

# BITTERWASSER UPDATE: HIGH GRADE LITHIUM LEACHATE FROM CLAYS & BRINE SAMPLING UNDER REVIEW

Arcadia Minerals Limited (ASX:AM7, FRA:8OH) (Arcadia or the Company), the diversified exploration company targeting a suite of projects aimed at Tantalum, Lithium, Nickel, Copper and Gold in Namibia, announce leach results from its Bitterwasser Lithium Clay Project and provide an update from the sampling conducted at 6 holes drilled at the Company's Bitterwasser Lithium Brines Project.

#### **HIGHLIGHTS**

#### **BITTERWASSER CLAYS:**

- 170mg/L high grade lithium leachate produced from Bitterwasser Lithium Clays
- Result achieved after sulphate roasting at 850°C for 1.5 hours and water leaching at 80°C (No acids used)
- Preliminary results indicate leachate contains low impurities and could serve as an alternative extraction method of lithium

#### **BITTERWASSER BRINES:**

- Twenty-seven samples taken from drill holes within the Upper and Lower Sand Units returned inconsistent and varying results from two accredited laboratories
- Two analytical methods (ICP-OES and ICP-MS) were employed by each of the two laboratories appointed by Arcadia to conduct test work over brine samples
- Results returned by each of the two laboratories varied significantly and materially with respect to major brine elements as follows:
  - Na (33% variation between the two laboratories),
  - Ca (30% variation between the two laboratories),
  - K (25% variation between the two laboratories),
  - Mg (14% variation between the two laboratories), and
  - Li (210% variation between the two laboratories)



- ICP assay methods utilised by laboratories are known to give rise to spectral and physical interferences in some brine samples, which is known to impact the accuracy of measurements
- As a result, Arcadia has no confidence in the sampling results, and has
  decided to conduct a review of the sampling and analysis methodology
  employed with the purpose of publishing verifiable results
- Next Steps: The existing boreholes will be resampled and re-analysed after the Company has obtained a better understanding of the sampling methodology that needs to be implemented (No further drilling required to re-sample)

**Philip le Roux, the CEO of Arcadia stated**: "The preliminary lithium leach results from the Clay project are considered compelling as it confirmed that water, instead of acid, can be used as a leaching agent to create a high-grade lithium leachate after roasting the clays with sulphate salts at moderate temperatures. This method also indicated a minimisation of impurities during the leaching stage.

The significant variance in the assay results received for the Brines project between two laboratories is a challenge in giving us confidence in the results. As a result, we will have to refine our analytical and sampling processes to ensure that the assay methodology we use is appropriate for the Bitterwasser Brines and to ensure that we return results that are accurate and reliable. Unfortunately, the ICP assay method utilised by the laboratories is known to give rise to spectral and physical interferences in some brine samples, which is known to impact the accuracy of measurements. For example, when analysing for lithium, the presence of many sodium and potassium ions in the plasma can affect the measurement of easily ionizable elements such as lithium, giving erroneous results. Previous results attained for grab sampling<sup>1</sup> were conducted by one laboratory using a Mobilab 130 Li based on Magnetic Resonance Technology, which is widely used in the Lithium-Brines industry to test grab samples. By reviewing our assay methodologies and possibly also opting for an additional method of sampling instead of only relying on the hydra-sleeve, we hope to produce precise and dependable results as soon as possible."

<sup>&</sup>lt;sup>1</sup> ASX Announcement 5 Feb 2024 "Drilling Grab Samples Indicate increasing Lithium Grade to Depth at Bitterwasser Brines"



# **Leaching Results**

Bitterwasser clays taken from the recent infill drilling program<sup>2</sup> were subjected to further leaching test work conducted under the auspices of the University of Stellenboschs' Chemical Engineering Department. Previously, sulfuric acid leaching at 60°C with an acid concentration of 1.5 M (moles per litre) and 12% solids was performed to establish baseline leaching performance for comparison with the results from roasting-leaching.

The baseline sulphuric acid leaching yielded a lithium concentration of 98 mg/L Li after 1 hour. An alternative lithium recovery method involving sulphate roasting of clay samples was undertaken with results indicating lithium content of 170mg/L Li after leaching the roasted clays with water. **Compared to the sulphuric acid method, the roasting method may increase the economic viability of lithium extraction from the Bitterwasser Clays, however, further optimisation studies are required**.

Clays were mixed with sodium sulphate and calcium sulphate in a 4:1:1 mass ratio and roasted in a muffle furnace at 850 °C for 1.5 hours. Thereafter, the roasted samples were leached with demineralized water in a 1.5 Litre reaction vessel at 80°C for 1 hour. The natural pH of the leach solution was found to be alkaline (~pH 10.5), which is most likely due to the partial dissolution of carbonate minerals present in the feed.

Lithium dissolution was 84% after 1 hour. Increasing the solids content during leaching, from 15% solids to 30% solids, decreased lithium dissolution from 84% to 77% after 1 hour, but increased the lithium concentration in solution from 96 mg/L to 170 mg/L. At these process conditions, the concentrations of aluminium, iron, and magnesium in solution were 12 mg/L, 8 mg/L, and 18 mg/L, respectively. It is likely that the sulphate salts react with the lithium-bearing minerals to form soluble lithium sulphate and that other minerals bearing aluminium, iron, and magnesium do not dissolve to a similar extent due to the high pH of the leach solution.

