

10 July 2017

The Company Announcements Office  
Australian Securities Exchange Limited

## **APHRODITE AND POSEIDON TO JOIN FORCES TO EVALUATE GOLD PRODUCTION**

### ***Highlights***

- **Aphrodite Gold Ltd and Poseidon Nickel Ltd enter into an MOU to complete due diligence for the processing of Aphrodite's gold resource at the Poseidon Black Swan Processing Facility (BSPF)**
- **A 50:50 joint ownership structure would be established to mine and process the resource**
- **Black Swan Process Facility has capacity to process over 2Mtpa**
- **Aphrodite recently released a mineral resource estimate of 1.3Moz including an Open Pit resource of 10.2Mt @ 1.8g/t for 598,000 ounces and comprehensive metallurgical results which confirmed gravity gold recovery of 30% and overall recovery of 92% to gold concentrate. Refer ASX announcement 27 June 2017.**
- **Processing ore at the BSPF would achieve significant capital efficiency.**
- **Delivery of a successful outcome under the MOU would transition Aphrodite from an explorer to a producer quickly and at far less cost.**
- **Joint due diligence will consider progressing a Definitive Feasibility Study (DFS) to establish an open pit operation at Aphrodite and producing a gold concentrate at the BSPF for sale to a third party.**
- **Forecast operating cost to transport ore and produce concentrate at BSPF estimated at \$8 and \$23 per tonne respectively when combined less than the processing costs forecast in Aphrodite's PFS**
- **The SPV owned BSPF - in addition to processing the Aphrodite resource - would also have the ability and availability to process third party gold resources from within WA's Eastern Goldfields.**

Poseidon Nickel Limited (ASX: POS, Poseidon) and Aphrodite Gold Limited (ASX: AQQ, Aphrodite, the Company) today announced they had entered into a Memorandum of Understanding (MOU) to evaluate the processing of AQQ's gold mineral resources at POS's Black Swan Processing Facility (BSPF) in Western Australia's Eastern Goldfields.

Under the terms of the MOU, the Parties have 60 days in which to conduct due diligence and evaluation.

Poseidon Chairman, Mr Chris Indermaur said, "Poseidon and Aphrodite have been in ongoing discussions now for well over six months and the MOU is an excellent result for both companies.

"Under the proposal Poseidon would farm in the BSPF and Aphrodite would farm in its gold mineral resource and tenements into a Special Purpose Vehicle (SPV) that will be a 50:50 joint ownership structure," he said.

"Entering into an MOU with Aphrodite unlocks the existing capital at the BSPF in what continues to be a very difficult nickel market".

"Poseidon plans to use the existing plant and infrastructure at BSPF to facilitate a transition to becoming a major gold producer in the highly prospective Goldfields region of Western Australia".

"Furthermore, BSPF offers a low-cost entry into the gold market and seeks to exploit the processing facility's ability to process both oxide and refractory gold resources".

"It is important however to stress that when the nickel market does improve, nickel production at Black Swan can restart via a parallel and independent circuit. Poseidon would retain the rights to nickel deposits at Black Swan and Silver Swan".

Aphrodite Gold Executive Chairman and Acting CEO, Mr Peter Buttigieg, said "Aphrodite is pleased to enter into this MOU with Poseidon".

"It allows the Company to evaluate the opportunity to develop the 1.3-million-ounce mineral resource by joining forces with Poseidon and utilise the nearby Black Swan Processing Facility".

"The recent completion of our PFS may significantly advance the development of our substantial gold resource 65 kilometres north of Kalgoorlie".

An aerial view of the BSPF is shown below in Figure 1. The facility was expanded in 2005 by LionOre at a capital cost of over \$70 million. The BSPF has been on care and maintenance since 2009 following the global downturn. The BSPF and equipment remain in good standing.

The BSPF (shown below in Figure 2) is a 2.2 million tonne per annum (Mtpa) processing facility that includes a conventional SAG mill, 5 ball mills, 2 flotation circuits, multiple thickeners, 3 ceramic filters and a large concentrate storage shed. The process plant is capable of processing both nickel and gold ores through parallel circuits.

Infrastructure at BSPF includes existing tailings disposal cells with sufficient capacity for over 2 years at the likely initial open pit production rate of 1.2 million tonnes per annum, a borefield and water treatment plant, large mine workshop and maintenance facilities, administration buildings, functional laboratory and metallurgical laboratory, plant stores and workshop areas, medical centre and emergency response control centre. Importantly the BSPF is connected to the South West Interconnected System (SWIS) electricity supply.

