

3 June 2015

**ASX CODE RWD** 

SHARE PRICE \$0.80

**SHARES ON ISSUE** 111.7 M

**OPTIONS** 24.1M (\$0.25 - \$1.09)

MARKET CAPITALISATION \$89.4M (undiluted)

**CASH POSITION** ~\$4.0M (Mar'15 Qtly + Listed Investments)

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# LD PROJECT EXPLORATION UPDATE Further Excellent SOP Results from LDDH1503

# **Highlights**

- Recent analytical results confirm substantial brine content over 100 metre vertical section in LDDH1503.
- Brines contained in 7 samples of core covering the 100m section averaged 15.5kg/m<sup>3</sup> SOP confirming previously reported results.
- Water soluble component of the cores tested averaged 32.4% of core weight or approximately 51% of the in situ core volume.
- Further analytical results are expected to be available shortly.

Reward Minerals Limited ("Reward" or the "Company") is pleased to advise of receipt of further highly encouraging brine analyses from the recently completed core hole LDDH1503.

These new brine assay results were obtained from seven samples of core taken at regular intervals down LDDH1503 which were crushed and directly hot water leached to extract the entrained Potassium Sulfate ("SOP") component from within that sample of core (i.e. specifically from various horizons down-hole). Previously reported results (refer to ASX announcement dated 11 May 2015) returned the grade of SOP as a composite of the entire hole.

The results of these leach trials established that the brine entrained in the core over more than 100 metres vertical depth averaged 15.5kg of SOP per cubic metre of brine with the core effectively saturated for the entire hole. Refer to Table 1 for more details.

Table 1: LDDH1503 Core & Brine Analyses

	Depth of Core Sample (LDDH1503)						
Analysis	3.1m	21.9m	46.1m	65.4m	80.1m	96.0m	113.5m
CORE – Wet Bulk SG (t/m³)	2.09	2.00	1.63	1.75	1.83	1.74	1.95
Moisture % (H <sub>2</sub> O)	23.2	24.2	32.2	32.2	29.0	26.0	20.0
Mass Leached %	34.0	26.0	44.6	43.6	41.8	35.2	35.8
K Concentration in Contained Brine (kg/m³)	11.7	6.5	6.5	6.6	6.3	4.5	6.4
SOP Concentration in Contained Brine (kg/m³)	26.0	14.6	14.5	14.7	14.0	10.1	14.4
K in Core (kg/m³)	6.9	2.8	3.9	4.2	4.0	2.3	3.7
SOP in Core (kg/m³)	15.3	6.3	8.7	9.3	8.8	5.1	8.3

The data also provides the corresponding figure for SOP per cubic metre of lakebed sediment (i.e total in-situ material, sediments and brine) which averaged 8.83kg per cubic metre of lakebed sediment as compared to the existing resource which averaged 6.17kg per cubic metre of lakebed sediment.

<sup>1.</sup> The SOP values are quoted in the context of the brines containing high levels of Sulfate, well in excess of the level required to produce SOP from the brines recovered

# **Detailed Analysis**

#### **Assay Methodology**

The samples were crushed and then leached with hot water (80°C) to extract the water soluble (brine) component. The leach residue was dried and weighed to provide a mass balance through the process.

A separate series of 70 samples were measured and weighed to establish in situ (wet) core bulk density (SG), moisture and soluble salt determinations. These samples were then dried at  $105^{\circ}$ C to determine moisture (H<sub>2</sub>O) content. The dried samples were sent to an independent laboratory for analysis of soluble and insoluble elemental composition. The bulk density and moisture content data for these samples are shown in Table 1 while the elemental analyses are not yet available.

#### **Entrained brine grade/composition**

Analysis of the brines obtained via the hot water leaching process are provided in Table 1. These establish the content of individual soluble ions in the wet core recovered from surface to 113.5 metres in hole LDDH1503. The back-calculated SOP content of the brine contained in the core samples analysed averaged 15.5kg/m³ SOP (brine).

The brine sample from the shallow (3.1 metre) core reported a considerably higher SOP content (26kg/m³ of brine) than the remainder of the samples. This may be due to enhanced brine evaporation in the near surface zone but further work is required to confirm the generality of this observation.

