

# Orocobre – Developing Argentina's Resources

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**4th Annual Lithium Supply & Markets Conference**  
**Buenos Aires, Argentina**  
**January 23<sup>rd</sup> – 25<sup>th</sup>, 2012**

Richard Seville, Managing Director and Chief  
Executive Officer



# Cautionary Notes

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## Cautionary Notes (Cont'd)

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process or to enforce judgments within Canada upon and against the directors and officers of the Company; the inherent risks and dangers of mining exploration and operations in general; risk of continued negative operating cash flow; the possibility that required permits may not be obtained; environmental risks; uncertainty in the estimation of mineral resources and mineral reserves; risks that the current inferred resource at the Company's Olaroz project will not be converted to a sufficient amount of indicated or measured resources to warrant development; general risks associated with the feasibility and development of each of the Company's projects; the risk that a definitive joint venture agreement with Toyota Tsusho Corporation may not be completed; risks that the new process being developed by the Company will take longer to develop than anticipated or that it will not be successfully developed; risks of being unable to sell production in the event of the development of a project; foreign investment risks in Argentina; changes in Argentinean laws or regulations; future actions by the Argentinean government; breach of any of the contracts through which the Company holds property rights; defects in or challenges to the Company's property interests; uninsured hazards; disruptions to the Company's supplies or service providers; reliance on key personnel; retention of key employees; absence of dividends; competition; absence of unitization or reservoir management rules; and the Company's dependence on an open border between Argentina and Chile. See the section titled "*Risk Factors*" in the Company's prospectus dated June 9, 2010, which is available for review under the Company's profile at [www.sedar.com](http://www.sedar.com).

Forward-looking information is based on the reasonable assumptions, estimates, analysis and opinions of management of the Company made in light of their experience and their perception of trends, current conditions and expected developments, as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made, but which may prove to be incorrect. The Company believes that the assumptions and expectations reflected in such forward-looking information are reasonable. Assumptions have been made regarding, among other things: the Company's ability to carry on its exploration and development activities, the timely receipt of required approvals, the prices of lithium and potash, the ability of the Company to operate in a safe, efficient and effective manner and the ability of the Company to obtain financing as and when required and on reasonable terms. Readers are cautioned that the foregoing list is not exhaustive of all factors and assumptions which may have been used.

Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such information. Accordingly, readers should not place undue reliance on forward-looking information. The Company does not undertake to update any forward-looking information, except in accordance with applicable securities laws.

# Over 300,000 hectares of properties

## Salar de Olaroz Li-K-B

- Toyota Tsusho partner
- DFS highlights strong fundamentals
- Large resource— long project life - low operating costs
- Financing stage with Mizuho Corporate Bank and JOGMEC

## Cauchari Li-K-B

- 30,000 ha lithium-potash property immediately south of planned Olaroz plant
- Initial 6 hole drilling program completed
- Drilling confirms high grade lithium extends into the key properties adjacent to the high grade part of another company's resource
- Resource estimate for 2Q/2012

## Salinas Grandes / Cangrejillos K-Li-B

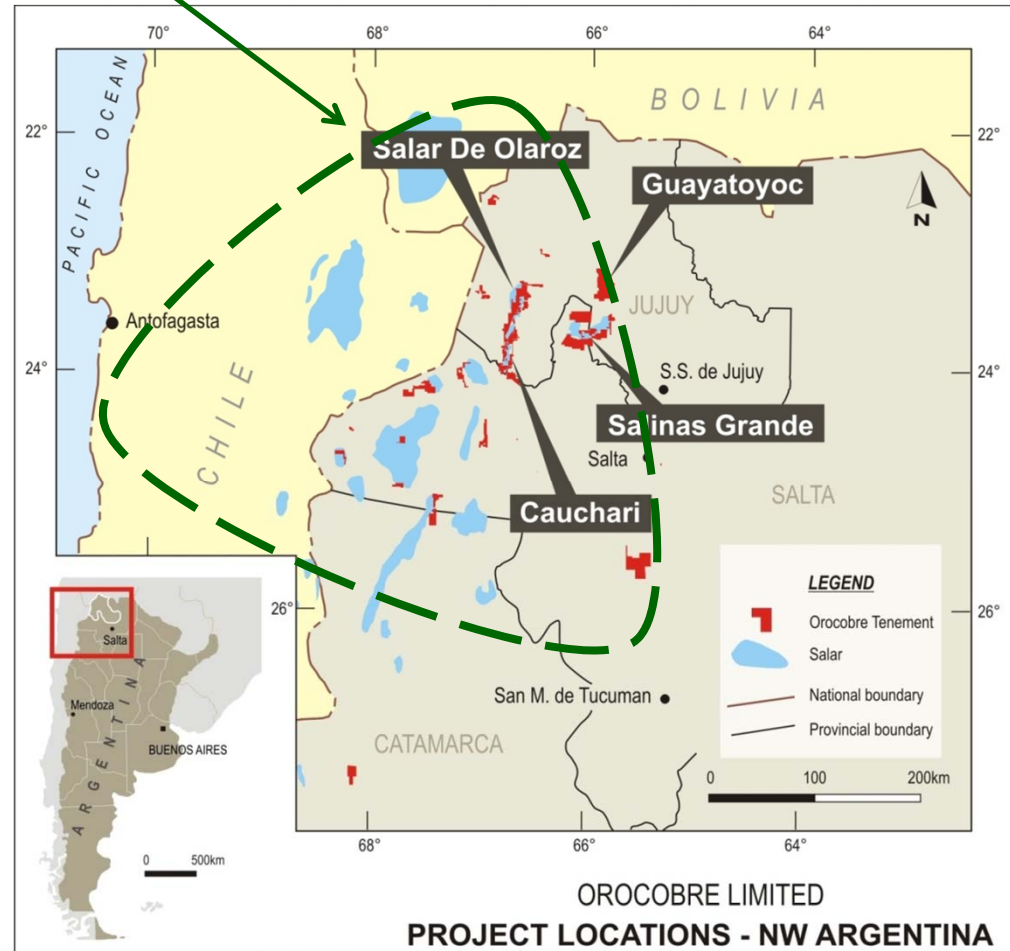
- Lithium-Potash project
- Drilling shows high grades, excellent chemistry
- Resource estimate planned Q1/2012

