

TSXV Release

ASX Release

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# Resouro Strategic Metals Inc.

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## Metallurgical Innovation and Risk Mitigation Update

### Tiros Titanium and Rare Earths Project

**Resouro Strategic Metals Inc.** ("**Resouro**" or the "**Company**") is pleased to provide an update on its metallurgical processing strategy at the globally significant Tiros Titanium and Rare Earths Project ("**Tiros Project**" or "**Tiros**" or "**Project**") in Minas Gerais, Brazil.

#### Key Highlights

- Metallurgical technology identified as a risk management and revenue enhancing process;
- Next stage of metallurgical optimization set to be completed by end of second quarter 2025;
- New process reinforces Resouro as a leader in sustainable and responsible mining and..
- An expert panel of independent and highly qualified metallurgists to oversee test work.

Building on successful proof-of-concept results, the Company has commenced the next stage of metallurgical optimization, targeting maximized product recovery, near-elimination of tailings, and unprecedented risk mitigation.

Resouro's application of Fusion Sulphuric Acid Leach ("**FSAL**") technology, developed by YM Serviços under the Memorandum of Understanding ("**MoU**") previously announced (*refer ASX - April 28, 2025/TSXV - April 27, 2025*), positions the Tiros Project at the forefront of sustainable mining innovation, offering potentially significant operational, economic, environmental and associated advantages.

The FSAL process involves:

- Applying controlled heat to the mineralized feed to enhance its physical and mineralogical properties;
- Comminution to an effective grind size for acid digestion;
- Filtering and removing silica;

- pH adjustments to precipitate products of titanium, iron and alumina; and
- Rare earth precipitation from the Rare Earths Oxide (“**REO**”) pregnant acid solution.

The next stage of follow up tests, supervised by YM Servicos, will commence on 5<sup>th</sup> May 2025 in collaboration with:

- REFRALAB for heat treatment and comminution <https://www.refralab.com.br/>;
- CIT Senai for acid treatment and precipitation. <https://www.fiemg.com.br/cit/>; and
- SGS laboratories for assay, <https://www.sgs.com/en-br/service-groups/laboratory-services>.

The budget for the first batch of tests, expected to be completed by the end of June 2025, is US\$70,000. Resouro will have absolute exclusivity and perpetuity to the technology for the entire Capacete Geological Formation, which hosts the mineralisation of the Tiros Project.

### **Resouro’s Executive Chairman, Chris Eager said:**

*“The advancement of the Tiros Project’s metallurgical program represents a major value-enhancing step for Resouro and its shareholders. By adopting a sustainable and highly efficient processing solution, we are positioning the Company to deliver superior returns through higher product recoveries, reduced capital intensity, and lower environmental risk. This innovation not only has the potential to strengthen the economic fundamentals of the Tiros Project but also differentiates Resouro as a forward-thinking company aligned with global sustainability expectations. We are committed to building long-term shareholder value by developing world-class assets through innovation, responsibility, and strategic discipline.”*

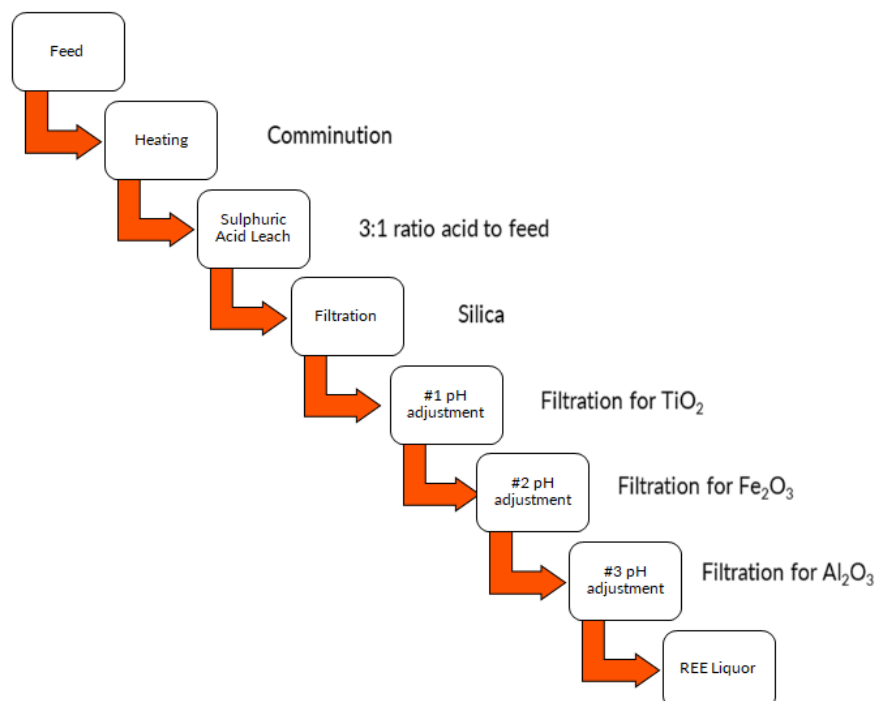
### **Resouro’s Chief Executive Officer, Alistair Stephens, said:**