This compares with the existing LD Indicated (JORC) Resource brine grade of 12.37kg/m³ and is consistent with the 15.06kg/m³ SOP results reported by Reward in its previous release (refer to ASX announcement dated 11 May 2015).

The current results are regarded as more definitive since they were recovered from actual core samples covering a full section of LDDH1503.

Additional analytical data should be available shortly enabling more detailed assessment of core material and brines recovered from LDDH1503. Also, it is believed that hole LDDH1504 will be completed shortly providing additional comparative data versus LDDH1503.

### **Core Bulk Density Data**

The bulk density figure for the 70 samples selected from LDDH1503 averaged 1.97t/m³. The average bulk density of the seven samples reported in Table 1 was 1.87t/m³.

#### **Core Moisture and Brine Content Parameters**

The average moisture content  $(H_2O)$  of the 70 core samples from LDDH1503 was 24.1% of the wet core mass. The corresponding brine content was calculated to be 32.4% by weight of the wet core. This figure translates to an average brine volume of approximately 50.9% of the wet core.

### **Lakebed (Core) SOP Content**

Using the brine content and analytical data above, the estimated SOP content of the lake bed sediments (i.e total insitu material, sediments plus brine) in LDDH1503 averages 8.8kg/m³ of wet in-situ lakebed material. The shallow 3.1 metre sample is a high 15.3kg/m3 being a function of the high grade brine in this section of core.

The percentage of the entrained brine recoverable from the lake bed sediments versus time is a parameter yet to be determined. Bore hole drilling and pumping trials are planned to commence shortly to assist in establishing this data for Reserve purposes. The Company recently purchased a rig capable of drilling 300+mm diameter holes down to over 150 metres.

Further results will be provided as they come to hand.

Yours faithfully,

Michael Ruane Director on behalf of the Board

#### **Competent Persons Statement**

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr David O'Farrell, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr O'Farrell is a consultant to Reward Minerals Ltd. Mr O'Farrell 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 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr O'Farrell consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources or Ore Reserves is based on information compiled by Mr Simon Coxhell, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. Mr Coxhell is a consultant to Reward Minerals Ltd. Mr Coxhell 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Coxhell consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

### Appendix 1 – Drill Hole Location

### **LD Project Drill Holes**

Hole ID	East (51)	North (51)	DEPTH (m)	Dip
LDDH1503	477902	7424581	135	-90

### Appendix 2 – JORC TABLE

# Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
techniques	random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole	LDDH1503 was drilled by an experienced in-house team using a heliportable Diamond Core Rig. Core diameter was approximately 96mm (HQ) to a depth of 135.5m. Core recovery was generally >90% even in the soft upper layers.
	etc). These examples should not be taken as limiting the broad meaning of sampling.	The core was logged for stratigraphic and geological interpretation by a professional contract geologist, Mr Jonathan Percival. Assessment of the core from a hydrogeological viewpoint – porosity, permeability fracture zoning etc is being conducted by Pendragon Environmental Solutions. Full results of the Pendragon studies are pending.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Core samples reported here were selected by Reward in-house geologists.
		The water leach testwork was conducted by metallurgical consultant Dr Geoff Browne with analysis of the leach brines by ALS/Ammtec Laboratories.
	Aspects of the determination of mineralisation that are Material to the Public Report.	The essence of the recent sampling was to establish the quantity of soluble salts at different levels (depths) in the core recovered from LDDH1503.
		Core samples were selected at approximately 2 metre intervals down-hole. The samples were measured and weighed and then subjected to two-stage leaching with 80°C. Water extracts were combined and submitted to ALS/Ammtec Laboratories and analysed using standard ICP MS methods. Analytical results are regarded as indicative only.
	In cases where 'industry standard' work has been done this would be relatively simple (eg	See "drilling techniques" below.

Criteria	JORC Code explanation	Commentary
	'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.	
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).	Core Drilling was done with a Heliportable diesel drive rig – depth capacity 150 metres (HQ – NQ Core).
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Cores obtained from the Diamond Drilling were wrapped in plastic sheeting and packed in core trays for transport. They were logged and photographed prior to dispatch from site. Selected sections of core have been sent for porosity and permeability measurement. When that data is available further analytical work may be undertaken.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Samples collected were of a reconnaissance nature only.
	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.	The samples analysed comprised of 100-150mm sections of wet core. The sampling reported is indicative only. Additional information will be available shortly following more comprehensive analysis.
		In addition, see notes on sampling techniques above.
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.	See above.
		Core was logged on a 1m basis by the in-field geologist. It was wrapped in a plastic membrane prior to dispatchment.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Notwithstanding the core recovery was in excess of 90%, the logging is qualitative in nature.

