

# TSODILO RESOURCES LIMITED

## INITIATES STUDIES FOR THE PRELIMINARY ECONOMIC ASSESSMENT FOR THE HIGH-GRADE XAUDUM IRON PROJECT IN BOTSWANA

FOR IMMEDIATE RELEASE

May 11, 2021

**TORONTO, ONTARIO** - Tsodilo Resources Limited ("Tsodilo" or the "Company") (TSX-V: TSD) (OTCQB: TSDRF) (FSE: TZO) is pleased to provide an update on its wholly owned Xaudum Iron Project. The Company has initiated geochemical analysis for grade determination and geotechnical test-work for Rock Mass Rating ("RMR") evaluation for the Preliminary Economic Assessment ("PEA") of its Xaudum Iron Formation ("XIF") project.

The following analysis and test works will be conducted:

- 755 samples from 10 drill holes within the XIF Block 2 area have been sent to ALS Chemex for analysis by:
  - Element analysis by X-ray fluorescence ("XRF") using borate fusion beads; and
  - LOI by muffle furnace (Table 1);
- 34 samples from 7 drill holes representing the main XIF geological domains (Table 2) have been sent for geotechnical laboratory test-work assessment to the Department of Mining and Geological Engineering at the Botswana International University of Science and Technology (BIUST), where:
  - 18 samples will undergo Unconfined Compressive Strength ("UCS") testing;
  - 8 samples will undergo Brazilian Tensile Strength (Brazilian Test) testing; and
  - 8 samples will undergo Direct Shear Strength tests on a selection of common discontinuities.

### Overview

Metallurgical results show that the XIF magnetite product is expected to be a premium product containing 67% Fe which is preferable over lower grade iron ores (See, *Press Release of 12/17/2013* on the Company's website). These high-grade ores and products currently command larger price premiums over standard ores (62% Fe) resulting in higher margins for suppliers of high-grade products. Further to this, "cleaner" iron ores with a Fe content equal to or greater than 65% use less coal per unit of steel and as such produce lower emissions. The current global drive for lower emission steel production results in steel producers dramatically increasing their demand for these high-grade green ores. As this shift towards green steel and emission reduction continues the high grade XIF is uniquely placed to meet this emerging market.

Preliminary work on the Xaudum Iron project has defined a CIM compliant Inferred Mineral Resource Estimate of 441 million tonnes (Mt) with an average grade of 29.4% Fe, 41.0% SiO<sub>2</sub>, 6.1% Al<sub>2</sub>O<sub>3</sub> and 0.3% P for the Block 1 magnetite XIF. Block 1 is a fraction of the potential XIF magnetite resource. An extrapolated exploration target has defined the XIF to be in the order of 5 to 7 billion tonnes at 15-40% Fe. This exploration target was generated by inversion modelling of ground magnetic geophysical data which was compared and moderated to volumes from drilling data within Block 1 and its potential quantity and grade is conceptual in

nature. To date, there has been insufficient exploration to define a mineral resource other than in Block 1 and it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Tsodilo's Chairman and CEO, James M. Bruchs, commented “These results will be important to the technical evaluation and economic understanding of the project and will be included in the PEA. The iron ore market is entering a new “Super Cycle” based on improving fundamentals and a healthy market and has recently recorded the highest price on record. This encouraging market outlook coupled with the gathering pace of the green steel revolution means that we are confident that the PEA will bring strong added value to the Company as we develop this project towards mining.”

### Iron Analysis

755 samples have been consigned for XRF chemical assay to the ALS Chemex Minerals Division Geochemistry laboratory (ALS) in Johannesburg, South Africa for Fe analysis by industry standard XRF borate fusion beads and LOI by muffle furnace. These samples represent 1,230 meters of high grade XIF mineralization within the Block 2a area, see Table 1 for the details of these samples sent for assay.

**Table 1. Table showing the drill holes and total meters of XIF mineralization contained in the samples sent for assay. Also shown is the average density and magnetic susceptibility for the Fe mineralization in these holes.**

Hole ID	From (m)	To (m)	Number of Samples	XIF Mineralization (m)	Density (g/cm <sup>3</sup> )	Magnetic Susceptibility (x10 <sup>-3</sup> )
XIF0013V	18.0	150.0	78	108.0	3.18	642.7
XIF0015V	47.7	200.7	88	150.7	3.22	479.7
XIF0014V	48.0	201.0	92	166.0	3.23	578.0
XIF0017V	44.0	200.6	91	150.7	3.18	650.1
XIF0016V	35.6	185.2	90	147.2	3.19	406.1
XIF0010E_2	21.0	75.0	32	43.0	3.20	205.0
XIF0010W_1	9.3	201.0	113	208.7	3.26	609.6
XIF0011E_1	18.5	132.0	68	81.5	3.26	456.2
L9650_8	36.7	128.6	55	91.9	NA	513.5
L9630_15	77.7	160.2	48	82.3	NA	NA
<b>Totals /Average</b>			<b>755</b>	<b>1,230.0 m</b>	<b>3.22</b>	<b>536.6</b>

### Geotechnical Test-Works

34 samples from the main XIF geological domains that will comprise the majority of the envisioned pit walls have been sent for geotechnical test-work to the Department of Mining and Geological Engineering at BIUST.

