



## PRESS RELEASE

16 March 2017

### Petropavlovsk PLC

#### POX Hub Update

Petropavlovsk PLC ("Petropavlovsk" or the "Company" or, together with its subsidiaries, the "Group") is pleased to provide a development update on the Pressure Oxidation Hub ("POX Hub"):

#### Highlights:

- Full scale POX Hub project development from January 2017 following the refinancing of US\$430m bank debt
- Construction of the POX Hub is 65% complete and construction of the Malomir flotation plant (Stage 1) is 90% complete (as at 28 February 2017)
- Commissioning of the POX Hub is scheduled to start in Q4 2018 with production ramping up through 2019
- Completion of the POX Hub potentially doubles the Company's average life of mine plan to greater than 15 years
- The POX Hub is set to add at least an additional 200koz pa to the production profile at a steady rate, with upside potential from exploration, expansion and tolling opportunities
- Including US\$32million for the Malomir flotation plant (Stages 1 & 2), total pre production capital expenditure for the POX Hub is US\$152million, as at 31 December 2016.

#### CEO Pavel Maslovskiy comments:

"I am pleased to report that construction activities at our POX Hub have fully resumed. This marks an exciting stage in Petropavlovsk's journey, achieving our vision of being strategically positioned as both a leading refractory and non refractory gold producer.

The POX Hub is 65% complete. The updated project economics, as audited by two independent consultants, mark the culmination of 24 months of project optimisation and balance sheet restructuring, allowing us to further de risk this core growth project.

Refractory gold is the future of the gold sector. The sector is increasingly unable to replace depleted oxide ounces. More than 50% of Russia's defined gold resources are refractory or partially refractory. The POX Hub positions Petropavlovsk as a solution to unlocking this embedded value within the Group and in Russia more broadly."

## Background

Defined within Petropavlovsk's substantial 20.2Moz JORC resource (7.2Moz JORC reserve) is 9.3Moz refractory gold resource (4Moz refractory reserve), with under explored resource upside within the highly prospective 3,600km<sup>2</sup> license holding.

In 2017, the Company expects to produce between 420,000oz – 460,000oz (2016 – 416,000oz), at US\$800/oz - \$900/oz AISC, from the non refractory operations at Pioneer, Albyn, Malomir and Pokrovskiy.

Unlocking the 9.3Moz refractory resource supports Petropavlovsk's long term growth objectives in doubling the average life of mine and sustaining the production profile.

The Company's defined economic refractory ounces are within the Malomir license area (964km<sup>2</sup>) and Pioneer license areas (1,375km<sup>2</sup>). Both licenses sit along or above the Mongolo-Okhotskiy mineralised belt. Refractory mineralisation at both Malomir and Pioneer is hosted mainly within carbonaceous schists and meta alevrolites. This same belt also hosts a number of large deposits, including Sukhoi Log and Teseevskoe-Baley to the west of the Amur region.

- **Malomir** (of which 62% JORC reserves are refractory) is the only large refractory deposit within the north east part of the Amur Region and remains largely under explored. The area is highly prospective for further resource growth due to favourable geology and large neighbouring alluvial deposits, many of which have unidentified hard rock sources.
- **Pioneer** (of which 58% JORC reserves are refractory) in addition to the significant non refractory reserves, further refractory resource potential exists within the Pioneer license, particularly along the contact between granitoid and Jurassic host rocks, south and south west of the Pioneer RIP plant.

## POX Feasibility

In 2010, an extensive feasibility study into refractory ore processing solutions was carried out by PHM Engineering, the Company's 100% owned subsidiary. This incorporated a base engineering study prepared by Outotec in cooperation with RDC Hydrometallurgy, the Company's 100% owned subsidiary. The results demonstrated that pressure oxidation (POX), via autoclaves, was the most technically and economically viable and advantageous processing solution, in addition to being the most efficient, safe and environmentally friendly method.

POX is a globally recognised process for treating refractory ore and flotation concentrate, by applying high temperature and high pressure within an autoclave. This allows the gold bearing sulphides to break down, making the gold amenable to cyanide leaching.

In 2011, the Company decided to proceed with the POX Hub development. The final design requires the construction of flotation plants at Malomir (5.4Mtpa) and Pioneer (6.0Mtpa) and a 500ktpa pressure oxidation facility (POX Hub) at Pokrovskiy, utilising four separate autoclave vessels (15m x 4m, each with a volume of 66m<sup>3</sup>).

This allows operations to be significantly more flexible, as flotation concentrates from Malomir and Pioneer with varying metallurgic properties can be separately processed simultaneously, without compromising productivity or gold recovery. The final design also allowed for a further 30% expansion in processing capacity from 500ktpa to 650ktpa, with the addition of two further autoclaves.

