



STARFIELD RESOURCES INC.

NEWS

Starfield Resources Commissions SGS Lakefield To Advance Hydromet Development

*Massive sulphides from Ferguson Lake Property to be processed on
continuous basis through hydromet circuit*

Toronto, Ontario – February 17, 2010 – Starfield Resources Inc. (“Starfield” or the “Company”) (TSX: SRU) today announced it has contracted SGS Minerals Services (SGS) in Lakefield, Ontario to advance the development of its innovative hydrometallurgical process for recovering metal from massive sulphide ores. This technology will have a direct impact on potential future operations at the Company’s Ferguson Lake Project in Nunavut and the Stillwater project in Montana.

The hydromet process chemistry has been demonstrated in several laboratories on a small scale. The next phase of development is to demonstrate that the key steps in the process can operate successfully using commercially available equipment and massive sulphides from Ferguson Lake.

The SGS test work will initially focus on perfecting the oxidation and hydrolysis process steps with a synthetic solution. Then, 100 kilograms of massive sulphides from Ferguson Lake will be processed to determine if there are any chemical implications to the hydromet circuit.

As part of its mandate, SGS will be responsible for the design, procurement and setup of test equipment, work program testing, technical assessments and preparation of the final report. The leaching equipment, that will produce the solution for the second stage of tests, is currently at SGS and was used to verify the leaching characteristics for the scoping study published in 2008.

“We are pleased to have the financing to further develop this economical, environmentally friendly process,” said André J. Douchane, President and CEO. “We expect SGS will take approximately six months to complete the work and write the report. A successful outcome from these definitive tests will advance the hydromet development to its final phase, which includes the design and construction of a mini pilot plant capable of treating massive sulphides.”

About Starfield

Starfield Resources Inc. is an exploration and development stage company exploring for copper, nickel, and platinum group elements (PGE) in North America. The Company has

three main projects: a PGE project in Montana's Stillwater District; a copper project in California's historic Moonlight Copper Mining District; and a copper/nickel/cobalt/PGE project in Ferguson Lake, Nunavut. Additional assets include a diamond joint venture in Nunavut, additional copper/nickel/chrome projects in Montana, and a portfolio of eight gold properties in Nevada that are currently under joint venture agreement. Starfield is also funding the development of a novel, environmentally friendly and energy efficient hydrometallurgical process to recover metals from massive sulphides.

Forward-Looking Statements

This news release may contain certain information that constitutes forward-looking statements. Forward-looking statements are frequently characterized by words such as "plan," "expect," "project," "intend," "believe," "anticipate" and other similar words, or statements that certain events or conditions "may" or "will" occur. Forward-looking statements are based on the opinions and estimates of management at the date the statements are made, and are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected in the forward-looking statements. These factors include the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drilling results and other geological data, fluctuating metal prices and other factors described above and in the Company's most recent annual information form under the heading "Risk Factors" which has been filed electronically by means of the Canadian Securities Administrators' website located at www.sedar.com. The Company disclaims any obligation to update or revise any forward-looking statements if circumstances or management's estimates or opinions should change. The reader is cautioned not to place undue reliance on forward-looking statements.

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Starfield Resources Inc. investors may also participate in the Company's online community at <http://www.agoracom.com/ir/Starfield>.

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