<sup>&</sup>lt;sup>2</sup> ASX Announcement 1 February 2024 "Eden Pan Lithium Infill Assay Results Point to Updated Mineral Resource"



# **Brine sampling**

As announced previously<sup>3</sup>, the Company completed the drilling of 6 holes consisting of two holes at three sites for a total of 567 m. The drilling was completed at locations approximately 10km apart over the length of the 42 km EM anomaly identified by a geophysical survey completed at the Bitterwasser Basin<sup>4</sup>. Refer to Annexure 1 for a map depicting the location of the drillholes and refer to Annexure 2 for the drillhole locations and logging results.

Grab samples within the shallow holes (i.e. holes that were not drilled to basin depth) were taken during January 2024 using Hydrasleeve<sup>5</sup> sampling bags. Results were returned in February 2024 of up to 84ppm Li and indicated that grades were increasing to depth. As the samples were taken as part of a grab sampling review, the samples were assayed by one laboratory. This laboratory utilised MobiLab 130 Li Magnetic Resonance Technology, which is used by several major Lithium Brine producers and explorers. Samples were also assayed thrice with minor variances and the highest of the three values was reported<sup>6</sup>.

Observations drawn from the results announced in February 2024 were:

- 1) that meaningful mineralisation existed halfway down the basement, and
- 2) that mineralisation, as expected, increased to depth.

A detailed sampling program was undertaken recently using hydra-sleeves at 10m intervals to determine mineralisation in each of the holes down to basin depth. The samples were then tested by two accredited laboratories for analyses with ICP-OES (Inductively Coupled Plasma Optical Emission Spectrometry) and ICP-MS (Inductively Coupled Plasma Mass Spectrometry) technologies.

However, when comparing the assay results received from the two laboratories, significant and material variances between the results from each laboratory were observed. The variances for some of the critical metals were:

<sup>&</sup>lt;sup>3</sup> ASX Announcement 5 Feb 2024 "Drilling Grab Samples Indicate Increasing Lithium Grade to Depth at Bitterwasser Brines"

<sup>&</sup>lt;sup>4</sup> See ASX Announcement 6 February 2023 "Geophysical Interpretation Defines Drill Targets for Lithium Brines"

<sup>&</sup>lt;sup>5</sup> Refer to ASX Announcement 20 November 2023 "Drilling Commenced at Bitterwasser Lithium in Brines Project"

<sup>&</sup>lt;sup>6</sup> ASX Announcement 5 Feb 2024 "Drilling Grab Samples Indicate Increasing Lithium Grade to Depth at Bitterwasser Brines"



Na (33%), Ca (30%), K (25%), Mg (14%), and, Li (210%).

Refer to Annexure 3 for a summary of the varying results.

In addition to the material variances encountered, the observations drawn from the grab sampling were contradicted by the results received, as the overall tenor of mineralisation was significantly lower than what was previously reported utilising Magnetic Resonance Technology (which technology is used by major Lithium explorers in the Lithium Triangle and elsewhere), and all elementary mineralisation appeared to remain constant, even to depth, under circumstances where the results attained in February 2024<sup>7</sup> showed the grade to increase concurrently as salinity increased to depth.

As a result, and particularly due to the variance of more than 200% in lithium content between the two laboratories, Arcadia has no confidence in the results received and have decided to conduct a review of the sampling and analysis methodology employed with the purpose of producing verifiable results before further results are announced.

Based on the outcome of the review, decisions will be made with respect to what method of sampling is to be undertaken, whether the exploration methodology requires a review and which analytical methodology is to be utilised. The sampling process can utilize the existing boreholes, which have already been cased, eliminating the need for drilling new holes.

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

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<sup>&</sup>lt;sup>7</sup> ASX Announcement 5 Feb 2024 "Drilling Grab Samples Indicate Increasing Lithium Grade to Depth at Bitterwasser Brines"