In 2014 POS completed an engineering study for the restart of the BSPF (refer to POS:ASX announcement 13 August 2014). The refurbishment capital was estimated at A\$12.8M to produce concentrate. The refurbishment will consider a gravity circuit as envisaged within the PFS.

The Black Swan open pit ore rock hardness was 30kWhr/t however Aphrodite's ore is typically less than 20kWhr/t therefore the Black Swan facility is likely to be able to process over 2Mtpa of gold ore. Consequently, work is progressing with third parties to source the supply of gold ore to increase the plant throughput.

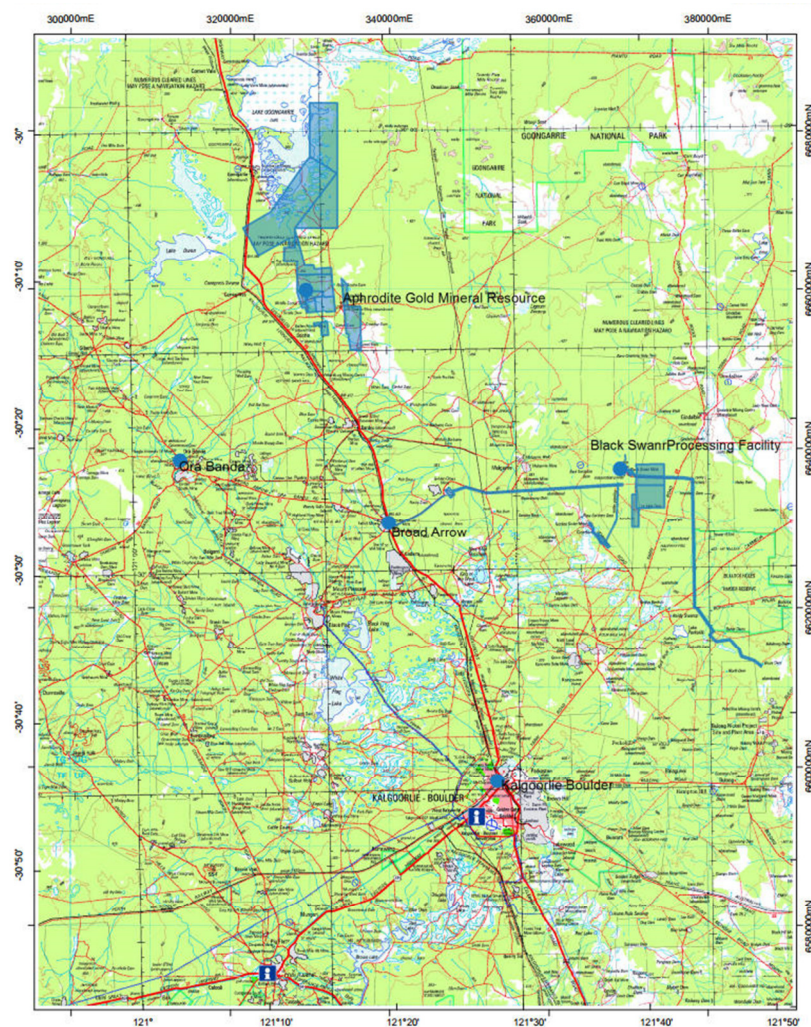


**Figure 1: Aerial View of Black Swan Operations**



**Figure 2: Black Swan Grinding Circuit (10MW of installed power)**

AQQ's gold mineral resource is located on granted mining leases that are located approximately 65 kilometres trucking distance from the BSPF Figure 3 below highlights the location of Aphrodite's gold tenements relative to Black Swan



**Figure 3: Aphrodite Gold Tenements Relative to Black Swan**

AQQ recently released the results from a PFS (refer to AQQ: ASX announcement 27 June 2017), which included an update to the mineral resource estimation; a comprehensive metallurgical testwork program and process design package including CAPEX and OPEX assessment; open pit mine optimisation, design and cost schedule; environmental baseline assessments including fauna, flora and vegetation, short range endemic invertebrates, subterranean fauna, surface water assessment, material characterisation for use in landform design and, a soil assessment; access road option study; and a preliminary tailing storage facility location and design assessment.

