

# 15 SEPTEMBER 2020

# ASX/MEDIA RELEASE

# BARDOC LAUNCHES MAJOR NEW +40,000m DRILLING PROGRAM TARGETING GROWTH AND NEW DISCOVERIES

Drilling programs underway targeting new exploration breakthroughs outside the current 3.02Moz Resource inventory to add further value to the Company's long-term development

Key Points:

- Exploration activities ramping up on several fronts with four drill rigs currently on site.
- Exciting and untested exploration targets have been developed at several project areas.
- Culmination of significant geological and geophysical work at deposit scale to be applied regionally.
- Untested exploration targets also exist adjacent to the Company's major deposits at Aphrodite, Zoroastrian and Excelsior.

Bardoc Gold Limited (ASX: **BDC**, **Bardoc** or **the Company**) is pleased to announce the commencement of a major new exploration campaign aimed at unlocking significant new gold discoveries at its 100%-owned **3.02Moz Bardoc Gold Project** located 40km north of Kalgoorlie in WA.

The Company has commenced this exciting phase of exploration as it moves towards the delivery of its Definitive Feasibility Study (DFS) in Q1 2021. An expanded 40,000m drilling program is underway with up to four rigs that will explore in several key locations across the Company's extensive and highly regarded tenement package in the North Kalgoorlie district.

Exploration will focus on several key areas over the coming months, with the aim of identifying significant new zones of mineralisation that will enhance the value of the Company as it moves forward with its mine development plans. These key areas are:

- Exploration along the 4km north-east trend at Zoroastrian-Excelsior to focus on other fractionated dolerites and shears (the key ore-hosting structures at these deposits);
- Exploration on a repeat setting of Zoroastrian-Excelsior at Nerrin Nerrin-South Castlereagh;
- Exploration close to the Aphrodite main lodes to follow up untested highly mineralised intercepts;
- Regional exploration to resume at Aphrodite where no drilling has taken place since 2012;
- Exploration drilling at Aphrodite to upgrade current resources for mine planning purposes;
- Resource extension work to extend the Mayday North Deposit at surface and at depth;



- Exploration work to follow up quality regional targets at Mayday North;
- Exploration work to define the main lodes at North Kanowna Star;
- Exploration work to explore highly ranked regional targets at North Kanowna Star; and
- Exploration work along the Bardoc Tectonic Zone (BTZ) to focus on the poorly understood and underexplored Black Flag Beds for gold in sediments.

#### **MANAGEMENT COMMENTS**

Bardoc Gold's Chief Executive Officer, Mr Robert Ryan, said the new exploration program reflected the Company's commitment to build a long-life, sustainable gold project in the North Kalgoorlie region and unlock the significant untapped exploration potential within the broader district.

"The Company's two 100%-owned major gold systems at Zoroastrian-Excelsior and Aphrodite, at +1Moz and +1.6Moz respectively, have understandably been the main focus for exploration and resource growth at the project in recent years.

"While these deposits are well drilled and well-understood, there has been very little greenfields exploration work beyond the boundaries of our current +3Moz Resource inventory in recent decades – despite the prime location of our tenements in one of the world's most endowed gold districts.

*"Following intensive geological field work including pXRF analysis of historical RAB drilling, GAIP Surveys, field mapping and target generation, the Company has developed a well thought-out exploration program designed to target new discoveries within our highly prospective 250km<sup>2</sup> of tenure.* 

"With the resource definition drilling now complete for the upcoming Definitive Feasibility Study, the geology team will focus their efforts on new discoveries outside of the current mine plan in parallel with ongoing work to complete and deliver the DFS by the March Quarter of 2021.

"New discoveries will form part of our longer term growth pipeline at the Bardoc Gold Project beyond what we define in the DFS, unless of course we are fortunate enough to make a game-changing discovery that changes the entire shape of the Company and our development profile – which will be a very nice problem to have!"

