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April 3, 2012

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## **SOUTH KALGOORLIE OPERATIONS TECHNICAL REPORT**

Please find attached a technical report entitled "Alacer Gold Corp. South Kalgoorlie Operations NI 43-101 Technical Report", dated March 30, 2012 and prepared in compliance with the Canadian Securities Administrators National Instrument 43-101 Standards of Disclosure for Mineral Projects, which is filed on the System for Electronic Document Analysis and Retrieval (SEDAR) and is available under the Company's profile at [www.sedar.com](http://www.sedar.com).

This technical report completed by Alacer takes the current status of the South Kalgoorlie Operations Expansion Project into account and presents the new resource and reserve estimations up to December 31, 2011.

Yours sincerely,

**Geoffrey T. Williams, Jr.**  
Executive Vice President – General Counsel and Secretary  
Alacer Gold Corp.



# **Alacer Gold Corp.**

## **South Kalgoorlie Operations**

### **NI 43-101 Technical Report**

**DRAFT**

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The effective date of the technical report, *Canadian National Instrument 43-101 Technical Report Alacer Gold Corp. South Kalgoorlie Operations*, is March 26, 2012.

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## Glossary

### *Units of Measure*

Degrees Celsius .....	°C
Gram .....	g
Hour .....	h
Kilo Newton .....	kN
Kilogram .....	kg
Kilometre .....	km
Kilopascal .....	kPa
Litre .....	L
Megalitre .....	ML
Metre .....	m
Metre cubic .....	m <sup>3</sup>
Metre relative level .....	m RL
Metre square .....	m <sup>2</sup>
Micrometre (micron) .....	µm
Milligram .....	mg
Millilitre .....	mL
Millimetre .....	mm
Million .....	M
Minute .....	min
Percent .....	%
Second .....	s
Tonne .....	t
Tonnes per annum .....	tpa
Tonnes per hour .....	tph
Troy ounce .....	oz

## 1.0 SUMMARY

### South Kalgoorlie Operations Expansion Project (SKOEP)

**Current Status:** In October 2011 Alacer Gold Corp. (“Alacer”) announced its board of directors had approved a \$25 million budget for the first stage of expanding the South Kalgoorlie Operations (“SKO”). The approval to proceed will fund ongoing underground mining feasibility work, ordering long lead items for a new 2.5 million tonne per annum (“Mtpa”) treatment plant and proceeding with cutbacks of the Hampton Boulder Jubilee (“HBJ”) north and Mt Martin open cuts.

The October 2011 announcement included Alacer’s commitment to the next stage of expanding SKO as the reserve increased 96% to 761,000 ounces.

The October 2011 announcement also stated that “following the completion of ongoing underground feasibility studies by the end of Q1 2012, the board of directors would consider proceeding with SKO expansion project (“SKOEP”) including the construction of a new 2.5 Mtpa processing plant. At the time of this technical report the Alacer board of directors has not approved the SKOEP. This technical report completed by Alacer takes the current status of SKOEP into account and presents the new resource and reserve estimations up to December 31, 2011 which are based on the key assumption that the SKOEP proceeds.

**Location:** The SKO tenements and freehold titles cover approximately 1,232 km<sup>2</sup>, and are located between Coolgardie, 15 km south of Kalgoorlie and 10 km north of Kambalda, as shown in Figure 4-1. These tenements lie in the Coolgardie and East Coolgardie Mineral Fields, in the Shire of Coolgardie and City of Kalgoorlie-Boulder (local government authorities) of Western Australia, centred at 30°45’S latitude and 121°28’E longitude.

**Ownership:** SKO consists of 117 tenements including 16 freehold titles, 5 exploration licences, 39 mining leases, 6 miscellaneous licences and 51 prospecting licences, all held directly by Alacer.

**Geology:** The SKO tenements are located in the Eastern Goldfields Superterrane (Cassidy et al., 2006) of the Archean Yilgarn Craton. The Eastern Goldfields Superterrane is made up of metavolcanic and metasedimentary rocks, granites and granitic gneiss and is divided into a number of terranes from southwest to northeast being the Kalgoorlie, Kurnalpi and Burtville Terranes. These tectono-stratigraphic terranes are defined on the basis of distinct volcanic facies, geochemistry and geochronology with the Eastern Goldfields Superterrane ranging in age from 2.81 to 2.66 Ga (billion years). The SKO tenement package is located almost entirely within the well-mineralised Kalgoorlie Terrane. This region is made up predominantly of younger (2.71 – 2.66 Ga) and minor older (>2.73 Ga) greenstone successions. The SKO tenements also extend into the adjacent Kurnalpi Terrane, which is generally slightly older.

Within the SKO tenements, the HBJ orebodies form part of a gold mineralised system along the Boulder-Lefroy shear zone that is over 6 km long and includes the Celebration, Mutoroo, HBJ and Golden Hope open-pit and underground mines. The HBJ orebodies are hosted within a steeply-dipping, north-northwest-striking package of mafic, ultramafic and sedimentary rocks and schists that have been intruded by felsic to intermediate porphyries. The area is extensively deformed with numerous north-striking shear zones and boudinage

of the porphyry intrusions. The main host rock for the Jubilee deposit is the Jubilee Dolerite. In general, gold is associated with sulphides, quartz-carbonate veins and potassic wall rock hydrothermal alteration.

**Mineralisation:** Gold mineralisation may occur within regional metamorphic settings ranging from subgreenschist through granulite facies however most of the mineralisation in Eastern Goldfields Superterrane occurs in the mid to upper greenschist range often in the brittle-ductile transition zone. It is characterised by a wide zone of pervasive carbonate alteration in the host rock with a central zone of potassium-micas, biotite, sericite (or vanadium, chromium-bearing micas). Mineralisation is controlled by a number of regional structures and host-rock lithology, which vary considerably in local ore deposit geometry. There are also a variety of deposit styles, mineralogy and alteration assemblages associated with each deposit.

**Exploration:** Key areas of exploration focus in 2011 were HBJ, Mt Marion and Shirl, Barbara, Surprise and Pit 28 (“SBS28”). Drilling beneath the HBJ area has demonstrated the prospectivity of this area with further open-pit optimisation and underground feasibility studies in progress. Similarly exploration at Mt Marion has identified continuity of mineralisation over a 600 m vertical extent which is also part of an existing underground feasibility study. High grade mineralisation has been identified at the SBS28 area. Further drilling will be carried out in 2012 to determine the potential of this area to host a combined open-pit/ underground mining complex. Further drilling will target potential high grade mineralisation beneath the Mt Martin, White Hope and Dawn’s Hope open-pits.

**Mineral Processing:** SKO owns and currently operates the Jubilee processing facility which has a milling capacity of 1.2 Mtpa. This is typically achieved by processing a blend of several types of ore from several operating mines. This currently includes ore from the Frog’s Leg joint venture (49%), HBJ Open-Pit ore and other smaller open-pits. The Jubilee processing facility was commissioned in 1987, and has been maintained in acceptable operating condition for the past 25 years. The process includes three stage crushing, ball milling with integrated gravity gold circuit, leach/CIL, elution electrowinning and smelting. The mill operates consistently at a minimum of 95% availability and a gold recovery efficiency of between 85% and 95%.

The proposed SKOEP calls for a future processing capacity of 2.5 Mtpa. SKO commissioned GR Engineering Services (“GRES”) in 2011 to study the options SKOEP including the various locations. The study included a detailed analysis of the capital and operating costs associated with the different options. The outcome of the study was a recommendation to construct a new 2.5 Mtpa mill to be located at the old New Celebration plant site location, which is considered more central to the dominant ore source (“HBJ Open-Pit”). A preliminary flow sheet was determined from this initial work. During 2011 GRES also completed a capital estimate to a definitive feasibility study (“DFS”) level on the construction of a new 2.5 Mtpa treatment plant as part of the SKOEP considerations.

**Resource and Reserve Estimates:** The latest SKO resource resource estimate is dated December 2011 and is presented in Table 1-1. The SKO resources have been updated for changes to HBJ, Pernatty, and Triumph resource resource estimates in 2011 resulting from infill and extensional drilling and reinterpretation. These Resources have been further updated for mine depletion to December 31, 2011. The Mt Martin acquisition has been added as a new Resource to the SKO Resource table. All other existing resources remain unchanged from the previous technical report (SRK 15<sup>th</sup> Dec, 2010). The overall December

2011 Resource represents an increase of 8% of Measured and Indicated Resources and 7% of Inferred Resources to the December 2010 Resource.

**Table 1-1: SKO Resources December 2011 Summary**

	Measured			Indicated			Total M&I			Inferred		
	Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)
SKO	1,365	2.5	111	37,117	2.1	2,545	38,482	2.1	2,656	33,359	1.9	2,046
Penfolds	0	0	0	1,600	2.3	120	1,600	2.3	120	136	3.4	15
Stockpiles	1,108	1.0	34	166	0.8	4	1,274	0.9	39	5	0.7	0
<b>Total SKO</b>	<b>2,473</b>	<b>1.8</b>	<b>146</b>	<b>38,884</b>	<b>2.1</b>	<b>2,669</b>	<b>41,357</b>	<b>2.1</b>	<b>2,815</b>	<b>33,500</b>	<b>1.9</b>	<b>2,061</b>

The Resource estimate contained in the tables above has been reviewed by Mr Chris Newman, BSc (Hons), MAusIMM, MAIG, Executive Vice President, Exploration, of Alacer, a Qualified Person (“QP”) under NI 43-101.

The Mineral Reserve estimate as at December 31, 2011 for SKO is shown in Table 1-2.

**Table 1-2: SKO Mineral Reserve Estimate as at December 31, 2011**

Asset/Project	Lower cut off grade, Au g/t	Tonnes ‘000	Grade g/t Au	Contained Ounces ‘000
HBJ	0.45	9,329	1.3	380
Mt Martin	0.60	1,250	1.9	77
Pernatty	0.60	304	2.3	22
Triumph	0.60	424	1.8	25
Total Stockpiles		1,142	1.0	38
<b>Total</b>		<b>12,449</b>	<b>1.4</b>	<b>542</b>

The Reserve estimate contained in the tables above has been reviewed by Mr Paul Thompson, BSc(Hons), MSc, FAusIMM Alacer, a QP under NI 43-101.

### Mining Operations:

The SKOEP plan involves initially mining and processing the four deposits and current stockpiles listed in this technical report, namely HBJ, Mt Martin, Triumph, and Pernatty, and continuing to process the 49% of the underground ore from the Frog’s Leg mine which is operated by La Mancha Resources (“LMA”) managed Frog’s Leg mine. The HBJ Open-Pit is currently in production and all future mine planning is based on establishing cutbacks within existing open-pits (HBJ, Mt Martin, Pernatty and Triumph). SKO mining utilises a dry hired and maintained fleet of mining equipment owned by Emeco International Pty Ltd. (“Emeco”) which is operated by Alacer employees. Drilling and blasting is done by an independent contractor (Jarrahfire). All technical and management work is done by Alacer technical staff working at SKO.

### Environmental Assessment:

SKO is operating in material compliance with licence conditions.

SKO has compiled a closure cost estimate for all its freehold location lands as well as its mining tenements in which it was determined that the total expected closure estimate for current disturbances and infrastructure is \$20.8 million. Of this \$13.7 million was allocated to

freehold location land and \$7.1 million for mining tenements. Although this estimate includes allowances for the closure and rehabilitation of the tailing storage facilities (“TSFs”) it does not include any allowance for the rest of the 14 reported contaminated sites.

SKO maintains a comprehensive record of all contaminated sites on its tenements and freehold locations in line with regulatory standards. It is noted that although there is no obligation on SKO to rehabilitate historic disturbance on freehold location land, it has made voluntary commitments regarding such rehabilitation and closure.

All bonds required for SKO’s tenements are in place, and the total environmental bonds lodged with the Department of Minerals and Petroleum for Western Australia (“DMP”) amounts to \$3.6 million.

### **Conclusions:**

The geological understanding of the SKO continues to evolve rapidly as work continues on the exploration program and the resource drilling/interpretation to convert known inferred resources to indicated resources. The knowledge acquired and the conversion rate achieved over the past 12 months confirms the ongoing potential of SKO.

Alacer believes that this high level of ongoing resource conversion combined with the proposed exploration and development strategy reflects the potential of the SKOEP.

Reserve estimations have been completed for the Indicated Mineral Resources only for the HBJ, Mt Martin, Pernatty and Triumph open pits. The reserve estimation process involved detailed mine optimizations, using appropriate costs and other suitable modifying factors to generate the highest “practical” cash flow pit shells to guide the mine designs. Each of the four pit designs have been scheduled on a monthly basis to generate both the individual mine schedules and a consolidated SKOEP schedule. Mining, processing and other appropriate costs were then applied to the financial models to generate a pre-tax cash flow model. The cash flow for each of the four open pits was determined to be positive.

The current reserves are based on the new 2.5 Mtpa processing plant as detailed in the SKOEP outlined in this technical report. These reserves will be mined out in 5 years and processed in a little over 6 years. Alacer has plans to continue an active exploration program and to continue converting Mineral Resources to Mineral Reserves as the mining progresses.

The consolidated treatment schedule and associated cash flow forecast discussed in section 22 of this report includes the ore received from the Frog’s Leg mine (49%). The Frog’s Leg mine is managed and operated by LMA. The joint venture agreement requires the mine operator to deliver ore to the surface and entitles Alacer to remove its share (49%) for treatment at SKO.

### **Recommendations:**

The SKOEP will require continual optimisation and review as new information becomes available as the project progresses over time. The new 2.5 Mtpa treatment plant associated with SKOEP will be subject to ongoing evaluation. As of the date of this technical report the board of directors of Alacer has made no decision to proceed with the new 2.5 Mtpa treatment plant.

The recommendations itemised below relate to the operating strategy outlined in this technical report.

- Actively continue with the planned exploration strategy in the area over 2012 (\$18 million budget for 2012) and beyond to maximise discovery opportunity and ensure that a high conversion rate from resources to reserves is achieved.
- Complete the resource drilling associated with the northern end of the HBJ open pit including the Mutooroo area and re optimise the resources to increase the reserves associated with the HBJ open pit. This work is expected to be completed in Q1 2012 and estimated cost for this work is included in the \$18 million exploration budget listed above.
- Finalise the resource drilling and complete new Mt Martin resource so that a new Mt Martin reserve can be potentially considered in Q2 2012. This work is expected to be complete in Q1 and Q2 2012. Review the potential for a DFS on any potential underground resources associated with Mt Martin. The estimated cost for this work is included in the \$18 million exploration budget listed above.
- Optimise the mining schedule and review the mining sequence for the Frogs Leg mine (49%) to potentially improve project value.
- Continually re optimise the HBJ, Mt Martin, Pernatty and Triumph open pits as new information becomes available. This work is included in the normal mining department costs associated with the SKO 2012 operating budget.
- Review the mining schedule associated with the consolidated treatment schedule and financial model as the stockpile volumes are large towards the end of the mine life. Further work should be evaluated to investigate if a “just in time” mining approach would increase the SKOEP value. This work is included in the normal mining department costs associated with the SKO 2012 operating budget.
- Following review at a PFS level, the HBJ Underground DFS should continue. This is a major resource that requires an in depth mining study and could significantly increase the SKOEP production profile and mine life. The PFS work is included in the \$25 million budget for first stage SKOEP listed above. The cost and timing associated with the ongoing DFS for the HBJ underground will be assessed as part of stage 1.
- Following review at a PFS level, the Mt Marion Underground DFS should continue. This is another potential higher grade resource that will potentially enhance the SKOEP production profile and mine life. The PFS work is included in the \$25 million budget for first stage SKOEP listed above. The cost and timing associated with the ongoing DFS for the HBJ underground will be assessed as part of stage 1.
- Complete the technical evaluation of the thickened tailings placement option for possible consideration for potential inclusion in SKOEP. No estimated cost and work schedule has been determined for this option at the time of this technical report, however provision has been made for continued tailings disposal into existing, currently licensed SKO tailings storage facilities.



## **2.0 INTRODUCTION**

Alacer, listed on the Toronto Stock Exchange (“TSX”) and the Australian Securities Exchange (“ASX”), is a mid-tier gold producer and explorer with assets in Australia and Turkey. Alacer was formed following the successful merger of Anatolia Minerals Development Limited (“Anatolia”) and Avoca Resources Limited (“Avoca”) in February 2011. The Australian operations consist of the SKO and the Higginsville Gold Operations (“HGO”), both wholly owned. Alacer also has a 49% interest in the Frog’s Leg mine which is managed by LMA. The Turkey operations consist of the Cöpler Gold Mine, which is 80% owned by Alacer.

Alacer produced 421,000 ounces of gold in 2011, on a 100% basis for the properties which it operates, and has set a strategic objective to increase gold production to 800,000 ounces by 2015 on the same basis.

The SKO is currently milling and processing gold bearing ore at a rate of 1.2 Mtpa which is the maximum capacity of the existing Jubilee treatment plant. Historically the ore has been sourced from many mines situated in the SKO land holding. Currently the ore is sourced from the HBJ Open-Pit, low grade stockpiles, and the 49% share of the Frog’s Leg mine. The MEJV allows for the ore owned by Alacer (49%) to be delivered and processed at the SKO.

The SKOEP involves effectively doubling the SKO ore processing capacity through the construction of a new processing plant to replace the current processing facility. This is justified by additional feed sources associated with the HBJ open-pit, the Mt Martin open-pit, the Pernatty open-pit and the Triumph open-pit. The significant feed source associated with the SKOEP is from a large push back (cutback) associated with the HBJ open-pit which exposes the ore body currently sitting below the existing open-pit. The HBJ ore body is approximately 2.6 km long and 2.6km deep and has been mined intermittently for the past 25 years.

SKO’s current processing facility, is a standard crush, grind, gravity, leach and CIP circuit with a throughput capacity of 1.2 Mtpa. The planned processing facility associated with SKOEP is a new 2.5 Mtpa processing facility which will serve as the central treatment hub for all current ore sources, ore from the 49% ownership of the Frog’s Leg mine and any new mines that the company may develop in the district.

### **2.1 Terms of Reference**

This report was prepared by Alacer’s qualified persons, as listed under Item 28, in March 2012 to provide an NI 43-101 compliant Technical Report on the SKO and relates to the SKOEP.

### **2.2 Sources of Information**

A number of specialist consultants have contributed to studies related to the SKO expansion project. Their reports are referenced and recorded under Item 27.





## **2.3 Personal Inspection of the Property**

Site visits have been conducted by all of the consultants referenced as contributors to the SKOEP; details are recorded in their respective reports referenced in this document. Alacer's internal QPs are intimately involved with site activities on a monthly basis.

### 3.0 RELIANCE ON OTHER EXPERTS

Alacer has relied on reports, opinions and statements from experts who are not QPs for information concerning legal, environmental, political, or other issues and factors relevant to the Technical Report. The authors of this report are not qualified to make extensive comment on the legal issues such as status of tenure, water rights and surface rights. Information has been supplied as summarised in the following table:

**Table 3-1: Reliance on other experts – table of details**

Report Title:	Supplied by:	Subject Matter:	Report date:
NI 43-101 Technical Report of the Mining Operations and Exploration Tenements of Avoca Resources Limited, Western Australia	SRK Consulting	Technical Report Used in sections 4 to 9	Dec 2010
South Kalgoorlie Operations Stage 3 Tailings Storage Facility DFS Design Report	Metago Environmental Engineers (Australia) Pty Ltd	Design of new tailings facilities for SKO Used in Sections 18 and 20	Nov 2011
Fatal Flaw Review for SKO Expansion Feasibility Study	Tetra Tech Inc.	Review of aspects of feasibility study for fatal flaw identification	Oct 2011
SKO 2.5 Mtpa Mill Feasibility Study	GR Engineering Services Ltd	Options and design study for a new mill for SKO Used in Sections 13 and 17	July 2011
SMC Test Report on Five Samples of Ore from HBJ GOLD PROJECT	JKTech Pty Ltd Tested at ALS Ammtec Pty Limited, Perth, WA	Testing comminution characteristics of HBJ ore Used in Section 13	May 2011
Metallurgical test reports	Australian Metallurgical And Mineral Testing Consultants Ltd	Metallurgical test reports on various gold recovery tests for SKO ores Used in Section 13	May 2011
HBJ Expansion Project - Indicative Power Supply Costs	MiNERGY Consulting	Power supply costs estimate Used in Section 17	July 2011
New Celebration Seepage Management - Geophysics & Bore Siting	RPS Aquaterra	Tailings design input data related to water seepage Used in Section 20	Nov 2011
SKO Geotechnical assessments	Peter O'Bryan & Associates consultants in mining geomechanics	Geotechnical studies and report on HBJ pit. Used in Section 15	Aug 2011

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Triumph resource estimate	Widenbar and associates	Triumph resource estimate Used in Section 14	June 2010
Mt Martin mineral resource estimate	CSA Global	Mt Martin mineral resource estimate Used in Section 14	Oct 2010
HBJ Resource Model Update	Widenbar and associates	HBJ Resource Model Update Used in Section 14	January 2012

## 4.0 PROPERTY DESCRIPTION AND LOCATION

### 4.1 Tenements

The SKO tenements and freehold titles (also referred to as “locations” or “freehold land”) cover in excess of 1,200 km<sup>2</sup>, and are located between Coolgardie, 15 km south of Kalgoorlie and 10 km north of Kambalda, in the State of Western Australia, as shown in Figure 4-1. These tenements lie in the Coolgardie and East Coolgardie Mineral Fields, in the Shire of Coolgardie and City of Kalgoorlie-Boulder (local government authorities) of Western Australia, centred at 30°45’S latitude and 121°28’E longitude.

**Figure 4-1: Location of SKO (Tenements in Blocked Area)**



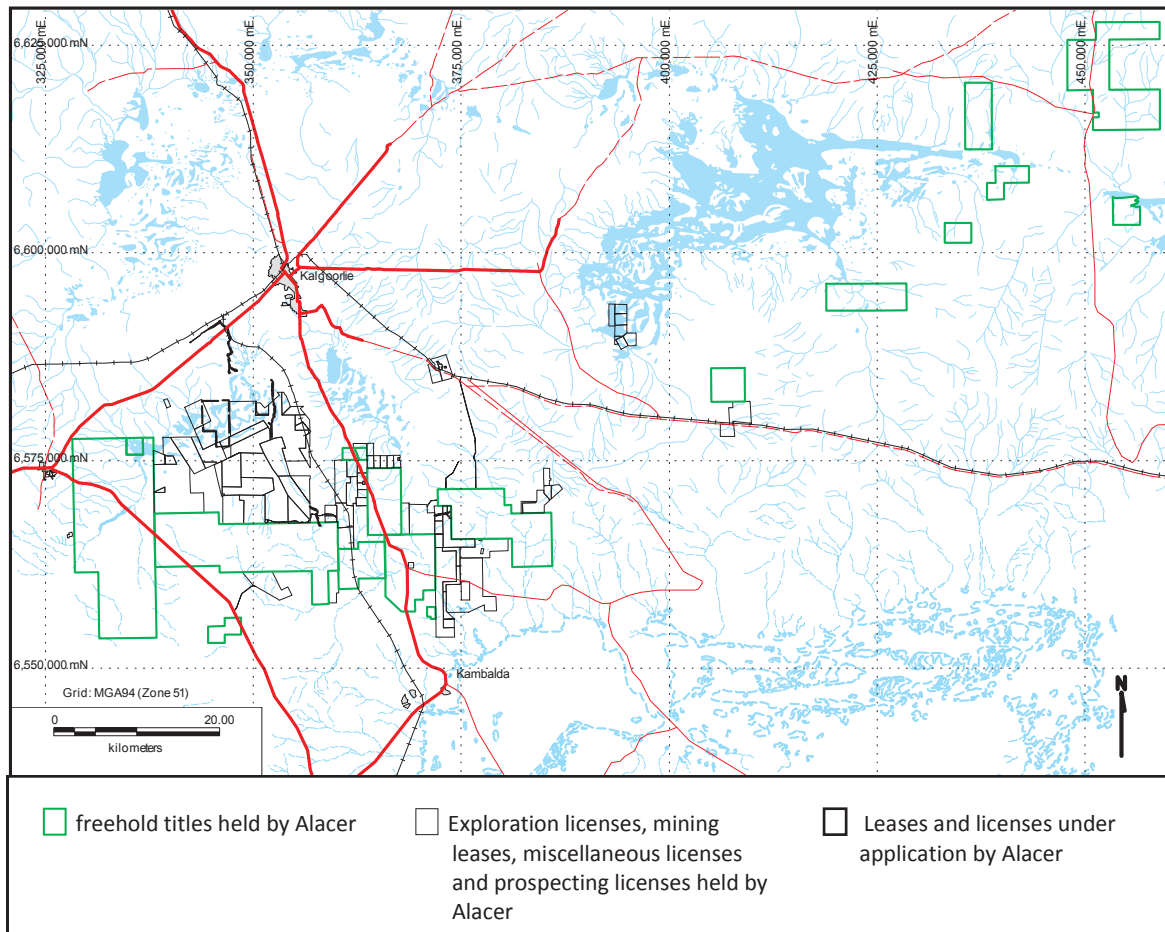
SKO consists of 16 freehold titles and 117 individual tenements, as shown in figure 4-2. Freehold locations are shown in green and other lease types in black.

The 117 tenements covering a total area of 1,210 km<sup>2</sup> include:

- 16 freehold titles
- 5 exploration licences ,
- 39 mining leases,
- 6 miscellaneous licences and
- 51 prospecting licences

Alacer has also applied for a further eight tenements, comprising two mining leases and six miscellaneous licences covering a total of 4.5 km<sup>2</sup>.

**Figure 4-2: SKO Tenement Location Plan (Plan supplied by Alacer Exploration)**



**Table 4-1: Summary of SKO Tenements**

Project	Exploration License	Freehold Land	Mining Lease	Miscellaneous License	Prospecting License	Total
Feysville					8	8
Glandore Sth					7	7
Golden Ridge-Boorara			4	1		5
Freehold Locations		15*				15
Kalbarra JV			1			1
Lake Greta	1		1(1)			2(1)
Mount Martin	1	1*	3		4	9
Mungari			1			1
Mungari East				(4)		(4)
New Celebration	1		5	4 (2)	11	21 (2)
Penfolds	2		21	1	14	38
Pokai			(1)			(1)
Queensland					1	1
Rose Hill			2		6	8
Trojan			1			1
<b>Total</b>	<b>5</b>	<b>16</b>	<b>39 (2)</b>	<b>6 (6)</b>	<b>51</b>	<b>117(8)</b>

Alacer owns 100% of the SKO tenements except at Kalbarra JV (Kanowna West), where Alacer holds a 10% interest, at the Lake Greta JV where Alacer owns 24.5% and Glandore where Alacer owns 80%.

Australian law generally requires that all necessary native title approval be obtained before a Mining Lease can be granted and mining operations can commence. SKO has mining leases supporting its current Mineral Reserves and/or Mineral Resources.

For SKO to expand leases into additional areas, currently under exploration, the relevant Exploration Licenses will need to be converted to Mining Leases prior to the commencement of any formal mining activities. This process requires native title approval on terms to be negotiated with the affected native title parties, or otherwise determined in accordance with the Native Title Act 1993.

The obligations that must be met to retain the property are the expenditure commitment for each tenement as well as rent and local rates payable to the DMP.

Table 4-2 shows expenditure commitment as well as rent payable and grant and expiry dates for each of the SKO tenements. Some tenements have passed their expiration date. All tenements with expiry days prior to December 31, 2011 have had either term extension or Section 64 applications lodged with the DMP.

The freehold titles are owned by Hampton Gold Mining Areas Ltd (“HGMAL”). The SKO conducts mining operations on the freehold titles, no rental fee is demanded and the explorer and/or owner have no statutory expenditure commitment. There is no reporting requirement for freehold titles.

**Table 4-2: Details of SKO Tenement Leases**

Lease	Project	Lease Type	Lease Status	Area (ha)	Grant Date	Expiry Date	Commitment (\$)	Rent (\$)
P26/3464	Feysville	Prospecting Licence	Granted	121	6/11/2007	5/11/2015	4,880	268.40
P26/3465	Feysville	Prospecting Licence	Granted	112	6/11/2007	5/11/2015	4,480	246.40
P26/3466	Feysville	Prospecting Licence	Granted	7	6/11/2007	5/11/2015	2,000	22.00
P26/3467	Feysville	Prospecting Licence	Granted	81	6/11/2007	5/11/2011	3,280	180.40
P26/3468	Feysville	Prospecting Licence	Granted	120	6/11/2007	5/11/2011	4,800	264.00
P26/3469	Feysville	Prospecting Licence	Granted	121	6/11/2007	5/11/2015	4,880	268.40
P26/3470	Feysville	Prospecting Licence	Granted	121	6/11/2007	5/11/2015	4,880	268.40
P26/3471	Feysville	Prospecting Licence	Granted	121	6/11/2007	5/11/2015	4,880	268.40
P25/1925	Glandore South	Prospecting Licence	Granted	187	31/01/2008	30/01/2012	7,520	413.60
P25/1926	Glandore South	Prospecting Licence	Granted	185	31/01/2008	30/01/2012	7,440	409.20
P25/1927	Glandore South	Prospecting Licence	Granted	37	31/01/2008	30/01/2012	2,000	83.60
P25/1928	Glandore South	Prospecting Licence	Granted	129	31/01/2008	30/01/2012	5,160	283.80
P25/1929	Glandore South	Prospecting Licence	Granted	193	3/12/2007	2/12/2015	7,760	426.80
P25/1930	Glandore South	Prospecting Licence	Granted	199	3/12/2007	2/12/2011	7,960	437.80
P25/1931	Glandore South	Prospecting Licence	Granted	160	3/12/2007	2/12/2015	6,400	352.00
M26/41	Golden Ridge-Boorara	Mining Lease	Granted	32	4/01/1984	3/01/2026	10,000	495.00
M26/433	Golden Ridge-Boorara	Mining Lease	Granted	6	14/12/1993	13/12/2014	10,000	90.00
M26/494	Golden Ridge-Boorara	Mining Lease	Granted	200	3/10/1997	2/10/2018	20,000	3,000.00
M26/534	Golden Ridge-Boorara	Mining Lease	Granted	418	3/10/1997	2/10/2018	41,800	6,270.00
L26/233	Golden Ridge-Boorara	Miscellaneous Licence	Granted	55	22/11/2004	21/11/2025	0	731.50
M27/181	Kalbarra JV	Mining Lease	Granted	243	7/04/1994	6/04/2015	24,300	3645.00
E15/634	Lake Greta	Exploration Licence	Granted	280	14/11/2001	13/11/2008	20,000	453.50
M15/1408	Lake Greta	Mining Lease	Granted	83	8/01/2004	7/01/2025	10,000	1,245.00



Lease	Project	Lease Type	Lease Status	Area (ha)	Grant Date	Expiry Date	Commitment (\$)	Rent (\$)
M15/1741	Lake Greta	Mining Lease	Application	51			0	765.00
E26/148	Mt Martin	Exploration Licence	Granted	3080	17/05/2011	16/05/2016	20,000	1,248.50
M26/132	Mt Martin	Mining Lease	Granted	65.5	17/03/21987	16/03/2029	10,000	990.00
M26/464	Mt Martin	Mining Lease	Granted	947	1/09/1995	31/08/2016	94,700	14,205.00
M26/782	Mt Martin	Mining Lease	Granted	507	24/11/2006	23/11/2027	50,700	7,605
P26/3346	Mt Martin	Prospecting Licence	Granted	56	19/02/2007	18/02/2015	2,280	125.40
P26/3347	Mt Martin	Prospecting Licence	Granted	127	22/05/2008	21/05/2012	5,080	279.40
P26/3348	Mt Martin	Prospecting Licence	Granted	149	22/05/2008	21/05/2012	6,000	330.00
P26/3349	Mt Martin	Prospecting Licence	Granted	133	22/05/2008	21/05/2012	5,320	292.60
L15/300	Mungari East	Miscellaneous Licence	Application	29			0	385.70
L26/249	Mungari East	Miscellaneous Licence	Application	75			0	997.50
L26/250	Mungari East	Miscellaneous Licence	Application	21			0	279.30
L26/251	Mungari East	Miscellaneous Licence	Application	69			0	917.70
E26/122	New Celebration	Exploration Licence	Granted	2800	31/01/2008	30/01/2013	20,000	1,765.00
M15/717	New Celebration	Mining Lease	Granted	981	19/09/1994	18/09/2015	98,100	14,715.00
M26/118	New Celebration	Mining Lease	Granted	380	16/12/1986	15/12/2028	38,000	5,700.00
M26/143	New Celebration	Mining Lease	Granted	1000	7/08/1987	6/08/2029	100,000	15,000.00
M26/224	New Celebration	Mining Lease	Granted	41	31/05/1988	30/05/2030	10,000	615.00
M26/493	New Celebration	Mining Lease	Granted	10	21/08/1996	20/08/2017	10,000	150.00
L15/220	New Celebration	Miscellaneous Licence	Granted	9	2/05/2000	1/05/2021	0	119.70
L15/221	New Celebration	Miscellaneous Licence	Granted	22	2/05/2000	1/05/2021	0	292.60
L26/122	New Celebration	Miscellaneous Licence	Granted	4	20/01/1989	19/01/2014	0	53.20
L26/123	New Celebration	Miscellaneous Licence	Granted	11	20/01/1989	19/01/2014	0	146.30
L26/214	New Celebration	Miscellaneous Licence	Application	8			0	106.40
L26/260	New Celebration	Miscellaneous Licence	Application	5			0	79.80
P26/3472	New Celebration	Prospecting Licence	Granted	181	9/11/2007	8/11/2015	7,240	398.20
P26/3473	New Celebration	Prospecting Licence	Granted	160	9/11/2007	8/11/2015	6,440	354.20
P26/3474	New Celebration	Prospecting Licence	Granted	161	9/11/2007	8/11/2015	6,480	356.40
P26/3475	New Celebration	Prospecting Licence	Granted	189	9/11/2007	8/11/2015	7,560	415.80

Lease	Project	Lease Type	Lease Status	Area (ha)	Grant Date	Expiry Date	Commitment (\$)	Rent (\$)
P26/3476	New Celebration	Prospecting Licence	Granted	141	9/11/2007	8/11/2015	5,680	312.40
P26/3477	New Celebration	Prospecting Licence	Granted	95	9/11/2007	8/11/2015	3,800	209.00
P26/3478	New Celebration	Prospecting Licence	Granted	121	9/11/2007	8/11/2015	4,880	268.40
P26/3525	New Celebration	Prospecting Licence	Granted	179	31/01/2008	30/01/2012	7,160	393.80
P26/3526	New Celebration	Prospecting Licence	Granted	195	31/01/2008	30/01/2012	7,800	429.00
P26/3527	New Celebration	Prospecting Licence	Granted	172	10/10/2008	9/10/2012	6,880	378.40
P26/3528	New Celebration	Prospecting Licence	Granted	134	10/10/2008	9/10/2012	5,360	294.80
E15/985	Penfolds	Exploration Licence	Granted	10920	2/07/2009	1/07/2014	39,000	4,426.50
E15/1211	Penfolds	Exploration Licence	Granted	4760	7/02/2011	6/02/2016	20,000	1,929.50
M15/456	Penfolds	Mining Lease	Granted	433	3/08/1990	2/08/2032	43,400	6,510.00
M15/469	Penfolds	Mining Lease	Granted	901	28/11/1989	27/11/2031	90,100	13,425.00
M15/663	Penfolds	Mining Lease	Granted	598	8/06/1993	7/06/2014	59,800	8,970.00
M15/721	Penfolds	Mining Lease	Granted	994	19/09/1994	18/09/2015	99,400	14,910.00
M15/722	Penfolds	Mining Lease	Granted	766	19/09/1994	18/09/2015	76,600	11,490.00
M15/723	Penfolds	Mining Lease	Granted	359	19/09/1994	18/09/2015	35,900	5,385.00
M15/724	Penfolds	Mining Lease	Granted	213	10/02/1995	9/02/2016	21,300	3,195.00
M15/726	Penfolds	Mining Lease	Granted	840	21/09/1994	20/09/2015	84,100	12,615.00
M15/740	Penfolds	Mining Lease	Granted	866	21/11/1994	20/11/2015	86,700	13,005.00
M15/747	Penfolds	Mining Lease	Granted	476	21/12/1994	20/12/2015	47,700	7,155.00
M15/753	Penfolds	Mining Lease	Granted	850	31/01/1995	30/01/2016	85,000	12,750.00
M15/937	Penfolds	Mining Lease	Granted	836	7/05/2003	6/05/2024	83,600	12,540.00
M15/938	Penfolds	Mining Lease	Granted	997	8/05/2003	7/05/2024	99,700	14,955.00
M26/204	Penfolds	Mining Lease	Granted	957	22/04/1988	21/04/2030	95,700	14,355.00
M26/245	Penfolds	Mining Lease	Granted	240	29/03/1989	28/03/2031	24,000	3,600.00
M26/328	Penfolds	Mining Lease	Granted	127	14/05/1991	13/05/2012	12,800	1,920.00
M26/441	Penfolds	Mining Lease	Granted	238	21/09/1994	20/09/2015	23,800	3,570.00
M26/452	Penfolds	Mining Lease	Granted	404	14/12/1994	13/12/2015	40,400	6,060.00
M26/458	Penfolds	Mining Lease	Granted	560	21/08/1996	20/08/2017	56,100	8,415.00
M26/482	Penfolds	Mining Lease	Granted	783	21/08/1996	20/08/2017	78,300	11,745.00

Lease	Project	Lease Type	Lease Status	Area (ha)	Grant Date	Expiry Date	Commitment (\$)	Rent (\$)
M26/567	Penfolds	Mining Lease	Granted	492	7/05/2003	6/05/2024	49,200	7,380.00
L26/248	Penfolds	Miscellaneous Licence	Granted	27	1/04/2010	31/03/2031	0	359.10
P15/4971	Penfolds	Prospecting Licence	Granted	46	14/10/2009	13/10/2013	2,000	101.20
P15/5049	Penfolds	Prospecting Licence	Granted	197	31/12/2009	30/12/2013	7,880	433.40
P15/5050	Penfolds	Prospecting Licence	Granted	121	31/12/2009	30/12/2013	4,840	266.20
P15/5051	Penfolds	Prospecting Licence	Granted	106	28/10/2008	27/10/2012	4,240	233.20
P15/5130	Penfolds	Prospecting Licence	Granted	75	22/07/2009	21/07/2013	3,000	165.00
P15/5131	Penfolds	Prospecting Licence	Granted	29	22/07/2009	21/07/2013	2,000	63.80
P15/5132	Penfolds	Prospecting Licence	Granted	20	22/07/2009	21/07/2013	2,000	46.20
P26/3499	Penfolds	Prospecting Licence	Granted	196	28/10/2008	27/10/2012	7,840	431.20
P26/3500	Penfolds	Prospecting Licence	Granted	45	2/07/2009	1/07/2013	2,000	99.00
P26/3529	Penfolds	Prospecting Licence	Granted	156	2/07/2009	1/07/2013	6,280	345.40
P26/3530	Penfolds	Prospecting Licence	Granted	174	2/07/2009	1/07/2013	7,000	385.00
P26/3531	Penfolds	Prospecting Licence	Granted	196	2/07/2009	1/07/2013	7,880	433.40
P26/3532	Penfolds	Prospecting Licence	Granted	112	2/07/2009	1/07/2013	4,520	248.60
P26/3533	Penfolds	Prospecting Licence	Granted	198	2/07/2009	1/07/2013	7,920	435.60
M15/1306	Pokai	Mining Lease	Application	244			0	3,660.00
P15/4978	Queensland	Prospecting Licence	Granted	29	17/06/2010	16/06/2014	2,000	63.80
M15/1204	Rose Hill	Mining Lease	Granted	17	2/06/1998	1/06/2019	10,000	255.00
M15/652	Rose Hill	Mining Lease	Granted	5	2/02/1993	1/02/2014	10,000	90.00
P15/4979	Rose Hill	Prospecting Licence	Granted	10	2/09/2010	1/09/2014	2,000	22.00
P15/4980	Rose Hill	Prospecting Licence	Granted	13	2/09/2010	1/09/2014	2,000	30.80
P15/4981	Rose Hill	Prospecting Licence	Granted	20	2/09/2010	1/09/2014	2,000	46.20
P15/4982	Rose Hill	Prospecting Licence	Granted	16	2/09/2010	1/09/2014	2,000	37.40
P15/4983	Rose Hill	Prospecting Licence	Granted	24	2/09/2010	1/09/2014	2,000	52.80
P15/4984	Rose Hill	Prospecting Licence	Granted	0.2	14/07/2010	13/07/2014	2,000	22.00
M25/104	Trojan	Mining Lease	Granted	872	18/11/1992	17/11/2013	87,200	13,080.00
E26/148	Woodline/Duplex Hill South	Exploration Licence	Granted	3080	17/05/2011	16/05/2016	20,000	1,248.50

Lease	Project	Lease Type	Lease Status	Area (ha)	Grant Date	Expiry Date	Commitment (\$)	Rent (\$)
M26/782	Woodline/Duplex Hill South	Mining Lease	Granted	507	24/11/2006	23/11/2027	50,700	7,605
P26/3346	Woodline/Duplex Hill South	Prospecting Licence	Granted	56	19/02/2007	18/02/2015	2,280	125.40
P26/3347	Woodline/Duplex Hill South	Prospecting Licence	Granted	127	22/05/2008	21/05/2012	5,080	279.40
P26/3348	Woodline/Duplex Hill South	Prospecting Licence	Granted	149	22/05/2008	21/05/2012	6,000	330.00
P26/3349	Woodline/Duplex Hill South	Prospecting Licence	Granted	133	22/05/2008	21/05/2012	5,320	292.60
	Total			47,128			2,307,080	313,560

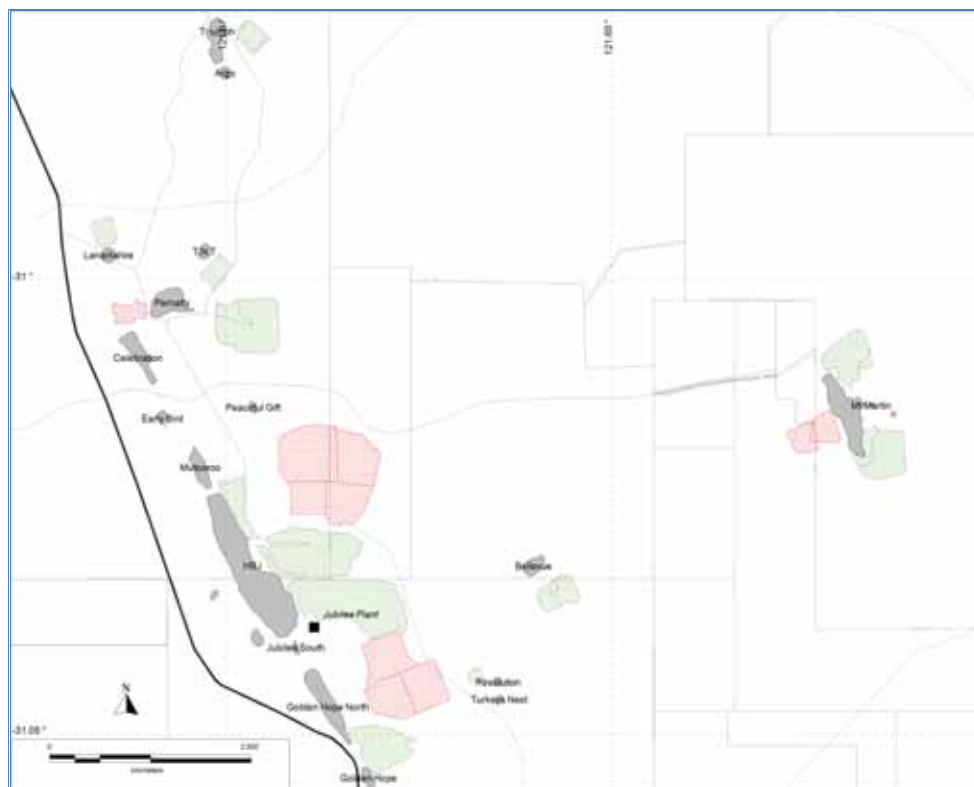
## 4.2 Surveying

Mining leases and prospecting licences must be marked out and exploration licences are not marked out in accordance with the Mining Act 1978 (WA). All tenement data is maintained up to date in a SQL database utilising Lease Control while their shapes are recorded in Mapinfo.

