Future Fuels Reports Results of Hyperspectral Survey at The Hornby Basin Uranium Project

19.06.2025 | ACCESS Newswire

VANCOUVER, June 19, 2025 - Future Fuels Inc. (TSXV:FTUR)(FSE:S0J) ("Future Fuels" or the "Company") is pleased to report the results of a hyperspectral remote sensing survey conducted at its 100%-owned Hornby Basin Uranium Project (the "Hornby Project" or the "Project"), located in the Hornby Basin, Nunavut Territory.

The hyperspectral survey (the "survey") successfully identified mineralogical, geochemical, and gas anomalies consistent with known uranium mineralization at the Project, generating over 100 anomaly clusters. The anomalous hyperspectral results will be integrated with the company's exploration model and will provide additional targets to ground truth in the upcoming exploration season.

"The first ever hyperspectral survey completed at the Hornby Project moves us another step closer to refining our targets." commented Rob Leckie, President & CEO of Future Fuels, "We will continue to update our shareholders as we move towards formularizing our first exploration program at the Project."

Highlights

- Confirmed spectral anomalies associated with muscovite, illite, pyrite, and chert-all minerals linked to sandstone-hosted uranium systems.
- Gas anomalies for helium (He), hydrogen (H?), carbon dioxide (CO?), and methane (CH?) detected above the Mountain Lake Uranium System, are interpreted to be related to radioactive decay of the system and redox-related processes.
- ~100 anomalous zones were generated using spectral and gas classifier models outside of the known mineralized extent of the Mountain Lake System area. (Figure 1).
- Spectral signature of the system includes diagnostic clay minerals and redox indicators, enhancing confidence in remote target generation across the Project area.
- Synthetic Aperture Radar (SAR) data identified dielectric anomalies spatially associated with alteration minerals (e.g., pyrite and illite), supporting the potential for mineralized zones under shallow cover.
- Future Fuels is one step closer to being able to integrate the wealth of data collected into VRIFY's AI targeting program to formulize the companies first exploration plan at the Hornby Project.

Figure 1: Map displaying the gas, dielectric constant (DC) and mineral endmember anomalies (polygons) and Helium emission intensity rasterised results.

Hyperspectral Survey Overview

The hyperspectral program consisted of evaluating satellite derived data across the entire property portfolio. The spectral signatures observed at the known mineralised area at Mountain Lake was used to assess and identify comparable targets across the broader Hornby Bay Basin (Figure 1). The survey analyzed 10-band Sentinel-2 data (VNIR and SWIR) and integrated it with PALSAR-2 SAR to detect mineralogical and geochemical signals from surface and near-surface environments.

Spectral unmixing techniques were applied to generate 16 mineral endmembers, compared to the USGS mineral library. High-confidence matches included:

- Muscovite (0.79 corr.)
- Illite (0.68 corr.)
- Pyrite (0.51 corr.)
- Chert (0.66 corr.)

These minerals are all common in or near uranium-bearing sandstones, particularly in redox-front systems where uranium precipitates from oxidized fluids.

A multivariate classifier trained on the spectral fingerprint of the Mountain Lake area identified 100 high-priority targets with similar spectral responses-excluding the known system itself-to guide future prospecting.

The gas component of the survey revealed elevated He, CH?, and CO? concentrations that are potentially linked to:

- Radiogenic decay of uranium and thorium (He)
- Redox and microbial activity involving pyrite and muscovite (CH? and CO?)

These anomalies indicate active geochemical pathways from depth, potentially marking concealed mineralization. Additionally, SAR backscatter analysis provided dielectric constant estimates, with higher values over Mountain Lake associated with moisture-bearing alteration minerals. The dielectric signature supports the remote detection of alteration zones even under shallow cover.

The survey results strongly support the exploration model for a near-surface, sandstone-hosted uranium system with spectral and gas signatures consistent with known high-grade mineralization. These insights will be integrated into Phase 2 exploration planning.

What is a Hyperspectral Survey?

