Date: 3 September 2025

ASX Code: MAN

Capital Structure
Ordinary Shares: 627,259,920
Current Share Price: 2.2c
Market Capitalisation: $13.8M
Cash: $13.3M (June 2025)
Debt: Nil

Directors

Lloyd Flint
Non-Executive Chairman
Company Secretary

James Allchurch
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New Basement Mapping Identifies Prospective Zones of High Lithium Concentrations

Highlights

- **The 100%-owned Utah Lithium Project hosts an Inferred Resource estimate of 3.3Mt Lithium Carbonate Equivalent (LCE)[1]**
- **High lithium concentrations in the Leadville Formation are derived from connate waters interacting with radiogenic, crystalline Precambrian basement**
- **Detailed mapping of the Precambrian basement was completed using geological, geophysical and petrophysical datasets as part of the first phase of a detailed Brine Flow Modelling Study**
- **Determining the structural complexity and paleo-topography of the Precambrian basement enables Mandrake to identify areas of 'high grade' lithium by identifying enhanced fluid pathways and proximity to the radiogenic source rocks**
- **Ongoing Brine Flow Modelling is set to pinpoint the most prospective lithium zones, with additional results expected shortly**
- **$13.3M cash and no debt as at 30 June 2025**

Mandrake Resources Limited (ASX: MAN) (Mandrake or the Company) is pleased to announce that mapping and interpretation of the Precambrian basement rocks at the 93,755 acre (approximately 379 km^2) 100%-owned Utah Lithium Project in the Paradox Basin has been completed, concluding the first phase of the Lithium Brine Flow Model Study.

Managing Director James Allchurch commented:

'The geological and reservoir characteristics of the Paradox Basin have historically been understood through the lens of oil and gas exploration and production. To guide lithium exploration, Mandrake is building a conceptual model of 2D lithium brine flow to identify areas most prospective for high lithium concentrations.

The lithium brine flow model will identify zones of high-grade lithium which don't necessarily coincide with historical oil and gas explorers' areas of interest, as illustrated by the revelatory 340mg/L lithium result obtained in the Peterson 88-21P well.

[1] ASX announcement 22 October 2024. With the exception of the information included in this report, the Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement. The Company confirms that the form and context in which the competent person's findings were presented have not been materially modified from the original announcements.

The first step of mapping the Precambrian Basement is now complete, identifying structural complexity associated with enhanced fluid pathways as well as high radiogenic source rocks known to enhance lithium concentrations. The Brine Flow Modelling Study is ongoing with further results to be provided shortly.'