## 4.3 Existing Surface Infrastructure

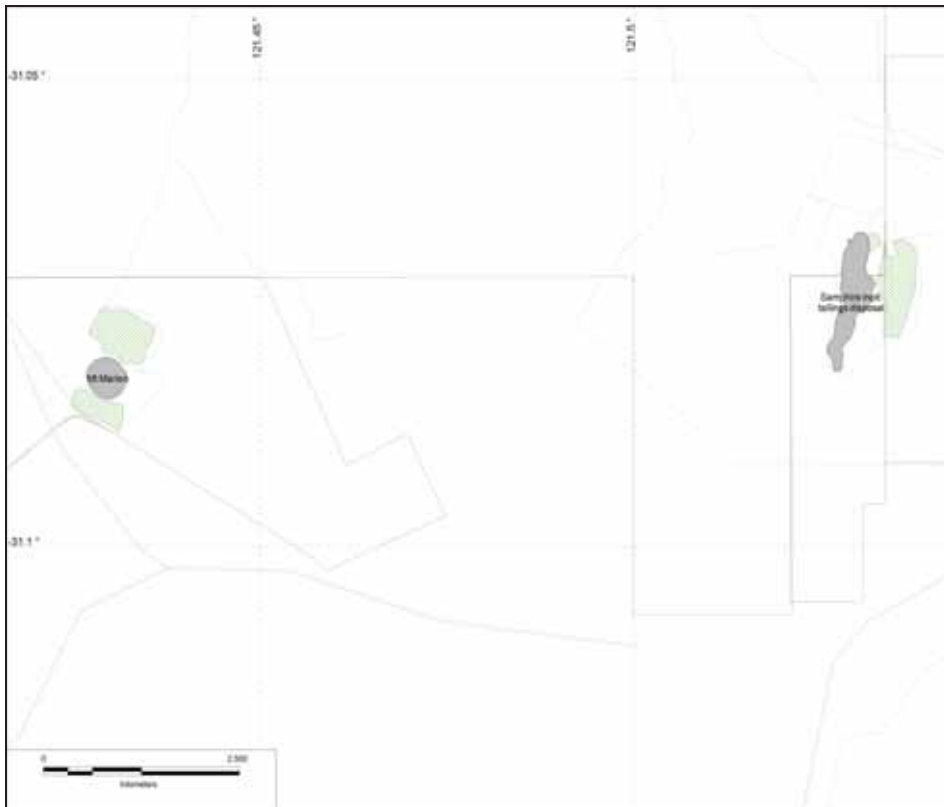
Figures 4-3 to 4-5 show surface infrastructure for HBJ, Mt Martin, Mt Marion, Baker's Flat, Barbara-Shirl-Surprise area and Pit 28. All major infrastructure lies on tenements held or jointly held by SKO.

**Figure 4-3: HBJ and Mt Martin Surface Infrastructure (Plan from SKO)**



Open-pits are shaded grey and TSF are depicted in red. Lease boundaries and roads depicted in grey and drainage depicted in blue. The Bellevue, Golden Hope North, Mt Goddard and Sapphire open-pits are now tailings storage facilities.

**Figure 4-4: Mt Marion Surface Infrastructure (Plan from SRK, 2010)**



**Figure 4-5: Bakers Flat, Barbara-Shirl-Surprise and 28 Pit (Plan from SRK, 2010)**



#### **4.3.1 Roads and Rail**

SKO is accessed by existing road infrastructure, and there are no operational access impediments to the processing facility or the various mines. Major sealed national highways connect Kalgoorlie, Coolgardie and Kambalda and a railway exists between Coolgardie and Kalgoorlie and Kalgoorlie and Kambalda, which connects Kalgoorlie to the port of Esperance in the south. SKO is located in the centre of the Kalgoorlie region and lies between the towns of Kalgoorlie, Coolgardie and Kambalda.

The existing 1.2 Mtpa Jubilee processing facility and the SKO administration office is located immediately northeast of the main highway connecting the mining centres of Kalgoorlie and Kambalda. There is a network of well-maintained compacted gravel roads linking the various SKO activity centers, tenements, open pits, rock and tailings dumps and other miscellaneous infrastructure.

#### **4.3.2 Communications**

The Telstra-owned optic fibre cable network runs alongside the main Kalgoorlie to Kambalda highway. Lateral feeders are already established from this line into the Jubilee site and the New Celebration site where the proposed new plant and infrastructure are planned to be located.

The SKO site also has adequate mobile phone coverage.

#### **4.3.3 Accommodation and Messing**

Employees associated with the SKO reside in one of the nearby large regional centres. All accommodation and messing is done in one of these centre and employees are actively encouraged to support the local community. Transport to and from the site is via road with a series of different road transport options available.

#### **4.3.4 Supply and Logistics**

As the nearby regional towns primarily service the mining industry any supply and logistical issues are generally limited and specific. The city of Kalgoorlie is serviced daily by regular flights from Perth (Capital city of Western Australia).

### **4.4 Mineral Royalties**

Royalties are paid to the Government of Western Australia based on saleable production on mining leases. The state of Western Australia has waived its right to freehold locations and any royalties on gold production. In terms of SKO's royalties payable, there are a number of specific agreements attached to a select number of tenements and locations. Many of the royalty agreements are associated with tenements with no current Resources and/or Reserves.

Production from SKO current four-year mine plan is entirely sourced from resources located on freehold/leasehold property, as such no state royalty is payable. There are private royalty payments that relate to production from HBJ open-pit at \$A10/oz.

In addition, a royalty is payable in the form of 1.75% of the total gold ounces produced from the following deposits: Shirl underground, Golden Hope, Bellevue, HBJ open-pit, Mt Martin open-pit, Mt Martin stockpiles and any reclaimed tailings.



## 4.5 Environmental Liabilities

Environmental risks that could lead to long-term liabilities or increased costs if not properly managed are saline seepage from various TSFs, successful and sustained rehabilitation of TSFs and waste rock dumps, dust amelioration on dumps and haul roads, and adequate provisions for final rehabilitation at the end of the life of the operations. SKO maintains a comprehensive record of all contaminated sites on its tenements in line with regulatory standards.

SKO tracks their environmental incidences via INX, a computer based database, and all incidences are recorded in the Annual Environmental Report (“AER”), which was last updated and submitted to the environmental authorities in September 2011. There were no material concerns raised by the regional office.

During the year two, TSF’s were capped using waste material from the HBJ Open-Pit and the remainder were sprayed with dust suppressant to negate dust blown particles spreading through the surrounding environment. One new waste dump was created, but this is being managed in such a way as to negate closure obligations by completing the tasks during the mining phase. Seeding and monitoring will be the only liabilities remaining at the completion of activities on this site.

Programs to understand saline seepage were implemented during the year (see Section 20).

Bonds are required on State regulated tenements in Western Australia, where mining works or activity generating other disturbances that require rehabilitation take place. No bonds are required for freehold titles. Table 4-3 presents provision for the current estimated mine closure costs for the SKO tenements. Table 4-4 presents the current SKO tenure bonds.

**Table 4-3: SKO Mine Closure Cost Estimate**

<b>Mining Centre</b>	<b>Costs</b>	<b>Mining/Location</b>
Rose Hill	\$89,158	M
Green Fields	\$0	
Barbara, Tripod, Pit 28, Surprise	\$637,813	L
Shirl	\$307,900	L
Bakers Flat	\$34,956	L
Gala	\$11,784	L
Noble	\$11,504	L
Noble PaleoChannels	\$69,516	L
Freddo	\$169,331	M
Greenback/Penfolds	\$184,987	M
Erebus	\$4,320	M
Fuji	\$15,030	M
Ghost Crab/Mt Marion	\$404,519	M
Samphire Inpit	\$2,041,993	BOTH
Inclined Shaft /Lancashire/Revelation	\$23,076	L
Dawns Hope	\$322,604	L
White Hope	\$10,388	L
Mt Goddard	\$175,192	L
Golden Hope South	\$42,288	L
Golden Hope North	\$634,447	L
Scrubby Tank	\$55,424	M
Butterfly	\$59,393	M
Resolution North & South	\$6,596	L
Bellevue	\$250,075	BOTH
Mt Martin	\$0	BOTH
Trojan	\$81,798	M
Transfind	\$64,993	L
Golden Ridge	\$98,568	M
Triumph and Argo	\$77,792	L
Lanarkshire Basalt	\$9,888	L
TNT	\$15,048	L
Pernatty	\$70,517	L
Celebration	\$399,204	L
Early Bird	\$0	
Mutoroo	\$0	
Peacefull Gift	\$1,088	L
Atreides and Napoleon	\$0	
Josephine	\$10,304	M
Loius	\$9,014	M
Bridgette and Sophia	\$11,584	M
New Cel	\$4,033,567	BOTH
HBJ	\$5,115,495	BOTH
Exploration Grid Lines	\$96,636	BOTH
Haul Roads, bores	\$1,947,181	BOTH
	<b>\$17,604,969</b>	

**Table 4-4: SKO Tenure Bonds**

Tenement ID	Dealing No	Received Date	Amount	Bond Status	Bond Type	Surety Provider
L15/221	Bond 382339	30-Sep-11	\$16,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M15/456	Bond 365888	18-Feb-11	\$300,000.00	Recorded	Unconditional Performance Bond	COMMONWEALTH BANK OF AUSTRALIA
M15/469	Bond 320345	01-May-09	\$280,500.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M15/717	Bond 364762	07-Feb-11	\$369,500.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M15/724	Bond 336258	09-Dec-09	\$165,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M15/726	Bond 320341	01-May-09	\$10,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M15/740	Bond 320340	01-May-09	\$52,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M15/937	Bond 336259	09-Dec-09	\$48,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M15/938	Bond 336261	09-Dec-09	\$24,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M25/104	Bond 385620	22-Nov-11	\$388,000.00	Pending	Unconditional Performance Bond	BNP PARIBAS
M26/118	Bond 364779	07-Feb-11	\$829,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M26/132	Bond 368780	01-Apr-11	\$5,000.00	Recorded	Security	
M26/143	Bond 342755	16-Mar-10	\$130,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M26/204	Bond 341650	25-Feb-10	\$346,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M26/328	Bond 320337	01-May-09	\$10,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M26/41	Bond 385619	22-Nov-11	\$41,500.00	Pending	Unconditional Performance Bond	BNP PARIBAS
M26/433	Bond 382340	30-Sep-11	\$18,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M26/458	Bond 320335	01-May-09	\$5,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M26/534	Bond 299605	10-Oct-08	\$415,800.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M26/567	Bond 320334	01-May-09	\$68,000.00	Recorded	Unconditional Performance Bond	BNP PARIBAS
M26/782	Bond 322199	08-Jun-09	\$32,000.00	Recorded	Unconditional Performance Bond	INVESTEC BANK (AUSTRALIA) LTD
			<b>\$3,553,300</b>			

## 4.6 Permits

Tenement conditions fall under the jurisdiction of the DMP. There are conditions of use attached to each tenement.

Each stage of the project development requires more stringent permits and increased levels of environmental bonds to be lodged with the regulatory bodies before the proposed activity can commence.

Permits are broadly divided into:

- **Area Permits:** This allows for vegetation clearing in a defined area for mining operations in a specified timeframe. Required on freehold titles and DMP regulated tenements.
- **Environmental Operation Licenses:** Covering various aspects of mining operations on Location Lands and the DMP regulated tenements.
- **Purpose Permits:** Allow for vegetation clearing for mineral exploration on Location Lands. Enables the holder to clear a number of different areas within a broadly defined area of interest over an extended period of time.
- **Program of Work Approvals:** These approvals permit clearance of designated areas for exploration activities on DMP regulated tenements.

**Table 4-5: Licences at SKO as at March 2012**

License Name	Date
Environmental License L5107/1988/12 (Jubilee Operations)	Valid to Oct 2014
Environmental License L8169/2007/1 (Shirl – Bakers Flat Mine)	Extinguished. March 2012
Groundwater License GWL59931(3) for 4,992,995 kL	Surrendered - Amalgamated into 106838 (see note below)
Groundwater License GWL106836(5) for 5,938,995 kL	Expires 22 November 2020
Groundwater License GWL160145(3) for 800,000 kL	Surrendered - Amalgamated into 106838 (see note below)
Groundwater License GWL66200(4) for 200,000kL	Valid to November 2020

Referring to Table 4-5 above, the Department of Water amalgamated the following licences: GWL 59931(4), GWL160145(3) into one Licence GWL 106836(5) for a total combined allocation of 5,938,995 kilolitres per annum and as a result GWL 59931(4) and GWL 160145(3) have been surrendered as they are no longer required.

SKO is materially compliant with the licence conditions. Areas of minor noncompliance include groundwater levels above trigger levels in two bores. A groundwater recovery plan has been developed and accepted by Department of Water.

All ground clearing permits are up to date or in the process of being updated. A works approval request for Jubilee 3A and 3B “TSFs” was approved in April 2010.

## 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

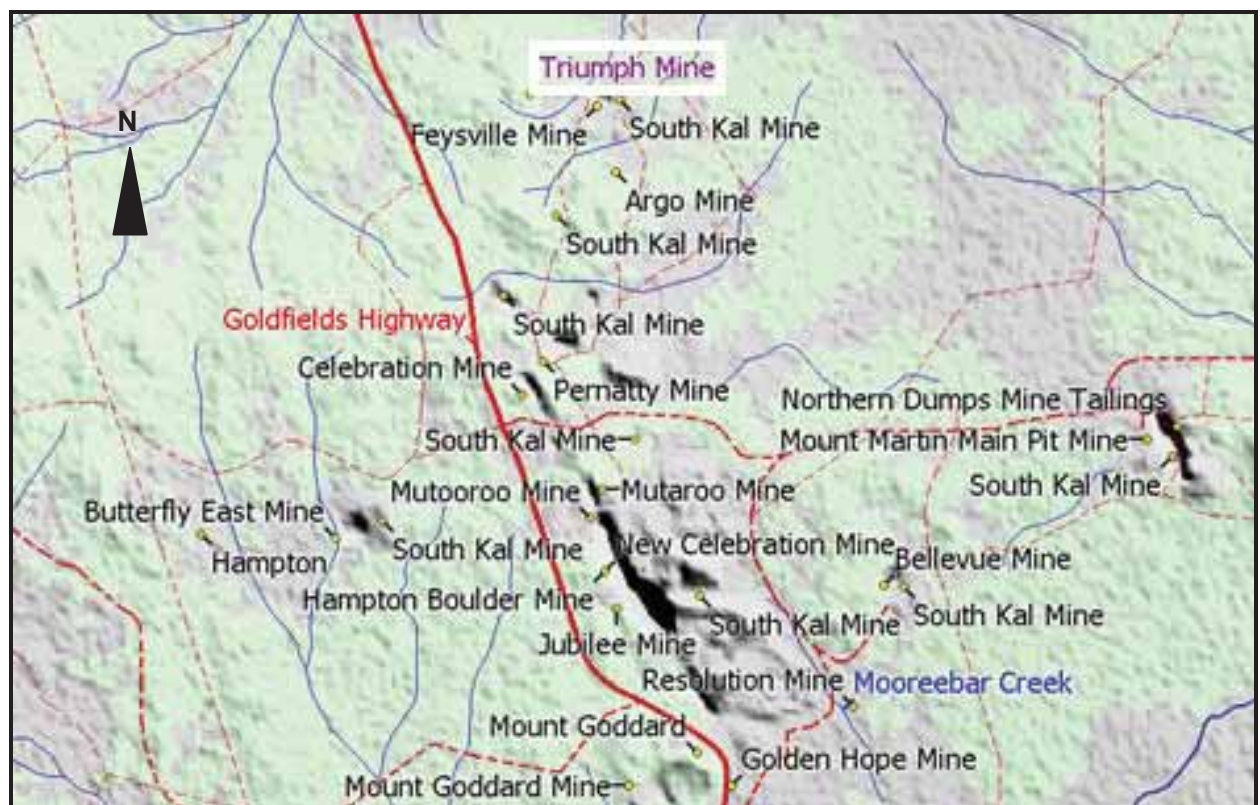
### 5.1 Access

As shown in Figure 1, the property is accessed by existing road infrastructure, and there are no operational access impediments. Major sealed national highways connect Kalgoorlie, Coolgardie and Kambalda and a railway exists between Coolgardie and Kalgoorlie and Kalgoorlie and Kambalda, which connects Kalgoorlie to the port of Esperance in the south.

The Jubilee treatment plant and the SKO mine site office facilities are located approximately 750 m northeast of one the major sealed national highways along a road maintained by Alacer. A series of haul roads connect the SKO mining sites with the Jubilee treatment plant.

The Mt Martin Project is located approximately 7 km east of the Jubilee processing facility. Access to Mt Martin is gained either via the Kalgoorlie-Kambalda Highway and then along the Mt Martin Road from the New Celebration turnoff to Mt Martin, or via the Mt Monger Road and then along the Golden Ridge Haul Road.

**Figure 5-1: Map Showing SKO Surrounding Road Network**



### 5.2 Topography, Elevation and Vegetation

The topography is relatively flat with low hills and ridges interspersed with gently undulating areas that are locally disrupted by breakaways or scraps (Figure 5-12). Other notable landforms are salt lakes, clay pans and laterite capped low mesas.



Elevation is on average approximately 500 m.

The region contains a range of woodland and shrub land assemblages, including a wide variety of Eucalypt, Acacia, Grevillea, Casuarina and Melaleuca species.

**Figure 5-2: Google Satellite Image over the SKO Tenements**



Scale of Image: "X" axis 16kms, "Y" axis 13kms.

### **5.3 Proximity of Property to Population Centres and Nature of Transport**

The SKO is centred approximately 40 km south of the City of Kalgoorlie-Boulder. Kalgoorlie-Boulder has an estimated resident population of approximately 32,390 persons (as at June 30, 2010; Australian Bureau of Statistics 2010). It is the hub of the Western Australian Goldfields region.

Kalgoorlie is 595 km from Perth, the capital city of Western Australia.

There are commercial jet daily flights between Kalgoorlie and Perth. Hire cars are available in Kalgoorlie. There are regular coach and train services between Kalgoorlie and Perth.

### **5.4 The Climate and Length of Operating Season**

Climate is sufficiently mild to allow exploration and mining activities to be carried out over the whole year.

Monthly climate summary statistics for Kalgoorlie-Boulder Airport are given in Table 5-1., taken from the Bureau of Meteorology (BoM, 2010a).

**Table 5-1: Monthly Climate Statistics for Kalgoorlie-Boulder Airport (BoM, 2010b)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean maximum temperature (°C)	33.7	32.1	29.5	25.2	20.7	17.5	16.7	18.6	22.3	25.8	29	32	25.3
Mean minimum temperature (°C)	18.2	17.8	16.1	12.6	8.7	6.2	5	5.5	8	11	14.1	16.6	11.6
Mean rainfall (mm)	23.3	31.1	24.1	21.1	26.3	28.5	24.8	21.3	14	14.8	17.8	16.5	264
Mean number of days of rain ≥ 1 mm	2.3	3	2.6	3.4	4.1	4.9	4.8	3.9	3	2.7	2.5	2.5	39.7

*red = highest value, blue = lowest value*

Kalgoorlie-Boulder has a dry climate with hot summers and cool winters.

The annual mean rainfall is 264 mm. June is the wettest month with a mean of 28.5 mm on 4.9 days.

## 5.5 Local Resources and Infrastructure

The property has access to power from the public grid supplied under contract. Application for additional power supply for the HBJ expansion project is well advanced.

Process water is from bore water or from previously mined open-pit lakes, and potable water is purchased from the regional public water supply.

Kalgoorlie-Boulder is the major supply center for the mine.

## 6.0 HISTORY

Gold was first discovered in the Kalgoorlie region of Western Australia (Eastern Goldfields) at the turn of the century and many small mining centres were quickly established during that period throughout the Eastern Goldfields. One of these areas was known as New Celebration, located south of the town of Kalgoorlie-Boulder.

Intermittent exploration for gold and nickel was undertaken by a variety of companies in the 1960's and 1970's. The rising gold price further renewed interest in the area in the 1980's, and open-pit mining at New Celebration started in 1986 by a joint venture comprising Newmont Holdings Limited (subsequently Newcrest; 60%), Hampton Areas Australia Ltd (25%) and Mt Martin Gold Mines (15%), which merged with Titan Resources in 1993. The New Celebration project includes the Hampton Boulder deposit, Ghost Crab open-pit (started mining in June 1997), and the Mount Marion decline from the Ghost Crab open-pit was established in September 1998.

In June 2001, Hill 50 Gold agreed to purchase the New Celebration project from Newcrest Mining. In December 2001 Harmony Gold Mining acquired Hill 50 Gold, the transaction giving Harmony Gold Mining a 100% interest in the New Celebration project.

The Jubilee deposit located immediately south (along strike) of the Hampton Boulder deposit was evaluated and mined by Hampton Areas Australia Ltd from 1984 to 1996 with open-pit mining starting in 1987. New Hampton Goldfields (New Hampton) acquired the Jubilee deposit in 1996. In May 2001, Harmony Gold Mining acquired New Hampton, and combined the operations of New Hampton's Jubilee operations and associated small open-pits with the New Celebration project into the SKO.

Open-pit mining continued until June 2005, and due to a sustained gold price increase, the SKO re-started open-pit mining in 2006 with exploitation of the newly discovered Shirl Deposit. Pre-stripping of the combined HBJ Open-Pit cutback, commenced in October 2006. The Hampton Boulder and Jubilee sections of the ore body were previously mined as separate open-pits, with a common boundary separating Location 50 (containing the Hampton Boulder open-pit to the north) and Location 48 (containing the Jubilee open-pit to the south).

Operators of both the Jubilee deposit and the New Celebration Project undertook extensive exploration activities during the time the respective owners held the properties. This resulted in the development of 43 open-pits and three underground projects associated with the SKO land holding during this period. Because there were two treatment plant facilities operating, for a combined capacity throughput of over 2 Mtpa, both the Jubilee and New Celebration projects rapidly converted any resources into mines.

The SKO has a significant database of historical exploration, mining and metallurgical data and this is considered in more detail in the exploration section of this report. In 2007, Dioro Exploration NL ("Dioro") acquired the SKO from Harmony Gold (Australia) Pty Ltd ("Harmony") via its wholly-owned subsidiaries, South Kal Mines Pty Ltd, New Hampton Goldfields Ltd and Aurora Gold (WA) Pty Ltd. Dioro acquired approximately 1,180 km<sup>2</sup> of tenements (mining and prospecting leases and freehold land) and associated mine infrastructure which supported the SKO.



In June 2006, Dioro acquired the Penfolds tenements (approximately 480 km<sup>2</sup>) from Harmony through its wholly-owned subsidiaries.

In April 2010 Avoca acquired Dioro.

Alacer was formed in February 2011 with the merger of Avoca (ASX) and Anatolia (TSX).

In August 2011, Alacer acquired the Mt Martin gold mining leases and locations from Australian Mines Ltd. The Mt Martin gold mine is located approximately 7 km east north east of the Jubilee treatment plant.

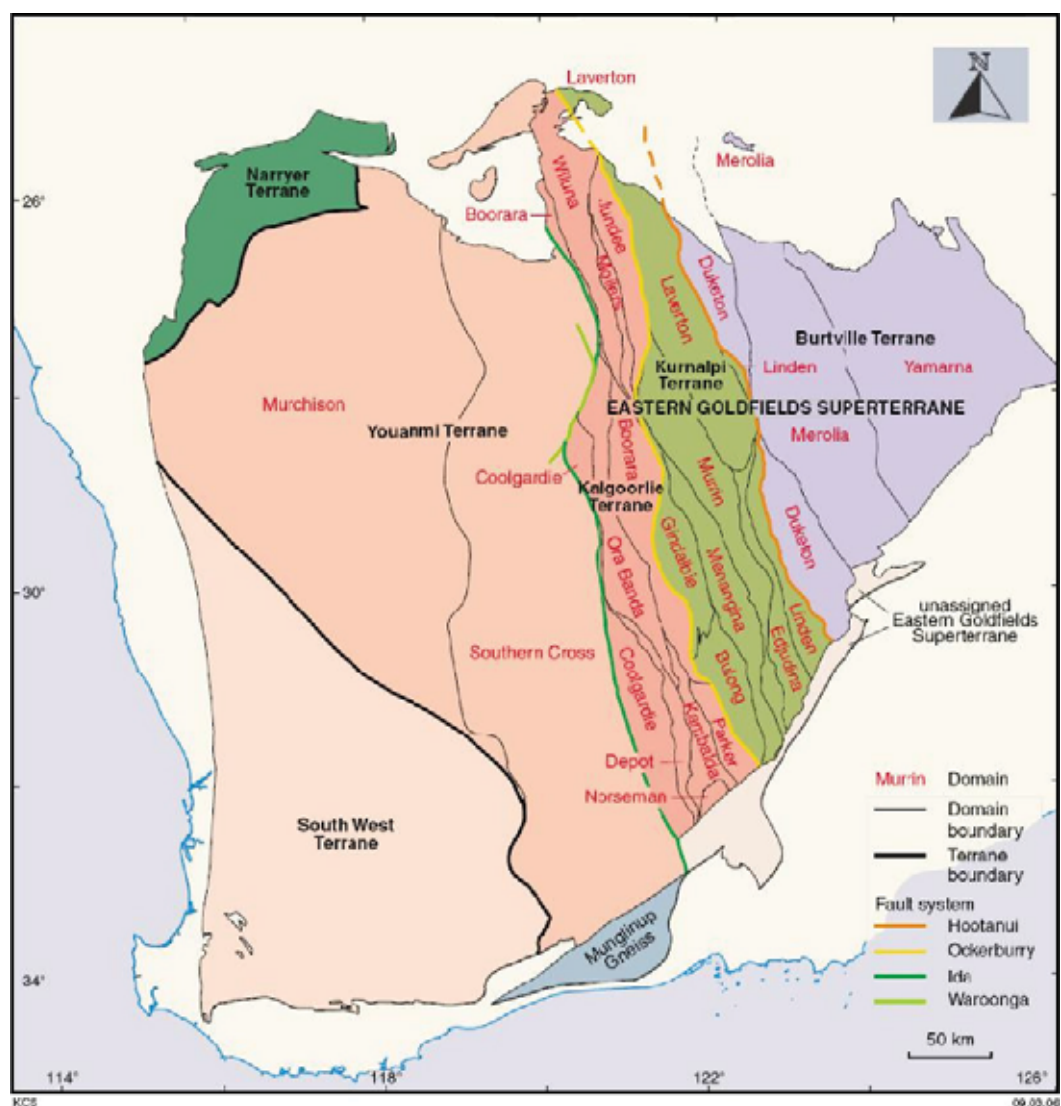
The Mt Martin gold mine has yielded approximately 200 Koz of gold to date from intermittent mining dating back to 1923. Gold ore was initially produced from a set of 4 shafts with the deepest underground workings at the 6 level which is 165 m below the surface. Open-pit mining followed at various stages thereafter, from the 1980s through to 2009.

In 2007 the Mt Martin project was sold to Australian Mines Ltd. ("AML"), but was subject to a sublease held by Dioro. In 2009 Dioro mined the open-pit down to a maximum depth 115 m in the central portion of the open-pit and recovered a total of 743,223 tonnes at 1.5 g/t for 31,321 oz of gold (Australian Mines 2010b). In January 2010 AML gained control when the Dioro sublease arrangement expired, but did not carry out any further mining.

## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

The SKO are located in the Eastern Goldfields Superterrane (Cassidy et al., 2006) of the Archean Yilgarn Craton. The Eastern Goldfields Superterrane is made up of metavolcanic and metasedimentary rocks, granites and granitic gneiss and is divided into a number of terranes from southwest to northeast being the Kalgoorlie, Kurnalpi and Burtville Terranes (Figure 7-1). These tectono-stratigraphic terranes are defined based on distinct volcanic facies, geochemistry and geochronology with the Eastern Goldfields Superterrane ranging in age from 2.81 to 2.66 Ga.

**Figure 7-1: Tectonic subdivision of the Yilgarn Craton (Cassidy et al,2006)**



The SKO tenement package falls largely within the Kalgoorlie and Kurnalpi Terranes, which in turn are further subdivided into several structurally bound domains, which preserve distinct volcanism. The interconnected fault systems that bound the terranes and domains form an anatomosing network.

The SKO tenement package is located almost entirely within the well-mineralised Kalgoorlie Terrane. This region is made up predominantly of younger (2.71 – 2.66 Ga) and minor older (>2.73 Ga) greenstone successions. The SKO tenements also extend into the adjacent Kurnalpi Terrane, which is slightly older.

The Coolgardie, Depot, Ora Banda, Kambalda, Norseman, Boorara, Bulong and Gindalbie domains are relevant to the areas covered by Alacer's leases.

Stratigraphy for the Ora Banda and Kalgoorlie Domains is relatively well-known and comprise (from stratigraphically lowest) a lower basalt unit, komatitic to high-magnesian basaltic rocks, an upper basalt unit and overlying felsic volcanic-sedimentary units. Conglomeratic and sandstone units unconformably overlie the upper felsic units adjacent to major shear zones. Layered mafic sills occur within various stratigraphic units and cross-cutting Proterozoic dykes also occur throughout the region. Metamorphic grade ranges from upper greenschist to upper amphibolite facies.

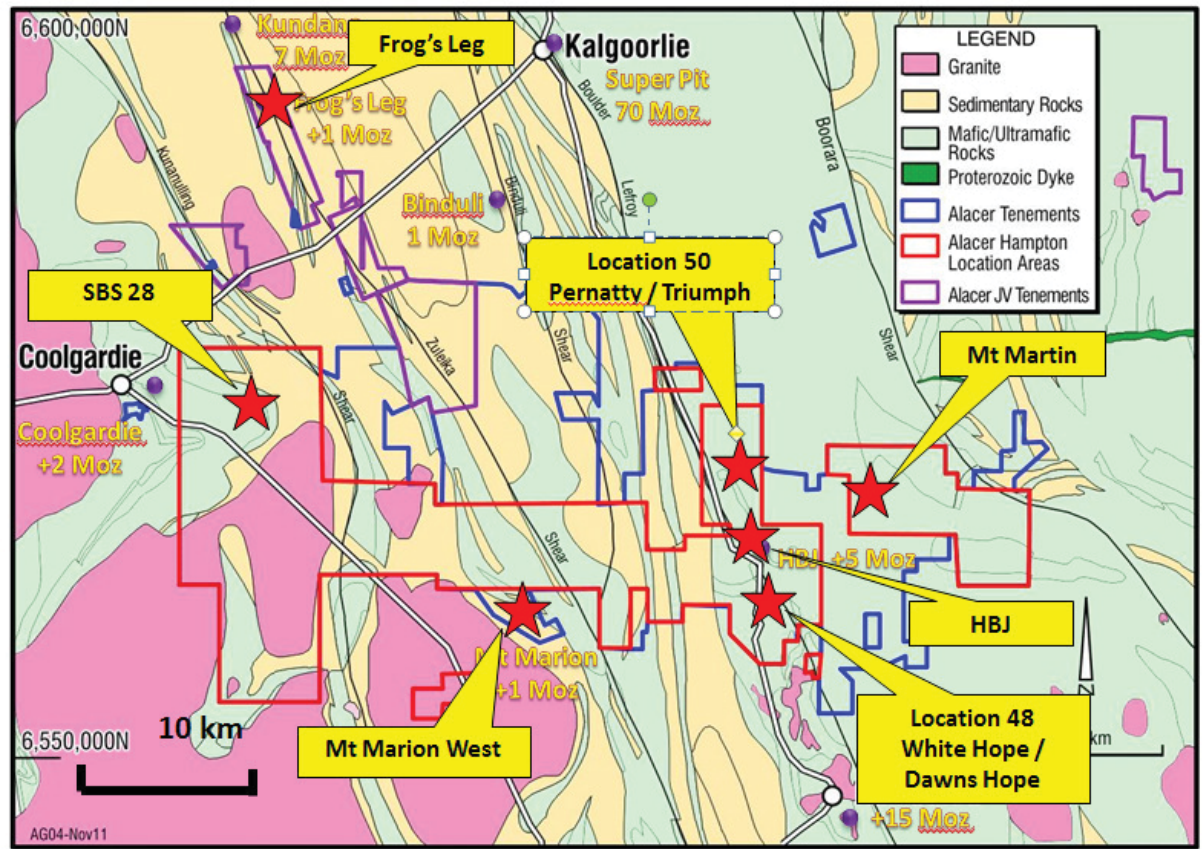
The deformation history of the area is generally divided into four main phases, comprising north-directed thrusting with recumbent folding and stratigraphic repetition in the first deformation. The second deformation resulted in north-northwest trending folds which are reflected in the dominant north-northwest trending fabric of the greenstone belts. Shortening continued during the third deformation with strike slip movement along northwest to north-northwest trending shear zones and the fourth deformation brittle faulting.

The Ora Banda and Kambalda Domains form a highly endowed gold corridor hosting some of the Yilgarn's largest gold deposits, including the Golden Mile deposit at Kalgoorlie, and the St Ives gold camp south of Kambalda. The Boorara Domain is also a highly prospective tectono-stratigraphic domain hosting a number of significant gold deposits including the Kanowna Belle deposit. These regions are also highly endowed in nickel.

## **7.1 Local and Property Geology**

The SKO deposits cover parts of the Coolgardie, Ora Banda, Kambalda and Boorara Domains (Williams, 2007) of the Kalgoorlie Terrane. The local geology of the SKO area is shown in Figure 7-2.

**Figure 7-2: Geological Map of the SKO Area Showing Prospect and Tenement Locations**



## 7.2 HBJ Deposit

The following description of the HBJ deposit is based upon Norris (1990) and Copeland (1998). The HBJ orebodies form part of a gold mineralised system along the Boulder-Lefroy shear zone that is over 4 km long and includes the Celebration, Mutoroo, HBJ and Golden Hope open-pit and underground mines.

The HBJ orebodies are hosted within a steeply-dipping, north-northwest-striking package of mafic, ultramafic and sedimentary rocks and schists that have been intruded by felsic to intermediate porphyries. The area is extensively deformed with numerous north-striking shear zones and boundin角度 of the porphyry intrusions. The main host rock for the Jubilee deposit is the Jubilee Dolerite.

Gold mineralisation is structurally controlled and occurs throughout the schists and particularly within the more competent porphyries. Mineralisation is focused along lithological contacts, within stockwork and tensional vein arrays and within shear zones. The main ore zone has a length in excess of 1.9 km and an average width of 40 m in the Jubilee workings but is generally narrower to the north in the Hampton-Boulder workings. Mineralisation is associated with an alteration assemblage of potassium-feldspar, biotite, chlorite, carbonate, silica, pyrite and veins of quartz, carbonate and pyrite.

### 7.3 Mt Marion Deposit

The Mt Marion orebody is located on the eastern side of the Coolgardie Domain within a flexure in the Karamindie Shear Zone. The orebody is hosted within a sub-vertical sequence of meta-komatiites intercalated with metasediments that have been metamorphosed to amphibolite facies.

Most gold mineralisation is contained within a rock unit that is locally referred to as “lode gneiss”, with some mineralisation within komatiites.

Gold mineralisation occurs in a footwall and hangingwall lode, each ranging in thickness from 2 to 15 m with a mean thickness of about 8 m. In places there is a weakly mineralised low-grade core up to 10 m thick. The lodes join in the upper parts of the deposit, and were mined out from within the previously worked Mt Marion open-pit.

In places, mineralisation extends from the hanging wall gneiss into the ultramafic hanging wall and this hanging wall halo appears to increase in width with increasing depth. The footwall contact of mineralisation generally coincides with the footwall contact of the gneiss and is more consistent. The mineralisation plunges steeply to the west and is open at depth. Geological mapping and structural measurements suggest that the two lodes are fold limbs, with the hinge plunging steeply to grid west.

The mineralised lens contains an alteration assemblage of silica/cummingtonite/plagioclase with minor pyrrhotite and traces of pyrite and thin quartz-feldspar-carbonate veins in strongly mineralised areas.

### 7.4 Shirl Deposit

The following description of the Shirl deposit is based upon SKM (2006). The Shirl deposit is located on the eastern side of the Coolgardie Domain approximately one kilometre south east of the historic Barbara-Surprise deposits. The orebody is hosted within a differentiated gabbro sill within a sequence of ultramafic rocks that have been intruded by felsic to intermediate porphyries.

The local geology is completely weathered to a depth of approximately 20 m below the natural surface, with fresh rock at approximately 50 m below the natural surface.

The known gold mineralisation has a length of 250 m, strikes northeast-southwest, and dips steeply to the west. The Shirl cross lode strikes northwest and is bounded to the south by the north-easterly striking lode. The mineralisation appears to be bounded to the north and south by northeast striking fault zones. The Shirl mineralisation occurs in the core of the Tindals Anticline, related to series of late formed north easterly fractures and is hosted by a gabbro. The Shirl orebody is variable in thickness with a minimum width of 5 m, but more commonly between 20 m and 30 m wide. Gold mineralisation within the supergene zone is associated with iron oxides after disseminated pyrite and carbonate. The gabbro displays intense biotite alteration within the supergene zone.

### 7.5 Bakers Flat Deposit

The following description of the Bakers Flat deposit is based upon SKM (2007). The Bakers Flat deposit is located on the eastern side of the Coolgardie Domain to the east of the Shirl deposit. The main zone of mineralisation occurs within transported gravelly clays that



unconformably overlie the basement Archean rocks. The transported palaeochannel sediments have an average thickness of 35 m but may be up to 45 m thick. The transported sediments overlie a package of komatiite, high magnesium basalts, differentiated gabbro and felsic intrusive rocks that are intersected by a shear zone and have been weathered to saprolites in the near surface environment.

Gold mineralisation occurs at depths of 30 to 40 m below surface in a flat supergene horizon of transported gravelly clay which lies immediately above the unconformable contact with residual saprolite. The mineralisation horizon ( $>0.5$  g/t Au) is 800 m long and 200 m wide and comprises grains of quartz, pistolites, ironstone nodules and lithic fragments in a green clay. The thickness of the ore zone varies between 2 and 6 m with an average thickness of about 3 m. Gold is associated with the clays and iron oxides. Gold mineralisation also occurs higher in the profile between 16 and 24 m below surface but the grade distribution is erratic. Several primary intercepts also occur in the residual bedrock profile.

## 7.6 Penfolds Project

The following description of the Penfolds Project is taken from Coffey (2009). A major NW-SE striking structure is present along the entire length of the Penfolds tenements that aligns with the Colnago trend which extends onto the Freehold locations. The regional stratigraphy strikes N to NW and consists of the sediments and felsic volcanoclastics of the overturned Depot Anticline and the Saddle Hills Greenstone belt, dominated by mafic and ultramafic volcanics. These are shear bounded to the east and west. The Kurrawang syncline contains a mafic to ultramafic belt called the Abattoir sequence, and the Black Flag metasediments complete the stratigraphy, which is bounded by the Boulder-Lefroy Fault to the east. The Boulder-Lefroy fault has interleaved talc-carbonate ultramafic lithologies and porphyries. Intrusive gabbro, and extrusive basalt and high magnesian basalt are present.

## 7.7 Mt Martin Deposit

The Mt Martin Tribute Area, is located within a regional scale NNW trending Archaean Greenstone Belt which extends from Lake Lefroy in the south to the Paddington area north of Kalgoorlie, within the Eastern Goldfields Province of the Yilgarn Block, W.A. Aspects of the regional geology have been mapped and discussed in relatively recent times by Swager (1995) and Swager and Griffin (1990).

Within the Mt Martin – Carnilya area, the greenstone belt comprises a mixed sequence of Archaean ultramafic (predominantly komatiitic) and fine-grained, variably sulphidic sedimentary lithologies with subsidiary mafic units. The supracrustal sequence is tightly folded and structurally complex. Metamorphic grades vary between greenschist and amphibolite facies (Purvis, 1994).

Known gold and nickel mineralisation at the Mt Martin Mine is associated with a series of stacked, westerly dipping, sulphide and quartz-carbonate bearing lodes which are mainly hosted within intensely deformed and altered chloritic schists sandwiched between talc-carbonate ultramafic lithologies.

## 7.8 Frogs Leg Deposit

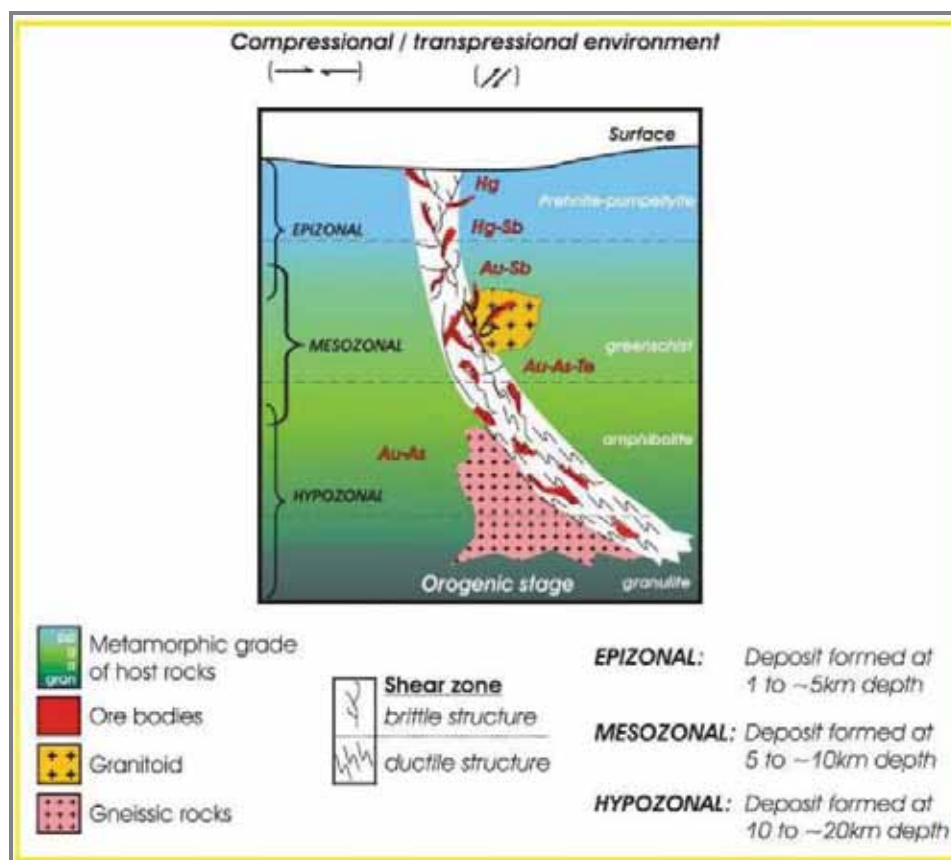
The Frog's Leg deposit occurs in the southern portion of the Kundana mining district in the Norseman Wiluna Belt of the Eastern Goldfields Province, in the Archaean-aged Yilgarn Craton. The Kundana mining district generally hosts gold mineralisation in quartz lodes and

veins, structurally emplaced within shale horizons and/or along lithology contacts. LMA's 100%-owned White Foil deposit is situated 2 km southwest of Frog's Leg. LMA owns or controls several other smaller deposits in the area including Kopai South and Cutters Ridge. There are several significant operating or closed gold mines in the Kundana district, including Strzelecki, Barkers, and the Raleigh South and North Pits.

## 8.0 DEPOSIT TYPES

In the Eastern Goldfields Superterrane of the Archean Yilgarn Craton, gold deposits are generally classified as orogenic gold deposits (Groves et al, 1998) and are hosted in a variety of mafic, ultramafic, felsic and sedimentary rocks and porphyry intrusions. The deposits form at a variety of crustal levels and display a strong structural control at a variety of scales. The nature of the local-scale structural control varies from deposit to deposit along with a variety of ore and alteration mineralogy. In general, gold is associated with sulphides, quartz-carbonate veins and potassic wall rock hydrothermal alteration.