The Pokrovskiy mine, in the Amur region, was identified as the optimal strategic location for the POX Hub, due to the excellent regional and on site infrastructure. The Malomir mine is 670km from site and the Pioneer mine 40km from site via all weather federal roads. The Trans-Siberian Railway is 10km from the site and Blagoveshchensk, the Russia-China trading hub of the Far East, is 450km from site via federal motorway. Furthermore, the region benefits from access to ample, low cost hydropower from four regional hydroelectric stations (c.5GW capacity) and the availability of highly skilled labour.

Pokrovskiy is a mature project with declining production but excellent on site infrastructure (including a 2Mtpa RIP plant). Utilising and adapting this existing infrastructure has a beneficial impact on capital costs, with US\$90million gross value of buildings and equipment being incorporated directly into the POX Hub facility. By leveraging our existing mine site, we do not need to increase our environmental footprint.

Ore will first be mined, crushed, ground and put through a flotation circuit at Malomir (and Pioneer from 2023). The resultant high grade flotation concentrate, equating to 5.5% mass of the original ore, will be dried and transported to the POX Hub for autoclave oxidation, neutralisation, filtration and then leached in the existing Pokrovskiy RIP circuit before Doré smelting.

Extensive autoclave test work is regularly carried out at the Company's Blagoveshchensk metallurgical test plant (operating since 2011). This enables the Company to run permutations of the key operating parameters with which to better understand the optimal solutions for autoclave concentrate recovery.

Alongside an independent technical audit, in 2016 the Company conducted an internal review of the 2010 study. As confirmed by RDC Hydrometallurgy, the updated estimates for operating and metallurgical project parameters are set out below:

		<b>Malomir</b>	<b>Pioneer</b>
<b>Malomir Flotation Plant</b>			
Ore processed	Kt	5,400	6,000
Ore grade	g/t	1.04	0.91
Flotation recovery	%	86%	82%
Sulphur content	%	25%	21%
Concentrate yield	mass %	5.5%	2.9%
Concentrate grade	g/t	24	24
<b>POX Hub</b>			
Concentrate processed	kt	300-330	150-170
Gold recovery	%	93%	98%
<b>TOTAL POX Hub recovery</b>	%	79%	80%

## Project Economics

### Capital Costs

As at 31 December 2016, the total project capital spent was c.US\$200million.

The total outstanding pre production estimated capex is c.US\$120million for the POX Hub, including a contingency allowance. Total outstanding estimated capital expenditure for the Malomir flotation plant is US\$32million.

### Operating Costs

The updated operating cost estimates are detailed in the table below. These are competitive with other global operating refractory gold producers and also comparable to the Company's non refractory open pit total cash costs. This reflects lower mining costs resulting from a lower strip ratio and materially lower RIP processing costs due to only 3-5.5% of volume of raw ore being treated.

		<b>Malomir</b>	<b>Pioneer</b>
<b>Total operating costs (inc flotation)</b>	US\$/oz	615-675	785-865
Mining costs	US\$/m3	2.5	2.6
Transport costs	US\$/t conc	26.0	1.7
Flotation costs	US\$/t treated ore	4.6	4.6
POX costs	US\$/t conc	78.2	78.1

### Updated Project Economics

The updated project economics, set out in the table below, account for updated operating and capital costs, assuming a long term average gold price of \$1,200/oz and a foreign exchange rate of USD:RUR60.

	<b>Project NPV (10%)</b>	<b>Project IRR (%)</b>	<b>Project payback (yrs)</b>	<b>Revenue 2018-2032 (US\$m)</b>	<b>Avg production 2018-2032 (koz pa)</b>
<b>Base case</b>	603	65	3.25	3,965	220

### Refinancing

The Company's successful refinancing of the Group's bank debt totalling c.US\$430 million (December 2016) required 100% self funding of the POX Hub from internal cash flow generated by the Group's current non refractory operations. This was modelled based on an average US\$1250/oz gold price throughout the construction and ramp up phase.

The Sberbank US\$100million commodity linked loan facility remains on schedule for completion of final documentation effective Q1 2017.

As at 15 March 2017, the Company has hedged 459koz of gold at US\$1,253/oz over 2017-2019.

## **Construction**

The POX Hub and Malomir flotation plant are fully permitted for construction.

Following the downward trend in the gold price in 2013, the Company put the POX Hub development on care and maintenance while exploring potential external funding solutions, namely with the Company's lenders and possible joint venture partners. Prior to this, significant design work, earth works, civil works and construction had been completed.

### Malomir Flotation Plant (nameplate capacity 5.4Mtpa)

The Malomir flotation plant is a staged build.

- **Stage 1** capacity is 3.6Mtpa across two parallel 1.8Mtpa lines. Stage 1 construction is 90% complete. Flotation concentrate production is scheduled for Q1 2018. Initially the concentrate will be stockpiled before being transported to the POX Hub ahead of the staged autoclave commissioning from Q4 2018.
- **Stage 2** expands the flotation plant to 5.4Mtpa by adding a third 1.8Mtpa line. This will fully calibrate the flotation plant capacity with the existing 6Mtpa crushing and grinding capacity. Stage 2 expansion is scheduled for completion and commissioning in 2019.
- Note. During Stage 1 operation, the spare crushing and grinding capacity will be fully utilised for nonrefractory feed from the open pit and underground ore into the RIP plant.

