

## Preferred Lithium Extraction Process for McDermitt Project

- **McDermitt benchmarked against U.S. sedimentary lithium deposits**
- **McDermitt metallurgy compares well with more advanced peers**
- **Acid leaching with beneficiation delivers best economic outcome**
- **Testwork to refine the recommended flowsheet commences ahead of further studies**

Jindalee Resources Limited (**Jindalee**, the **Company**) is pleased to advise that global engineering, construction, procurement and maintenance company Fluor Corporation (NYSE: FLR) (**Fluor**) has completed a review of the metallurgical testwork undertaken by Jindalee at the Company's 100% owned McDermitt Lithium Project (**Project**).

The review included an examination of various lithium extraction pathways and determined that acid leach with beneficiation is expected to produce the best economic outcome for the Project. The review recommends that metallurgical testwork commences immediately to refine the preferred flowsheet in order to support further studies on the Project, incorporating the recently updated Mineral Resource Estimate (**MRE**).

### Background:

Currently, there are two potential pathways for the extraction of lithium from sedimentary deposits such as McDermitt: sulphuric acid leaching of either whole or beneficiated ore, and alkali salt (sulphation) roasting.

Initial work completed by Jindalee focussed on beneficiation and sulphuric acid leaching, similar to the flowsheet proposed by the nearby Thacker Pass project<sup>1</sup>.

The results of the acid leach testwork to date have been successful with highlights including:

- Lithium recoveries of over 95% with sulphuric acid ( $H_2SO_4$ ) leach at moderate temperatures and atmospheric pressure on whole of ore samples<sup>2</sup>.
- Increase of lithium content in the <0.01mm fraction by more than 50% (from 0.22% to 0.34%) via beneficiation of McDermitt ore (attrition scrubbing) at 20% solids which also reduced carbonate and analcime (both acid consuming minerals)<sup>3</sup>.
- Further attrition scrubbing test work demonstrated an increase in the lithium content in the <0.01mm fraction by 60.9% (from 0.23% to 0.37%)<sup>4</sup>.
- Leaching experiments on beneficiated samples demonstrated lithium extraction rates of 94-97% with 26% less acid consumed per lithium unit than for previous similar experiments on non-beneficiated ore.



In its 2021 Preliminary Scoping Study, Jindalee also assessed the alkali salt roasting. Jindalee subsequently undertook whole of ore alkali salt (sulphation) roasting testwork on McDermitt ore. Alkali salt roasting is the processing route proposed for the Sonora Lithium Project<sup>5</sup>, owned by Ganfeng Lithium. The alkali salt roasting testwork successfully produced lithium phosphate ( $\text{Li}_3\text{PO}_4$ ) assaying 5.89% Li from ore grading 0.15% Li, indicating a 40x uplift in grade, before purification.

The testwork also confirmed lithium extraction of 89.5% using salts recycled from roasting and leaching, with positive implications for reduced reagent usage<sup>6</sup>. Investigation of the potential to apply beneficiation in the proposed sulphation roast flow sheet confirmed that this process is not applicable.

### **Discussion and Results:**

In late 2022 Jindalee engaged Fluor to review all metallurgical testwork undertaken at McDermitt and recommend next steps for the Project. As part of this review, three processing routes for McDermitt ore were evaluated:

1. Alkali salt roasting,
2. Acid leaching (using  $\text{H}_2\text{SO}_4$ ) without beneficiation, and
3. Acid leaching (using  $\text{H}_2\text{SO}_4$ ) with beneficiation.

Simple financial models were prepared for the three processing routes (with results benchmarked against U.S.-sediment hosted lithium projects) for the purposes of ranking these potential processing routes.

The review and modelling found, within the accuracy of the comparison, that there were no significant differences between the capital costs for the three processing routes. Operating costs were based on benchmarked mining and processing costs, adjusted for differences in acid consumption between peer projects. Analysis determined that acid leaching with beneficiation (to upgrade the leach head grade) delivered the lowest operating costs and best financial outcome.

Furthermore, it was noted that the very large MRE at McDermitt (21.5 Mt LCE, Table 1)<sup>7</sup> allows flexibility in development, providing the opportunity to optimise mining and feed high grade ore early in the mine life.

### **Next Steps:**

Jindalee intends to immediately commence the metallurgical testwork recommended by Fluor to refine the preferred flowsheet. The results of this testwork will be integrated with optimised mine studies on the latest McDermitt MRE and will inform the next phase of studies at McDermitt.

Authorised for release by the Board of Jindalee Resources Limited.

