



## OPERATIONAL UPDATE: BITTERWASSER LITHIUM CLAYS

Arcadia Minerals Limited (ASX:AM7, FRA:8OH) (Arcadia), a diversified exploration company targeting a suite of projects aimed at Lithium, Tantalum, Nickel, Copper and Gold in Namibia, is pleased to provide a progress update relating to the Bitterwasser Lithium Project:

### HIGHLIGHTS

- 28% of auger drilling program has been completed and dispatched for analysis
- Representative 153.7 kg clay sample dispatched to Anzaplan in Germany for mineralogical and metallurgical test work to understand lithium concentrations and lithium bearing phases, and to establish the amenability of the Bitterwasser clays to beneficiation

Arcadia Minerals Limited (ASX:AM7, FRA:8OH) (Arcadia or the Company) is pleased to provide an update on the Lithium-in-Clays potential of its Bitterwasser Lithium Project, and reports that all the planned geostatistical drill holes (12-drill holes) and six of the 52 geological exploration drill holes of the follow-up auger drilling program<sup>i</sup> that commenced on the 1<sup>st</sup> of December 2021 have been completed. Additionally, the Company has dispatched a 153.7 kg clay sample for mineralogical and metallurgical test work.

### Auger drilling program

The auger drilling program is primarily aimed at possibly extending the existing **inferred JORC Mineral Resource of 15.1 million tons @ 828ppm Li and 1,79% K (at a cut-off grade of 680ppm Li)**<sup>ii</sup> located in only one of seven exposed pans, from an area that represents approximately 6% of the total exposed clay pan surfaces at the project.

A total of 143 drillhole samples consisting of 17 Quality Assurance & Quality Control (QA/QC) samples and 126 clay samples have been sent to ALS Laboratories in Johannesburg, South Africa for analysis.

### Clay sample dispatched for test work

A representative 153.7 kg clay sample from the upper lithium enriched clay horizon was collated from 5 boreholes and sent to Anzaplan in Germany for mineralogical and metallurgical test work. Anzaplan, who are part of the Dorfner group of companies, is a leading European industrial and specialty minerals processing company, with more than a century of experience in industrial and specialty minerals. Anzaplan is equipped to develop flowsheet and process designs, that follows different processing routes for lithium-bearing minerals such as lithium-rich clays. Evaluation of numerous processing routes for the conversion of lithium minerals to battery grade carbonate or hydroxide compounds, has

already been performed at Anzaplan for other Lithium-in-Clay projects. Anzaplan will undertake preliminary analysis on the clay sample for LexRox (a company owned and operated by the executive directors of the Company, and who continue to self-fund the auger drilling program subject to approval of the acquisition of the Bitterwasser Lithium in Clays project by Arcadia shareholders).<sup>ii</sup>The analysis includes a chemical analysis through X-Ray Fluorescence (XRF), a test-work for the main elements in the clays and Inductively Coupled Plasma Mass Spectrometry (ICP) for Lithium and trace elements. Importantly, the mineralogical characterization through X-ray Powder Diffraction (XRD), to identify lithium concentration and lithium bearing mineral phases (qualitatively and quantitatively) in the Bitterwasser samples, and the particle size distribution of the clays, will also be conducted.

The purpose of the analyses by Anzaplan is to understand the lithium concentration and lithium bearing phases in the Bitterwasser clays, and to determine the other phases to be considered in potential processing methodologies of the Bitterwasser clays. Based on the results of this analysis, Arcadia will be provided with a quotation targeting the development of a process for the beneficiation of the clay materials, which includes the hydrometallurgical extraction and recovery of lithium. If results from Anzaplan's work is satisfactory and shareholders approve the acquisition, Arcadia will conduct the necessary work targeting the development of a beneficiation process by Anzaplan. This would be an important milestone for the Company to achieve as well as assessing the potential of the Bitterwasser Lithium in Clays Project.

### **Geostatistical drilling program**

The drilling of geostatistical drill holes is aimed at conducting variography work for the purposes of Mineral Resource estimation and classification after receipt of the mineralised drill samples.