#### **ZOROASTRIAN – EXCELSIOR TREND**

The Zoroastrian-Excelsior area is a **+1Moz Au gold camp**<sup>1</sup>. The north-east trending zone that encompasses Zoroastrian and Excelsior is a mineralised corridor some 4km long with historically mined (high-grade underground) prospects at Pleasurebound and Wycheproof.

Previous exploration has concentrated only on two prospects, Pleasurebound and Wycheproof, outside of the significant mineralisation at Zoroastrian and Excelsior.

The geology of this area is well understood at Zoroastrian and Excelsior. Bardoc's geology team, in conjunction with supporting geoscientists including the CSIRO, has identified additional rock units that have the same geochemical characteristics as the major host unit, the Zoroastrian Dolerite.



The Pleasurebound Dolerite is a differentiated dolerite with a highly fractionated unit similar to the major fractionated host unit at Zoroastrian. Furthermore, north-south trending structures – such as those seen at Royal Mint and Blueys South Lodes – are recognised within the Pleasurebound Dolerite and these are yet to be fully tested. It is also noted that the main lodes at Zoroastrian, Royal Mint, Blueys South and Zoroastrian South are all interpreted as intersecting the Pleasurebound Dolerite at depth.

The **+4km long north-east trend** is coincident with the timing of the mineralising processes and has smaller sub-parallel structures north and south of the main fault zone that represent standalone exploration targets to be worked through, ranked and drill tested in an orderly manner to ensure exploration expenditure is targeted in a methodical and geoscientific manner.

At Zoroastrian, the down-plunge extension of the major lodes noted above **remain open at depth** and the structures are interpreted as continuing further south into areas of untested Zoroastrian Dolerite that has indications of being the preferred fractionated unit. Only comprehensive and focused drilling can reveal the nature of the rocks and possible mineralisation.

The Excelsior shear is a significant ductile zone that extends for 7km north and south of the Excelsior Pit. Mineralisation occurs along its entire length from South Castlereagh in the south to Ellen Pearce in the north. Further testing along this major mineralised shear would be targeting Excelsior-style mineralisation (Excelsior is 420koz historical and modern gold endowment).

To the east of Excelsior, the north-east trend intersects the Scotia Basalt which, in this area, is interpreted as being doleritic in nature by previous workers. The Scotia Basalt is a known host of mineralisation at prospects such as Jackorite (successfully mined by Excelsior Gold in 2015), the actively mined (not by BDC) Grace Darling and Wycheproof (small open pit by Keras Mining in 2016).

In order to fully explore this +1Moz system, the Company will apply the latest geological thinking and mineralisation models using the best science available. The application of the best science in an orderly manner, including remote sensing where appropriate, will maximise the opportunity of having early success by testing the best targets first.

Zoroastrian current JORC resource 515koz, ~1900 underground mining 8koz, ~1990 open pit mining 16koz Au, ~2016 open pit 53koz Au, for total gold of 592koz Au

Excelsior current JORC resource 320koz, ~1900 underground mining 4koz, ~1990 open pit mining 97koz Au, for total gold of 421koz Au