Figure 1 – Location of Brine Boreholes

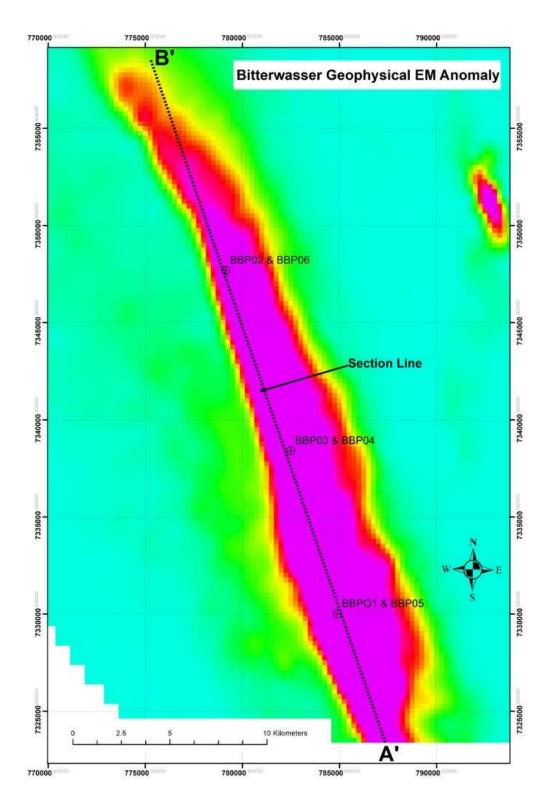




Table 1 – Brine Drillhole Locations

Hole_ld	WGS84_UTM33S_X	WGS84_UTM33S_Y	Elevation	End of hole	Water Level (m)
BBP01	784907	7330018	1138	52	21.8
BBP02	779145	7347699	1150	82	36.5
BBP03	782502	7338404	1143	72	28.7
BBP04	782498	7338400	1143	127	28.8
BBP05	784900	7330003	1139	109	22.0
BBP06	779156	7347724	1150	125	36.6

<sup>\*</sup> Note: All holes were drilled vertically (therefore all drill azimuths are zero and dips -90°). X=Easting and Y=Southing

Table 2 – Brine Drillhole Logging Results

	Sar	Sand Gravel		vel .	Basement	
Hole_ld	From	То	From	То	From	То
BBP01	0	37	37	52		
BBP02	0	54	54	82		
BBP03	0	42	42	72		
BBP04	0	42	42	90	90	127
BBP05	0	36	36	68	68	109
BBP06	0	54	54	115	115	125

# TABLE 3 – VARIATIONS BETWEEN LABORATORY RESULTS RECEIVED

		Variance	Variance	Variance	Variance	Variance
	Element	Na	K	Ca	Mg	Li
Borehole Site	Sample	Lab 1 vs 2				
1	BBP01-30m	-74.3%	-53.3%	-31.2%	-20.4%	15.8%
1	BBP01-40m	-1.9%	3.8%	29.9%	41.3%	16.7%
1	BBP01-50m	-81.1%	-60.6%	-71.6%	-62.7%	33.3%
1	BBP06-60m	-61.6%	-35.7%	-36.1%	-18.5%	-120.0%
1	BBP06-70m	-103.5%	-57.9%	-35.5%	-5.4%	-160.0%
1	BBP06-80m	-66.0%	-30.2%	-73.2%	-35.0%	-140.0%
1	BBP06-90m	-65.6%	-34.2%	-65.3%	-31.9%	-120.0%
1	BBP06-100m	-60.4%	-23.7%	-81.8%	-5.2%	-160.0%
2	BBP03-30m	-39.3%	-9.3%	-45.2%	-36.3%	-180.0%
2	BBP03-40m	-7.4%	-6.4%	-10.1%	1.3%	-600.0%
2	BBP03-50m	-29.0%	-28.2%	-30.3%	-18.5%	-400.0%
2	BBP03-60m	-6.8%	-11.7%	-6.6%	2.1%	-400.0%
2	BBP04-70m	-22.5%	-15.6%	-24.2%	-13.4%	-400.0%
2	BBP04-80m	-14.0%	1.0%	-22.2%	-9.5%	-150.0%
2	BBP04-90m	-12.5%	-1.3%	-14.8%	-4.0%	-440.0%
2	BBP04-100m	-26.5%	-10.5%	-28.2%	-17.1%	-250.0%
2	BBP04-110m	-22.5%	-27.9%	-26.1%	-15.0%	-420.0%
2	BBP04-120m	-23.6%	-8.1%	-21.9%	-12.4%	-214.3%
3	BBP02-41m	80.9%	2.9%	46.2%	65.6%	0.0%
3	BBP02-52m	-56.4%	-203.0%	-48.9%	-47.9%	16.7%
3	BBP02-62m	-22.9%	-7.5%	-31.3%	-24.5%	-200.0%
3	BBP02-71m	-39.5%	-35.1%	-42.1%	-29.6%	-300.0%
3	BBP05-80m	-17.9%	2.0%	-21.6%	-9.3%	-122.2%
3	BBP05-90m	-6.4%	12.5%	-12.8%	-4.1%	-185.7%
3	BBP05-100m	-31.3%	-11.5%	-32.3%	-21.6%	-216.7%
3	BBP05-110m	-29.9%	-8.7%	-33.5%	-20.7%	-300.0%
3	BBP05-120m	-35.8%	-14.9%	-37.5%	-27.6%	-300.0%
		-32.5%	-24.9%	-29.9%	-14.1%	-211.0%



#### COMPETENT PERSONS STATEMENT & PREVIOUSLY REPORTED INFORMATION

The information in this announcement that relates to exploration objectives is based on, and fairly represents, information and supporting documentation prepared by the Competent Person(s) whose name(s) appears below, each of whom is either an independent consultant to the Company and a member of a Recognised Professional Organisation or a director of the Company. The Competent Person(s) named below have 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	South African Council for Natural	This announcement
(Director Arcadia	Scientific Professions #400125/09	
Minerals)		

The Company confirms that the form and context in which a Competent Person's previous findings are presented in the footnotes above and noted in the table below have not been materially modified from the original market announcements and that all material assumptions and technical parameters underpinning the announcements continue to apply. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