**Figure 8-1: Schematic Model for Orogenic Gold Deposits**



Source: After Groves, et al., 1998

On a regional scale, structure is the single most important factor controlling ore deposit distribution and geometry of ore shoots which are generally adjacent to trans-craton deformation zones. On the mining scale, gold mineralisation tends to be situated in shorter strike-length, geometrically-related, smaller scale structures reflecting later movement on these trans-craton deformation zones. Different mineralisation styles reflect strength contrasts between different adjacent rock types which in turn affect variations in orientation of resultant host structure in regional stress fields. Accordingly individual mines may be dominated by a single deposit style or several different mineralisation styles depending upon scale of controlling structures, homogeneity and thickness of host rocks.

Mineralisation is common in shear zones along lithological contacts. Discordant veins may be grossly stratabound and restricted to specific lithologies. Deposits may run the complete



spectrum from ductile to brittle fault and fracture zones though most gold-hosting structures show features of brittle-ductile transition.

While all Archean lithologies in Yilgarn greenstone belts may be mineralised, mafic volcanics and internal granitoids are the most productive hosts in areas of significant gold production. Rocks with high iron contents or high Fe/Fe+Mg ratios and/or banded iron formations are often important hosts in comparison to other Archean greenstone belts. Ore mineralogy tends to be fairly simple with a prevalence of native gold or gold sited within pyrite±pyrrhotite±arsenopyrite structures. Native gold is generally greater than +900 fine. Only deposits in the lower greenschist facies contain electrum with lower fineness.

Associated minerals may include scheelite, tellurides, stibnite, galena, sphalerite, chalcopyrite, magnetite, hematite, anhydrite, tourmaline and fluorite. It is suspected that an evolving fluid system rather than discrete phases of hydrothermal action may be involved.

The following deposit styles are most prevalent:

- Shear zone lodes: Gold deposition within alteration haloes ± quartz veins ± breccias.
- Breccia lodes: Commonly rich in tellurides, relatively small in size these generally occur along lithological contacts in a brittle deformational style.
- Quartz vein sets: Sets of thin, short-lived quartz veins that collectively form ore shoots tens of metres wide and hundreds of metres in strike length. Most occur in low-tensile strength rock such as dolerite and felsic porphyriess. Gold often occurs within alteration selvages adjacent to the veins.
- Laminated quartz veins: 1 to 10 m thick persistent quartz veins > 1 km in length and over 250 m deep
- Stratabound / strataform sediment-hosted lodes in banded iron formations or other iron-rich sedimentary rocks or within black shales.

## 9.0 EXPLORATION

The SKO exploration assets cover in excess of 120,000 ha located in the Kalgoorlie – Kambalda region, centred approximately 40 km south of Kalgoorlie.

Avoca acquired 100% of Dioro and the SKO tenements in April 2010 and subsequently merged into the newly formed Alacer in February 2011.

Dioro's major exploration projects included freehold locations, New Celebration Project and Penfolds Project. Other projects centred around Kalgoorlie and Coolgardie comprise Feysville, Glandore, Golden Ridge, Boorara, Kalbara JV (Kanowna West), Lake Greta, Queensland and Rose Hill. The leases are located within the Coolgardie, Kunnaling, Bulong, East Coolgardie and Kanowna mineral fields. All the tenements are in the Eastern Goldfields Superterrane of the Archean Yilgarn Craton in Western Australia and targeted lode gold.

Due to the large size and disparate nature of the various drillhole databases for each of the deposits, it is not possible to comment on the location and density of the samples except to note that the holes have been surveyed (although not by whom) and the location of any sample is known.

Recent exploration at SKO is closely linked to Resource development and drilling. A summary of the location of Mineral Reserves and/or Mineral Resources and exploration prospects is included in Table 9-1.

**Table 9-1: Summary of tenements and location of Mineral Resources and Exploration Prospects at South Kalgoorlie (Source: Coffey, 2009)**

Project Name	Tenements	Reserves/Resources	Exploration Prospects
Freehold locations	Locations 32, 35-37, 39-41, 45, 48, 50, 51, 53, 55, 59, 61, 62.	HBJ Project Shirl Open-Pit Shirl Underground Pernatty Decline TNT (Pernatty Nth) White Hope Pit 28 Lanarkshire Porphyry Bakers Bakers Flat Dawns Hope Triumph Inclined Shaft Lancashire Lass Noble 6 Resources Mt Martin	Colnago Kings Battery N & S Prospects, Shrews End anomaly. 50 drill ready targets Bakers Flat palaeo-channel supergene gold prospect
New Celebration	E26/122, L15/220, 221, L26/122, 123, 214, M15/717, M26/118, 143, P26, 3478, 3525-3528	Mt Marion Resource	Mt Marion West,
Penfolds	E15/1211, 985, L26/248, M15/456, 469, 663, 721-724, 726, 740 747, 753, 937, 938, M26/204, 245, 328, 441, 452, 458, 482, 567, P15/4971, 5049-5051, 5130-5132, P26/3499, 3500, 3529-3533	Mungari, Abattoirs South, Penfolds, Scrubby Tank, Greater Jezebel Area, Freddo	Lode gold targets along structures. Nickel potential (Lodestar has rights to these).
Feysville	P26/3464- 3471		Target lode gold
Glandore South	P25/1925-1931		Target lode gold
Golden Ridge -Boorara	L26/233, M26/41, 433, 494, 534	Golden Ridge Resource	Target lode gold
Kalbara JV (Kanowna West)	M27/181		Alacer owns 10%
Lake Greta,	E15/634, M15/1408 1741		Target lode gold
Queensland	P15/4978		Target lode gold
Rose Hill	M15/652, 880, 881, 1089, 1204, 1246, 1307, P15/2875, 2877, 3274, 3350, 3668, 4979-4984	Rose Hill Resource	Target lode gold
Mungari	M15/533	Mungari resource	Target lode gold
Pokai	M15/1306		No technical info
Trojan Location 41	M25/104	Trojan resource	Echo, November

The exploration focus of Dioro was the freehold location areas, New Celebration Project and Penfolds project areas. Since acquisition of the South Kalgoorlie leases, Alacer has carried out a review of existing drilling data and additional drilling in key areas. Drilling conducted for Alacer in 2011, as well as previous operators, is summarized in Table 9-2. The net result of

the exploration and evaluation drilling was the development of the geological interpretations which supported the decision to commence and continue mining operations on the property.

**Table 9-2: Summary of Historical Drilling and Alacer 2011 Drilling**

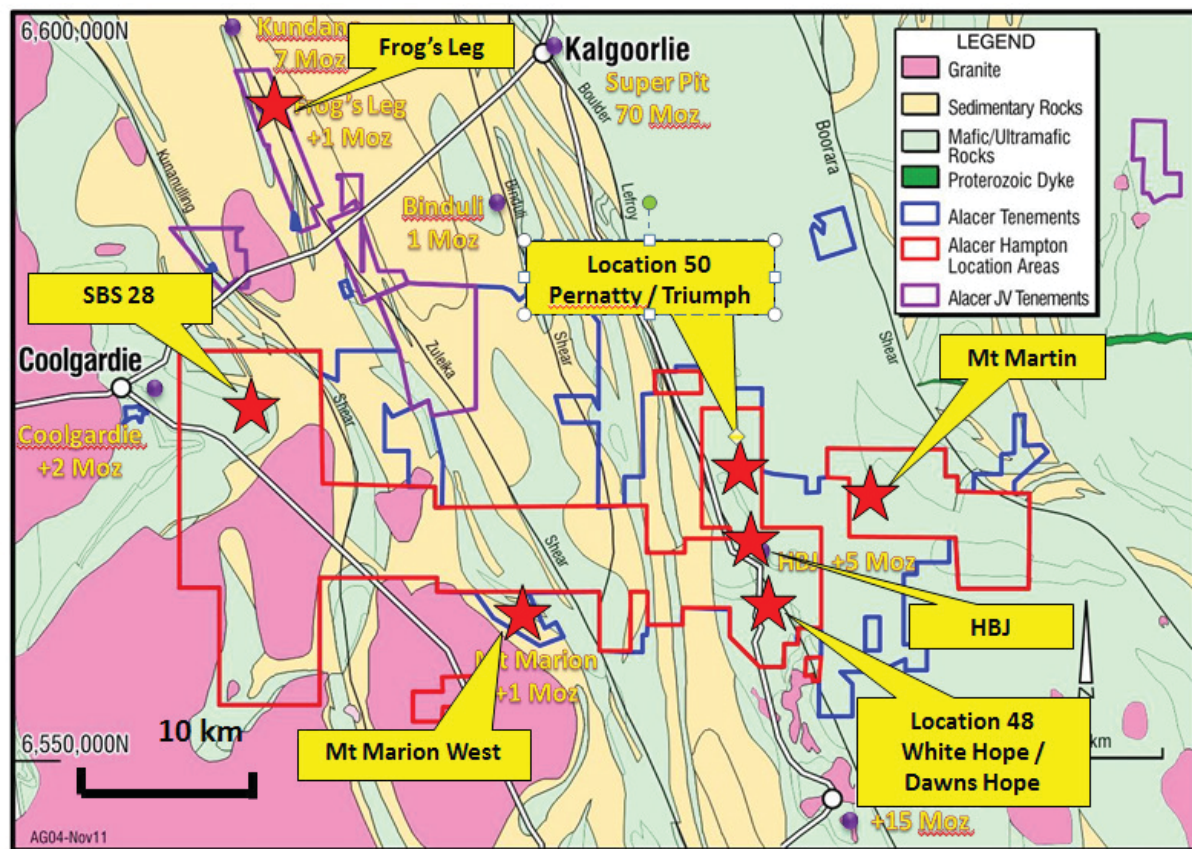
Owner	Project	Drill Type	Holes	Metres
Various	Historical SKO (pre-2011)	Aircore	14,667	596,055
		RAB	40,169	1,123,574
		RC	26,291	1,434,677
		Diamond	3,432	646,065
		Unknown	7,283	315,847
Alacer 2011	HBJ	Diamond	25	11,450
		RC	512	31,584
	SBS28	Diamond	18	4,726
		RC	274	20,259
	Lake Cowan	AC	402	14,296
		RC	89	9,688
	Mt Marion West	Diamond	26	7,486
		RC	17	1,687
	Mt Martin	Diamond	8	2,171
		RC	15	2,702
	Triumph	RC	134	4,064
	White Hope	Diamond	5	2,217
	Chief's Lode	RC	17	1,696
	Pernatty	RC	63	4,607
		Total		93,447

Gap Geophysics Australia Pty Limited (“GAP”) was commissioned by Alacer Gold in 2011 to conduct several small surface geophysical surveys using GAP’s proprietary Sub-audio Magnetics (“SAM”) technique over grids in the South Kalgoorlie area. GAP utilised its SAM technology to survey in GDA94 (MGA Zone 51 coordinates) over designated areas at 50 m line spacing. The deliverables for the surveys include Located Total Magnetic Intensity (“TMI”) data, corrected for diurnal variation and Equivalent Magnetometric Resistivity (“EQMMR”) grid data, corrected for magnetic inclination and declination. The land areas were surveyed using the HPTX-70 transmitter to allow large dipoles enabling efficient crew utilisation. Heavy gauge wire was deployed as well as extra pits at each electrode resulting in up to 20 amps of current being achieved. The lighter Gap GP-20 / Zonge GGT-10 transmitter system was used for the salt lake surveys. Alacer employees interpreted the geophysical data using MapInfo, a GIS based software package, to aid in targeting. The surveys were designed to assist geological mapping for mineral exploration. Linear features can be seen in EQMMR grids and will generally relate to real structural features such as more conductive lithologies compared to surrounding rock or preferentially weathered rock such as shear zones or thicker regolith.

Since acquisition of the SKO tenements, the exploration focus has successfully secured a five year life of mine (“LOM”) plan for the operation. There is a significant shift in exploration strategy for SKO in 2012, with the focus on discovering higher quality ounces to increase the

LOM grade from 2.0 g/t to >2.5 g/t (including Frog's Leg). The successful 'Alacer' strategy that applied at Higginsville for discovering high grade underground positions beneath existing large open-pits will be undertaken at SKO. SBS28, Mt Martin and HBJ will be fully evaluated as potential underground targets in 2012 with delineation continuing through to 2013. Conceptual targets will also be developed in 2012 with the intent to test these conceptual high grade targets commencing in 2013, with subsequent resource delineation covering 2014 to 2015. In parallel, all existing known deposits currently not residing in resources will be evaluated and added into the SKO resources inventory for LOM planning. The following diagram points out the SKO exploration focus areas for 2012. Figure 9-1 illustrates the SKO exploration focus areas for 2012.

**Figure 9-1: SKO Exploration Focus Areas**



## 10.0 DRILLING

Historical data includes DD, RC, rotary air blast (“RAB”) and Aircore holes drilled between 1984 and 2010 from various programmes across the current SKO tenements. Not all the historical drilling programmes at SKO are documented and several historic drill types are listed as ‘unknown’. Over 4,000 km of drilling has been completed on the tenure.

Historically, diamond core and RC logging was recorded using paper logs and entered into a database at HBJ. The data was later stored in MS Access databases.

Diamond and RC drill holes were surveyed using either a downhole gyroscopic surveying tool, a miniature multishot tool or an Eastman camera during the process of drilling the hole. The drilling contractor would provide a single shot Eastman downhole camera as part of the drilling contract with the initial survey point being at the base of the cased precollar and then at approximately 20 m intervals beyond that point. Kalgoorlie based service providers provided specialist downhole survey services.

Drilling by Alacer has predominantly been RC, with minor DD, and Aircore drilling. All diamond holes were surveyed during drilling with down hole single shot cameras, and then at end of hole by Ranger Surveys using a Gyro Inclinator at 5 or 10 m intervals. RC drillholes utilised downhole single shot camera. Drillhole collars were surveyed by onsite mine surveyors.

Drilling conducted for Alacer in 2011, as well as for previous operators, is summarized in Table 10-1. The net result of the exploration and evaluation drilling was the development of the geological interpretations which supported the decision to commence and continue mining operations on the property.

Since acquisition of the SKO Project leases, Alacer has carried out a review of existing drilling data and conducted additional drilling in key areas. Drilling has focused on key advanced areas in order to deliver confidence in the medium term mine plan.

Key areas of focus in 2011 were HBJ, Mt Marion and SBS28. Drilling beneath the HBJ area has demonstrated the prospectivity of this area with further open pit optimisation and underground feasibility studies in progress. Similarly exploration at Mt Marion has identified continuity of mineralisation over a 600m vertical extent which is also part of an existing underground feasibility study. High grade mineralisation has been identified at the Shirl/Barbara/Surprise/Pit 28 (SBS28) area. Further drilling will be carried out in 2012 to determine the potential of this area to host a combined open pit/ underground mining complex. Initial drilling testing for potential high grade mineralisation at White Hope was disappointing, but further follow up drilling is required.

Additional drilling has been completed at Lake Cowan, Triumph, Pernatty, Chief’s Lode and Mt Martin as part of final definition of open pit mine designs and sterilisation for planned site infrastructure. All drilling has been undertaken by local drilling contractors under the supervision of Alacer employees. Sample recovery is generally good, and there is no indication that sampling presents a material risk for the quality of the evaluation of the deposit.



**Table 10-1: Summary of SKO Drilling**

Owner	Project	Drill Type	Holes	Metres
Various	Historical SKO (pre-2011)	Aircore	14,667	596,055
		RAB	40,169	1,123,574
		RC	26,291	1,434,677
		DD	3,432	646,065
		Unknown	7,283	315,847
Alacer 2011	HBJ	DD	25	11,450
		RC	512	31,584
	SBS28	DD	18	4,726
		RC	274	20,259
	Lake Cowan	AC	402	14,296
		RC	89	9,688
	Mt Marion West	DD	26	7,486
		RC	17	1,687
	Mt Martin	DD	8	2,171
		RC	15	2,702
	Triumph	RC	134	4,064
	White Hope	DD	5	2,217
	Chiefs Lode	RC	17	1,696
	Pernatty	RC	63	4,607
		Total		93,447

## 10.1 HBJ

The HBJ 'line of lode' is a 6 km zone of mineralisation that extends from Golden Hope in the south to Celebration in the north (Figure 10). The existing HBJ pit was mined for over 25 years producing approximately 1.6 Moz Au and was owned by separate companies across the Location 48 and Location 50 tenement boundary. The deposit now falls under a single owner and extends some 2.6 km and has been developed to a maximum depth of 220 m.

The following summary of historical drilling is based on Devlin and Job (2001):

Diamond core and RC logging was recorded using paper logs and entered into a database at HBJ. The data was later stored in an Access database.

Jubilee consists of 974 DD, RC and percussion holes, drilled between June 1984 and 2001, on a 25 by 25 m grid. Downhole depths vary between 6 and 443 m.

At Hampton Boulder, DD and RC drill holes, were surveyed using either a downhole gyroscopic surveying tool, a miniature multishot tool or an Eastman camera during the process of the drill hole. The drilling contractor would provide a single shot Eastman downhole camera as part of the drilling contract with the initial survey point being at the base of the cased precollar and then at approximately 20 m intervals beyond that point. Kalgoorlie based service providers provided specialist downhole survey services. At Jubilee, methodology has changed and improved with time.

Historical data from the Hampton Boulder and Jubilee pits were combined for the 2001 Resource Estimate.

For the July 2010 Resource Estimate, an updated validated drill hole database in Access format was merged with an Access database for Golden Hope and included a total of 17,750 valid drill holes (Widenbar, 2010). Drill spacing varies from close spaced grade control data to widely spaced holes at depth. This resource was updated for December, 2011.

A total of 18,837 valid drill holes were in the collar file when the databases were merged. There were a total of 82,300 assay intervals in the combined assay database. The local HBJ grid was used as the coordinate system.

In 2011, Alacer completed 25 diamond holes for 11,450 m and 512 RC holes for 31,584 m. Drilling by Alacer has predominantly been RC, with minor DD, and Aircore drilling. All diamond holes were surveyed during drilling with down hole single shot cameras, and then at end of hole by Ranger Surveys using a Gyro Inclinometer at 5 or 10 m intervals. RC drillholes utilised downhole single shot camera. Drillhole collars were surveyed by onsite mine surveyors.

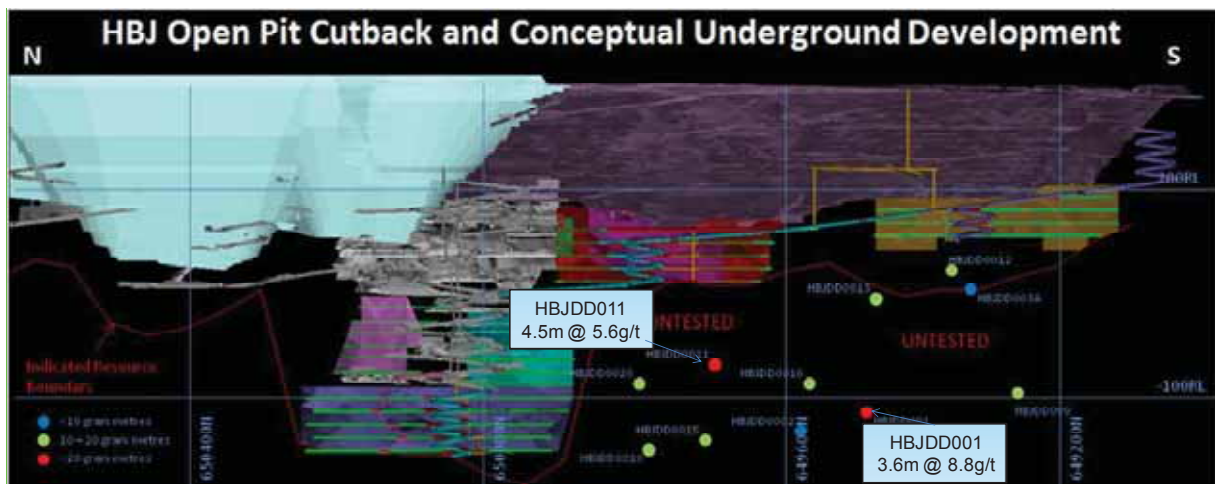
Exploration comprised testing of both open pit and underground potential at HBJ. Reverse Circulation drilling (“RC”) focussed on testing for an extensive pit cutback to the existing pit shell immediately below the current pit floor. Diamond drilling (“DD”) tested the deeper underground potential of the deposit.

Drilling beneath the HBJ area has demonstrated the prospectivity of this area and Alacer considers that there is potential to confirm additional mineralised extensions. This includes potential underground mining targets as the deposit remains open at depth along much of its 2.6 km strike length, as well as additional open pit cutbacks.

The long section of the HBJ line of Lode is presented in Figure 10-1 showing the location of Alacer 2011 drilling below the current HBJ resource boundary. The planned HBJ Pit north cutback is shown in blue and the planned underground development and stoping for the current HBJ Underground Feasibility Study (in progress) is also shown.

The HBJ pit crosses a tenement boundary between Location 48 and Location 50.

**Figure 10-1: Long section of the HBJ line of Lode (true width estimated at 65% of downhole width)**





Historical data includes diamond, RC and percussion holes drilled between 1984 and 2001 from various programmes at the pits.

## 10.2 Mt Marion

The Mt Marion deposit is located 18 km west of HBJ and previous production of 650,000 oz Au occurred between 1997 and 2007.

The July 2010 Mt Marion resource estimate included DD completed since 2005, which comprised 6 LTK60 extensional holes (1,713 m) and 44 LTK48 grade control holes (1,243 m) (Barnett, 2010). All drilling was contracted to Major Pontil Pty Ltd. The LTK60 extensional holes were drilled using a Boart-Longyear LM75 electric drill rig, while a bobcat-mounted Boart-Longyear LM30 was used for the grade control drilling.

After the mine closure, exploration drilling began again in November 2010 with DD and RC drilling. In 2011, Alacer completed 26 diamond holes for 7,486 m and 17 RC holes for 1,687 m.

Holes were drilled to approximately 200 m with RC pre-collars drilled between 102 to 120 m and the majority of the diamond tails being NQ2 and some had HQ tails followed by NQ2 tails. Ausdrill were used as the RC drill contractor with both Westralian Diamond Drillers and Ausdrill undertaking the DD. Rigs, core and progress were inspected daily by Alacer staff. Planned end of hole depth was generally 30 m beyond the target zone, with the end of hole depth being decided on by the project geologist prior to completion. This way if a second prospective zone occurred or the target zone was deeper than expected, all holes would pass through the ore zone. Holes were designed on paper sections and then coordinates were uploaded into Surpac. The drill collars were marked out by the survey department prior to drilling commencing. Once complete, each drill collar was surveyed by the survey department and the coordinates loaded into the database. Holes at Marion West have a tendency to lift due to the intense shearing, which meant careful planning of target zones and collar locations with constant monitoring of the dip and azimuth. The logging and assay results from this diamond core and RC form the basis of this resource model.

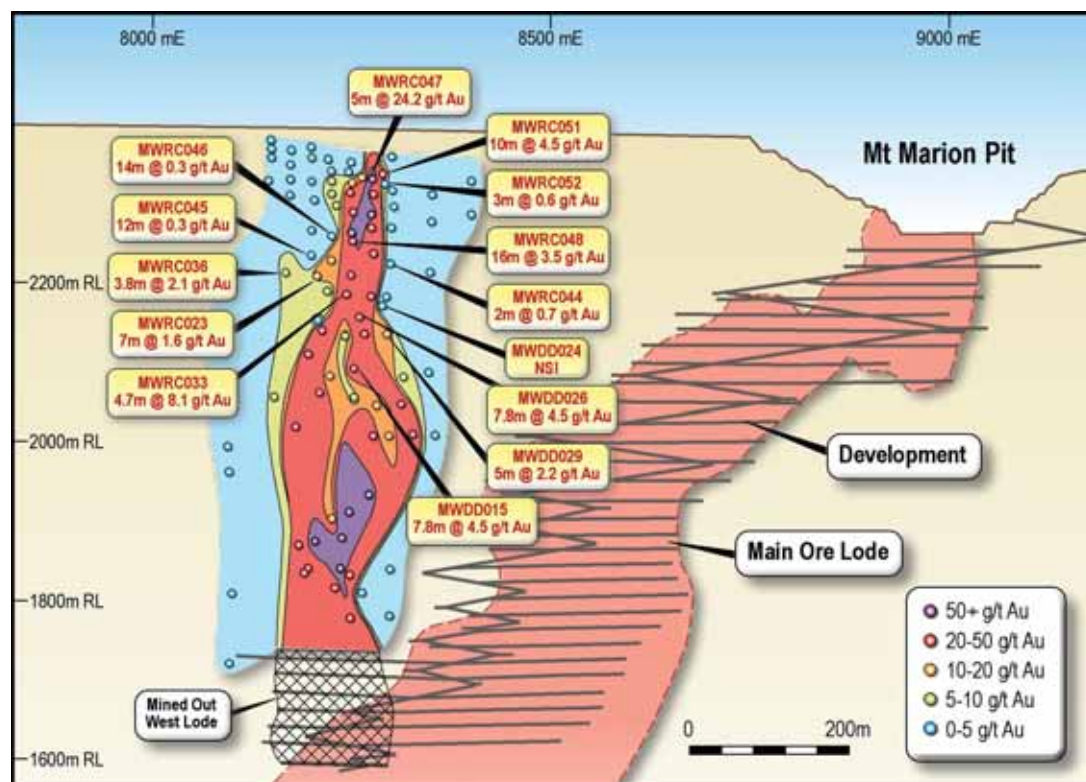
Due to the subdued topography all drill sites are on near ground level which was cleared and levelled prior to drilling. As there is no existing infrastructure to impede access in almost all cases collars are located by bearing up from the ore zone target and little adjustment has been found to be necessary. Underground drillhole locations were all surveyed using a Leica reflectorless total station. This applies to both extensional and grade control drilling. Face sample positions were calculated using Cube Consulting's Surpac add-on, SurFace. The face positions were calculated from a chainage distance from a known point, with a vertical face DTM cut through the survey strings of the ore drive for each face at its respective chainage. The digital face photo was then draped over the face DTM, allowing the sample intervals to be digitised over the photo in real-world coordinates. Once the sample channel had been saved as a string file, SurFace loads it into the drillhole database complete with sample, geology and assay information. The face positions are expected to be accurate within 0.5 m in easting and 0.3 m in northing and elevation.

Surface drill rig set up was in line with standard industry practice. With the rig aligned along a tape line set out by the onsite surveyor and holes collared as near as possible to the survey peg. All hole collars are then resurveyed post completion and database collar locations corrected. Drill rod racks, water tanks and crew facilities are then arranged as site and space permit.

All holes were surveyed during drilling with down hole single shot cameras, and then at end of hole by Ranger Surveys using a Gyro Inclinator at 5 or 10 m intervals, depending on hole length, down the drill rod string. In all cases Gyro surveys are used in preference to single shot down hole surveys. All extensional diamond holes are surveyed initially at 15 m depth, then every 30 m down-hole and at the end of hole. Grade control holes are surveyed at the end of the hole, with the collar survey determined by picking up two points on a survey staff inserted into the hole collar. Face sample channel surveys are determined by the angle of the channel as it is digitised on the draped face photograph, in a vertical plane. The surveys are automatically loaded into the SurFace database.

Alacer reviewed previous drilling in the area and remodelled mineralisation. This exercise re-estimated remaining Mineral Resources at Mt Marion and Mt Marion West, but also demonstrated that the mineralisation remains open at depth and also near surface. The mineralisation intersected near-surface at Mt Marion West is not included in any Mineral Resource estimate. Drilling in this area has identified continuity of mineralisation over a 600m vertical extent and forms part of an ongoing underground feasibility study, as shown in Figure 10-2. The most recent drilling and interpreted gram metre contour for Mt Marion west is highlighted in the below diagram. A resource estimate update for Mt Marion West is in progress.

**Figure 10-2: Long Section of the Mt Marion West Mineralisation (true widths are estimated at 65% of downhole width)**



### 10.3 Barbara-Shirl Surprise-Pit 28 (SBS28)

The SBS28 area is situated on Location 59, approximately 15 km southeast of Coolgardie. Previous production from several areas, including underground operations at Barbara amount to approximately 300,000 oz Au.

RC drilling was completed during late 2005 and early 2006 for the first Shirl Underground block model. Diamond core was structurally and geologically logged. The 2007 Shirl drillhole database contains records for 1934 holes drilled prior to 2007 and is summarised in Table 10-2.

**Table 10-2: Type and Number of Drill Holes at Shirl Underground**

Hole Type	Number of Holes	Drilled
DD	7	2006
RC	1335	2005-2007 (many unrecorded)

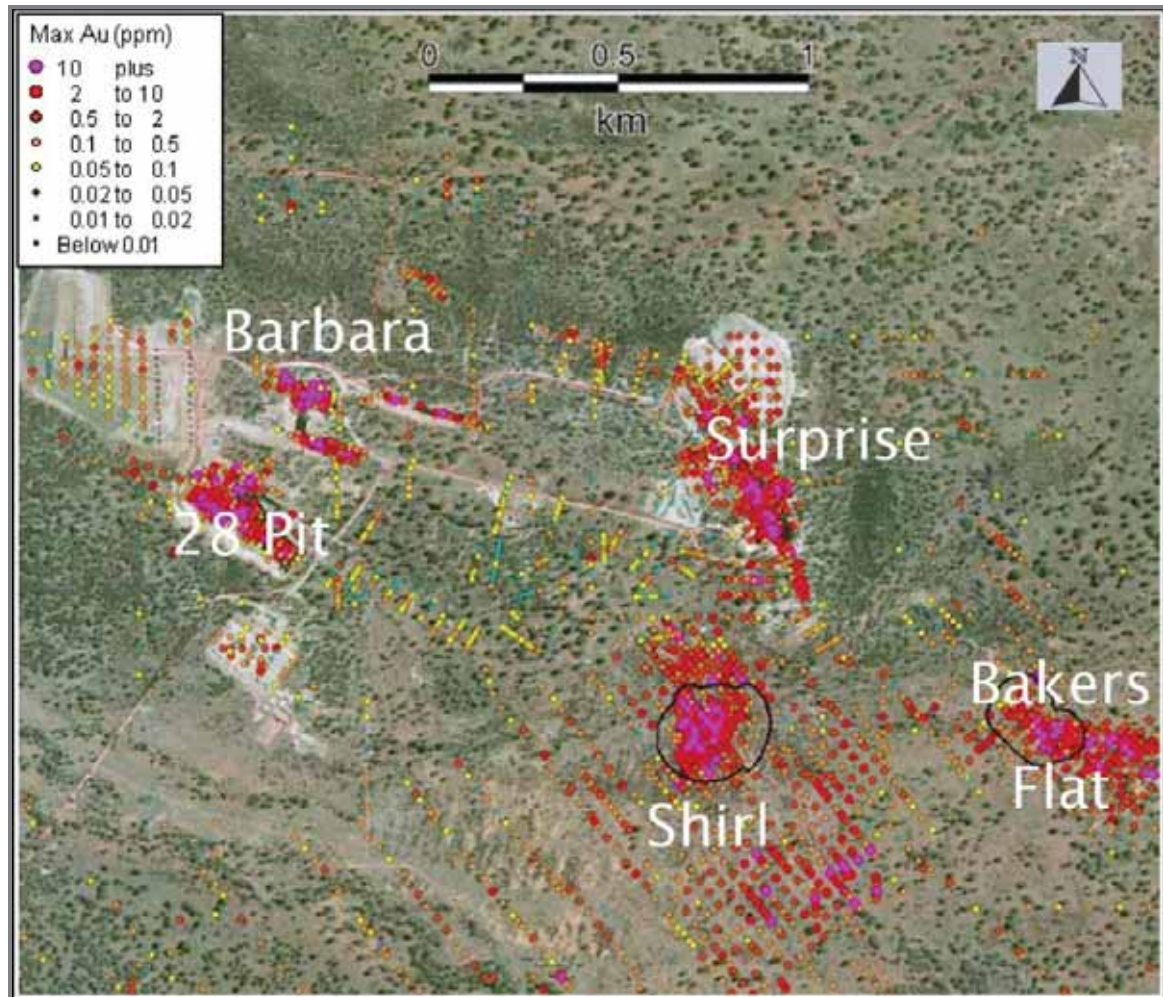
Pollard (2006) notes that all collar positions were surveyed using either RTK GPS or a Total Station survey instrument. All holes used in the resource estimate were also downhole surveyed by Ausmine Ltd. using a downhole gyroscope. Magnetic data provided by the downhole survey contractor was converted to Shirl local mine grid by rotating through -51 degrees.

In 2011, Alacer completed 18 diamond holes for 4,726 m and 274 RC holes for 20,259 m. Drilling focused on accessing the underground potential at Shirl and near surface positions at Shirl, Pit28 and Barbara. All diamond holes were surveyed during drilling with down hole single shot cameras, and then at end of hole by Ranger Surveys using a Gyro Inclinator at 5 or 10 m intervals. RC drillholes utilised downhole single shot camera. Drillhole collars were surveyed by onsite mine surveyors. Assay results are still awaited for the majority of drillholes.

Alacer reported the presence of a large mineralised footprint over a 2.2 x 1.4 km area with limited drilling documented since the discovery of the Shirl deposit in 2004 (Figure 10-3). A number of near surface exploration targets exist in this region. High grade mineralisation has been identified at the SBS28 area. Further drilling will be carried out in 2012 to determine the potential of this area to host a combined open-pit/ underground mining complex.



**Figure 10-3: Plan of the Barbara-Surprise-Shirl Area Showing the Large Mineralised Footprint, showing maximum gold in hole.**



## 10.4 Pernatty

Drilling at Pernatty Decline includes RAB, RC and DD. Alacer completed 63 RC holes for 4,607 m in 2011. Ausdrill were used as the RC drill contractor. Rigs, chips and progress were inspected daily by Alacer staff. Planned end of hole depth was generally 30 m beyond the target zone, with each end of hole depth being decided on by the project geologist prior to completion. This way, if a second prospective zone occurred or the target zone was deeper than expected, all holes would pass through the ore zone. Holes were designed in Surpac and drill collars were marked out by the survey department prior to drilling commencing. Once completed each drill collar was surveyed by the survey department and the coordinates loaded into the database.

Due to the subdued topography around the Pernatty pit, all drill sites were on level ground and were cleared and levelled prior to drilling. As there is no existing infrastructure to impede access, in almost all cases collars are located by bearing up from the ore zone target and little adjustment has been found to be necessary.

Surface drill rig set up was in line with standard industry practice. With the rig aligned along a tape line set out by the onsite Surveyor and holes collared as near as possible to the survey peg. All hole collars are then resurveyed post completion and database collar locations

corrected. Drill rod racks, water tanks and crew facilities are then arranged as site and space permit.

There is very little record of how the historic drillholes were surveyed. However from the data it is assumed the majority of the drilling was surveyed using Eastman single shot cameras at 30 m interval.

## **10.5 Triumph**

Historical data is available from the Dioro report “Triumph May 2008 Mineral Resource Report” and MS Access database. A total of 1,535 drill holes were in the data set, with approximately 1,380 of these being in the area of interest in resource modelling. A total of 53,338 assay intervals were in the data set.

In 2011, Alacer completed 134 RC holes for 4,064 m. Ausdrill were used as the RC drill contractor. Rigs, core and progress were inspected daily by Alacer staff. Planned end of hole depth was generally 20 m beyond the target zone, with each end of hole depth being decided on by the project geologist prior to completion. RC drillholes utilised downhole single shot camera. Drillhole collars were surveyed by onsite mine surveyors.

## **10.6 Mt Martin**

The Mt Martin Project is located approximately 40 kilometres south east of the township of Kalgoorlie (Figure 9.4). Access to Mt Martin is gained via either the Kalgoorlie-Kambalda Highway and then along the Mt Martin Road from the New Celebration turnoff to Mt Martin, or via the Mt Monger Road and then along the Golden Ridge Haul Road.

The Mt Martin orebody was discovered in 1923 and has been mined both underground and open pit by various owners and has produced approximately 200,000 ounces of gold. Open pit mining by New Hampton Goldfields ceased in September 1997. The commencement of the underground mining is unknown, but gold was mined from a set of four shafts with the deepest being 165 meters below the surface. During the period 1994 to 2004, Harmony mined the open pit to a maximum depth of 80m and 800 meters long. Around 2007 the project was sold to Australian Mines Limited, but was subject to a sublease held by Dioro Exploration NL. Dioro in 2009 mined down to a maximum depth 115 meters in the central portion of the pit and recovered a total of 743,223 tonnes at 1.5g/t for 31,321 oz of Au (Australian Mines 2010b). Alacer will commence exploration on the Mt Martin tenements in 2012.

Mt Martin drill hole data has been recorded in the CSA Global Pty Ltd. (“CSA”) resources report of October 2010 and was provided by Australian Mines in an MS Access format comprising collar, survey, assay, lithological and weathering data.

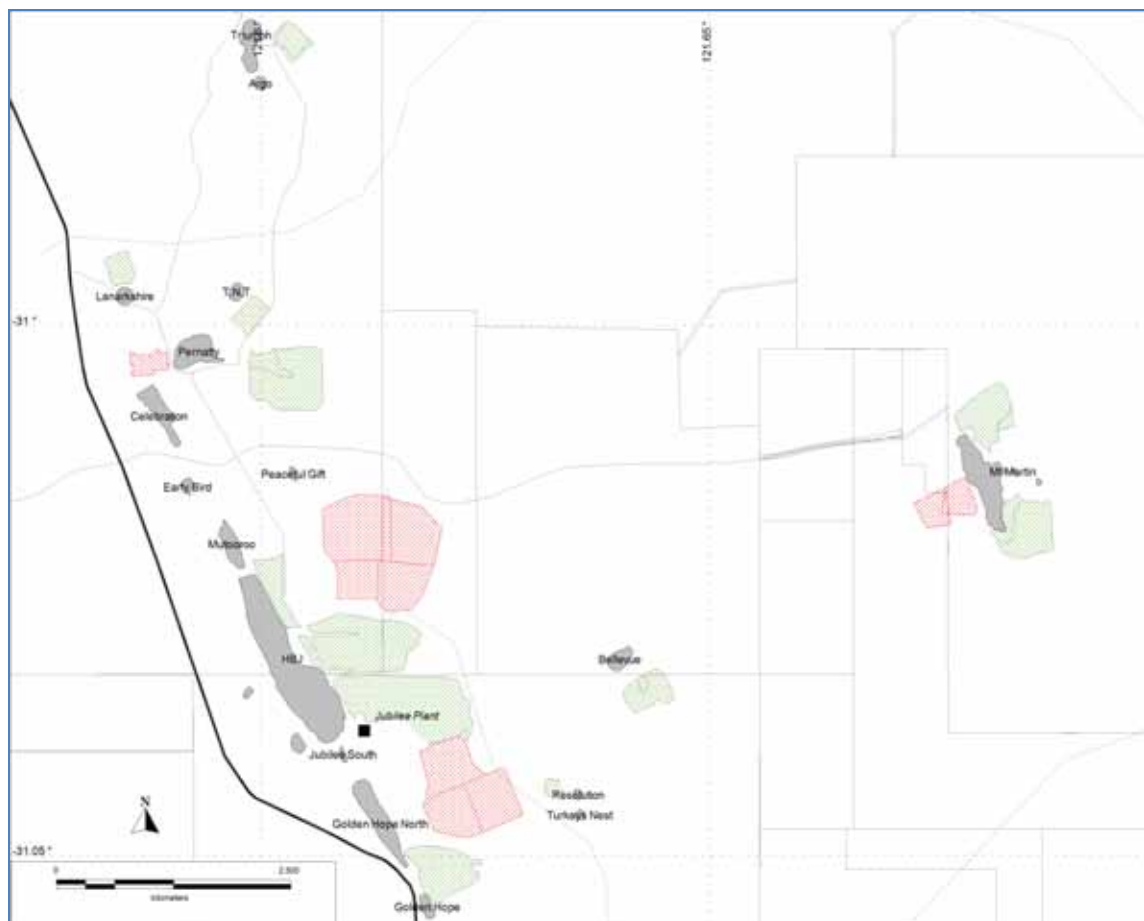
The records of the holes are shown in Table 10-3.

**Table 10-3: Mt Martin Drill Hole type, quantity and meters**

Type	Number Drill Holes	Meters
DD	183	15,955.27
RC	536	42,031.50
Rotary Air Blast	492	12,402.00
Type Not Recorded	164	18,342.30
<b>Total</b>	<b>1,375</b>	<b>88,731.07</b>

In late 2011, Alacer completed eight diamond holes for 2,171 m and fifteen RC holes for 2,702 m. All diamond holes were surveyed during drilling with down hole single shot cameras, and then at end of hole by Ranger Surveys using a Gyro Inclinometer at 5 or 10 m intervals. RC drillholes utilised downhole single shot camera. Drillhole collars were surveyed by onsite mine surveyors. Assay results are still awaited for the majority of drillholes.

**Figure 10-4: Mt Martin Gold Project Location Plan**



## **11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY**

SKO is a long-term producing operation, which has had a long history of drilling, and sampling to support exploration and resource development. There have been several owners since mining began at the SKO deposits over 40 years ago, resulting in a historical database of sampling and grades supporting resource development. Many of the drilled and sampled areas have now been mined. The production from these drilled and sampled resources provides sufficient verification that the mineralisation is present, and that sampling methodology was adequate to support the operation. Most of the historical data is no longer relevant to the ongoing operation. Current practice is described below.

### **11.1 Sampling of RC Drilling**

Chips from the RC drilling face-sampling hammer are collected for assaying. Sample return lines are cleaned with compressed air each metre, and the cyclone sample collector is cleaned following each rod. Samples are riffle split through a three tier splitter. The hole collars are surveyed and holes greater than 30 m in depth are downhole surveyed by an electronic multi-shot tool at 5 m intervals. The sample intervals used are mainly 1 or 2 m, which is appropriate, given the average thicknesses of the mineralisation and the drilling methods adopted.

Recent (from September 2011) grade control drilling at HBJ undertaken with Total Drilling Services Pty Ltd. ("TDS") has used a cyclone-mounted cone splitter. Sample interval is 1 m. Hole collars are surveyed after drilling; no downhole surveys are taken due to the generally shallow depth (<54 m) of the holes.

### **11.2 Sampling of Diamond Core Drilling**

The core is geologically logged and the entire core submitted for assaying and is sampled according to geology, with an average sample length of 1 m. The core is halved with a rock saw; one half is assayed and the other half retained for reference.

### **11.3 Sampling of Stockpile**

Stockpiles are not sampled; the grades attributed to them are derived from the grade control estimates during mining, except for the Sapphire stockpile, which was re-drilled. Re-sampling of stockpiles is not recommended as obtaining a representative sample is difficult.

### **11.4 Sample Preparation, Analyses and Security**

Samples are currently placed in pre-numbered sample bags by the drill crew and collected by SKO staff. The sample numbers are recorded on submission sheets and faxed to the laboratory. SKO staff deliver the samples to the laboratory where they are checked against the samples submission sheets. The SKO staff member delivering the samples has custody over the samples at all times. Sample numbers are recorded and tracked by the laboratory using electronic coding.

In the case of discrepancies, the assaying is delayed until these are resolved by the supervising geologist. The SGS laboratory in Kalgoorlie is ISO9001 accredited and independent of Alacer Gold.

## **11.5 Assaying**

Samples are dried and riffle split if necessary. They are then jaw crushed and the total sample (up to a maximum of 3 kg) is pulverised in a ring mill to a nominal 90% passing 75 µm. The laboratory uses the fire assay method. A 30 g charge of the analytical pulp is fused at 1050°C for 45 minutes with litharge. The resultant metal pill is digested in aqua regia and the gold content determined by atomic adsorption spectrometry, with detection limit of 0.01 g/t Au.

All assay pulps are routinely discarded after three months unless the QA/QC reveals any issues with the results.

## **11.6 Security Measures**

SKO current procedures are appropriately designed to avoid unintentional mistakes in sampling numbering from a QA/QC perspective.