## Guayatoyoc - K

- Potassium discovery – not yet drilled

## Others – Li, K, B,

All projects located in “The Lithium Triangle”





## Olaroz Project – Current Status

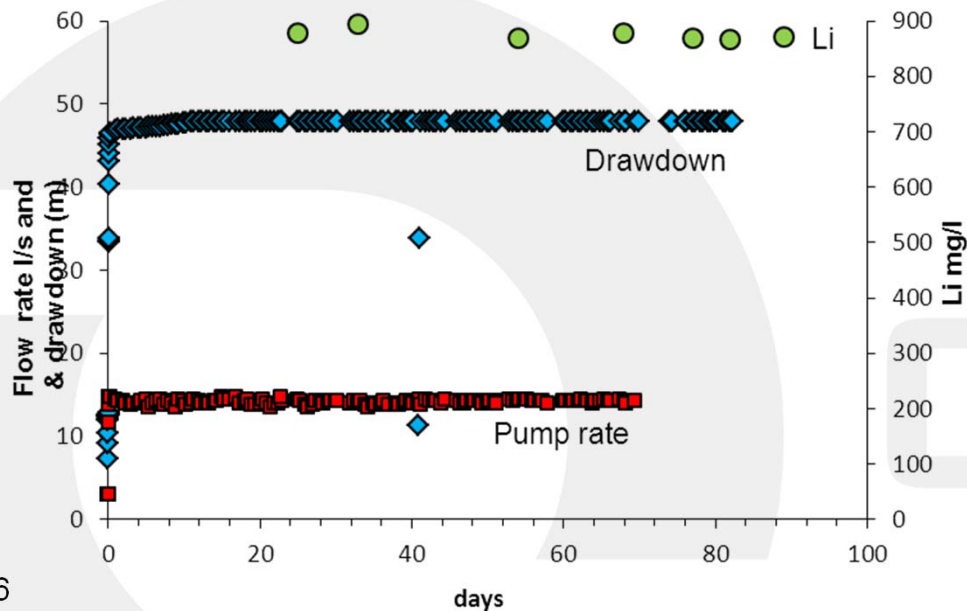
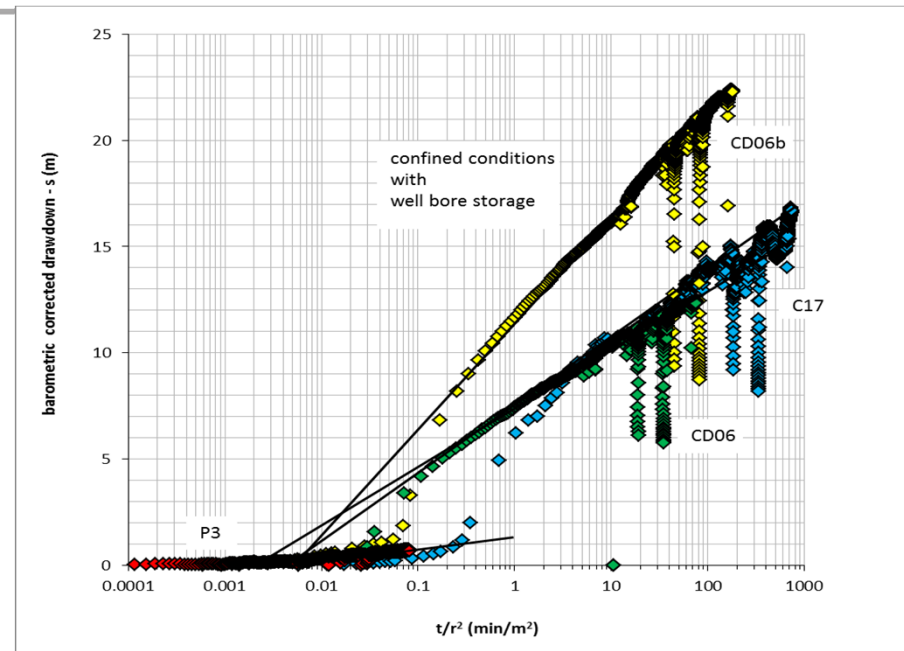
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- DFS completed in April 2011 - strong project fundamentals
- Large and high grade brine resource with 6.4 MT lithium carbonate eq. to 200m (M&I)
- Long project life - 16,400tpa Lithium Carbonate over 40 years extracts 14% of resource
- Low cost processing with US\$1512/t LCE (US\$1230/t with potash credits) forecast
- Battery grade lithium carbonate produced for 12 months from pilot plant on site at Olaroz
- EIS approved 12/2010, EIS Addenda and gas pipeline approved by UGAMP 10/2011
- Fresh water supply permits approved. Local community agreements signed.
- Detailed Engineering design well advanced with SKM, Long lead time items being ordered.
- Management negotiations completed with Toyota Tsusho Corporation on its involvement. Debt finance package being finalised with Mizuho Corporate Bank and JOGMEC
- Awaiting Jujuy government approval and aiming for production in mid 2013