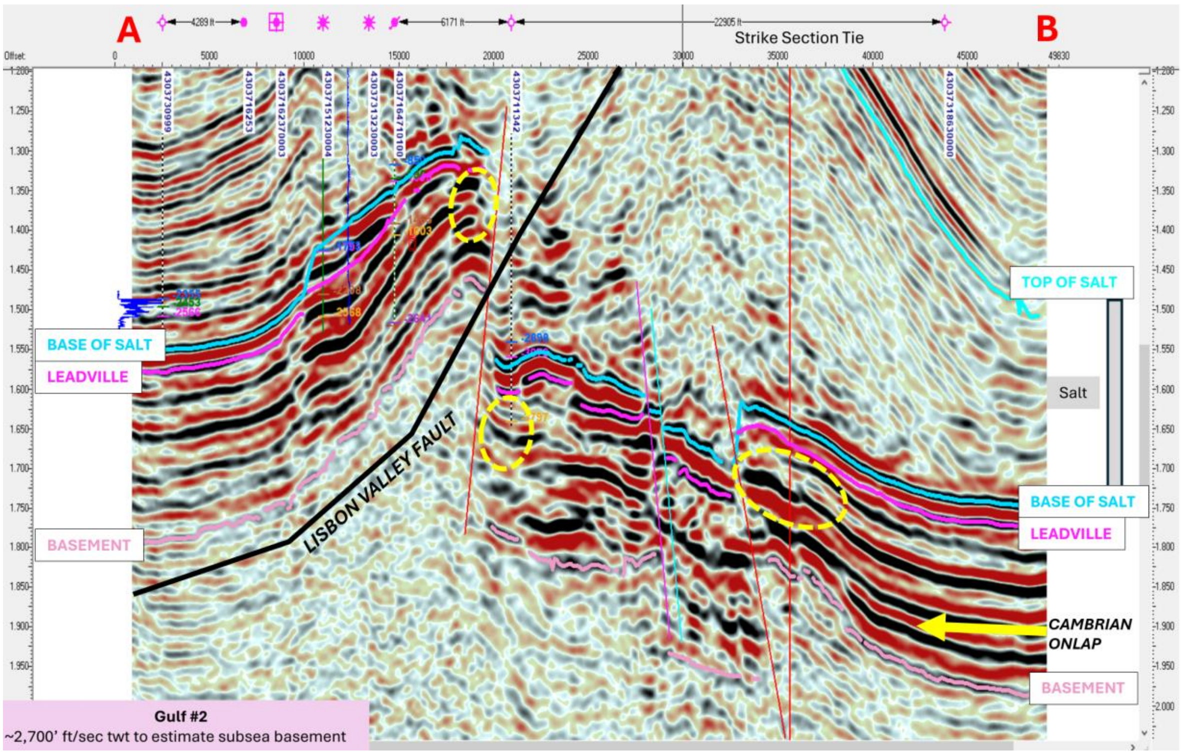

Figure 1. SW-NE seismic section (A-B on Figure 2) showing basement complexity around the re-activated Lisbon Fault together with horst/graben extension post Leadville deposition. Potentially enriched lithium brine areas in the Leadville that directly lie above Precambrian basement paleo highs are highlighted in dashed yellow. Prospective areas will be further refined in the forthcoming brine flow model.

Mandrake has now completed the basement mapping component of the conceptual 2D lithium brine flow model designed to identify areas most prospective for high lithium concentrations.

The comprehensive brine flow model will incorporate the following:

- Core-based porosity/permeability and flow-test permeability trends
- Fault geometries from 3D seismic and well data
- Regional lithium brine chemistry trends
- Potentiometric surfaces for brine flow directions
- PETRA software for mapping and cross sections

The model will be invaluable in optimising exploration at the Utah Lithium Project by identifying zones of high-grade lithium brine within the Leadville Formation and creating a reliable potentiometric vector map detailing brine flow within the Leadville Formation.

Detailed mapping of Precambrian basement rocks was identified as a key element following results of previous work undertaken by Mandrake which determined that lithium bearing brines within the Leadville Formation in the Jesse 1A well and across the Lisbon trend are likely to have been sourced from connate water which has strongly interacted with radiogenic, high 87Sr/86Sr, crystalline Precambrian basement.

Other authors studying radiogenic isotopes and dissolved noble gasses (e.g. Kim et al., 2022, Tyne et al., 2022)[2],[3] also support this concept and further demonstrate the clear geochemical separation between the underlying Mississippian Leadville and Devonian McCracken Formations and the overlying Pennsylvanian Paradox Clastic stratigraphy.

Understanding the structural complexity and paleo-topography of the Precambrian basement can guide lithium exploration in the Leadville and McCracken formations by identifying enhanced fluid pathways and proximity to the source rocks.

- **Enhanced Fluid Pathways** – Basement highs and fault-related structures can create vertical and lateral permeability pathways, facilitating upward migration of lithium-enriched brines into overlying carbonate reservoirs.

- **Source Rock Proximity** – Areas where the Leadville and McCracken formations directly overlie radiogenic basement are likely to have higher lithium concentrations due to prolonged water–basement interaction.

Structural mapping of the Precambrian basement was undertaken using Mandrake's comprehensive geological, geophysical (including seismic) and petrophysical datasets.

Detailed basement mapping identified a series of Precambrian paleo highs, evidenced by thinning of Cambrian sediments that onlap the Precambrian basement as well as several zones exhibiting a high level of structural complexity (Figure 1).

These newly discovered highs are interpreted to influence deposition of sediments or to represent older fault zones that could be preferential zones for fluid interaction with the basement.