Criteria	JORC Code explanation	Commentary
	The total length and percentage of the relevant intersections logged.	Total Core logged and photographed.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	See above.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	Core. See above.
	For all sample types, the nature, quality and appropriateness of the sample preparation	Core sections were collected at 10m intervals and analysed separately.
	technique.	Solid samples recovered have been retained for future analysis.
	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	As above.
	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.	As above.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Core samples collected regarded as representative of a particular section.
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.	The brine samples collected from leaching of the core sections were analysed at a reputable independent laboratory (Australian Laboratory Services Ltd). Internal standards are used to calibrate equipment and analytical procedures.
		The program is regarded as reconnaissance and of an indicative nature only.
		No field analyses were involved and no internal standards or blanks were included in samples submitted for analysis at this stage.
	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.	No field analyses undertaken. Samples sent to ALS after Company labelling for security purposes. Chloride analysis conducted in house.
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable	Reconnaissance work only. No standards or blanks included for this stage. Internal standards and blanks also used in the Chloride

Criteria	JORC Code explanation	Commentary
	levels of accuracy (ie lack of bias) and precision have been established.	determinations conducted in house.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	In progress.
	The use of twinned holes.	Individual holes only.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Data storage as PDF/Excel files on Company PCs in Perth.
	Discuss any adjustment to assay data.	No adjustment to assay data.
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.	Collar of the hole was located by GPS (± 5M). Reduced level (RLs) was noted but is not regarded as of sufficient accuracy to formally record at this time.
	Specification of the grid system used.	UTM grid – GDA 94 Z51
	Quality and adequacy of topographic control.	See above regarding RLs.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Single location.
	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.	Drilling is of a reconnaissance nature only. No definite resource implications at this time.
	Whether sample compositing has been applied.	No.
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.	Vertical hole only – unbiased.
	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.	No sample bias.
Sample security	The measures taken to ensure sample security.	Samples were submitted to the independent laboratory (ALS) labelled with Company

Criteria	JORC Code explanation	Commentary
		identification only.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	In view of the reconnaissance nature of the sampling program no audit of the sampling technique or analytical techniques is warranted at this stage.

## **Section 2 Reporting of Exploration Results**

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.	Tenement drilled was E45/2803 and is registered 100% in the name of Holocene Pty Ltd (Reward Minerals Ltd). Drilling and sampling was conducted in conjunction with Martu monitors within the Martu Determination Area.
	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.	Granted tenement subject to State Deed and Indigenous Land Use Agreement with the Martu Traditional Owners.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	No known previous exploration performed by other parties on the exploration area.
Geology	Deposit type, geological setting and style of mineralisation.	The area drilled comprises the surface of a playa lake believed to contain buried Palaeovalleys or basins with saline water.
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:	See Appendix 1 above.
	easting and northing of the drill hole collar	
	elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	RLs not available.
	dip and azimuth of the hole	See Appendix 1.
	down hole length and interception depth	
	hole length.	See Appendix 1.
	If the exclusion of this information is justified on the basis that the information is not	

Criteria	JORC Code explanation	Commentary
	Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods		Reconnaissance drilling only. No attempt to relate to resources hence no cut-off grades or aggregation of results.
	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.	No aggregation of results.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Only direct assay/analytical results reported. SOP value quoted was calculated as K x 2.23 (K to $K_2SO_4$ ).
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.	Stratigraphic drill holes for identification of palaeovalley sediment profile. See text of announcement.
	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').	Hole was approximately 135.5 metres vertical depth. Solid core collected.
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.	See ASX announcement dated 11 May 2015.
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.	Reconnaissance work. Brine analyses obtained are regarded as indicative but significant warranting follow up. All analytical results available are provided in this release.

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.	Reconnaissance only, all available data provided herein.
Further work	*	Follow up drilling and Pump Trials will be undertaken when relevant Permitting approvals are received.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Not applicable – commercially sensitive.