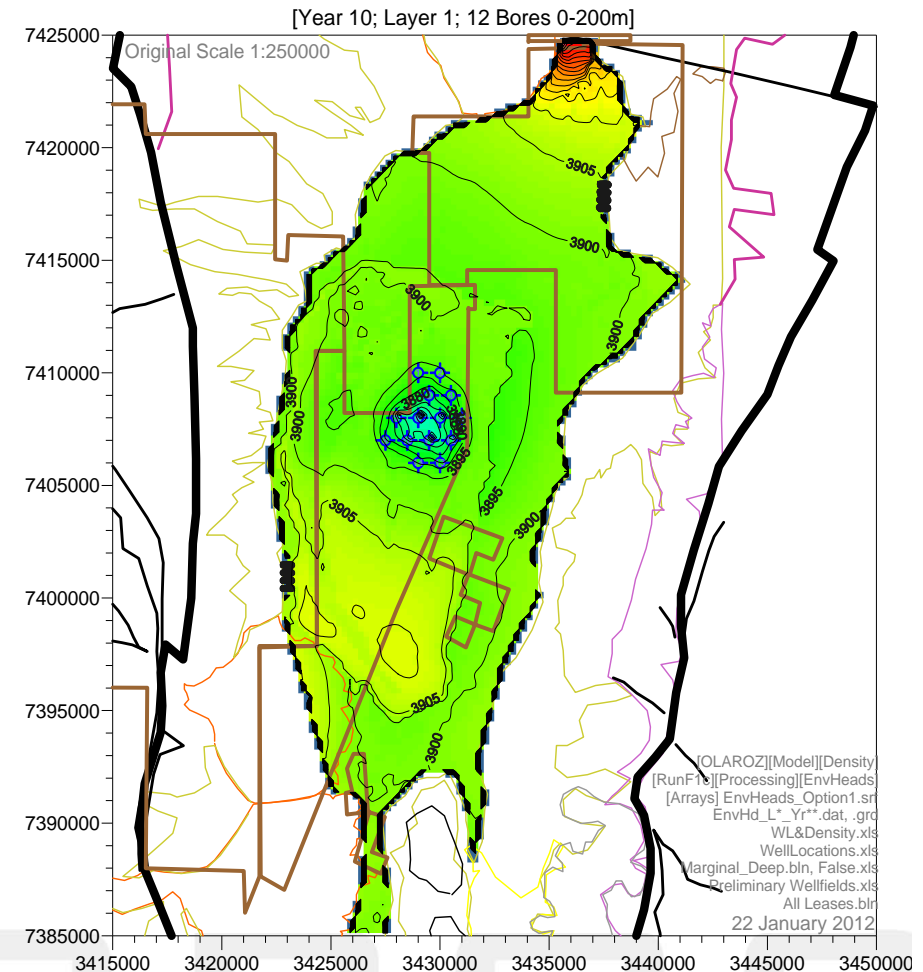
# Olaroz Project – Positive long term pumping tests

- Long term pumping test over 50-200m zone showing constant grades and chemistry – +/- 15l/s over 90 days
- Lithium averages 875mg/l with a standard deviation of +/-10
- Brines concentration is 17% higher than the 749mg/l average Li from adjacent diamond drill hole CD06.
- Potentially drawing from a higher specific yield and higher grade unit averaging 852mg/l in CD06 indicating higher permeability is associated with higher specific yield.



# Olaroz Project – Production Modelling and Expansion Potential

- DFS production forecast of 16,400 tpa lithium carbonate (180l/s commencing at 725mg/l) took into account
  - Market considerations - approximately 10% of forecast world consumption in 2014
  - Hydrogeological - “Low stress” pumping approach to a new hydrogeological environment of mixed sedimentary sequence
  - Resource parameters
- A 3D finite difference fluid flow and solute transport model that incorporates variable density is currently being built and calibrated. The model is intended to forecast production over the length of the project life, and will be used to control the brine feed during production.
- Preliminary results from the model suggest that there are no unforeseen difficulties in extracting the planned initial production of 16,400 tpa lithium carbonate with an initial grade of above 800mg/l and slow rates of decline over the project life.
- The model will be used to investigate the possibility of increases in production rate.





