

Date: 22 May 2023

ASX Code: MAN

**Capital Structure**

Ordinary Shares: 598,759,920  
Current Share Price: 3.9c  
Market Capitalisation: \$23.3M  
Cash: \$18.3M (Mar 2023)  
EV: \$5.0M  
Debt: Nil

**Directors**

Lloyd Flint  
Non-Executive Chairman  
Company Secretary

James Allchurch  
Managing Director

Roger Fitzhardinge  
Non-Executive Director

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# Wells secured for re-entry Lithium sampling at Utah Lithium Project

## Highlights

- Mandrake has executed a Well Access Agreement (WAA) with a local helium/oil and gas producer at the 100%-owned Utah Lithium Project
- Utah Lithium Project is in the 'lithium four corners' Paradox Basin, which hosts significant concentrations of lithium-rich brines and is located 16km south-east of Anson Resources' (ASX: ASN market cap \$244M) brine-hosted 1Mt Lithium Carbonate Equivalent Resource<sup>1</sup>
- WAA allows Mandrake to re-enter multiple existing oil and gas wells to sample lithium brines, significantly accelerating the exploration program and pathway to a maiden Lithium Resource
- The WAA circumvents the requirement for drilling - saving millions of dollars in exploration – wells can now be accessed and sampled for 1/10<sup>th</sup> of the cost of drilling a new well
- Majority of wells covered by the WAA are cased down to the deepest target allowing sampling of several different lithium-brine bearing zones per well
- Preparations for sampling activities are well advanced - Mandrake fully funded - \$18.3M as at 31 March 2023



Figure 1 – Suspended well covered by the WAA. Note established well pad and aboveground infrastructure

<sup>1</sup> ASN ASX release dated 2 November 2022

Managing Director James Allchurch commented:

*"Mandrake currently holds over 80,000 acres prospective for lithium-rich brines in the Paradox basin, Utah.*

*The execution of a Well Access Agreement with the biggest oil and gas operator in the district, Paradox Upstream, represents an immense value-add for Mandrake. The Company can now access existing suspended oil and gas wells and utilise the cased well bore to test multiple potential zones for lithium-rich brines. The cost to drill a new well for this purpose would be in excess of US\$3M. The cost per well to re-enter existing wells is expected to be less the US\$300k per well.*

*The broader alignment with Paradox Upstream will facilitate the permitting process and may also pave the way for additional opportunities for Mandrake to utilise Paradox's impressive infrastructure footprint. This includes 900 km of operated gas gathering lines (350 km of which is wholly owned) that feed directly to the Paradox-owned Lisbon Valley Gas Plant located in the centre of Mandrake's lease position.*

*We look forward to delivering an exciting period of strong news-flow that will be underpinned by the lithium brine sampling programme across the lease position, utilising existing wells and targeting several reservoir intervals prospective for lithium. The sampling and evaluation phase will facilitate the generation of a maiden Lithium Resource Estimate which in turn will be a value driver for the Company on multiple fronts".*



**Figure 2 – Available well and pad covered by the Well Access Agreement**

Mandrake Resources Limited (ASX: MAN) (Mandrake or the Company) is pleased to announce that it has executed a Well Access Agreement (WAA) with the largest vertically integrated oil and gas / helium producer/processor in the northern Paradox Basin, Paradox Upstream LLC (Paradox). The WAA covers Mandrake's entire 88,096-acre (approximately 356 km<sup>2</sup>) Utah Lithium Project with any subsequent leasing conducted by Mandrake being able to be added to the scope of the WAA.

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The northern Paradox Basin contains oversaturated brines discovered during oil exploration 80 years ago. Brines are primarily hosted by two enormous brine reservoirs - the Paradox formation (>4,000ft thick interbedded salt/clastic) and the 400ft thick Leadville Formation.

Anson Resources (ASX: ASN; market cap: \$244M) has a Mineral Resource Estimate of over 1Mt of LCE at 124mg/L with an additional aggregate Exploration Target range of 2.1Mt – 4.7Mt Lithium Carbonate Equivalent (LCE)<sup>2</sup> 60km to the northwest of Mandrake's Utah Lithium Project.

The WAA is transformative for the Utah Lithium Project in that it allows Mandrake to re-enter Paradox's existing suspended oil and gas wells for the purpose of sampling lithium-rich brines. The majority of the wells considered for re-entry are drilled to a total depth of approximately 8,000 feet which enables Mandrake to sample at least four distinct independent zones across the Leadville and Paradox formations, providing a series of data points which will in turn inform Resource calculations.

Crucially, the WAA circumvents the requirement for drilling which will save Mandrake millions of dollars in exploration drilling costs given that a new well is estimated to cost in excess of US\$3M. The existing Paradox wells, which are cased, can be re-entered and perforated at intervals prospective for lithium-rich brines at approximately 1/10<sup>th</sup> of the cost of drilling a new well.

Paradox operates over 150 wells across its portfolio.

The WAA will potentially also allow for a more streamlined permitting process with local regulatory agencies.

As per the ASX announcement of 15 May 2023, Mandrake has completed a detailed field inspection as part of due diligence and has now identified six existing oil and gas wells for potential re-entry to enable lithium brine sampling.

Preparations for sampling are well advanced and Mandrake looks forward to keeping the market informed as it enters this exciting phase.

### **Well Access Agreement Terms**

The following is a summary of the material terms of the Well Access Agreement (WAA) with Paradox Upstream LLC (Paradox).

