# QX Resources

QX Resources
QXR - The X Factor in Battery Minerals Supply

**19 June 2024**

## Large Basin Confirmed in Drillholes with Multiple Brine Horizon Targets - Liberty Lithium Brine Project USA

- **Drilling and geophysics indicate the existence of a large brine basin at Liberty Lithium Brine Project USA, with brine intersected over 400 m vertically.**
  - **Geological similarities confirmed with the nearby Silver Peak lithium brine producer Albemarle, in Clayton Valley Nevada, with encouraging initial lithium assay results, aquifers and salinity.**
- **Lithium brine specialists have proposed additional drilling to intersect deep lithium brines in the centre of the basin, in a more favourable setting, further west of recent drilling.**
- **Discussions continue with various USA based battery supply participants who are keen to work with potential new lithium developers within the USA, including with Stardust who aim to IPO in June.**
- **QXR and IG Lithium Option Agreements are being amended to facilitate undertaking further drilling.**
- **QXR aims to provide an update soon on progress with gold exploration in Queensland.**

QX Resources Limited (**ASX: QXR**, '**QXR'**) can confirm that the Liberty Lithium brine project in California, USA, is a large brine basin with numerous brine aquifers, shown in downhole sampling and geophysics in the second hole of the Company's two-hole diamond drill program (Table 1).

Porous conglomerates saturated with brines were intersected beneath fine grained lake sediments with sandy layers. The geology intersected is very encouraging as it is similar to the producing sequences of Clayton Valley Nevada, where Albemarle's producing lithium brine deposit is located [1]. Detailed downhole geophysics together with initial downhole brine sampling (packer sampling) shows increasing salinity with depth, together with large brine volumes, both encouraging for discovering a potentially economic lithium brine deposit in the properties.

Although the maximum lithium assay values were 50mg/l Li over 15 metres near the base of hole #2 (Table 2), the salinity and conductivity increased with depth, at levels similar to known producers. Ingress of fresh water into the aquifers may explain the lower lithium values in drill holes #1 and #2 being located close to a range front fault on the edge of the basin. These initial holes were located near the edge of the basin in part for logistics and access reasons as well as the surface lithium anomaly.

Hole #2 also intersected thick porous brine horizons – critical for future success- which is considered encouraging, together with the geological similarity to Clayton Valley NV (Albemarle's Silver Peak mine). These similarities include basal porous conglomerate units containing brine beneath finer grained lake sediments. However, the best producing horizons at Clayton Valley are tuff units within the sediment package which have not been intersected in drillholes to date, but which outcrop 4km to the southwest of hole #2 (Figure 4).

Results were analysed by external lithium brine specialists to produce interpretations, including the globally recognised Hydrominex Geoscience Consulting. Lithium brine specialists have advised additional drilling is required to potentially intersect deep lithium brines in the centre of the basin, further west of drilling undertaken by QXR, based on lab results to date.

**QXR Managing Director, Stephen Promnitz, said:** *"QXR has defined a new large scale brine basin, saturated with brines, at the Liberty Lithium Brine Project. A large near-surface brine field with lithium potential is rare to date in the USA. The geological setting, with conglomerates loaded with brines, is similar to Albemarle's producing deposit. We are yet to find tuff horizons similar to Clayton Valley, which are the best brine aquifers – although they do outcrop nearby, suggesting they may exist within the basin. Surface and downhole geophysics make it compelling for further drilling to the west, in the centre of the basin under deeper sediments, which may intersect higher grade lithium brine, compared to the drilling to date."*

[1] *www.pureenergyminerals.com/wp-content/uploads/2018/04/PureEnergy_ClaytonValleyPEA_Rev1_23March2018.pdf*

**Next Steps**

Applications for further drillholes were submitted some time ago. To provide operational flexibility, an amended drill program has been submitted to regulators for approval. Bulk volumes of brine will be submitted for testwork with selected direct lithium extraction (DLE) providers, as well as with lithium refiner Stardust Power Inc, with whom QXR holds at Letter of Intent *(ASX announcement 29 Feb 2024)*. Stardust expects to list on NASDAQ in June via a c.US$490m deal and then plans to build a lithium refinery in Oklahoma.

Discussions continue with various USA based battery supply participants who are keen to work with potential new lithium developers within the USA.

QXR and IG Lithium are currently discussing amendments to the Option Agreements to facilitate the undertaking of further drilling.

**Background**

The Liberty Lithium Brine Project, located in SaltFire Flat, California, covers contiguous claims over 102km$^2$ (25,300 acres), being one of the largest single lithium brine projects in the USA (Figure 1). The Company entered an Option to Purchase Agreement and an Operating Agreement (Option Agreements) to earn a 75% interest in the large scale Liberty Lithium brine project in California, USA, from vendor IG Lithium LLC *(ASX announcement 5 October 2023).* Based on results received to date, the Company is currently in discussion with IG Lithium regarding potential renegotiation of the Option Agreements to allow a longer period of time to conduct additional drilling prior to any future commitments.