Release Date	ASX Announcements
<sup>1, 3, 6-7</sup> 5 February 2024	Drilling Grab Samples Indicate Increasing Lithium Grade to Depth at Bitterwasser Brines
<sup>2</sup> 1 February 2024	Eden Pan Lithium Infill Assay Results Point to Updated Mineral Resource
<sup>4</sup> 6 February 2023	Geophysical Interpretation Defines Drill Targets for Lithium Brines
<sup>5</sup> 20 November 2023	Drilling Commenced at Bitterwasser Lithium in Brines Project



## **MINERAL RESOURCES ESTIMATE**

The Company confirms that it is not aware of any new information or data that materially affects the information included in the Bitterwasser Mineral Resource estimate and all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its updated resource announcement made on 24 August 2022.

The information in this announcement that relates to Mineral Resources complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code).

Summary of estimated JORC compliant Mineral Resources for the Bitterwasser Project – Lithium in Clays

Summary of estimated JORC compliant Mineral Resources for the Bitterwasser Project – Lithium in Clays				
CATEGORY	UNIT	TONNAGE	GRADE	CONTAINED
		ton	Li ppm	Li ton
Cut-off Grade of 0 ppn	n Li			
	Upper	-	-	-
Indicated	Middle	-	-	-
	Total Indicated	-	-	-
	Upper	61 518 571	464.60	28 582
Inferred	Middle	92 382 945	568.85	52 552
	Total Inferred	153 901 516	527.18	81 134
Cut-off Grade of 500 p	pm Li			
	Upper	-	-	-
Indicated	Middle	-	-	-
	Total Indicated	-	-	-
	Upper	28 192 877	556.86	15 699
Inferred	Middle	56 955 751	670.72	38 201
	Total Inferred	85 148 628	633.03	53 900
Cut-off Grade of 600 p	pm Li			
	Upper	-	-	-
Indicated	Middle	-	-	-
	Total Indicated	-	-	-
	Upper	2 878 041	634.69	3 659
Inferred	Middle	21 292 230	729.82	28 282
	Total Inferred	44 516 575	717.50	31 941



#### **BACKGROUND ON ARCADIA**

Arcadia is a Namibia-focused diversified metals exploration company, which is domiciled in Guernsey. The Company explores for a suite of new-era metals (Lithium, Tantalum, Platinum-Group-Elements, Nickel and Copper). The Company's strategy is to bring the advanced Swanson Tantalum project into production and then to use the cashflows (which may be generated) to drive exploration and development at the potentially company transforming exploration assets. As such, the first two pillars of Arcadia's development strategy (a potential cash generator and company transforming exploration assets) are established through a third pillar, which consists of utilising the Company's human capital of industry specific experience, tied with a history of project generation and bringing projects to results, and thereby, to create value for the Company and its shareholders.

Most of the Company's projects are located in the neighbourhood of established mining operations and significant discoveries. The mineral exploration projects include-

- 1. Bitterwasser Lithium in Clay Project which project contains a potentially expanding JORC Mineral Resource from lithium-in-clays
- 2. Bitterwasser Lithium in Brines Project which is prospective for lithium-in-brines within the Bitterwasser Basin area.
- 3. Kum-Kum Project prospective for nickel, copper, and platinum group elements.
- 4. TVC Pegmatite Project prospective for Lithium, Tantalum and other associated minerals.
- 5. Karibib Project prospective for copper and gold.
- 6. The Swanson Mining Project advanced tantalum mining project undergoing development to become a mining operation, and which contains a potentially expanding JORC Mineral Resource within the Swanson Project area.

As an exploration company, all the projects of the company are currently receiving focus. However, currently the Swanson project and the Bitterwasser Lithium projects may be considered as Arcadia's primary projects due to their potential to enhance the Company's value.

For more details, please visit www.arcadiaminerals.global

#### **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.



#### **ANNEXURE 4 JORC 2012 Tables – BITTERWASSER LITHIUM IN CLAYS**

The following Tables are provided to ensure compliance with the JORC Code (2012 Edition) requirements for the reporting of Exploration Results and Mineral Resources at the Eden Pan Bitterwasser Lithium-in-Clays Project. The sample that was tested at Stellenbosch University, of which the results were announced in this announcement, was taken from the core from the in-fill drilling program

