

## **RED MOUNTAIN TO DRILL CLAYTON VALLEY LOOKALIKE IN USA**

Red Mountain Mining Limited (**RMX**) is pleased to advise that it has entered into an exploration and earn-in agreement (**Earn-In Agreement**) in respect of the Red Valley Project, a Lithium brine project located in Utah, United States (**Red Valley Project**).

Under the Earn-In Agreement, RMX will fund initial drilling at existing, mapped targets and conduct chemical analysis of the Red Valley Project. Following analysis of the drilling results for Lithium enrichment, RMX has the right to acquire 51% of the Red Valley Project for US\$250,000.

### **Highlights**

- **Extensive geological modelling has identified a Clayton Valley lookalike in Utah**
- **Clayton Valley is the only source of Lithium brine production in the USA**
- **Unique Opportunity with Arizona-based geologist, Mr Bill Feyerabend, a Clayton Valley Lithium expert**
- **Earn-in Agreement Signed with No Share Dilution and Initial Spend of up to US\$300,000**
- **Project located in state of Utah – world class mining jurisdiction, close to end-users**
- **RMX fully funded to fast-track drilling – another step in building RMX into a diversified energy metals and gold explorer**
- **Low up-front cost with significant upside potential**

The Clayton Valley, Nevada remains the sole source of Lithium production in the USA, having initially started production in 1967. Production methods are very well understood with brines extraction occurring via traditional pumping and evaporation.

RMX's earn-in partner, Mr Bill Feyerabend, is an acknowledged expert on the Clayton Valley basin and was the author of the expert geological reports for Clayton Valley hopefuls, Lithium-X (TSX: LIX, market capitalization: C\$120 million) and Pure Energy (TSXV: PE, market capitalization: C\$57 million). In addition, Mr Feyerabend has been involved with various drill programmes in the Clayton Valley. Albemarle Corporation (NYSE:ALB, market capitalization US\$9.3bn) largely controls the Clayton Valley via its Silver Peak Project.

Over the course of his work, Mr Feyerabend has developed a detailed geological model as to the characteristics of the Lithium enrichment in the Clayton Valley together with the qualities which allow traditional extraction techniques. Extensive cross-referencing across a range of geological data over the western United States land mass has revealed a basin with remarkable similarities to the Clayton Valley.

Mr Feyerabend stated:

*“My experience in the Clayton Valley led me to query why it was the sole Lithium brine production location in the USA. Analysis of Clayton Valley physical characteristics and considerable research over the last two years has led to the identification of the Red Valley Project as a geologic analogue for the Clayton Valley.*

*“More recently, clay based Lithium exploration projects have gained some prominence. The Red Valley Project is not clay based and can be distinguished from these clay based projects which will ultimately have to rely on the development of new and untried extraction and separation technologies. I look forward to working with Red Mountain to test the Red Valley Project during what will be an exciting time.”*

Figure 1: Clayton Valley v’s Red Valley Project:

Characteristic	Clayton Valley	Red Valley
Source - Large Scale Lithium - Enriched Rocks	✓	✓
Basin contains fine sediments from lithium-enriched sources	✓	✓
Anomalous Lithium in Waters	✓	✓
Vertically Stable - Old Sediments Outcrop Around Basin	✓	✓
Potential Aquifers from Cyclical Sedimentation	✓	✓
Extensional Faulting	✓	✓
Large Scale Faulting	✓	✓
Travertine in drill logs	✓	✓
Recent basalt volcanism	✓	✓

## Transaction

Under the Earn-In Agreement, RMX will fund initial drilling and chemical analysis of the Red Valley Project. Prior to drilling, RMX will carry out further staking of tenements around the drilling areas which ensure that it controls an area of sufficient size to develop a significant Lithium brines operation. The total cost of initial drilling, analysis and tenement applications is estimated to be between US\$200,000 and US\$325,000.

If commercial grade Lithium is reported in brines, RMX has the right to acquire 51% of the Red Valley Project for US\$250,000.

Should RMX elect to proceed with the acquisition, a joint venture will be formed and RMX will have right to increase its ownership to 80% of the Red Valley Project by meeting certain expenditure requirements on the Red Valley Project. After that, the joint venture will become a contributing arrangement with customary dilution provisions.

RMX Director Jeremy King commented:

*“We believe that low opex, close-to-market brines projects are the future of the Lithium materials story. The deal we have struck represents an exciting first mover opportunity to potentially control a second Lithium production province in North America. All of the requisite geological features for a Lithium enriched system suitable for traditional brines mining methods are present, which is highly encouraging.”*

*“We intend to fast track drilling and test the prospect, for which we are fully funded. This represents another step in building RMX into a diversified energy metals and gold explorer and developer.”*

## Red Valley Project Area v the Clayton Valley

The Red Valley Project area was identified by Mr Feyerabend by focusing consecutively on areas of crustal extension in western North America and then on areas of rhyolitic volcanics. Final focus came with historical chemical analyses and looking at all available drill and geological information. The Red Valley Project stood out as a remarkable twin of the Clayton Valley.