Two vertical diamond drill holes were completed (369m & 443 metres depth), spaced 4km apart (Figure 2, 3). Holes were centred over an extensive lithium brine surface anomaly and significant MT geophysical target, interpreted as a series of conductive brine bearing aquifers at depth. Brine horizons were intersected in both holes with numerous brine aquifers intersected in drillhole #2 *(ASX announcement 8 Feb 2024).*

QXR entered into a Letter of Intent with Stardust Power Inc., a development stage American manufacturer of battery-grade lithium products, to assess the lithium brines from the Liberty Lithium Brine Project. The parties intend to evaluate options to potentially supply Stardust Power with lithium brine products, dependent on results, on a non-exclusive basis for processing into battery-grade lithium materials for electric vehicles *(ASX announcement 29 Feb 2024).* The Company plans to share the results of the two hole drill program with Stardust as part of ongoing discussions.

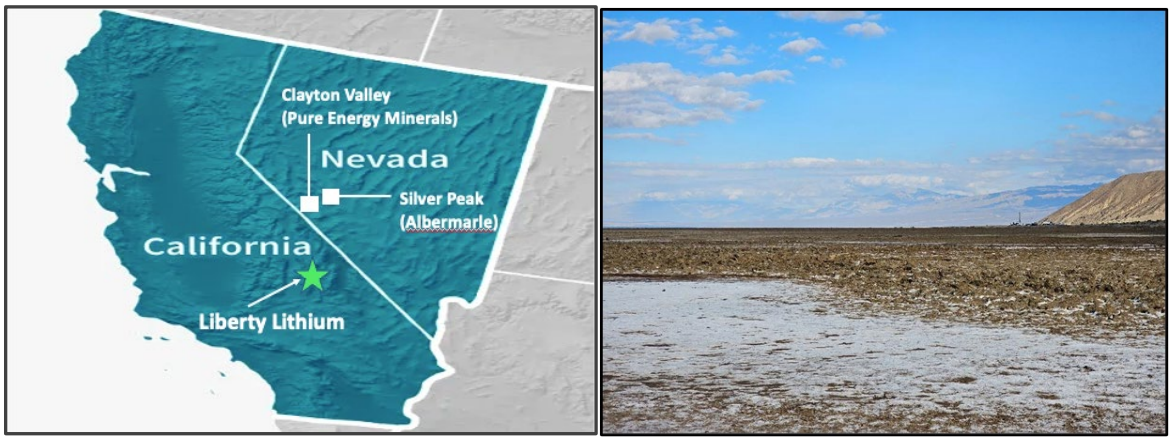



***Figure 1: The Liberty Lithium Brine Project; The drill rig on the Drillhole#1 as seen from Drillhole#2***

**Drillholes**

Drillhole #1 (LLD23001) was completed at 369 metres depth. Target horizons were intersected at 49m depth and 329m depth. Fine grained sediments, gravels and coarse alluvial fan material were intersected down the length of the hole. An interpretation is that the drillhole went through the range front fault at 249m depth.

Drillhole #2 (LLD24002) was completed at 433 metres depth, located 4km to the south of drillhole #1. Both drillholes were centred over significant MT geophysical targets interpreted as a series of conductive brine bearing aquifers at depth. Both holes were positioned within an extensive lithium brine surface anomaly of over 10km defined in auger samples. An interpretation is that the drillhole went through the range front fault at 370m depth.

Figures 5 shows the increase in lithium and chloride concentration in brine with increasing depth. Figures 6-8 show interpretations of the possible geology on MT geophysical lines and the location of proposed drill holes. The location of the proposed drill holes is also shown in Figure 9.

**Recommendations**

Results were analysed by external lithium brine specialists to produce interpretations, including the globally recognised Hydrominex Geoscience Consulting, and others who have closely reviewed the geological setting of Albemarle's Silver Peak lithium brine producer in Clayton Valley, Nevada. Their recommendations included additional drilling further west of drilling undertaken by QXR, to potentially intersect deep lithium brines in the centre of the basin, based on lab results to date. Surface and downhole geophysics suggests that the basin is angled to the west with deeper sediments and brines to the west of recent drilling. Further, the geochemistry of the brine samples may suggest an ingress of fresh water into the aquifers, resulting in lower lithium grade in the two holes drilled to date, as the holes were drilled adjacent to a range front fault with significant fresh water inflows into the basin, along the basin edge.