# **Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Sampling was undertaken using industry standard practices and consisted of hand-auger drilling by Bitterwasser Lithium Exploration (Pty) Ltd. conducted during 3 phases.</li> <li>Phase I during 2019 and Phase II from 2021 to Jan 2022 and Phase III, in November 2023.</li> <li>All drill holes are vertical</li> <li>During Phase I, a total of 89 samples were taken from the core of the drilling campaign, of these 74 were for chemical/metallurgical analysis and 15 for QAQC purposes.</li> <li>Samples ranged from 1012g to 42g.</li> <li>An additional 15 density samples were collected.</li> <li>During Phase II a total of 397 samples were taken from the core of the drilling campaign, of these 352 were for chemical analysis and 45 for QAQC purposes.</li> <li>During Phase III a total of 168 samples were taken from the core of the drilling campaign, of these 155 were for chemical analysis and 13 for QAQC purposes.</li> <li>An additional 138 density samples were collected from phase II</li> <li>To minimize sample contamination, the collected sediment samples were placed on a canvas cloth, while the clay-bit was cleaned with a</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>wet cloth and water after every sample.</li> <li>All drill hole and sample locations are mapped in WGS84 UTM zone 33S</li> <li>During 2010 sampling was undertaken using industry standard practices and consisted of surface sampling by Botha &amp; Hattingh (2017).</li> <li>24 soil samples were taken from pits of 1.5m depth. Two (2), 500ml groundwater samples were taken from taps attached to the wind pumps.</li> <li>Measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used are not known, because this information is not recorded in available documents.</li> </ul>
Drilling techniques	Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	<ul> <li>During Phase I, sixteen (16) vertical hand-auger drill holes were drilled perpendicular to the long axis of the Eden Pan.</li> <li>The holes were drilled on a 500m x 500m grid and have a total core length of 93.10m.</li> <li>A 250 mm long auger clay-bit with a 90mm outer diameter was used.</li> <li>The depth of the holes ranged from 0.8m to 12.20m.</li> <li>During Phase II, a total of 64 vertical hand-auger drill holes were drilled, which comprise of 52 normal drill holes and 12 drill holes for geostatistical reasons over the Eden pan.</li> <li>The normal holes were drilled on a 500m x 500m grid and have a total core length of 273.20m. The geostatistical holes surround drillhole BMB03 (Phase I), with each drill line comprising of 3 holes spaced at 62.5 x 62.5 x 125 m from BMB03. The total drilling meters is 139.40m</li> <li>During Phase III, 26 vertical hand-auger drill holes were drilled perpendicular to the long axis of the Eden Pan.</li> </ul>



Criteria	JORC Code explanation	Commentary
		The holes were drilled as infill holes on a 250m by 250m grid and have a total core length of 213.2m. The drilling of these holes resulted in the drill spacing over the mineralised area being 250m by 250m.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>Core loss was recorded as part of the operational procedures where the core loss was calculated from the difference between actual length of core recovered and penetration depth measured as the total length of the drill string after subtracting the stick-up length.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples is not recorded in available documents.</li> <li>No apparent bias was noted between sample recovery and grade.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All drillholes were fully logged and are qualitative.</li> <li>The core has been logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Phase I: The total length of the mineralized clay logged is 85.80m and the percentage is 92%.</li> <li>Phase II: The total length of the mineralized clay logged for the normal holes is 258.80m and the percentage is 95%. For the geostatistical holes total length of the mineralized clay logged is 136.80 m and the percentage is 98%.</li> <li>Phase III: The total length of the mineralized clay logged for the holes is 211.0m and the percentage is 98%. The soil samples of Botha &amp; Hattingh, (2017) have been logged according to industry standards.</li> </ul>
Sub-sampling	If core, whether cut or sawn and whether quarter, half or all core	Phase I: Each of the 74 samples was split into two. One split was for
techniques	<ul><li>taken.</li><li>If non-core, whether riffled, tube sampled, rotary split, etc and</li></ul>	chemical analysis and the other split for initial sequential leach (metallurgical) test work.



Criteria	JORC Code explanation	Commentary
and sample preparation	<ul> <li>whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>The Upper Unit was composite sampled at an interval of 0.90m and 478g/composite sample (45 % of total sample material collected), while the Middle Unit was sampled at an average interval of 1.45m and 643g/composite sample.</li> <li>Phase II: Each 20cm (sample tube length) sample was split into smaller sub-samples (A-samples and B-samples). A-samples were shipped to the lab for analysis, while the B-samples were stored and used for duplicates and bulk sampling.</li> <li>Phase III: Each 20cm (sample tube length) sample was split into smaller sub-samples (A-samples and B-samples). A-samples were shipped to the lab for analysis, while the B-samples were stored and used for duplicates. 140kg of the B sample middle unit was used to make up a bulk sample for additional metallurgical test work</li> <li>A composite sample was collected according to lithology units. Samples didn't cross over lithological boundaries. A representative sample was taken of each 20cm run, taking into account the sample weight and size. i.e., one composite sample contains a weighted sample of each run.</li> <li>No information is available on sub-sampling techniques and sample preparation of Botha &amp; Hattingh (2017), because such procedures are not documented in available documents. It is assumed that sampling was undertaken using industry standard practices.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks,</li> </ul>	<ul> <li>Phase I: The samples were analysed at SGS laboratory in Randfontein, South Africa.</li> <li>Sodium peroxide fusion ICP-OES with an ICP-MS finish for analysis of Li (ppm), K (%), Al (%), Cr (%), Si (%), Ti (%), As (ppm), Cd (ppm), Fe (%), Mg (%), Mn (%), P (%), Co (%) and Y (%) was done.</li> <li>Sequential leach (metallurgical) test work (Acid leach).</li> <li>The QAQC samples consisted of African Minerals Standards (Pty) Ltd's (AMIS) certified reference materials AMISO339 (standard),</li> </ul>



