

# SUNRISE RESOURCES plc

(“the Company”)

AIM Announcement

22 January 2018

## PROJECT UPDATES

Sunrise Resources plc, the AIM-traded company focusing on the development of its CS Pozzolan-Perlite Project in Nevada, USA, is pleased to provide the following project updates:

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### **CS Pozzolan-Perlite Project, Nevada, USA**

#### **Latest Pozzolan Test Work Results Highly Positive:**

- **Tests on Sunrise’s CS (natural) pozzolan show that the product mitigates the negative impact of “concrete cancer”**
- **The performance of CS pozzolan places it amongst the best natural pozzolans available on the market**

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The Company has now received independent certification testwork results for three composite samples of its natural pozzolan demonstrating that they can significantly reduce “concrete cancer”.

A form of concrete cancer is the expansion and consequential cracking and potential structural failure that can occur when alkalis in the Portland cement react with common aggregates containing reactive silica. This is the so-called “Alkali-Silica Reaction” (ASR). ASR is a major concern for cement and concrete producers and their customers.

***Commenting today, Executive Chairman Patrick Cheetham said: “This is a very important milestone in our testwork. The CS pozzolan was tested using some of the most reactive aggregates known in the western USA. Substituting 25% CS natural pozzolan for Portland cement gave an average 96% reduction in expansion compared to control samples using 100% Portland cement after the prescribed 14 days test period. The performance of the CS pozzolans in this test places it amongst the best commercially available pozzolans, industrial or natural, and will assist the Company in positioning its products in the market.”***

As advised in the Company’s recent Annual Report, pozzolan testing has moved on from strength testing, where samples from all pozzolan zones have consistently exceeded the ASTM strength requirements, to more advanced testing of three “master” composite samples from areas that are expected to fall within potential starter-pit operations. The three master samples are a tuff sample from the Tuff Zone, a perlite sample from the Main Zone and a tephra sample from the Main Zone.

As also advised the more advanced testing will evaluate various properties of the CS pozzolan that can assist the Company in determining value relative to other pozzolans. Perhaps the most critical of these properties are those that relate to the ability of the pozzolan to mitigate the widespread problem of ASR.

Pozzolans have been proven to reduce (mitigate) ASR and the extent to which this potential expansion is reduced is tested under ASTM Standard C1567<sup>1</sup>. ASTM C1567 measures the expansion of a mortar bar made with cementitious materials and aggregates in a hot alkaline water bath. In this case the cementing material comprised 25% CS pozzolan and 75% Portland cement. After 14 days the expansion is measured and compared to control mixes made using 100% ordinary Portland cement.

In the tests now being reported the CS pozzolans were tested using reactive Colorado aggregates. The expansion of mortar bars made using the three CS Project master samples averaged 0.02%, in a tight range, at 14 days compared to the ASTM acceptance limit of 0.1% above which expansion is considered to be potentially deleterious. Mortar bars made using 100% cement and the same reactive aggregate expanded by an average of 0.64%.

## **Phase 2 Drilling Completed**

The Company is also pleased to report that its Phase 2 drilling programme at the CS Project has now been completed as planned. Further information will be made available when drill samples have been evaluated.

## **Derryginagh Barite Project, Ireland**

The Derryginagh Project licence was renewed in 2015 and is subject to review every two years by the Exploration and Mining Division of the Department of Communications, Climate Action and Environment (DCCA).  
(DCCA).

DCCA has offered to renew the licence for a further two-year period subject to the Company meeting certain expenditures on exploration over the first next 6 month period and thereafter during the remainder of the next two year period.

In line with its strategy to focus on the CS Project, the Company has decided that its financial resources are better directed to the CS Project and consequently has declined the renewal offer.

The Company is not carrying any value for the Derryginagh Project in its accounts.

### **Further information**

<b>Sunrise Resources plc</b> Patrick Cheetham, Executive Chairman	<b>Tel: +44 (0)1625 838 884</b>
<b>Northland Capital Partners Limited</b> <i>Nominated Adviser and Broker</i> Edward Hutton/David Hignell John Howes/Rob Rees	<b>Tel: +44 (0)203 861 6625</b>
<b>Beaufort Securities Limited</b> <i>Joint Broker</i> Jon Belliss	<b>Tel: +44 (0)207 382 8300</b>

**ENDS**

### **Notes to Editors:**

Sunrise Resources plc is working towards the development of profitable mining operations at the CS Pozzolan-Perlite Project in Nevada, USA and to unlock the value inherent in its diverse portfolio of industrial minerals, precious metals and base metal projects.

### **About Natural Pozzolan**

Pozzolan is a cementitious material that can partially replace ordinary Portland cement in cement and concrete mixes in amounts up to 35%. Natural pozzolans, therefore, have strong

“green” credentials as the production of Portland cement is responsible for 5% of the global man-made carbon dioxide emissions with nearly one tonne of carbon dioxide (CO<sub>2</sub>) generated for each tonne of cement produced. Natural pozzolans can also improve the strength and chemical resistance of concrete. Natural pozzolans can also replace industrial by-product pozzolans in cement such as coal fly ash. The availability and quality of fly ash is under threat as coal-fired power stations are phased out in favour of natural gas plants and fly ash quality becomes more variable due to increased emission control legislation.

### **About Perlite**

Perlite is a glassy raw material which, when heated in a furnace, pops like popcorn and expands by up to 20 times in volume into a white or pale coloured, low density material. Expanded perlite is used in various industrial and household applications such as insulation, paint texturing, building materials, filter aids, insulating industrial cryogenic storage vessels and as a potting medium in gardening and horticulture to aid water retention and aeration of the soil. Some perlites can also be used as a natural pozzolan.

### Notes:

1. *ASTM International is a globally recognized leader in the development and delivery of voluntary consensus standards. ASTM C1567 is the standard test method for determining the potential alkali-silica reactivity of combinations of cementitious materials and aggregate (Accelerated Mortar-Bar Method).*
2. *The news release may contain certain statements and expressions of belief, expectation or opinion which are forward-looking statements, and which relate, inter alia, to the Company's proposed strategy, plans and objectives or to the expectations or intentions of the Company's directors. Such forward-looking statements involve known and unknown risks, uncertainties and other important factors beyond the control of the Company that could cause the actual performance or achievements of the Company to be materially different from such forward-looking statements. Accordingly, you should not rely unduly on any forward-looking statements and save as required by the AIM Rules for Companies or by law, the Company does not accept any obligation to disseminate any updates or revisions to such forward-looking statements.*
3. *This announcement contains inside information.*

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