## **11.7 QP's Statement**

In the QP's opinion, the sampling, sample preparation and analytical procedures are adequate for the preparation of a Mineral Resource and Reserve estimate. Due to the historical component of the sample database, it was not possible to verify the effectiveness of any previous security measures.



## 12.0 DATA VERIFICATION

The current databases comprise a mixture of historic data derived from continued exploration activities undertaken by numerous property owners dating back to the 1970s, and more recent data from exploration campaigns managed by current SKO personnel.

There is limited information available on historical QA/QC procedures. SKO has generally accepted the available data at face value, and carry out basic data validation procedures as each deposit within the mineral inventory is re-evaluated during the annual planning phase or as part of more detailed geological modelling and resource estimation ahead of any modification to reserves.

SKO's QA/QC procedures define the use of assay pills, standards, blanks, barren flushes, check analyses, grind size, fire assay charge weight, density, drillhole surveys, photographing of core and provide standard rules for data capture.

In the open-pit operations, commercially prepared standards and assay pills are used. An assay pill contains a measured amount of gold and is added to a barren sample. Currently, for grade control samples an assay pill sample is added every 100 samples. A commercial standard is added every 100 samples. A blank is added every 100 samples. A duplicate sample is taken every 100 samples.

External pulp standards are submitted with every assay batch at a rate of one standard per face sample batch, or approximately one standard for every 40 core samples.

Results of the standards, blanks and duplicates are recorded in the database.

Ongoing production data generally confirms the validity of prior sampling and assaying of the mined deposits to within acceptable limits of accuracy. By applying consistent sampling and analysis protocols, the reasonable match between production data and prediction data can be taken as confirmation that the methods of sampling, handling, preparation, analyses and data capture and QA/QC controls are suitable for resource estimation.

### 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Detailed metallurgical recovery and processing information is available for HBJ, Mt Martin, Pernatty and Triumph, as each mine has previously been mined and the ore processed at the current 1.2 Mtpa Jubilee processing facility. No new ores or ore types are included in this technical report. Historical operating data from SKO Jubilee plant indicate that recoveries of 94% can be achieved although the average gold recovery for 2011 was 91% from the treatment of ore grading 2.5g/t gold. Approximately 50% of the gold was recovered by the gravity circuit. The Jubilee plant performance for 2011 is shown in Table 13-1, and the information has been taken from the monthly operational reports. The ore listed as other comprises several old low grade dumps.

**Table 13-1: Composite Weighting Representing Mill Feed Scenarios**

Ore Source	Tonnes (t)	Grade(g/t)	Recovery (%)	Estimated P <sub>80</sub> grind size (µm)
HBJ	773,359	1.29	90	184
Frog's Leg	335,442	5.85	92	188
Other	122,541	0.94	88	187
Total	1,231,342	2.50	91	185

At the current throughput rate of 1.2 Mtpa the existing processing facility has a cyclone overflow sizing of P<sub>80</sub> of 185 µm. Throughout the year this sizing has varied from 135 µm to 300 µm depending on throughput and the ore blend of the day. There has generally been a gradual increase in grind size with time. Plant operating data has shown that a reduction in leach recovery of approximately 2% occurs when the grind size is coarsened from P<sub>80</sub> of 145 µm to P<sub>80</sub> of 200 µm and a reduction of an additional 1.5% when the grind size reached a P<sub>80</sub> of 250 µm.

The historical information from the actual processing of ore shows that even though the SKO ore sources are blended with the ore from the Frog's Leg mine each ore type behaves differently in terms of overall recovery in relation to grind size. The Frog's Leg ore is far more sensitive to increased recovery at a lower grind size. This data concurs with test work completed for La Mancha Resources by Minerals Technical Services (METS) in December 2007 that shows that a recovery of 95 – 98% could be achieved at a P<sub>80</sub> of 106 µm grind size.

This grind size performance information associated with the processing of Frog's Leg ore then formed the basis of the 106 µm design size criteria for the new 2.5 Mtpa associated with SKOEP. In relation to the proposed 2.5 Mtpa processing facility associated with SKOEP, an additional metallurgical test work program was also completed in 2011 as part of the SKOEP Feasibility Study. The intent of this test work was to validate if any significant variations would be apparent in comparison to the historical metallurgical information known from the existing 1.2 Mtpa Jubilee processing facility in relation to HBJ and Frog's Leg as these two ore sources make up 83% of the feed associated with the reserve estimation associated with this technical report.

Historical information was used as Metallurgical performance criteria for the Mt Martin, Pernatty and Triumph ore bodies.

In relation to the additional test work done in 2011 for HBJ and Frog's leg, suitable core samples were extracted from the HBJ Open-Pit for the additional test work along with some "grab" samples of current Frog's Leg ore. The samples selected for the test work provide a good cross section of the ore within the HBJ Open-Pit design. The samples are representative of the various types and style of mineralization of the ore planned to be mined.

Table 13.2 shows the different samples used and the style of mineralization tested.

**Table 13-2: Composite Weighting Representing Mill Feed Scenarios**

<i>Porphyry Composite</i>					
Weighting	Constituent Ore			Mass	
33.30%	Southern Porphyry			10	kg
33.30%	Central Porphyry 2			10	kg
33.30%	Northern Porphyry 2			10	kg
			Total	30	kg
<b>Total Composite CY2013-2014</b>					
Weighting	Constituent Ore			Mass	
5%	Southern Porphyry			1.5	kg
5%	Central Porphyry 2			1.5	kg
5%	Northern Porphyry 2			1.5	kg
17.5%	LG Schist			5.25	kg
17.5%	HG Schist			5.25	kg
35%	Ultramafic			10.5	kg
15%	Frog's Legs Blend			4.5	kg
			Total	30	kg
<b>Total Composite CY2015-2020</b>					
Weighting	Constituent Ore			Mass	
13%	Southern Porphyry			3.9	kg
13%	Central Porphyry 2			3.9	kg
13%	Northern Porphyry 2			3.9	kg
11.5%	LG Schist			3.45	kg
11.5%	HG Schist			3.45	kg
23%	Ultramafic			6.9	kg
15%	Frog's Legs Blend			4.5	kg
			Total	30	kg

The test work was done as part of the GRES feasibility study and was carried out by ALS Ammtec Pty Ltd in Perth and was designed to generate the following information:

- Unconfined compressive strength (UCS).
- Crushing work index (CWi).
- Bond rod and Bond ball work indices (BRWi and BBWi).
- SAG Mill Comminution (SMC) and Bond Work Index (BWi) testing on variability samples to generate data for JKSimMet modelling.

- Gravity gold recovery and leach extraction in alkali cyanide solution at 46% solids and grind size of 80% passing 106 microns. Tests to be monitored for gold, silver, copper and nickel at intervals of 2, 4, 8, 12 and 24 hours. A mass balance was determined at the completion of the leach test.
- Size by size assay on a representative ore sample following grinding to 80% passing 106 microns.
- Slurry viscosity to be measured at pulp density of 40, 45 and 50% solids across the normal range of shear rates.
- Settling tests and flocculent screening tests to confirm thickener sizing.
- Paste thickening test work if thickened discharge is to be considered for TSF design.
- Slurry viscosity testing at higher pulp density (55, 60 and 65% solids) to determine pumping parameters.

Various test composites were made up to represent some of the possible mill feed options that may result from the different mine optimizations as shown in Table 13-2.

Gold grade of the samples used for testing was as shown in Table 13-3.

**Table 13-3: Gold Analyses of Metallurgical Test Samples**

Sample		Gold 1	Gold 2	Ave
SOUTHERN PORPHYRY	g/t	1.65	1.71	1.68
CENTRAL PORPHYRY	g/t	0.57	0.62	0.60
NORTHERN PORPHYRY	g/t	0.47	0.76	0.62
LOW GRADE SCHIST	g/t	0.85	1.00	0.93
HIGH GRADE SCHIST	g/t	1.88	1.59	1.74
LOW GRADE ULTRAMAFIC	g/t	0.40	1.06	0.73
FROG'S LEGS	g/t	2.64	1.83	2.24
CENTRAL PORPHYRY 2	g/t	1.44	1.43	1.44
NORTHERN PORPHYRY 2	g/t	0.88	0.85	0.87
FROG'S LEGS 2	g/t	13.3	9.95	11.63
FROG'S LEGS BLEND	g/t	5.87	5.24	5.56

Table 13-4 presents the JKSimMet mill modelling input parameters and indicates the relative rock hardness of the HBJ pit rock types.

**Table 13-4: Rock Hardness Characterisation of HBJ Pit Rock Types**

Sample Designation	A*b				t10 @ 1 kWh/t			
	Value	Category	Rank	%	Value	Category	Rank	%
CENTRAL PORPHYRY	36.5	hard	940	28.3%	29.1	moderately hard	1200	36.1%
NORTHERN PORPHYRY	42.6	medium	1385	41.7%	29.8	moderately hard	1312	39.5%
SOUTHERN PORPHYRY	30.0	hard	441	13.3%	25.9	hard	702	21.1%
LOW GRADE ULTRAMAFIC	60.1	moderately soft	2201	66.3%	40.2	soft	2428	73.1%
SCHIST COMPOSITE	47.1	medium	1647	49.6%	34.8	medium	1933	58.2%

An operating work index, derived from empirical grinding circuit data, was used to calculate the BBWi for the existing feed ore blend. The calculated Bond ball work index value applicable to the existing plant feed ore blend was 16.1 kWh/t. Comminution tests indicated a Bond ball work index of 14.7 kWh/t for a test product of 80% <106 µm. The crusher and ball mill design for the new plant is based on an operating scenario where the mill feed is 100% porphyry because the porphyry ore is the most abrasive, most competent and the hardest of the rock types being considered for processing.

As shown in Table 13-5, the porphyry ore is categorised as highly competent with unconfined compressive strength (UCS) up to 209 MPa. As shown in Table 13-5, the porphyry is highly abrasive with an abrasiveness index 0.63 and hard with a BBWi of 14.7 kWh/t.

**Table 13-5: Table of Unconfined Compressive Strength Per Sample**

Sample	Date	Source	UCS (MPa)	Failure Mode	Description
Porphyry #1	Jan 2011	ROM > 50 mm	209.008	Cataclasis	Very Strong
Porphyry #2	Jan 2011	ROM > 50 mm	129.653	Columnar	Strong
Porphyry #3	Jan 2011	ROM > 50 mm	183.727	Columnar	Strong
Porphyry #4	Jan 2011	ROM > 50 mm	40.179	Columnar	Medium Strong
Porphyry #5	Jan 2011	ROM > 50 mm	75.402	Columnar	Strong
LG Ultramafic #1	May 2011	Cored from ROM rock sample	42.803	Shear	Medium Strong
LG Ultramafic #2	May 2011	Cored from ROM rock sample	3.094	Shear	Very Weak
LG Ultramafic #3	May 2011	Cored from ROM rock sample	6.956	Shear	Weak
LG Ultramafic #4	May 2011	Cored from ROM rock sample	18.837	Shear	Weak
LG Ultramafic #5	May 2011	Cored from ROM rock sample	20.025	Shear	Medium Strong
Frog's Leg #1	May 2011	Cored from ROM rock sample	47.181	Shear	Medium Strong
Frog's Leg #2	May 2011	Cored from ROM rock sample	41.272	Shear	Medium Strong
Frog's Leg #3	May 2011	Cored from ROM rock sample	60.126	Shear	Strong
Frog's Leg #4	May 2011	Cored from ROM rock sample	91.382	Shear	Strong
Frog's Leg #5	May 2011	Cored from ROM rock sample	39.287	Shear	Medium Strong

**Table 13-6: Table Work Index and Abrasion Index Per Sample.**

Sample	Date	RWi (kWh/t <sub>METRIC</sub> )	BWi (kWh/t <sub>METRIC</sub> )	Abrasion Index
LG Ultramafic	May 2011	14.3	10.5	0.0843
Southern Porphyry	May 2011	19.1	13.8	0.4628
Central Porphyry 1	May 2011	20.6	14.8	0.4871
Northern Porphyry 1	May 2011	17.4	14.2	0.3673
Porphyry	Jan 2011	20.8	14.7	0.6368
Schist Comp	May 2011	16.5	11.1	0.2577

Referring to Figure 13-1, leachability tests of the overall composite sample milled to a P80 of 106 µm indicated 90% gold dissolution in 24 hours. Cyanide (NaCN) consumption was 0.84 kg/t, lime consumption was 2.15 kg/t.

From an overall perspective in relation to the new 2.5 Mtpa processing facility, there were no significant differences in metallurgical response compared to what has historically been seen with the current 1.2 Mtpa Jubilee processing facility. To the extent known, there are not any processing factors or deleterious elements that are present that could have a significant effect on potential economic extraction.

The new 2.5 Mtpa processing facility design will include the same process design configuration as the current processing facility flow sheet. The new processing facility is designed to achieve a finer grind P<sub>80</sub> of 106 µm as compared to 185 µm grind currently being achieved. This will allow a higher gold recovery to be achieved from the ores being processed particularly the Frog's Leg ore which the test work shows responds favourably to finer grinds.

For the purposes of modelling the recovery of each ore body in relation to the consolidated economical analysis as outlined in Section 22 of this report, historical plant performance criteria and new test work information has been considered. Table 13.7 shows the Metallurgical recovery criteria selected for use in the consolidated economical analysis.

The various recovery information determined for 106 grind in the 2011 test work shows a range of 85.1% - 93.7% for Porphyry and a range of 88.3% - 94.3% for non-Porphyry. Based on a reasonable assumption that the HBJ open pit has 50% Porphyry and 50% non porphyry the average of the range mid points is 90.4%. The same test data however shows that 2 separate composite samples with HBJ and Frog's Leg determined a recovery range of 92.8% - 94.0%. Both these composite samples contained 15% Frogs Leg. The results of the composite samples suggest that either the recovery of HBJ or Frog's Leg individual samples are lower than the achieved recovery for the combined composite result.

Assuming the midpoint of the composite sample is correct at 93.4% recovery and assuming the 15% Frog's Leg feed achieves 95% recovery then the HBJ recovery would be 93.1%. For the purposes of the cash flow in section 22 based on a P<sub>80</sub> passing 106 µm a 92% recovery is selected for HBJ and a 95% recovery is selected for Frog's Leg. As no additional test work has been completed on Mt Martin, Pernatty and Triumph the historical recoveries associated with the current 1.2 Mtpa Jubilee plant have been used in the economic analysis for the 2.5 Mtpa SKOEP.



**Table 13-7: Table Work Index and Abrasion Index Per Sample.**

Mine/Ore source	Historical Gold recovery achieved by current 1.2Mtpa Jubilee processing facility (180µm grind)	Gold recovery achieved as a result of recent test work (106µm grind)	Gold recovery chosen for economic analysis (section 22) for SKOEP (106µm grind)
HBJ open pit	90%	85.1 - 94.3%	92%
Mt Martin open pit	88%	Nil	88%
Pernatty open pit	90%	Nil	90%
Triumph open pit	90%	Nil	90%
Frog's Leg (49%)	92%	95-98%	95%
HBJ 85%/Frog's Leg 15%		92.8 – 94%	92%

The processing facility flow sheet is discussed in Section 17 of this report.

## 14.0 MINERAL RESOURCE ESTIMATES

The latest SKO Resource estimate is dated December 31, 2011 and is presented in Table 14-1 (summary) and 14-2 (detail).

The SKO resources have been updated for changes to HBJ, Pernatty, and Triumph Resource Estimates in 2011 resulting from infill and extensional drilling and reinterpretation. These resources were further updated for mine depletion to December 31, 2011. The Mt Martin acquisition has been added as a new resource to the SKO resource table. All other existing resources remain unchanged from the previous technical report (SRK, 15 December 2010).

The overall December 2011 Resource represents an increase of 8% of Measured and Indicated Resources and 7% of Inferred Resources to the December 2010 Resource.

**Table 14-1: Summary of SKO Mineral Resource Estimate (December 31, 2011)**

Mineral Resource for SKO as at December 2011												
	Measured			Indicated			Total M & I			Inferred		
	Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)
Total SKO	1,365	2.5	111	37,117	2.1	2,545	38,482	2.1	2656	33,359	1.9	2,046
Total Penfolds	0	0	0	1,600	2.3	120	1,600	2.3	120	136	3.4	15
Total Stockpiles	1,108	1.0	34	166	0.8	4	1,274	0.9	39	5	0.7	0
Total SKO Resources	2,473	1.8	146	38,884	2.1	2,669	41,357	2.1	2815	33,500	1.9	2,061

**Table 14-2: SKO Resources December 2011 - Total**

Mineral Resource for SKO as at December 2011													
	Cut off Grade	Measured			Indicated			Total M& I			Inferred		
		Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)	Tonnes (kt)	Grade (g/t)	Ounces (koz)
<b>SKO</b>													
HBJ Superpit	0.5				9,573	1.7	529	9,573	1.7	529	230	1.6	12
HBJ Underground	1.0				16,188	2.0	1,065	16,188	2.0	1,065	24,412	1.8	1,374
Mt Marion	1.0	252	4.9	40	2,388	3.6	280	2,640	3.8	320	2,768	3.0	267
Mt Martin	0.5				2,848	1.9	177	2,848	1.9	177	1,195	2.3	88
Pematty Decline	0.9				2,087	2.5	166	2,087	2.5	166	754	2.7	64
Triumph	0.7	146	1.8	8	1,098	1.7	61	1,244	1.7	69	400	1.8	23
Shirl OP	1				75	2.8	7	75	2.9	7	21	3.8	3
Shirl UG	1				662	4.7	99	662	4.7	99	519	2.8	47
Trojan	1	665	2	43	788	2.1	54	1,453	2.1	97			
White Hope	1						-	0	0	0	1,013	1.9	63
28 Pit	1				350	2.6	29	350	2.6	29	231	2.4	18
Lanarkshire Porphyry	0.7						-	0	0	0	1,325	1	44
Bakers Flat	1				213	2.3	16	213	2.3	16	267	2.5	21
Dawns Hope	1	302	2	20	170	2.6	14	472	2.2	34			
Golden Ridge	1				339	2.3	25	339	2.3	25	66	2.8	6
Inclined Shaft / Lancashire Lass	1				159	2.7	14	159	2.7	14			
TNT (Pematty Nth)	0.7				180	1.7	10	180	1.7	10	49	1.6	3
Noble 6	1						-	0	0	0	109	3.7	13
<b>Total SKO</b>		<b>1,365</b>	<b>2.5</b>	<b>111</b>	<b>37,117</b>	<b>2.1</b>	<b>2,545</b>	<b>38,482</b>	<b>2.1</b>	<b>2,656</b>	<b>33,359</b>	<b>1.9</b>	<b>2,046</b>
<b>Penfolds</b>													
Mungari	1						-	0	0	0	62	3.3	7
Abattoirs South	1				52	4.4	7	52	4.2	7			-
Penfold	0.9				60	3	6	60	3.1	6	22	3	2
Scrubby Tank	1				135	1.9	8	135	1.8	8			
Greater Jezebel Area	0.7				559	2.1	38	559	2.1	38			
Freddo	1				350	1.9	22	350	2.0	22	25	1.8	1
Rose Hill	1				444	2.7	39	444	2.7	39	27	6	5
<b>Total Penfolds</b>					<b>1,600</b>	<b>2.3</b>	<b>120</b>	<b>1,600</b>	<b>2.3</b>	<b>120</b>	<b>136</b>	<b>3.4</b>	<b>15</b>
<b>Stockpiles</b>													
Low Grade Stockpiles		876	0.7	20.6	166	0.8	4	1,043	0.7	25	5	0.74	0.119
RoM Stocks		232	1.9	13.9				232	1.9	14			
<b>Total Stockpiles</b>		<b>1,108</b>	<b>1.0</b>	<b>34.4</b>	<b>166</b>	<b>0.8</b>	<b>4</b>	<b>1,274</b>	<b>0.9</b>	<b>39</b>	<b>5</b>	<b>0.7</b>	<b>0</b>

## 14.1 HBJ Resource Estimate

The HBJ Resource Estimates for both Open-Pit and Underground was updated in December 2011 and are presented in Tables 14-3 and 14-4.

**Table 14-3: HBJ Open Pit Resource Estimate December 2011**

Category	Cut off grade Au g/t	Tonnes '000	Grade g/t Au	Ounces '000
Measured	0.5	-	-	-
Indicated	0.5	9,573	1.7	529
Inferred	0.5	230	1.6	12

**Table 14-4: HBJ Underground Resource Estimate December 2011**

Category	Cut off grade Au g/t	Tonnes '000	Grade g/t Au	Ounces '000
Measured	1.0	-	-	-
Indicated	1.0	16,188	2.0	1,065
Inferred	1.0	24,412	1.8	1,374

The resource estimate is based on the HBJ Resource Model Update carried out by Widenbar and Associates Pty Ltd. ("WAA") in December 2011. Alacer supplied a validated drill hole database in Access format (HBJ0207.mdb, dated 17/12/2011). An additional database was provided separately for Golden Hope (Goldenhope.mdb, dated 24/06/2010). Collar, down-hole survey, assay and geology tables were provided. Digital terrain models ("DTMs") were supplied in Surpac format for "as-built" (current) topography, and "all-cut" (limit of original open-pit) topography. Solid wireframe models in Vulcan and Surpac formats were provided for all mineralised zones, and for all underground workings.

A total of 18,837 valid drill holes were in the collar file when the databases were merged. There were a total of 82,300 assay intervals in the combined assay database. The local HBJ grid was used as the coordinate system.

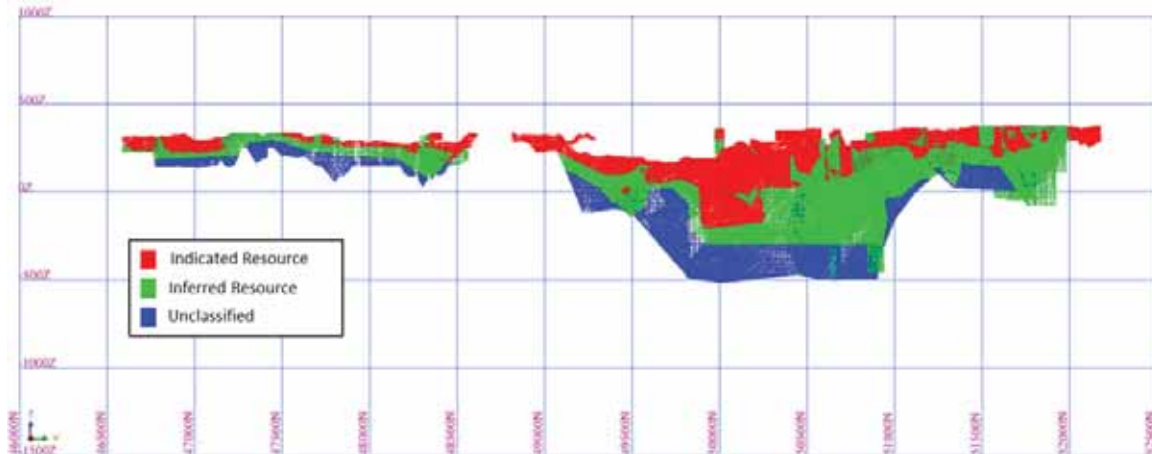
Classification was based on drill density and the exceptional geological continuity of the mineralization shown over the long history of mining the 2.2 km long HBJ Open-Pit. There is no Measured material in the HBJ Resource.

Indicated Resources were typically defined by drill densities of approximately 40 m by 40 m drill spacing down to 10 m by 5 m grade control in the HBJ North area. Indicated Resources possess good lode continuity and the high data density has provided a good understanding of the geology as well as providing a high level of confidence in the grade interpolation.

Inferred Resources were defined by drill densities greater than 40 m by 40 m. Drill spacing is generally 80 to 100 m by 80 to 100 m and in good structural control within Domain 3 (which contains over 80% of the reported metal). Alacer was comfortable in exceeding this drill spacing in some areas. The Inferred Resources was restricted to the -300RL, despite drilling existing below.

Details of the resource update are captured in WAA's resource report titled HBJ Resource Model Update January 2012 (WAA).

**Figure 14-1: Alacers's classification of the HBJ Resource**



#### 14.1.1 HBJ Open-Pit Resource Reporting

The HBJ Open-Pit Mineral Resource is reported using a 0.5 g/t Au cut-off within a \$1,500/Oz pit shell designed on a 1.2 Mtpa milling configuration. The Underground Mineral Resource is reported using a 1 g/t Au cut-off below and outside the same \$1,500 /Oz 1.2 Mtpa pit shell.

#### 14.1.2 Resource Model Interpolation

Ordinary Kriging ("OK") has been used for interpolation using the Datamine ESTIMA process. Search ellipses applied in the estimate were based on a combination of drill hole spacing and the variography analysis.

The primary search ellipse had radii of 40 m along strike, 8 m across strike and 40 m down dip. A minimum of 12 samples and a maximum of 24 was required in the search, with a maximum of four samples per drill hole allowed. Where a block was uninformed after the first search, a second search was applied with search radii of 80 m along strike, 16 m across strike and 80 m down dip. A final third pass with the search radii increased by a factor of three and samples reduced to a minimum of two was used to inform any blocks still unestimated.

All blocks were informed in the first search pass.

Density values were supplied by Alacer, and vary by domain and rock type. An interpreted top-of-fresh surface is used to assign Oxide and Fresh codes; oxide is set a density of 2.0 g/cm<sup>3</sup> and fresh mafics initially to 2.7g/cm<sup>3</sup>. The major Domain 3 at HBJ is considered to be essentially porphyry and is assigned a density of 2.62g/cm<sup>3</sup>.

Validation of the model was carried out by visual inspection, statistical comparisons and comparison with reconciliation data.

### **14.1.3 Resource Classification**

#### **Geological and Mineralisation Continuity**

Geological and mineralisation continuity is considered to be reasonably understood, and is supported by knowledge from open-pit and underground operations. The classification reflects this level of confidence.

#### **Drilling Spacing**

Drill hole and data locations have been used to ensure that local drill spacing conforms to the minimum expected for the resource classification. Drill spacing varies from close spaced grade control data to widely spaced holes at depth. Indicated material is confined to areas where drill line spacing is typically less than 40 m, with remaining material assigned to the Inferred category.

#### **Modelling Technique**

A conventional Ordinary Kriging (“OK”) modelling technique has been used, with an unfolding methodology applied to provide a dynamic element to the allocation of search ellipses. Output from the kriging has been used to aid determination of resource categories.

#### **Final Classification**

The classification of the HBJ resource has been assigned by Alacer. Classification was based on drill density and the exceptional geological continuity of the mineralization shown over the long history of mining the 2.2 km long HBJ Open-Pit. There is no Measured material in the HBJ Resource.

Indicated Resources were typically defined by drill densities of approximately 40 m by 40 m drill spacing down to 10 m by 5 m grade control in the HBJ North area. Indicated zones possess good lode continuity and the high data density has provided a good understanding of the geology as well as providing a high level of confidence in the grade interpolation. Inferred Resources were defined by drill densities greater than 40 m by 40 m. Drill spacing is generally 80 to 100 m by 80 to 100 m and in good structural control within Domain 3 (which contains over 80% of the reported metal). Alacer was comfortable in exceeding this drill spacing in some areas. The Inferred Resource was restricted to the -300RL, despite drilling existing below.

Classification of the December 2011 Resource was carried out using the same parameters used for the previous resource estimate carried out in June 2010.

## **14.2 Mt Martin Open-Pit Resource Estimate**

Alacer acquired the Mt Martin deposit from Australian Mines Limited in August 2011. Mt Martin is adjacent to the SKO tenements and infrastructure, and is included in the SKO resources.

The most recent resource estimation for Mt Martin was completed by CSA Global Pty Ltd for Australian Mines Limited and dated October 2010. The resource estimation is unchanged and valid as the December 2011 estimation.

CSA carried out the Mineral Resource estimate for the Mt Martin deposit using the following scope of work:

- Statistical analysis
- Variogram modelling



- Block model of geological features, based on weathering and mineralisation
- Estimation and validation of the resource
- Classification and reporting of the Mineral Resource estimate
- Recommendations for future work
- Final report compilation

Model validation was carried out graphically and statistically to ensure that the block model grade accurately represented the drill hole data. Densities assigned to the model are based on those used by Coutts (2001) and were provided by Australian Mines. These values were derived from samples collected from various levels in the pit during the last phase of open pit mining, which was completed in 1997 (Table 14-55).

**Table 14-5: Material Densities**

Material	Density (t/m <sup>3</sup> )
Transported / Back Fill	1.8
Oxide	2.0
Transitional	2.4
Fresh	3.0

#### 14.2.1 Resource Reporting

The Mineral Resource estimate is reported on a 0.5 g/t cut-off by deposit and is presented in table 14-6.

**Table 14-6: Mt Martin Resource Estimate Dec 2011.**

Category	Cut off grade Au g/t	Tonnes '000	Grade g/t Au	Ounces '000
Measured	0.5	-	-	-
Indicated	0.5	2,848	1.9	177
Inferred	0.5	1,195	2.3	88

#### 14.2.2 Resource Model Interpolation

All Grade interpolation was carried out using “OK” and Inverse Distance Squared (“IDS”) methods. The IDS estimation was used as one of the validation tools. Cell discretisation of 3 m x 3 m x 3 m was used for grade estimation. Both the OK and IDS estimations were constrained to the individual lodes. The OK and IDS estimations used the same search parameters. Table 14-7 summarize the search parameters.

**Table 14-7: Mt Martin model search ellipse parameters**

Run Number		1	2	3
Ore Domain	Min Number of Samples	10	5	1
	Max Number of Samples	20	20	20
	Search Ellipsoid multiplier	1x	2x	3x

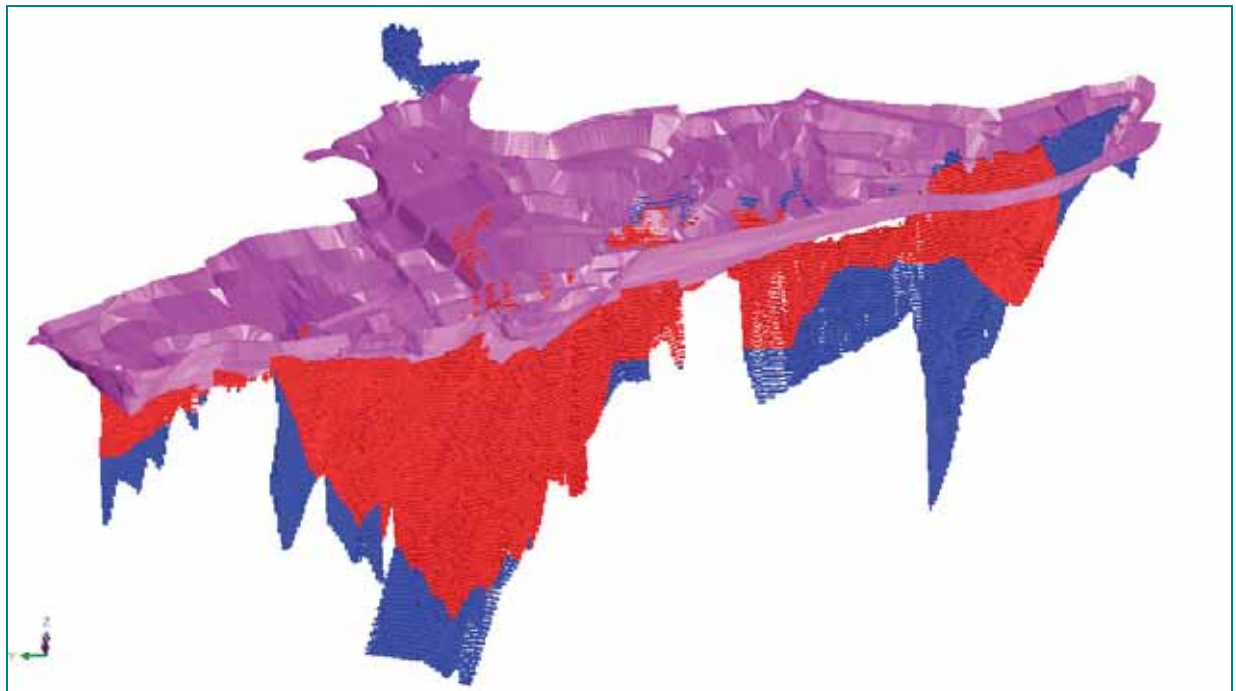
Waste Domain	Min Number of Samples	10	5	-
	Max Number of Samples	20	20	-
	Search Ellipsoid multiplier	1x	2x	-

### 14.2.3 Mt Martin Resource Classification

CSA noted areas of concern during the classification are the age of some of the drilling, and of the quality control processes used during the drilling and lack of density values for the deposit. However the density of the RC and DD and the geometry of mineralisation, which matches the expected shape for this style of mineralisation, provide enough confidence to classify the resource.

Classification of the two block models, coloured on Inferred (blue) and Indicated (red), is presented in the following diagram.

**Figure 14-2: Model of Mt Martin Resource Classification** (Indicated = red, Inferred = Blue)



## 14.3 Pernatty Resource Estimate

Alacer completed a review and update of the Pernatty deposit resource estimate in December 2011. The resource is presented in Table 14-8.

**Table 14-8: Pernatty Resource Estimate December 2011 (Alacer)**

Category	Cut off grade Au g/t	Tonnes '000	Grade g/t Au	Ounces '000
Measured	0.9	-	-	-
Indicated	0.9	2,087	2.5	166
Inferred	0.9	754	2.7	64

Alacer's report details the parameters and methods employed in the December 2011 resource estimation of the Pernatty Deposit. The estimation was completed at Alacer by E. Reaney, Project Resource Geologist, and utilised all available RC and DD data. The purpose of the model was to provide a basis for a reserve estimate and mining feasibility study to be completed, and ultimately a decision to mine being made. Only those processes relevant to this estimate are detailed here.

The Pernatty resource has been modelled numerous times, including: 1992 (Stapleton et al), 1994 (Woolfe), 1996 (Bryant), 2007 (Matthews) and 2010 (Reaney). During the pre-production phase of development, Ransom (1986) reported a geological ore reserve of 545,000 t @ 3.65 g/t Au. The 1992 model updated the resource to 627,000 t @ 5.83 g/t Au for 117,000 oz. In 1994 the undiluted resource for the Pernatty underground stood at 677,000 t @ 5.8 g/t Au for a total of 125,000 oz. In 2007 the resource above 1 g/t Au for Pernatty underground stood at 1.9 Mt at 2.47 g/t Au for 153,000 oz. In 2010 the interpretation changed slightly and saw an increase in tonnes to 2.9 Mt at 2.8 g/t Au.

#### **14.3.1 Pernatty Geological and Mineralisation Continuity**

The geological interpretation of the area is well understood, and is supported by the knowledge from open-pit and underground operations. However given the mineralisation is controlled by shear zones the mineralisation continuity is considered to be less understood. Historical geological logging lacks good structural information, making identification of these shear zones difficult, resulting in much of the interpretation being based on grade continuity.

#### **14.3.2 Drill Spacing**

Drill hole and data locations have been used to ensure that local drill spacing conforms to the minimum expected for the resource classification of the Pernatty deposit. Indicated material is confined to areas where drill hole intercepts spacing within the mineralised zone is typically less than 30 to 40 m. Inferred Resources have been confined to drill hole intercept spacing typically less than 60 m, with remaining material assigned as unclassified, however there can be variations to this depending on the geological and grade continuity of particular areas. Drill density for Pernatty Deeps is limited, and this has been reflected in the classification.

#### **14.3.3 Modelling Technique**

OK estimation techniques have been used in the interpolation of Pernatty. This technique was used because it is considered most accurate as it incorporates the variographic analysis of each domain, allowing the orientation of the grade continuity to be modelled accurately. Output from the kriging has also been used to aid the determination of resource categorisation by the use of kriging variance and slope of regression.

#### **14.3.4 Final Classification**

An Indicated resources are categorised to blocks generally estimated in search pass 1 which have a drill hole intercept spacing of less than 20 to 40 m with a minimum of 10 samples. Inferred Resources are categorised to blocks which have been estimated in search pass 2, which have a drill hole intercept spacing of less than 80 m with a minimum of 10 samples. All other blocks are currently assigned as unclassified. There is no Measured Resource classification for the Pernatty deposit.

#### **14.3.5 Pernatty Deposit – Recommendations**

Mine evaluation studies should be carried out to assess the potential for development (underground). Currently Pernatty is open in several places, to the south and the north. Drill density is poor in many areas of the interpreted mineralised zones, restricting the amount of

Indicated and Inferred Resources, grade control drilling prior to mining is needed to help define the extent of the Pernatty ore zones in the oxide as well as infilling domains much deeper which are driving the pit optimisations. During the interpretation process it became apparent there are discrepancies between the drill hole data and underground workings triangulations. This has also been documented in previous reports. This error could be down to a number of factors. Over the years the data with have undergone many grid transformations, errors in the process and rounding could have led to slight errors in the drill hole co-ordinates. Also, although the underground development was surveyed, the stopes were not. The stopes used for the depletion have been estimated and width and length are based on the size of the development levels below and above. These errors may in turn have led to several errors in the estimation process. The ore interpretation has honoured the drillhole data, so in places the ore may be located outside of the interpreted underground workings. Once the model has been depleted, in places the model will still show remnant ore around the workings that in fact may have already been mined or vice versa. These errors should be analysed in a risk assessment prior to mining and grade control drilling undertaken to reduce the risk and confirm remnant ore and the location of underground voids.

## 14.4 Triumph Resource Estimate

In June 2010 WAA produced a resource estimate for the remaining resources in the Triumph deposit as summarised in Table 14-9.

**Table 14-9: Triumph Resource Estimate valid as at December 2011**

Au Cutoff	Measured				Indicated				Inferred			
	Volume	Tonnes	Au	Oz	Volume	Tonnes	Au	Oz	Volume	Tonnes	Au	Oz
3.00	5,495	14,506	3.78	1,761	35,170	97,333	3.97	12,417	13,297	37,229	3.40	4,068
2.00	16,544	44,392	2.86	4,075	108,112	296,721	2.92	27,875	53,613	149,519	2.63	12,662
1.50	27,823	73,840	2.41	5,712	192,443	522,206	2.41	40,445	84,850	235,056	2.30	17,351
1.00	43,949	116,259	1.98	7,401	327,981	877,051	1.94	54,563	111,230	303,594	2.06	20,127
0.90	47,881	126,455	1.90	7,717	357,331	954,149	1.86	56,905	118,027	320,462	2.00	20,647
0.80	51,814	136,635	1.82	7,995	383,221	1,022,542	1.79	58,781	130,189	353,497	1.90	21,548
0.70	55,372	145,862	1.75	8,216	411,815	1,097,549	1.72	60,588	147,459	399,958	1.76	22,670
0.60	58,957	154,848	1.69	8,404	433,276	1,153,280	1.67	61,773	162,975	443,251	1.66	23,585
0.50	61,957	162,291	1.64	8,536	449,922	1,196,361	1.63	62,504	171,973	468,438	1.60	24,022
0.00	65,792	172,074	1.56	8,647	484,262	1,289,301	1.53	63,587	193,298	528,147	1.45	24,689

Collar, survey and assay data were provided by Alacer, together with solid wireframe models of mineralised zones, as-built and in-situ surface DTM's, and a top-of-fresh surface DTM. A total of 1,535 drill holes were in the data set, with approximately 1,380 of these being in the area of interest in resource modeling. A total of 53,338 assay intervals were in the data set. Following an analysis of sample length, these were composited to 1 m. Composites were flagged with the mineralization wireframes, producing a total of 7,821 ore composites. Blocks were flagged above and below a top-of-fresh surface, with regolith codes of OX and FR, and densities of 2.0 g/cm<sup>3</sup> and 2.8 g/cm<sup>3</sup> assigned above and below this surface.

#### 14.4.1 Resource Model Interpolation

The data and resource model blocks were ‘unfolded’ using a simple flattening algorithm to enable search ellipses to be more simply defined. Estimation was carried out by Ordinary Kriging using the Datamine Estima process. Variogram parameters were as described in the variography section. Because of the varying spacing of drill hole data, a multi-pass search strategy was used and after review of several variations the following search ellipses, minimum / maximum composite numbers etc were used, as shown in Table 14-10.

**Table 14-10: Triumph model search ellipse parameters**

	Pass 1	Pass 2	Pass 3
X Search	15	30	75
Y Search	15	30	75
Zsearch	3	6	15
Min samples	12	12	2
Max Samples	16	20	20
Max Per Hole	4	4	4

#### 14.4.2 Triumph Resource Classification

WAA reported that the Triumph resource classification (field RESCAT) is essentially based on data spacing, using a combination of search pass used to estimate a block and number of composites used in the estimation.

- All blocks estimated in search pass 1 are classified as Measured Resource.
- All blocks estimated in search pass 2 are classified as Indicated Resource
- Blocks estimated in search pass 3 and with 12 or more samples used in estimation are classified as Indicated Resource
- All other blocks are classified as Inferred Resource

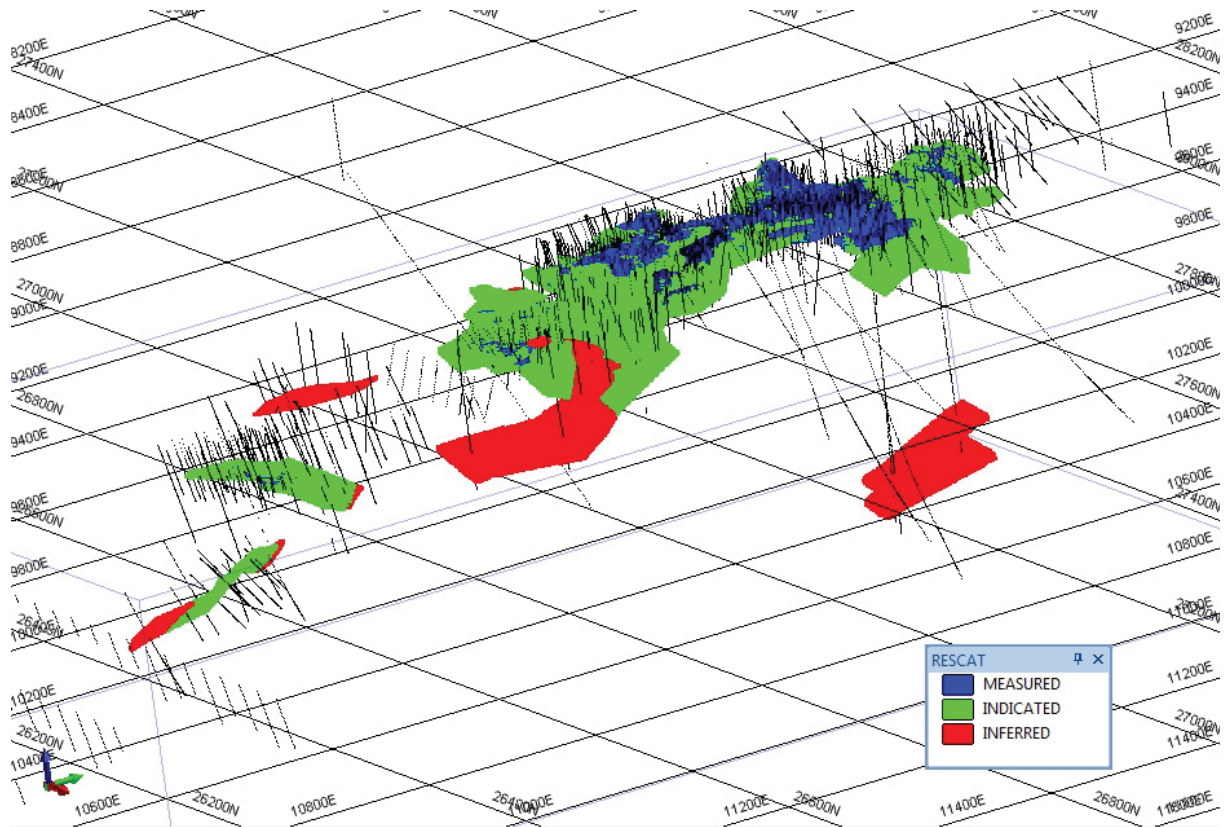
There are some specific exceptions to these rules:

- Wireframe Zone 8 is classified as Indicated Resource
- Wireframe Zone 22 is classified as Indicated Resource
- Wireframe Zone 52 is classified as Inferred Resource
- Wireframe Zone 14 is classified as Inferred Resource to the south of 27100N and Indicated Resource to the North.