Laboratory tests to be conducted:

- 18 samples will undergo Unconfined Compressive Strength (“UCS”) testing. UCS tests the maximum axial compressive stress that a specimen can bear under zero confining stress. USC testing is a common test to understand the rock strength of a sample, and is widely used in geotechnical design for establishing an overall RMR for pit design;

- 8 samples will undergo Brazilian Tensile Strength testing. The Brazilian Test is a common laboratory test to indirectly determine a rock's tensile strength and is an important parameter in establishing a robust RMR for pit design. The Brazilian Test is the most widely used tensile strength test as the sample preparation and the testing procedure are efficient compared to other tensile strength tests;
- 8 samples will undergo Direct Shear Strength tests on a selection of common discontinuities to aid in the establishment of a robust RMR for pit design.

**Table 2. Shows the breakdown of the geotechnical samples by Geodomain and the test works to be performed**

<b>Geodomain</b>	<b>UCS</b>	<b>Brazilian Tensile Strength</b>	<b>Direct Shear Strength</b>
Kalahari Overburden (KAS)	4		
Diamictite schist (DIA)	5	4	4
Weathered Diamictite schist (DIA)	4		
Banded magnetite (MBA)	4	4	4
Weathered Banded magnetite MBW)	1		
Weathered magnetic diamictite schist (DMW)			
<b>Sub-Total</b>	<b>18</b>	<b>8</b>	<b>8</b>
<b>Total</b>		<b>34</b>	

#### **Density and Magnetic Susceptibility**

The samples sent for iron assay have been measured for density using the Archimedean method of weighing dry and then weighing submerged in water. The average density for the Fe mineralization in these holes can be seen in Table 1.

Magnetic susceptibility readings (Table 1) have been recorded on these samples providing an instant first-order understanding of the mineralogy of the iron bearing rocks being drilled. Any magnetic susceptibility readings over 100 ( $\times 10^{-3}$ ) are considered high and indicate a high proportion of magnetite where magnetite is the dominant magnetic and iron bearing component within the XIF.

#### **About Botswana International University of Science and Technology**

The Botswana International University of Science and Technology is a Government of Botswana supported institution established as a research-intensive University that specializes in Engineering, Science and Technology at both undergraduate and graduate (Master's and Doctoral) levels.

The University is a national strategic initiative that is intended to serve as one of the key platforms for transforming Botswana's economy. Because of its research emphasis, BIUST works with the private sector to meet emerging skills needs of the industry, as well as identifies challenges that can be solved through applied research.

#### **About ALS Chemex, South Africa**

ALS is a global leader in providing laboratory testing, inspection, certification and verification solutions with a reputation for providing quality analytical services to the global mining industry in the fields of analytical chemistry, mineralogy and metallurgical testing, commodity analysis and certification.

## About the XIF Project

- ◇ the project is located in the North-West District of Botswana and is proximate to the Namibian boarder and lies thirty (30) miles from the town of Divundu in Namibia. The Trans Caprivi Railway (TCR) line linking Zambia and Namibia is planned to pass through Divundu providing access to Walvis Bay, Namibia's deep-sea port. The project is also located within forty-three (43) miles of the proposed Mucusso line to Angola's Namibe Port;
- ◇ preliminary work on the Xaudum Iron project has defined a CIM compliant Inferred Mineral Resource Estimate of 441 million tonnes (Mt) with an average grade of 29.4% Fe, 41.0% SiO<sub>2</sub>, 6.1% Al<sub>2</sub>O<sub>3</sub> and 0.3% P for the Block 1 magnetite XIF;
- ◇ Block 1 is a fraction of the potential XIF magnetite resource. An extrapolated exploration target has defined the XIF to be in the order of 5 to 7 billion tonnes at 15-40% Fe. This exploration target was generated by inversion modelling of ground magnetic geophysical data which was compared and moderated to volumes from drilling data within Block 1 and its potential quantity and grade is conceptual in nature. To date, there has been insufficient exploration to define a mineral resource other than in Block 1 and it is uncertain if further exploration will result in the target being delineated as a mineral resource. See, *Press Release of 9/14/2014* on the Company's website for further details;
- ◇ metallurgical magnetic separation results (Davis Tube Recovery) show an average concentrate of 67.2% Fe, 4.2% SiO<sub>2</sub>, 0.5% Al<sub>2</sub>O<sub>3</sub>, 0.07% P is obtained at P80 grind size of 80 microns, although higher grades are possible at finer P80's. See, *Press Release of 12/17/2013* on the Company's website;
- ◇ further exploration will be focused on Block 2 where the Company expects an increase in the resource;
- ◇ the XIF Project is a potential large and long-life Tier 1 mining project;
- ◇ the PEA will evaluate a number of options for development of the project at a variety of scales including:
  - non-traditional but potentially profitable small-scale startup mining production options such as Ferrosilicon (FeSi) production from a magnetite concentrate,
  - mid-size scenarios, whereby magnetite concentrate would be processed through a concentrator and transported to railhead and onto port facilities;
  - large-scale mining options where full-scale mining would produce a magnetite concentrate processed by a concentrator plant with further potential modification to a pellet which would then be transported to port facilities;
- ◇ Botswana has significant coal reserves which can be a major advantage for the Xaudum Iron project, allowing for coal to be used in the beneficiation process to generate iron products such as iron pellets, sponge iron, pig iron, and also steel; and,
- ◇ the project would represent the first iron deposit to be considered for development in Botswana. Gcwihaba has identified the project as having the potential to positively impact the future economy of Botswana as the country looks to diversify its economy, and help Botswana to reach its goal of moving away from a dependence on diamond revenues.