### **Newsflow outlook**

Once the acquisition of the Bitterwasser Lithium in Clays Project is approved by shareholders<sup>iii</sup>, the Company is to test the existence of deeper clay horizons situated underneath the exposed clay pans, and these will be tested with the use of rotary diamond drill machinery.

Other work that is to be undertaken during the auger drilling program conducted by LexRox, is to examine the potential mineralisation of the clays at the other exposed pans in the Bitterwasser pan district, where a potential mineral resource is possible, and to investigate the potential existence of sub-surface clay pans covered by Kalahari dunes within the greater Bitterwasser Project area.

The hand-held auger drilling program at Bitterwasser is on track to be completed by Q1 2022 and, if successful, an updated Mineral Resource estimate is expected to be completed during Q2-2022. Mineralogical results from Anzaplan are expected during Q1 2022 and, if conclusive, metallurgical test results are expected to be received during Q2 2022.

#### **Additional Information: Bitterwasser Lithium Project**

Exploration work conducted by LexRox since 2019 was limited to the Bitterwasser main pan. A shallow hand auger drilling programme, which forms the basis of the existing 15.1 million tons JORC Mineral Resource @ 828ppm Li, was conducted. Results from the drilling program confirmed significant lithium-in-clay mineralisation overlying an anomalous electrical-conductive body identified during a ground electrical conductivity survey. It is considered likely that this electrical-conductive body is associated with a dense saline and/or brine aquifer and is therefore a highly prospective target for lithium brine explorations<sup>iv</sup>.

The lithium-clay mineralisation intersected within the relatively small area prospected was spatially continuous, and trended moderately sub-parallel to the long axis of the saltpan and consistently yielded prospective Li grades. The clays increased in thickness and lithium content towards the central portions of the pan, where Li grades approaching 1,200 ppm were encountered, which is in-line with similar projects situated near producing lithium mines in other parts of the world.

Auger sampling confirmed the presence of a lithium-in-clay resource comparable in grade and extent to that owned by major exploration companies in Nevada, USA. Clay deposits in similar geological settings are presently being developed in Clayton Valley in Nevada USA, by Cypress Development and Noram Ventures in close proximity (within 1.5km<sup>2</sup>) to the Lithium-in-Brine operations of Albermarle Corp. and Pure Energy Minerals.

	<b>Arcadia</b>	<b>Noram</b>	<b>Cypress</b>
<b>Resource in tonnes</b>	15.1Mt*	363Mt	1,304Mt
<b>Resource Classification</b>	Inferred	Meas. and Ind.	Indicated
<b>Cut-off</b>	680ppm	400ppm	400ppm
<b>Stage of Development</b>	Discovery	Pre-PEA	PFS
<b>Average. Grade</b>	828ppm	923ppm	904ppm
<b>Att. Interest</b>	50%	100%	100%
<b>Land Package</b>	403,100ha (4,031km <sup>2</sup> )	2,197ha (23.94Km <sup>2</sup> )	2,197ha (21.9Km <sup>2</sup> )
<b>Brine Potential</b>	To be determined	1.6km from Albermarle Corp's Silver Peak Brine operations.	Adjacent to Pure Energy Ltd and Albermarle Corp's

			Lithium-in-Brine operations
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Table 1: Peer comparison of clay projects in Clayton Valley, Nevada, USA.

Sources: Refer to <https://www.cypressdevelopmentcorp.com/news/2021/cypress-development-enters-into-license-agreement-with-chemionex-for-their-dle-technology-equipment-for-clayton-valley-lithium/> and <https://noramlithiumcorp.com/resource/clayton-valley/> and to <https://www.cypressdevelopmentcorp.com/projects/nevada/technical-reports/>.

\* Over only 6% of exposed clay pans. Potential exists to increase resource over exposed clay pans and potential sub-surface clay pans over the existing 3,438Km<sup>2</sup> of the Bitterwasser Lithium Project

The Cypress Development project, initially (before additional exploration) reported average lithium grades of 867 ppm Li, while the Noram Ventures project reported lithium grades of 858 ppm Li, which is very similar to the estimated average grade of the Mineral Resources reported to date within the Bitterwasser Main Pan.).