The classification is shown in Fig the diagram before 14-3.



**Figure 14-3: Triumph Resource Classification Model**





## 15.0 MINERAL RESERVE ESTIMATES

### 15.1 Summary

Included in Table 15-1 is the Mineral Reserve as at December 2011. This comprises the September 2011 Mineral Reserve, adjusted for mining depletion up to December 31, 2011.

**Table 15-1: Ore Reserves for the South Kalgoorlie Operations as at December 31, 2011**

Asset/Project	Lower cut off grade, Au g/t	Tonnes '000	Grade g/t Au	Contained Ounces '000
HBJ	0.45	9,329	1.3	380
Mt Martin	0.60	1,250	1.9	77
Pernatty	0.60	304	2.3	22
Triumph	0.60	424	1.8	25
Total Stockpiles		1,142	1.0	38
<b>Total</b>		<b>12,449</b>	<b>1.4</b>	<b>542</b>

The revised Mineral Reserve included in Table 15-1 now includes stockpiles which were not previously included in the September 2011 reserve statement.

The HBJ, Mt Martin, Pernatty, and Triumph reserves are all similar in nature as they are existing open-pit mines and the reserves presented represent push backs (cut backs) to the existing historical mine workings. Similar reserve estimation methodology has been applied to each mine. Each mine has different estimation parameters based on the historical knowledge of the open-pit, and any new technical information gathered as part of the resource estimation process and the separate Feasibility studies.

The SKO is an existing mining and treatment operation. The reserve estimation process is part of an ongoing work cycle associated with the current mines. This reserve estimation has been done as part of the work associated with the SKOEP. SKOEP is based on the company building a 2.5Mtpa treatment plant to replace the current Jubilee plant with the new plant being commissioned in early 2013. Currently mining is occurring at the HBJ Open-Pit providing mill feed for the 1.2 Mtpa Jubilee plant. Mining is currently being done by conventional drill, blast, load and haul methods. The SKOEP mine plan for the next 5 years includes the push back expansion of the HBJ pit and resumed mining and accompanied by push backs on the three smaller pits, Mt Martin, Triumph and Pernatty. The following sub sections address the mining of the four pits.

### 15.2 Reserve Methodology

An iterative study methodology was followed to progress the HBJ, Mt Martin, Pernatty and Triumph mineral deposits from a mineral resource to a mineral reserve, as shown in Figure 15-1. The aim was to assess the financial viability of mining pushbacks to maximise recovery of the remaining resource beneath the existing open-pits. Four individual mine plans were created by following the iterative study methodology performing pit optimisation, pit design, scheduling and financial analysis for each mineral deposit.

A Perth based mining specialist company, Mining One Consultants, was engaged by SKO to perform the open-pit optimisations and to produce optimum pit shells for design purposes. Project inputs were supplied by SKO to constrain the open-pit optimisations performed using Gemcom Whittle 4.0 software.

Initial pit designs were created by Mining One Consultants based on optimised pit shells and were later adjusted by SKO to better suit site specific requirements.

Detailed scheduling and financial analysis were performed by SKO using Gemcom Minesched Software and in house financial models.

In addition to the mining studies carried out by SKO and their consultants, SKO contracted Tetra Tech to undertake a fatal flaw review of the HBJ and Mt Martin pits expansion plans in October 2011. A site visit was conducted to visually inspect the pits, mine design, block models, financial models, mine schedules and the operating limitations. The fatal flaw review was completed using a number of assessment tools including:

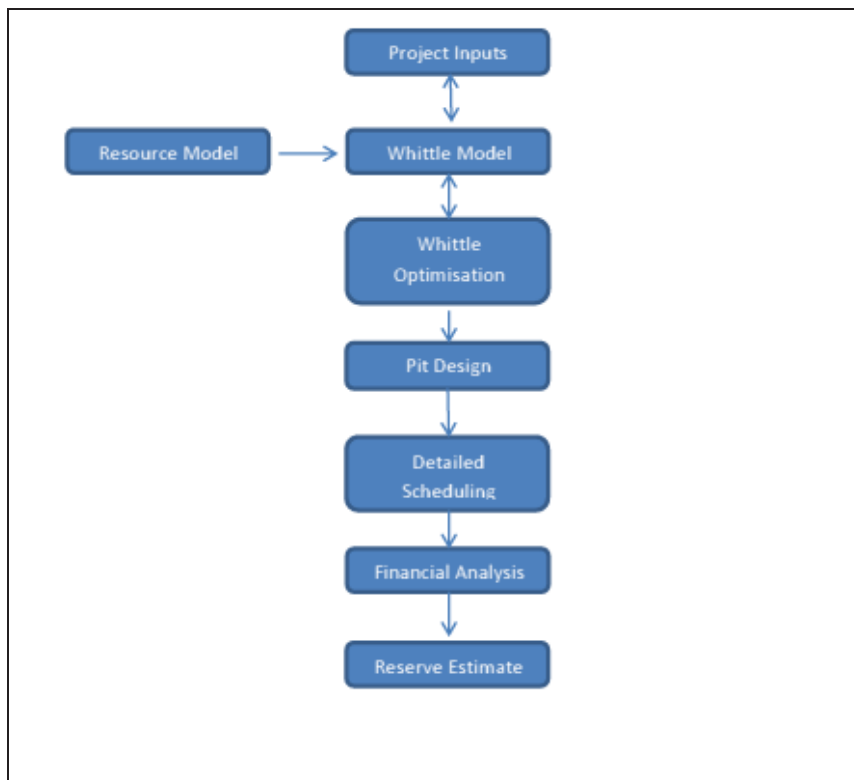
- Mine Design Criteria
- Preliminary Economic Assessment
- Cut Off Grade (COG) Estimate
- Square Metre Analysis for Production Rate Review

The following areas of the Mt Martin and HBJ Projects were individually reviewed and analysed for fatal flaws:

- Resource Block Model
- COG Estimation
- Whittle Optimisation Outputs
- Pit Design and design parameters
- Mine production schedule and assumptions
- Financial model, inputs, assumptions and calculations

The review exercise reported no fatal flaws in the SKO expansion plans.

**Figure 15-1: Study Methodology**



### 15.2.1 Cut-off Grade Calculation

#### *Pit Rim Cut-off Grade*

The Pit Rim cut-off grade (the incremental COG) determines which material will be processed by equating the operating cost of processing and selling to the value of the block in terms of recovered metal and the selling price.

The Pit Rim COG can be calculated using the following equation:

$$\text{Pit Rim COG (g/t)} = \frac{(\text{Process Cost A\$/t ore} \times \text{Mining Dilution})}{(\text{Selling Price A\$/g} - \text{Selling Cost A\$/g}) \times (\text{Mining Recovery \%} \times \text{Process Recovery \%})}$$

The Pit Rim COG is traditionally defined as the cut-off grade used to determine whether or not a block should be milled or taken to the waste dump.

### 15.2.2 Whittle Optimisation

#### *Whittle Inputs*

Whittle 4.0 pit optimisation software was used to generate a range of possible pit shells based on the Whittle inputs shown in Table 15-2. It is important to note that the cash flow option was used as the ore selection method.

Ore is selected by comparing the cash flow which would be produced by processing it, and the cash flow which would be produced by mining it as waste. If the cash flow from processing it is higher, the material is treated as ore. If not, it is treated as waste.

**Table 15-2: Whittle Inputs**

whittle Inputs	Unit
Metal Price (Gold)	A\$/oz
Process Recovery (Gold)	%
Mining cost (ore and waste)	A\$/t mined
Process cost	A\$/t ore
Selling cost	A\$/oz
Slope Angle	Degrees
Mining Recovery	%
Mining Dilution	%
Ore selection Method	Cash Flow

***Whittle Outputs***

A range of potential pit shells for each mine were produced using appropriate Revenue Factors . The optimisation results are then used to identify the best pit size.

## 15.3 HBJ Open-Pit

The current phase of the HBJ Open-Pit is operated by SKO using conventional drill and blast, and, load and haul methods.

A HBJ pushback, containing 9.3 Mt @ 1.3 g/t for 380 koz of Au metal, was chosen as the preferred pushback option. A detailed mine plan was developed for the pushback. The following table summarises the reserve work estimation process used for HBJ.

### 15.3.1 *HBJ Open-Pit Reserve Estimation Process*

The steps followed in the HBJ Mineral Reserve Estimate process are included in Table 15-3. The steps describe the inputs, analysis and outputs from the process.

**Table 15-3: HBJ Open-Pit Reserve Estimation Process**

HBJ Open-Pit	Reserve Estimation – December 2011 Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.
<b>Mineral resource handover</b>	<p>The HBJ resource estimate is based on the HBJ Resource model update completed by Widenbar and Associates (WAA) in December 2011. The total HBJ resources are classified as HBJ Open-Pit resources and HBJ underground resources. The resources classified as Open-Pit mineral resources are those classified using a 0.5 g/t Au cut-off within a \$1500 /oz pit shell designed on a 1.2 Mtpa treatment plant option.</p> <p>The model interpolation was by Ordinary Kriging using the Datamine ESTIMA process.</p> <p>The resource model used for the HBJ Open-Pit reserve estimate are those resources associated with the HBJ Open-Pit resources classification.</p> <p>The other relevant information regarding the HBJ resource estimate can be found in Section 14 of this technical report.</p>
<b>Block model suitability for proposed mining method</b>	<p>Resource block model presented a complete model including ore and waste blocks.</p> <p>The blocks were presented in a 3 dimensional horizontal/vertical alignment within the resource boundaries.</p> <p>The primary block dimensions were 10 m x 20 m x 5 m (XYZ). The minimum block dimension used was 1.25 m x 2.5 m x 1.25 m.</p> <p>The minimum block dimension is set well below the primary block which allows the mining shape to adequately fill the orebody wire frame as interpreted by the geologist (effective mining shape). The minimum block Y direction of 2.5 m is suitable for the HBJ orebody as the orientation of the ore body is sub vertical, long and relatively tabular (Porphyry). The 2.5 m side of the block is orientation in the long (north – south) direction.</p> <p>For the purposes of determining reserve mining limits, the primary block dimensions are used as part of the whittle process. Where the ore body wire frame cuts a primary block the sub blocks then fill out to the edge of the mining shape. The sub blocks representing the orebody have a consistent grade for any primary block, and their combined shape (plus estimated dilution) is representative of the selective mining shape.</p> <p>For the purposes of the reserve determination all inferred and unclassified blocks were assigned a grade of 0.0 g/t.</p> <p>The block model for the resource was established in Datamine.</p> <p>Design work was carried out in Datamine.</p> <p>Whittle was the software package used for mine scheduling.</p>
<b>Resource block model covers area of interest and all waste blocks have assigned grades</b>	<p>All waste blocks outside the resource were all assigned a gold grade of 0.0 g/t and were positioned in the model to cover all areas of interest (mine design locations) outside the resource locations.</p>
<b>Basis and accuracy of study</b>	<p>The HBJ reserve estimate covered in this section is specifically related to a mine pushback (cut back). This implies that significant previous history in relation to mine design, production performance and costs exist and this information forms the basis of an accurate mining study.</p> <p>The study is considered to be at Feasibility level. It should be noted that some of the cost level of accuracy range from estimates through actual quotations. Any cost estimation is based on previous experience associated with the mine or other mines within</p>



<p><b>HBJ Open-Pit</b></p>	<p><b>Reserve Estimation – December 2011 Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.</b></p>
	<p>the South Kalgoorlie Operations (SKO): Where estimations are used, suitable level of contingency % has been applied. Separate levels of contingency have been applied to the various levels of accuracy associated with cost estimation.</p>
<p><b>Any consideration of reconciliation data</b></p>	<p>Reconciliation data associated with mining the historical HBJ Open -Pit is available. No tonnage or grade adjustment for reconciliation based on historical performance has been made in this reserve estimate although recent work associated with the Eastern Wall cut-back indicates that a positive reconciliation on tonnes is likely. This is generally seen to be associated with the margin zones associated with the ore body boundaries along the eastern and western side of the ore. For the purpose of the reserve estimation this is not included and is considered only as potential up-side.</p>
<p><b>Cut off grade determination</b></p>	<p>The pit rim cut off grade (COG) was determined as part of the reserve estimation. The pit rim COG determines which material will be processed by equating the operating cost of processing and selling to the value of the mining block in terms of recovered metal and the expected selling price. The COG is then used to determine whether or not a mining block should be delivered to the treatment plant for processing or taken to the waste dump as waste.  For the HBJ reserve a COG of 0.49 g/t was determined. The calculation of COG is described in Section 15.2.1 of this technical report.</p>

<p><b>HBJ Open-Pit</b></p>	<p><b>Reserve Estimation – December 2011</b>  <b>Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.</b></p>
<p><b>Modifying factors to be applied to the resource as part of the conversion of resource to reserve.</b></p> <ol style="list-style-type: none"> <li><b>1. mining shape</b></li> <li><b>2. dilution</b></li> <li><b>3. mining recovery</b></li> <li><b>4. ground conditions</b></li> <li><b>5. ground support requirements</b></li> <li><b>6. mining sequence</b></li> <li><b>7. fill requirements</b></li> <li><b>8. other</b></li> </ol>	<p>Following consideration of the various modifying factors the following rules were applied to the reserve estimation process for the conversion of resource to reserve (mined ore) for suitable evaluation.</p> <ol style="list-style-type: none"> <li>1. The mining shape in the reserve estimation is generated by a wireframe (geology interpretation of the ore zone) which overlays the block model. Where the wire frame cuts the primary block, sub blocks fill out the remaining space to the wire frame boundary (effectively the mining shape). It is reasonable to assume that the mining method can selectively mine to the wire frame boundary with the additional dilution provision stated in point 2 below.</li> <li>2. Dilution of the ore through the mining process has been set at 6% which is considered as additional ore mined in relation to mining to the wire frame boundary as identified in point 1 above, albeit at a grade of 0. 0g/t. The amount of dilution is considered appropriate based on orebody geometry, historical mining performance and the size of mining equipment to be used to extract ore</li> <li>3. Expected mining recovery of the ore has been set at 95% (i.e. 5% ore loss).</li> <li>4. No specific allowance has been made for ground conditions not included in dilution and mining recovery listed above. Pit wall designs take into account specific geotechnical domains summarized below.</li> <li>5. No specific ground support requirements are needed outside of suitable pit slope design criteria based on specific geotechnical domains summarized below.</li> <li>6. Mining sequence is included in the mine scheduling process for determining the economic evaluation and takes into account available operating time and mining equipment size and performance.</li> <li>7. No fill is required.</li> <li>8. No other modifying factors are required.</li> </ol>

HBJ Open-Pit	Reserve Estimation – December 2011 Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.																				
<p><b>Whittle Optimisation &amp; Pit Design</b></p>	<p>Whittle 4.0 pit optimization software was used to generate a range of possible pit shells based on standard whittle inputs. Note that the cash flow option was used as the ore selection method. The Whittle optimization inputs used for this work are;</p> <table border="1" data-bbox="467 813 919 1603"> <thead> <tr> <th>Whittle Inputs (unit)</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Metal Price – Gold (A\$/oz)</td> <td>1,250</td> </tr> <tr> <td>Processing Recovery – Gold (%)</td> <td>92.0</td> </tr> <tr> <td>Mining Cost – ore &amp; waste (\$/t)</td> <td>2.55</td> </tr> <tr> <td>Process Cost – ore (\$/t)</td> <td>15.96</td> </tr> <tr> <td>Selling Price – Gold (\$/oz)</td> <td>10.00</td> </tr> <tr> <td>Slope Angle (degrees)</td> <td>By specific zone</td> </tr> <tr> <td>Mining Recovery (%)</td> <td>95.0</td> </tr> <tr> <td>Mining Dilution (%)</td> <td>6.0</td> </tr> <tr> <td>Ore Selection Method</td> <td>Cash Flow</td> </tr> </tbody> </table> <p>The whittle shells provide guidance to the final size of the open-pit. As this project involves a push back specific allowance has to be made for practical mining widths and ramp locations. Haul roads are either 12 m (single lane) or 25 m (dual lane). Haul road gradient is 10% for dual lane and 12% for single lane. Minimum working area is defined as 13 m x 25 m.</p>	Whittle Inputs (unit)	Value	Metal Price – Gold (A\$/oz)	1,250	Processing Recovery – Gold (%)	92.0	Mining Cost – ore & waste (\$/t)	2.55	Process Cost – ore (\$/t)	15.96	Selling Price – Gold (\$/oz)	10.00	Slope Angle (degrees)	By specific zone	Mining Recovery (%)	95.0	Mining Dilution (%)	6.0	Ore Selection Method	Cash Flow
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Ore Selection Method	Cash Flow																				
<p><b>Failure mechanisms investigated</b></p>	<p>Detailed geotechnical review was completed by Peter O'Bryan (Geotechnical consultant) as part of the feasibility study process and considered all likely failure mechanisms.</p>																				
<p><b>Geotechnical domains identified</b></p>	<p>Geotechnical domains were mapped and established as part of the model and design criteria. The geotechnical domains were simplified into three zones as shown in the table below;</p>																				

<b>Reserve Estimation – December 2011</b> <b>Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.</b>																			
<b>HBJ Open-Pit</b>	<b>Reserve Estimation – December 2011</b> <b>Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Description</th> <th style="width: 20%;">Zone 1 (below 340mRL)</th> <th style="width: 20%;">Zone 2 (340 – 360mRL)</th> <th style="width: 30%;">Zone 3 (Above 360mRL)</th> </tr> </thead> <tbody> <tr> <td>Batter Angles (degrees)</td> <td style="text-align: center;">60</td> <td style="text-align: center;">60</td> <td style="text-align: center;">45</td> </tr> <tr> <td>Berm Width (m)</td> <td style="text-align: center;">8</td> <td style="text-align: center;">8</td> <td style="text-align: center;">4</td> </tr> <tr> <td>Vertical height between Berms (m)</td> <td style="text-align: center;">20</td> <td style="text-align: center;">20</td> <td style="text-align: center;">5</td> </tr> </tbody> </table>	Description	Zone 1 (below 340mRL)	Zone 2 (340 – 360mRL)	Zone 3 (Above 360mRL)	Batter Angles (degrees)	60	60	45	Berm Width (m)	8	8	4	Vertical height between Berms (m)	20	20	5	
Description	Zone 1 (below 340mRL)	Zone 2 (340 – 360mRL)	Zone 3 (Above 360mRL)																
Batter Angles (degrees)	60	60	45																
Berm Width (m)	8	8	4																
Vertical height between Berms (m)	20	20	5																
<b>Hydrological domains identified</b>	Detailed hydrological investigation has been previously done. The presence of the original open-pit and underground workings below the southern end of the pit show limited water ingress potential. Water levels are easily monitored and managed in the mining process.																		
<b>Mining method selection based on orebody geometry, rockmass characteristics and local conditions and mining practices.</b>	As this work is a push back associated with the original HBJ Open-Pit, the mining method selection is based on historical and previous mining methods. The mechanized open-pit mining methods used at HBJ are similar to all gold open-pits being mined in the Eastern Goldfields of Western Australia. The orebody geometry and style lends itself to the mining method chosen.																		
<b>Dilution modifying factors</b>	<ol style="list-style-type: none"> <li>1. <b>Width and orientation of ore mineralization.</b></li> <li>2. <b>nature of contacts with along the ore/waste boundaries.</b></li> <li>3. <b>composite representation of ore blocks and smoothing.</b></li> <li>4. <b>Mine design and ore block layouts.</b></li> <li>5. <b>minimum mining widths.</b></li> <li>6. <b>mining practices.</b></li> <li>7. <b>geotechnical and geological controls.</b></li> </ol>	<ol style="list-style-type: none"> <li>1. Dilution parameters used are listed above. These parameters are based on the historical evidence of mining the HBJ ore body which is consider wide, long and tabular. The sub vertical orientation of the ore body (porphyry) is amenable to minimal variation in ore block boundaries from bench to bench.</li> <li>2. The nature of contacts between the mineralization and waste have also been considered in the dilution parameters selected based on historical contacts between ore and waste and the blasting techniques used.</li> <li>3. Significant consideration has been given to the location of the ore blocks within the minimum mining shapes. The blocks are positioned with a vertical/horizontal configuration within a mining shape that is sub vertical in nature and aligns itself well with the overall ore body shape.</li> <li>4. Overall dilution of 6% for the reserve estimation takes into account the historical performance of mining the ore blocks typically seen in the HBJ pit. The actual ore block identification in the mining process is based on 30 m depth grade control RC drilling programs. All grade control block determination is based on 1 m RC samples.</li> <li>5. The process of mining up the identified ore boundary wire frame for this type of ore body is in line with conventional gold open-pit mining practices. All ore blocks are based on working the bench heights nominated. The minimum mining widths fit well below the overall ore blocks determined to be mined.</li> </ol>																	

<p><b>HBJ Open-Pit</b></p>	<p><b>Reserve Estimation – December 2011</b>  <b>Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.</b></p>
<p><b>8. ore recovery/losses due to pillars, mining practice, ground conditions and reconciliation.</b></p> <p><b>9. Selected mining equipment</b></p>	<p>6. Standard WA open-pit mining practices apply.</p> <p>7. Geotechnical and geological controls have been taken into account.</p> <p>8. Minimal ore losses are expected due to vertical nature of ore body and mining methods selected. A conservative mining recovery of 95% has been selected for the reserve estimation process.</p> <p>9. Ore is planned to be mined using a 120 t loader in backhoe configuration loading 100 t off-highway haul trucks</p>
<p><b>Grade of diluting material</b></p>	<p>All waste material is in the model at 0.0 g/t.  All inferred and unclassified blocks in the block model has been assigned a grade of 0.0 g/t.</p>
<p><b>Capital cost</b></p>	<p>Detailed quotes and estimates were obtained for establishment of the project. Capital is specifically associated with the HBJ mine ore belongs to the consolidated South Kalgoorlie Operations.</p> <p>For the HBJ mine, mining costs associated with capital waste stripping are known as a continuation of the mining currently taking place at HBJ. Where larger equipment sizes have been used new equipment rates were obtained from the equipment suppliers (Emeco).</p> <p>For the consolidated SKO capital costs, the treatment plant capital cost was determined as part of the DFS study completed by GRES for a new 2.5 Mtpa treatment plant. Surface infrastructure costs were also determined by various engineering consultants or the Alacer internal projects group. Alacer project cost estimates are generally based on the experience gained from similar project work completed at the Higginsville Gold Operation site which is 150 Km south of the SKO.</p>
<p><b>Operating cost</b></p>	<p>Mining operating cost was determined as part of an ongoing mining operating regime currently in place at the SKO. This is based on equipment hire arrangement with Emeco and the provision of Alacer management and operators to complete the mining. Drill and blast contractor Jarrahdale provide the drilling and blasting cost through agreed contractual rates. Haulage costs consider the cycle time from source to destination on a bench by bench basis.</p> <p>Treatment plant operating costs have been determined as part of the DFS associated with the new 2.5 Mtpa treatment plant. These costs were developed on the basis of the currently operating 1.2 Mtpa jubilee treatment plant and modified to take into account the newer/larger plant proposed in the DFS.</p> <p>General and Administration (G&amp;A) costs are based on the existing SKO with revised forecast for any variations which may apply due to increased treatment plant throughput.</p>
<p><b>Cost contingency and market factors</b></p>	<p>Separate contingency factors have been applied to various sections of the reserve estimation based on whether the work is new or currently part of SKO.</p>
<p><b>LOM schedule based on proved and probable reserves</b></p>	<p>Following the assignment of 0.0 g/t grade to all waste, inferred and unclassified blocks only indicated blocks in the model carried grade. The wire frame representing the required mining shape was then applied to the resource model to determine all the minable primary blocks above COG. The resultant mining shapes were transported into Gemcom Minesched Software for scheduling. The following scheduling parameters were used for the generation of the LOM plan.</p>

<p><b>HBJ Open-Pit</b></p>	<p><b>Reserve Estimation – December 2011</b>  <b>Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.</b></p> <ol style="list-style-type: none"> <li>1. Mechanical availability of 82%. This takes into account rain delays, public holidays, planned maintenance etc.</li> <li>2. Utilisation of availability of 86%. This includes shifts breaks and meal breaks.</li> <li>3. Digger productivity of 14,600 BCM/shift.</li> </ol>
<p><b>Effect of inferred resource on mine schedule and life of mine plan.</b></p>	<p>If the inferred blocks within the final pit shape are included in the LOM schedule an additional 9 koz can be included at incremental treatment cost only.</p>
<p><b>Project viability in relation to inferred resource.</b></p>	<p>The mine currently shows a resource to reserve conversion rate of 72%.</p>
<p><b>Metallurgical testwork in relation to material to be mined.</b></p>	<p>Detailed metallurgical information was available from the historical and existing mining and processing of the HBJ ore body. The HBJ ore body is a porphyry style ore body and is considered geologically very consistent along strike and at depth. A series of additional test work was done as part of the new 2.5 Mtpa DFS completed by GRES on representative samples of the ore to be mined.</p>
<p><b>Technology considered for the process</b></p>	<p>Standard gold treatment process is required with crushing, grinding, gravity and cyanidation circuits applicable.</p>
<p><b>Plans for processing ore produced</b></p>	<p>Detailed feasibility on plant design was carried out as a result of the information available from the current 1.2 Mtpa treatment plant and the additional metallurgical test work on the ore from within the existing open-pit.</p>
<p><b>Plans for processing of marginal material in relation to various cut off grades.</b></p>	<p>Mineralisation mined slightly below COG will be considered as waste. At this stage no plans have been made to separately stockpile this material for future treatment potential. All mineralization below COG is considered waste for economic evaluation.</p>
<p><b>Economic criteria used for feasibility study</b></p>	<p>Two separate economic evaluations have been done in relation to the HBJ Open-Pit. The first is specifically related to the HBJ Open-Pit and second is the consolidated SKO economics based on a consolidated schedule derived from the combination of several operating mines feeding one treatment plant.</p> <p>The following economic assumptions relate specifically to the HBJ Open-Pit,  Gold price = A\$ 1,250 for every year of the project, considered to be the average gold price over the life of the pit.  Gold recover = 92%</p> <p>In the consolidated SKOEP financial model a gold price deck is in line with company's gold price view of the life of the project.</p>
<p><b>Economic consideration show different considerations</b></p>	<p>HBJ Open-Pit ONLY considers NPV, Cash Flow, Gold Price forecast and IRR.  At A\$1,250, the NPV(5%) is \$12.8 M.</p>



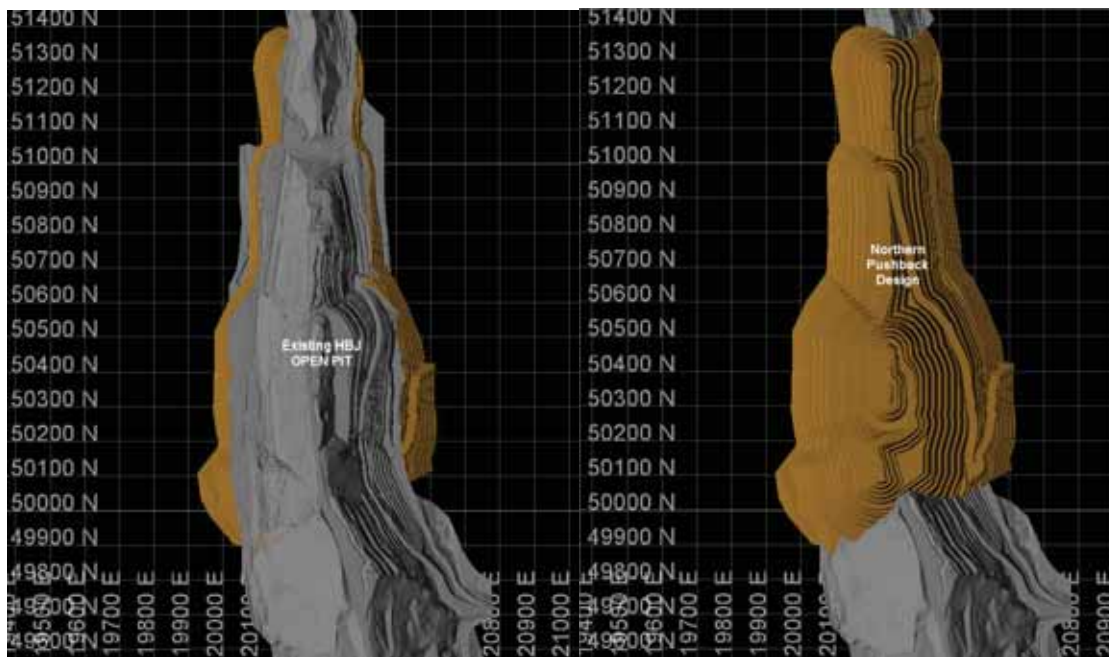
<b>Reserve Estimation – December 2011</b> <b>Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.</b>	
<b>HBJ Open-Pit</b>	<b>Reserve Estimation – December 2011</b> <b>Reserve is 9.3 Mt @ 1.3 g/t for 0.38 Mozs.</b>
<b>1. NPV</b> <b>2. Cash flow</b> <b>3. Gold price forecast</b> <b>4. IRR</b>	Consolidated SKO economics considers NPV, Cash Flow, Gold Price forecast and IRR
<b>Economic evaluations directly link to LOM plan.</b>	Financial model directly refers to the LOM schedule and associated works.
<b>Economic criteria based on proved/probable ore reserves only</b>	The base case LOM schedule only takes indicated resource into account.
<b>Economic sensitivities done</b>	Economic sensitivities have been completed on Value (Gold price, grade) and Cost (capital and operating) for the consolidated SKO economic model. However in the mining process the relative economics of each individual feed source is continually re evaluated against value and cost variations.
<b>Status of statutory approval</b>	The HBJ Open-Pit is an existing mine within the SKO. All statutory approval for the existing operation are currently in place. Approvals associated with the building of a new 2.5Mtpa treatment plant to replace the current 1.2 Mtpa treatment plant are well advanced.
<b>Reserve/ resource statement sign off</b>	To be done as part of this technical report.

### 15.3.2 HBJ Open-Pit Mine Planning

The final HBJ pushback design and layout was strongly influence by geotechnical constraints and incremental cost trade-offs. To minimise risk and maximise project NPV, the final pushback design focused on extending the pit base on the Northern side of the west wall failure, as shown in Figure 155-2.

The HBJ pushback will extend the current pit base by 140m vertically, recovering 9.1 Mt of ore containing 376 Koz of gold. The overall strip ratio is approximately 8:1 with the majority of the ore located on the lower benches, as summarised in **Error! Reference source not found.4**.

**Figure 155-2: HBJ Pushback Layout**



**Table 15-4: HBJ Open-Pit Reserve Estimate**

Material Type	HBJ Push Back 4
HG Ore (Mt)	7.9
HG Grade (g/t)	1.4
LG Ore (Mt)	1.4
LG Grade (g/t)	0.50
Total Ore (Mt)	9.3
Total Ore Grade (g/t)	1.3
Waste (Mt)	74.3
Total Material (Mt)	83.5
Strip Ratio (w:o)	8
Contained Au (k oz)	380

## **15.4 Mt Martin Open-Pit**

A Mt Martin pushback, containing 1.30 Mt of ore and 74.6 koz of Au metal, was chosen as the preferred pushback based on site specific geological and geotechnical constraints. A detailed mine plan was developed for the pushback by following the study Methodology.

### **15.4.1 Mt Martin Open-Pit Reserve Estimation Process**

The steps followed in the Mt Martin Mineral Reserve Estimate process are included in Table 15-5. The steps describe the inputs, analysis and outputs from the process.

**Table 15-5: Mt Martin Open-Pit Reserve Estimation Process**

Mt Martin Open-pit	Reserve estimation Reserve of 1.3 mt @ 1.9 g/t for 0.08 Mozs.
Mineral resource handover	<p>Alacer acquired the Mt Martin deposit from Australian Mines Limited in August 2011. The Mt Martin resource estimate is based on a resource model update completed by CSA Global Pty Ltd for Australian Mines Limited which is dated October 2010. The resource remains valid as no additional work or depletion has occurred at Mt Martin since this date.</p> <p>The model interpolation was by OK and an IDS model was also run for comparison.</p> <p>The other relevant information regarding the Mt Martin resource estimate can be found in Section 14 of this technical report.</p>
Block model suitability for proposed mining method	<p>The Resource block model presented a complete model including ore and waste blocks.</p> <p>The blocks were presented in a 3 dimensional horizontal/vertical alignment within the resource boundaries.</p> <p>The primary block dimensions were 10 m x 20 m x 20 m (XYZ). The minimum block dimension used was 1.25 m x 2.5 m x 2.5 m.</p> <p>The minimum block dimension is set well below the primary block which adequately allows the mining shape to be adequately filled up the wire frame boundary that describes the edge of the ore body (effective mining shape).</p> <p>For the purposes of determining a reserve mining shape the primary block dimensions are used as part of the whittle process. Where the ore body wire frame cuts a primary block the sub blocks then fill out to the edge of the mining shape. The sub blocks are the same grade as the primary block.</p> <p>For the purposes of the reserve determination all inferred and unclassified blocks were assigned a grade of 0.0 g/t.</p> <p>The block model for the resource was established in datamine.</p> <p>The model was transferred to Vulcan for all mine design work.</p> <p>Igantit was software package used for mine scheduling.</p>
Resource block model covers area of interest and all waste blocks have assigned grades	<p>All waste blocks outside the resource were assigned a gold grade of 0.0 g/t and were positioned in the model to cover all areas of interest (mine design locations) outside the resource locations.</p>
Basis and accuracy of study	<p>The Mt Martin reserve estimate covered in this section is specifically related to a mine pushback (cut back). This implies that significant previous history in relation to mine design, production performance and costs exist and this information forms the basis of an accurate mining study. The Mt Martin mine was previously mined by Alacer through an agreement with Australian Mines Limited.</p> <p>The study is considered to be at Feasibility level. It should be noted that some of the cost level of accuracy range from estimates through actual quotations. Any cost estimation is based on previous experience associated with the mine or other mines within the South Kaigoorlie Operations (SKO).</p> <p>Where estimations are used, suitable level of contingency % has been applied. Separate levels of contingency have been applied to the various levels of accuracy associated with cost estimation.</p>
Any consideration of reconciliation data	<p>Reconciliation data associated with mining the historical Mt Martin open-pit is available. No tonnage or grade adjustment for</p>



<p><b>Mt Martin Open-pit</b></p>	<p><b>Reserve estimation</b>  <b>Reserve of 1.3 mt @ 1.9 g/t for 0.08 Mozs.</b></p>
<p>Cut off grade determination</p>	<p>reconciliation based on historical performance has been made in this reserve estimate.  For the purpose of the reserve estimation this is not included and is considered only as potential up-side.</p> <p>The pit rim cut off grade (COG) was determined as part of the reserve estimation. The pit rim COG determines which material will be processed by equating the operating cost of processing and selling to the value of the mining block in terms of recovered metal and the expected selling price. The COG is then used to determine whether or not a mining block should be delivered to the treatment plant for processing or taken to the waste dump as waste.</p> <p>For the Mt Martin reserve a COG of 0.44 g/t was determined. The calculation of COG is described in Section 15.2.1 of this technical report.</p>

Mt Martin Open-pit	Reserve estimation Reserve of 1.3 mt @ 1.9 g/t for 0.08 Mozs.
<p>Modifying factors to be applied to the resource as part of the conversion of resource to reserve.</p> <ol style="list-style-type: none"> <li>1. mining shape</li> <li>2. dilution</li> <li>3. mining recovery</li> <li>4. ground conditions</li> <li>5. ground support requirements</li> <li>6. mining sequence</li> <li>7. fill requirements</li> <li>8. other</li> </ol>	<p>Following consideration of the various modifying factors the following rules were applied to the reserve estimation process for the conversion of resource to reserve (mined ore) for suitable evaluation.</p> <ol style="list-style-type: none"> <li>1. The mining shape in the reserve estimation is generated by a wireframe (geology interpretation of the ore zone) which overlays the block model. Where the wire frame cuts the primary block, sub blocks fill out the remaining space to the wire frame boundary (effectively the mining shape). Its reasonable that the mining method can mine to wire frame boundary with additional dilution provision stated in point 2 below.</li> <li>2. Dilution of the ore through the mining process has been set at 10% which is considered as additional ore mined in relation to mining to the wire frame boundary as identified in point 1 above.</li> <li>3. Expected mining recovery of the ore has been set at 95%.</li> <li>4. No specific allowance has been made for ground conditions not included in dilution and mining recovery listed above. Pit wall designs take into account specific geotechnical domains summarized below.</li> <li>5. No specific ground support requirements needed outside of suitable pit slope design criteria based on specific geotechnical domains summarized below.</li> <li>6. Mining sequence is included in the mine scheduling process for determining the economic evaluation and takes into account available operating time and mining equipment size and performance.</li> <li>7. No fill requirements are required.</li> <li>8. No other modifying factors are required.</li> </ol>





Mt Martin Open-pit	Reserve estimation Reserve of 1.3 mt @ 1.9 g/t for 0.08 Mozs.																				
Whittle Optimisation & Pit Design	<p>Whittle 4.0 pit optimization software was used to generate a range of possible pit shells based on standard whittle inputs. Note that the cash flow option was used as the ore selection method.</p> <p>The Whittle optimization inputs used for this work are;</p> <table border="1" data-bbox="467 813 919 1603"> <thead> <tr> <th>Whittle Inputs (unit)</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Metal Price – Gold (A\$/oz)</td> <td>1,350</td> </tr> <tr> <td>Processing Recovery – Gold (%)</td> <td>92.0</td> </tr> <tr> <td>Mining Cost – ore &amp; waste (\$/t)</td> <td>2.55</td> </tr> <tr> <td>Process Cost – ore (\$/t)</td> <td>15.96</td> </tr> <tr> <td>Selling Price – Gold (\$/oz)</td> <td>10.00</td> </tr> <tr> <td>Slope Angle (degrees)</td> <td>By specific zone</td> </tr> <tr> <td>Mining Recovery (%)</td> <td>95.0</td> </tr> <tr> <td>Mining Dilution (%)</td> <td>10.0</td> </tr> <tr> <td>Ore Selection Method</td> <td>Cash Flow</td> </tr> </tbody> </table> <p>The selection of A\$1,350 was based on the timing of the mining of the Mt Martin pit expected to be in 2012 and 2013. The whittle shells provide guidance to the final size of the open-pit. As this project involves a push back specific allowance has to be made for practical mining widths and ramp locations.</p> <p>Haul roads are 15 m between the 241mRL and 205mRL. The haul road will be 11m from the 205mRL to the bottom of the pit. Haul road gradient is 1 in 9.</p> <p>Minimum working area is set at 379 m at the top of the pushback and 42 m at the bottom of the push back.</p>	Whittle Inputs (unit)	Value	Metal Price – Gold (A\$/oz)	1,350	Processing Recovery – Gold (%)	92.0	Mining Cost – ore & waste (\$/t)	2.55	Process Cost – ore (\$/t)	15.96	Selling Price – Gold (\$/oz)	10.00	Slope Angle (degrees)	By specific zone	Mining Recovery (%)	95.0	Mining Dilution (%)	10.0	Ore Selection Method	Cash Flow
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Slope Angle (degrees)	By specific zone																				
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Mining Dilution (%)	10.0																				
Ore Selection Method	Cash Flow																				
Failure mechanisms investigated	Detailed geotechnical review was completed by Peter O'Bryan (Geotechnical consultant) as part of the feasibility study process and considered all likely failure mechanisms.																				
Geotechnical domains identified	Geotechnical domains were mapped and established as part of the model and design criteria. The geotechnical domains were simplified into two zones as shown in the table below;																				

Mt Martin Open-pit		Reserve estimation Reserve of 1.3 mt @ 1.9 g/t for 0.08 Mozs.		
		Description	Fresh	Oxide
		Batter Angles (degrees)	60	60
		Berm Width (m)	5	5
		Vertical height between Berms (m)	20	20
		Detailed hydrological investigation has been previously done. The presence of the original open-pit and underground workings below the southern end of the pit show limited water ingress potential. Water levels are easily monitored and managed in the mining process.		
		As this work is a push back associated with the original Mt Martin open-pit, the mining method selection is based on historical and previous mining methods. The mechanized open-pit mining methods used at Mt Martin are similar to all gold open-pits being mined in the Eastern Goldfields of Western Australia. The ore body geometry and style lends itself to the mining method chosen.		
<p>Hydrological domains identified</p> <p>Mining method selection based on orebody geometry, rockmass characteristics and local conditions and mining practices.</p> <p>Dilution modifying factors</p> <ol style="list-style-type: none"> <li>1. Width and orientation of ore mineralization.</li> <li>2. nature of contacts with along the ore/waste boundaries.</li> <li>3. composite representation of ore blocks and smoothing.</li> <li>4. Mine design and ore block layouts.</li> <li>5. minimum mining widths.</li> <li>6. mining practices.</li> <li>7. geotechnical and geological controls.</li> <li>8. ore recovery/losses due to pillars, mining practice.</li> </ol>	<ol style="list-style-type: none"> <li>1. Dilution parameters used are listed above. These parameters are based on the historical evidence of mining the Mt Martin ore body. A nominal 10% dilution factor has been applied to Mt Martin.</li> <li>2. The nature of contacts between the mineralization and waste have also been considered in the dilution parameters selected based on historical contacts between ore and waste and the blasting techniques used.</li> <li>3. Significant consideration has been given to the location of the ore blocks within the minimum mining shapes. The blocks are positioned with a vertical/horizontal configuration within a mining shape that is sub vertical in nature and aligns itself well with the overall ore body shape.</li> <li>4. Overall dilution of 10% for the reserve estimation takes into account the historical performance of mining the ore blocks typically seen in the Mt Martin pit.</li> <li>5. The process of mining up the identified ore boundary wire frame for this type of ore body is in line with conventional gold open-pit mining practices. All ore blocks are based on working the bench heights nominated. The minimum mining widths fit well below the overall ore blocks determined to be mined.</li> <li>6. Standard WA open-pit mining practices apply.</li> <li>7. Geotechnical and geological controls have been taken into account.</li> <li>8. Minimal ore losses are expected due to vertical nature of ore body and mining methods selected. A conservative mining</li> </ol>			



Mt Martin Open-pit	Reserve estimation Reserve of 1.3 mt @ 1.9 g/t for 0.08 Mozs.
ground conditions and reconciliation.	recovery of 95% has been selected for the reserve estimation process.
Grade of diluting material	All waste material is in the model at 0.0 g/t. All inferred and unclassified blocks in the block model has been assigned a grade of 0.0 g/t.
Capital cost	Detailed quotes and estimates were obtained for establishment of the project. Capital is either specifically associated with the Mt Martin mine or is considered part of the consolidated South Kalgoorlie Operations Expansion project (SKOEP). For the Mt Martin mine, mining costs associated with capital waste stripping are known as a continuation of the mining currently taking place at SKO. Where different equipment sizes will be used new equipment rates were obtained from the equipment suppliers (Emeco). For the consolidated SKO capital costs, the treatment plant capital cost was determined as part of the DFS study completed by GRES for a new 2.5 Mtpa treatment plant. Surface infrastructure costs were also determined by various engineering consultants or the Alacer internal projects group. Alacer project cost estimates are generally based on the experienced gained from similar project work completed at the Higginsville Gold Operation site which is 150 Km south of the SKO.
Operating cost	Mining operating cost was determined as part of an ongoing mining operating regime currently in place at the SKO. This is based on equipment hire arrangement with Emeco and the provision of Alacer management and operators to complete the mining. Drill and blast contractor Jarrahdale provide the drilling and blasting cost through agreed contractual rates. Haulage costs consider the cycle time from source to destination on a bench by bench basis. Treatment plant operating costs have been determined as part of the DFS associated with the new 2.5Mtpa treatment plant. These costs were developed on the basis of the currently operating 1.2Mtpa jubilee treatment plant and modified to take into account the newer/larger plant proposed in the DFS. General and Administration (G&A) costs are based on the existing SKO costs with revised forecast for any variations which may apply due to increased treatment plant throughput.
Cost contingency and market factors	Separate contingency factors have been applied to various sections of the reserve estimation based on whether the work is new or currently part of SKO.
LOM schedule based on proved and probable reserves	Following the assignment of 0.0 g/t grade to all waste, inferred and unclassified blocks only indicated blocks in the model carried grade. The wire frame representing the required mining shape was then applied to the resource model to determine all the minable primary blocks above COG. The resultant mining shapes were transported into Gemcom Minesched Software for scheduling. The following scheduling parameters were used for the generation of the LOM plan. <ol style="list-style-type: none"> <li>1. Mechanical availability of 92%. This takes into account rain delays, public holidays, planned maintenance etc.</li> <li>2. Utilisation of availability of 70%. This includes shifts breaks and meal breaks.</li> <li>3. Digger productivity of 3,408 BCM/shift.</li> </ol>