For more information, refer to the technical report prepared by SRK Consulting (UK) Ltd. for Gcwihaba Resources (Pty) Ltd. titled "Mineral Resource Estimate for the Xaudum Iron Project (Block 1), Republic of Botswana" with an effective date of August 29, 2014 and filed on SEDAR under the Company's profile at [www.sedar.com](http://www.sedar.com) .

An informational presentation of the project can be found on the Company's website at [www.tsodiloresources.com/i/pdf/3\)-Tsodilo-Iron-Project-Overview\\_March-2021.pdf](http://www.tsodiloresources.com/i/pdf/3)-Tsodilo-Iron-Project-Overview_March-2021.pdf).

### **About Tsodilo Resources Limited**

Tsodilo Resources Limited is an international diamond and metals exploration company engaged in the search for economic diamond, metal deposits and industrial stone at its Bosoto (Pty) Limited ("Bosoto"), Gcwihaba Resources (Pty) Limited ("Gcwihaba") and Newdico (Pty) Ltd. ("Newdico) projects in Botswana and its Idada 361 (Pty) Limited ("Idada") project in Barberton, South Africa. The Company has a 100% stake in Bosoto (Pty) Ltd. which holds the BK16 kimberlite project in the Orapa Kimberlite Field (OKF) in Botswana and the PL216/2017 diamond prospecting license also in the OKF. The Company has a 100% stake in its Gcwihaba project area consisting of seven metal (base, precious, platinum group, and rare earth) prospecting licenses all located in the North-West district of Botswana. The Company has a 100% interest in its Newdico industrial stone project located in Botswana's Central District. Additionally, Tsodilo has a 70% stake in Idada Trading 361 (Pty) Limited which holds the gold and silver exploration license in the Barberton area of South Africa. Tsodilo manages the exploration of the Newdico, Gcwihaba, Bosoto and Idada projects. Overall supervision of the Company's exploration program is the responsibility of Dr. Alistair Jeffcoate, Project Manager and Chief Geologist of the Company and a "qualified person" as such term is defined in National Instrument 43-101.

*This press release may contain forward-looking statements. All statements, other than statements of historical fact, that address activities, events or developments that the Company believes, expects or anticipates will or may occur in the future (including, without limitation, statements pertaining to the use of proceeds, the impact of strategic partnerships and statements that describe the Company's future plans, objectives or goals) are forward-looking statements. These forward-looking statements reflect the current expectations or beliefs of the Company based on information currently available to the Company. Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of the Company to differ materially from those discussed in the forward-looking statements, and even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on the Company. Factors that could cause actual results or events to differ materially from current expectations include, among other things, changes in equity markets, changes in general economic conditions, market volatility, political developments in Botswana and surrounding countries, changes to regulations affecting the Company's activities, uncertainties relating to the availability and costs of financing needed in the future, exploration and development risks, the uncertainties involved in interpreting exploration results and the other risks involved in the mineral exploration business. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise. Although the Company believes that the assumptions inherent in the forward-looking statements are reasonable, forward-looking statements are not a guarantee of future performance and accordingly undue reliance should not be put on such statements due to the inherent uncertainty therein.*

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*Company. Factors that could cause actual results or events to differ materially from current expectations include, among other things, uncertainties relating to availability and cost of funds, timing and content of work programs, results of exploration activities, interpretation of drilling results and other geological data, risks relating to variations in the diamond grade and kimberlite lithologies; variations in rates of recovery and breakage; estimates of grade and quality of diamonds, variations in diamond valuations and future diamond prices; the state of world diamond markets, reliability of mineral property titles, changes to regulations affecting the Company's activities, delays in obtaining or failure to obtain required project approvals, operational and infrastructure risk and other risks involved in the diamond exploration and development business. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise. Although the Company believes that the assumptions inherent in the forward-looking statements are reasonable, forward-looking statements are not a guarantee of future performance and accordingly undue reliance should not be put on such statements due to their inherent uncertainty.*

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