During the exploration work carried out by LexRox, it was established that the geological and environmental requirements for the formation of significant lithium-in-clay and lithium-in-brine deposits are present. Although lithium in clays have been confirmed, the lithium grade in the indicated brines are yet to be confirmed through appropriate exploration techniques. However, sufficient evidence exists to suggest the presence of a lithium-in-brine aquifer within the Bitterwasser Saltpan district<sup>v</sup>.

Supporting evidence to qualify the Bitterwasser Project as the world's latest district scale Lithium province comes from geological and environmental indicators identified through LexRox's reconnaissance exploration efforts. Such evidence includes water-quality data (total dissolved solids and electrical conductivity) from numerous domestic water supply boreholes in the area, lithium-in-clay grades from hand auger drilling and associated electrical-conductive anomalies, the presence of conducive regional tectonic structures, favourable source rocks and climatic conditions in proximity to an enclosed basin (the Kalkrand Half-Graben). Such geological and environmental indicators are comparable in nature to known lithium-in-brine districts in other parts of the world.

Other economically significant saltpan districts around the world are associated with anomalous K and B values. The lithium mineralisation associated with the lithologies documented at Bitterwasser's main saltpan yielded B values of > 400 ppm and K values consistently > 1.8 wt. %. This emphasises the geochemical similarities with other globally significant saltpan districts.

The Bitterwasser Project lies remarkably close to the inferred source of mineralisation, being the alkaline Brukkaros volcanic field. Elevated groundwater temperatures, as high as 39 °C, have been reported from domestic water-supply boreholes in close vicinity to the saltpans, suggesting a deep-seated geothermal heat source and mineralisation mechanism. The thickness of the sedimentary packages which make up the Bitterwasser saltpans range

between 30 m to 100 m thick and are of sufficient size and porosity to accommodate substantial brine aquifers.

**This announcement has been authorised for release by the directors of Arcadia Minerals Limited.**

For further information please contact:

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## COMPETENT PERSONS STATEMENT & PREVIOUSLY REPORTED INFORMATION

The information in this announcement that relates to Exploration methodology has been reviewed by the Competent Person (being a member of a Recognised Professional Organisation) whose name appears below and who is a director of the Company. The Competent Person has sufficient experience relevant to the style of mineralisation and types of deposits under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the JORC Code 2012.

Competent Person	Membership	Report/Document
Mr Philip le Roux (Director Arcadia Minerals)	South African Council for Natural Scientific Professions #400125/09	This announcement and JORC Tables

As stated above in the footnotes, the Company confirms that the form and context in which a Competent Person's findings are presented in the referenced market announcements or geological reports have not been materially modified from the original market announcements or geological reports.

### DISCLAIMER

Some of the statements appearing in this announcement may be forward-looking statements. You should be aware that such statements are only predictions and are subject to inherent risks and uncertainties. Those risks and uncertainties include factors and risks specific to the industries in which Arcadia operates and proposes to operate as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets, among other things. Actual events or results may differ materially from the events or results expressed or implied in any forward-looking statement. No forward-looking statement is a guarantee or representation as to future performance or any other future matters, which will be influenced by a number of factors and subject to various uncertainties and contingencies, many of which will be outside Arcadia's control.

The Company does not undertake any obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in this announcement. To the maximum extent permitted by law, none of Arcadia, its directors, employees, advisors or agents, nor any other person, accepts any liability for any loss arising from the use of the information contained in this announcement. You are cautioned not to place undue reliance on any forward-looking statement. The forward-looking statements in this announcement reflect views held only as at the date of this announcement.

This announcement is not an offer, invitation, or recommendation to subscribe for, or purchase securities by the Company. Nor does this announcement constitute investment or financial product

advice (nor tax, accounting, or legal advice) and is not intended to be used for the basis of making an investment decision. Investors should obtain their own advice before making any investment decision.

### BACKGROUND ON ARCADIA

Arcadia is a Namibia-focused diversified metals exploration company, which is domiciled in Guernsey. The Company explores for a suite of battery metals (Nickel, Lithium and Copper), precious metals, and owns the advanced Swanson Tantalum & Lithium project. Some of the Company's projects are located in the neighbourhood of established mining operations and significant discoveries.

