Hudson Resources Announces the Development of CO2 Free White Cement Using the White Mountain Anorthosite

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VANCOUVER, British Columbia, Jan. 22, 2018 (GLOBE NEWSWIRE) -- Hudson Resources Inc. (the “Company”) – (TSX-V:HUD) (OTC:HUDRF) is pleased to announce that it has now completed initial research and development activities and has confirmed that the White Mountain anorthosite (calcium feldspar) can be used to make a CO_2 free, heat-resistant, acid-resistant, white cement. Hudson believes this cement has numerous potential applications including white or coloured architectural concrete, fibre reinforced cement, refractory castable pieces, fire-proof building materials, and hazardous waste containment.

Hudson has been working with researchers at The University of British Columbia’s Ceramics and Refractories Research and Testing Laboratory (UBCeram) for the past year using the White Mountain anorthosite to create Chemically Bonded Anorthosite Cements (CBAC), Concretes and Composites. Hudson has branded the new anorthosite concrete as AnoCrete.

In the spring of 2016, based on research from existing phosphate cements, Hudson discovered that by adding phosphoric acid to its crushed anorthosite, a cementitious material could be created at room temperature. In comparison, Ordinary Portland Cement (OPC) requires the high temperature processing of limestone which releases a significant amount of CO_2 into the atmosphere.

According to the Cement Sustainability Initiative, the cement industry causes five percent of global man-made CO_2 emissions annually. Every tonne of Portland cement produced contributes 0.9 tonnes of CO_2 to the environment. The CO_2 emissions generated in the production of Hudson’s anorthosite cement are limited to the contribution from the production of the anorthosite (mainly crushing and transportation of ore) and the production of phosphoric acid (estimated as low, neutral or in some cases negative when using modern technologies -https://www.researchgate.net/publication/235704822).

The main objective of Hudson’s research to date has been to develop a sustainable, low to zero CO_2 cement with superior appearance (white colour) and heat and acid resistance in comparison to OPC. The research has achieved excellent results in a very short period of time. Initial research was completed at McGill University in Montreal. In the summer of 2017, UBCeram, in conjunction with Hudson, was awarded a Natural Sciences and Engineering Research Council of Canada (NSERC) grant to conduct research and define a path to commercialization.

Testing to date has successfully demonstrated that AnoCrete exceeds the OPC minimum ASTM C150 compressive strength of 28MPa after 28 days. The properties of AnoCrete are effected by ambient heat, the amount of added phosphoric acid and the particle size of the anorthosite. Additional research is ongoing to perfect the mix and determine how various additives can be used to improve performance characteristics.

UBCeram research has identified a number of key properties which support Anocrete being a premium product, including:

- Low to net zero CO_2 emission
- High whiteness
- High durability (insoluble in water and acidic solutions, resistant to sulphate solutions)
- Potential to produce a lightweight cement
- Strength comparable to OPC
- High heat resistance (up to 1200°C before it started to turn into glass).
- Alkali, thermal shock, and abrasion resistant

James Tuer, Hudson’s President, stated, “We are very excited about the prospects of developing an environmentally sustainable white cement. This process only works because of the unique nature of the White Mountain anorthosite. We envision a number of applications where AnoCrete can outperform existing white cements where an environmentally sustainable cement is desired, a bright white colour is preferred, or where high temperature and acid resistance is needed. We are continuing to work with UBCeram this year to advance this exciting new product line.”

Hudson believes AnoCrete may be used in the following applications;

- Structural cements such as white architectural cement concrete, heat-reflecting cement for warm climates, marine cement, borehole sealant for deep oil and gas wells, and premixed just-add-water cement for homeowners
- Cost effective, hard and chemically resistant ceramic components such as countertops and tiles
- High temperature materials such as monolithic and castable refractories for the metal industry, insulating firebricks and foams, fireproof panels
- Lightweight acid resistant composite materials compatible with E-glass and steel fibres
- Encapsulation of nuclear waste including Caesium, Strontium, Barium and Technetium
- Stabilization of hazardous waste such as mine tailings, municipal solid waste, industrial sludge, contaminated soils, and smelter slags

These applications are all high value cements in comparison with OPC. For example, white cement commands a significant premium over grey OPC. Increases in carbon taxes (Canada recently announced a carbon tax of $50 per tonne by 2022) can be expected to significantly increase OPC prices. Hudson believes that AnoCrete can be more than price competitive with these OPC-based high value cements while having a net zero CO_2 impact.

This development further diversifies the White Mountain anorthosite’s potential revenue streams. Hudson now envisages the anorthosite product being used in the manufacture of structural E-Glass fibre, as a filler and extender in paints and plastics, as a primary feed material in the production of alumina and as a source of CO_2 free white cement.

Hudson is currently completing the construction of the White Mountain project on the west coast of Greenland with production forecast for the second half of 2018. Through it’s wholly-owned subsidiary, Hudson Greenland A/S, Hudson owns 100 percent of the White Mountain project. The company was granted a 50-year mining license in 2016. Photos of the 2017 construction activities have been updated on Hudson’s website: hudsonresources.ca/gallery.asp

ON BEHALF OF THE BOARD OF DIRECTORS

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