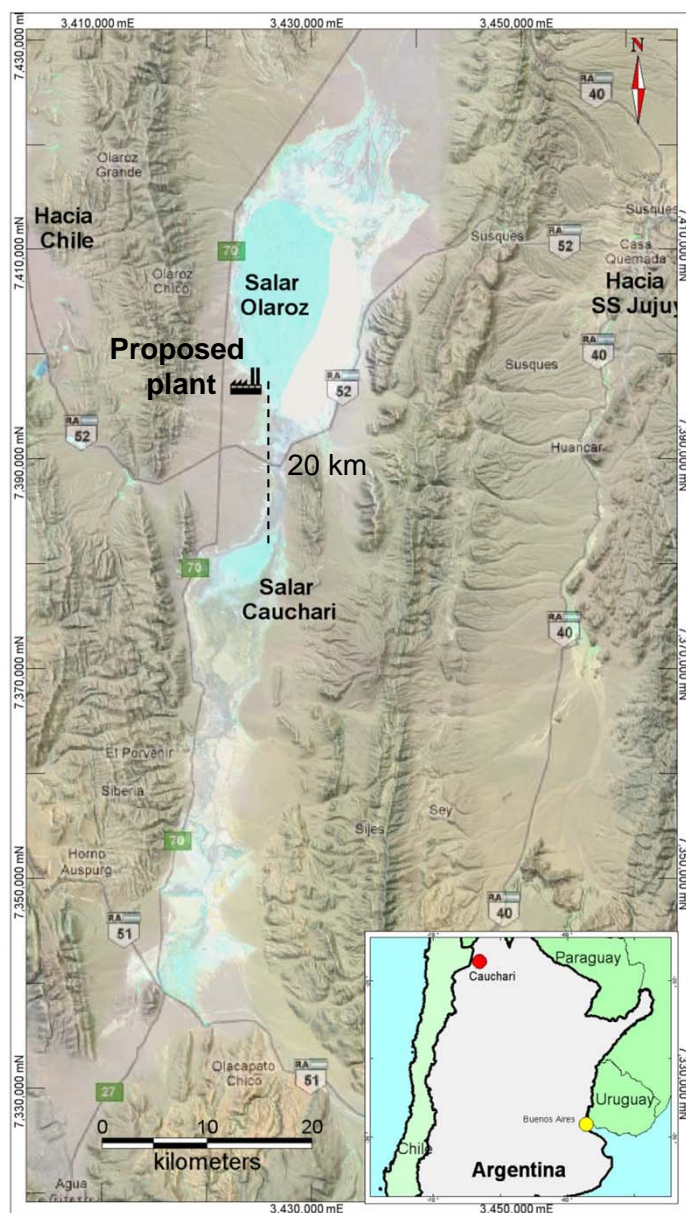
## Olaroz Project – Next Steps

- Pilot plant production and product qualification
- Finalise financing arrangements with Mizuho Corporate bank and JOGMEC
- Final documentation  
Investment decision by both Toyota Tsusho and Orocobre
- Jujuy government final approval
- Construction commencing 2Q 2012
- Production mid-2013





## Salar de Cauchari – Extensive Synergies with Olaroz



### Promising project located immediately south of Orocobre's flagship Olaroz project

- Over 30,000 hectares of properties immediately south of Salar de Olaroz held by 85% owned South America Salars
- Possible additional brine source for the planned Olaroz plant, 20 km N of recent drill holes

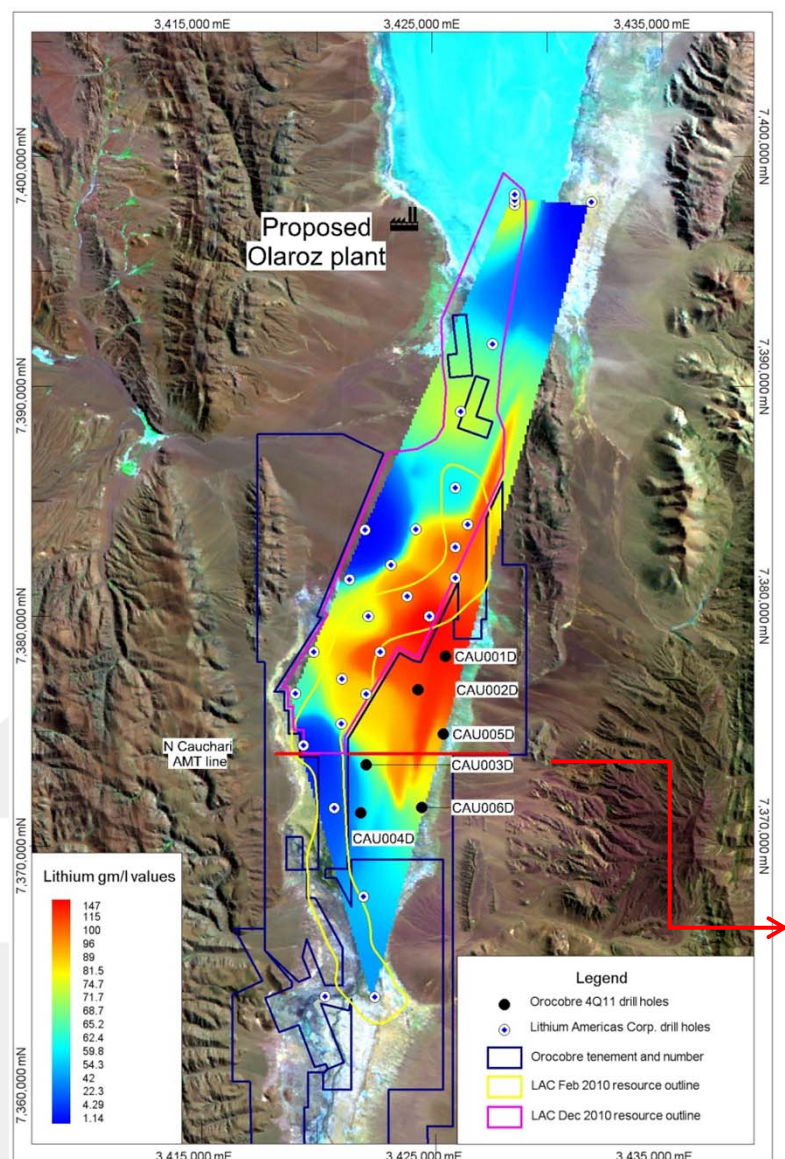
### Drilling confirms attractive lithium values