*“The technical results we are seeing from the Fusion Sulphuric Acid Leach process are exceptionally encouraging. This innovative approach maximises recoveries of titanium, iron, alumina, and rare earths while addressing one of the most critical challenges in mining today — the management of mineral processing waste. The FSAL process significantly enhances the metallurgical performance of the Tiros mineralisation, upgrades titanium to a higher-value product, and has the potential to eliminate conventional tailings generation. This development underscores Resouro’s technical leadership and our commitment to advancing the Tiros Project with efficiency, integrity, and environmental stewardship.”*

## Risk Mitigation and Revenue Enhancement

The FSAL process (*Figure 1*) has been identified as a risk mitigation and potential revenue enhancing process for multiple reasons:

1. The process converts over 90% of the mass in feed (minerals of titanium, iron, silica and alumina) into saleable products and displaces, by heat treatment, volatile materials;
2. The process converts anatase (technically 100%  $\text{TiO}_2$ ) into rutile (technically 100%  $\text{TiO}_2$ ) at the pre-heat temperature, resulting in a conventional approach to titanium processing and recovery;
3. Sulphuric acid digest is a common process for recovering titanium and rare earths;
4. The process advances heat treatment to convert weathered materials (iron and alumina type minerals) into recoverable and saleable products; and
5. Most importantly, the process has been identified as a major sustainable process with significant risk reduction by the potential elimination of tailings from mineral processing.



*Figure 1.* The FSAL flow sheet converts almost the entire mineralisation to saleable products.

Based on the preliminary cost assessment, the Company estimates that the preheat treatment represents a potential cost and capital neutral or beneficial position for the following reasons:

1. The beneficiation process, whether by gravity or flotation, requires substantial volumes of water, producing tailings that can exceed the feed volume by orders of magnitude especially in clay-rich material. Without effective water recovery systems (clay is a significant water absorbing compound), managing these tailings become a major challenge. Dewatering clay-based tailings is capital-intensive, operationally costly, and likely to surpass mining costs; and
2. The elimination of tailings shifts capital and operating costs to the front-end of the process and may be cost-neutral overall.

The economic driver of this process lies in the high-grade mineralization zone of the Tiros resource which contains grades of 24% titanium dioxide and 9,100ppm total rare earth oxide. Both compounds are amenable to sulphuric acid digestion recovery(*refer ASX - April 9, 2025/TSXV - April 8, 2025*).

When weighted against risks, the process offers significant benefits, including the elimination of tailings generation, thereby removing the environmental and community risk of a tailings dam.

The Company acknowledges that the Mariana tailings dam failure in Minas Gerais, Brazil, represents one of the most catastrophic breakdowns of corporate responsibility and technical due diligence in history. The disaster devastated communities, caused irreparable environmental damage, and resulted in an estimated US\$50 billion in compensation claims. The FSAL process is a risk mitigation strategy.

Resouro is committed to safe and responsible practices, taking a novel approach to mineralization treatment that positions it as a leader in sustainable mining, setting a new benchmark for responsible mining.

The Company's innovative approach has already received strong support in early discussions with the Minas Gerais Government agencies, particularly regarding the elimination of tailings facilities — a critical issue in the region's mining sector.

## Global Significance of the Tiros Mineral Resource

The Tiros Project hosts one of the largest known titanium and Rare Earth Element (“REE”) resources globally, positioning it as a strategically significant supply source in two critical and rapidly evolving markets.

### Titanium

- Tiros contains vast quantities of titanium-rich mineralisation, primarily in the anatase form, which can be upgraded to rutile by heat treatment — a premium feedstock for titanium dioxide pigment and titanium metal.
- With rising global demand for titanium in aerospace, defence, low-carbon technologies, and advanced manufacturing, Tiros offers a long-life, low-impurity alternative to declining global ilmenite and rutile reserves.
- The potential for high-purity, chloride-grade titanium feedstock differentiates Tiros in a market increasingly driven by sustainability and supply-chain diversification.