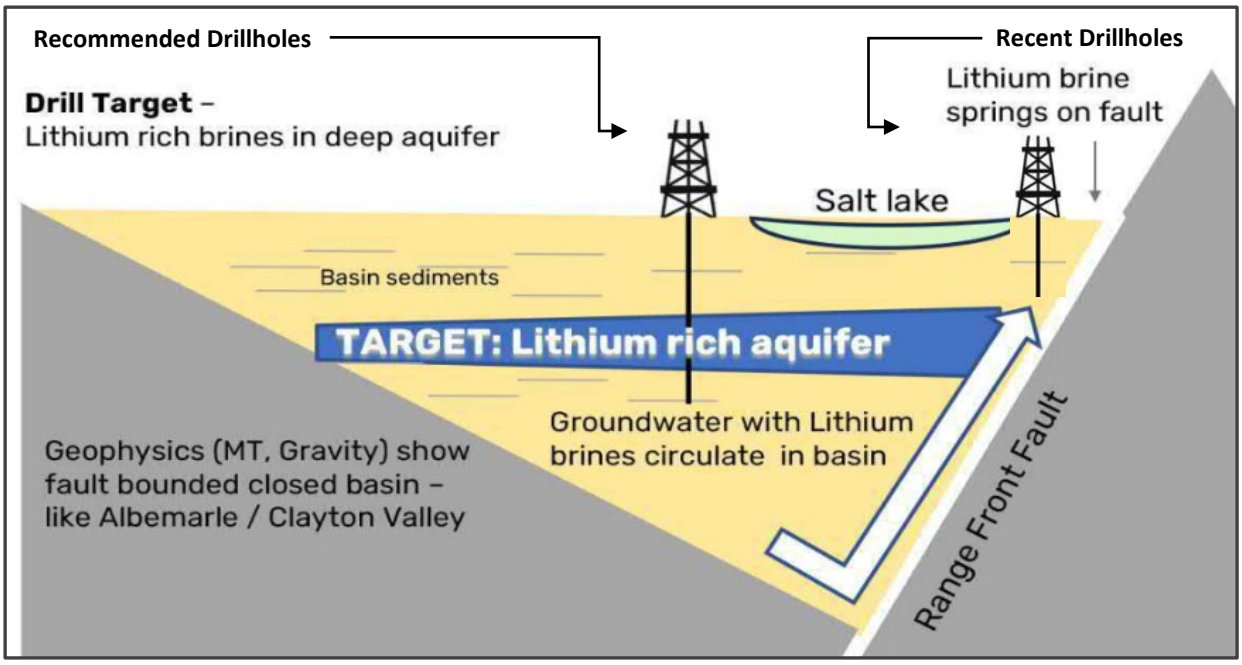



***Figure 2: Stylised Target Aquifer in modelled cross section of basin - Liberty Lithium Project***

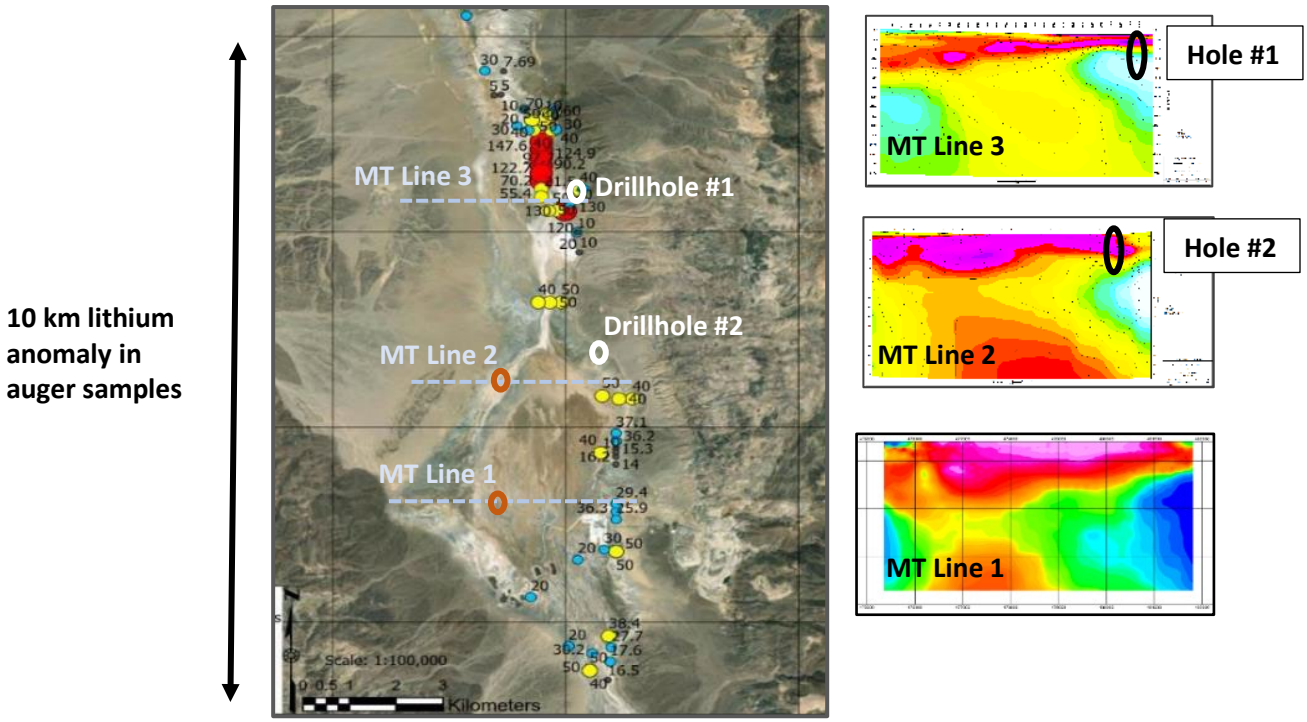
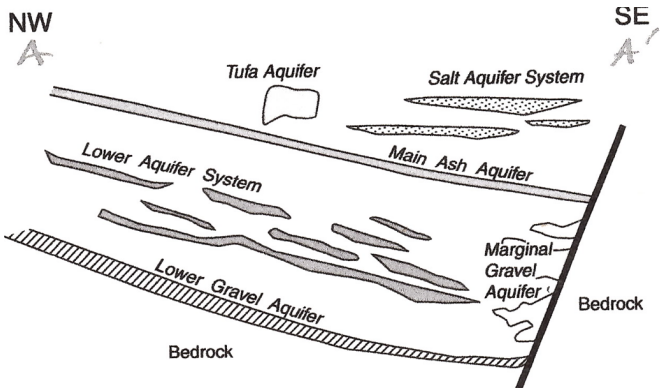



