

CLEAN RESOURCES

ADVANCED HYDROCARBONS

CLEANER HYDROCARBON PRODUCTION – RECOVERY TECHNOLOGIES

FUNDING DETAILS

Limitless Frac System – Continuous Pumping / Dissolvable Dart Completion System

Advanced Upstream is demonstrating its Limitless™ Fracturing System, a revolutionary fracturing sleeve and dissolvable dart system that allows reduced complexities, risks, and costs in well completions through enabling multiple fracturing stages, and non-stop frac stimulation without well intervention. The compact magnesium alloy dart is programmed and launched at surface to land in a specific sleeve, while mini onboard sensors track the dart to its location within the wellbore and ‘activate’ the dart before landing on to the target sleeve. The dart dissolves after fracturing treatment, leaving behind a large bore for production. Upon successful demonstration of the initial field deployment of up to five systems, up to three additional successful field trials will be completed to transition Limitless™ to commercialization.



RECIPIENT:

**Advanced
Upstream Ltd**



PARTNERS:

**Seven Generations
Energy**



TOTAL BUDGET:

\$485,500



AI FUNDING:

\$200,000



PROJECT DATES:

**September 2020 –
July 2021**



PROJECT TRL:

**Start: 6
End: 7**

APPLICATION

The system design allows for the operator to increase the length of the horizontal/lateral portion of the well. The Limitless™ dart is pumped down the well requiring no intervention from wireline or coiled tubing, which directly saves the customer money and reduces the overall volume of equipment on location during the well completion process. The reduction in equipment utilized during completion will reduce the number of vehicles on the road, associated CO2 emissions, safety-related issues, and the amount of land and water used.



PROJECT GOALS

The key goals of the project are:

- Validate the dart operations to accurately select, land and activate in the specified target sleeve or sleeves in an actual well completion environment
- Demonstrate the operating success of both the Single Point and Cluster sleeve designs in actual well completion conditions proving the ability to complete the frac treatment without the use of coiled tubing and wireline interventions
- Validate the operating efficiencies of the Limitless™ Fracturing System related to no coiled tubing and wireline intervention and the reduction of operating vehicles on location, pumping efficiency reducing the total number of hours during the frac treatment process and the reduction in the amount of water utilized during the completion tool pump down process

BENEFITS TO ALBERTA

The successful implementation of this technology or use of the knowledge generated could result in:

- Increased employment opportunities related to design, manufacture, assembly, and distribution of Limitless™ systems
- Reductions in per barrel and per well environmental impacts associated with water use and land disturbance, and GHG emissions related to less equipment and associated vehicles required to travel to and complete well sites
- Improvements in well economics related to reduced completion time, reduced completion costs, and extended operational life



**2 New
Products/Services**



**Future GHGs
Reduced**



36 Future Jobs

CURRENT STATUS

March 2021

Advanced Upstream successfully completed multiple functional tests to demonstrate compatibility of their Limitless™ systems with completion techniques leveraged by their field demonstration partner Seventh Generation Energy. A target test well for field demonstration has been identified, and program planning for successful deployment and testing is underway.