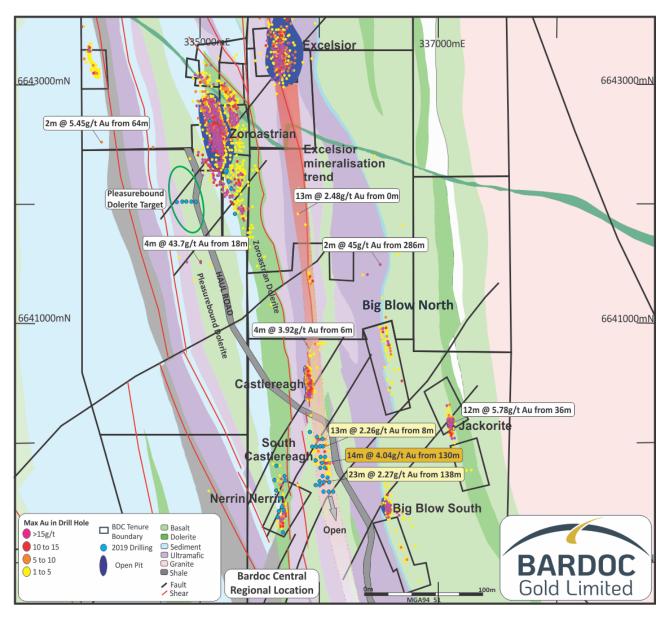


Figure 1. Zoroastrian-Excelsior +1Moz Au north-east trend and the north-east Nerrin Nerrin-South Castlereagh trend

## NERRIN NERRIN – SOUTH CASTLEREAGH TREND

This priority area is analogous to the **+1Moz Zoroastrian-Excelsior** trend. The under-explored Nerrin Nerrin prospect, which contains a small Resource of 26koz Au, is similar to Zoroastrian in that it is **on a north-east structure that intersects a fractionated portion of the Zoroastrian Dolerite**.

Adding further weight to the comparison, Castlereagh (mined by Excelsior Gold in 2015) and South Castlereagh, with a Resource of 21koz Au, are located on the southern extension of the Excelsior Shear.

This north-east zone stretches some 2km over several favourable rock units and also includes mineralisation at the Big Blow North Prospect. Further detailed work over the coming months will enable the targeting of key structural and lithological areas supported by detailed geochemistry and exploration models. The success



and learnings of the targeting of the high-grade lodes such as Royal Mint and Blueys South at Zoroastrian will be applied to this area to target significant mineralisation such as seen in the Zoroastrian lodes.

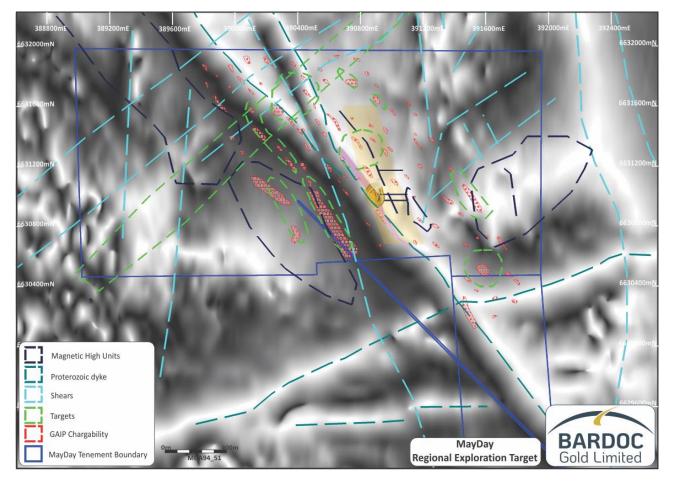
Additionally, there has been little historical work completed along the Excelsior Shear in this region, so there is an opportunity to explore for a repeat of Excelsior style mineralisation.

#### MAYDAY NORTH EXPLORATION

The Company has commenced exploration air-core drilling at Mayday North with some 6,000-8,000m planned. The drilling is focusing on targets generated from the GAIP survey, structural interpretations and geochemistry as detailed in ASX release *"Latest Drilling Success Extends Mayday North Deposit and Identifies Potential New Mineralised Corridor, 23 July 2020"*.

The Company completed a geophysical GAIP survey in March 2020 which enabled mapping of resistive and chargeable units of rock to be completed. **These features are commonly related to hydrothermal changes** (i.e. gold mineralisation events) in the Eastern Goldfields. The survey **has successfully identified**:

- **Resistive units** from the survey indicating potential silicification and quartz veining which is known to commonly occur with gold mineralisation; and
- **Chargeable units** which are potentially associated with sulphide minerals, pyrite and arsenopyrite which are known to commonly occur with gold mineralisation and are present at the Mayday North Deposit.