***Figure 3: Location Map - Liberty Lithium with surface brine sample results (mg/l Li) and geophysics profiles (MT)*** *showing conductive horizons permissible for brine filled aquifers, showing actual (white on map) and proposed (red on map) drilling platforms* (*ASX announcement 26 July 2023, 8 Feb 2024*).




Ash / Tuff target yet to be located in drillhole at Liberty Lithium

Gravel / Conglomerate layers beneath lake sediments in both projects

***Figure 4: Schematic cross-section of aquifers at Clayton Valley Nevada*** *showing the gravel (conglomerate) aquifers similar to Liberty Lithium and the target of an ash (tuff) aquifer that has not yet been intersected at Liberty Lithium (Source: Zampirro, 2005)*

In other matters, QXR aims to provide an update soon on progress with gold exploration in Queensland.

**Authorised by the Board of QX Resources Limited.**

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**Table 1. Drill hole collar summary**

| Hole_ID | Easting (m) | Northing (m) | UTM Zone | RL m | Depth m | Az. | Dip | Drill Type | Core Size |
|---|---|---|---|---|---|---|---|---|---|
| LLD23001 | 479799 | 3987118 | 11S | 294 | 369 | 0 | -90 | DD | PQ |
| LLD24002 | 480044 | 3983246 | 11S | 297 | 443.5 | 0 | -90 | DD | PQ |

**Table 2. Drill hole results**

| Hole_ID | Depth (m) | Width sample (m) | Li (mg/l) | Na (mg/l) | K (mg/l) | Cl (mg/l) | SO4 (mg/l) |
|---|---|---|---|---|---|---|---|
| LLD23001 | 350 | Base hole | 40 | 38,500 | 2680 | 84,700 | 3950 |
| LLD23001 | 366 | 1 | 37 | 39,700 | 2510 | 84,800 | 4340 |
| LLD24002 | 53-69 | 16 | 20 | 67,700 | 1480 | 41,900 | 3950 |
| LLD24002 | 105-120 | 15 | 27 | 103,000 | 2340 | 75,200 | 4260 |
| LLD24002 | 133-148 | 15 | 36 | 135,000 | 3000 | 92,700 | 5820 |
| LLD24002 | 175-190 | 15 | 41 | 182,000 | 3360 | 110,000 | 6440 |
| LLD24002 | 184-200 | 16 | 25 | 111,000 | 2110 | 67,100 | 3980 |
| LLD24002 | 288-297 | 9 | 47 | 174,000 | 3780 | 141,000 | 6920 |
| LLD24002 | 346-361 | 15 | 50 | 39,500 | 4110 | 151,000 | 7480 |

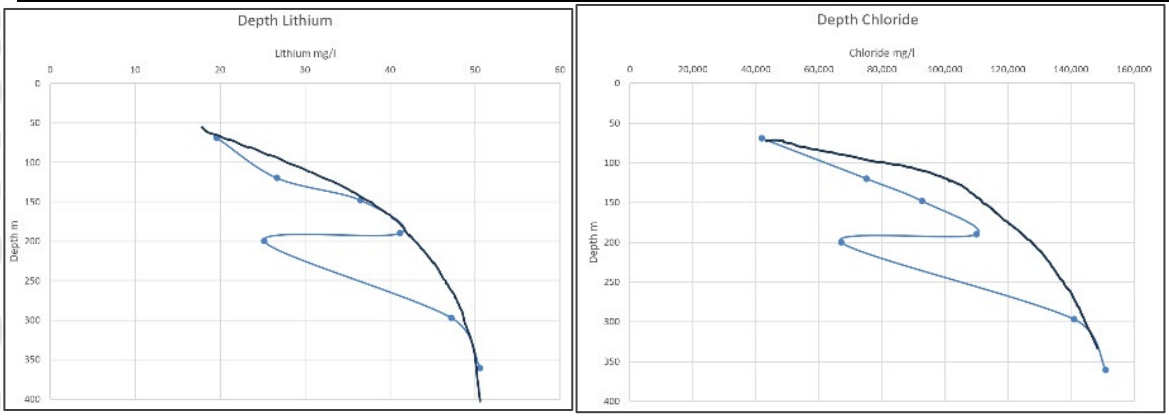


***Figure 5: Liberty Lithium Drillhole #2 – Lithium and chloride increases with depth, as does sodium and other elements***

