Spark Energy Minerals Files NI 43-101 Technical Report for Arapaima Lithium & REE Project, Brazil and Provides Overview

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Vancouver, June 2, 2025 - Spark Energy Minerals Inc. (CSE: SPRK) (OTC Pink: SPARF) (FSE: 8PC) ("Spark" or the "Company"), is pleased to announce the publication of its maiden NI 43-101 Technical Report for the Arapaima Lithium and Rare Earth Elements (REE) Project, located in the heart of Brazil's "Lithium Valley" in Minas Gerais, Brazil.

Covering a vast contiguous land package of 919 km², the report confirms Arapaima as a highly prospective early-stage exploration project with compelling lithium and REE potential.

Highlights

- Identification of 123 individual pegmatite occurrences across 13 trends with a combined strike length of 31 km.
- Discovery of anomalous lithium values in rock chip samples (up to 1,397 ppm Li) and stream sediments (up to 191 ppm Li), as well as evolved pegmatites with K/Rb ratios as low as 23.84, potentially indicative of spodumene-rich LCT pegmatites.
- Promising REE mineralization in the Caladão Granite, with soil samples returning >3,000 ppm TREO and stream sediments >6,000 ppm TREO, adjacent to high-grade drill results reported by neighbouring company Axel REE Limited.
- Excellent access via sealed roads and proximity to established infrastructure and the producing Sigma Lithium mine, located just 15 km away.

"This technical report validates our exploration thesis and highlights Arapaima's position as one of the most exciting early-stage lithium and REE projects in the region," said Eugene Hodgson, CEO of Spark Energy Minerals. "We are committed to executing a systematic and focused exploration campaign to unlock its full potential."

The full NI 43-101 Technical Report is available on SEDAR+ and the Company's website here.

Arapaima Lithium and REE Project Overview

Location

The Arapaima project covers ~919 km² in northeastern Minas Gerais. It spans parts of the Araçuaí pegmatite belt, with nearby towns including Aracuaí, Teófilo Otoni, Itinga, Virgem da Lapa, Padre Paraiso and others.

The project area is about 550 km (~8.5-hour drive) from Belo Horizonte via sealed highways BR-381 and BR-116. Air access is available to regional centers (an ~85 km drive to the project). The town of Padre Paraiso lies at the southern edge (the "gateway of the Lithium Valley") and serves as a field base. Padre Paraiso lies on a new high-voltage transmission line (Padre Paraiso-Governador Valadares 6) which will strengthen the regional grid. This will ensure reliable power for future operations.

Figure 1: Arapaima Lithium and REE project - Access

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Project Ownership

Spark owns 100% of the Arapaima package, comprising of 58 granted exploration licenses (ELs) plus 4 applications (total 62 licenses) covering roughly 919 km². Previously, the size of Arapaima had been report as 64,359-hectares however over the course of developing the technical report, the outlying tenements have been included as an all-encompassing project that stretches throughout the Lithium Valley and in close proximity to other notable projects, including Sigma Lithium, Lightning Minerals, Lithium Ionic, Axel REE, etc.

Figure 2: Arapaima Lithium and REE project tenements relative to neighbouring projects

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Geology

The project lies in the Eastern Brazilian Pegmatite Province (EBPP), a ~150,000 km² Paleoproterozoic-Neoproterozoic belt (mostly in eastern Minas Gerais) known for its lithium-cesium-tantalum (LCT) and gem pegmatites. Minas Gerais hosts ~90% of the EBPP; pegmatites here have been mined for gems and rare elements since colonial times. Arapaima falls within the Araçuaí pegmatite district ("Lithium Valley"), which includes major LCT-pegmatite fields at Itinga, Coronel Murta, Pedra Azul, Padre Paraiso, etc.

Figure 3: Regional Geology (Source: Modified from Pedrosa-Soares et al. 2011)

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Mineralization

Target mineralization is predominantly LCT-type granitic pegmatites (hosting lithium, cesium, tantalum, niobium, etc.) and rare-earth-oxide (REO) clay deposits developed by weathering of REE minerals. The field observations report pegmatites ranging from centimetres to ~200 m thick, often in swarms along 13 mapped trends (total ~31 km of strike).