Air-core drilling has now commenced to test these zones not previously observed in airborne magnetic data.

Figure 2. Mayday North target plan



Resource extension work is also being prepared for Mayday North. There is no effective drill testing north of the current resource. Previous drill testing (1980s and 1990s) failed to intersect fresh rock and, as such, the highly mineralised contact zone, mined in the existing open pit, of the felsic volcanics and the basalt has not been adequately tested.

The Mayday North deposit has **significant depth extensions that are not fully tested**. The cross-section below is typical for the deposit and shows that we are yet to fully define the eastern and western extents of the shallowly north-plunging mineralisation, which remains open at depth.

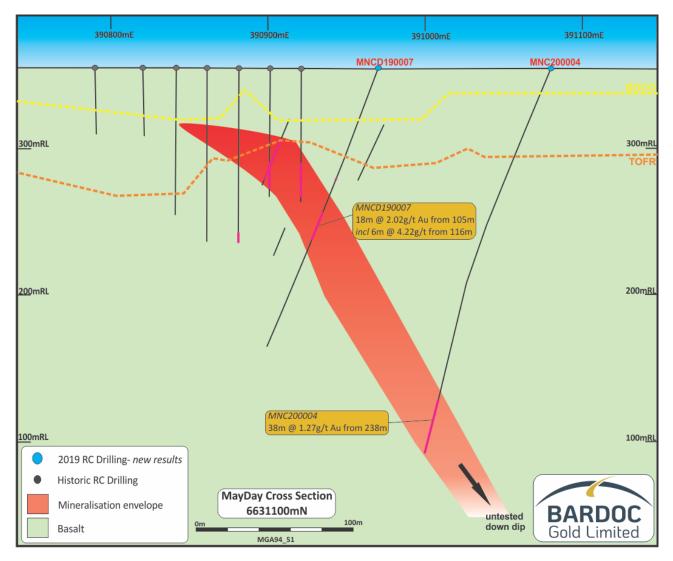


Figure 3. Mayday North cross section, significant widths open at depth, drill hole MNC200004 finished in mineralisation. (refer ASX announcement 25 Feb 2020)



#### NORTH KANOWNA STAR EXPLORATION

The Perseverance-Wedge resource at North Kanowna Star is a **large mineralised system**. The current resource at Perseverance-Wedge is 32koz Au and is reported only in the oxide/transitional material. The mineralised system, which is open at depth and to the north and south, requires further drill testing.

The system is currently defined as being 700m long x 250m wide, compared with Zoroastrian (515koz Au) which is 1,500m x 450m.

The North Kanowna Star Project required significant geological work to upgrade its geological database to the requirements of a modern day rigorous geoscientific assessment. The Company's geology team has visited historical RAB drilling and collected samples that best represent the freshest rock units at each hole. These samples were then logged for structure, alteration, rock type and pXRF measurements are taken.

The Company completed a GAIP survey in early 2020 and **has identified zones of chargeable and resistive rocks**, as often found at mineralised systems in the Eastern Goldfields.

The focus of exploration over the coming months will be twofold:

- To investigate priority structural/geochemical/geophysical target areas to explore for new discoveries as defined by the comprehensive review of the newly collected datasets from the old RAB drilling and the recent GAIP survey; and
- Exploration at known resource areas and fresh rock gold intercepts at multiple locations to locate the main mineralised zones to enable, ultimately, Mineral Resource Estimates to be developed that can be included in mine planning scenarios.