- Richest part of an adjacent company's resource extends onto Orocobre properties
- Elevated lithium encountered to base of drilling at 249 m

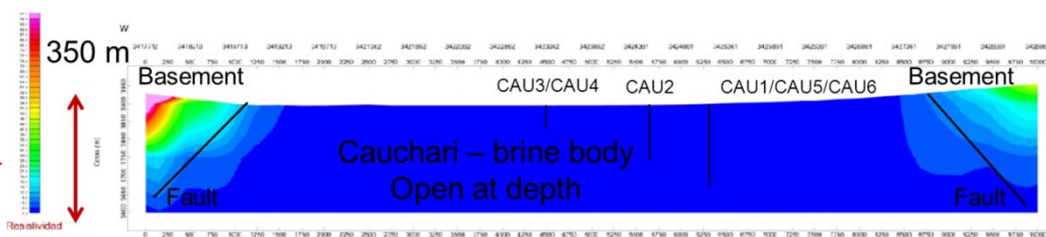
### Significant synergy potential with Olaroz

- K/Li grades lower than Olaroz but still attractive
- Similar chemistry but with higher sulphate
- Should be amenable for treatment concurrently with Olaroz brine with minor changes to process

# Salar de Cauchari – The Drilling Target

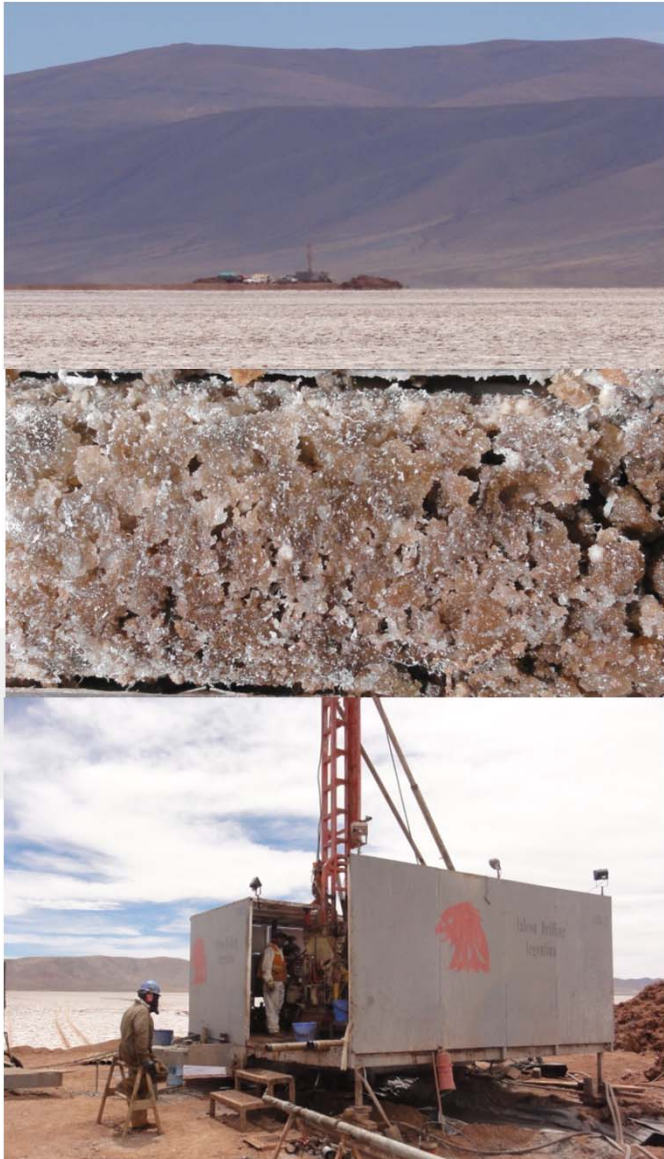


- NI43-101 data suggests the high grade part of the LAC resource extends into Orocobre properties to the SE
- Orocobre AMT geophysics (below) shows the presence of brine in the south of Orocobre's principal properties
- Orocobre drilled six holes, confirming the high grade brine is present
- The brine body extends from the salar salt pan through the Orocobre properties, becoming deeper to the east and south
- The planned resource estimate will quantify the size of the resource which could be processed through the Olaroz plant