### Rare Earth Elements

- Tiros’ REE content is analogous to some of the most sought-after deposits globally with significantly low sovereign risk.
- The rare earth suite includes critical magnet metals Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy), and Terbium (Tb), essential for electric vehicles, wind turbines, and defence systems.
- As global supply chains shift away from Chinese dominance, Tiros stands out as a scalable, jurisdictionally secure, and environmentally progressive alternative.

The TiO<sub>2</sub> and REE resource at the Tiros Project represents a globally strategic asset, aligning with key industrial, geopolitical, and environmental drivers. It offers secure, sustainable access to minerals essential for the clean energy transition and future-facing technologies.

## **ENVIRONMENTAL IMPACT ASSESSMENT**

Resouro appointed Sete Soluções e Tecnologia Ambiental (“Sete”) last year to undertake Environmental Studies for Tiros. Sete is a highly regarded Brazilian Environmental Consultant, headquartered in Belo Horizonte with offices throughout Brazil. Sete are progressing with the Environmental Impact Assessment for permitting of a Demonstration Treatment Plant.

### **Metallurgical Supervisory Team**

Under the terms of the MOU, Ysao Munemassa will supervise the test work program. Resouro has also engaged a high-quality supervisory team of metallurgical experts to review and document the FSAL process and offer independent and impartial advice on the process. The resumes of the independent team are as follows.

#### **Ysao Munemassa: University of São Paulo, Geology, 1966**

Ysao Munemassa is a distinguished Brazilian geologist with nearly six decades of experience in mineral exploration and project development. A graduate of the University of São Paulo (1966), he has held senior roles at leading global mining companies including Union Carbide, Vale, BP Minerals (as Vice President of Exploration in Brazil), CESBRA, Newmont Corporation, and Teck Resources Limited. Throughout his career, Mr. Munemassa has been instrumental in the discovery of major mineral deposits across Brazil, including an iron deposit in Carajás, chromite in Amapá, the Cabaçal gold deposit in Mato Grosso, and copper-gold IOCG mineralization at Salobo. His contributions extend across multiple commodities including gold, nickel, phosphate, scheelite, and potash. In addition to his corporate roles, Mr. Munemassa has led several entrepreneurial mining ventures, operating gold mines in Goiás, Bahia, and Amapá. As a researcher, he has developed innovative metallurgical processes for the extraction of potassium, magnesium, silica, titanium, and rare earth elements. Mr. Munemassa brings a unique combination of technical expertise, field experience, and innovation to resource development in Brazil.

#### **J.R. Goode : P.Eng. (ON and NL), 1963, FCIMM, FAusIMM**

John graduated from the Royal School of Mines as a metallurgist in 1963. After two years with Falconbridge and two years at RTZ’s Avonmouth operation, he transferred to Rio Algom in Elliot Lake, Ontario, where he was involved in process development in the yttrium-thorium and uranium plants. In 1973, he transferred to RTZ’s Ore Sorters Ltd. In 1976, John joined Kilborn Engineering and was VP of Mining and Metallurgy when he left in 1994. While there, he completed numerous

gold, uranium, and rare earth projects, including the design and commissioning of a new yttrium plant in Elliot Lake and an evaluation of rare earth operations in China that resulted in AMR (now Neo Performance Materials) acquiring interests in two separation plants. John joined Barrick Gold in 1994 and spent four years managing China operations. Upon returning to Canada, he established a consultancy undertaking numerous projects, including many rare earths projects in ore processing and separation plant design. John has presented about 80 papers, many concerning rare earths. He is a co-organizer of CIM conferences and was an expert to ISO/TC 298 rare earth, which sets international standards for the industry.

### **Steve Williams B App Sc, MBA – Executive Chairman, Blue Coast Research (BCR)**

Steve has worked in the mining industry, in Australia, Canada and South America for more than four decades working in metallurgical operations in Australia, Canada, Philippines, Dominican Republic and Mongolia. Steve Williams founded metallurgical services for Lakefield Research in Chile and worked there from 1994 – 2001. At SGS Lakefield Research, Steve acquired 30 years of experience in metallurgical project management and business development, before becoming Managing Director for SGS Canada in 2008. He is the author of many acclaimed papers in geometallurgy, and he became a CIM Distinguished Lecturer in 2004, followed by a CIM Fellow, for his notable work in geometallurgy. Steve joined Blue Coast Research in 2019 and has worked on many geometallurgy based projects for BCR.

