

ASX Announcement

28 October 2024

QUARTERLY REPORT**For the period ended 30 September 2024****ASX Code:** MAN**Capital Structure**

Ordinary Shares: 616,759,920
Current Share Price: 2.7c
Market Capitalisation: \$16.7M
Cash: \$13.7M (Sept 2024)
Debt: Nil

Directors

Lloyd Flint
Chairman/Company Secretary

James Allchurch
Managing Director

Roger Fitzhardinge
Non-Executive Director

Contact Details

First Floor
10 Outram Street
West Perth WA 6005
Australia

Tel: +61 8 6189 1155

mandrakeresources.com.au**Highlights**

- **Large-scale maiden Inferred Resource estimate of 3.3Mt Lithium Carbonate Equivalent (LCE) establishes the Utah Lithium Project as a top tier US-domiciled lithium brine asset**
- **Successful initial brine testing by two DLE providers – Rio-Tinto backed ElectraLith and Bill Gates' Breakthrough Energy Fellows' Electroflow Technologies (Electroflow)**
- **Lithium Brine Supply Agreement executed with Electroflow to supply Electroflow's Direct Lithium Extraction (DLE) pilot plant with bulk lithium brine**
- **In conjunction with several pre-eminent technical groups, Mandrake has been awarded US\$1M by the US Department of Energy (DoE) – to be applied to forthcoming well re-entries**
- **Strong news flow from forthcoming activities:**
 - **Re-entry of existing wells targeting reservoirs known to host high concentration lithium-rich brines**
 - **Production of large brine volumes from re-entry of existing wells to supply two DLE partner pilot plants**
 - **Commencement of Scoping Study**
- **Cash position of \$13.7M**

Utah Project – Operations

Mandrake Resources Limited (ASX: MAN) (Mandrake or the Company) is pleased to provide the following operations report for activities at the Company's 100%-owned large-scale 93,755-acre (~379km²) Utah Lithium Project for the quarter ending 30 September 2024.

Mineral Resource Estimate – 3.3Mt Inferred LCE Resource

Subsequent to the end of the September 2024 quarter, Mandrake release a large-scale maiden Inferred Mineral Resource Estimate (MRE) of 3.3Mt Lithium Carbonate Equivalent (LCE) at the Utah Lithium Project, confirming the project as a top tier US-domiciled lithium brine asset. The Inferred MRE is summarised in Tables 1 and 2, with further details provided in Mandrake's ASX release dated 22 October 2024.

Table 1. Maiden JORC Inferred Resource Summary for the Utah Lithium Project

Resource Category	Formation	Brine Volume (billion m ³)	LCE (Mt) ¹
Inferred	Paradox Clastics A, B & C	2.5	1.5
	Leadville	4.2	1.6
	McCracken	0.5	0.2
	Totals	7.2²	3.3

¹ Conversion factor of 5.323 used to convert lithium tonnes to lithium carbonate equivalent (LCE) tonnes

