

# **AIM Announcement**

### 2 March 2017

### SUNRISE RESOURCES PLC ("the Company")

## **CS PROJECT - UPDATE**

Sunrise Resources plc (ticker symbol 'SRES'), the AIM-traded diversified mineral exploration and development company ("the Company"), is pleased to provide this positive update on testwork and details of a new development in the potential commercialisation of the CS Project.

#### **HIGHLIGHTS:**

- Variability testing of samples from across the deposit indicate consistent results as a high quality natural pozzolan.
- Pozzolan testwork accelerated. Samples now submitted to accredited laboratory for certification testing. Results expected within 45 days.
- Testing also identified a potentially valuable opportunity for production of Perlite, a product in high demand in the construction and other industries (refer below for more details).
- Concept Study in progress to evaluate commercial options for development of the project will be expanded to include perlite production.

**Commenting today, Executive Chairman Patrick Cheetham said:** "I am delighted at the rapid progress made by Magmatics Inc. in testing of the CS Deposit for the production of natural pozzolan and that we can move so quickly to certification testing. The uniform performance of samples from across the surface of the deposit is very encouraging. The discovery that this same material may also have commercial application as perlite is an unexpected and exciting development that could add substantially to the opportunities to commercialise this project."

#### **Further information**

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#### **Detailed Information**

The Company's Pozz Project, which includes the CS Deposit, was established to search for and acquire, at low-cost, deposits having potential for the production of natural pozzolan. Natural pozzolans are seeing increased use in cements and concrete as a "greenhouse gas friendly" alternative to Portland cement.

Further details on the Company's opportunity in natural pozzolan can be found on the Company's website at: <u>http://www.sunriseresourcesplc.com/projects/pozz-overview</u>

The staking of the CS Deposit in Nevada was announced on 14 November 2016 and the Company moved quickly to carry out initial testwork. The results of this initial testwork, announced on 22 December 2016, were very positive for the production of natural pozzolan and justified a concept study and testwork programme to evaluate the economic viability of the project, announced on 25 January 2017.

#### **Pozzolan Testing**

The first stage in the work programme, variability testing, is well advanced at Magmatics' laboratory in Idaho. The objective of the variability testing is to define the areas of the deposit at surface having the best pozzolanic properties. In each test, the reactivity of the pozzolan/Portland cement/sand/water mix is assessed by testing its strength against an index mix of Portland cement/sand/water mix after curing for 7 days and then again after 28 days curing (curing involves chemical reaction and hardening).

The initial "strength against index" results of variability testing at 7 days are now available and show a very favourable low variability across the deposit, with results in line with those previously reported from selected samples.

It was originally planned that variability testing would be followed by a programme of grind size optimisation to maximize pozzolanic reactivity prior to certification of the pozzolan. The results obtained to date indicate that we have already achieved a workable grind size and that we can bypass this time-consuming testing stage. Consequently, samples have now been submitted to CTL Thompson, Inc. in Denver, a leading accredited cement and construction industry materials testing laboratory, for certification of CS pozzolan according to ASTM C618N<sup>1</sup>. This will be important in establishing the material's credentials to future customers.

#### Perlite Testing

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 used in:

- Various industrial and household applications such as insulation, paint texturing, plaster and concrete fillers, building materials fillers, formed insulation, field conditioners (soil porosity enhancement), and fire proofing.
- Filter aids (in competition with diatomite).
- Insulating industrial cryogenic storage vessels.
- As a potting medium in gardening and horticulture to aid water retention and aeration of the soil.

Following simple torch heating tests which suggested the CS Deposit samples expanded significantly on heating, two samples were submitted to the perlite testing laboratory at the New Mexico Bureau of Geology and Mineral Resources<sup>2</sup> alongside a commercial sample of

perlite considered to be one of the highest quality perlites in North America (Socorro reference sample). The results are tabulated below:

	Furnace	Expanded	Average		Sinks - Avg of 2
Sample	Yield	Density	Brightness – OLD	Brightness - NEW	runs
Parameter	(%)	(lbs/ft3)			(%)
Socorro Reference	91.92	1.81	85.40	79.50	3.30
CS Sample 1	87.60	1.60	86.00	80.00	0.60
CS Sample 2	94.98	2.25	84.90	78.90	0.20
CS Sample 2 Duplicate	94.78	2.32	85.30	79.30	0.20

The CS samples yielded a high brightness, low density expanded product. Expanded apparent densities of commercial perlites vary in the range 2-11 lbs/ft<sup>3</sup>.

With just two samples tested so far, more work needs to be done, but initial indications are that the samples tested represent commercial quality perlite. Sample 2 outperformed the high quality reference material on some parameters and gave close and very acceptable results on other parameters. The very low expanded density of Sample 1 may have advantages in certain applications, for example in insulation.

The application of perlite to different industrial uses is dependent not only on these properties but also on the size distribution of the expanded particles. The expanded test products have been subject to a full sieve analysis and results indicate potential in a wide range of commercial applications. However, at this stage the expansion tests have been carried out on a specific size fractions (for both the CS samples and the reference material) and further testwork is necessary to determine which applications can be targeted in commercial practice.

The CS Deposit can now be described as both a perlite and a high quality pozzolan.

The Concept Study for development of the CS Deposit will now be expanded to consider production of perlite alongside pozzolan and define options for commercialisation of project.

For more information on perlite see: https://perlite.org/library-perlite-info/perlite-library.html

According to the United States Geological Survey, in 2014, the last year for which it has published data, the total value of expanded perlite used in the USA was 454,000 tons having a value of US\$151,000,000, an average of US\$332/ton.

#### <u>Notes:</u>

1. ASTM International is a globally recognized leader in the development and delivery of voluntary consensus standards. ASTM C618N is the standard for natural pozzolan.

- 2. The New Mexico Bureau of Geology and Mineral Resources provides perlite analyses for industry, government, and the public through the perlite laboratory, an applied-research and public-service facility. The perlite laboratory is the only readily accessible perlite testing facility in the United States.
- 3. Whilst the Company has established that its CS mining claims contain significant outcrop areas and exposed vertical thicknesses of glassy rhyolite meeting the chemical requirements for natural pozzolan, the Company has not yet carried out any drilling and no code-compliant Exploration Target or Mineral Resource or Ore Reserve has been defined.
- 4. This announcement contains inside information for the purposes of Article 7 of Regulation (EU) 596/2014 of the European Parliament and of the Council.
- 5. The information in this release has been compiled and reviewed by Mr. Patrick Cheetham (MIMMM, MAusIMM) who is a qualified person for the purposes of the AIM Note for Mining and Oil & Gas Companies. Mr. Cheetham is a Member of the Institute of Materials, Minerals & Mining and also a member of the Australasian Institute of Mining & Metallurgy.

#### Notes to Editors:

#### About Sunrise Resources plc

Sunrise Resources plc is an AIM-traded diversified mineral exploration and development company. The Company's objective is to develop profitable industrial minerals mining operations to sustain the Company's wider mineral exploration efforts and create value for shareholders through the discovery of world-class precious metal and diamond deposits.

The Company holds a portfolio of industrial minerals projects in Nevada, USA including deposits of diatomite, natural pozzolan and high-grade limestone. It is also exploring for silver, gold, and diamonds in Nevada and Western Australia.

Shares in the Company trade on AIM. EPIC: "SRES"

Website: www.sunriseresourcesplc.com