked against the original data. No errors were found. This was not an exhaustive test but sufficient to give confidence that the data is reasonably accurate with respect to the supporting information.
Site visits | Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. | DataGeo visited the site on 26 March 2014 and was able to establish that the drillholes were correctly positioned, the old working and position of the shear was appropriate; the topography was generally flat. RC chips, chip trays and diamond core were reviewed to establish the support for the mineralisation.
Geological interpretation | Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology. | The confidence in the geological interpretation is considered good for the main mineralised shear zone, as it is supported by surface mapping and corroboration of the surface positions with the close spaced drilling. The Penny’s Find Shear is a major outcropping feature. The application of hard boundaries to reflect the position of the zones which host the mineralisation is supported by the field and drilling observations. Only physical data obtained in the field was utilised. Alternative interpretations are unlikely to have a material impact on the reported tonnage and grade of the main shear zone. Uncertainty exists with the interpretation of the minor mineralised zones and supergene mineralisation as reflected in the Inferred classification.
The presence of faults and the positioning of the shear and associated foot and hanging wall zones provides the geological control and this combined with presence of gold is used to constrain the interpretation.
Dimensions | The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource. | The main mineralisation within the deposit occurs over a 500 m strike length and extends some 28 m down-dip and varies between 5 m and 10 m in width. The deposit remains open at depth.
Estimation and modelling techniques | The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. | Gold grades were estimated by ordinary kriging within the main mineralised shear zone, while inverse distance weighting, raised to the power of three, was used for the minor domains. For domains with less than 10 samples, the average of the composites was applied.
### Criteria | JORC Code explanation | Commentary
---|---|---
**The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.** | Hard boundaries were used for the mineralised domains. Weathering horizons were not used to constrain the grade estimation. The sample data was composited to 1 m downhole. Composites were top-cut and a restrictive search was used to control the impact of extreme grades on the local block estimates. Block modelling and grade estimation was carried out using Vulcan software. The block model was constructed using a parent block size of 5 mE by 10 mN by 5 mRL with sub-celling to half the block size in each direction to ensure accurate volume representation. Grade estimation was to the parent block size, with a three-step search strategy utilised. The orientation of the search was adjusted for each domain. The initial (primary) search was 30 m along strike by 20 m down-dip by 5 m thick. This search range was expanded by double the length for blocks not informed in the primary search and again in the final search strategy. This strategy informed on average 85% of the blocks within the zones to be estimated in the primary and secondary search passes. Volume validation was carried out by comparison of the solids representing the mineralisation to the block model. Validation of the grade estimates was carried out both globally, by comparing the average estimated block grade to the average input composite grade, and spatially by generating grade-trend plots, comparing the estimated block grades to the input grades along east-west and horizontal slices. The grade estimates were also visual reviewed against the drillhole data. |  
**The assumptions made regarding recovery of by-products.** |  
**Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).** |  
**In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.** |  
**Any assumptions behind modelling of selective mining units.** |  
**Any assumptions about correlation between variables.** |  
**Description of how the geological interpretation was used to control the resource estimates.** |  
**Discussion of basis for using or not using grade cutting or capping.** |  
**The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.** |  
**Moisture** | Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content. | All tonnage estimates are reported as dry tonnages. |  
**Cut-off parameters** | The basis of the adopted cut-off grade(s) or quality parameters applied. | The Mineral Resource was reported above a 1 g/t Au cut-off grade, which is based on the assumption that the mineralisation would likely be mined by open-pit methods and that the ore would be hauled off-site for treatment. |  
**Mining factors or assumptions** | Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made. | A mining scoping study conducted in 2009, based on a previous resource model, indicated that economic extraction by open cut could occur to approximately 80m below the surface. |  
**Metallurgical factors or assumptions** | The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made. | Preliminary metallurgical test work to determine gold recovery (both by gravity and cyanide leaching) has occurred which indicates that the recovery would be in excess of 95%. However, the test work was based on two very high-grade samples (one of oxide, the other of fresh) which are not considered to be representative of the typical grades encountered at the Penny’s Find deposit. |  
**Environmental factors or assumptions** | Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where |  
The Deposit is located on a granted mining license. DataGeo is unaware of any studies relating to environmental impacts of a potential mining and processing operation in the location. These are numerous mining and processing operations within 50Km of the site and thus it is considered likely that environmental impacts would be manageable. |
### Criteria | JORC Code explanation | Commentary
--- | --- | ---
Bulk density | Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. | Density was assigned to the model blocks based on the oxidation state and the mineralisation. For the fresh rock, the bulk density is based on measurements of diamond drill core. For oxidised and partially oxidised material bulk density was assigned based on experience from similar deposits within the region.

Classification | The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person’s view of the deposit. | The Mineral Resource has been classified as a combination of Indicated and Inferred Resources. The classification is based on the quality and amount of input data; the spatial arrangement of the drill data and its supported position; the grade continuity for the largest zone and confidence in the geological interpretation, which is supported by field observation and drilling. Whilst QAQC information is lacking for the 2007 drilling a comprehensive programme for the 2012 drilling was mostly supportive. Higher confidence areas have more supporting data, areas of lower geological support reflect a lower classification.

The resource was classified as a combination of Indicated and Inferred Resources, based on the following:
- Blocks within the main shear zone (domains s1 to s4) and the southernmost minor footwall mineralised zone (domain s1f) which were estimated using a minimum of 10 samples from at least two drillholes that were no more than an average of 50 m from the block, were identified. A wireframe was constructed to define this zone which was classified as Indicated Resources.
- All other blocks/domains, including the supergene mineralisation, were classified as Inferred Resources. The Mineral Resource estimate reflects the Competent Persons understanding of the Deposit.

Audits or reviews | The results of any audits or reviews of Mineral Resource estimates. | Snowden reviewed the Mineral Resource estimate in 2014 and found no significant flaws in the resource estimate.

Discussion of relative accuracy/ confidence | Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. | The statement relates to global estimates of tonnes and grade. The CPs believe the accuracy of the grade and tonnage estimate for Indicated Mineral Resources to be within ±20-30% globally based on general experience of this style of mineralisation. Similarly, the accuracy of the grade and tonnage estimate for the Inferred Mineral Resources is considered to be within ±50% globally based on general experience of this style of mineralisation.