Flagship Minerals Ltd. Pantanillo Gold Project - Metallurgical Review and Update

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Flagship Minerals Limited (ASX:FLG) has completed a review of previous metallurgical testwork on the Pantanillo deposit within its 100% held Pantanillo Gold Project hosting 47.4Mt @ 0.69g/t Au for 1.05Moz Au QFE of mineralisation, located in the Maricunga Gold Belt in northern Chile.

HIGHLIGHTS

- Flagship completes a review of previous metallurgical testwork at the Pantanillo Gold Project.

- Pantanillo hosts 47.4Mt @ 0.69g/t Au for 1.05Moz Au - QFE1 of mineralisation.

- Pantanillo column leach testwork shows high and rapid gold recovery for oxide mineralisation.

- Gold recoveries for oxides up to 85.5%, and oxide composites of 80% after 25 days.

- Pantanillo recoveries very encouraging, peer group oxide Au recoveries typically 50% -70%.

- Results support coarser crush and dump leach particle size test work before pilot testwork starts.

- Fenix ore reserve grade of 0.48g/t Au with 75% Au recovery from dump leach.

- Based on Fenix dump leach recovery, successful testwork on Pantanillo mineralisation may position Flagship for significant CAPEX/OPEX savings if Au recoveries are maintained.

Flagship Minerals' Managing Director, Paul Lock, commented:

"The Pantanillo Gold Project positions Flagship well, hosting a qualifying foreign estimate of 47.4Mt @ 0.69g/t Au for 1.05Moz Au that is amenable to open cut mining and heap leach processing, the project provides Flagship a material gold inventory and, as per this release, the project is reasonably advanced with positive metallurgy. Flagship is focusing on the oxide mineralisation at Pantanillo as this can position Flagship for a low Capex entry into gold production and high margins through low Opex. The metallurgy to date is very encouraging with recoveries for oxides up to 85.5% and oxide composites of 80% after only 25 days leaching. Further, the oxide mineralisation at Pantanillo resembles that of RIO2's Fenix gold project ~40km to the north. As discussed herein RIO2 has chosen to forgo crushing and move to dump leach, while still maintains recoveries of 75%, which are very strong in the context of the peer group.

This is a matter of simple economics, the cost of crushing equipment and crushing is more than the present value of the increased gold recoveries. For Flagship, Fenix provides a very good ready reckoner of Pantanillo's potential.

Further, what attracts us to oxides and heap leach is the simplicity. Heap leach operations in their simplest form are drill, blast, load and truck operations, thereafter stacking run of mine or crushed material on a leach pad and irrigating with a leach solution to dissolve the gold (or copper). At the end of the mine life the exhausted heap on the leach pad is easy to manage. With oxide leach there is no tailing facilities, and both water and energy consumption is low.

In essence heap leach operations are simple and efficient and are typically high margin enterprises, and some of the largest gold miners run heap leach operations, for example Barrick (Veladaro - 0.68g/t AuEq), Kinross (Fort Knox - 0.34 g/t AuEq; Bald Mountain - 0.42 g/t AuEq; Round Mountaid - 0.78 g/t AuEq), Newmont (Cripple Creek - 0.45 g/t AuEq), Eldorado (Kisladag - 0.78 g/t AuEq) and SSR (Marigold - 0.45 g/t Au) (see footnote 2 on page 2*)".

Metallurgical test work is a core component of the Company's work plan to advance the Pantanillo project towards production.

A review of previous testwork confirms that high gold recoveries were achieved through cyanidation of

crushed material. This includes gold recovery of 85.5% from column leach testwork on oxide material, and 80% from column leach testwork on oxide composite after 25 days and 83.5% after 188 days.

Appendix 1 provides summary results of this testwork, which was completed by previous operators. These data are sourced from NI 43-101 reports lodged by previous operators, see Appendix 1* for relevant References and Appendix 2 JORC Code Table 1.

The metallurgical testwork indicates that gold is cyanide soluble particularly in the oxide zone and is assumed to be recoverable under heap leach conditions. In column leach testwork at a particle size of 100% <38mm, gold recoveries of >80% were achieved, derisking and facilitating Flagship's next phase of leaching testwork. The testwork results for Pantanillo are very encouraging when considered in the context of the results achieved by RIO2 for its Fenix project ~40km to the north and other heap leach gold projects as outlined in Figure 1* in link below:

Flagship will conduct confirmatory heap leach testwork for input into future financial modelling and to guide ongoing optimisation testwork. The program will partly focus on particle size v Au recovery v time and will assess the potential of 'dump leaching'. In a heap leach operation dump leaching refers to the leaching of blasted Run of Mine 'ore' delivered to the leach pad by truck, directly from the mine, removing the need for crushing, screening, stockpiling, conveying, agglomeration and rehandling for heap stacking, and hence materially reducing pre-production capital expenditure (Capex), sustaining capital expenditure and operating costs (Opex).