Criteria	JORC Code explanation	Commentary
	duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	<ul> <li>AMIS0341 (standard), AMIS0342 (standard), AMIS0355 (standard) and AMIS0439 (blank) and were inserted on average every 6 – 7m within the sampling stream.</li> <li>Phase II: The samples were analysed at ALS Laboratories in Okahandja Namibia.</li> <li>Sodium peroxide fusion with ICP-MS finish major element analysis was conducted.</li> <li>For every 34 samples analysed, 2 Blanks, 2 CRMs and 2 duplicates were added. QC testing of the crushing (CRU-QC) and pulverizing (PUL-QC) efficiency is conducted on random samples.</li> <li>Phase III was sent to Scientific Services in Cape Town for ICP-EOS analyses for Li only.</li> <li>The QA/QC samples inserted by BLE consisted of African Minerals Standards (Pty) Ltd.'s (AMIS) certified reference materials AMIS0577 (blank), AMIS0683 (standard), AMIS0578 (blank) and AMIS0684 (standard).</li> <li>The Botha &amp; Hattingh (2017) samples were submitted to the University of Stellenbosch Central Analytical Facility in Stellenbosch South Africa for analysis, between 20 April and 13 July 2010</li> <li>The samples were analysed of lithium, boron and the cations Ca, Mg, K and Na.</li> <li>Lithium and boron analysis was conducted using ICP analysis, while the cations were analysed using AAS.</li> <li>Only samples that yielded Li values above 300ppm were included in the cation analysis.</li> <li>Sample preparation for Li, B and cation analysis was by acid digestion.</li> <li>Phase III: Sample is yet to be sent to the laboratory for analyses</li> <li>It is assumed that industry best practices were used by the laboratories to ensure sample representivity and acceptable</li> </ul>



Criteria	JORC Code explanation	Commentary
		Bitterwasser Lithium assay data accuracy, however the specific QAQC procedures used are not recorded in available documents
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>All samples and data were verified by the project geologist.</li> <li>Creo reviewed all available sample and assay reports and is of the opinion that the electronic database supports the field data in almost all aspects and suggests that the database can be used for resource estimation.</li> <li>All sample material was bagged and tagged on site as per the specific drill hole it was located in. The sample intersections were logged in the field and were weighed at the sampling site.</li> <li>All hard copy data-capturing was completed at the sampling locality.</li> <li>All sample material was stored at a secure storage site.</li> <li>The original assay data has not been adjusted.</li> <li>Recording of field observations and that of samples collected was done in field notes and transferred to and electronic database following the Standard Operational Procedures.</li> <li>No twin holes were drilled.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>The locations of all the samples were recorded.</li> <li>The sample locations are GPS captured using WGS84 UTM zone 33S.</li> <li>The quality and accuracy of the GPS and its measurements is not known, because it is not stated in available documents.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Phase I The drill holes are spaced on a 500 m x 500 m grid.</li> <li>The Upper Unit was composite sampled at an interval of 0.90 m and 478 g/composite sample (45 % of total sample material collected), while the Middle Unit was sampled at an average interval of 1.45 m and 643 g/composite sample</li> <li>Phase II: The normal holes were drilled on a 500 m x 500 m grid and the geostatistical holes surround drill hole BMB03 (Phase I), with</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>each drill line comprising of 3 holes spaced at 62.5 x 62.5 x 125 m from BMB03.</li> <li>Phase III: Comprise of infill drilling of the original 500m by 500m grid and results in a 250 by 250m grid spacing of the mineralised area.</li> <li>The samples collected are a composite sample that represents each 20 cm run (sample tube length) as best as possible and does not extend over lithological boundaries. The composite sample contains between 33-50% of each 20 cm sample depending on the size. Composite samples contain as close to equal amount as possible from top to bottom of each lithological unit sampled</li> <li>The data spacing and distribution of the drill holes and samples are sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied</li> <li>For the Botha &amp; Hattingh (2017) samples, the P02 pits were spaced at 900 m and the P03 pits were spaced at 2500 m.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>During Phase I, II and III the holes were all drilled vertical and perpendicular to the sediment horizons and all the sediment horizons were sampled equally and representative.</li> <li>The lithium is not visible; therefore, no bias could take place when selecting the sample position.</li> <li>The orientation of the Botha &amp; Hattingh (2017) sample pits is vertical and sampling occurred perpendicular to the soil horizons and all the soil horizons were sampled equally and representative.</li> <li>The orientation of the sampling is unbiased.</li> <li>The relationship between the sampling orientation and the orientation of key mineralized structures is not considered to have introduced a sampling bias.</li> </ul>



Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	<ul> <li>Bitterwasser Lithium Exploration (Pty) Ltd. maintained strict chain-of-custody procedures during all segments of sample handling, transport and samples prepared for transport to the laboratory are bagged and labelled in a manner that prevents tampering. Samples also remain in Bitterwasser Lithium Exploration (Pty) Ltd control until they are delivered and released to the laboratory.</li> <li>An export permit was obtained from the Namibian Mining Department to transport the samples across the border.</li> <li>Measures taken by Botha &amp; Hattingh, (2017) to ensure sample security have not been recorded in available documents.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>Audits and reviews were limited to the Standard Operational         Procedures in as far as data capturing was concerned during the sampling.     </li> <li>Creo considers that given the general sampling programme, geological investigations and check assaying, the procedures reflect an appropriate level of confidence.</li> </ul>