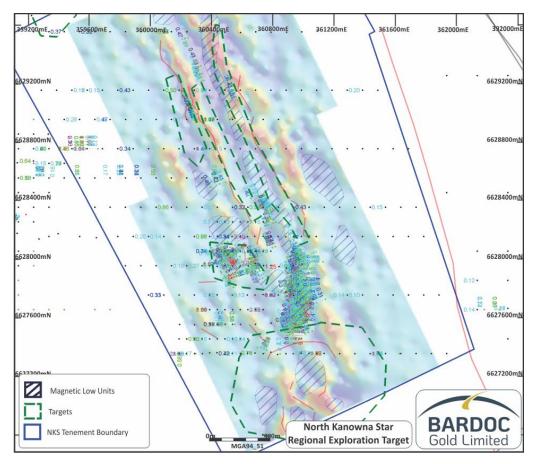


Figure 4. North Kanowna Star exploration targets over resistivity from GAIP



#### **BARDOC TECTONIC ZONE**

Bardoc Gold has recently engaged the services of respected geological consultancy Model Earth. The team at Model Earth has reviewed the Bardoc Tectonic Zone and is working with the Company's geologists to update the regional structural architecture to account for the latest thinking and targeting practices with a view to support exploration drilling scheduled to commence later this year.

Of particular note is the work in targeting the thick sequences of the Black Flag Beds present on the Company's leases. The Black Flag Beds have been underexplored over the past 30 years until the discovery of the +2Moz Invincible Deposit within fine grained sediments at St lves.

Bardoc Gold has spent considerable effort in geophysical assessment and collection of over 2,300 rock chip samples from historic RAB drilling that has never been assessed with detailed geochemistry. Applying modern techniques to existing data saves considerable drilling cost and maximises the value of the current sample datasets.

The plan below highlights the Black Flag Beds and the key regional structures of the Bardoc Tectonic Zone and Black Flag Fault. With the development of modern exploration models based upon the latest gold mineralisation thinking, the Company is confident that it has the knowledge and ability to be successful in its exploration efforts along this major trend.

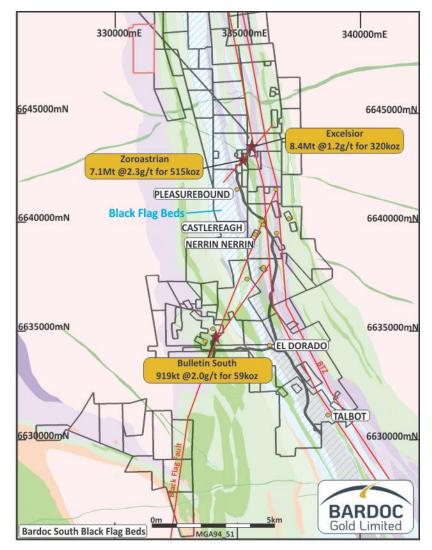


Figure 5. Bardoc Tectonic Zone and Black Flag Beds



#### APHRODITE EXPLORATION

The Aphrodite Project area is under-explored. The current resource of **1.68Moz Au** is located in one small area of the prospective zone and there has been **no exploration outside of the Alpha / Phi Lode areas since 2012**. The Aphrodite area will be an area of extensive exploration over the coming months with several areas of interest.

Exploration away from the current deposits has the following key features:

- The controlling structures at Aphrodite are well understood after detailed geological works over the last 20 years;
- This knowledge and understanding is yet to be applied on a regional scale as previous exploration efforts were to support future mine plans with detailed resource drilling; and
- There has been no regional exploration drilling since 2012.

Bardoc Gold is now able to capitalise on the 20 years of knowledge at Aphrodite and resume exploration activities in areas that are highly likely to be successful.

The Aphrodite Deposit is a **regionally significant mineralised system** that is **open at depth and along strike**. There are opportunities for a targeted exploration program to further develop lodes such as the Sigma and Omega lodes, which contain broad widths of high grade mineralisation and the Company will test some of these over the coming months.

The plan is to conduct resource upgrade (in-fill) drilling at these (Sigma and Omega) lodes with a view to providing updated Mineral Resource Estimates that will support and enhance future open pit and underground mining plans.