The mineral projects include-

1. The Swanson Project – advanced tantalum and lithium project with early development potential
2. Kum-Kum Project – prospective for nickel, copper, and platinum group elements
3. Karibib Project – prospective for copper and gold
4. Bitterwasser Project – prospective for lithium-in-brines and lithium-in-clays.

Arcadia's exploration strategy is to rapidly advance the Swanson Tantalum project to a potential cash generating mining operation, thereby executing the first part of its three-pillar exploration strategy of becoming a potential cash generator (pillar 1) which is to provide cash resources to explore the Company's potentially company transforming assets (pillar 2) by utilising its human capital of industry specific experience tied with a history of project generation and bringing projects to results (pillar 3).

The Swanson and the Bitterwasser Projects contain JORC Mineral Resources. At Swanson a JORC Mineral Resource of 1.2Mt at an average grade of 412g/t Ta<sub>2</sub>O<sub>5</sub>, 76g/t Nb<sub>2</sub>O<sub>5</sub> and 0.29% Li<sub>2</sub>O was announced on the 23<sup>rd</sup> of September 2021, which was derived from 23 drillholes completed in September 2020 over 3 pegmatites. See the table below for more details of the Swanson mineral resource.

#### SWANSON TANTALUM PROJECT MINERAL RESOURCE (JORC 2012).

Classification	Pegmatite	Mass (kt)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	Nb <sub>2</sub> O <sub>5</sub> (ppm)	Li <sub>2</sub> O (%)
Indicated	D0	4.6	289	77	1.06
	D1	221.1	372	82	0.55
	D2	280.5	439	82	0.20
	F1	157.4	504	57	0.03
	<b>Total</b>	<b>663.5</b>	<b>431</b>	<b>76</b>	<b>0.28</b>

Inferred	D0	79.7	354	54	0.87
	D1	188.4	337	85	0.34
	D2	214.0	407	80	0.13
	F1	61.9	527	55	0.01
	<b>Total</b>	<b>544.0</b>	<b>389</b>	<b>75</b>	<b>0.30</b>
Indicated + Inferred	D0	84.3	351	55	0.88
	D1	409.5	356	83	0.45
	D2	494.4	425	81	0.17
	F1	219.2	510	56	0.02
	<b>Total</b>	<b>1,207.5</b>	<b>412</b>	<b>76</b>	<b>0.29</b>

At Bitterwasser a JORC Mineral Resource of 15.1 million tons @ 828ppm Li and 1.79% K (at a cut-off grade of 680ppm Li) representing only 6% of the exposed clay pans was defined over one of seven clay pans. The Mineral Resource was announced on the 3<sup>rd</sup> of November 2021 and is contained over three exploration licenses, which licenses are the subject of an acquisition that is conditional upon Arcadia shareholders' approval. See the table below for more details of the Bitterwasser mineral resource.

BITTERWASSER LITHIUM IN CLAYS PROJECT MINERAL RESOURCE (JORC 2012).

Mineral Resource Category				
Classification	Tonnage (kt)	Li Grade ppm	Contained Li (tonnes)	Lithium Carbonate Equivalent
Total Indicated	0	0	0	0
Total Inferred	15,100	828	12,503	66,929
Total Resources	<b>15,100</b>	828	12,503	<b>66,929</b>

For more details, please visit [www.arcadiaminerals.global](http://www.arcadiaminerals.global)

<sup>i</sup> Refer ASX AM7 announcement of 01 December 2021.

<sup>ii</sup> Refer ASX AM7 announcement of 03 November 2021 and of 01 December 2021.

<sup>iii</sup> Refer ASX AM7 announcement of 03 November 2021 and of 01 December 2021.



<sup>iv</sup> Independent Geological Report –Lithium Resource at the Bitterwaser Pan, Hardap Region Namibia – Nov. 2021, Dr Johan Hattingh, Creo Design (Pty) Ltd and AM7 announcement of 3 November 2021.

<sup>v</sup> Independent Geological Report –Lithium Resource at the Bitterwaser Pan, Hardap Region Namibia – Nov. 2021, Dr Johan Hattingh, Creo Design (Pty) Ltd and AM7 announcement of 3 November 2021.