- Upfront payment of US\$180,000
- Six wells pre-approved for immediate re-entry; additional wells require Paradox approval
- US\$40,000 payment for each of the first three pre-approved wells re-entered
- Mandrake has the right to transfer both operatorship and ownership of any re-entered well(s) at any time
- All subsequent Mandrake leasing to be added to the scope of the WAA
- 2% overriding royalty interest (ORRI) payable to Paradox on the sale of any lithium or other minerals extracted from re-entered wells

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<sup>2</sup> ASN ASX releases dated 15 Feb 2023 and 22 March 2023



### **About Paradox Upstream LLC**

Headquartered in Houston, Texas, Paradox Upstream LLC (100%-owned subsidiary of Paradox Resources LLC) is a privately held, independent energy company, with primary assets within the Paradox Basin of Utah and Colorado, engaged in:

- Helium extraction and liquefaction
- Natural gas gathering, processing, treating, dehydration and compression
- Carbon capture, utilization and sequestration

Paradox is operator of 570 miles of operated gas gathering lines (220 miles of which is wholly owned) with four compression stations that feed directly to the Paradox owned Lisbon Valley Gas Plant.

Paradox operates over 150 wells on approximately 98,000 net acres in the Paradox Basin.

### **Paradox Basin, USA**

The Paradox Basin in the south-eastern Utah 'lithium four corners' area hosts hypersaline brines historically documented to contain significant concentrations of lithium, potassium salts (potash), bromine, boron and other elements. The Paradox Basin hosts the Cane Creek potash mine operated by Intrepid Potash (NYSE: IPI) (the United States' biggest potash producer) and the operations of mid-tier ASX-listed lithium developer Anson Resources (ASX: ASN) who has an existing JORC Mineral Resource of 1.04Mt of Lithium Carbonate Equivalent (LCE) and 5.27Mt of Bromine<sup>3</sup>.

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<sup>3</sup> ASN ASX release dated 2 November 2022

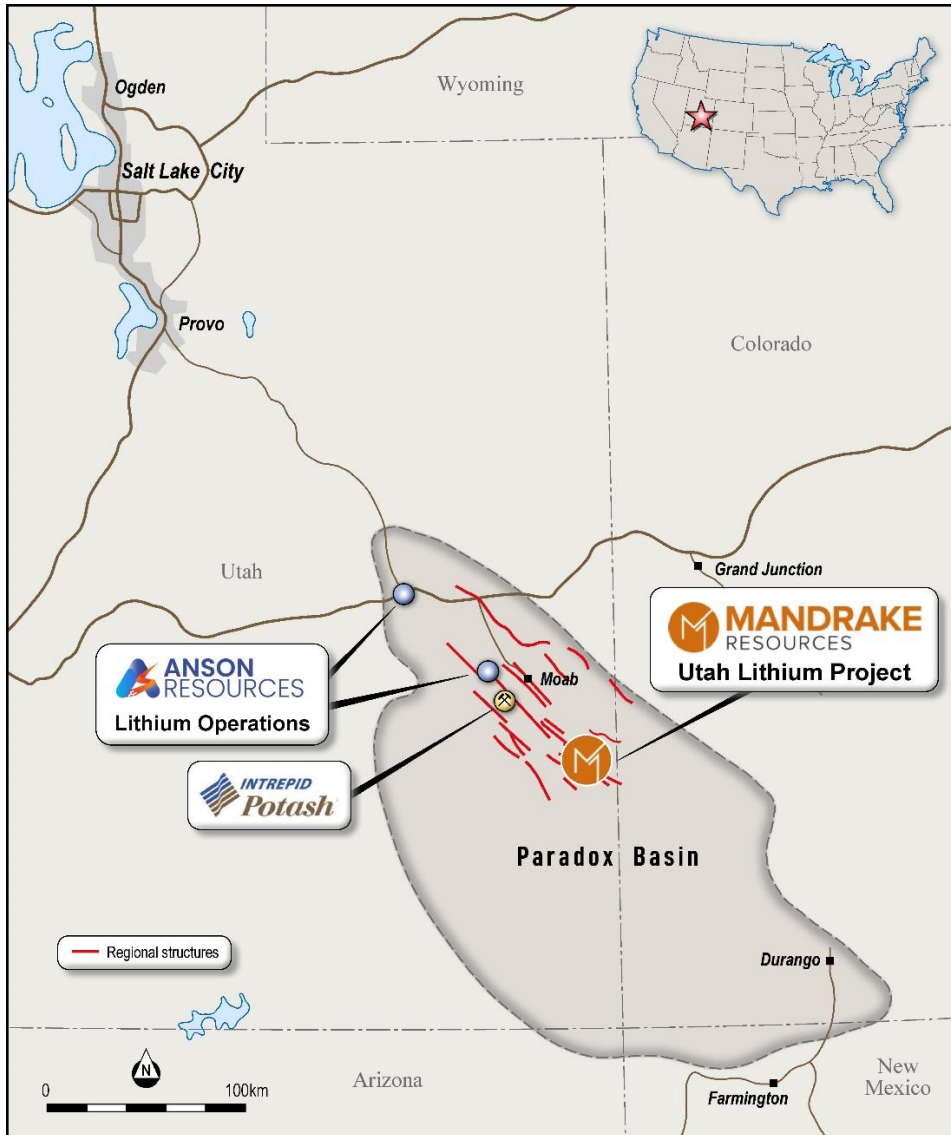


Figure 3: Location of the Utah Lithium Project

**Competent Persons Statement**

The information related in this announcement has been compiled and assessed under the supervision of Mr James Allchurch, Managing Director of Mandrake Resources. Mr Allchurch is a Member of the Australian Institute of Geoscientists. He has sufficient experience that is relevant to the information under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Allchurch consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.