The Brine Flow Modelling work is continuing with further results to be provided shortly.

About Mandrake

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 (~379km^2) 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.

[2] Kim, J.-H. et al., 2022, Hydrogeochemical evolution of formation waters responsible for sandstone bleaching and ore mineralization in the Paradox Basin, Colorado Plateau, USA: GSA Bulletin, v. 134, p. 2589–2610

[3] Tyne, R.L. et al., 2022, "Basin architecture controls on the chemical evolution and ^{4}He distribution of groundwater in the Paradox Basin": Earth and Planetary Science Letters, v. 589, p. 117580, doi:10.1016/j.epsl.2022.117580.

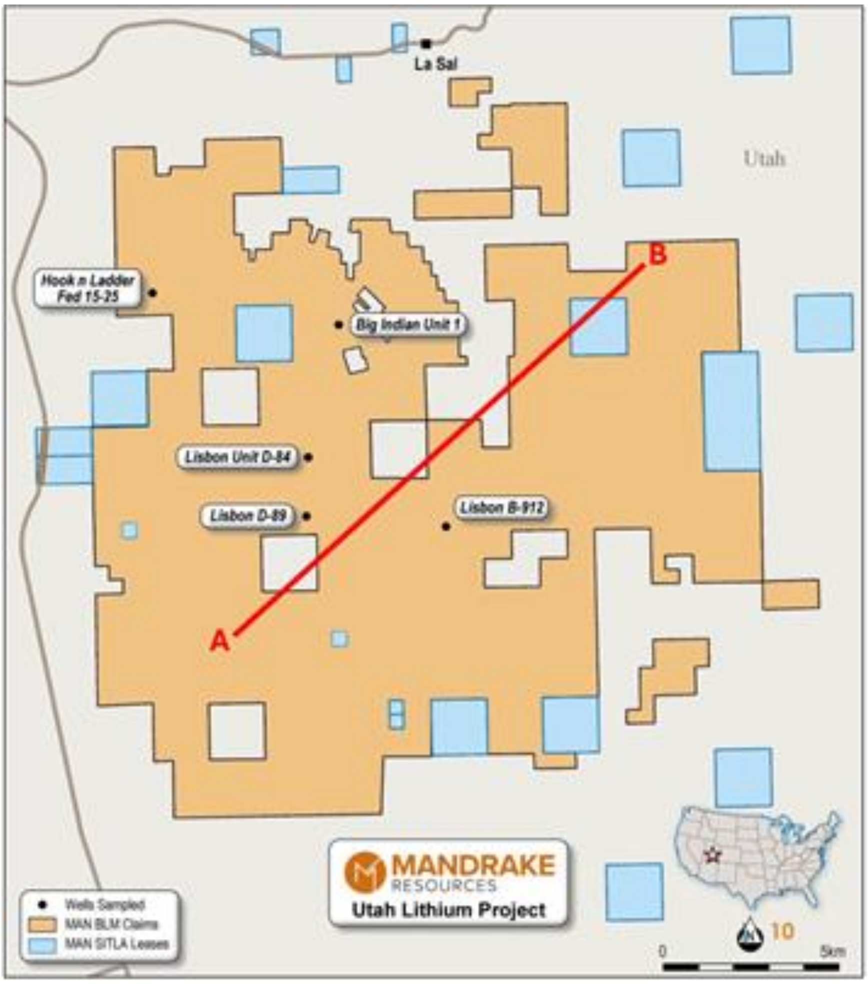

Figure 2: SW – NE section line used in Figure 1.

This announcement has been authorised for release by the Board of Mandrake Resources.

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.