# **Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the</li> </ul>	<ul> <li>The Bitterwasser Project area is east of Kalkrand in South Central Namibia, some 190 km south of Windhoek in the Hardap Region.</li> <li>The Bitterwasser Lithium Project comprises three exclusive exploration licences, EPLs 5353, 5354 and 5358, all held by Bitterwasser Lithium Exploration (Pty) Ltd and that is active until June 2025</li> <li>The project covers a total area of 59 323.09 hectares.</li> </ul>



Criteria	JORC Code explanation	Commentary
	area.	<ul> <li>Environmental Clearance Certificates were obtained by Bitterwasser Lithium for all three EPLs.</li> <li>A land-use agreement, including access to the property for exploration has been obtained through the Ministry of Agriculture, Water and Forestry of Namibia and the landowners of the Eden Pan.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>A regional reconnaissance investigation in the form of a systematic field survey covering the entire southern Namibia and some parts of the Northern Cape Province of South Africa was done during 2009 and 2010. The reconnaissance investigation was aimed at establishing the prospectiveness of the area that could potentially sustain economic exploitation of soda ash and lithium (Botha &amp; Hattingh, 2017).</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Eden form part of the Cenozoic aged Kalahari Group and comprises a lithium, potassium and boron enriched sulphate-, chlorite- and carbonate- saltpan.</li> <li>The presence of an active deep-seated connate/hydrothermal water circulation network is suggested, which acts as a transport mechanism for lithium-bearing brines into the overlying Gordonia Formation pan sediments.</li> <li>High evaporation rates (&gt;3200 mm/year) occurring in the area are favourable for brine formation and salt-concentration.</li> </ul>
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> </ul>	<ul> <li>Drill results of phase III have been described in this announcement.</li> <li>All relevant data is included in the report.</li> </ul>



Criteria	JORC Code explanation	Commentary
	• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	A lower cut-off grade of 500 ppm Li was used for the resource statement. The estimated volumes and grades are based on this cut-off grade.
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul> <li>The drill holes were all drilled vertically, with the clay units being horizontal.</li> <li>The mineralized clay thickness intercepted range from 0.40 m to 10.20 m.</li> </ul>
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	The appropriate diagrams and tabulations are supplied in the reports referred to the announcements referenced in the footnotes.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	<ul> <li>This report has been prepared to present the prospectivity of the project and results of historical and recent exploration activities.</li> <li>All the available reconnaissance work results have been reported.</li> </ul>



Criteria	JORC Code explanation	Commentary
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>The Namibian Government conducted a regional magnetic survey in the area.</li> <li>The Namibian Government conducted a radiometric survey of potassium in the area.</li> <li>An electromagnetic (EM) survey was done by the groundwater consultancy Geoss during October 2019.</li> <li>ASn airborne TDEM survey was also conducted over the area in Oct 2022.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>The next exploration phase should focus on the further exploration of the Eden Pan, while also conducting exploration on some of the other pans in the region.</li> <li>More metallurgical test work would also be conducted on the clay bulk sample.</li> </ul>



## **JORC 2012 Tables – BITTERWASSER BRINES**

The following Tables are provided to ensure compliance with the JORC Code (2012 Edition) requirements for the reporting of Exploration Results at the Eden pan Bitterwasser Lithium-in-Brines Project.