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Cut-off Grade (ppm Li)	Indicated Resource			Inferred Resource			Indicated & Inferred Resource		
	Tonnage (Mt)	Li Grade (ppm)	LCE (Mt)	Tonnage (Mt)	Li Grade (ppm)	LCE (Mt)	Tonnage (Mt)	Li Grade (ppm)	LCE (Mt)
1,000	1,470	1,420	11.1	1,540	1,270	10.4	3,000	1340	21.5

**Table 1 – Summary of 2023 McDermitt Mineral Resource Estimate at the reporting cut-off of 1,000ppm<sup>7</sup>. Note: totals may vary due to rounding**

#### References:

Additional details including JORC 2012 reporting tables, where applicable, can be found in the following releases lodged with ASX and referred to in this announcement:

1. Lithium Americas Ltd 31/01/2023: “Lithium Americas Provides General Motors Transaction Details and Update on Construction Plan for Thacker Pass” Accessed: [https://www.lithiumamericas.com/resources/thacker-pass/Thacker-Pass-Feasibility-Study-43\\_101\\_1-31-23.pdf?v=0.670](https://www.lithiumamericas.com/resources/thacker-pass/Thacker-Pass-Feasibility-Study-43_101_1-31-23.pdf?v=0.670)
2. Jindalee Resources ASX Announcement 19/07/2019: “Further Positive Metallurgical Test Results from McDermitt”
3. Jindalee Resources ASX Announcement 17/08/2020: “More Metallurgical Test Results from McDermitt”
4. Jindalee Resources ASX Announcement 22/02/2021: “More positive metallurgical results from McDermitt”
5. Bacanora Minerals Ltd 25/01/2018: “Technical Report on the Feasibility Study for the Sonora Lithium Project, Mexico” Accessed: <https://www.bacanoralithium.com/pdfs/Bacanora-FS-Technical-Report-25-01-2018.pdf>
6. Jindalee Resources ASX Announcement 14/10/2022: “Positive results from metallurgical testwork at McDermitt”
7. Jindalee Resources ASX Announcement 27/02/2023: “Resource at McDermitt increases to 21.5 Mt LCE”

The Company confirms that it is not aware of any new information or data that materially affects the information included in the market announcement on 27 February 2023 and that all material assumptions and technical parameters underpinning the estimates of mineral resources referenced in the market announcement continue to apply and have not materially changed.

#### About Jindalee

Jindalee Resources Limited (ASX: JRL) is a pure-play US lithium company focussed on the development of the giant McDermitt Lithium Project (21.5 Mt LCE), currently the largest lithium deposit in North America. The Company also provides shareholders with indirect exposure to lithium, gold, base and strategic metals, iron ore, uranium and magnesite in Australia through projects generated by the Company’s technical team.

#### About Fluor Corporation

**Fluor Corporation** (NYSE: FLR) is building a better world by applying world-class expertise to solve its clients’ greatest challenges. Fluor’s 40,000 employees provide professional and technical solutions that deliver safe, well-executed, capital-efficient projects to clients around the world. Fluor had revenue of \$13.7 billion in 2022 and is ranked 259 among the Fortune 500 companies. With headquarters in Irving, Texas, Fluor has provided engineering, procurement and construction services for more than 110 years. For more information, please visit [www.fluor.com](http://www.fluor.com).

#### Forward-Looking Statements

This document may contain certain forward-looking statements. Forward-looking statements include but are not limited to statements concerning Jindalee Resources Limited’s (Jindalee’s) current expectations, estimates and projections about the industry in which Jindalee operates, and beliefs and assumptions regarding Jindalee’s future performance. When used in this document, the words such as “anticipate”, “could”, “plan”, “estimate”, “expects”, “seeks”, “intends”, “may”, “potential”, “should”, and similar expressions are forward-looking statements. Although Jindalee believes that its expectations reflected in these forward-looking statements are reasonable, such statements are subject to known and unknown risks, uncertainties and other factors, some of which are beyond the control of Jindalee and no assurance can be given that actual results will be consistent with these forward-looking statements.



Such factors may include, among others, risks related to regulatory approvals of or in connection with the proposed transaction, actual results of current or planned exploration activities, change in market conditions which affect the completion of the transaction, obtaining appropriate approvals to undertake exploration activities in the portfolio of projects, changes in exploration programs and budgets based upon the results of exploration, future prices of minerals resources; grade or recovery rates; accidents, labour disputes and other risks of the mining industry; delays in obtaining government approvals or financing or in the completion of development or construction activities; movements in the share price of investments and the timing and proceeds realised on future disposals of investments, the impact of the COVID 19 pandemic as well as those factors detailed from time to time in the Company's interim and annual financial statements and reports, all over which are available for review on ASX at [asx.com.au](http://asx.com.au) and OTC Markets at [otcm Markets.com](http://otcm Markets.com).

Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements.

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