MANDRAKE RESOURCES

- # JORC Code, 2012 Edition – Table 1 report template

- ## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• 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. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • 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.	• The La Sal and Lisbon 3D seismic surveys were undertaken in 2008 and 2012 respectively using the NAD 1927 survey system. Survey details below: **Recording System:** I/O, SEGD FORMAT, 3/4-NYQ MIN **Sample Interval:** 2 MS SAMPLES/TRACE 2001 SYSTEM IMPERIAL **Source:** DYN, 5.5 LB AT 40 FT **Source Lines:** VARIOUS **Group Interval:** 165/220 FT **Shot Interval:** 300/220 FT **Geophones:** GEOSPACE 30 CT, 10 HZ, 6 PER STRING OVER 50 FT **Record length:** 4.0 SECS **Sample rate**: 2 MS **3D Geometry Assignment:** AZIM=227 DEG; CDP BIN SIZE 110 x 110 FT • In January 2024 Mandrake collected brine samples from existing perforations in five historical shut-in oil and gas wells located in the Lisbon Valley. A ball-valve bailer attached to a wireline truck was used to retrieve samples from the formations of interest. • A mixture of brine and minor volumes of hydrocarbon liquids retrieved from the bailer were poured into a clean bucket and then into a 2,000 mL separator funnel to separate hydrocarbons from water. After 5-10 minutes of allowing for hydrocarbon/brine separation, a 200-300 mL aliquot of the brine was captured from the separation funnels to be analysed with an AquaTroll 500 water multimeter. The Aqua Troll was factory calibrated upon shipment and re-calibrated upon arrival for high

Criteria	JORC Code explanation	Commentary
		conductivity brines (~100,000 µs/cm). After 30-40 minutes of allowing for hydrocarbon/brine separation, the brine separated was collected in a HDPE sampling bottle with minimal headspace and transported in a cooler on ice. • Mandrake has not drilled any wells and is currently reliant on petroleum company wells to access brine.
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).	• The historical oil and gas wells were drilled using conventional oil and gas drill rigs that drill vertical well bores using rotary drilling techniques.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • 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.	• Mandrake has yet to conduct drilling at the Utah Lithium Project. • Sample size of the samples collected by Mandrake is constrained by the capacity of the bailer. • Measurements of the original liquids recovered by Mandrake from the bailer, oil saturation and final sample collected were recorded. • Mandrake took actions to extract brine from each sample and separate-out any minor liquid hydrocarbons that were retrieved from the original mixed-liquids in the bailer. • The historical collection of brines from the oil and gas wells is poorly documented.
Logging	• 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. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged.	• Historical petrophysical well logs associated with the historical wells include gamma-ray, neutron density, resistivity, sonic, mud logs. • The petrophysical logs provide information such that geologists can make stratigraphic formation picks to define the down well lithology of each well. These interpreted lithological logs are used to prepare cross-sections to map the reservoir and to target future well locations.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • 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. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• No sub-sampling techniques were applied to the brine samples collected by Mandrake. • Specific sampling techniques, sample preparation of brine, and Quality Control-Quality Assurance procedures related to all historical wells is unknown.

Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.
	• 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.
	• 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.
		• Sample collection and preparation of the samples collected by Mandrake followed the protocols of the NELAC accredited laboratories used.
		• A blind synthetic standard was provided every 20-30 samples or at the beginning and end of a set of samples. Blind blanks (distilled water) are provided every 50-60 samples or at the beginning of each set of samples and a check lab was used for every second sample.
		• The contracted labs reported the following methodologies for sample analysis:
		  o Sample Digestion: EPA 200.2
		  o Anions: EPA M300.0, EPA 300.0, SM2320B, SM4500S2-D, SM2310BSM, SM D516
		  o Cations: EPA M200.7 & EPA 200.7
		  o Volatile Organic Compounds (Hydrocarbons): EPA M8015D, EPA M8260C/D, and EPA M3520C
		• Assay procedures are considered appropriate.
		• Quality control procedures included the use of external laboratory checks.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• Documentation of primary field data collected by Mandrake was conducted under standard operating procedures.
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 used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• Well locations are identifiable in the field. • The longitude and latitude locations of the oil and gas wells provided by the oil and gas companies are recorded in government databases. • The datum elevation was verified with well log headers and published surface topographic maps.
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • 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. • Whether sample compositing has been applied.	• Mandrake has yet to conduct drilling at the Utah Lithium Project.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • 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.	• Seismic interpretation has been undertaken by Mandrake to evaluate geological structures and lithological units.
Sample security	• The measures taken to ensure sample security.	• Samples collected by Mandrake were safely stored by Mandrake's personnel while at the field and shipped by registered courier to the laboratories and DLE providers. • Sample security procedures (if any) as conducted by the historical oil and gas companies are unknown.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• No audits/reviews have been undertaken on the historical work conducted by oil and gas companies to date.

• Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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.* • *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.*	• The Utah Lithium Project is located approx. 60km SSE of the City of Moab, in the State of Utah in the United States. • The total land position is 93,755 acres and includes: o 34,670 acres within an Other Business Agreement (OBA) with the Utah State Government's School and Institutional Trust Lands Administration (SITLA). o The remaining land position of approximately 59,085 acres is comprised of over 2,950 staked Bureau of Land Management (BLM) placer claims. • All the land tenure / staked BLM claims are 100% owned by Mandrake's US subsidiary (Mandrake Lithium USA Inc.).
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Historical exploration work has been performed by oil and gas companies who have completed hydrocarbon-specific exploration and production activities over the last 80 years across the lease and claim areas. • Individual wells within oilfields continue to produce in the Paradox Basin and within the boundaries of the Utah Lithium Project.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Project is in the north-central portion of the Paradox Basin. • Structurally, Mandrake's Project occurs on the southern margin of the "Paradox fold and fault belt", which consists of a series of roughly parallel, northwest-trending faults, northwest striking diapiric salt-cored anticlines and synclines in the northern part of the Paradox Basin.

Criteria	JORC Code explanation	Commentary
		• Currently, Mandrake's lithium-brine geological target units are defined by the Devonian McCracken sandstone, the Mississippian Leadville-Ouray Limestone Formation (Leadville Limestone) and the Pennsylvanian Paradox Member of the Hermosa Formation. • The Leadville Limestone comprises massive to thinly laminated, gray, buff, and yellow limestone that were deposited in intertidal to subtidal environments. • The Paradox Basin can be defined by the maximum extent of halite and potash salts in the Middle Pennsylvanian Paradox Formation and is composed of halite interbedded with gypsum, shale, sandstone, and dolomite deposited intermittently in a closed marine depositional environment.
Drill hole Information	• *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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *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.*	• Mandrake has yet to conduct drilling at the Utah Lithium Project. • The historical oil and gas wells were drilled vertically.
Data aggregation methods	• *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.*	• Lithium analyses of the samples collected by Mandrake for the Leadville and McCracken range from 55 to 88 mg/L across the Mandrake lease area. This data was de-clustered to generate a contour map showing Li concentrations across the Mandrake

Criteria	JORC Code explanation	Commentary
	• *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Lease areas. De-clustering entailed taking averages of the Lisbon area well analyses and the Jesse 1A well analyses and representing the well or grouped-wells by their respective geographical centers and average Li concentrations. A final Leadville and McCracken concentration of 73 mg/L Li was calculated by using volume-weighted averages. • The Paradox Clastic lithium concentrations are derived from arithmetic averages of analyses from each of the clastic zones: A (avg. 112 mg/L), B (avg. 142 mg/L) and C (avg. 69 mg/L) across the Mandrake acreage area and samples along NW-trending belt of geochemically similar samples to the Mandrake acreage area.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• Mandrake has yet to conduct drilling at the Utah Lithium Project. • The oil and gas fluids (hydrocarbons and brine) are produced from large, confined aquifer/reservoir deposits; hence, the brine samples – as fluid media – represent samples from a larger pool of fluids. Accordingly, it is accurate to state that brine data do not have common solid mineral deposit sample intervals or intercepts. Hence downhole lengths and true widths are not applicable to this type of deposit.
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.*	• Mandrake has yet to conduct drilling at the Utah Lithium Project.
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.*	• All data provided and available for this announcement is summarised in the body of the report.

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.*	• Based on the Mandrake's current knowledge of the project, all meaningful information has been provided.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Future work for the development of the lithium brine flow model includes the following: o Core-based porosity/permeability and flow-test permeability trends. o Fault geometries from 3D seismic and well data. o Regional lithium brine chemistry trends. o Potentiometric surfaces for brine flow directions. o PETRA software for mapping and cross sections.