Mt Martin Open-pit	Reserve estimation Reserve of 1.3 mt @ 1.9 g/t for 0.08 Mozs.
Effect of inferred resource on mine schedule and LOM plan.	If the inferred blocks within the final pit shape are included in the LOM schedule an additional 38 koz can be included at incremental treatment cost only.
Project viability in relation to inferred resource.	The mine currently shows a resource to reserve conversion rate 44%
Metallurgical testwork in relation to material to be mined.	Detailed metallurgical information was available from the historical and existing mining and processing of the Mt Martin ore body.
Technology considered for the process	Standard gold treatment process is required with crushing, grinding, gravity and cyanidation leach circuits applicable.
Plans for processing ore produced	Detailed feasibility on plant design was carried out as a result of the information available from the current 1.2 Mtpa treatment plant and the additional metallurgical test work on the ore from within the existing open-pit. The Mt Martin ore was previously treated through the Alacer owned 1.2 Mtpa Jubilee plant for Australian Mines Limited.
Plans for processing of marginal material in relation to various cut off grades.	Mineralisation mined below COG will be considered as waste. At this stage no plans have been made to separately stockpile this material for future treatment potential. All mineralization below COG is considered waste for economic evaluation.
Economic criteria used for feasibility study	<p>Two separate economic evaluations have been done in relation to the Mt Martin open-pit. The first is specifically related to the Mt Martin open-pit and second is the consolidated SKOEP economics based on a consolidated schedule derived from the combination of several operating mines feeding one treatment plant.</p> <p>The following economic assumptions relate specifically to the Mt Martin open-pit,            Gold price = Two different gold prices have been used for evaluation. The first is A\$ 1,250 /oz and the second is A\$1,566/oz. The higher gold price is the company's view of the gold price in 2012.</p>
Economic consideration show different considerations 1. NPV 2. Cash flow 3. Gold price forecast 4. IRR	<p>Mt Martin Open-Pit ONLY considers NPV, Cash Flow, Gold Price forecast and IRR.            At A\$1250 /oz, the NPV(5%) is \$17.6M            At A\$1560 /oz, the NPV(5%) is \$36.3M</p> <p>The consolidated SKOEP economics considers NPV, Cash Flow, Gold Price forecast and IRR</p>

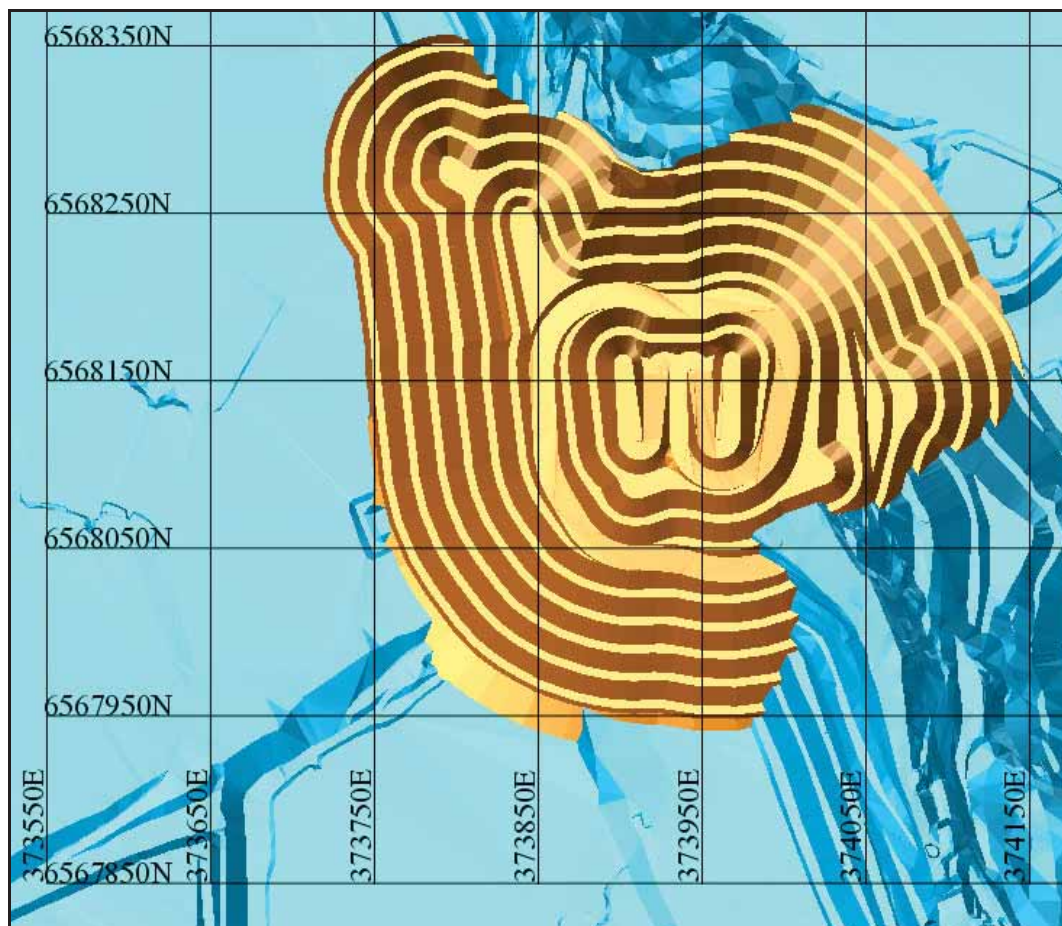
Mt Martin Open-pit	Reserve estimation Reserve of 1.3 mt @ 1.9 g/t for 0.08 Mozs.
Economic evaluations directly link to LOM plan.	Financial model directly refers to the LOM schedule and associated works.
Economic criteria based on proved/probable ore reserves only	The base case LOM schedule only takes indicated resource into account.
Economic sensitivities done	Economic sensitivities have been completed on Value (Gold price, grade) and Cost (capital and operating) for the consolidated SKO economic model. However in the mining process the relative economics of each individual feed source is continually re evaluated against value and cost variations.
Status of statutory approval	The Mt Martin open-pit is an existing mine within the SKO. All statutory approval for the existing operation are currently in plant. Approvals associated with the building of a new 2.5 Mtpa treatment plant to replace the current 1.2 Mtpa treatment plant are well advanced.
Reserve/ resource statement sign off	To be done as part of this technical report.



### 15.4.2 Mt Martin Open-Pit Mine Planning

The Mt. Martin pushback design and layout was strongly influenced by geotechnical constraints and incremental cost trade-offs. To minimise risk and maximise project NPV, the final pushback design focused on maximising depth by cutting back the west side of the pit, as shown in Figure 155-3.

**Figure 15-3: Mt Martin Open-Pit Pushback Layout**



The Mt. Martin pushback will extend the current pit base by 37 m vertically, recovering 1.30 Mt of ore containing 74.6 koz of gold. The overall strip ratio is approximately 8.3:1 with the majority of the ore located on the lower benches, as summarised in **Error! Reference source not found.6**.

**Table 15-6: Mt Martin Open-Pit Reserve Estimate**

Material Type	Mt. Martin Push Back
Total Ore (Mt)	1.25
Total Ore Grade (g/t)	1.9
Waste (Mt)	10.87
Total Material (Mt)	12.18
Strip Ratio (w:o)	8.7
Contained Au (koz)	77



## **15.5 Pernatty Open-Pit**

The current phase of the Pernatty open-pit is operated by SKO using conventional drill and blast, and, load and haul methods.

A Pernatty pushback, containing 0.3 Mt @ 2.3 g/t for 200 koz of Au metal, was chosen as the preferred pushback option. A detailed mine plan was developed for the pushback. The following table summarises the reserve work estimation process used for HBJ.

### **15.5.1 *Pernatty Open-Pit Reserve Estimation Process***

The steps followed in the Pernatty Mineral Reserve Estimate process are included in Table 15-7. The steps describe the inputs, analysis and outputs from the process.

**Table 15-7: Pernatty Open-Pit Reserve Estimation Process**

Pernatty Open-Pit Reserve estimation – December 2011 Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs	
Pernatty Open-Pit	Reserve estimation – December 2011 Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs
Mineral resource handover	<p>The Pernatty resource estimate is based on the Resource model completed by Alacer in December 2011. This is the latest resource model completed on Pernatty. The Pernatty resource model has been done several times previously as detailed in Section 14 of this technical report.</p> <p>The model interpolation was by OK.</p>
Block model suitability for proposed mining method	<p>The Resource block model presented a complete model including ore and waste blocks.</p> <p>The blocks were presented in a 3 dimensional horizontal/vertical alignment within the resource boundaries.</p> <p>The primary block dimensions were 8 m x 8 m x 8 m (XYZ). The minimum block dimension used was 0.5 m x 0.5 m x 0.5 m.</p> <p>The minimum block dimension is set well below the primary block which adequately allows the mining shape to be adequately filled up the wire frame boundary that describes the edge of the ore body (effective mining shape).</p> <p>For the purposes of determining a reserve mining shape the primary block dimensions are used as part of the whittle process. Where the ore body wire frame cuts a primary block the sub blocks then fill out to the edge of the mining shape. The sub blocks are the same grade as the primary block.</p> <p>For the purposes of the reserve determination all inferred and unclassified blocks were assigned a grade of 0.0 g/t.</p> <p>The block model for the resource was established in datamine.</p> <p>The model was transferred to Vulcan for all mine design work.</p> <p>Igantit was software package used for mine scheduling.</p>
Resource block model covers area of interest and all waste blocks have assigned grades	<p>All waste blocks outside the resource were all assigned a 0.0 g/t and were positioned in the model to cover all areas of interest (mine design locations) outside the resource locations.</p>
Basis and accuracy of study	<p>The Pernatty reserve estimate covered in this section is specifically related to a mine pushback (cut back). This implies that significant previous history in relation to mine design, production performance and costs exist and this information forms the basis of an accurate mining study.</p> <p>The study is considered to be at Feasibility level. It should be noted that some of the cost level of accuracy range from estimates through actual quotations. Any cost estimation is based on previous experience associated with the mine or other mines within the South Kalgoorlie Operations (SKO).</p> <p>Where estimations are used, suitable level of contingency % has been applied. Separate levels of contingency have been applied to the various levels of accuracy associated with cost estimation.</p>
Any consideration of reconciliation data	<p>Reconciliation data associated with mining the historical Pernatty open-pit is available. No tonnage or grade adjustment for reconciliation based on historical performance has been made in this reserve estimate.</p>



<p><b>Pernatty Open-Pit</b></p>	<p><b>Reserve estimation – December 2011 Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs</b></p>
<p>Cut off grade determination</p>	<p>For the purpose of the reserve estimation this is not included and is considered only as potential up-side due to the nature of the mineralization particularly on the boundaries of the ore body.</p> <p>The pit rim cut off grade (COG) was determined as part of the reserve estimation. The pit rim COG determines which material will be processed by equating the operating cost of processing and selling to the value of the mining block in terms of recovered metal and the expected selling price. The COG is then used to determine whether or not a mining block should be delivered to the treatment plant for processing or taken to the waste dump as waste.</p> <p>For the Pernatty reserve a COG of 0.6 g/t was determined. The calculation of COG is described in Section 15.2.1 of this technical report.</p>

Pernatty Open-Pit	Reserve estimation – December 2011 Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs
<p>Modifying factors to be applied to the resource as part of the conversion of resource to reserve.</p> <ol style="list-style-type: none"> <li>1. mining shape</li> <li>2. dilution</li> <li>3. mining recovery</li> <li>4. ground conditions</li> <li>5. ground support requirements</li> <li>6. mining sequence</li> <li>7. fill requirements</li> <li>8. other</li> </ol>	<p>Following consideration of the various modifying factors the following rules were applied to the reserve estimation process for the conversion of resource to reserve (mined ore) for suitable evaluation.</p> <ol style="list-style-type: none"> <li>1. The mining shape in the reserve estimation is generated by a wireframe (geology interpretation of the ore zone) which overlays the block model. Where the wire frame cuts the primary block, sub blocks fill out the remaining space to the wire frame boundary (effectively the mining shape). It is reasonable to assume that the mining method can selectively mine to the wire frame boundary with the additional dilution provision stated in point 2 below.</li> <li>2. Dilution of the ore through the mining process has been set at 6% which is considered as additional ore mined in relation to mining to the wire frame boundary as identified in point 1 above, albeit at a grade of 0.0 g/t. The amount of dilution is considered appropriate based on orebody geometry, historical mining performance and the size of mining equipment to be used to extract ore</li> <li>3. Expected mining recovery of the ore has been set at 94% (i.e. 6% ore loss).</li> <li>4. No specific allowance has been made for ground conditions not included in dilution and mining recovery listed above. Pit wall designs take into account specific geotechnical domains summarized below.</li> <li>5. No specific ground support requirements are needed outside of suitable pit slope design criteria based on specific geotechnical domains summarized below.</li> <li>6. Mining sequence is included in the mine scheduling process for determining the economic evaluation and takes into account available operating time and mining equipment size and performance.</li> <li>7. No fill is required.</li> <li>8. No other modifying factors are required.</li> </ol>



Pernatty Open-Pit																					
Reserve estimation – December 2011 Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs	<p>Whittle 4.0 pit optimization software was used to generate a range of possible pit shells based on standard whittle inputs. Note that the cash flow option was used as the ore selection method.</p> <p>The Whittle optimization inputs used for this work are;</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Whittle Inputs (unit)</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Metal Price – Gold (A\$/oz)</td> <td>1,400</td> </tr> <tr> <td>Processing Recovery – Gold (%)</td> <td>91.0</td> </tr> <tr> <td>Mining Cost – ore &amp; waste (\$/t)</td> <td>2.86</td> </tr> <tr> <td>Processing Cost – ore (\$/t)</td> <td>24.97 (includes haulage to the plant)</td> </tr> <tr> <td>Selling Price – Gold (\$/oz)</td> <td>10.00</td> </tr> <tr> <td>Slope Angle (degrees)</td> <td>By specific zone</td> </tr> <tr> <td>Mining Recovery (%)</td> <td>95.0</td> </tr> <tr> <td>Mining Dilution (%)</td> <td>6.0</td> </tr> <tr> <td>Ore Selection Method</td> <td>Cash Flow</td> </tr> </tbody> </table> <p>A gold metal price of A\$1,400 /oz was used for Pernatty due to the timing of the mining of the pit set for 2012.</p> <p>The whittle shells provide guidance to the final size of the open-pit. As this project involves a push back specific allowance has to be made for practical mining widths and ramp locations.</p> <p>Haul roads are either 12 m (single lane) or 25 m (dual lane).</p> <p>Haul road gradient is 12%.</p> <p>Minimum working area is defined as 11 m x 5.0m.</p>	Whittle Inputs (unit)	Value	Metal Price – Gold (A\$/oz)	1,400	Processing Recovery – Gold (%)	91.0	Mining Cost – ore & waste (\$/t)	2.86	Processing Cost – ore (\$/t)	24.97 (includes haulage to the plant)	Selling Price – Gold (\$/oz)	10.00	Slope Angle (degrees)	By specific zone	Mining Recovery (%)	95.0	Mining Dilution (%)	6.0	Ore Selection Method	Cash Flow
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Whittle Optimisation & Pit Design	<p>Detailed geotechnical review was completed by Peter O'Bryan (Geotechnical consultant) as part of the feasibility study process and considered all likely failure mechanisms.</p>																				
Failure mechanisms investigated	<p>Geotechnical domains were mapped and established as part of the model and design criteria. The geotechnical domains were simplified into three zones as shown in the table below;</p>																				
Geotechnical domains identified																					

Pernatty Open-Pit		Reserve estimation – December 2011 Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs				
		Description	Fresh (below 260mRL)	Fresh (260 – 320mRL)	Transitional (320 – 340mRL)	Oxide (above 340mRL)
		Batter Angles (degrees)	75	70	65	55
		Berm Width (m)	6	6	6	6
		Vertical height between Berms (m)	10-30	20	20	15
		Detailed hydrological investigation has been previously done. The presence of the original open-pit and underground workings below the southern end of the pit show limited water ingress potential. Water levels are easily monitored and managed in the mining process.				
		As this work is a push back associated with the original Pernatty open-pit, the mining method selection is based on historical and previous mining methods. The mechanized open-pit mining methods used at Pernatty are similar to all gold open-pits being mined in the Eastern Goldfields of Western Australia. The ore body geometry and style lends itself to the mining method chosen.				
Mining method selection based on orebody geometry, rockmass characteristics and local conditions and mining practices.		<ol style="list-style-type: none"> <li>Dilution parameters used are listed above. These parameters are based on the historical evidence of mining the Pernatty ore body. The sub vertical orientation of the ore body is amenable to minimal variation in ore block boundaries from bench to bench.</li> <li>The nature of contacts between the mineralization and waste have also been considered in the dilution parameters selected based on historical contacts between ore and waste and the blasting techniques used.</li> <li>Significant consideration has been given to the location of the ore blocks within the minimum mining shapes. The blocks are positioned with a vertical/horizontal configuration within a mining shape that is sub vertical in nature and aligns itself well with the overall ore body shape.</li> <li>Overall dilution of 6% for the reserve estimation takes into account the historical performance of mining the ore blocks typically seen in the Pernatty pit. The actual ore block identification in the mining process is based on 30m depth grade control RC drilling programs. All grade control block determination is based on 1m RC samples.</li> <li>The process of mining up to the identified ore boundary wire frame for this type of ore body is in line with conventional gold open-pit mining practices. All ore blocks are based on working the bench heights nominated. The minimum mining widths fit</li> </ol>				
Hydrological domains identified		Detailed hydrological investigation has been previously done. The presence of the original open-pit and underground workings below the southern end of the pit show limited water ingress potential. Water levels are easily monitored and managed in the mining process.				
Mining method selection based on orebody geometry, rockmass characteristics and local conditions and mining practices.		As this work is a push back associated with the original Pernatty open-pit, the mining method selection is based on historical and previous mining methods. The mechanized open-pit mining methods used at Pernatty are similar to all gold open-pits being mined in the Eastern Goldfields of Western Australia. The ore body geometry and style lends itself to the mining method chosen.				
Dilution modifying factors		<ol style="list-style-type: none"> <li>Width and orientation of ore mineralization.</li> <li>nature of contacts with along the ore/waste boundaries.</li> <li>composite representation of ore blocks and smoothing.</li> <li>Mine design and ore block layouts.</li> <li>minimum mining widths.</li> <li>mining practices.</li> <li>geotechnical and geological</li> </ol>				





Pernatty Open-Pit	
<p><b>Reserve estimation – December 2011</b>  <b>Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs</b></p>	<p>well below the overall ore blocks determined to be mined.</p> <ol style="list-style-type: none"> <li>6. Standard WA open-pit mining practices apply.</li> <li>7. Geotechnical and geological controls have been taken into account.</li> <li>8. Minimal ore losses are expected due to relatively vertical nature of ore body and mining methods selected. A conservative mining recovery of 94% has been selected for the reserve estimation process.</li> <li>9. Ore is planned to be mined using a x tone loader in backhoe configuration loading 100t off-highway haul trucks</li> </ol>
<p>controls.</p> <ol style="list-style-type: none"> <li>8. ore recovery/losses due to pillars, mining practice, ground conditions and reconciliation.</li> <li>9. Selected Mining Equipment</li> </ol>	<p>All waste material is in the model at 0.0 g/t.  All inferred and unclassified blocks in the block model has been assigned a grade of 0.0 g/t.</p>
<p>Grade of diluting material</p>	<p>Detailed quotes and estimates were obtained for establishment of the project. Capital is either specifically associated with the Pernatty mine ore belongs to the consolidated South Kalgoorlie Operations and is considered part of the South Kalgoorlie Expansion Project (SKOEP).</p> <p>For the Pernatty mine, mining costs associated with capital waste stripping are estimated as a continuation of the mining currently taking place at SKO. Where different equipment sizes are intended to be used new equipment rates were obtained from the equipment supplier (Emeco).</p> <p>For the consolidated SKO capital costs, the treatment plant capital cost was determined as part of the DFS study completed by GRES for a new 2.5 Mtpa treatment plant. Surface infrastructure costs were also determined by various engineering consultants or the Alacer internal projects group. Alacer project cost estimates are generally based on the experience gained from similar project work completed at the Higginsville Gold Operation site which is 150 Km south of the SKO.</p>
<p>Capital cost</p>	<p>Mining operating cost was determined as part of an ongoing mining operating regime currently in place at the SKO. This is based on equipment hire arrangement with Emeco and the provision of Alacer management and operators to complete the mining. Drill and blast contractor Jarrahdale provide the drilling and blasting cost through agreed contractual rates. Haulage costs consider the cycle time from source to destination on a bench by bench basis.</p> <p>Treatment plant operating costs have been determined as part of the DFS associated with the new 2.5Mtpa treatment plant. These costs were developed on the basis of the currently operating 1.2 Mtpa jubilee treatment planted and modified to take into account the newer/larger plant proposed in the DFS.</p> <p>General and Administration (G&amp;A) costs are based on the existing SKO costs with revised forecast for any variations which may apply due to increased treatment plant throughput. Royalties?</p>
<p>Operating cost</p>	<p>Separate contingency factors have been applied to various sections of the reserve estimation based on whether the work is new or currently part of SKO.</p>
<p>Cost contingency and market factors</p>	<p>Following the assignment of 0.0 g/t grade to all waste, inferred and unclassified blocks only indicated blocks in the model carried grade (note none of the resource is classified as measured). The wire frame representing the required mining shape was then applied to the resource model to determine all the minable primary blocks above COG. The resultant mining shapes were</p>
<p>Cost contingency and market factors</p>	<p>Following the assignment of 0.0 g/t grade to all waste, inferred and unclassified blocks only indicated blocks in the model carried grade (note none of the resource is classified as measured). The wire frame representing the required mining shape was then applied to the resource model to determine all the minable primary blocks above COG. The resultant mining shapes were</p>

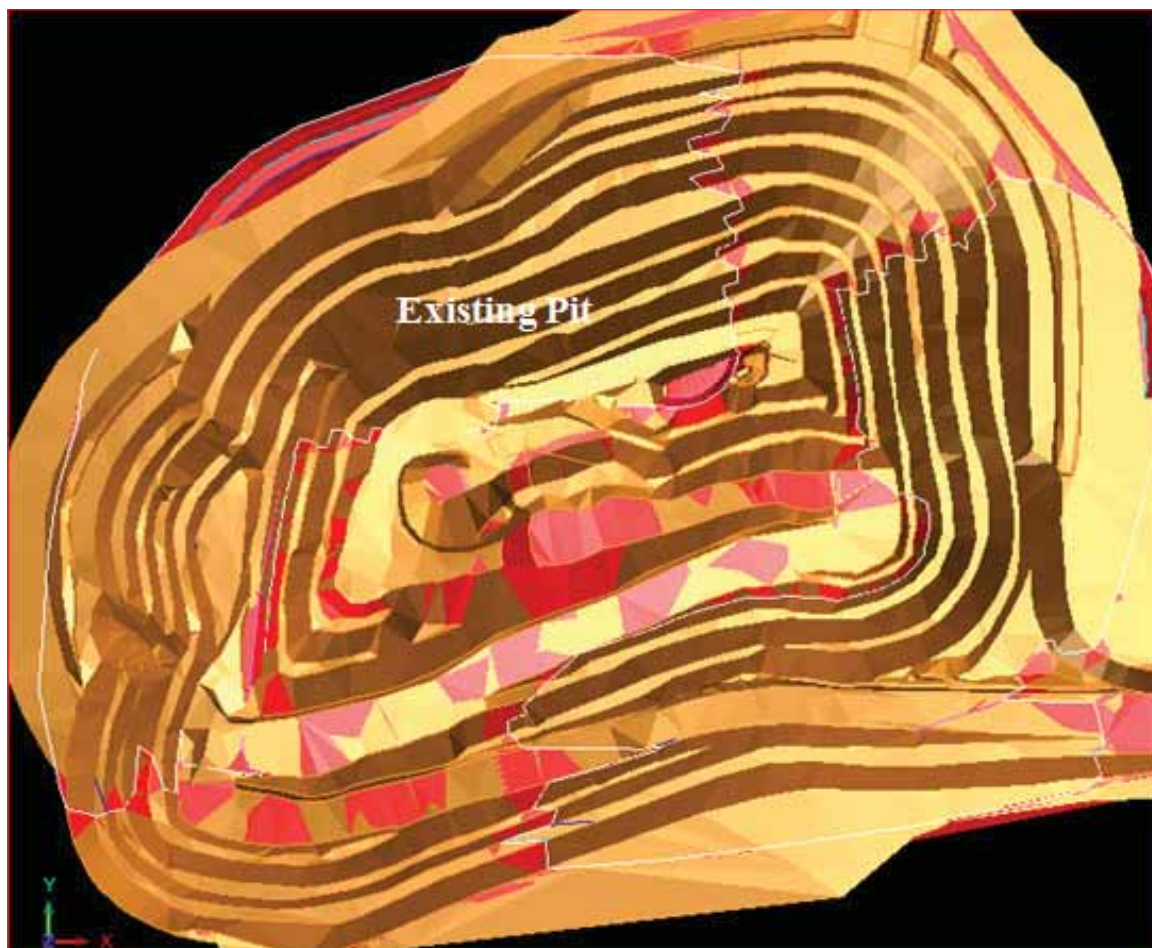
Pernatty Open-Pit	Reserve estimation – December 2011 Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs
	<p>transported into Gemcom Minesched Software for scheduling. The following scheduling parameters were used for the generation of the LOM plan.</p> <ol style="list-style-type: none"> <li>1. Mechanical availability of 92%. This takes into account rain delays, public holidays, planned maintenance etc.</li> <li>2. Utilisation of availability of 72%. This includes shifts breaks, travel time and meal breaks.</li> <li>3. Digger productivity of 4,230 BCM/shift.</li> </ol>
Effect of inferred resource on mine schedule and LOM plan.	If the inferred blocks within the final pit shape are included in the LOM schedule an additional 8koz can be included at incremental treatment cost only.
Project viability in relation to inferred resource.	The mine currently shows a resource to reserve conversion rate of 13%
Metallurgical testwork in relation to material to be mined.	Detailed metallurgical information was available from the historical and existing mining and processing of the Pernatty ore body. The recovery of the gold from the Pernatty ore will be 91%.
Technology considered for the process	Standard gold treatment process is required with crushing, grinding, gravity and cyanidation circuits applicable.
Plans for processing ore produced	Detailed feasibility on plant design was carried out as a result of the information available from the current 1.2 Mtpa treatment plant and the additional metallurgical test work on the ore from within the existing open-pit.
Plans for processing of marginal material in relation to various cut off grades.	Mineralisation mined slightly below COG will be considered as waste. At this stage no plans have been made to separately stockpile this material for future treatment potential. All mineralization below COG is considered waste for economic evaluation.
Economic criteria used for feasibility study	<p>Two separate economic evaluations have been done in relation to the Pernatty open-pit. The first is specifically related to the Pernatty open-pit and second is the consolidated SKO economics based on a consolidated schedule derived from the combination of several operating mines feeding one treatment plant.</p> <p>The following economic assumptions relate specifically to the Pernatty open-pit, Gold price = Pernatty was modeled at A\$ 1,250 and A \$1,566. The higher gold price represents the companies view on the gold price for 2012. The pernaty open-pit will be mined to completion in 2012. Gold recovery = 91%</p>
Economic consideration show different considerations 1. NPV 2. Cash flow	<p>Pernatty Open-Pit ONLY considers NPV, Cash Flow, Gold Price forecast and IRR At A\$1,250, the NPV(5%) is \$3.8 M At A\$1,560 the NPV(5%) is \$11.2 M</p>

Pernatty Open-Pit	Reserve estimation – December 2011 Reserve of 0.3 Mt @ 2.3 g/t for 0.02 Mozs
3. Gold price forecast 4. IRR	Consolidated SKO economics considers NPV, Cash Flow, Gold Price forecast and IRR
Economic evaluations directly link to LOM plan.	Financial model directly refers to the LOM schedule and associated works.
Economic criteria based on proved/probable ore reserves only	The base case LOM schedule only takes indicated resource into account.
Economic sensitivities done	Economic sensitivities have been completed on Value (Gold price, grade) and Cost (capital and operating) for the consolidated SKO economic model. However in the mining process the relative economics of each individual feed source is continually re evaluated against value and cost variations.
Status of statutory approval	The Pernatty open-pit is an existing mine within the SKO. All statutory approval for the existing operation are currently in place. Approvals associated with the building of a new 2.5 Mtpa treatment plant to replace the current 1.2 Mtpa treatment plant are well advanced.
Reserve/ resource statement sign off	To be done as part of this technical report.

### 15.5.2 Pernatty Open-Pit Mine Planning

The final Pernatty pushback design and layout was strongly influence by geotechnical constraints and incremental cost trade-offs. Referring to Figure 15-4, the Pernatty pushback will extend the current pit base by 30 m vertically, recovering 0.304 Mt of ore containing 24.6 koz of gold. The overall strip ratio is approximately 16.7:1 with the majority of the ore located on the lower benches.

**Figure 155-4: Pernatty Open-Pit Pushback Layout**



The Pernatty Open-Pit reserve estimate is presented in Table 15-8.

**Table 15-8: Pernatty Open-Pit Reserve Estimate**

Material Type	Pernatty Push Back
HG Ore (kt)	289
HG Grade (g/t)	2.61
LG Ore (kt)	15
LG Grade (g/t)	0.74
Total Ore (kt)	304
Total Ore Grade (g/t)	2.3
Waste (Mt)	4.7
Total Material (Mt)	5.0
Strip Ratio (w:o)	16.9

Material Type	Pernatty Push Back
Contained Au (k oz)	22

## **15.6 Triumph Open-Pit**

A Triumph pushback, containing 0.43 Mt of ore and 25 koz of Au metal, was chosen as the preferred pushback based on site specific geological and geotechnical constraints. A detailed mine plan was developed for the pushback.

### **15.6.1 Triumph Open-Pit Reserve estimation check list and detail**

The Triumph Open-Pit Mineral Reserve Estimate check list and detail is included in Table 15-9.



**Table 15-9: Triumph Open-Pit Reserve estimation check list and detail**

Triumph Open-Pit Reserve estimation Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs	
Triumph Open-Pit	Reserve estimation Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs
Mineral resource handover	<p>The Triumph resource estimate is based on the Resource model update completed by Widenbar and Associates (WAA) in June 2010.</p> <p>The model interpolation was by OK using the Datamine ESTIMA process.</p> <p>The other relevant information regarding the Triumph resource estimate can be found in Section 14 of this technical report.</p>
Block model suitability for proposed mining method	<p>The Resource block model presented a complete model including ore and waste blocks.</p> <p>The blocks were presented in a 3 dimensional horizontal/vertical alignment within the resource boundaries.</p> <p>The primary block dimensions were 5 m x 5 m x 5 m (XYZ). The minimum block dimension used was 0.5 m x 0.5 m x 0.25 m.</p> <p>The minimum block dimension is set well below the primary block which adequately allows the mining shape to be adequately filled up the wire frame boundary that describes the edge of the ore body (effective mining shape).</p> <p>The minimum block at Triumph adequately covers the orientation of the ore body. The Triumph ore body lenses are flat dipping and narrow in nature. Each lens can be visually defined due the quartz association.</p> <p>For the purposes of determining a reserve mining shape the primary block dimensions are used as part of the whittle process. Where the ore body wire frame cuts a primary block the sub blocks then fill out to the edge of the mining shape. The sub blocks are the same grade as the primary block.</p> <p>For the purposes of the reserve determination all inferred and unclassified blocks were assigned a grade of 0.0 g/t.</p> <p>The block model for the resource was established in datamine.</p> <p>The model was transferred to Vulcan for all mine design work.</p> <p>Igantit was software package used for mine scheduling.</p>
Resource block model covers area of interest and all waste blocks have assigned grades	<p>All waste blocks outside the resource were all assigned a 0.0 g/t and were positioned in the model to cover all areas of interest (mine design locations) outside the resource locations.</p>
Basis and accuracy of study	<p>The Triumph reserve estimate covered in this section is specifically related to a mine pushback (cut back). This implies that significant previous history in relation to mine design, production performance and costs exist and this information forms the basis of an accurate mining study.</p> <p>The study is considered to be at Feasibility level. It should be noted that some of the cost level of accuracy range from estimates through actual quotations. Any cost estimation is based on previous experience associated with the mine or other mines within the South Kaigoorlie Operations (SKO).</p> <p>Where estimations are used, suitable level of contingency % has been applied. Separate levels of contingency have been applied to the various levels of accuracy associated with cost estimation.</p>
Any consideration of reconciliation data	<p>Reconciliation data associated with mining the historical Triumph open-pit is available. No tonnage or grade adjustment for</p>

<p><b>Triumph Open-Pit</b></p>	<p><b>Reserve estimation</b>  <b>Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs</b></p>
	<p>reconciliation based on historical mining performance has been made.          For the purpose of the reserve estimation this is not included and is considered only as potential up-side due to the style of mineralization seen at Triumph.</p>
<p>Cut off grade determination</p>	<p>The pit rim cut off grade (COG) was determined as part of the reserve estimation. The pit rim COG determines which material will be processed by equating the operating cost of processing and selling to the value of the mining block in terms of recovered metal and the expected selling price. The COG is then used to determine whether or not a mining block should be delivered to the treatment plant for processing or taken to the waste dump as waste.</p> <p>For the Triumph reserve a COG of 0.72 g/t was determined. The calculation of COG is described in Section 15.2.1 of this technical report.</p>

Triumph Open-Pit	Reserve estimation Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs
<p>Modifying factors to be applied to the resource as part of the conversion of resource to reserve.</p> <ol style="list-style-type: none"> <li>1. mining shape</li> <li>2. dilution</li> <li>3. mining recovery</li> <li>4. ground conditions</li> <li>5. ground support requirements</li> <li>6. mining sequence</li> <li>7. fill requirements</li> <li>8. other</li> </ol>	<p>Following consideration of the various modifying factors the following rules were applied to the reserve estimation process for the conversion of resource to reserve (mined ore) for suitable evaluation.</p> <ol style="list-style-type: none"> <li>1. The mining shape in the reserve estimation is generated by a wireframe (geology interpretation of the ore zone) which overlays the block model. Where the wire frame cuts the primary block, sub blocks fill out the remaining space to the wire frame boundary (effectively the mining shape). It is reasonable to assume that the mining method can selectively mine to the wire frame boundary with the additional dilution provision stated in point 2 below.</li> <li>2. Dilution of the ore through the mining process has been set at 20% which is considered as additional ore mined in relation to mining to the wire frame boundary as identified in point 1 above, albeit at a grade of 0.0 g/t. The amount of dilution is considered appropriate based on orebody geometry, historical mining performance and the size of mining equipment to be used to extract ore. The dilution associated with Triumph has been established in line with the ore body orientation.</li> <li>3. Expected mining recovery of the ore has been set at 100%. This is based on the style of mineralization associated with Triumph in that it's a quartz vein style ore body and very visual in the ore block marking and mining process.</li> <li>4. No specific allowance has been made for ground conditions not included in dilution and mining recovery listed above. Pit wall designs take into account specific geotechnical domains summarized below.</li> <li>5. No specific ground support requirements are needed outside of suitable pit slope design criteria based on specific geotechnical domains summarized below.</li> <li>6. Mining sequence is included in the mine scheduling process for determining the economic evaluation and takes into account available operating time and mining equipment size and performance.</li> <li>7. No fill is required.</li> <li>8. No other modifying factors are required.</li> </ol>

Triumph Open-Pit	Reserve estimation Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs																				
	<p>Whittle 4.0 pit optimization software was used to generate a range of possible pit shells based on standard whittle inputs. Note that the cash flow option was used as the ore selection method.</p> <p>The Whittle optimization inputs used for this work are;</p> <table border="1" data-bbox="467 813 948 1603"> <thead> <tr> <th>Whittle Inputs (unit)</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Metal Price – Gold (A\$/oz)</td> <td>1,400</td> </tr> <tr> <td>Processing Recovery – Gold (%)</td> <td>92.0</td> </tr> <tr> <td>Mining Cost – ore &amp; waste (\$/t)</td> <td>2.90</td> </tr> <tr> <td>Process Cost – ore (\$/t)</td> <td>25.71 (includes haulage to the plant)</td> </tr> <tr> <td>Selling Price – Gold (\$/oz)</td> <td>10.00</td> </tr> <tr> <td>Slope Angle (degrees)</td> <td>By specific zone</td> </tr> <tr> <td>Mining Recovery (%)</td> <td>100.0</td> </tr> <tr> <td>Mining Dilution (%)</td> <td>20.0</td> </tr> <tr> <td>Ore Selection Method</td> <td>Cash Flow</td> </tr> </tbody> </table>	Whittle Inputs (unit)	Value	Metal Price – Gold (A\$/oz)	1,400	Processing Recovery – Gold (%)	92.0	Mining Cost – ore & waste (\$/t)	2.90	Process Cost – ore (\$/t)	25.71 (includes haulage to the plant)	Selling Price – Gold (\$/oz)	10.00	Slope Angle (degrees)	By specific zone	Mining Recovery (%)	100.0	Mining Dilution (%)	20.0	Ore Selection Method	Cash Flow
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Mining Recovery (%)	100.0																				
Mining Dilution (%)	20.0																				
Ore Selection Method	Cash Flow																				
Whittle Optimisation & Pit Design	<p>A metal price of A\$1,400 was used form Triumph as its more representative to the timing of the mining of the pit. The Triumph mine will be completed in 2012.</p> <p>The whittle shells provide guidance to the final size of the open-pit. As this project involves a push back specific allowance has to be made for practical mining widths and ramp locations.</p> <p>Haul roads are based on a minimum width of 12 m.</p> <p>Haul road gradient is 10%.</p> <p>Minimum working area is defined as 15 m x 50 m.</p> <p>Additional operating constraints were also applied to the Triumph push back. The maximum width at the top was set as 69 m. The minimum width at the bottom of the pushback was 15 m. The maximum depth from the surface is 95m.</p>																				
Failure mechanisms investigated	<p>Detailed geotechnical review was completed by Peter O'Bryan (Geotechnical consultant) as part of the feasibility study process and considered all likely failure mechanisms.</p>																				

Triumph Open-Pit		Reserve estimation Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs																	
Geotechnical domains identified	<p>Geotechnical domains were mapped and established as part of the model and design criteria. The geotechnical domains were simplified into rock type domains as shown in the table below;</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Description</th> <th style="width: 20%;">Fresh (below 305mRL)</th> <th style="width: 20%;">Fresh (305 – 330mRL)</th> <th style="width: 30%;">Oxide (Above 330mRL)</th> </tr> </thead> <tbody> <tr> <td>Batter Angles (degrees)</td> <td style="text-align: center;">75</td> <td style="text-align: center;">75</td> <td style="text-align: center;">55</td> </tr> <tr> <td>Berm Width (m)</td> <td style="text-align: center;">8</td> <td style="text-align: center;">8</td> <td style="text-align: center;">5</td> </tr> <tr> <td>Vertical height between Berms (m)</td> <td style="text-align: center;">20</td> <td style="text-align: center;">25</td> <td style="text-align: center;">15</td> </tr> </tbody> </table>			Description	Fresh (below 305mRL)	Fresh (305 – 330mRL)	Oxide (Above 330mRL)	Batter Angles (degrees)	75	75	55	Berm Width (m)	8	8	5	Vertical height between Berms (m)	20	25	15
Description	Fresh (below 305mRL)	Fresh (305 – 330mRL)	Oxide (Above 330mRL)																
Batter Angles (degrees)	75	75	55																
Berm Width (m)	8	8	5																
Vertical height between Berms (m)	20	25	15																
Hydrological domains identified	<p>Detailed hydrological investigation has been previously done. The presence of the original open-pit show limited water ingress potential. Water levels are easily monitored and managed in the mining process.</p>																		
Mining method selection based on orebody geometry, rockmass characteristics and local conditions and mining practices.	<p>As this work is a push back associated with the original Triumph open-pit, the mining method selection is based on historical and previous mining methods. The mechanized open-pit mining methods used at Triumph are similar to all gold open-pits being mined in the Eastern Goldfields of Western Australia. The ore body geometry and style lends itself to the mining method chosen.</p>																		
Dilution modifying factors	<p>1. Width and orientation of ore mineralization.                  2. nature of contacts with along the ore/waste boundaries.                  3. composite representation of ore blocks and smoothing.                  4. Mine design and ore block layouts.                  5. minimum mining widths.                  6. mining practices.</p>																		
Dilution modifying factors	<p>1. Dilution parameters used are listed above. These parameters are based on the historical evidence of mining the Triumph ore body which is considered as a series of flat dipping narrow lenses. The very small blocks used in the reserve estimation match well the detailed mining process required for the Triumph ore lenses.                  2. The nature of contacts between the mineralization and waste have also been considered in the dilution parameters selected based on historical contacts between ore and waste and the blasting techniques used.                  3. Significant consideration has been given to the location of the ore blocks within the minimum mining shapes. The blocks are positioned with a vertical/horizontal configuration within a mining shape that is sub vertical in nature and aligns itself well with the overall ore body shape.                  4. Overall dilution of 20% for the reserve estimation takes into account the historical performance of mining the ore blocks typically seen in the Triumph pit. The actual ore block identification in the mining process is based on 30 m depth grade control RC drilling programs. All grade control block determination is based on 1 m RC samples.                  5. The process of mining up to the identified ore boundary wire frame for this type of ore body is in line with conventional gold</p>																		

Triumph Open-Pit	Reserve estimation Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs
<p>7. geotechnical and geological controls.</p> <p>8. ore recovery/losses due to pillars, mining practice, ground conditions and reconciliation.</p> <p>9. Selected Mining Equipment</p>	<p>ope- pit mining practices. All ore blocks are based on working the bench heights nominated. The minimum mining widths fit well below the overall ore blocks determined to be mined.</p> <p>6. Standard WA open-pit mining practices apply.</p> <p>7. Geotechnical and geological controls have been taken into account.</p> <p>8. Minimal ore losses are expected due to vertical nature of ore body and mining methods selected. A mining recovery of 100% has been selected for the reserve estimation process due to the visual nature of the ore lenses.</p> <p>9. Ore is planned to be mined using a x tone loader in backhoe configuration loading 100 t off-highway haul trucks</p>
Grade of diluting material	<p>All waste material is in the model at 0.0g/t.</p> <p>All inferred and unclassified blocks in the block model has been assigned a grade of 0.0g/t.</p>
Capital cost	<p>Detailed quotes and estimates were obtained for establishment of capital costs associated with the project. Capital either is specifically associated with the Triumph mine or is considered part of the consolidated South Kalgoorlie Operations (eg treatment plant capital).</p> <p>For the Triumph mine, mining costs associated with capital waste stripping are known as a continuation of the mining currently taking place at SKO.</p> <p>For the consolidated SKO capital costs, the treatment plant capital cost was determined as part of the DFS study completed by GRES for a new 2.5 Mtpa treatment plant. Surface infrastructure costs were also determined by various engineering consultants or the Alacer internal projects group. Alacer project cost estimates are generally based on the experience gained from similar project work completed at the Higginsville Gold Operation site which is 150 Km south of the SKO.</p>
Operating cost	<p>Mining operating cost was determined as part of an ongoing mining operating regime currently in place at the SKO. This is based on equipment hire arrangement with equipment supplier Emeco and the provision of Alacer management and operators to complete the mining. Drill and blast contractor Jarrahdale provide the drilling and blasting cost through agreed contractual rates. Haulage costs consider the cycle time from source to destination on a bench by bench basis.</p> <p>Treatment plant operating costs have been determined as part of the DFS associated with the new 2.5 Mtpa treatment plant. These costs were developed on the basis of the currently operating 1.2Mtpa jubilee treatment plant and modified to take into account the newer/larger plant proposed in the DFS.</p> <p>General and Administration (G&amp;A) costs are based on the existing SKO costs with revised forecast for any variations which may apply due to increased treatment plant throughput. Royalties?</p>
Cost contingency and market factors	<p>Separate contingency factors have been applied to various sections of the reserve estimation based on whether the work is new or currently part of SKO.</p>
LOM schedule based on proved and probable reserves	<p>Following the assignment of 0.0 g/t grade to all waste, inferred and unclassified blocks only indicated blocks in the model carried grade (note none of the ore is classified as measured). The wire frame representing the required mining shape was then applied to the resource model to determine all the minable primary blocks above COG. The resultant mining shapes were transported into</p>