A hyperspectral survey is a remote sensing technique that analyzes light reflected from the Earth's surface across a wide range of wavelengths, well beyond what the human eye can see. Each mineral reflects light in a unique way, creating a "spectral signature" that can be used to identify specific materials on the ground, such as clays, oxides, or sulfides commonly associated with mineral deposits. In this survey, satellite imagery from Sentinel-2 was used to capture visible and infrared light in 10 spectral bands. The data was then processed using a method called spectral unmixing, which separates the signal into pure mineral components (called endmembers). By comparing these signatures with known mineral libraries, geologists can detect subtle variations in surface mineralogy that may indicate buried mineralization. Additionally, the survey mapped natural gas emissions (e.g., helium, hydrogen, methane) that can escape from uranium-bearing deposits through cracks and fissures in the ground. These gas signatures-along with mineral indicators-help pinpoint potential new exploration targets, even when they're hidden beneath soil, vegetation, or glacial cover (After Pendock, 2025).

References

Future Fuels Inc. (2025). NI 43-101 Technical Report on the Hornby Basin Uranium Project. Future Fuels Inc.

Pendock. N, (2025) Uranium exploration at Mountain Lake, Nunavut, using Sentinel-2visible/near infrared [VNIR], shortwave infrared [SWIR] and Palsar-2 synthetic aperture radar [SAR] imagery.

Smith, J.P. (2003). Geophysical Survey Data and Uranium Assay Analysis in the Hornby Basin. Canadian

Geological Survey Bulletin No. 315.

National Instrument 43-101 Disclosure

Nicholas Rodway, P. Geo, (NAPEG Licence # L5576) is a consultant of the company and is a qualified person as defined by National Instrument 43-101 - Standards of Disclosure for Mineral Properties. Mr. Rodway has reviewed and approved the technical content in this release.

About Future Fuels Inc.

Future Fuels' principal asset is the Hornby Project, covering the entire 3,407 km² Hornby Basin in north-western Nunavut, a geologically promising area with over 40 underexplored uranium showings, including the historic Mountain Lake System. Additionally, Future Fuels holds the Covette Property in Quebec's James Bay region, comprising 65 mineral claims over 3,370 hectares.

On behalf of the Board of Directors

FUTURE FUELS INC.

Rob Leckie
CEO and Director
info@futurefuelsinc.com
604-681-1568
X: @FutureFuelsInc
www.futurefuelsinc.com

Forward Looking Statements

Neither the TSX Venture Exchange nor its Regulation Service Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

This news release contains forward-looking statements and other statements that are not historical facts. Forward-looking statements are often identified by terms such as "will", "may", "should", "anticipate", "expects" and similar expressions. All statements other than statements of historical fact included in this news release are forward-looking statements that involve risks and uncertainties. There can be no assurance that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. Important factors that could cause actual results to differ materially from the Company's expectations include but are not limited to market conditions and the risks detailed from time to time in the filings made by the Company with securities regulators. The reader is cautioned that assumptions used in the preparation of any forward-looking information may prove to be incorrect. Events or circumstances may cause actual results to differ materially from those predicted, as a result of numerous known and unknown risks, uncertainties, and other factors, many of which are beyond the control of the Company. The reader is cautioned not to place undue reliance on any forward-looking information, including, but not limited to, statements regarding the Hornby Project, the prospects of the mineral claims forming the Hornby Project, which are not at an advanced stage of development, the Company's anticipated business and operational activities, and the Company's plans with respect to the exploration or advancement of the Hornby Project. Factors that could cause actual results to vary from forward-looking statements or may affect the operations, performance, development and results of the Company's business include, among other things, the Company's ability to generate sufficient cash flow to meet its current and future obligations; that mineral exploration is inherently uncertain and may be unsuccessful in achieving the desired results; that mineral exploration plans may change and be re-defined based on a number of factors, many of which are outside of the Company's control; the Company's ability to access sources of debt and equity capital; competitive factors, pricing pressures and supply and demand in the Company's industry; and general economic and business. Such information, although considered reasonable by management at the time of preparation, may prove to be incorrect and actual results may differ materially from those anticipated. Forward-looking statements contained in this news release are expressly qualified by this cautionary statement. The forward-looking statements contained in this news release are made as of the date of this news release and the Company will update or revise publicly any of

the included forward-looking statements as expressly required by applicable law.

SOURCE: Future Fuels Inc.

View the original press release on ACCESS Newswire