All exposed pegmatites are heavily weathered in the tropical climate; outcrops are quartz-tourmaline-feldspar-mica lodes with no intact spodumene visible at surface. As a result, surface samples typically return low Li (due to leaching of spodumene and lepidolite), even when the underlying rock may host economic lithium levels. Sahara notes that deeply weathered profiles can hide higher-grade spodumene zones at depth.

Pathfinder geochemistry (stream sediments, soils, rock chips) shows characteristic ratios of fertile LCT-pegmatites: high K/Rb, strong Li-Nb correlation, and anomalous tin, tantalum, gallium, etc., with low Ta/Nb ratios (typical of spodumene-bearing pegmatites). These element associations will guide target selection.

Spark's Exploration History

Beginning November 2024, Spark engaged Avant Geofísica to reprocess regional magnetics/radiometrics and conduct satellite multispectral targeting. Concurrently, Spark conducted ground mapping and sampling. By early 2025, the field program had completed ~397 geochemical samples (stream sediment, soil,

rock-chip). SEM geologists logged 401 outcrop observations and identified 123 pegmatite occurrences (13 trends) on the tenure. Four high-priority exploration targets (e.g. Grota do Maquém, Agua Branca, Cruzeta and Caladão) were defined for immediate follow-up.

Figure 4: Arapaima Lithium and REE project advanced targets

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Lithium Targets

The Cruzeta Target has produced the highest assays to date with 739ppm, 1,217ppm and 1,397ppm Li respectively. The K/Rb ratios for these three samples report as low as 23.84 to 36.42 pointing to the potential proximity of highly evolved Lithium, Cesium, Tantalum (LCT) pegmatites which are characterized by this ratio and the corresponding pathfinder elemental association. The Cruzeta Target along with Grota do Maquem and Agua Branca account for the identification of 123 individual pegmatite occurrences across 13 trends with a combined strike length of 31 km.

Figure 5: Cruzeta Lithium Target and corresponding rock chip and stream sediment results (Source: Spark 43-101, March 2025)

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Rare Earth Element (REE) Potential

Spark completed reconnaissance geological mapping over the Caladão Granite. Australian junior explorer Axel REE Limited (Axel) has reported significant Gallium and REE results within the Caladão Granite. Spark's tenements are contiguous with Axel's Caladão Project and has returned high-grade REE and gallium mineralization after completing a first phase drill program. Results include 49.92m @ 5,909ppm TREO with 1m @ 22,115ppm TREO.

Initial soil and stream sediment samples collected by Sprak within their contiguous tenements have returned anomalous TREO results > 3000ppm in soils and > 6000ppm TREO in stream sediment samples. The figure below highlights Sparks results along with Axel's drilling results all hosted within the Caladão Granite.

Figure 6: Caladão Target - REE Results from Axel drilling and Spark stream sediment and soil sampling (Source: Spark 43-101, March 2025)

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Qualified Person:

The scientific and technical information disclosed in this document has been reviewed and approved by Beau Nicholls, BSc (Geo) FAIG, a Qualified Person consistent with NI 43-101 and the QP of Spark Energy's 43-101.

About Spark Energy Minerals Inc.

Spark Energy Minerals, Inc. is a Canadian company focused on acquiring, exploring, and developing battery metals and mineral assets, with a particular emphasis on its substantial interests in Brazil. The Company's flagship project is the Arapaima Lithium project spanning 64,359 hectares in Brazil's renowned Lithium

Valley, one of the most prolific mining regions in the world. This region is rapidly gaining global recognition for its vast deposits of lithium and rare earth minerals, positioning Brazil as a critical player in the global energy transition.

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FOR ADDITIONAL INFORMATION, SEE THE COMPANY'S WEBSITE AT

https://sparkenergyminerals.com
Email to info@sparkenergyminerals.com
Contact: Eugene Hodgson, CEO, Tel. +1-778-744-0742

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