# **Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Water samples were collected using hydro sleave equipment within 3 shallow water drill holes.</li> <li>The holes were drilled between November 2023 and January 2024</li> <li>All drill holes are vertical.</li> <li>Total of 6 samples, two per shallow hole were sampled to obtain a preliminary indication of the lithium content. The holes first need to be developed and pump tests need to be concluded before a sampling program can be implemented that can be used in the future for resource classification.</li> <li>No QA / QC samples were taken at this stage.</li> <li>Sample size was about 1 Liter and three subsamples from each sample were taken to be analysed</li> </ul>
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	<ul> <li>During this phase of drilling 6 water drill holes were drilled, two in the north, two in the center and two in the south of the 42km long geophysical EM anomaly,</li> <li>The holes were drilled about 10km on strike apart.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>Holes were drilled using Percussion Drilling with steel casing inserted to depths of c. 60m and perforated pvc casing to the end of the hole. A gravel pack was inserted between the casing and sediments/gravels to ensure free flow of brines into the casing for the purposes of test work.</li> <li>PVC Casing within the Steel casing was cemented to ensure integrity of the borehole development and a bentonite layer was inserted above the perforated casing to plug the hole to ensure that brines or other water do not flow from the upper aquifer.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>Core loss was recorded as part of the operational procedures where the core loss was calculated from the difference between actual length of core recovered and penetration depth measured as the total length of the drill string after subtracting the stick-up length.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples is not recorded in available documents.</li> <li>No apparent bias was noted between sample recovery and grade.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All drill holes were fully logged and are qualitative.</li> <li>The core has been logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>The main geological units logged include sand, gravel and basalt (basement).</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the</li> </ul>	<ul> <li>One liter water samples collected at 10m depth spacings using a hydrasleave.</li> <li>Individual samples were split into three and sent for analyses.</li> <li>The samples were sent to two laboratories ALS (Canada) and SGS (South Africa).</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <li>sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	Sampling was undertaken using industry-standard practices.
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>The samples were analysed using ICP OES (SGS) and ICP MS (ALS)</li> <li>Samples were analysed for 28 elements (SGS) and 27 elements (ALS) including major elements of interest Li, Na, Ca, K, Mg</li> <li>No QA / QC samples were added.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>All samples and data were verified by the project geologist.</li> <li>All water samples were put into plastic bottles, tagged on site as per the specific drill hole it was located in. The sample depth was estimated from the depth of the downhole hydro sleeve depth where the sample was collected.</li> <li>All hard copy data-capturing was completed at the sampling locality.</li> <li>Recording of field observations and that of samples collected was done in field notes and transferred to an electronic database following the Standard Operational Procedures.</li> </ul>
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations	<ul> <li>The locations of all the samples were recorded.</li> <li>The sample locations are GPS captured using WGS84 UTM zone 33S.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <li>used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	The quality and accuracy of the GPS and its measurements is not known, because it is not stated in available documents.
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Two drill holes per site were located about 10 km apart along the strike of the 42km long geophysical EM anomaly.</li> <li>At each site two holes were drilled. The shallow hole targeted the water within the sand and the deeper hole targeted the water within the gravel unit.</li> <li>The data spacing and distribution of the drill holes and samples would not be sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>All six holes were drilled vertically.</li> <li>The lithium is not visible in the water; therefore, no bias could take place when selecting the sample position.</li> <li>The relationship between the sampling orientation and the orientation of key mineralized structures is not considered to have introduced a sampling bias.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Arcadia maintained strict chain-of-custody procedures during all segments of sample handling, transport and samples prepared for transport to the laboratory are bagged and labelled in a manner that prevents tampering.</li> <li>An export permit was obtained from the Namibian Mining Department to transport the samples across the border to both laboratories</li> </ul>



Criteria	JORC Code explanation	Commentary
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>Audits and reviews were limited to the Standard Operational Procedures in as far as data capturing was concerned during the sampling.</li> </ul>

# **Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>The Bitterwasser Project area is east of Kalkrand in South Central Namibia, some 190 km south of Windhoek in the Hardap Region.</li> <li>The Bitterwasser Lithium Project comprise of three exclusive exploration licences, EPLs 8101, 8102, 8103 &amp; 8104 and, all held by Brines Mining &amp; ExplorationPty) Ltd and that up for renewal. Environmental Clearance Certificates were obtained by BME for all four EPLs.</li> <li>A land-use agreement, including access to the property for exploration has been obtained through the Ministry of Agriculture, Water and Forestry of Namibia and the landowners.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>A regional reconnaissance investigation in the form of a systematic field survey covering the entire southern Namibia and some parts of the Northern Cape Province of South Africa was done during 2009 and 2010. The reconnaissance investigation was aimed at establishing the prospectiveness of the area that could potentially sustain economic exploitation of soda ash and lithium (Botha &amp; Hattingh, 2017).</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The geology of the area consists of Kalahari sand and Gravel that lay on top of basalt basement.</li> <li>The presence of an active deep-seated connate/hydrothermal water circulation network is suggested, which acts as a transport mechanism for lithium bearing brines into the overlying Gordonia Formation pan sediments.</li> </ul>



Criteria	JORC Code explanation	Commentary
		High evaporation rates (>3200 mm/year) occurring in the area are favourable for brine formation and salt-concentration.
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul> <li>Drill results are described in this announcement.</li> <li>All relevant data is included in this report.</li> </ul>
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	Due to the variance in the sampling results between the laboratories and lack of verification capacity with QA/QC, the samples cannot be used for any mineral resource estimate or an indicator of mineralisation, and new samples will have to be taken and analysed.
Relationship between mineralisation widths and	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there</li> </ul>	<ul> <li>The drill holes were all drilled vertical, with the sand and gravel units being horizontal.</li> <li>The water table start around 30m to a depth of 115m.</li> </ul>



Criteria	JORC Code explanation	Commentary
intercept lengths	should be a clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	The appropriate diagrams and tabulations are supplied in the reports referred to the announcements referenced in the footnotes.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	<ul> <li>This report has been prepared to present the prospectivity of the project and results of historical and recent exploration activities.</li> <li>All the available reconnaissance work results have been reported.</li> </ul>
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples         <ul> <li>size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul> </li> </ul>	<ul> <li>The Namibian Government conducted a regional magnetic survey in the area.</li> <li>The Namibian Government conducted a radiometric survey of potassium in the area.</li> <li>An electromagnetic (EM) survey was done by the groundwater consultancy Geoss during October 2019.</li> <li>An airborne TDEM survey was also conducted over the area in Oct 2022.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>The next phase would include in-fill drilling.</li> <li>Metallurgical test work would also be conducted on the water to understand the potential of recovery of lithium from the brines.</li> </ul>