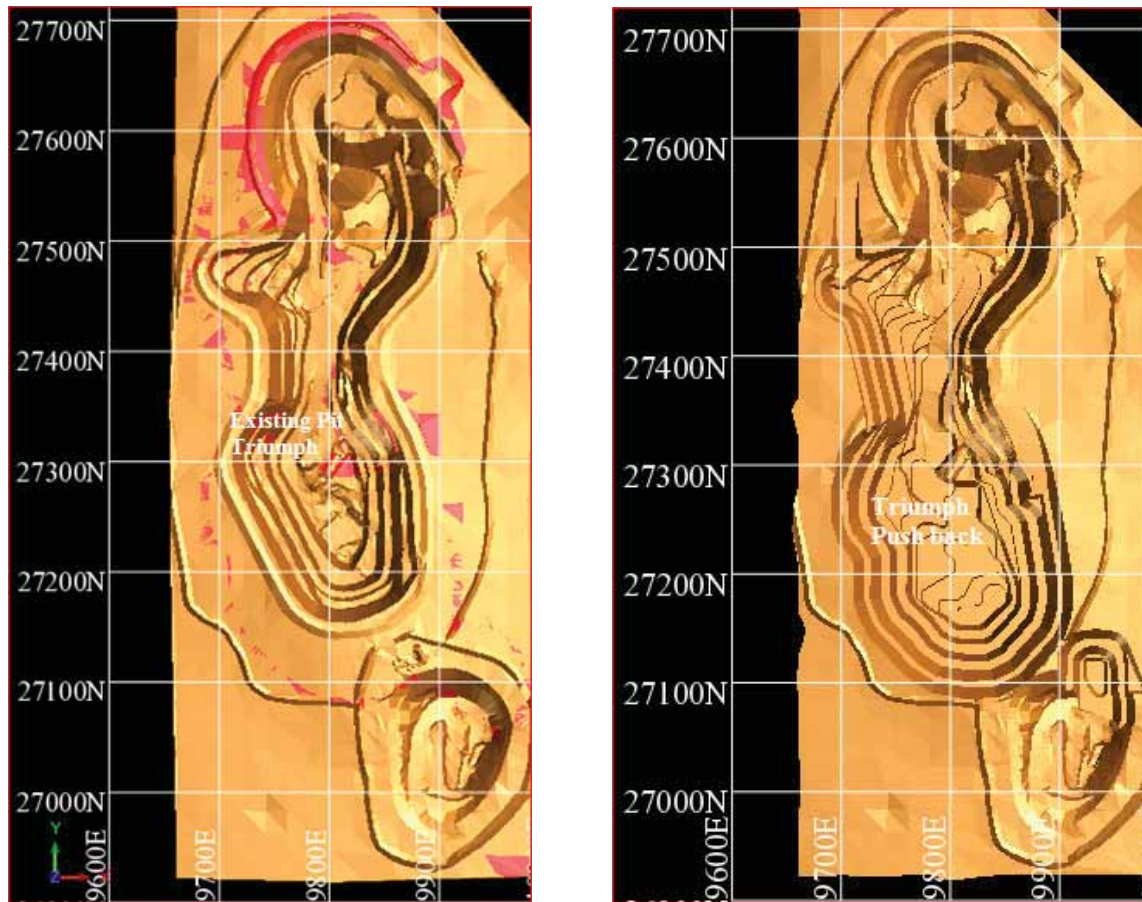
Triumph Open-Pit	Reserve estimation Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs
	<p>Gemcom Minesched Software for scheduling. The following scheduling parameters were used for the generation of the life of mine plan.</p> <ol style="list-style-type: none"> <li>1. Mechanical availability of 92%. This takes into account rain delays, public holidays, planned maintenance etc.</li> <li>2. Utilisation of availability of 70%. This includes shifts breaks and meal breaks.</li> <li>3. Digger productivity of 3,408 BCM/shift.</li> </ol>
Effect of inferred resource on mine schedule and LOM plan.	If the inferred blocks within the final pit shape are included in the LOM schedule an additional 8koz can be included at incremental treatment cost only.
Project viability in relation to inferred resource.	The mine currently shows a resource to reserve conversion rate 36%.
Metallurgical testwork in relation to material to be mined.	Detailed metallurgical information was available from the historical and existing mining and processing of the Triumph ore body.
Technology considered for the process	Standard gold treatment process is required with crushing, grinding, gravity and cyanidation leach circuits applicable.
Plans for processing ore produced	Detailed feasibility on plant design was carried out as a result of the information available from the current 1.2 Mtpa treatment plant and the additional metallurgical test work on the ore from within the existing open-pit.
Plans for processing of marginal material in relation to various cut off grades.	Mineralisation mined slightly below COG will be considered as waste. At this stage no plans have been made to separately stockpile this material for future treatment potential. All mineralization below COG is considered waste for economic evaluation.
Economic criteria used for feasibility study	<p>Two separate economic evaluations have been done in relation to the Triumph open-pit. The first is specifically related to the Triumph open-pit and second is the consolidated SKO economics based on a consolidated schedule derived from the combination of several operating mines feeding one treatment plant.</p> <p>The following economic assumptions relate specifically to the Triumph open-pit,  Gold price = Both A\$1,250 was used and A\$1,566. The higher of the gold price is the company's view of the gold price in 2012. The Triumph open-pit will be mined in 2012.  Gold recover = 92%</p>
Economic consideration show different considerations 1. NPV 2. Cash flow	Triumph Open-Pit ONLY considers NPV, Cash Flow, Gold Price forecast and IRR. At A\$1,250, the NPV(5%) is \$2.6 M At A\$1,560, the NPV(5%) is \$9.4 M

Triumph Open-Pit	Reserve estimation Reserve 0.4 Mt @ 1.8 g/t for 0.03 Mozs
3. Gold price forecast 4. IRR	Consolidated SKO economics considers NPV, Cash Flow, Gold Price forecast and IRR
Economic evaluations directly link to LOM plan.	Financial model directly refers to the LOM schedule and associated works.
Economic criteria based on proved/probable ore reserves only	The base case LOM schedule only takes indicated resource into account.
Economic sensitivities done	Economic sensitivities have been completed on Value (Gold price, grade) and Cost (capital and operating) for the consolidated SKO economic model. However in the mining process the relative economics of each individual feed source is continually re evaluated against value and cost variations.
Status of statutory approval	The Triumph open-pit is an existing mine within the SKO. All statutory approval for the existing operation are currently in place. Approvals associated with the building of a new 2.5 Mtpa treatment plant to replace the current 1.2Mtpa treatment plant are well advanced and are currently being considered as part of the consolidated SKOEP.
Reserve/ resource statement sign off	To be done as part of this technical report.

### 15.6.2 Triumph Open-Pit Mine Planning

The final Triumph pushback design and layout was strongly influence by geotechnical constraints and incremental cost trade-offs. To minimise risk and maximise project NPV, the final pushback design focused on extending the pit base on the Southern and west side of the pit side. The Triumph pushback will extend the current pit base by 25 m vertically, recovering 0.428 Mt of ore containing 25 koz of gold. The overall strip ratio is approximately 7.7:1 with the majority of the ore located on the lower benches, as summarised in **Error! Reference source not found.**

**Figure 15-5: Triumph Pushback Layout**



**Table 15-10: Triumph Open-Pit Reserve Estimate**

Material Type	Triumph Push Back
HG Ore (kt)	389
HG Grade (g/t)	1.93
LG Ore (kt)	39
LG Grade (g/t)	0.75
Total Ore (kt)	424
Total Ore Grade (g/t)	1.8
Waste (Mt)	3.28
Total Material (Mt)	3.7
Strip Ratio (w:o)	7.7
Contained Au (k oz)	25

## **16.0 MINING METHODS**

SKO mining activities are managed by a team of Alacer's SKO employees, covering exploration, resource development and mine geology, mine planning, and mine production and survey.

Open-pit production currently takes place in two 10.5 hour shifts for 7 days a week. The shift rosters are currently '7-on-4-off, 7-on-3-off'. The shift rosters are based on the mines local proximity to the city of Kalgoorlie – Boulder.

Conventional Western Australian open-pit mining methods are used at SKO, in line with standard open-pit mining practices seen throughout the world. Following completion of the final pit design and long term plan and schedule by the Alacer SKO technical team, the general mining process applied at SKO is described below.

### **16.1 Open Pit Designs**

Detailed open pit designs are completed prior to the final mining approval by the company. This can be done as a specific project or as part of the company's annual budget and mine planning process. The open pit design is originated from the original reserve estimation open pit designs and subsequently includes any new information that may become apparent prior to proceeding with the mining operation. This includes geotechnical, hydrological and any other parameters that may be relevant to the open pit design and may be different or an improvement on that design criteria as specified in the reserve estimation process described in chapter 15 of this report.

Part of this ultimate design process is to consider chosen production rates, expected mine life, mining unit dimensions, mining dilution factors, mining equipment selection and other final design specifications before commencing mining. This is considered either as a specific project for approval to commence, or completed as part of the SKO budget approval process.

The following descriptions outline the actual mining methods used at SKO following approval to proceed with the mining operation.

### **16.2 Grade Control Drilling**

Grade control drilling of the ore zones by way of angled drill holes, on average 10 to 15 m spaced, to a vertical depth of up to 40 m to confirm the extent of the ore zone, establish the grade distribution and enable mine planning and short term scheduling of waste and ore mining. Grade control drilling is carried out under contract by TDS, using Atlas Copco ROC L8 reverse circulation drills, fitted with industry standard splitter box sampling facilities.

Supervision of the grade control drilling operations and sampling of drill cuttings is the responsibility of Alacer's SKO geology team. Assaying of drill samples is carried out under contract using assay laboratories in Kalgoorlie. It is estimated that 43,000 m of grade control drilling will be required in 2012.

### **16.3 Blast Hole Drilling**

Blast hole drilling in both waste and ore is carried out under contract utilising the services of Perth-based contractor Jarrahfire Drilling. Blast hole diameters range from 89 mm in

narrower ore zones up to 165 mm in bulk waste benches. Blast scheduling and blast design is carried out by Alacer's SKO site mining technical team.

## **16.4 Blasting**

Blasting of ore and waste rock benches involves the priming, charging and firing of blast holes. The supply of bulk explosives, initiating equipment and accessories is under contract with Dyno Nobel Asia Pacific Pty Ltd. ("Dyno") Bulk explosives are transported to site from Dyno's Kalgoorlie explosives depot as required, and loaded direct into blast holes by way of up to 6 t bulk explosives trucks (mobile processing units).

Priming of blast holes (prior to loading of explosives), pattern tie-in and shotfiring is carried out by a shotfiring crew supplied under the blast hole drilling contract, Jarrahfire.

Controlled blasting is standard practice in close proximity to final pit walls, ranging from pre-splitting along steeper, hard rock batters, to variations on pattern sizes and powder factors adjacent to the less competent final batters. Specifically at the HBJ Open-Pit, trim blasts are fired to protect the final walls.

## **16.5 Loading and Hauling**

Loading and hauling of blasted rock from the open-pit is done using conventional excavators and dump trucks, with ore hauled and dumped to the run of mine ("ROM") pad and waste hauled and dumped to the designated waste dump locations.

Mine working areas, haul roads, and ore and waste tip heads are continuously maintained and formed using the ancilliary equipment fleet, including dozers and graders. Dust suppression is carried out by way of up to 50 t water carts, with pulse watering along the main haulage routes and watering down of blast muck piles on a regular basis to contain dust. Routine servicing and minor repairs of major equipment is done by service trucks which are also equipped with portable fuel and lube storage and dispensing facilities.

## **16.6 Ore Haulage**

Road Train Haulage of ore from satellite mines to the SKO treatment plant is carried out under contract by IES Resources Ltd ("IES"), carrying up to 100 tonne loads. IES also provide loading for the crusher feed services to the SKO treatment plant.

## **16.7 Mining Fleet**

An important element of SKO's operating strategy has been to continue the use of leased load and haul equipment and ancilliary support equipment, such as dozers, graders, water cart and service trucks. SKO hire the mining equipment on a minimum monthly charge basis with SKO supplying fuel and equipment operators. The equipment is hired out by and maintained by its owner, Emeco under contract. The strategy was adopted initially to avoid capital expenditure and rapidly escalating contractor's rates, but has proved flexible and economical in an opportunistic environment. The decision to continue with this approach followed a review of alternative pricing submissions that were obtained from three mining contractors as part of the feasibility study review in 2011. The arrangement with Emeco has proven to be the most cost effective.

The mining equipment fleet strategy and the basis for a three year contract with Emeco from 2012 includes the continued use of the 120 t excavator / 100 t truck fleet at the Pernatty open-pit, with three additional fleets mobilised as follows:-

- An additional 120 t excavator / 100 t truck fleet mobilised in late 2011 to commence mining of the Triumph open-pit;
- A 200 t excavator / 150 t truck fleet mobilised to commence mining of the HBJ cutback in February 2012; and
- A second 190 t excavator / 150 t truck fleet to carry out the Mt Martin open-pit cutback during the first quarter 2012. This fleet would be deployed to HBJ upon completion of the Mt Martin cutback, with continued mining at Mt Martin using one of the smaller fleets.



## 17.0 RECOVERY METHODS

### 17.1 Introduction

The method for recovering gold from the various ore sources associated with SKOEP is well understood and has been supported by appropriate metallurgical recovery history and some additional confirmatory test work as discussed in Section 13.

The existing 1.2 Mtpa processing facility (Jubilee processing facility) flow sheet is suitable for continued operation from a processing point of view but is considered undersized for the project moving forward. A new 2.5 Mtpa processing facility is being considered as an integral part of the SKOEP.

Alacer commissioned GRES in 2011 to evaluate plant design options and develop the costs associated with the construction and operation of a new 2.5 Mtpa processing facility proposed for SKOEP.

A plant capacity of 2.5 Mtpa was selected by Alacer as being the optimum throughput rate for the development of the existing mines comprising of HBJ, Mt Martin, Pernatty and Triumph in combination with any new mine development associated with exploration success and any further conversion of resources to reserves. The new plant capacity also takes into account the processing of the Alacer owned (49%) ore feed from the Frog's Leg mine. The process design and equipment selection undertaken for this study has been based on the feed ore being 100% HBJ porphyry ore. The porphyry grade is 1.3 g/t but the plant has been designed for a feed grade of 2.5 g/t which is inclusive of Frog's Leg ore.

The key metallurgical criteria for the new mill are shown in Table 17-1.

**Table 17-1: Key Metallurgical Criteria**

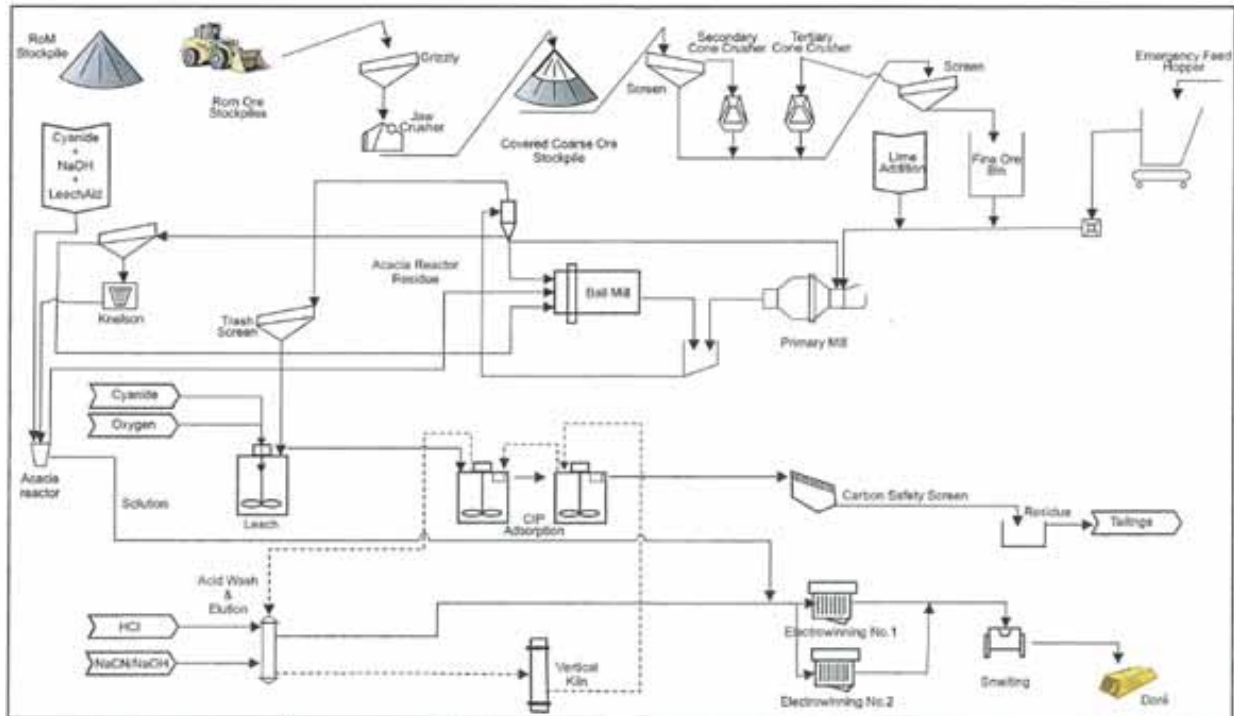
Item	Units	Value
Annual Milling capacity	tpy	2,500,000
Head grade	Au g/t	2.5 – 2.6
Gold Recovery	%	90 – 93
Crushing circuit	type	3 stage
Mill	type	5.6MW ball mill
Milling rate	tph	304
Target grind	P80 µm	106
Specific mill power per t (feed)	kWh/t	16.1
Gravity gold circuit	type	Knelson concentrator + intensive leach
Leach + CIP (Hybrid)	Hours (residence time)	24

The elution, electrowinning, carbon regeneration and gold room circuits are standard to the industry. Tailings disposal is discussed in Section 18.6.

## 17.2 Description of the Existing Processing Facility (1.2 Mtpa Jubilee Processing Facility)

The Jubilee processing facility process flow sheet is shown in Figure 17-1. Key performance criteria relating to the 1.2 Mtpa Jubilee processing facility are included in Section 17-3.

**Figure 17-1: Jubilee 1.2 Mtpa Processing Facility Process Flow Sheet**



All the current production from the SKO mines and Frog's Leg (49%) is processed through the Jubilee processing facility. Ore from the various sources is separately stockpiled on the ROM pad and reclaimed by a front-end loader to the required daily blend specification. This is specifically done on the basis of hardness. The Jubilee processing facility was commissioned in 1987 and has a nominal capacity of 1.2 Mtpa.

### 17.2.1 Crushing, Milling, Gravity and Classification

Ore from the various sources is separately stockpiled on the ROM pad and reclaimed to achieve the required daily nominated blend. The process route comprises primary jaw crushing, secondary and tertiary cone crushing in closed circuit with screens, primary ballmilling, closed circuit secondary ball milling, cyanide leaching, carbon-in-pulp ("CIP") adsorption, split Anglo-American Research Laboratories ("AARL") elution, electrowinning, smelting and tailings disposal.

A gravity circuit treats a portion of the secondary ball mill cyclone underflow. Concentrate from a 30" Knelson concentrator is treated in an Acacia leach reactor with the leach solution reporting to the eluate tanks in the secure gold room for electrowinning. Solid tailings are returned to the mill discharge stream. The gravity circuit recovers approximately 30 to 40% of the overall gold recovered by the Jubilee processing facility.

### 17.2.2 Leach and Adsorption

Leaching takes place in three mechanically agitated 600 m<sup>3</sup> tanks, with a target cyanide concentration of 200 – 250 ppm. The pH is kept relatively low at ~9.1 due to the hypersaline water used in the process, which is 60,000 to 90,000 ppm total dissolved solids (“TDS”) used. Adsorption is performed in eight 375 m<sup>3</sup> mechanically agitated tanks with activated carbon advanced counter-current to the slurry flow by recessed impeller pumps. The adsorption tanks are split into two parallel trains. The carbon is loaded to a gold concentration of up to approximately 2,500 to 3,500 g/t. Slurry from the last two adsorption tanks is pumped over a tails screen.

### 17.2.3 Elution and Gold Recovery

Gold is eluted from the carbon by a conventional split AARL process, electrowon and smelted to produce Doré bullion. The elution circuit operates six days a week. Twice a week the cathodes are cropped, and the gold recovered. Gold electrowinning and smelting processes are performed inside a secure gold room following conventional practice in the Western Australian gold industry.

Metal accounting is performed weekly based on gold in plant feed, determined from predominantly hand sampling of slurry streams reconciled against gold in circuit and the weekly gold bullion production.

### 17.2.4 Tailings Disposal

Unthickened tailings are currently pumped to the previously worked out Samphire open-pit. SKO currently holds active TSF licence approvals for Samphire and additional TSF capacity in the historical Jubilee TSF (Tailings dam).

## 17.3 Historical 1.2 Mtpa Jubilee Processing Facility Performance

The following historical performance data for the 1.2 Mtpa Jubilee plant is shown in Table 17-2. This shows typical annual examples of the performance associated with the current processing facility.

**Table 17-2: Mill Performances Major Indices**

Plant History	Year	F2006	C2009
	Units	12 months	12 months
Tonnes	d mt	1,261,469	1,146,466
Recovery	%	89.3%	91.1%
Gold produced	oz	88,388	89,310
Cost/ tonne	AUD/t	12.76	18.39
Cost/ ounce	AU D/oz	184.00	236.06

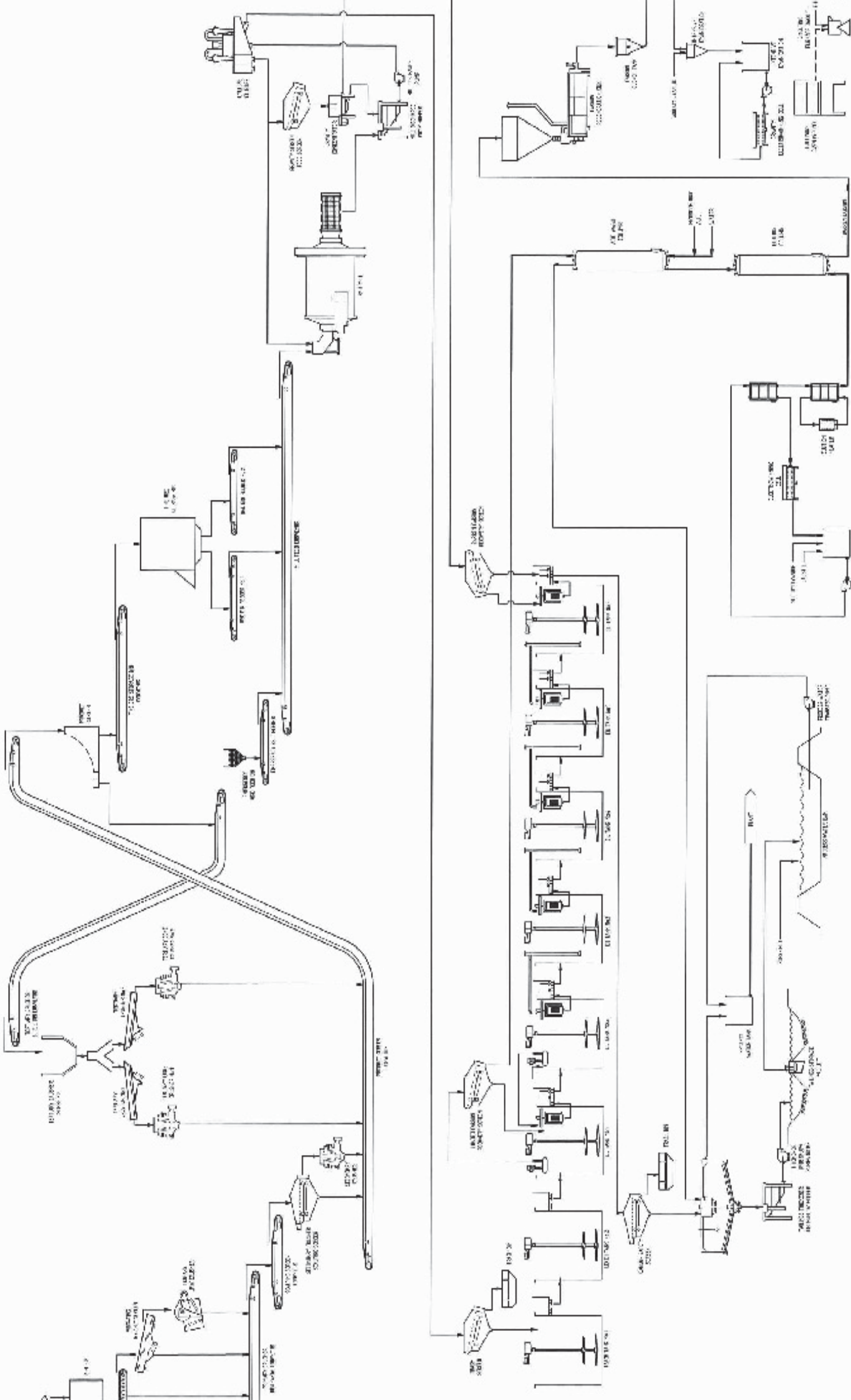
Historic records of reagent consumptions for the 1.2 Mtpa Jubilee processing facility are shown in Table 17-3.

**Table 17-3: Major Mill Consumables**

Plant History		F2007	C2009
	Units	12 months	12 months
Reagent Consumption			
Grinding Balls	kg/t	0.56	0.89
Cyanide	kg/t	0.62	0.96
Lime	kg/t	3.05	5.17
Caustic	l/t	0.21	0.25
Oxygen	m <sup>3</sup> /t	0.45	0.43
Carbon	kg/t	0.01	0.02
Lead Nitrate	kg/t	0.11	0
Acid	l/t	0.12	0.13
Natural Gas	l/t	0.16	0.16
Power	kWh/t	21.9	26.6

#### **17.4 Process Description for the new 2.5 Mtpa Processing Facility (SKOEP)**

The new 2.5 Mtpa processing facility will be constructed on the plant site previously occupied by the New Celebration treatment plant. The New Celebration processing facility site was deconstructed and cleared in 2008/9. This site is central to the expanded SKO pits and new TSFs. The process flow sheet for the new 2.5 Mtpa processing facility is included in Figure 17.2.



MAKER BUILD CORPORATION  
SULTAN BALUBALL MILL  
PROCESS FLOW DIAGRAM  
OVERALL SCHEMATIC

NO.	DATE
100000	10/10/2000
100000	10/10/2000
100000	10/10/2000



SCALE: 1:100  
DATE: 10/10/2000

DESIGNED BY: [Name]  
DRAWN BY: [Name]  
CHECKED BY: [Name]  
APPROVED BY: [Name]

NO.	DATE
100000	10/10/2000
100000	10/10/2000
100000	10/10/2000

ISSUED BY: [Name]

### 17.4.1 **Crushing, Milling, Gravity and Classification**

The new 2.5 Mtpa processing facility will comprise a three stage crushing circuit utilising a double toggle jaw crusher, a scalping screen and a single secondary cone crusher operating in open circuit. The secondary crusher product and scalping screen undersize will combine and report to a double deck product screen. Oversize from the product screen will be conveyed to the tertiary crusher surge bin. Each bin will be equipped with a vibratory pan feeder to meter the delivery of ore to each of the two tertiary cone crushers. Each tertiary crusher (Metso HP5 or equivalent) would have a 450 kW motor installed and operate with a closed side setting (CSS) of 13 mm to produce a product having 80% passing 9 mm. The tertiary crushers can be operated individually when the crushing plant is on reduced throughput allowing maintenance and liner changes to be performed on the tertiary crushers without complete loss of crusher productivity.

Product screen undersize material will be stored in a fine ore bin equipped with an emergency load-out door to facilitate the creation of an emergency mill feed stockpile.

The grinding circuit design utilised the available test work measured values for the Bond rod work indices and Bond ball work indices. The grinding circuit provides a high degree of flexibility to cope with the anticipated variations in the ore hardness and the long term trend toward 100% porphyry ore blends.

Key design criteria is listed below:

Feed ore F80	9,000 microns
Ore dry solids SG	2.7
Bond Rod work index	20.6 kWh/t (test work)
Bond Ball work index	14.7 kWh/t (test work)
Process water SG	1.06
Ball mill pinion power (calculated)	5,200 kW
Ball mill installed power	5,600 kW
P <sub>80</sub> Grind Size	106 microns

The single stage ball mill was selected to be 6.10 m diameter by 9.0 m long. The mill will be configured as an overflow mill. The ball charge volume would be 34% and the predicted grinding power available at the pinion was 4,950 kW when the consumed motor power was 5,200 kW. The mill will operate at 75% critical speed and will be fitted with a 6,000 kW drive motor and a reduction gearbox. An inching drive motor would be fitted for maintenance and relining purposes.

The ball mill will operate in closed circuit with the cyclone classification and a gravity circuit. The mill classification circuit will comprise a cluster of 400 mm cyclones with seven units operating. The cyclone overflow would report to a vibrating trash screen ahead of the leach and adsorption circuit while the cyclone underflow would return to the ball mill for further grinding. A bleed stream of cyclone underflow will be delivered to the gravity screen with the screen undersize feeding a 40" Knelson concentrator. Flow to the gravity circuit has been maximised to suit the inclusion of a single QS40 Knelson concentrator. The concentrator can be configured to use the same rotating assembly as the XD40 Knelson (as installed at Higginsville) but utilise a different bowl. The QS40 Knelson has higher capacity than the



XD40 but is comparatively priced. GRES believe this unit would be a sensible selection for Alacer given the commonality of rotating parts with the XD40.

#### **17.4.2 Leach and Adsorption**

The proposed leach circuit design is a hybrid CIL and will comprise two 2,250 m<sup>3</sup> mechanically agitated leach tanks. The tanks will be lined with a ultra high build (“UHB”) epoxy coating and mechanical agitation will be provided by 783Q150 Lightnin mixers fitted with 110 kW motors. The installed power has been modelled to suspend the maximum particle size expected from the grinding circuit.

Feed to the leach circuit will gravitate from the trash screen underflow into a stilling box which also serves as the leach tank feed distributor and by-pass system. Sodium cyanide solution will be metered into the slurry at this point to commence leaching.

The normal flow of pulp will be into leach tank 1 which overflows into leach tank 2. As an aid to the leaching kinetics, oxygen produced on site using a pressure swing adsorption (“PSA”) plant will be delivered under pressure down the leach tank agitator shafts.

The adsorption circuit will comprise six tanks having an operating volume of 1,100 m<sup>3</sup> per tank. Each adsorption tank will be fitted with a single, mechanically wiped intertank screen. As for the leach circuit, these tanks will be lined with UHB epoxy coating and mechanically agitated by Lightnin mixers fitted with 75 kW motors.

The loaded carbon pump mounted in adsorption tank 1 will deliver pulp at a flowrate of 80 m<sup>3</sup>/h to the loaded carbon screen. Loaded carbon will be removed by the screen as oversize and return pulp from the loaded carbon screen underflow will be directed into adsorption tank 1. The carbon inventory within the CIL circuit will be approximately 76 t.

The carbon advance rate (CAR) for the circuit to maintain soluble losses below 0.02 ppm is 4.3 tpd. To maintain soluble losses below 0.01 ppm the CAR is predicted to be 5.2 tpd.

#### **17.4.3 Elution and Gold Recovery**

The loaded carbon pump and screen will be sized to fill the elution column within four hours. So as to withstand the 120 °C operating temperature and wide range of pH conditions within the process, the 5 tonne capacity column will be fabricated from SAF2205 and serve the dual purpose of acid wash and elution.

The elution system will be designed to operate as a Zadra pressure leach process with the cycle time expected to be 16 hours for elution and 24 hours overall including the acid wash and rinse. Electrowinning cells will be installed inside the gold room building on a mezzanine floor. The electrowinning circuit will utilise stainless steel cathodes and high pressure water blasting to recover the precious metal sludge. Filtered sludge will be dried fluxed and smelted in a doré furnace located within the goldroom building. The furnace will be low pressure gas (“LPG”) fired and the drying oven will be electric.

To improve bullion security, the Acacia reactor that facilitates the intensive cyanidation of gravity concentrates will also be housed within the gold room.

#### **17.4.4 Tailings Disposal**

Tailings will be deposited in the current licenced TSF being used at SKO. The current facilities will last until mid way through 2015. Additional TSF locations will also be required after 2015 as the mine progresses. Potential new “in pit” tailings disposal locations will be assessed as part of the ongoing TSF investigations including the completed Celebration, Pernatty and Triumph open-pits.

An alternative TSF option is also currently being investigated by Alacer which uses “thickened tailings”. The concept of this option is to fully cover the old New Celebration TSF. The company is currently completing testwork to see if this is a viable option for the future. This option has not currently been included in this reserve estimation.

#### **17.4.5 Reagents**

##### **Grinding Media**

It is anticipated that grinding balls will be supplied to site in bulk. A drive in ball bunker will be provided and balls will be loaded into the ball mill by front end loader via the emergency hopper feeder in combination with crusher ore.

##### **Quicklime**

Quicklime will be stored in a bulk silo and dosed directly onto the mill feed conveyor at a rate controlled by a rotary valve, weightometer and variable speed drive (“VSD”).

##### **Cyanide**

The cyanide dosing system will operate on a ring main to supply reagent to the leaching area, elution and intensive cyanidation of gravity concentrates. As is the case at Higginsville, the cyanide mixing and storage facility will be leased through the supplier as part of the supply agreement. No allowance has been made in the capital estimate to construct this facility.

##### **Oxygen**

Oxygen will be produced on site using a PSA plant installed as part of the new plant construction. A back up system to the PSA would be deliveries to site from Kalgoorlie in liquid form. Oxygen gas will be generated by the PSA and dosed to the leach tanks via a flow control valve and rotameter.

##### **Sodium Hydroxide**

Sodium hydroxide will be supplied to site in liquid form at 50% w/w. A sodium hydroxide ring main system and automated dosing valves will make the required additions of caustic to the intensive cyanidation system and elution as needed.

##### **Hydrochloric Acid**

Hydrochloric acid will be delivered to site in liquid form at 32% w/w.

##### **Activated Carbon**

76 t of activated carbon will be required for the first fill of the additional CIL tank.

#### **17.4.6 Electrical and Instrumentation**

All of the major process equipment will be programmable logic control (“PLC”) controlled with the operations interface and control platform being a Citec software control and data acquisition (“SCADA”) system. To assist with technician training and workforce flexibility the configuration of the system will be developed in a similar format to the Alacer Higginsville treatment plant.

#### **17.4.7 Power requirements**

The current load for the SKO Jubilee processing facility is 4 MW with electricity supplied via the 33 kV grid system which extends from Kalgoorlie to Kambalda. The current power supply agreement ends on January 31, 2013. A tender for the new power supply agreement is currently in progress, with the plan to select a preferred supplier in Q2 2012.

As part of the SKOEP infrastructure upgrade the new 2.5 Mtpa processing facility will draw an estimated average load of 8 MW. Also included in the capital cost estimate associated with the surface infrastructure as shown in chapter 21 of this report is the requirement to upgrade the power reticulation system from Kalgoorlie-Boulder to SKO to accommodate the increased load on the 33 kV system currently feeding SKO. This will be designed to 10.5 MW to allow for maximum expected loads.

#### **17.4.8 Water**

For process water, detailed water balance has been completed as part of the SKOEP feasibility study. This work involves the evaluation of the water return from the various tailings storage facilities. All the process water used as part of SKOEP comes from decant return water or from existing water bores. As specified in section 21 cost provision has been made for the refurbishment of the existing New Celebration bore field on Location 50, to ensure that adequate process water is available for SKOEP. Also under consideration is the possibility of using thickened tailings for tailing placement. If this is justified it is expected the amount of process make-up water required will reduce significantly.

Fresh water for use in the elution circuit is sourced from local station stock dams. In addition to this, potable water is sourced for domestic use by way of the water quota agreement with the water authority of Western Australia (“Water Corporation”).

## 18.0 PROJECT INFRASTRUCTURE

### 18.1 Roads and Rail

SKO is accessed by existing road infrastructure, and there are no operational access impediments to the processing facility or the various mines. Major sealed national highways connect Kalgoorlie, Coolgardie and Kambalda and a railway exists between Coolgardie and Kalgoorlie and Kambalda, which connects Kalgoorlie to the port of Esperance in the south. SKO is located in the centre of the Kalgoorlie region and lies between the towns of Kalgoorlie, Coolgardie and Kambalda.

The existing 1.2 Mtpa Jubilee processing facility and the SKO administration office is located immediately northeast of the main highway connecting the mining centres of Kalgoorlie and Kambalda. There is a network of well-maintained compacted gravel roads linking the various SKO activity centers, tenements, open-pits, rock and tailings dumps and other miscellaneous infrastructure.

### 18.2 Tailing Disposal

The current SKO processing facility (Jubilee processing facility) has historically placed tailings in conventional above ground TSF, and completed open-pits. The plant is currently (as at December 2011) placing tailings to the Samphire pit and returning supernatant water back to the processing facility. There is also an alternative placement site available at cell 3B on the existing above ground Jubilee tailings storage facility.

As described in Section 17 of this report the existing TSF arrangement (under licence) at SKO will last until the middle of 2015. Following that time it is currently planned to use three new mined out open-pits for ongoing placement of tailings. These are the Celebration, Pernatty and Triumph open-pits.

Alacer is also currently considering a alternative option for tailings placement by placing “thickened tailings” on top of the old New Celebration TSF. Metago (SLR) Environmental Engineers (“Metago”) is currently working on the feasibility study associated with this option.

Metago has submitted conceptual designs for the “thickened tailings” option to Alacer which is suitable for placing tailings for a 10 year LOM at a deposition rate of 2.5 Mtpa dry solids equivalent.

Alacer sees the value in considering a high density tailings storage facility in the future at SKO due to the following reasons;

1. Ease of construction and operation of the high density TSF compared to a conventional TSF;
2. Lower water usage and management requirements;
3. The ability to recover and re use a significant percentage of the process water prior to placement of tailings;
4. Capital expenditure is reduced significantly due to the reduced need for costly ongoing embankment lifts; and

5. The ability to rehabilitate the TSF sequentially, after completion of each stage of the tailings placement.

For the purposes of this reserve estimation the “Thickened tailings” placement proposal has not been included.

The current placement of the tailings in the Sapphire Open-Pit (9 km west of the Jubilee plant) will continue as planned.

### **18.3 Power**

The following specialist consultants have been commissioned by Alacer and have delivered reports relevant to the proposed power supply upgrade required for the HBJ expansion project.

- MiNERGY Consulting – Investigation of power costs for the SKOEP (July 2011). The investigation was based on 8 MW average power demand and 70 GWh annual energy consumption. This will be followed by a tender for firm pricing which is planned to be completed by March 2012, in order to secure on-going electricity supply from January 2013 when the current supply agreement ceases.
- Hetherington Exploration & Mining Title Services Pty Ltd - Land tenure aspects associated with the relocation of an existing powerline that is currently located immediately west of the HBJ Open-Pit. This report is an assessment of the titles required under the Mining Act and other legislation to facilitate the relocation of the existing powerlines.
- BEC Engineering - Feasibility study and assessment of works for the relocation of approximately 5.5 km of TransAlta-owned Overhead 132 kV Powerline which currently runs alongside the west wall of the HBJ Open-Pit.

Western Power, the owner of the power system infrastructure and 33 kV power line has been responsible for the feasibility study, assessment of works and design for:-

- the relocation of approximately 5.5 kms of overhead 33 kV Powerline within the same easement as the 132 kV powerline; and
- the power system upgrade for the additional 10.5 MVA requirement for the new 2.5 Mtpa processing facility at the old New Celebration plant site, requiring upgrade of underground cabling from the Boulder substation, augmenting sections of powerline north of the SKO site, and installation of additional voltage regulators.

SKO, through its consultants and in collaboration with Western Power, has given due consideration to the following aspects related to the relocation of the 132 kV and 33 kV power lines:

- Route selection
- Land acquisition
- Permit approvals - environmental, aboriginal, ground disturbance
- Survey for final design
- Clearing of line route

- Design approval
- Pole manufacture
- Material procurement
- Survey for set out
- Pole and material delivery to site
- Excavation of pole and stay holes
- Erection of poles
- Installation of stay anchors
- Stringing of conductor and earthwire
- Testing and commissioning of new line
- Shutdown to tie in new line
- Demolition of existing line.

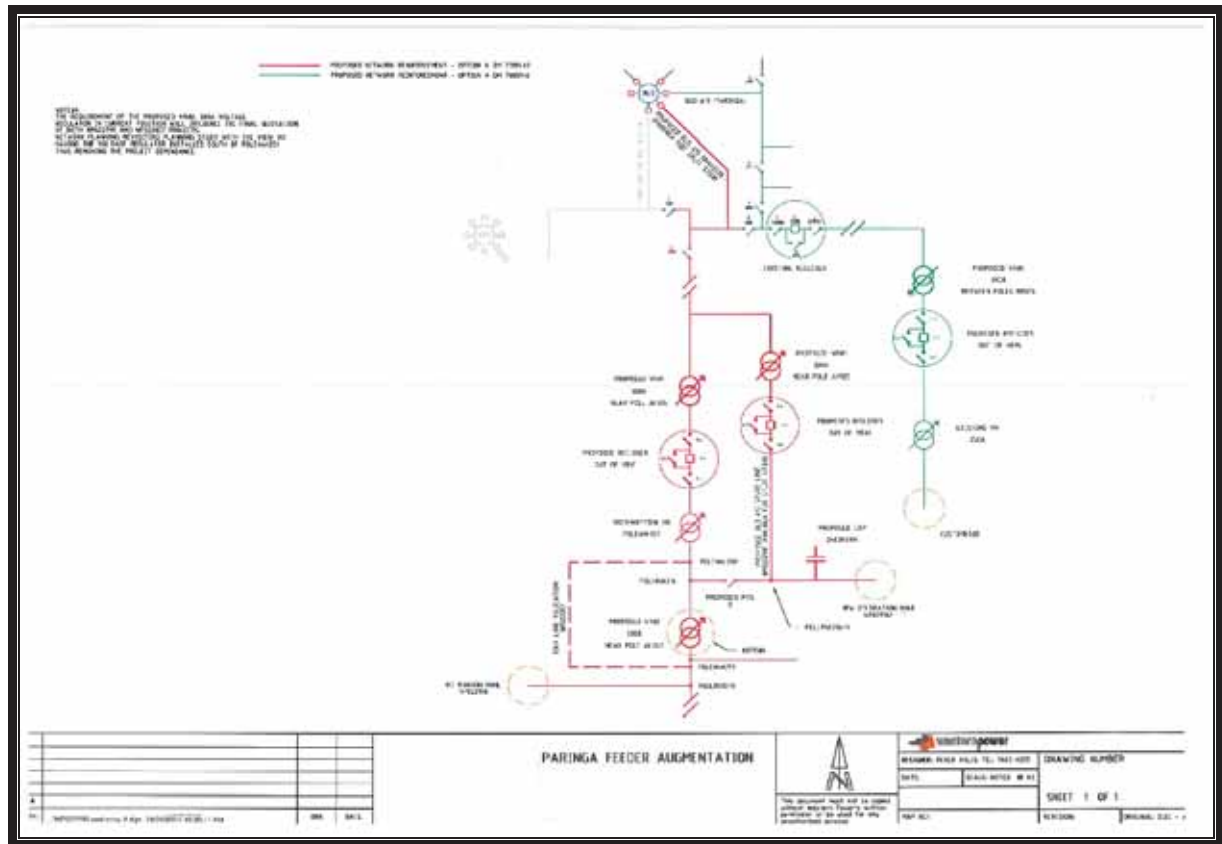
The power line relocation is planned to commence in early 2012, with completion and electrical tie-in in early April 2012. The final design and costing for the power system upgrade is expected from Western Power in March 2012, with the expectation that ordering of long lead items and preparations for the upgrade would commence in April 2012. There are no apparent impediments to the roll out of the project.