Recent interpretive work by the Company has also highlighted areas of drilling that has not been followed up even though it is of similar grade and thickness as that found at the Alpha and Phi Lodes. These mineralised drill holes are thought to represent mineralised structures that are parallel to the main Alpha and Phi lodes and hence are highly ranked targets as they are close to the current Open Pit and Underground mine designs from the March 2020 PFS.

The collection of data and geological interpretation of the Company's tenements is undertaken largely inhouse by its geologists. In support of the ongoing geological effort, the Company has secured input from respected and successful geological and geophysical experts, including Greg Wilson, Dr Peter Schaubs of the CSIRO, Dr Jayson Meyers and David Stannard of Resource Potentials and Michael Outhwaite from the Jon Standing-led Model Earth consultancy group.



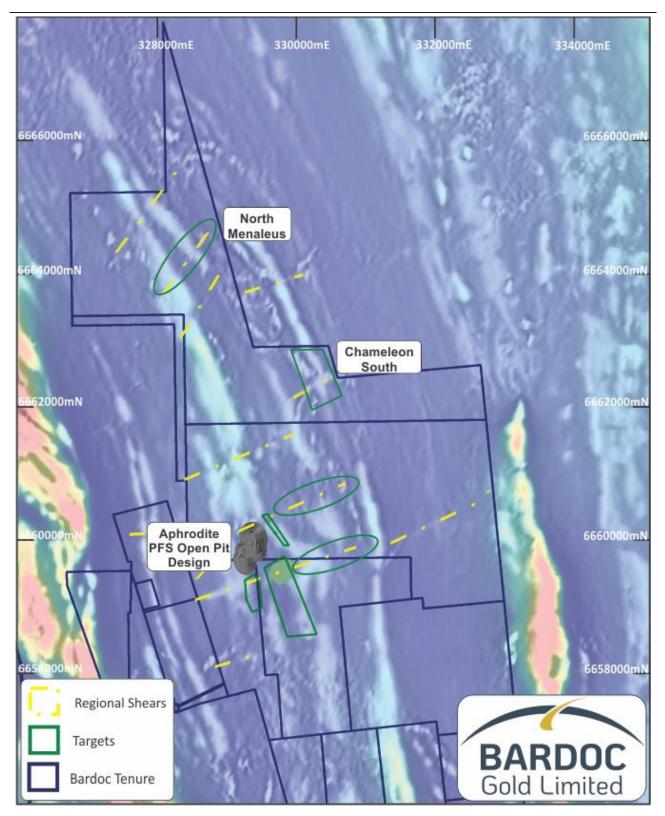


Figure 6. Aphrodite untested areas on known mineralised trends over air magnetics



#### **NEXT STEPS**

- Air-core drilling is underway at Mayday North.
- RC drilling to commence at Aphrodite, Sigma Lode, as part of resource upgrade work.
- Geotechnical core drilling at Zoroastrian is on schedule to be completed within the next few days.
- The works for the DFS are advancing with final geotechnical reports due for Excelsior this week and Zoroastrian underground at the end of the month
- Heritage and flora and fauna surveys over key areas of mine design are complete.

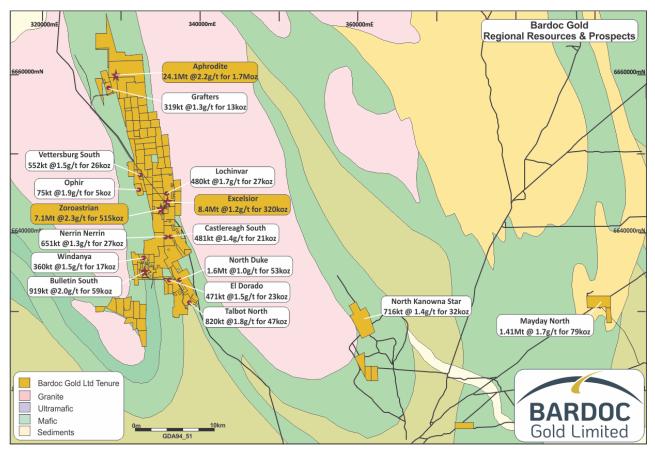


Figure 7. Bardoc Gold Project, tenement location plan.