This announcement has been authorized for release by the Board of Directors.

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### **About the Company**

Resouro is a Canadian incorporated mineral exploration and development company, listed on the ASX, TSXV, OTC and FSE, focused on the discovery and advancement of economic mineral projects in Brazil, including the Tiros Titanium-Rare Earths Project and the Novo Mundo Gold Project. The Tiros project has 28 mineral concessions totalling 497 km<sup>2</sup> located in the state of Minas Gerais, one of the best infrastructurally developed states of Brazil, 350 km from the state capital of Belo Horizonte. Resouro's Mineral Resource Estimate for the

Tiros Project contains 165 million tonne of titanium dioxide and 5.5 million tonne of total rare earths oxides within a Measured and Indicated Resource of 1.4 billion tonne.

DOMAIN	Category	Million Tonne	TiO <sub>2</sub> %	TREO (ppm)	MREO (ppm)	REO/TREO rat
HG (High Grade)	Measured	30	24	9,300	2,500	27%
	Indicated	74	23	8,900	2,300	26%
	<b>M + I</b>	<b>103</b>	<b>23</b>	<b>9,100</b>	<b>2,400</b>	<b>26%</b>
	Inferred	33	22	8,300	2,200	26%
MG (Medium Grade)	Measured	340	11	3,700	1,000	28%
	Indicated	930	11	3,600	1,000	28%
	<b>M + I</b>	<b>1,300</b>	<b>11</b>	<b>3,600</b>	<b>1,000</b>	<b>28%</b>
	Inferred	470	11	3,400	920	27%
TOTAL (HG+MG)	Measured	367	12	4,100	1,100	28%
	Indicated	1,000	12	4,000	1,100	27%
	<b>M + I</b>	<b>1,400</b>	<b>12</b>	<b>4,000</b>	<b>1,100</b>	<b>28%</b>
	Inferred	500	12	3,700	1,000	27%

Note: Further details of the Company's JORC MRE are contained within the Company's ASX announcement of 9 April, 2025/TSXV 8 April 2025. Resouro is not aware of any new information or data that materially affects the information included in the Company's announcement and that all material assumptions and technical parameters underpinning the estimates referred to therein continue to apply and have not materially changed.

## Resouro Strategic Metals Inc., capital structure

ASX Chess Depositary Interests	42,833,059
TSXV Common Stock	49,756,990
<b>Total on Issue</b>	<b>92,590,049</b>
<i>Shares held in Escrow included in Total on Issue</i>	<i>10,979,257</i>
Options issued under the Company Plan	12,495,000
Options issued to Brokers	1,843,643
Warrants issued to Brokers	600,616
Performance Rights	750,000
<b>Fully Diluted Securities</b>	<b>108,279,308</b>

## Forward-Looking Information

This news release contains certain "forward-looking information" within the meaning of applicable securities law. Forward-looking information is frequently characterized by words such as "plan", "expect", "project", "intend", "believe", "anticipate", "estimate" and other similar words, or statements that certain events or conditions "may" or "will" occur. Although we believe that the expectations reflected in the forward-looking information are reasonable, there can be no assurance that such expectations will prove to be correct. We cannot guarantee future results, performance or achievements. Consequently, there is no representation that the actual results achieved will be the same, in whole or in part, as those set out in the forward-looking information.



*Forward-looking information is 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 anticipated in the forward-looking information. Some of the risks and other factors that could cause the results to differ materially from those expressed in the forward-looking information include, but are not limited to: general economic conditions in Canada and globally; industry conditions, including governmental regulation and environmental regulation; failure to obtain industry partner and other third party consents and approvals, if and when required; the need to obtain required approvals from regulatory authorities; stock market volatility; liabilities inherent in the mining industry; competition for, among other things, skilled personnel and supplies; incorrect assessments of the value of acquisitions; geological, technical, processing and transportation problems; changes in tax laws and incentive programs; failure to realize the anticipated benefits of acquisitions and dispositions; and the other factors. Readers are cautioned that this list of risk factors should not be construed as exhaustive.*

*The forward-looking information contained in this news release is expressly qualified by this cautionary statement. We undertake no duty to update any of the forward-looking information to conform such information to actual results or to changes in our expectations except as otherwise required by applicable securities legislation. Readers are cautioned not to place undue reliance on forward-looking information.*

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