However, dump leaching is likely to recover less gold compared to crushing and leaching the same material. The test work will provide Flagship the necessary information to conduct trade off studies, where the present value of higher gold recoveries through crush and leach are compared to the present value of capital and operating cost savings gained through dump leach. Aside from decreasing Capex and Opex, dump leach also simplifies the operations which serves to reduce risk.

Heap leaching inclusive of dump leaching is practiced all around the world and in 2021 was responsible for approximately 46% of global gold production. In the Maricunga Gold Belt (MGB), RIO2 (googlechartCVE:RIO) is currently constructing the Fenix dump leach gold project located about 40km NW of Pantanillo. Fenix is slated to produce approximately 82,000oz Au pa for 17 years. The ROM grade over the mine life is a planned average 0.48g/t Au and AISC are stated to be $1237/oz. RIO2 and previous owners conducted numerous heap leach focussed testwork campaigns on the Fenix deposit.

Like Pantanillo, the tests showed rapid and relatively high gold recoveries at fine to moderate particle sizes.

However, RIO2 is adopting the dump leach process that does not include crushing, instead leaching blasted ROM 'ore' at a particle size of 100% -150mm, delivered to the heap directly from the mine. RIO2 expects a gold recovery to be 75% over the life of mine at a head grade of 0.48g/t Au. The recovery curves from the Fenix testwork at a -19mm crush, Pantanillo-25mm crush and Fenix dump leach material is shown in Figure 2*. This demonstrates slower gold recoveries of the dump leach material but with ultimate gold recoveries of 75% against approximately 82% average gold recovery at -19mm crush size, a difference of 7%, see Figure 3*.

As a result of the metallurgical review, Flagship is of the opinion that the data for the Fenix and Pantanillo leach testwork conducted on crushed material show similar leach kinetics i.e. recovery v time. This similarity may also translate to the potential for dump leaching of the Pantanillo oxide mineralisation and may open up a pathway for an even lower Capex and Opex start-up.

In summary, although the leach testwork supports increased gold recovery with finer particle sizes on the heap, the increase in gold recovery may not warrant the additional Capex and Opex, which would counter intuitively reduce a projects Net Present Value.

Strategy and Work Plan

Flagship's strategy for the Pantanillo project is to define sufficient Mineral Resources that will support considerations for project development consisting of open pit mining and heap leach processing with an aim to produce 100,000oz of gold per year for more than 10 years.

Nearby projects, such as the Fenix Gold Project owned by RIO2 provides a useful benchmark, where construction has recently commenced. Fenix is an oxide gold project slated to produce 1.32 Million ounces of gold over a 16 year mine life, it has a 0.48g/t head grade and an average life of mine AISC of US$1,237/oz Au.

Flagship's work plan for the Pantanillo Gold Project will focus on the following:

- Conducting the necessary work to convert and increase the existing qualifying foreign estimate to Mineral Resources reported in accordance with the JORC Code (2012). This will include validation of the existing drillhole data, confirmatory, infill and extensional drilling as well as other supportive work.

- Additional metallurgical testwork and other project studies for input into techno-economic evaluation. The Pantanillo deposit has significant additional exploration potential for both oxide and higher-grade sulphide mineralisation. Oxide potential exists along strike and in areas proximal to the existing deposit.

Further potential for additional mineralisation also exists below post mineralisation cover to the southeast of Pantanillo. Outside of the Pantanillo deposit, exploration potential remains in the Pantanillo Central, Quebrada Pantanillo and Oro 52 prospects. Although the alunite alteration is typically associated with advanced argillic alteration caps that commonly overly gold-bearing porphyry-type deposits like Pantanillo and other gold deposits in the region, limited drilling has been conducted at some of these targets.

Exploration potential throughout the broader project area of over 100km2 will also be assessed. The occurrence of magnetite and pyrite in the fresh mineralisation provides a good co-incident geophysical target utilising magnetics and Induced Polarisation.

*To view tables and figures, please visit: https://abnnewswire.net/lnk/5O8X9O77

About Flagship Minerals Ltd

Flagship Minerals ASX:FLGFlagship Minerals Ltd's (ASX:FLG) strategy is to secure and develop projects which it believes will position the Company as a low-cost producer of Copper and Lithium, metals that matter. Specifically, Flagship Minerals seeks to secure low capital intensity projects in low-cost jurisdictions and infrastructure rich settings, projects which are positioned for high margin outcomes, and projects which are proximal to industry, chemical processing, and manufacturing.

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