## **BARDOC GOLD PROJECT – BACKGROUND**

The Bardoc Gold Project was formed in October 2018 following completion of the merger between Excelsior Gold and Spitfire Materials, bringing together significant resources and excellent potential for growth. The Bardoc Gold Project runs contiguously north for 40km in the Eastern Goldfields. There are four main deposits and a multitude of smaller projects within the 250km<sup>2</sup> land-holding, providing a large Resource base and excellent exploration potential within the prolific Norseman-Wiluna greenstone belt and junction of the Bardoc Tectonic Zone (BTZ) and the Black Flag Fault (BFF).

These two deep-seated crustal structures host many multi-million-ounce deposits, including the world-renowned Golden Mile in Kalgoorlie.



#### **GLOBAL RESOURCE – BARDOC GOLD PROJECT**

Deposit	Туре	Cut-Off (g/t Au)	MEASURED		INDICATED		INFERRED		TOTAL RESOURCES			Original ASX			
			Tonnes (,000t)	Grade (g/t Au)	Ounces (,000oz)	Report Date									
Aphrodite	OP	0.4	-	-	-	11,622	1.7	619	6,676	1.4	298	18,288	1.6	916	22/5/18
Aphrodite	UG	2.0	-	-	-	3,458	3.9	436	2,391	4.3	330	5,848	4.1	765	
Aphrodite	TOTAL		-	-	-	15,080	2.2	1,055	9,067	2.2	628	24,136	2.2	1,681	
Zoroastrian	OP	0.4	-	-	-	3,862	1.8	229	1,835	1.5	89	5,698	1.7	318	22/5/18
Zoroastrian	UG	2.0	-	-	-	580	4.4	82	823	4.3	114	1,403	4.4	197	
Zoroastrian	TOTAL		-	-	-	4,442	2.2	311	2,658	2.4	203	7,101	2.3	515	
Excelsior	ОР	0.4	-	-	-	6,729	1.2	266	1,749	1.0	54	8,478	1.2	320	
Mulwarrie	ОР	0.5	-	-	-	-	-	-	881	2.8	79	881	2.8	79	13/11/18
Mayday North	ОР	0.5	-	-	-	-	-	-	1,410	1.7	79	1,410	1.7	79	
Bulletin South	ОР	0.4	152	2.2	11	546	2.1	36	150	2.1	10	849	2.1	57	
Duke North	ОР	0.4	-	-	-	851	1.0	28	795	1.0	25	1,646	1.0	53	
Talbot North	ОР	0.4	-	-	-	698	1.8	40	123	1.8	7	820	1.8	47	
North Kanowna Star	ОР	0.5	-	-	-	-	-	-	716	1.4	32	716	1.4	32	
Lochinvar	ОР	0.4	-	-	-	423	1.8	24	57	1.6	3	480	1.7	27	19/2/14
Nerrin Nerrin	ОР	0.5	-	-	-	-	-	-	651	1.3	26	651	1.3	26	
Vettersburg South	ОР	0.6	-	-	-	-	-	-	552	1.5	26	552	1.5	26	11/12/13
El Dorado	ОР	0.5	-	-	-	-	-	-	471	1.5	23	471	1.5	23	
South Castlereagh	ОР	0.5	-	-	-	111	1.6	6	369	1.3	15	481	1.4	21	
Windanya	ОР	0.6	-	-	-	-	-	-	360	1.5	17	360	1.5	17	11/12/13
Grafters	ОР	0.5	-	-	-	-	-	-	319	1.3	14	319	1.3	14	
Ophir	ОР	0.6	-	-	-	-	-	-	75	1.9	5	75	1.9	5	11/12/13
TOTAL RESC	DURCES		152	2.3	11	28,880	1.9	1,766	20,403	1.9	1,247	49,426	1.9	3,022	

Note: Differences may occur due to rounding. Full details of the Mineral Resource estimate were provided in the Company's ASX Announcement dated 30 September 2019.