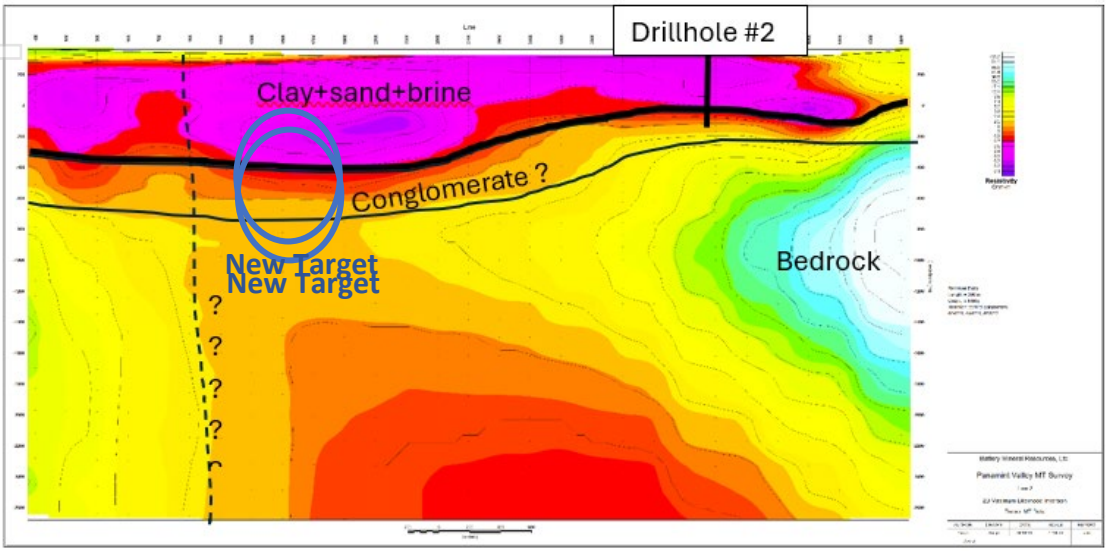


***Figure 6: Liberty Lithium Drillhole #2 over MT Geophysics (Line 2 – Resistivity) – (New target to west in blue)***

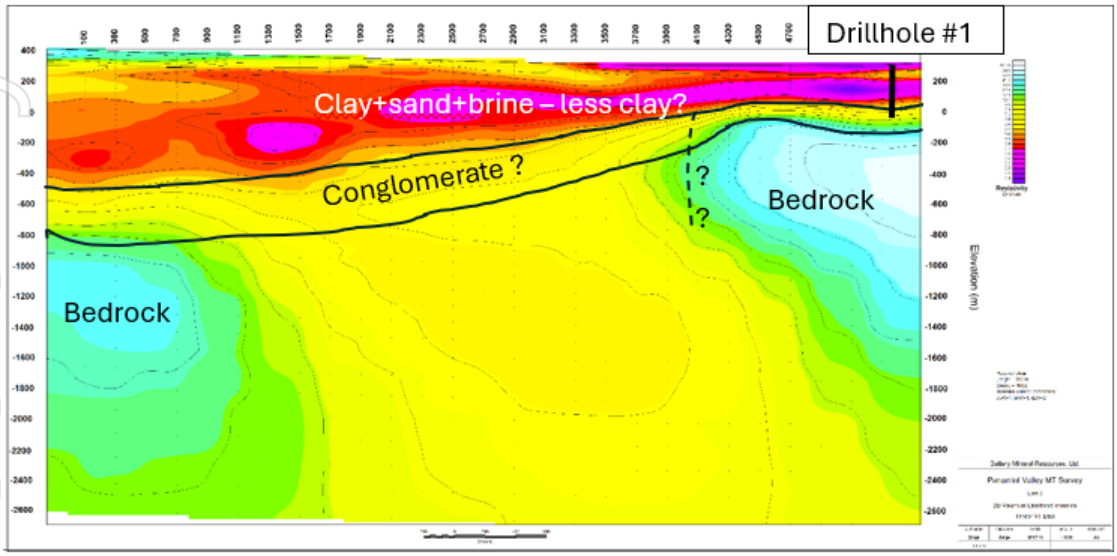


*Figure 7: Liberty Lithium Drillhole #1 over MT Geophysics (Line 3 – Resistivity) – (Drilled too far east)*