² Assumes production from all formations

There may be minor discrepancies in the above table due to rounding

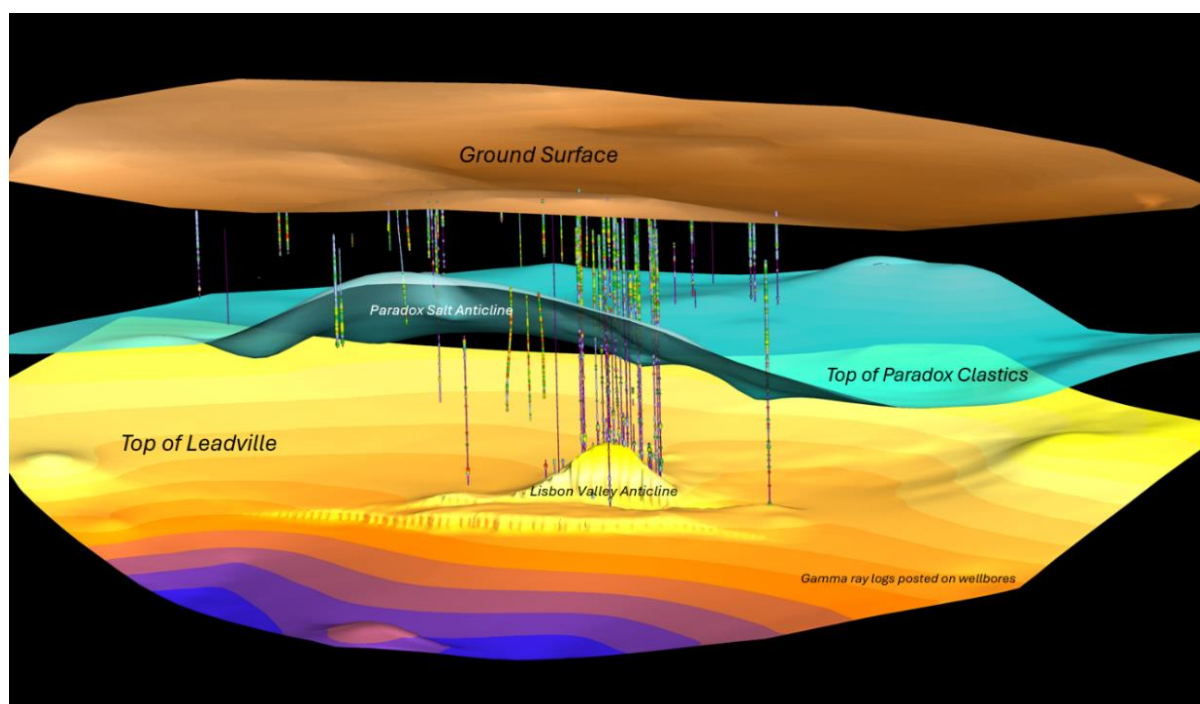


Figure 1. 3D model of stratigraphic intervals of the lithium brine host formations at the Utah Lithium Project. 3D seismic data was integrated to determine the continuity of geologic units and fault geometries

Table 2. Maiden JORC Inferred Resource for the Utah Lithium Project

Resource Category	Formation	Rock Volume (km ³)	Brine Volume (billion m ³)	Average Porosity (%)	Avg Li (mg/L)	Elemental Li (t) ²	LCE (Mt) ^{1,2}
Inferred	Leadville	46.6	4.2	9	73	306,000	1.63
	McCracken	9.3	0.5	5	73	35,000	0.19
	Paradox Clastic Zone A	11.3	1.2	11	112	137,000	0.73
	Paradox Clastic Zone B	5.9	0.7	12	142	100,000	0.53
	Paradox Clastic Zone C	5.3	0.6	12	69	44,000	0.24
	Totals	78.4	7.2²	9.6⁴	86³	622,000	3.31

¹ Conversion factor of 5.323 used to convert lithium tonnes to lithium carbonate equivalent (LCE) tonnes

² Assumes comingled production from all formations

³ Brine volume weighted average lithium concentration

⁴ Brine volume weighted average porosity

There may be minor discrepancies in the above table due to rounding

Direct Lithium Extraction (DLE)

DLE and Refining (DLE-R) partner ElectraLith has produced 99.9% pure battery grade lithium hydroxide directly from Mandrake's 100%-owned Utah Lithium Project brines. The result confirms DLE-R's ability to produce lithium hydroxide without consuming water or chemicals, validating the potential of the Utah Lithium Project.

Spun out of Monash University and backed by Rio Tinto, ElectraLith's DLE-R is emerging as one of the cleanest, fastest, most versatile and cost-efficient methods of extracting and refining lithium. It's proprietary electro-membrane technology requires no water or chemicals and can run entirely on renewable power, making it ideal for the water and resource constrained Paradox Basin.

