



**FRACTAL SYSTEMS ANNOUNCES SIGNING OF A NON-BINDING TERM SHEET
WITH A MAJOR PRODUCER TO PROVIDE LONG-TERM SUPPLY FOR THE
ENHANCED JETSHEAR REGIONAL HUB PROJECT**

First Commercial Deployment of Enhanced JetShear™ Technology Now Underway

March 4, 2019 (Calgary, Alberta) – Fractal Systems Inc. (“Fractal” or the “Company”), a privately-owned technology company engaged in the business of developing proprietary partial upgrading technology solutions for producers and midstream companies, today announced that it has entered into a non-binding term sheet with Cenovus Energy Inc. (“Cenovus”) for a potential diluted bitumen (dilbit) supply and tolling agreement for its proposed Enhanced JetShear Regional Hub project.

Since the conclusion of the Enhanced JetShear (“EJS”) commercial demonstration program in 2017 Fractal has been focused on the development of a commercial scale project to be located at a major pipeline hub in Alberta. Fractal has developed commercial relationships with producers, midstream companies, capital providers and other organizations to enable the development of the EJS Regional Hub project with a processing capacity of up to 70,000 barrels per day (bpd) of dilbit (50,000 bpd of bitumen). The non-binding term sheet with Cenovus contemplates 20,000 to 35,000 bpd of dilbit supply on a long-term tolling basis to support the development of this project. Fractal and Cenovus have worked collaboratively on pilot projects for the Enhanced JetShear technology since 2013, and the development of the EJS Regional Hub project builds on the success of those projects.

“We are very pleased to be able to announce this non-binding term sheet for dilbit supply with Cenovus” said Joe Gasca, Fractal’s Chairman. “The support that Cenovus has provided to the development of the EJS technology over the past several years has made a significant contribution to our success. We look forward to continuing to work with Cenovus as we advance the EJS Regional Hub project.”

“We are encouraged with the results of the Enhanced JetShear process commercial demonstration.” said Harbir Chhina, Cenovus Executive Vice-President & Chief Technology Officer. “The demo met all operational and safety milestones and consistently demonstrated viscosity and density improvements that may allow the avoidance of more than 40% of the diluent normally required to transport bitumen. As well, the process may reduce the Total Acid Number of the feed by greater than 60%, which may make it possible for the produced product to access broader markets.”

The Enhanced JetShear technology is expected to cost-effectively improve bitumen product quality (particularly through reduced acidity) and may significantly lower bitumen viscosity which eliminates the need for over 40% of the diluent that is normally required for diluted bitumen to meet pipeline specifications. This would potentially reduce transportation costs and increase export pipeline capacity by approximately 20%.



Background

Since the mid-2000s, Fractal has been advancing the development of its proprietary and patented technologies, JetShear™ and Enhanced JetShear to provide heavy oil and bitumen producers with cost-effective solutions to improve margins, debottleneck infrastructure and provide flexibility associated with the transportation of heavy oil. During 2013, Fractal entered into technology and testing agreements with Cenovus, and in May of 2014, the parties commenced testing dilbit at Fractal's 1,000 bpd JetShear demonstration facility located near Provost, Alberta, using commercial-scale JetShear components.

On February 16, 2015, Sustainability Development Technology Canada awarded Fractal and Cenovus \$3.7 million of funding to conduct field trials of the newly developed EJS and Acid Reduction Process™ ("ARP™") technologies. Building on the demonstration of the JetShear technology platform that concluded in April of 2015, Fractal commenced engineering for a retrofit and expansion of the JetShear facility. Construction was completed in the first half of 2016 and the expanded facility operated from late August 2016 through August 2017. Cenovus now owns the facility and has a license agreement in place which recognizes significant investment made by Cenovus in the technology development.

During the operating periods, the facility processed over 225,000 barrels of partially-diluted bitumen that was trucked to the site from Cenovus's Christina Lake and Foster Creek SAGD projects. The facility consistently achieved over 40% diluent displacement and reduced the total acid number or TAN and olefinic content of the product to below industry thresholds.

The key objectives set by Cenovus for the large-scale demonstration that were met or exceeded included:

- 1) Ensuring the facility's operation and throughput expectations were achieved with no recordable safety or environmental incidents;
- 2) Meeting processing objectives using EJS while maintaining 100% volumetric yield and reaching pipeline transportation specifications for viscosity and density with 40% or greater reduction in required diluent; and
- 3) Achieving ambitious product quality targets (olefin content, acidity, diluent displacement, and product stability).

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