### Pioneer Flotation Plant (nameplate capacity 6.0Mtpa)

The Pioneer flotation plant is scheduled for construction in 2021, ahead of concentrate production from 2023.

### POX Hub (nameplate capacity c.500ktpa)

The POX Hub construction is approximately 65% complete. Greater than 80% of the project equipment is on site, including all critical path items and long lead items. The four 15m x 4m autoclaves, each with a volume of 66m<sup>3</sup>, were received on site, installed and lined in 2013.

All core structures are complete including the oxygen, autoclave and filtration plants.

During 2016, the Company renewed key contracts with Outotec. Outotec is responsible for the design and development of the plant. All assembling, installation and commissioning works are carried out under Outotec installation and technical supervision. As part of the recommencing of the POX Hub development Outotec

(alongside the Company) ran checks on all the major equipment in situ and commenced work on the automation and control systems.

In January 2017, the contract was awarded to commence all the piping, welding and assembly works which will be ongoing throughout the year.

### **Key Construction Milestones**

During 2017, the oxygen plant, supporting POX Hub infrastructure and all piping, welding and assembly works are scheduled for completion. This leaves the completion of the autoclave plant, RIP refurbishment and Hub integration to be completed by Q3 2018.

During Q4 2017, the Malomir flotation plant (Stage 1) is scheduled for commissioning, whilst flotation concentrate production is due to commence from Q1 2018.

In Q4 2018, the POX Hub is scheduled to commence a staged dry and wet commissioning, one autoclave at a time.

The ramp up to commercial production is due to occur throughout 2019.

### **Upside Potential**

#### Exploration

The Company continues to explore the potential for further mine life extension and production expansion.

At Malomir, exploration work has identified several highly prospective satellite refractory targets for further exploration work, including Ozhidaemoe.

At Pioneer, refractory targets have been identified south of the main Pioneer orebody zone. Initial exploration drill results included: 68.4m@0.65g/t, 48.1m@0.74g/t and 30.9m@0.79g/t. The Alexandra zone and Sosonovaya license are also expected to provide further refractory resource upside.

There is also known refractory mineralisation with the Albyn license holding.

#### Expansion

The autoclave plant was designed and constructed to allow for an additional two autoclaves to be installed, increasing processing capacity by 30% to 650ktpa.

#### Marketing Optionality

Given the scale of the POX Hub and the large amount of undeveloped refractory gold mineralisation in the Russian Far East, the hub opens a new dimension for the Group's future growth beyond its own existing reserves and potential reserves.

- *Selling Concentrate*  
Market analysis is being carried out to explore the possible economic benefit of selling concentrate to generate near term revenue stream ahead of the POX Hub commissioning.
- *Third Party Tolling*  
The POX Hub could treat third party refractory ore under a tolling arrangement. As part of running optimisation scenarios on our production plan, upside opportunities exist for increasing the concentrate grade of the feed to the POX Hub organically within our own assets or in cooperation with third party high grade ore.
- *Regional License Acquisition*  
The POX Hub also creates opportunities to treat ores from deposits available for acquisition in the Amur region, especially those with significant reserves and resources but abandoned during the Soviet Era due to a lack of technology.

### **Investor Morning, 29 March 2017**

The Company will be hosting an event in London on 29 March 2017 from 09.00am to 11.30am.

The event will include a corporate and financial overview, followed by technical presentations on our foundation open pit operations and transformational development growth projects: the POX Hub, and development of underground operations at Pioneer and Malomir,

Further details of the event will be published on the Company's new website. [www.petropavlovsk.net](http://www.petropavlovsk.net)

### **About Petropavlovsk**

Petropavlovsk is one of Russia's leading gold mining companies. As at 31 December 2016, the Company had produced approximately 6.4Moz of gold.

Petropavlovsk is in the construction phase of a state of the art pressure oxidation facility to process the Company's substantial refractory resource base. The Company's combined 3,600km<sup>2</sup> license holding has untapped resource potential. The Company is a leading employer and contributor to the development of the local economy in the Amur region, Russian Far East, where it has operated since 1994.

Petropavlovsk is a shareholder (31.1%) of IRC Limited and is the guarantor of the US\$340m project finance facility (US\$234m principal outstanding, as at 31 December 2016). IRC is a vertically integrated iron ore producer and developer in the Russian Far East and North Eastern China. IRC is listed on the Hong Kong Stock Exchange (Ticker: 1029.HK).

Petropavlovsk is listed on the Main Market of the London Stock Exchange (Ticker POG.LN)

## Enquiries

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