ElectraLith and Mandrake are currently negotiating the terms to facilitate the construction of a prototype DLE-R pilot plant to be located at Mandrake's Utah Lithium Project. The relationship between ElectraLith and Mandrake is non-exclusive.

Lithium Brine Supply Agreement for Pilot Plant

During the September 2024 quarter, Mandrake executed a Lithium Brine Supply Agreement (LBSA) with its second DLE partner, US-based Electroflow Technologies, Inc. (Electroflow). The LBSA will see Mandrake supply Electroflow's DLE pilot plant with brines from its Utah Lithium Project which Electroflow will process at its own cost.

Mandrake will initially truck a large volume of brine to Electroflow's existing San Francisco Bay Area laboratory facility to enable preliminary processing to calibrate equipment and finalise pilot plant design.

The bulk of the pilot plant processing work will then commence in Utah in the new year. The projected scale of production from the pilot plant facility is anticipated to be several hundred grams of high purity lithium hydroxide per day.

Electroflow has already achieved repeatable recoveries of 92% lithium when producing lithium hydroxide directly from Mandrake's brines.

Electroflow's proprietary electrochemical process uses lithium-selective electrodes to convert saltwater brines into lithium chemicals for batteries. Their process eliminates the need for excessive chemical reagents for purification and offers high scalability with a modular cell stack design. Electroflow is backed by Bill Gates' Breakthrough Energy Fellows programme.

The relationship between Mandrake and Electroflow is non-exclusive.

Award of US\$1M Funding Grant from DOE

Mandrake, together with Idaho National Laboratories (INL), the National Renewable Energy Laboratory (NREL) and the University of Utah, have been granted US\$1 million to conduct relevant field work and research for '*Characterizing and Estimating Reserves of Lithium and Other Critical Minerals in the Paradox Basin, Utah.*'

The US\$1 million in funding comes from the Geothermal Technologies Office (GTO), under the Office of Energy, Efficiency and Renewable Energy (EERE) in the US Department of Energy (DoE).

Partnering with INL, NREL and the University of Utah will give Mandrake access to the foremost US scientists and sophisticated US-funded laboratories and thrust both Mandrake and the lithium potential of the Paradox Basin into the US national spotlight.

Outstanding funding opportunities and general support from the US government are currently available for US-based critical minerals projects as the US seeks to promote a domestic supply of critical minerals and navigate the geopolitical permutations of the new energy transition. Mandrake has an additional three DoE applications for funding that are outstanding.

Mandrake will apply funds from this grant to forthcoming re-entry activities.

About our partners - Idaho National Laboratory (INL) and National Renewable Energy Laboratory (NREL)

INL, is a DoE national laboratory and employs 6,169 people with a FY2022 budget of US\$1.6B.

NREL is a federally funded research and development center sponsored by the DoE with 3,675 employees.

Both organizations have a deep understanding of the critical minerals space and bring an immense skillset to the lithium brines of the Paradox Basin.

Continued exploration of existing projects

Although the primary focus of the Company has been on the Utah Lithium Project, Mandrake continues to assess the Berinka (gold/copper in NT) and Jimperding (PGE/Ni/Cu in WA) projects.

Corporate

As at 30 September 2024, Mandrake had approx. \$13.7M in cash.

Expenditure of approx. \$1.2M during the quarter ending 30 September 2024 is primarily attributable to annual claim fees and costs of the MRE. Expenditure going forward is expected to reduce.

Additional ASX disclosure information

ASX Listing Rule 5.3.2: There was no substantive mining production and development activities during the quarter.