- Indicated and inferred resources are now 13.1 million tonnes @ 2.99 g/t gold for 1.26 million contained ounces compared to the previous estimate of 28.7 million tonnes @ 1.52 g/t gold for 1.4 million ounces
- The open pit mineral resource estimate is now 10.2 million tonnes @ 1.8 g/t gold for 598,000 ounces.
- The underground mineral resource estimate is now 2.9 million tonnes @ 7.0 g/t gold for 663,000 ounces, an increase in grade and ounces from 4.6 g/t and 485,000 ounces respectively.
- The mineral resource is open at depth with strong mineralisation evident below 440 metres to a depth of at least 600 metres
- Comprehensive metallurgical testwork has established that oxide, transition and primary mineralisation all can be effectively processed and produce gold rich concentrate recovering 92% of the gold to the concentrate.
- The Aphrodite PFS estimated that a standalone processing facility would have processing operating costs of \$38 per tonne for conventional gravity, carbon in leach (CIL) and \$53 per tonne to include a concentrate production, neutralisation, pressure oxidation (POX) and CIL to produce gold bullion
- Capital for a standalone 1 million tonne per annum plant has been estimated at \$81M for conventional CIL, and \$123M incorporating POX compared to the POS estimated cost of \$12.8M to refurbish the BSPF to produce a gold rich concentrate. This cost may be significantly reduced by the outcome of the due diligence and evaluation under the MOU.
- Open pit optimisation to a vertical depth of 155 meters incorporating POX processing resulted in mineralised material of 2.7M tonnes @ 2.2 g/t for 187,000 ounces was based on the above processing cost of \$53 per tonne and 92% metallurgical recovery.
- Revised open pit optimisation, mine design and production schedule based on the POS BSPF costs of \$23 per tonne and transport costs of \$8 per tonne are expected to lead to an improved feasibility result and will be the focus of the due diligence and evaluation.
- In addition to the positive metallurgical results, the increase in underground resource to 663,000 ounces and grade to 7.0 g/t gold has prompted a review of the Aphrodite 2013 Tetra Tech underground mining study.

- Other prefeasibility study activities including base line environmental studies for flora; fauna; short range endemic invertebrates; subterranean fauna; material characterisation, surface water assessment, Heritage survey, risk assessments and a tailing storage facility preliminary assessment, were completed without any major impediments identified.
- Baseline surveys completed are in sufficient detail to provide the basis to commence the process of government and regulatory approvals including clearing permit, project management plan and mine closure plan and indicate there are no impediments to obtaining approvals subject to no major changes in legislation.

The Parties believe the project can be developed in two stages in order to secure early cash flow by refurbishing the existing BSPF to initially treat Aphrodite's open pit mineral resource. To that end, discussions are progressing with offtake parties for the gold concentrate. Gold production could start within 12 months from securing finance and pre-production capital at the mine and refurbishment of the BSPF.

As indicated in the Aphrodite PFS, improved metallurgical recoveries can be achieved by establishing a pressure oxidation (POX), neutralisation and carbon in leach (CIL) circuit at the BSPF. However the installation of the POX circuit and associated infrastructure can be deferred with substantial capital savings without comprising early gold production and concentrate sales. The subsequent establishment of a refractory gold processing facility is an important strategic decision. POS senior staff have over 10 years of operating expertise in the application of POX for the processing of concentrates.

Subject to the success of the due diligence and evaluation process the Parties intend to jointly progress a Definitive Feasibility Study (DFS) with a suitably experienced engineering consultant to begin the integrated design at BSPF. The DFS will underpin the future funding of the Operation. Regulatory approvals will also be progressed in parallel to allow early engagement with key stake holders.

Entering into an MOU to process gold mineral resources from Aphrodite's gold tenements is consistent with the POS strategy of establishing BSPF, with all of its existing plant and infrastructure, as the first refractory gold POX facility within the Eastern Goldfields region and is consistent with AQQ strategy of participating in a plant capable of processing both its open pit and underground resources at a reasonable cost and as quickly and as efficiently as possible.

