



Investment Ideas

28 February 2017

PepinNini Minerals (ASX:PNN): drilling area targeted

Salta Lithium Project – Exploration Results

- PNN announced on 27 February 2017 that geophysical vertical electrical sounding surveys (“VES”) completed over three tenements (Pular, Arizaro, Pocitos) indicate the potential for lithium brine bearing aquifers close to the surface with considerable thickness. See table below

VES survey results

Salar	Mina	Area ha	Minimum depth(m)	Aquifer layers interpreted	maximum depth (m)	average thickness (m)
Pular	Sulfa I	657	0.24	three	Open at depth > 150	119 <i>but open at depth</i>
Arizaro	Ariza Sur 1	3,004	5.7	one	95	52
Pocitos West	Tabapocitos 02	2,970	2.1	three	264	181
Pocitos East	Pocitos 11	3,000	11.6	one	139	85

Source: Company

- Drilling permit applications have been submitted for drilling at the Pocitos Salar.** Drilling - to confirm lithium grades and aquifer thickness - is planned for March/April.
- Management disclose that the Pocitos Salar was drill tested by 12 shallow holes in 1979 by and Argentinian government agency (DGFM). The most significant result from the historical work program included an intersection of 417mg/L lithium (Li) and 14,300mg/L Potassium (K). Note: the results of these holes are historical, and cannot be confirmed by PNN under JORC 2012 standards.
- If PNN’s drilling program intersects significant grades, then drainable porosity (specific yield) will be evaluated through core samplings and pumping tests; management is targeting to have an estimated (JORC 2012 compliant) maiden Resource at Salar Pocitos within the next 12 months.
- PNN intends to complete additional VES surveys over three other tenements – Salinas Grandes, Rincon, and Cauchari.

State One comments

- ✓ We note that the geophysical survey results (probably in combination with historical drilling) has supported PNN to select Salar Pocitos as the target for its maiden drilling programme.
- ✓ **The average thickness of deposit – 181m at Pocitos West / 85m at Pocitos East – implies an attractive average thickness for Salar Pocitos as a whole (State One estimate 135m).**
- ✓ The lithium grade of 417mg/L - as per historical government drilling at Salar Pocitos - is below the grades disclosed by peers operating in the same region (NW Argentina). However, we calculate that this grade is high enough to potentially result in a significant maiden Resource of ~1.45Mt lithium carbonate equivalent (LCE). As a comparative, the Resource at Orocobre’s (ASX: ORE) flagship producing Salar de Olaroz Project is some 6.4Mt of LCE.

Peer comparative: lithium grades

Company	Project	Grade (mg/L)		Comments
		Li	Potassium (K)	
Lithium X	Sal de Los Angeles	450	5,000	Indicated and Inferred Resource
Orocobre (ASX: ORE)	Salar Olaroz	690	5,730	Measured and Indicated Resource / Producing operation
Orocobre (ASX: ORE)	Salinas Grandes	795	9,547	Inferred Resource
Orocobre (ASX: ORE)	Salar de Cauchari	400-700		20km south of Olaroz, viewed by ORE as same basin with similar brine chemistry
Galaxy Resources (ASX: GXY)	Sal de Vida	753	8,377	Measured and Indicated and Inferred Resource
PepinNini (ASX: PNN)	Salar de Pocitos	417	15,300	As per 1979 drilling programme by Argentinian government agency

Source: Companies, compiled by State One Stockbroking

Salar Pocitos: estimated Maiden Resource sensitivity analysis - Lithium Carbonate Equivalent (Mt)

		Average deposit thickness (m)				
		105	120	135	150	165
Average Li grade (mg/L)	300	0.84	0.97	1.09	1.21	1.33
	350	0.99	1.13	1.27	1.41	1.55
	400	1.13	1.29	1.45	1.61	1.77
	450	1.27	1.45	1.63	1.81	1.99
	500	1.41	1.61	1.81	2.01	2.21

Source: State One Stockbroking

Note: Assumptions: 1) potential brine area = 85% of Salar Pocitos 5,970ha combined tenement (mina), base case average deposit thickness = 135m, base-case lithium grade = 400mg/L, base-case brine yield = 10%, conversion ratio: 1t Li = 5.29t Li₂CO₃.

- **At a forecast long-term lithium carbonate price of US\$10,000/t, our estimated/indicative Salar Pocitos maiden Resource of 1.45Mt LCE has an in-situ value of US\$14.5bn.**
- At the current spot lithium carbonate price of US\$20,000/t, the in-situ value doubles to US\$29bn.
- PNN has been exploring in the Salta Province of NW Argentina since 2010 and continues to hold a portfolio of properties covering the Santa Ines and Chivinar Cu-Au Projects. Through strong local connections, and being “on-the-ground” when tenements were relinquished by small private holders, PNN has - for relatively modest outlays - successfully accumulated thirteen mining leases (mina) prospective for lithium brine over the past 6-8 months. **As at end December 2016, PNN’s total tenement holding was 32,665ha. The Salar Pocitos mina of 5,970ha accounts for 18% of PNN’s total tenement holdings.** As a result, we suggest that a total exploration target of over 3Mt LCE is not unreasonable. We believe a Resource of this size would be attractive to a number of potential LCE processors. Our understanding is that PNN has been approached by several industry players, with discussion progress dependent on Resource development.
- ***The initial drilling and assay results (targeted for April 2017) will provide key data on aquifer thickness and brine composition (specifically the lithium grade in mg/L). This data could act as a powerful share price catalyst as it will give investors - for the first time - some idea of the potential grade and size of the Resource at PNN’s Salta Lithium Project.***



PNN's Lithium Project - Salta Province, Argentina



Source: Company, State One Stockbroking

- PNN also has **16 tenements in central Australia** covering **16,608km²** (Musgrave and Mozart Projects) prospective for nickel, copper, PGE, and diamonds. Capital demands here are at a minimum, but give investors “free” exposure to any increase in the base metal price environment.

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Note: State One Stockbroking was lead manager for PNN in a A\$1m capital raising in July 2016 and A\$0.6m capital raising in February 2017.

Alan Hill
 Executive Chairman
 Phone: +61 8 9288 3388
ahill@stateone.com.au

Ric Heydon
 Equities & Derivatives Advisor
 Phone: +61 8 9288 3307
rheydon@stateone.com.au

Mark Sullivan
 Institutional Dealer
 Phone: +61 2 9024 9134
msullivan@stateone.com.au

Thomas Tan
 Equities Advisor
 Phone: +61 2 9024 9131
ttan@stateone.com.au

Morris Levitzke
 Equities Advisor
 Phone: +61 8 9288 3315
mlevitzke@stateone.com.au

Graeme Johnson
 Equities & Derivatives Advisor
 Phone: +61 8 9288 3316
gjohnson@stateone.com.au

Yitz Barber
 Equities Advisor
 Phone: +61 2 9024 9107
ybarber@stateone.com.au

Tammie Wong
 Equities Advisor
 Phone: +61 2 9024 9133
twong@stateone.com.au

Alexander Bax
 Equities Advisor
 Phone: +61 8 9288 3340
abax@stateone.com.au

Daniel Chiew
 Analyst
 Phone: +61 8 9288 3349
dchiew@stateone.com.au

David Zhang
 Equities Advisor
 Phone: +61 2 9024 9130
dzhang@stateone.com.au

David Brennan
 Senior Investment Analyst
 Phone: +61 2 9024 9142
dbrennan@stateone.com.au