

## DFS PROGRESSING WELL WITH COMPLETION OF GEOTECHNICAL PROGRAM

- Extensive DFS-level geotechnical investigations completed across all critical infrastructure locations
- Over 400 individual tests conducted covering mining infrastructure, TSF and raw water dam
- Preliminary findings confirm favourable subsurface conditions aligned with regional geology
- Consistent stratigraphy and suitable subsurface conditions to enable more standardised foundation designs and construction approaches across infrastructure areas
- Final results will support detailed engineering design and de-risk infrastructure planning as part of the ongoing Kasiya DFS
- Programs were designed and conducted with oversight from the Sovereign-Rio Tinto Technical Committee

**Sovereign Metals Limited (ASX:SVM; AIM:SVML; OTCQX: SVMLF) (Sovereign or the Company)** is pleased to announce the successful completion of comprehensive feasibility-level geotechnical fieldwork programs at its Kasiya Rutile Graphite Project (**Kasiya or the Project**) in Malawi.

The extensive programs, conducted by ARQ Geotech (Pty) Ltd and with oversight from the Sovereign-Rio Tinto Technical Committee, represent a critical milestone in the Project's ongoing Definitive Feasibility Study (**DFS**) and demonstrate continued momentum toward advancing the genuine Tier-1 Kasiya project.

The geotechnical investigations provide essential subsurface data that will inform detailed engineering design and infrastructure planning across major Project components. The comprehensive scope covered critical infrastructure areas including mining operations, process plants, tailings storage facility (**TSF**), and raw water storage dam – representing the foundational elements required for the Project's development.

**Managing Director and CEO Frank Eagar commented:** "Completing these comprehensive infield geotechnical programs marks another significant milestone towards the completion of our DFS and another step in our systematic approach towards the development of Kasiya."

Understanding subsurface conditions is essential for predicting interactions between in-situ geological strata and the overlying infrastructure. The geotechnical data will inform the design of foundations, earthworks, slope stability measures, and material suitability; ultimately contributing to safe, efficient, and cost-effective development.



The fieldwork programs employed a sophisticated combination of near-surface and deep investigation techniques across the project site, with over 400 individual tests conducted to characterise soil and rock profiles comprehensively.

### GEOTECHNICAL PROGRAMS SUMMARY

The owner's team conducted various geotechnical programs and investigations essential for understanding the physical properties of the ground for proposed infrastructure. The programs and investigations focused on key infrastructure areas critical to mine development and operations:

- Mining Infrastructure: Main access roads, northern process plant, contractors' and permanent accommodation camps, railway spur, electrical substation, power plant, and support facilities,
- TSF, and
- Raw Water Dam.

Activities focused on characterising soil and rock profiles. Field testing included both general and advanced techniques:

- Rotary Core Drilling with standard penetration testing,
- Cone Penetration Test with pore pressure measurements (**CPTu**),
- Dynamic Probe Super Heavy (**DPSH**),
- Geophysics: active seismic activities such as multi-channel analysis of surface wave (**MASW**),
- Spiral Auger Drilling,
- Dynamic Cone Penetrometer (**DCP**),
- Trenches, and
- Test pitting.

In parallel with the field testing, representative soil and rock samples, both disturbed and undisturbed, were collected throughout the investigation for laboratory analysis.

Table 1: Key Statistics per Development Area			
Development Area	Investigation Method	Number of Tests	Approximate Total Depth Investigated (m)
Mining Infrastructure	Test Pits	112	560
	DCP	92	92
	Rotary Core Drilling	18	450
	DPSH	11	165
TSF	Test Pits	51	255
	Rotary Core Drilling	10	250
	CPTu	22	310
	MASW	15	13,000
Raw Water Dam	Trenches	6	720
	Auger Drilling	41	248
	Rotary Core Drilling	29	435



## PRELIMINARY FINDINGS

Initial results indicate highly favourable subsurface conditions that correlate well with the expected regional geology. The material profiles encountered across all infrastructure sites show generally consistent stratigraphy comprising the following:

- Surface topsoil horizon,
- Underlying transported horizon of variable origin (aeolian, colluvium, and alluvium),
- Reworked residual gneiss transitioning to residual gneiss with depth,
- Deeply weathered soil profile consistently observed across the areas,
- The weathered soil profile transitioning to extremely soft to very soft rock, and ultimately into hard rock at greater depths, and
- Subsurface materials are generally derived from gneissic bedrock.

Consistent stratigraphy and suitable subsurface conditions to enable more standardised foundation designs and construction approaches across infrastructure areas, potentially reducing engineering complexity and construction costs.

Significantly, ferricrete identified within the transported horizon has been assessed as potentially reusable as engineered fill material.

The completion of these geotechnical programs represents continued strong execution of the DFS workstreams. The findings will be integrated into detailed engineering design work to optimise infrastructure placement, foundation design, and construction methodologies.



Figure 1: CPTu rig





Figure 2: MASW Testing



Figure 3: Auger Drilling





**Figure 4: Geotechnical diamond drilling**



## Enquiries

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## Forward Looking Statement

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*This announcement has been approved and authorised for release by the Company's Managing Director & CEO, Frank Eagar.*