Above: The location of drill holes projected onto the AMT geophysical section (red line in the map). Complete results for CAU003D and CAU004D are pending. Initial results and brine densities suggest brine with elevated Li is likely to extend to CAU004D





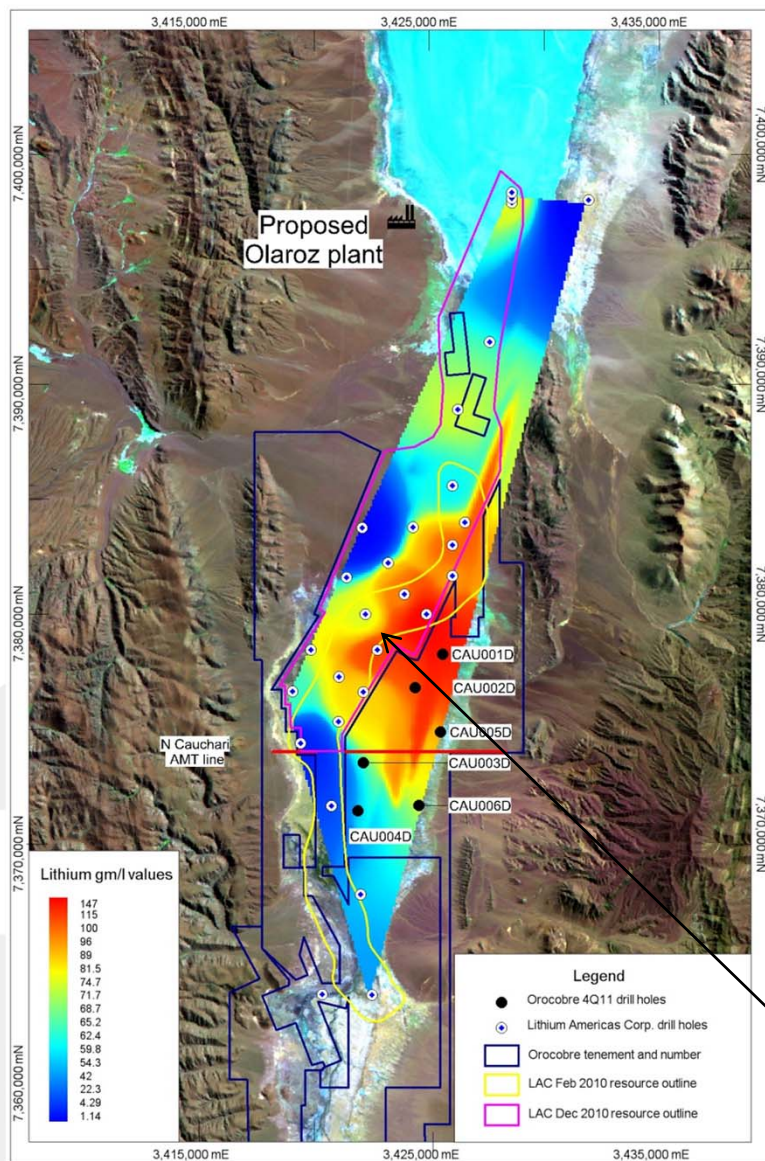
## Drilling/Sampling Procedures

- Five diamond and one rotary hole drilled
- Samples sealed in core tubes and processed for total porosity and specific yield
- Brine samples bailed from the base of drill holes, after purging brine from the drill hole
- Biodegradable dye used to evaluate potential sample contamination
- Brine extracted from core to compare with bailed brine samples
- Repeat bailer sampling conducted at intervals of 30-50 m, to evaluate sample repeatability

## Laboratory QA/QC

- Samples submitted to experienced Alex Stuart lab, with standards every 5 samples and duplicates every 10 samples
- Downhole logging undertaken to correlate units and develop a detailed geological model for the resource estimate