ASX Listing Rule 5.3.3 - Schedule of Mineral Tenements as at 30 September 2024

Location	Project	Status	Tenement	Interest - start of quarter	Interest - end of quarter
Utah, USA	Utah Lithium	Recorded*	MANPBLM-1 to MANPBLM-3036	100%	100%
Utah, USA	Utah Lithium	OBA*	MANOBA	100%	100%
Utah, USA	Utah Uranium	Recorded*	MANLBLM-1 to MANLBLM-12	100%	100%
NT, Australia	Berinka	Granted	EL31710	100%	100%
WA, Australia	Jimperding	Granted	EL70/5345	100%	100%

*- Recorded BLM claims and OBA gives Mandrake 100% lithium rights

ASX Listing Rule 5.3.5: Payments to related parties of the Company and their associates during the quarter per Section 6.1 of the Appendix 5B total \$124,306, comprised of Directors' fees, salaries and secretarial and accounting services performed by directors.

This announcement has been authorised by the board of directors of Mandrake.

About Mandrake Resources

Mandrake is an ASX listed explorer, focused on advancing its large-scale lithium project in the prolific 'lithium four corners' Paradox Basin in south-eastern Utah, USA. The Company's 100%-owned tenure position exceeds 93,000 acres (~379km²) and incorporates a large-scale maiden Inferred Resource estimate of 3.3Mt Lithium Carbonate Equivalent (LCE), establishing the Utah Lithium Project as a top tier US-domiciled lithium brine asset.

Positioned within Utah's pro-mining jurisdiction, the project benefits from a favourable regulatory environment that supports mining activities. The project has access to Tier 1 infrastructure, including power and water resources.

Furthermore, the project aligns with the proactive efforts of the US government and industry to promote domestic exploration and production of strategic and critical materials.

For further information visit www.mandrakeresources.com.au

The Mineral Resources information contained in this ASX release is extracted from the ASX release entitled "Maiden Inferred Resource of 3.3Mt LCE" dated 22 October 2024, available at www.mandrakeresources.com.au and www.asx.com. Mandrake confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. Mandrake confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Forward looking statements

Statements regarding plans with respect to the Company's mineral properties are forward looking statements. There can be no assurance that the Company's plans for development of its mineral properties will proceed as expected. There can be no assurance that the Company will be able to confirm the presence of mineral deposits, that any mineralisation will prove to be economic or that a mine will successfully be developed on any of the Company's mineral properties.

Competent Persons Statement

The technical information in this announcement complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) and 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 style of mineralisation and type of deposit 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.

Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

MANDRAKE RESOURCES LIMITED

ABN

60 006 569 124

Quarter ended ("current quarter")

30 September 2024

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (..3.months) \$A'000
1.	Cash flows from operating activities		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	(1,214)	(1,214)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	-	-
	(e) administration and corporate costs	(177)	(177)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	178	178
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	-
1.8	Other (provide details if material)	-	-
1.9	Net cash from / (used in) operating activities	(1,213)	(1,213)

2.	Cash flows from investing activities		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) exploration & evaluation	-	-
	(e) investments	-	-
	(f) other non-current assets	-	-

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (..3.months) \$A'000
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
2.6	Net cash from / (used in) investing activities	-	-

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	Net cash from / (used in) financing activities	-	-

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	14,921	14,921
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(1,213)	(1,213)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	-
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (..3.months) \$A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	13,708	13,708

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	208	421
5.2	Call deposits	13,500	14,500
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	13,708	14,921

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	124
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-
<i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i>		

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

7. Financing facilities <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
7.1 Loan facilities	-	-
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 Total financing facilities	-	-
7.5 Unused financing facilities available at quarter end		-
7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

8. Estimated cash available for future operating activities	\$A'000
8.1 Net cash from / (used in) operating activities (item 1.9)	(1,213)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	-
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(1,213)
8.4 Cash and cash equivalents at quarter end (item 4.6)	13,708
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	13,708
8.7 Estimated quarters of funding available (item 8.6 divided by item 8.3)	11.3
<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>	
8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:	
8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer: n/a	
8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer: n/a	
8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?	
Answer: n/a	
<i>Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.</i>	

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date:28 October 2024.....

Authorised by:Board of Directors.....
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.