#### **GLOBAL RESERVE – BARDOC GOLD PROJECT**

PROJECT		PROBABLE		TOTAL			
PROJECT	Tonnes (kt)	Grade (g/t)	Gold (koz)	Tonnes (kt)	Grade (g/t)	Gold (koz)	
Excelsior OP	3,540	1.4	160	3,540	1.4	160	
Zoroastrian OP	350	1.9	20	350	1.9	20	
Aphrodite OP	2,830	2.3	210	2,830	2.3	210	
Bulletin OP	520	2.0	30	520	2.0	30	
Zoroastrian UG	810	3.2	80	810	3.2	80	
Aphrodite UG	2,380	3.7	290	2,380	3.7	290	
TOTAL	10,430	2.4	790	10,430	2.4	790	



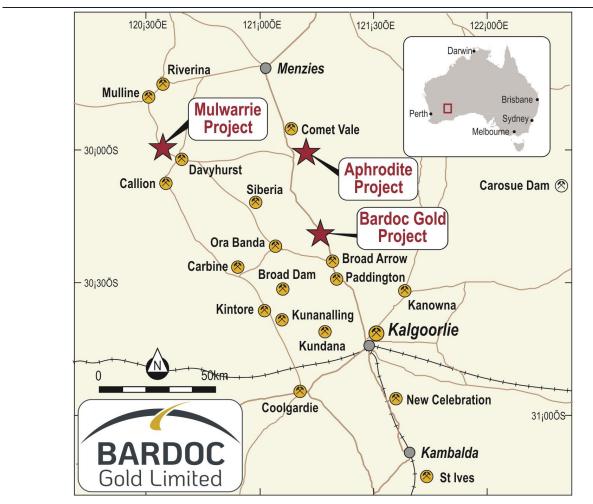


Figure 8: Project Location Plan

## DISCLAIMERS AND FORWARD-LOOKING STATEMENTS

This announcement contains forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", "target", "anticipate", "forecast", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions.

The forward-looking statements in this announcement are based on current expectations, estimates, forecasts and projections about Bardoc and the industry in which they operate. They do, however, relate to future matters and are subject to various inherent risks and uncertainties. Actual events or results may differ materially from the events or results expressed or implied by any forward-looking statements. The past performance of Bardoc is no guarantee of future performance.

None of Bardoc's directors, officers, employees, agents or contractors makes any representation or warranty (either express or implied) as to the accuracy or likelihood of fulfilment of any forward-looking statement, or any events or results expressed or implied in any forward-looking statement, except to the extent required by law. You are cautioned not to place undue reliance on any forward-looking statement. The forward-looking statements in this announcement reflect views held only as at the date of this announcement.

Approved for release by

Robert Ryan Chief Executive Officer



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#### **Competent Person's Statement**

#### **Exploration Results**

Information in this announcement that relates to exploration results and mineral resources is based on information compiled by Mr. Bradley Toms who is the Exploration Manager of Bardoc Gold Limited. Mr. Toms is a Member of The Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking, to qualify as Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Toms consents to the inclusion in the document of the information in the form and context in which it appears.

#### **Mineral Resources**

The Company confirms it is not aware of any new information or data that materially affects the information included in the 30 September 2019 Bardoc Resource Estimate and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its resource announcement made on 30 September 2019.

#### Ore Reserves – Open Pit & Underground

The information referred to in this announcement has been extracted from the Pre-Feasibility Report and Ore Reserve Statement dated 17 March 2020 and available to view on www.bardocgold.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the Ore Reserves Statement and that all material assumptions and technical parameters underpinning the estimates in the Ore Reserves Statement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the Ore Reserves Statement.