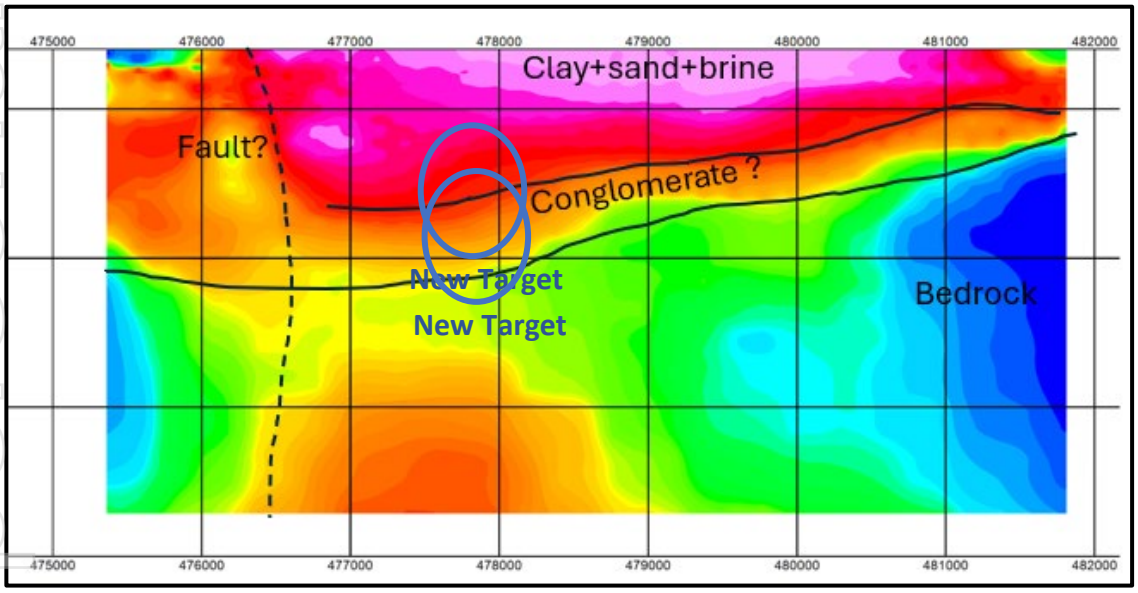


*Figure 8: Liberty Lithium- New Target over MT Geophysics (Line 1 – Resistivity)*

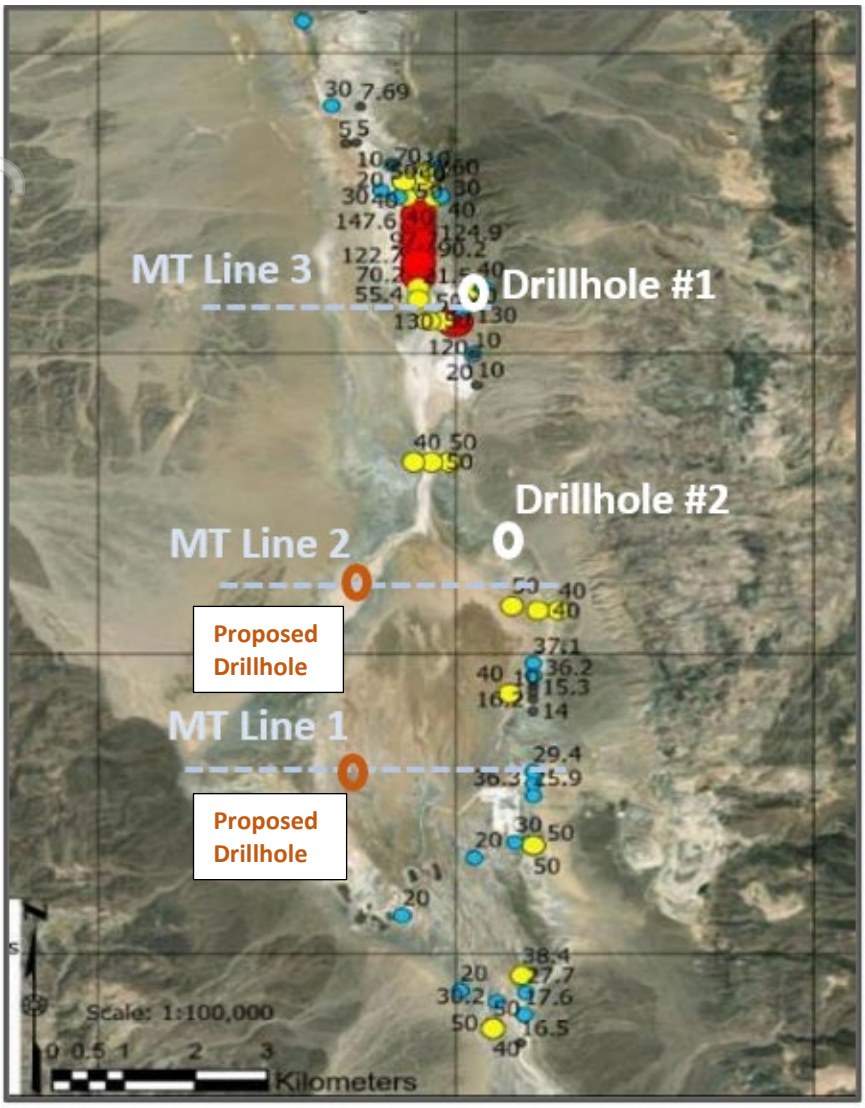


***Figure 9: Liberty Lithium – Recent drillholes (white), Recommended drillholes (orange) over surface brine sample results (mg/l Li) and MT geophysics lines***

***About QX Resources:***

QX Resources (ASX:QXR) is focused on exploration and development of battery minerals, with hard rock lithium assets in a prime location of Western Australia (WA), lithium brine project in the USA, copper/moly/gold assets in Queensland and a strategic investment in nickel sulphides in Sweden. The aim is to connect end users (battery, cathode and car makers) with QXR, an experienced explorer/developer of battery minerals, with an expanding mineral exploration project portfolio and solid financial support.

**Lithium hard rock portfolio**: QXR's lithium strategy is centred around WA's prolific Pilbara province, where it has four projects in strategic proximity to some of Australia's largest lithium deposits and mines. Across the Pilbara, QXR's regional lithium tenement package (both granted or under application) spans more than 350 km$^2$.