Lithium concentrations in the earth’s crust are generally 5 to 70 *parts per million* (ppm) and a few *parts per billion* (ppb) in waters. Depending upon the recovery technique, cut-off lithium values for brine production are considered to be in the range of 30 – 100 ppm. From his studies and reports on the Clayton Valley Basin, Mr Feyerabend has focused on how Lithium mineralisation moves from 5-70 ppm in rocks to +30 ppm in fluids.

## Regional Geology

- **Clayton Valley and the Red Valley target share extensional tectonics and intrusive and volcanic rocks with concentrated lithium.**

Extensional tectonics is the geologic process resulting in stretching and thinning of the earth’s crust. Extension occurred from California to Colorado and thinned the crust by up to an estimated 50%. Thinning brings heat closer to the surface causing extensive melting and formation of intrusive and volcanic rocks. Lithium is an “incompatible” element which because of its odd size and charge does not fit easily into

common rock minerals, so it tends to be concentrated in late forming rocks such as rhyolites and residual fluids. This is the first step in the sequence resulting in lithium brine accumulations.

- **Both Clayton Valley and the Red Valley target have numerous basalt cones and flows**

Geologically recent basaltic volcanic events are thought, because of their high iron and magnesium content, to be sourced from the earth's mantle. That implies a pathway or plumbing system through the entire earth's crust for the passage of fluids generated at any level. The Red Valley target additionally has anomalous helium in historic water analyses which is interpreted to support a deep crustal plumbing system with circulating hot waters. The exact role or significance of the basalts are not understood, but they are present in multiple locations and it is assumed that there is a structural or plumbing significance to them.



Figure 2: Drilling for lithium brines in Clayton Valley with recent basalt cone on horizon to left of drill

### ***Basin Geology – Stratigraphy and Local Structure***

Many Lithium exploration proposals focus on evidence of the presence of Lithium or a source, and pay little or no attention to a reservoir. Areas of initial interest based on regional or district geology sometimes had no suitable receptacle, and thus the lithium flowed off to the ocean.

- **Both the Clayton Valley and the Red Valley Target are unusually vertically stable**

As important as anomalous Lithium levels is a suitable reservoir to receive and store lithium-enriched fluids. Clayton Valley is unusual in the Nevada Basin and Range province in that the exposures of older sediments around the perimeter show it has been relatively vertically stable compared to the typical subsidence in extensional valleys. That means that it has been able to receive and store fluids within economic drilling depths. Clayton Valley hosts lithium brines in a variety of rock types separated by impermeable clays and has more recent faulting which pumping indicates connects the aquifers and allows fluids to move into and

be stored in reservoir rocks. The Red Valley Project area is in a basin ringed by older sediments, indicating the same vertical stability, and is in the part of the basin where the sedimentary pattern of alternating permeable and impermeable rock units can be expected.

- **Smaller scale Faulting has allowed fluid migration to Reservoirs**

Brine pumping in Clayton Valley suggests to smaller scale faulting connects the aquifers and allows fluids to move into and be stored in reservoir rocks. Geologic mapping in the Red Valley Project and topographic linears show there is also more recent smaller scale faulting to provide a plumbing system for fluids to reach reservoir rocks.

### ***Water Chemistry – Evidence for the Lithium Mineralizing System***

Visually, the Clayton Valley is similar to much of the surrounding area and playas in Nevada and Utah. Clayton Valley technical reports showed Mr Feyerabend one indication, water analyses from springs and wells, which while sparse do clearly show lithium present.

- **The Red Valley target has abundant water chemistry evidence of a lithium system on the scale of Clayton Valley**

Historic Clayton Valley water chemistry is generally sparsely documented, but Lithium concentrations in the few springs and old wells around the production area are in the 1 – 3 ppm Lithium range.

US government funded water sampling for Uranium prospectivity in the late 1970s and early 1980s has provided high quality data in the Red Valley Project area and its surrounds. The sampling and analysis was carried out at the prestigious Oak Ridge National Laboratory.

Analysis of that data has shown that Lithium values in waters comparable to the Clayton Valley occur over a twenty mile area in the Red Valley Project area. Additionally, Boron levels jump up to 4,740 ppb, Strontium up to 6,373 ppb and water conductivity doubles and triples with higher Lithium as it does in Clayton Valley.

Additional evidence is found by the presence of Travertine, a rock type often deposited around mineral springs. Travertine was logged in a 1970s drill hole by the US Geological Survey in Clayton Valley and was noted in a water well drilled in the Red Valley target area. That water well was abandoned because of poor water quality. It is on a structural trend with two nearby hot springs which analyze +1 ppm lithium.

### ***Summary***

The Red Valley Project shares a striking geologic similarity to Clayton Valley. It has endured the same geologic processes to generate lithium brines with a chemistry similar to those now being commercially produced. It has also endured the same geologic processes to create suitable reservoir horizons in its valley sediments. Historic water drilling and sampling has revealed anomalous Lithium and further that other indicia of Lithium systems are also present. To date, the target area has not been drill tested and is in a world class mining jurisdiction. The vast majority of the project area is federal lands managed by the Bureau of Land Management where mineral staking and permitting historically have been straight forward processes.

-Ends