Yours sincerely



Michael Beer  
Company Secretary

**APHRODITE CORPORATE DIRECTORY**

**Director / Senior Management**

Peter Buttigieg	Executive Chairman & Acting CEO
Angus Middleton	Non-Executive Director
Paul Buttigieg	Non-Executive Director
Roger Mitchell	Non-Executive Director
Michael Beer	Company Secretary
Eduard Eshuys	Technical Consultant

**Corporate Enquiries**

P 61 3 8609 6321  
F: 61 3 9331 7323  
E: [mbeer@beerandco.com.au](mailto:mbeer@beerandco.com.au)  
:

**Shareholder Enquiries**

Enquiries concerning shareholdings should be addressed to:

SecurityTransfer Australia  
Suite 93, 530 Little Collins Street, Melbourne VIC 8007  
P: 1300 992 916

**Principal & Registered Office**

116 Harrick Road  
Keilor Park  
VIC 3042  
P: 61 3 8609 6321  
F: 61 3 9331 7323

**Media Enquiries**

P: 61 3 8609 6321  
F: 61 3 9331 7323  
E: [paul.buttigieg@aphroditegold.com.au](mailto:paul.buttigieg@aphroditegold.com.au)

**Home Exchange**

The Company's shares are listed  
on the Australian Securities Exchange  
and the home exchange is Perth  
ASX code: AQQ

## **MEMORANDUM OF UNDERSTANDING**

This memorandum of understanding (“**MOU**”) is entered into on 8<sup>th</sup> July 2017 between:

Poseidon Nickel Limited (ASX: POS), (“**Poseidon**”);

and

Aphrodite Gold Limited (ASX: AQQ), (“**Aphrodite**”).

Poseidon and Aphrodite are collectively referred to herein as the “**Parties**”.

### RECITALS:

- A. Poseidon owns directly or via subsidiaries the Black Swan Operations located in the Goldfields, Western Australia. The facility includes the Silver Swan mine, Black Swan open pit nickel mine and a 2.2Mtpa concentrator with 7 mills and 2 operational circuits. Infrastructure includes tailings facility with spare capacity of approximately 2.4 years at 1.2Mtpa rates, borefield to supply water to the processing facility, water treatment facility, workshops, stores, warehouse and offices.
- B. Aphrodite holds directly or via subsidiaries the Aphrodite Gold Project (Aphrodite) approximately 65 kilometres north-west of the Black Swan Operations that include the tenements. Aphrodite have progressively explored their tenements for gold and recently completed their prefeasibility study (PFS). Aphrodite is seeking to develop Aphrodite and start mining.
- C. The Parties intend to evaluate the joint development of Aphrodite’s PFS gold resource and Poseidon’s Black Swan Processing Operations for the mining and processing of gold ore mined at Aphrodite and processed at Black Swan Operations providing a cost effective expeditious development path to market (“**Proposed Transaction**”).
- D. Poseidon and Aphrodite have been in discussions to explore the synergies available between the Party’s assets and have expressed an interest in establishing a jointly owned 50:50 Special Purpose Vehicle (SPV) (“**NewCo**”) to support an early entry into gold mining and processing.
- E. Both Parties acknowledge that they have developed and own intellectual property (IP).
- F. The Parties wish to enter into this non-binding MOU to record their current intent for the terms of the Proposed Transaction.

### 1. **Purpose of MOU**



The purpose of this MOU is to provide a framework for co-operation so that the Parties can establish the key principles to be incorporated into a formal agreement (the “Final Agreement”) to enable the Proposed Transaction.

## 2. Creation of NewCo

The Parties agree to work in good faith to establish the terms under which an SPV or NewCo will be established which Poseidon and Aphrodite will share equally. The parties agree that the purpose of NewCo is to share equally the definitive feasibility study (DFS) costs, capital development costs, operating costs and after-tax net profits earned in respect of mining and processing gold.;

- i. Both Parties will contribute their share of the funds required by NewCo.
- ii. NewCo to raise capital to fund the development of the Aphrodite open pit and underground mining operation, refurbishment of the Black Swan process plant , install the carbon in leach (CIL) circuit, carbon stripping and carbon regeneration facilities, electro-winning cells (EW), gold room, Pressure Oxidation autoclave including supporting infrastructure (timing to be agreed), associated infrastructure costs and related activities, working capital, pre-production activities, commissioning and start-up costs to commercial production.
- iii. Subsequent operating expenses are expected to be funded from Newco cash flow but in the event of a shortfall may require cash calls on the Parties;
- iv. If either Poseidon or Aphrodite default on a cash call the defaulting party equity in NewCo will be diluted under a mechanism to be agreed.
- v. Excess plant capacity will be offered to third party gold miners in the region by NewCo.
- vi. Poseidon will retain the nickel rights on the tenements including but not limited to Silver Swan underground operation, Black Swan open pit mine, high grade Silver Swan tailings and Stockpiled ore.
- vii. Poseidon will also retain the right to process nickel ore mined via the high grade Silver Swan circuit without jeopardising in any way the gold production and the capital or operating cost of the upgraded for gold processing Black Swan Process Plant. Any processing of nickel ore through the Silver Swan circuit will be on a commercial basis to be negotiated in the Final Agreement.
- viii. Care and maintenance costs of the Silver Swan mine will be Poseidon’s expense.