# Cauchari – Drilling Results



## Drilling Results

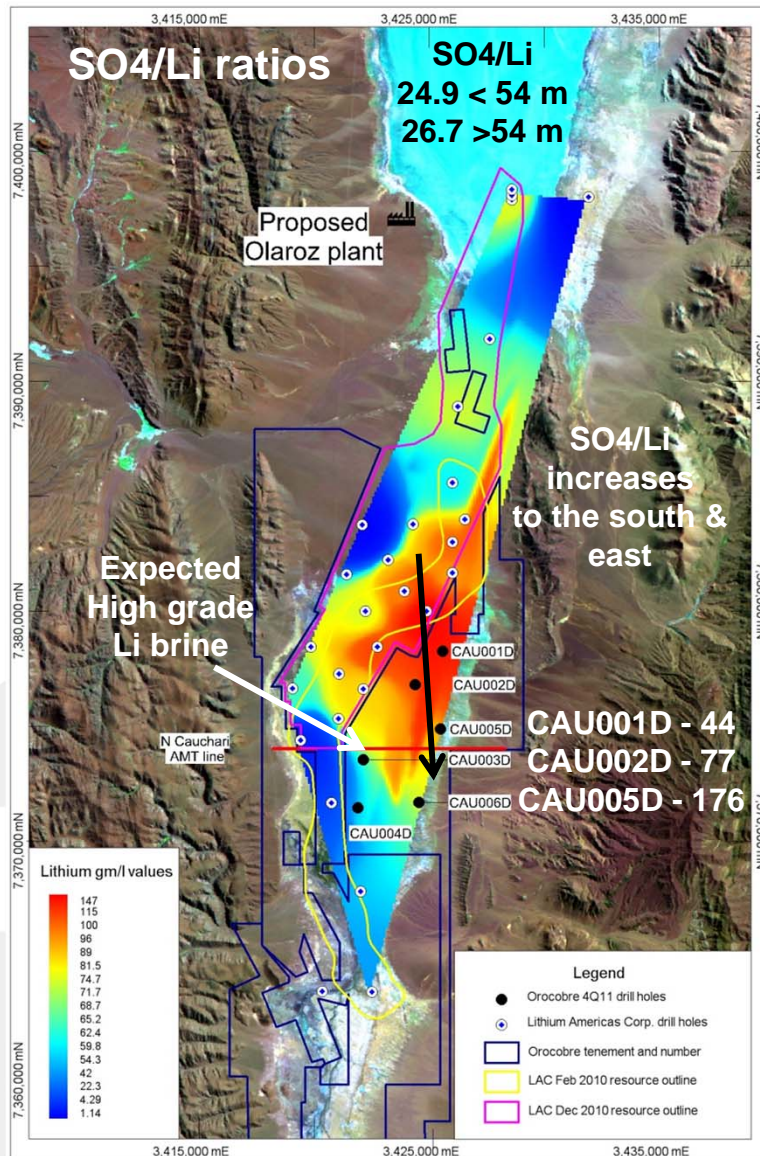
- Richest part of adjacent company's resource extends onto Orocobre properties
- Elevated lithium encountered to the base of drilling at 249 m in CAU001D
- Results pending for southern three holes, two of which were abandoned above 100 m and do not test the prospective stratigraphy adequately
- Lower density brine in top 60m

	Interval	Li	K	B	Mg/Li	K/Li	SO4/L
CAU001D	Average <b>over 244 m</b> from 5 to 249 m	548	5,111	822	2.6	9	44
CAU002D	Average <b>over 177 m</b> from 9 to 186 m	403	4,057	622	2.1	10	77
CAU005D	Average <b>over 72 m</b> from 18 to 90 m (results pending to 168 m)	63	576	204	4.9	9	176
CAU003D	Average <b>over 31.5 m</b> from 22-53.5 m (results pending to 72 m - hole abandoned)	411	3,467	Preliminary results			
CAU004D	Hole abandoned at 46.5 m	Results pending					
CAU006	Hole drilled to 150 m	Results pending					

*Purple Boundary – LAC resource area 11/10*  
*Yellow Boundary – LAC resource area 3/10*



# Cauchari – Brine Chemistry



## Brine Chemistry

- Mg/Li in the range of Olaroz (2.4), FMC Hombre Muerto (1.4) and Atacama (6.4) averages
- SO4/Li increases away from the salar centre, and towards the south - higher than Olaroz average of 26.7
- K values lower than Olaroz average of 5994 mg/l (beneath 54 m), but significantly elevated – 244 m @ 5111 mg/l in CAU001D, 177 m @ 4057 mg/l in CAU002D
- Ca values moderate, 510 mg/l in CAU001D, 660 mg/l in CAU002D – comparing to 636 mg/l in Hombre Muerto and 379 mg/l in Atacama