Figure 18-1: Power Line Overlay at SKO



**Figure 18-2: Schematic of the Power System Upgrade between Boulder Substation and SKO**



## 18.4 Water

Water required for the processing facility comes from several locations.

Raw water is extracted from the existing established SKO borefield located at Location 48. A second borefield is situated on Location 50, which was historically used to supply raw water to the New Celebration treatment plant. Although this has been decommissioned, all of the infrastructure, including securely fenced areas, bore collars, pipeline and valving, switchboards, telemetry equipment and overhead power line remains in tact. A capital cost provision has been included in this reserve estimate for the refurbishment of this bore field in the second half or 2014.

Raw water is also recovered through open-pit dewatering.

Raw water is stored in a lined pond serviced by the raw water pumps which supply the process water pond and other site services requiring saline water.

Process water is recovered from the Samphire open-pit tailings supernatant water. Capital has been included in this reserve estimate to upgrade the return water pumping system from Samphire open-pit to the processing facility process water dam. This upgrade in the return pumping system has been designed and costed to cater for the increase in plant capacity to 2.5 Mtpa.

Process water is stored in the lined process water pond from where it is distributed to plant user points.

Potable water for domestic use is sourced under a quota system arranged through the Water Corporation, and trucked in from the nearby city of Kalgoorlie as required. Fresh dam water has been sourced from a number of local stock water dams on the Woolibar station. This is normally used in the gold stripping process and has proven to be a reliable source over past years.

## **18.5 Communications**

The Telstra-owned optic fibre cable network runs alongside the main Kalgoorlie to Kambalda highway. Lateral feeders are already established from this line into the Jubilee site and the New Celebration site where the proposed new plant and infrastructure are planned to be located.

The SKO site also has adequate mobile phone coverage.

## **18.6 Accommodation and Messing**

Employees associated with the SKO reside in one of the nearby large regional centres. All accommodation and messing is done in one of these centre and employees are actively encouraged to support the local community. Transport to and from the site is via road with a series of different road transport options available.

## **18.7 Supply and Logistics**

As the nearby regional towns primarily service the mining industry any supply and logistical issues are generally limited and specific. The city of Kalgoorlie is serviced daily by regular flights from Perth.

## 19.0 MARKET STUDIES AND CONTRACTS

### 19.1 Markets

Gold can be readily sold through numerous markets and buyers throughout the world and it is not difficult to ascertain its market price at any particular time. Because of the active nature of gold markets, SKO is capable of achieving competitively priced transactions at the time of sale. SKO gold production is currently refined to market delivery standards by the Perth Mint (Perth, Australia). Due to the availability of alternative refiners, no material adverse effect would result if the Perth Mint was unable to process SKO's product.

### 19.2 Contracts

The key contracts currently in place at SKO are listed in Table 19-1.

**Table 19-1 Summary of Key Contracts**

Contract	Contractor/Supplier	Status
Mining Equipment Hire & Maintenance	Emeco International Pty Ltd	Interim agreement in place; final 3-year contract drafting for execution in early 2012.
Drill & Blast	Jarrahrefire Drilling	Interim agreement in place; final contract drafting for execution in early 2012
Explosives Supply	Dyno Nobel Asia Pacific Pty Ltd	Current – expires 31 December 2012
Grade Control Drilling	Total Drilling Services Pty Ltd	Current – expires 31 December 2012
Ore Haulage	IES Resources Pty Ltd	Current – expires 31 July 2012
Electricity Supply Agreement	Premier Power Sales Pty Ltd	Current – expires 31 January 2013; Tender for new contract in progress
Refining Agreement	Novated from AGR Matthey to West Australian Mint in March 2010	On-going; ceases upon termination by either party
Cyanide Supply	Australian Gold Reagents Pty Ltd	Current – expires 30 April 2012

*Notes: the Emeco contract above was selected as the preferred option when compared to pricing that was supplied by three different mining contractors as part of the study in 2011. Emeco supplies the equipment and maintenance services and HBJ employee the operators. All other contract rates for drill and blast, and ore haulage are well within industry norms, by comparison with recent tenders carried out for other WA sites within the Alacer Group.*



## **20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

### **20.1 Environmental Studies**

#### ***New Celebration Tailings Storage Facility***

In the past twelve months studies have been conducted into the leakage problems surrounding the existing New Celebration TSF's. Throughout its history several studies have failed to ascertain the exact technical reasons to why leakage problems have occurred with New Celebration TSF. Each month approximately 6,000 – 8,000 m<sup>3</sup> of discharge water is reporting to catchment areas immediately surrounding the historical TSF's.

In 2011 SKO implemented a detailed study of the in situ water existing in the TSF's. Penetrometer tests revealed that the TSF's were effectively dry and should not be the cause of 6-8,000 m<sup>3</sup> of discharge per month being currently managed. Closer observations during rainfall events showed considerable groundwater recharge occurring along fault lines on the northern side of the TSF causing the suspected closed aquifer to recharge during rainfall events. An electromagnetic survey conducted over the TSF site highlighted the conduits and desired pathways that water was taking to re charge the aquifers in the area. Subsequently the company has installed additional bores to help manage the water and these bores are now starting to impact the groundwater levels surrounding this facility. Within two months of establishing production bores the monitoring bores have dropped between 0.5 and 4.0 m depending on their distance from the production bores.

This work has been done as part of the investigation into the potential of using "thickened tailings" at the New celebration TSF associated with the 2.5 Mtpa SKOEP evaluation and the ongoing desire by the company to manage the new Celebration TSF groundwater levels. The "thickened tailings" option potentially provides a long term solution to the water recharge issue with the aquifer through the ability to contour the surface water run off more effectively.

#### ***Jubilee Tailings Storage Facility***

The seepage production bores along the toe of the Jubilee TSF were reinstated and pumped to capacity during 2011, resulting in the water levels of all SKO's monitoring bores falling below the required 6.0 m in depth. This pumping rate will be maintained to ensure compliance with SKO's licence conditions.

### **20.2 Waste and Tailing Disposal, Site Monitoring, and Water Management**

Tailings disposal will continue into the Sapphire open-pit, followed by the completion of the Jubilee TSF cells and other small open-pits as discussed in Sections 18 and 19 in this report.

In relation to the work that is currently being done on the longer term "thickened tailings" option, the final design has been compartmentalised to ensure that progressive rehabilitation can occur and reduce the closure liability. Suitable material will be placed on completed cells so that the closure liability is only the last two years of deposition. This innovative approach has been widely accepted by the regulatory authorities. The area designated for this tailings





required to expand the mining projects with the Mt Martin clearing permit the only outstanding issue. SKO has existing clearing permits over Mt Martin but will need to amend these to ensure sufficient clearing is permitted for the waste dump. The flora and fauna surveys have been carried out for this project and will be submitted when the final reports are received.

## **20.4 Social or Community Requirements**

The local community was informed of SKO's intentions at a forum designed to look into future activities in the Kalgoorlie/Boulder region. Apart from this, the local pastoralist is regularly updated on the proposed mining activities at SKO.

## **20.5 Mine Closure**

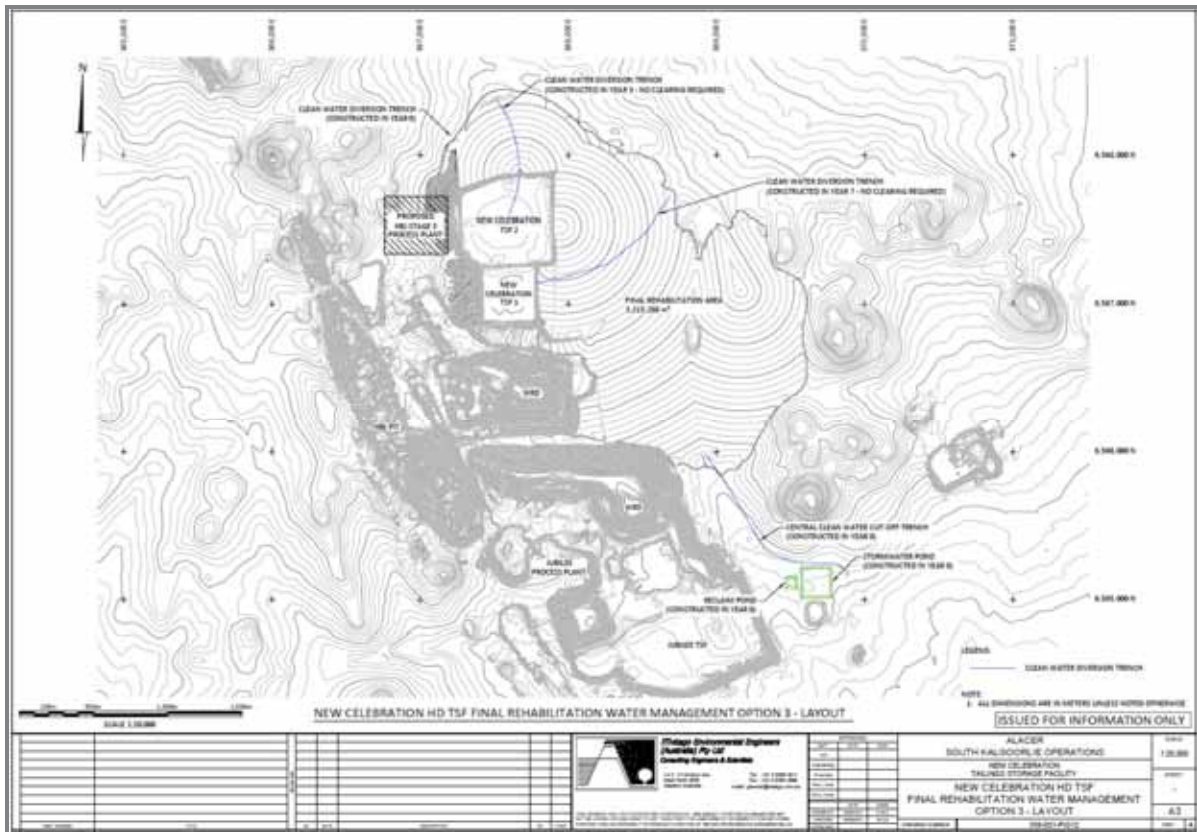
The current closure liabilities are recorded on a spreadsheet (as shown under Section 4.5) and costings are estimated by applying a rating system to the extent the rehabilitation has been completed and the costs associated with completing the rehabilitation of the site and the on going monitoring required to achieve closure.

SKO has recently engaged consultants to prepare mine closure plans supported by liability assessments which meet the standards and requirements of internal and external stakeholders for Alacer projects in Australia.

The first phase of this is to prepare aligned templates such that all of the various project areas at SKO have closure plans and liability assessments completed in an aligned format.

The DMP have requested that SKO prepare closure plans for all of the Mining Leases where mining activities have been undertaken.

Figure 20-2: SKO Tailings Storage Facilities and water management at closure



## 21.0 CAPITAL AND OPERATING COSTS

### 21.1 Capital Cost

A detailed assessment of the capital cost has been included in the economics considerations associated with SKOEP and the associated reserve estimation process. The various capital cost estimates described in this chapter are listed below.

- New 2.5 Mtpa processing plant including critical spares and first fill items.
- Power supply infrastructure.
- Project management.
- TSF and tailings placement infrastructure.
- Raw and process water infrastructure.
- General surface infrastructure.
- Open-pit infrastructure and mine development including pre strippings associated with push backs (cut backs).
- Underground infrastructure and mine development.
- Environmental closure requirements.

#### 21.1.1 *New 2.5 Mtpa Process Plant Capital Cost*

As summarised in Table 21-1, a capital cost estimate for the new 2.5 Mtpa process plant was developed at feasibility level and estimated at \$93.7M. The plant would include 3 stage crushing, single stage ball milling, gravity gold circuit, hybrid leach/CIL, carbon acid wash and elution column, regeneration kiln, gold electrowinning and smelting.

**Table 21-1: Capital Cost Estimate for New 2.5 Mtpa Process Plant**

Description	\$A Estimate
AREA 200 - PLANT SITE BULK EARTHWORKS	\$416,563
AREA 310 - CRUSHING	\$19,782,269
AREA 320 - ORE STORAGE	\$6,059,796
AREA 330 - GRINDING AND CLASSIFICATION	\$11,732,300
AREA 332 - GRAVITY CONCENTRATION	\$1,296,348
AREA 340 - LEACH AND ADSORPTION	\$11,780,680
AREA 350 - ELUTION / GOLD RECOVERY	\$3,176,088
AREA 360 - REAGENTS	\$2,120,133
AREA 370 - POWER AND RETICULATION	\$10,680,454
AREA 390 - WATER STORAGE & RETIC	\$955,961
AREA 391 - WATER SUPPLY	\$94,962
AREA 400 - TAILINGS THICKENING & DISPOSAL	\$2,043,968
AREA 420 - AIR COMPRESSORS	\$978,753

Description	\$A Estimate
AREA 440 - WORKSHOPS/ STORES.	\$75,114
AREA 499 - PLANT PIPING	\$5,228,164
AREA 804 - CONSTRUCTION EQUIPMENT	\$4,970,692
AREA 500 - ENGINEERING.	\$10,793,573
AREA 510 - COMMISSIONING.	\$922,830
AREA 600 - TEMPORARY FACILITIES	\$617,819
<b>TOTAL CAPITAL ESTIMATE (±15%)</b>	<b>\$93,717,467</b>

The 2.5 Mtpa process plant capital cost estimate included in Table 21.1 has been supplied by GRES.

Alacer has included an additional cost estimate of \$3.8 M to cover the cost of insurance spares, reagents and consumables, first fill stocks and other owner costs, including insurance.

The resultant total 2.5 Mtpa process plant capital cost is \$97 M.

### 21.1.2 Power Supply Infrastructure

The capital costs associated with the power line relocation project and the power system upgrade project are summarised in Table 21-2.

**Table 21-2: Capital Cost Estimate for the Power Infrastructure**

Description	\$A Estimate
TransAlta 132kV Power line relocation 5.5km	\$4.1M
Western Power 33kV Power line relocation 5.5km	\$1.7M
Western Power - Power System Upgrade	\$7.2M
<b>Total</b>	<b>\$13.0M</b>

Relocation of the existing 132 kV and 33 kV power lines is required to enable the cutback on the HBJ pit west wall and enable waste dumping to the west of the open-pit. The design and installation of the 132 kV power line will be carried out by engineers and constructors nominated by TransAlta, the owner of the 132 kV line. The cost estimate for this has been provided as a firm price by the nominated engineers/constructors. The design and costing for the 33 kV power line has been provided by the owner, Western Power who will also carry out the installation works. This also includes provision to disconnect and re-align a section of the 33 kV spur line that currently feeds the Location 50 borefield and the Woolibar station homestead.

The power system upgrade is required to accommodate the additional 10.5 MVA supply to the new 2.5 Mtpa treatment plant. This includes upgrading the sub-surface cable from the Boulder sub-station, augmenting a section of the overhead power line north of SKO and

installing additional voltage regulators. The preliminary design and costing has been provided by Western Power, who will also carry out the upgrade works.

### **21.1.3 Project Management**

Provision has been made for specific project management cost of \$1.7 M for all capital projects specifically relating to SKOEP.

### **21.1.4 Tailings Storage Facility(TSF) and Tailings Placement Infrastructure**

Provision has been made for \$5.3 M, in the 2012 year to establish a larger capacity tailings disposal system from the new plant to the Samphire open-pit to enable continued placement into the Samphire open-pit until it is completely filled. This is expected to continue at least until 2014. A provision of \$2 M has been made in 2014 for the raising of the Jubilee TSF to the licence approved level. A provision of \$0.5 M in 2015 and \$0.25 M in 2016 have been made for the relocation of tailings lines and the establishment of new TSF at Celebration, Pernatty or Triumph Open-pits.

### **21.1.5 Raw and Process water infrastructure**

Provision has been made for \$1.3 M in 2012 for upgrading of the process water return line from the Jubilee return water pond to enable on-going pumping of Jubilee bore water to the Celebration open-pit immediately north of the new plant site. The existing Samphire return water line will be connected to this new line to enable continued dewatering of the Samphire open pit, allowing for on-going tailings disposal into Samphire. This infrastructure will ensure that the return water capacity is in line with the new 2.5 Mtpa processing facility.

An additional \$0.25 M provision has been made in 2013 for the establishment of return water from the Butterfly open-pit. An additional \$0.3 M has been included in 2014 for the establishment of water return from the Celebration open-pit. In 2015 \$0.5 M has been included for the refurbishment and re establishment of the Jubilee bore field.

### **21.1.6 Other Infrastructure**

Provision has been made for \$10 M, spread over 2012 and 2013 for the remaining infrastructure, other than the process plant. This includes total site bulk earthworks, the main office complex, mining fleet workshop and fuel storage/dispensing facilities, plant maintenance workshops, stores and laboratory, and all associated services.

### **21.1.7 Open-Pit Infrastructure and Mine Development Provision**

Provision has been made for \$116.7 M for open-pit infrastructure and mine development. The large majority of this is for the pre stripping associated with the HBJ and Mt Martin open-pits. \$97 M is associated with pre stripping associated with the HBJ Open-Pit push back (cut back) in 2012 and 2013. \$17 M is associated with Mt Martin push back(cut back) in 2013. The method used for determining the waste allocation to capital pre stripping was the waste mining required above the overall open-pit stripping rate. Due to the nature of the push backs for the HBJ and Mt Martin open-pits this is considered a reasonable allocation method. No pre stripping provisions have been made for Pernatty or Triumph in the consolidated model.

The remaining \$2.7 M in this capital costs belongs to various mine establishments, including sustaining capital and mine closure.

### 21.1.8 **Underground Infrastructure and Mine Development**

Although not included in the specific requirements of the reserve estimation associated with this technical report provision has been made in the consolidated financial model for SKOEP shown in Section 22 of this report for the capital costs associated with the Frogs Leg mine. The capital cost used in the model is purely estimated for the purpose of the model and in no way reflects any detailed reserve information for that mine.

### 21.1.9 **Environmental Closure Requirements**

A provision of \$17 M has been made for the closure requirements associated with SKO as outlined in Section 20.

## 21.2 **Mine Operating Costs**

The average unit open-pit mine operating costs applied in the SKOEP economic evaluation are summarised in Table 21-3. These cover the cost of mine management, mine geology, drill and blast, load and haul and ore haulage to the plant.

**Table 21-3: Average Unit Open-Pit Mine Operating Costs**

	HBJ	Mt Martin	Pernatty	Triumph
Ore, \$/t	\$2.90	\$2.84	\$3.37	\$4.22
Waste, \$/t	\$2.40	\$2.75	\$3.35	\$4.05
Grade Control, \$/t	\$2.10	\$2.10	\$2.50	\$2.50
Ore haulage to plant, \$/t	\$0.00	\$3.76	\$3.04	\$3.11

The ore and waste mining operating costs (\$/t) shown in the table above include the following costs;

- Mining equipment costs associated with hiring equipment from supplier (Emeco) and the associated machine running costs. This includes equipment hire cost, equipment supplier overheads, fuel usage, ground engaging tools (“GET”), tyres and an estimate for equipment damage. These costs have been derived from first principles and the use of the OEM specifications. The specifications are used for capacities, swing times, load times and dump times. The calculations also take into account haulage travel times for dump trucks where the calculations are based on 5 m vertical incremental haul profiles. The main difference in the costs between ore and waste is based on the different dump locations.
- Operators costs including salaries and oncosts for the operators and mining supervisors. The number of personell is based on equipment numbers and types crossed reference to the current work cycle. Provision has been made for expected salary increases based on Western Australian CPI index.
- Drill and Blast costs using the current drill and blast contractors rates (Jarrahfire). These rates include drilling holes, loading holes with explosives, explosives, and shot firing. The rates are also cross referenced with the various patterns selected by SKO for the different material types.



- Mining department overhead costs which include management and technical staff salaries, consumables, light vehicles, and miscellaneous hire equipment.

In the consolidated model shown in Section 22, a provision has also been made for the rehandling component of all stockpiles which accumulate in the treatment schedule. The operating cost for this has been estimated at \$0.80 /t.

For completion the consolidated economic model discussed in Section 22 of this report takes into account the capital and operating costs associated with the Frogs Leg mine(49%). The estimated unit mining costs applied to Alacer's 49% share of Frog's Leg ore treated at SKO are summarised in Table 21-4.

**Table 21-4: Frog's Leg (49%) Unit Underground Mine Operating Costs**

	Frog's Leg UG (49%) Unit Costs
Ore Mining, \$/t	\$45.00
Owner/Management, \$/t	\$8.00
Geology, \$/t	\$5.00
Ore haulage to plant, \$/t	\$9.00

### 21.3 2.5 Mtpa Treatment Plant Operating Costs

The operating cost estimate was produced from first principles using the existing cost profile for SKO's 1.2 Mtpa Jubilee plant as a benchmark. The power cost has been calculated using the forecast average unit rate of A\$0.162 per kWh. The power usage is derived from the installed load list developed for each plant scenario and the application of anticipated power draw factors. The current electricity supply agreement ceases at 31 January 2013 and a tender for a new agreement will commence in early 2012.

The operating estimates have been prepared using information extracted from monthly reports for the Jubilee processing facility during 2008, 2009 and 2010 calendar years and the unit costs for consumables and services are based on estimates established in the fourth quarter of 2010 calendar year. Table 21-5 includes a summary of the treatment plant unit operating cost estimate.

In the consolidated model in Section 22 the 2012 processing cost is associated with the current 1.2 Mtpa Jubilee processing facility. This cost is \$18/t compared to the 2.5 Mtpa \$15.47/t shown below.

**Table 21-5: Operating Cost Estimate for New 2.5 Mtpa Process Plant**

Cost Element Description	Processing Unit Costs
Labour (operations and maintenance)	\$2.68
Maintenance Materials (other than wear parts)	\$0.53
Wear Materials & maintenance wear spares	\$2.73
Reagents	\$3.99
Power	\$4.47
Other costs	\$1.09

Cost Element Description	Processing Unit Costs
Cost per Tonne (\$/t)	\$15.47

## 21.4 General and Administration Operating Costs

The estimated General and Administration Operating costs applied in the SKOEP economic evaluation are summarised in Table 21-6 below. This cost has been estimated from the current SKO G&A cost profile.

**Table 21-6 General & Administration Costs**

	G & A Unit Costs
Admin/Services	\$2.00
OH&S, Environment	\$1.00
Total G&A	\$3.00

## 22.0 ECONOMIC ANALYSIS

All financial numbers in this Section 22 are in United States dollars (USD) and all financial analyses are pre-tax.

An economic evaluation of the SKOEP was completed based on a consolidated financial model. This model brings together the mine production from the four separate open pits included in this technical report and estimated ore delivery from the Frog's leg mine (49%). The model was based on the currently known reserves and disregards any potential upside relating to other mineral resources within the SKO land holding or at Frog's Leg.

The mining schedule included in the consolidated model for the Frog's Leg mine (49%) is a production estimation based on mining and processing of 1,000t of ore per day, which has historically been achieved from the existing operation. The cost of mining the Frog's Leg ore was also based on historically achieved rates for development and stoping and takes into consideration all overhead costs associated with mining of the orebody. Costs for waste development have been capitalized.

Separate standalone independent financial evaluations were completed for the four open pits included in this report (HBJ, Mt Martin, Pernatty, and Triumph).

In addition to the capital cost and unit operating cost estimates set out in Section 21 and the royalty rates set out in Table 22-3, the principal economic assumptions made in the financial analysis are the gold price and the USD:AUD exchange rate. Each of these has been varied by year as shown in Table 22-1. The gold price forecast used was based on a weighted average of analysts' consensus forecast sourced from Bloomberg and the prevailing GFMS forecast as of September 2011. The exchange rate for the AUD vs. the USD was based on analysts' consensus forecast sourced from Bloomberg as of September 2011. The weighted average gold price used is US\$1300 per ounce.

**Table 22-1 Principal Economic Assumptions**

Year:	2012	2013	2014	2015	2016	2017
<b>Gold Price, \$A/oz</b>	\$1,514	\$1,566	\$1,412	\$1,282	\$1,210	\$1,210
<b>USD:AUD</b>	1.080	1.025	0.992	0.950	0.909	0.909

Table 22-2 shows the consolidated standalone SKOEP Annual Production Schedule and Cashflow Forecast.



**Table 22-2 Annual Production Schedule and Cash Flow Forecast**

	2012	2013	2014	2015	2016	2017	2018	2019	TOTAL LOM
Open Pits - Ore Mined (t)	1,092,762	1,988,901	3,440,361	4,154,435	630,543	0	0	0	11,307,002
Grade (g/t Au)	1.7	1.4	1.3	1.3	1.8	0.0	0.0	0.0	1.4
Contained Gold (oz)	58,903	90,598	145,744	172,838	36,369	0	0	0	504,451
Underground - Ore Mined (t)	345,541	337,489	355,671	255,836	228,407	213,900	205,556	138,600	2,081,000
Grade (g/t Au)	6.1	6.1	5.6	6.1	5.8	5.7	5.4	4.4	5.8
Contained Gold (oz)	68,121	65,863	64,037	50,175	42,812	38,855	35,952	19,562	385,377
Total - Ore Mined (t)	1,438,303	2,326,390	3,796,032	4,410,271	858,950	213,900	205,556	138,600	13,388,002
Grade (g/t Au)	2.7	2.1	1.7	1.6	2.9	5.7	5.4	4.4	2.1
Contained Gold (oz)	127,024	156,461	209,781	223,012	79,181	38,855	35,952	19,562	889,828
Total - Ore Treated (t)	1,200,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	849,402	138,600	14,688,002
Grade (g/t Au)	3.1	2.0	2.0	1.8	1.7	1.5	2.2	4.4	2.0
Contained Gold (oz)	120,591	161,432	158,043	143,539	140,317	124,022	59,938	19,562	927,445
Recovery (Au)	91%	92%	93%	93%	93%	93%	94%	95%	-----
Recovered Gold (oz)	109,816	148,446	146,458	133,561	130,376	115,266	56,221	18,584	858,729
Total Cash Generation	USD (98,770,104)	26,398,935	37,164,637	47,403,767	75,573,507	64,026,464	25,604,658	(5,832,061)	\$171,569,804

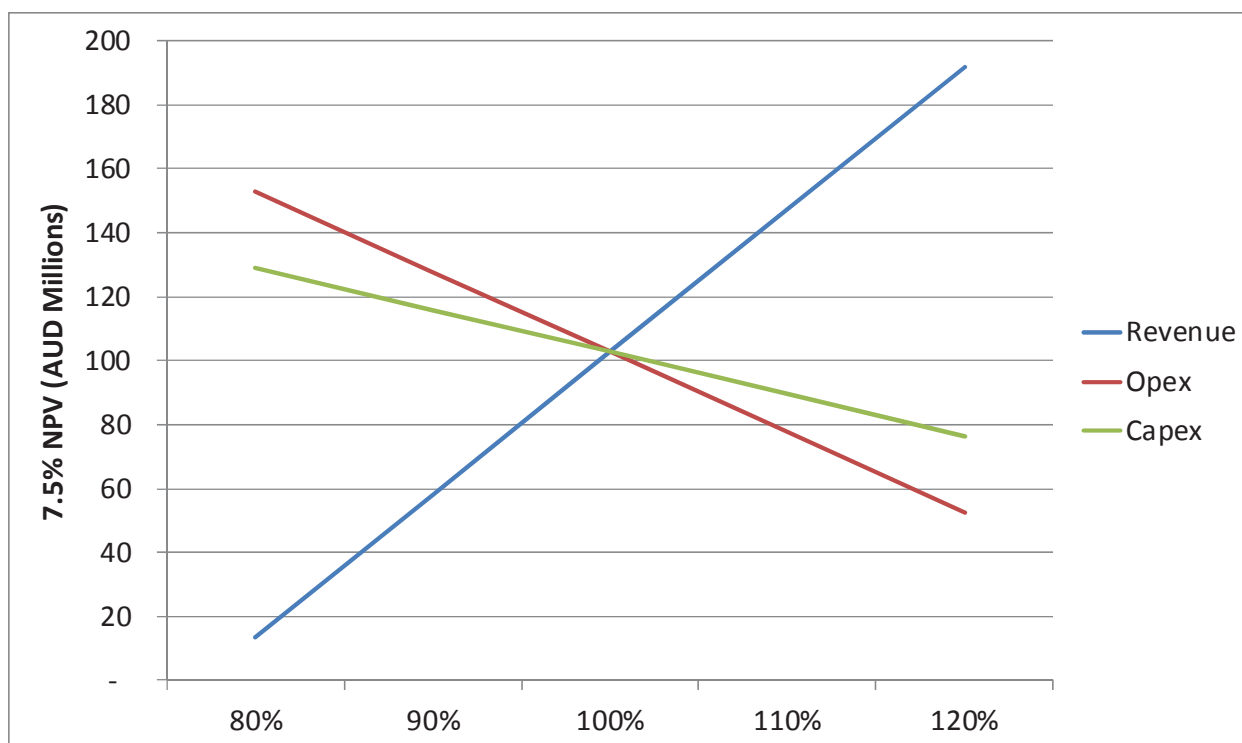
The consolidated standalone model estimates a pre-tax net present value of \$103 million as at January 1, 2012 using a discount rate of 7.5%. The internal rate of return on the \$98 million usage of cash in 2012 is 41% on a standalone basis. Payback of this cash is estimated to occur after approximately 2.5 years in mid 2015. The results shown above are based on Mineral Reserves only and do not account for any value from additional resources at SKO or Frog's Leg.

Royalty charges are applicable to production from various land holdings as shown in Table 22-3. These royalty charges have been included in the calculation of the cash flow forecast in Table 22.2.

**Table 22-3 Royalty Payment Calculation Methodology**

Royalty	Method of Calculation	Applicable to
WA State Royalty	2.5% of revenue from gold produced	Triumph and Frog's Leg (49%)
Newcrest Royalty	\$10 per ounce produced	HBJ, Pernatty and Triumph
Franco Nevada Royalty	1.75% of revenue from gold produced	Mt Martin
HTA (Pacific Nevada)	1.75% of revenue from gold produced	HBJ, Pernatty and Triumph

Figure 22-1 shows the sensitivity of the 7.5% net present value to gold price, capital expenditure and operating costs. This sensitivity is based on varying these parameters -10% to +10%. The sensitivity analysis shows that a 10% change in the gold price would change the 7.5% net present value by \$89 million, a 10% change in the operating costs would change 7.5% the net present value by \$50 million and a 10% in capital expenditure would change the 7.5% net present value by \$27 million.

**Figure 22-1 SKOEP Project Sensitivity – Gold Price and Costs**


## **23.0 ADJACENT PROPERTIES**

No reliance was placed on any information from adjacent properties in the estimation and preparation of the resources and reserves reported in this technical report. Adjacent properties are therefore deemed not material to this report.



## **24.0 OTHER RELEVANT DATA AND INFORMATION**

No reliance has been placed on other relevant data and information. This is not considered necessary to make this technical report understandable and not misleading.

## 25.0 INTERPRETATION AND CONCLUSIONS

The geological understanding of the SKO continues to evolve rapidly as work continues on the exploration program and the resource drilling/interpretation to convert known inferred resources to indicated resources. The knowledge acquired and the conversion rate achieved over the past 12 months confirms the ongoing potential of SKO.

Alacer considers that this high level of ongoing conversion combined with the proposed exploration and development strategy reflects the potential of the SKOEP.

The case based on Indicated Mineral Resources only followed a detailed optimization, design and scheduling process for the HBJ, Mt Martin, Pernatty and Triumph open pits. Appropriate costs and other suitable modifying factors were used to generate optimization shells and the highest “practical” cash flow shell was used to guide the mine designs. Each of the four pit designs were scheduled on a monthly basis to generate the individual mine schedules and a consolidated SKOEP schedule. Mining, processing and other appropriate costs were then applied to the financial models to generate a pre-tax cashflow model. The cashflow for each of the four open pits was determined to be positive in all cases when considering the mineralized material generated from the diluted Indicated Mineral Resources, and regarding all other material as waste. Based on this a Mineral Reserve can therefore be reported for each of the four open pits detailed in Table 25-1.

**Table 25-1 Ore Reserves for the South Kalgoorlie Operations as at December 2011**

Asset/Project	Lower cut off grade, Au g/t	Tonnes '000	Grade g/t Au	Contained Ounces '000
HBJ	0.45	9,329	1.3	380
Mt Martin	0.60	1,250	1.9	77
Pernatty	0.60	304	2.3	22
Triumph	0.60	424	1.8	25
Total Stockpiles		1,142	1.0	38
<b>Total</b>		<b>12,449</b>	<b>1.4</b>	<b>542</b>

The current reserves are based on the new 2.5 Mtpa processing plant as detailed in the SKOEP outlined in this technical report. These reserves will be mined out in 5 years and processed in a little over 6 years. The company has plans to continue an active exploration program and to continue converting Mineral Resources to Mineral Reserves as the mining progresses. The company is not aware of any significant risks or uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information, mineral resource or mineral reserve estimates associated with this technical report.

The consolidated treatment schedule and cash flow forecast also includes the ore received from the Frog's Leg mine (49%). The Frog's Leg mine is managed and operated by LMA. The joint venture agreement has the mine operator delivering ore to the surface and Alacer removing its share (49%) for treatment at SKO. Alacer has estimated the ore delivery schedule and associated costs from the revised forecast received from LMA in 2011. There is a level of uncertainty that exists with the current Frog's Leg information included in the consolidated financial evaluation in section 22. This information is based on an estimated delivery schedule of ore from the mine which is managed by another company (La Mancha

Resources). This however does not affect the resource and reserve estimations presented in this report as they are the mines owned and managed by Alacer (100%).

## 26.0 RECOMMENDATIONS

The SKOEP will require continual optimisation and review as new information becomes available as the project progresses over time. The new 2.5 Mtpa treatment plant associated with SKOEP will be subject to ongoing evaluation. As of the date of this technical report the board of directors of Alacer has made no decision to proceed with the new 2.5 Mtpa treatment plant.

The recommendations itemised below relate to the operating strategy outlined in this technical report.

- Actively continue with the planned exploration strategy in the area over 2012 (\$18 million budget for 2012) and beyond to maximise discovery opportunity and ensure that a high conversion rate from resources to reserves is achieved.
- Complete the resource drilling associated with the northern end of the HBJ open pit including the Mutooroo area and re optimise the resources to increase the reserves associated with the HBJ open pit. This work is expected to be completed in Q1 2012 and estimated cost for this work is included in the \$18 million exploration budget listed above.
- Finalise the resource drilling and complete new Mt Martin resource so that a new Mt Martin reserve can be potentially considered in Q2 2012. This work is expected to be complete in Q1 and Q2 2012. Review the potential for a DFS on any potential underground resources associated with Mt Martin. The estimated cost for this work is included in the \$18 million exploration budget listed above.
- Optimise the mining schedule and review the mining sequence for the Frogs Leg mine (49%) to potentially improve project value.
- Continually re optimise the HBJ, Mt Martin, Pernatty and Triumph open pits as new information becomes available. This work is included in the normal mining department costs associated with the SKO 2012 operating budget.
- Review the mining schedule associated with the consolidated treatment schedule and financial model as the stockpile volumes are large towards the end of the mine life. Further work should be evaluated to investigate if a “just in time” mining approach would increase the SKOEP value. This work is included in the normal mining department costs associated with the SKO 2012 operating budget.
- Following review at a PFS level, the HBJ Underground DFS should continue. This is a major resource that requires an in depth mining study and could significantly increase the SKOEP production profile and mine life. The PFS work is included in the \$25 million budget for first stage SKOEP listed above. The cost and timing associated with the ongoing DFS for the HBJ underground will be assessed as part of stage 1.
- Following review at a PFS level, the Mt Marion Underground DFS should continue. This is another potential higher grade resource that will potentially enhance the SKOEP production profile and mine life. The PFS work is included in the \$25 million budget for first stage SKOEP listed above. The cost and timing associated with the ongoing DFS for the HBJ underground will be assessed as part of stage 1.
- Complete the technical evaluation of the thickened tailings placement option for possible consideration for potential inclusion in SKOEP. No estimated cost and work schedule

has been determined for this option at the time of this technical report, however provision has been made for continued tailings disposal into existing, currently licensed SKO tailings storage facilities.

## 27.0 REFERENCES

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## 28.0 CERTIFICATES OF QUALIFIED PERSONS

I, Chris Newman, of Perth, Australia do hereby certify:

That I am Executive Vice President with Alacer Gold Corporation with a business address at PO Box 1156, West Perth WA 6872

1. This certificate applies to the technical report titled "SKO NI 43-101 Technical Report" dated March 30, 2012 with an effective date of March 26, 2012 (the "Technical Report").
2. That I am a member in good standing of the Australian Institute of Geoscientists (MAIG - 4705) and the Australian Institute of Mining and Metallurgy (MAusIMM – 207985)
3. That I am a graduate of the Australian National University, with a Bachelor of Science Degree with Honours, 1988.
4. That I have worked as a geologist for over 23 years. My work experience spans grassroots and brownfields exploration, resource and project development, and open pit and underground mining with Western Mining Corporation, BHP Billiton, Alcoa, Avoca Resources and Alacer Gold. This experience dominantly covers gold, copper, nickel and iron ore deposits
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that I am a "qualified person" for the purposes of NI 43-101.
6. That I, Chris Newman last visited the SKO project during February 1<sup>st</sup> – 2<sup>nd</sup>, 2012 for 2 days.
7. I am solely responsible for sections 4-12 and sections 14 of the Technical Report and jointly responsible for sections 1-3 and 25-27.
8. I am not independent of Alacer as described in Section 1.4 of NI 43-101.
9. I have read NI 43-101 and the parts of the Technical Report for which I am responsible have been prepared in compliance with that instrument.
10. That as of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed this 30<sup>th</sup> day of March, 2012 at Perth, Western Australia.

*Original document signed and sealed by*

"Christopher Raymond Newman"

Christopher Raymond Newman, BSc(Hons), MAusIMM, MAIG  
Executive Vice President

Alacer Gold Corporation

I, Paul William Thompson, of Perth, Western Australia, do hereby certify:

1. I am Vice President Technical Services with Alacer Gold Corporation with a business address at PO Box 1156, West Perth WA 6872.
2. This certificate applies to the technical report entitled "SKO NI 43-101 Technical Report" dated March 30, 2012 with an effective date of March 26, 2012 (the "Technical Report").
3. I am a graduate of Liverpool University, UK, with a Bachelor of Science Honours Degree from 1983 and a postgraduate of Leeds University, UK, with a Master of Science Degree from 1984.
4. I am a Fellow in good standing of the Australian Institute of Mining and Metallurgy (FAusIMM – 209231)
5. I have worked as a geotechnical engineer and mining engineer for over 27 years. My work experience spans open pit and underground mining with Anglo American, De Beers, Newcrest Mining, Coffey Mining and Alacer Gold. This experience covers gold, copper, diamond, nickel, uranium and iron ore deposits.
6. I am a "Qualified Person" for purposes of National Instrument 43-101 (the "Instrument").
7. My most recent personal inspection of the Property was on February 21, 2012 for one day.
8. I am responsible for Sections 13, 15 to 18 and 21 to 22 in their entirety and jointly responsible for Sections 1 to 3 and 25 to 27 of the Technical Report.
9. I am not independent of Alacer Gold as defined by Section 1.5 of the Instrument.
10. I have had prior involvement with the Property that is the subject of the Technical Report as an employee of Newcrest Mining Limited from the period 1991 to 1995 in a geotechnical engineering role.
11. I have read the Instrument and the technical report has been prepared in compliance with the Instrument.
12. As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed this 30<sup>th</sup> day of March, 2012 at Perth, Western Australia.

*Original document signed and sealed by*

"Paul William Thompson"

Paul William Thompson, BSc(Hons), MSc, FAusIMM  
Executive Vice President  
Alacer Gold Corporation

March 30, 2012

29510300-REP-R0001-00

To:  
British Columbia Securities Commission  
Alberta Securities Commission  
Saskatchewan Financial Services Commission  
Manitoba Securities Commission  
Ontario Securities Commission  
Autorité des Marchés Financiers  
New Brunswick Securities Commission  
Nova Scotia Securities Commission  
Securities Commission of Newfoundland and Labrador  
Superintendent of Securities, Prince Edward Island

**Subject: Consent of Qualified Person**

Dear Sirs/Mesdames:

I, Christopher Raymond Newman, MAIG, MAusIMM of Alacer Gold Corp consent to the public filing of the Technical Report titled "South Kalgoorlie Operations NI 43-101 Technical Report", and dated March 30, 2012 Document No. 129510300-REP-R0001-00 (the "Technical Report") and to extracts from, or a summary of, the Technical Report in the Annual Information Form, dated March 30, 2012, of Alacer Gold Corp. (the "AIF").

I also confirm that I have read the AIF being filed and that it fairly and accurately represents the information in the Technical Report that supports the AIF.

Dated this 30<sup>th</sup> day of March, 2012

SIGNED

*Original document signed and sealed by  
Christopher Raymond Newman,  
BSc(Hons), MAusIMM, MAIG*

---

Christopher Raymond Newman,  
BSc(Hons), MAusIMM, MAIG  
Executive Vice President  
Alacer Gold Corporation

March 30, 2012

29510300-REP-R0001-00

To:  
British Columbia Securities Commission  
Alberta Securities Commission  
Saskatchewan Financial Services Commission  
Manitoba Securities Commission  
Ontario Securities Commission  
Autorité des Marchés Financiers  
New Brunswick Securities Commission  
Nova Scotia Securities Commission  
Securities Commission of Newfoundland and Labrador  
Superintendent of Securities, Prince Edward Island

**Subject: Consent of Qualified Person**

Dear Sirs/Mesdames:

I, Paul William Thompson, FAusIMM, of Alacer Gold Corp consent to the public filing of the Technical Report titled "South Kalgoorlie Operations NI 43-101 Technical Report", and dated March 30, 2012 Document No. 129510300-REP-R0001-00 (the "Technical Report") and to extracts from, or a summary of, the Technical Report in the Annual Information Form, dated March 30, 2012, of Alacer Gold Corp. (the "AIF").

I also confirm that I have read the AIF being filed and that it fairly and accurately represents the information in the Technical Report that supports the AIF.

Dated this March 30<sup>th</sup> day of March, 2012

SIGNED

*"Original document signed and sealed by  
Paul William Thompson, BSc(Hons), MSc,  
FAusIMM"*

---

Paul William Thompson,  
BSc(Hons), MSc, FAusIMM  
Vice President Technical Services  
Alacer Gold Corporation



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## **JORC COMPETENT PERSON STATEMENT**

The information in this report which relates to Exploration Results and Mineral Resources is based on information compiled and approved by Chris Newman, a full-time employee of Alacer, who is a Member of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Mr Newman has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" and a qualified person pursuant to National Instrument 43-101 of the Canadian Securities Administrators. Mr Newman consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report which relates to Mineral Reserves is based on information compiled and approved by Paul Thompson, a full-time employee of Alacer, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Thompson has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" and a qualified person pursuant to National Instrument 43-101 of the Canadian Securities Administrators. Mr Thompson consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.