**Lithium brine**: QXR has entered an Option to Purchase Agreement to earn-in to 75% of the Liberty Lithium Brine Project, a large recently consolidated lithium brine project in California, USA.

**Gold portfolio**: QXR is also developing two Central Queensland gold projects through an earn-in agreement with Zamia Resources Pty Ltd. Both gold projects are strategically located within the Drummond Basin, a region that has a >6.5moz gold endowment.

**Nickel sulphides**: QXR has a significant 39% shareholding in unlisted public Australian company Bayrock Resources Limited, which has a portfolio of highly prospective battery minerals assets in Sweden, primarily in nickel, cobalt and copper. QXR is assisting Bayrock with project development and financing initiatives

**Competent Persons Statement**

The information in this report that relates to Exploration Results has been prepared by Mr Murray Brooker. Murray Brooker is a geologist and hydrogeologist and is a Member of the Australian Institute of Geoscientists. Mr Brooker is an employee of Hydrominex Geoscience Pty Ltd and is independent of QX Resources. Mr Brooker has sufficient relevant experience to qualify as a competent person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Brooker consents to the inclusion in this announcement of this information in the form and context in which it appears.

**Forward Looking Statements and Important Notice**

This report contains forecasts, projections and forward-looking information. Although the Company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions it can give no assurance that these will be achieved. Expectations and estimates and projections and information provided by the Company are not a guarantee of future performance and involve unknown risks and uncertainties, many of which are out of QX Resources' control.

Actual results and developments will almost certainly differ materially from those expressed or implied. QX Resources has not audited or investigated the accuracy or completeness of the information, statements and opinions contained in this announcement.

To the maximum extent permitted by applicable laws, QX Resources makes no representation and can give no assurance, guarantee or warranty, express or implied, as to, and takes no responsibility and assumes no liability for the authenticity, validity, accuracy, suitability or completeness of, or any errors in or omission from, any information, statement or opinion contained in this report and without prejudice, to the generality of the foregoing, the achievement or accuracy of any forecasts, projections or other forward looking information contained or referred to in this report. Investors should make and rely upon their own enquiries before deciding to acquire or deal in the Company's securities

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# Appendix 1 - JORC Code, 2012 Edition – Table 1

## Section 1 - Sampling Techniques and Data

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

| Criteria | Commentary |
|---|---|
| *Sampling techniques* | **Historical exploration 2018-2023**<br>• Brine samples have been collected as hand auger samples from near surface up to 2m, collected in clean plastic bottles. Brine samples were collected over an area of approximately 20km$^2$ at irregular intervals.<br>• 4 shallow diamond drill holes were drilled. Limited brine samples were collected in clean plastic bottles using a bailer process - although samples may have been contaminated by fresh water and not representative.<br>• A ground gravity and MT geophysical survey was conducted.<br><br>**Exploration 2023-2024**<br>• QXR completed two PQ diamond drillholes to 369m and 443.5m depth.<br>• Holes positioned over a lithium anomaly generated from surface hand auger brine samples and conductive MT geophysics anomalies.<br>• Brine samples were collected from a number of depths in each hole. QAQC sampling protocols were conducted consistent with current best practice. |
| *Drilling techniques* | **Historical Drilling**<br>• 3 shallow vertical diamond drill holes were drilled to test stratigraphy and some brine samples.<br>• 2018: 2BMR 256m PQ/HQ vertical, RC1 287m HQ vertical<br>• 2020: PV4C 452m , PV5C 353m PQ/HQ vertical<br><br>**Drilling 2023-2024**<br>• 2 Diamond holes: LLD23001 (Hole 1: 369 metres); LLD24002 (Hole 2: 443.5 metres)<br>  • Drilling diameters: PQ<br>  • Drill rig used: Atlas Copco CT14 (truck mounted) |
| *Drill sample recovery* | **Historical Drilling**<br>• Core sample recoveries were of a good standard. Sampling recoveries were documented.<br>• Brine samples were taken from brine bailed from the hole (and not from the drill core) with a bailer device on a rope & they are independent of the quality (recovery) of the core samples.<br><br>**Drilling 2023-2024**<br>• Measuring recovered core's length vs drill run's length for diamond drilling<br>• All measurements were done on site with high recovery, supported by the use of PQ size core<br>• Brine samples were taken by a bailer at the base of the core tube and are independent of the quality (recovery) of the core samples.<br>• Other brine samples were collected by bailer after an airlift and purging of the drillhole together with pumping of the hole over 24 hours.<br>• Packer samples (straddle packer) were collected from drillhole #2 (LLD24002) over discrete intervals (5m-15m wide) which provided the best examples of the discrete aquifers. |
| *Logging* | **Historical Drilling**<br>• All holes were logged by qualified geologists at drilling site. Only quantitative (spreadsheet) logging has been sighted. Some core photography has been sighted.<br><br>**Drilling 2023-2024**<br>• All holes were logged by qualified geologists at drilling site.<br>• Quantitative (spreadsheet) logging has been completed with graphic logs and commentary<br>• Core photography has been completed.<br>• Downhole geophysics has been conducted as a separate logging method. |