- ix. Poseidon and Aphrodite will appoint an equal number of directors to the board of Newco with dead lock provisions to be set out in the Final Agreement.
- x. Poseidon and Aphrodite will be responsible for their own legal expenses.
- xi. It is recognised that the potential of the proposed arrangement may create interest in the stock of both parties and that during detailed due diligence information may enter the market. The parties therefore agree to this document being posted in full as part of the ASX announcement in the interests of transparency.
- xii. The Parties intend to reflect this MOU in a Final Agreement within sixty (60) days.

(b) Documentation and unenforceability. Notwithstanding the preparation of such a Final Agreement, the Parties acknowledge that the terms set forth within this MOU will underpin the Final Agreement. This MOU however does not create obligation or rights on either party and will not be used in a court of law by the parties for any reason.

### 3. Indicative Timetable

Subject to any confidentiality restrictions, Aphrodite is to provide Poseidon and Poseidon is to Provide Aphrodite a copy of any available data as soon as possible after execution of this MOU for each Party to undertake a review of the data with the intent of completing due diligence and preliminary review/feasibility of the Proposed Transaction.

Provision of the following items as a minimum but not limited to the information tabled below will be exchanged within fourteen (14) business days upon execution of the MOU:

- i. Poseidon are to provide documentation relating to the existing regulatory approvals (DER, DMP and DoW relating to existing activities);
- ii. Gold resource estimates (no reserve estimate exits);
- iii. Provision of metallurgical testwork;
- iv. Mine design, LOM planning, geotechnical and hydrogeological studies available including forecast capital and operating costs (Aphrodite Gold PFS);
- v. Engineering for Black Swan plant refurbishment, CIL circuit, carbon stripping & regeneration facilities, EW & gold room design, pressure oxygen circuit (POX), including forecast capital and operating costs;

- vi. Where available mass and energy balances, design criteria, PFDs and P&IDs;
- vii. Infrastructure review including tailings, water and power;
- viii. Any other information requested by the parties that is relevant to the proposed transaction.

The Parties agree that the information to be provided by the outlined in Clause 4 shall be used to jointly prepare a business plan. The joint business plan and supporting documentation shall be subject to independent third party expert reviews as part of the due diligence process and must be completed within sixty (60) days of the execution of this MOU.

The Parties agree that they will use reasonable endeavours to meet the Indicative Timetable in clause 4 to effect the Proposed Transaction but parties acknowledge that the Indicative Timetable is indicative only and is subject to change.

#### 4. General

a. Public Announcements.

The Parties shall consult with each other before issuing any news release or making any public announcement with respect to this MOU or the transactions described herein and, except as required by any applicable law or regulatory requirement, neither party shall issue any news release or make any such public announcement without the written consent of the other, which consent shall not be unreasonably withheld or delayed.

b. Termination.

Any Party may terminate this MOU.

c. Entire Understanding.

This MOU is the entire agreement and understanding between the parties on everything connected with the subject matter of this MOU and supersedes any prior agreement or understanding on anything connected with that subject matter, other than the Confidential Agreement, which continues to apply.

d. Costs and Outlays.

Subject to the terms of this MOU each Party must pay its own costs and outlays connected with the negotiation, preparation and execution of this MOU. Each Party must bear equally all duty and other government imposts payable in connection with this MOU and all other documents and matters referred to in this MOU when due. The parties shall mutually agree on the appointment of legal counsel for the preparation of the Final Agreement (the costs to be shared equally).

e. Laws.

This MOU shall be governed and construed in accordance with the law of Western Australia and the Parties hereby submit themselves to the non-exclusive jurisdiction of the courts of the State in relation to all matters concerning the operation and interpretation of this MOU.

Agreed by  
**POSEIDON NICKEL LIMITED**  
in accordance with Section 127(1)  
of the Corporations Act 2001 (Cth)  
by authority of the Director/s



---

Director - Chairman

Chris Indermaur

---

Name (please print)

Agreed by  
**APHRODITE GOLD LIMITED**  
in accordance with Section 127(1)  
of the Corporations Act 2001 (Cth)  
by authority of the Director/s



---

Director – Managing Director and CEO

Peter Buttigieg

---

Name (please print)