| Criteria | Commentary |
|---|---|
| *Sub-sampling techniques and sample preparation* | **Historical Drilling**<br>• Sample preparation records exist with QA/QC procedures.<br><br>**Drilling 2023-2024**<br>• Brine samples collected by bailer and airlift/bailer during drilling of drillhole #1 and #2 (LLD23001; LLD24002).<br>• Brine samples collected from straddle packer sampling from drillhole #2 over discrete intervals (5m-15m wide).<br>• A QA/QC procedure of sample preparation implemented.<br>• The Blanks and Duplicates, and Standard samples were inserted for QA/QC, approximately at 1 in 5 samples |
| *Quality of assay data and laboratory tests* | **Historical Exploration**<br>• All of the surface brine samples and drillhole bailer samples were submitted to registered recognised laboratories. Analytical methods used were ICP and traditional analysis for Li, Na, K, Cl, SO4 (Methods EPA 300, EPA200.7). Samples were filtered prior to analysis.<br><br>**Current Drilling 2023-2024**<br>Brine samples collected were submitted to a registered recognised laboratory, Western Environmental Testing Laboratory (WETLAB), in Reno (Sparks), Nevada USA |
| *Verification of sampling and assaying* | **Historical Drilling**<br>• Primary data was sourced from unpublished documents from IG Lithium<br><br>**Drilling 2023-2024**<br>• Preliminary logging was done by site geologists and later entered into graphic logs by geologists and is considered to be quantative.<br>• All data were prepared in accordance with the prepared procedure. |
| *Location of data points* | **Historical Drilling**<br>• Coordinates for the drillholes have been recorded<br>• Coordinates for the recent QX Resources drillholes and are presented in Table 1 |
| *Data spacing and distribution* | **Historical Drilling**<br>• Coordinates for the drillholes were Collar surveys completed by geologists using a GPS.<br>**Drilling 2023-2024**<br>• Coordinates for the drillholes were Collar surveys completed by geologists using a GPS |
| *Orientation of data in relation to geological structure* | **Historical Exploration**<br>• Surface brine sampling covered most of the visible salt lake.<br>• Drillholes were vertical perpendicular to the lake sediments<br><br>**Drilling 2023-2024**<br>• Drillholes are vertical, perpendicular to the lake sediments as seen in core and in geophysical logs |
| *Sample security* | **Historical Exploration**<br>• Drill core samples were kept onsite. Brine samples were taken to the laboratory.<br><br>**Drilling 2023-2024**<br>• Drill core samples are kept onsite. Brine samples were taken directly to the laboratory by the supervising geologists. |
| *Audits or reviews* | **Historical Exploration**<br>• Historical data was carefully review by Dr Mark King a renowned global specialist in lithium brines.<br>**Drilling 2023-2024**<br>• Not considered necessary at this stage |

## Section 2 - Reporting of Exploration Results

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

| Criteria | Commentary |
|---|---|
| *Mineral tenement and land tenure status* | • The Liberty Lithium Brine Project (Salt Fire Flat project) is covered by 1264 unpatented BLM claims over covering approximately 10,230 Ha (25,280 acres) of contiguous title in Inyo County, California.<br>• The claims are held by an unrelated third party under agreement and on behalf of IG Lithium LLC.<br>• QXR entered an Agreement to earn a 75% interest of the Liberty Lithium Brine Project in October 2023. |
| *Exploration done by other parties* | **Historical Exploration 2018-2023**<br>• The project is held by the original claim owner and under a pre-existing option to purchase agreement, two companies conducted exploration works including surface and auger brine sampling, detailed gravity and MT geophysics and 3 drillholes.<br>• Sampling highlighted anomalous Lithium in auger brine samples up to 215mg/l Li.<br>• Geophysics included broad spaced gravity and magnetotellurics (MT)<br>• Limited brine samples were collected in by a bailer process from drillhole and appear to have been contaminated by fresh water and not representative. |
| *Geology* | • The project is an enclosed arid basin with sand, silt, clay and halite horizons accumulated in a salt lake setting from terrestrial sediments and evaporation of brines.<br>• Brines within the salt lake are formed by solar concentration interpreted to be combined with warm geothermal fluids, with brines hosted within sedimentary units. Geology was recorded at surface and in drillhole logs. |
| *Drill hole Information* | • Current drilling included in Table 1. |
| *Data aggregation methods* | • Averaging over the sampled brine intercept was used |
| *Relationship between mineralisation widths and intercepts* | • Brine mineralisation is interpreted as horizontally lying with drilling perpendicular to units hosting brine, as seen in core and in geophysical logs |
| *Diagrams* | • A diagram showing surface brine samples (Figures 3 and 8) and auger brine samples are represented here with lithium analyses in mg/L mg/l lithium.<br>• Appropriate Maps sections and figures are included in this report |
| *Balanced reporting* | • Presentation of data is considered to be balanced. |
| *Other substantive exploration* | • Gravity and MT geophysics suggest a basin of at least 800m-1000m in depth filled with sediments and potential zones of brine mineralisation |
| *Further work* | • Lithium brine specialists have recommended further drilling to intersect deep lithium brines in the centre of the basin, further west of recent drilling. This was based on an interpretation of assay results, together with geophysics, and comparisons with known nearby brine producing basins. An amended drill program has been submitted to regulators for approval. |