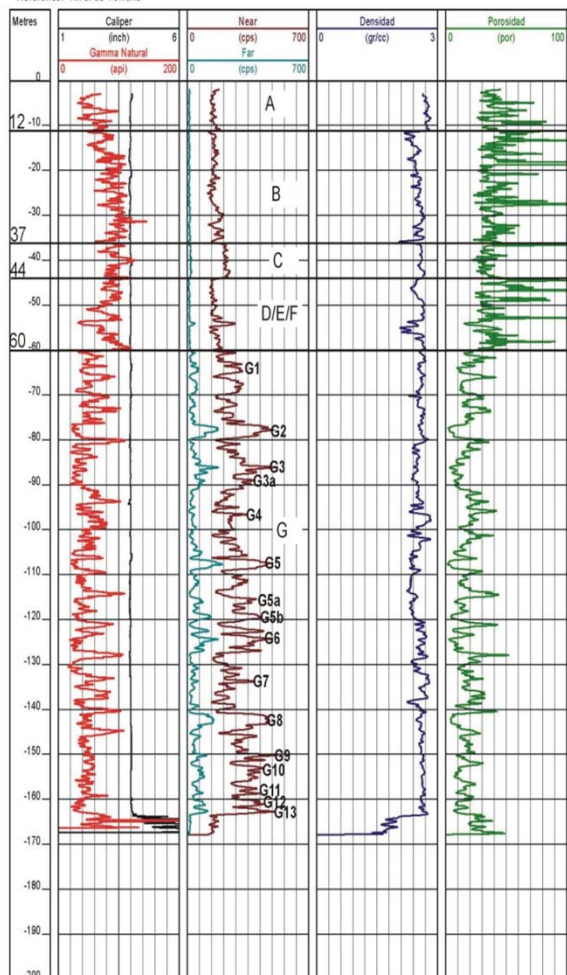
## Brine Processing

- Brine suitable for processing at Olaroz with minor modifications to the Olaroz process.

# Salar de Cauchari – Project Geology

LU14

Well Name: CAU001D 18-Nov-2011  
Location: Salar de Cauchari  
Reference: Nivel de Terreno



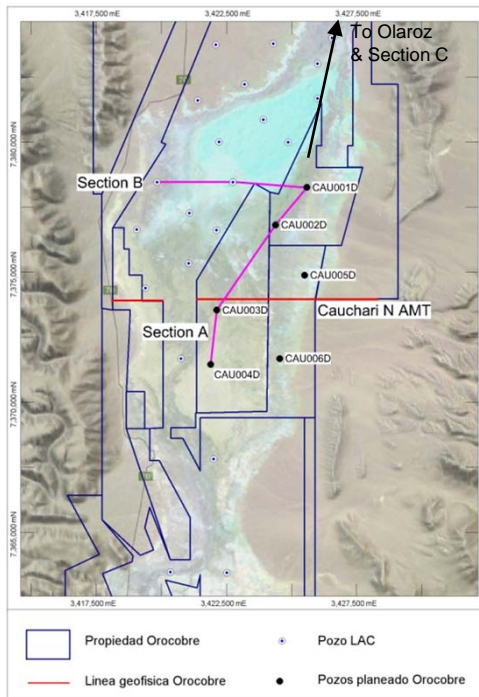
## Project geology

- Salar surrounded by fractured bedrock, uplifted on NS basin parallel faults
- The salar hosts extensive halite units, and lesser interbedded silts, clays and sands. Some porous halite is present
- Red silt and clay units overlie the halite dominant sequence, which becomes interbedded with sediments towards the eastern basin margin
- The lithologies show many similarities to Olaroz - correlating with Units A to G and suggesting additional brine potential below Olaroz drilling
- The base of the sequence has not been intersected nor has the base of the brine been reached. Sand may underlie the halite units

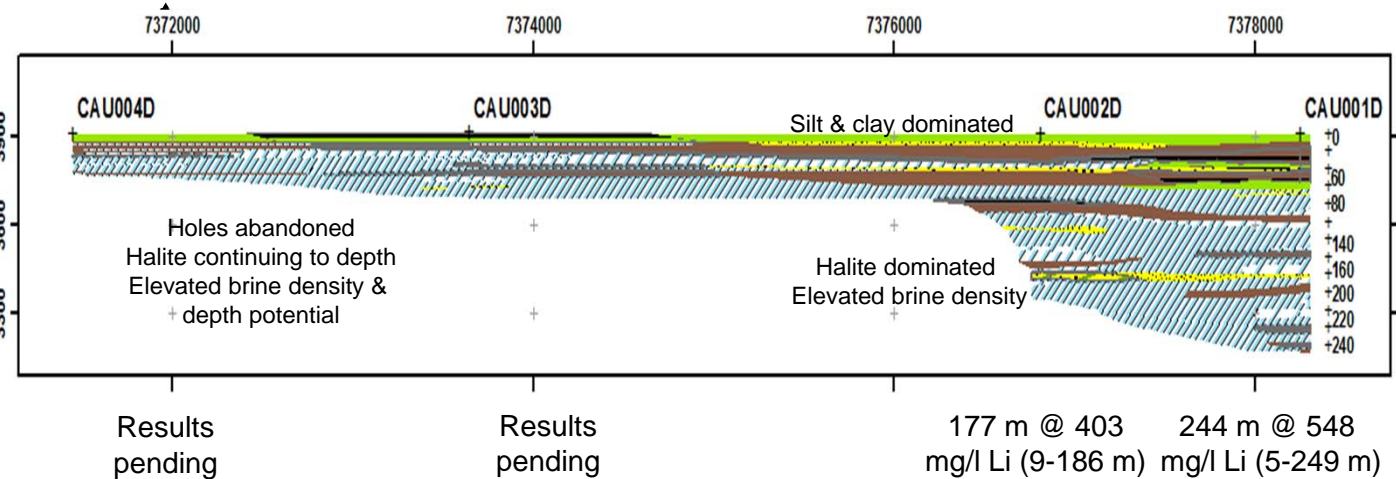
## Geophysics

- AMT electrical geophysics identified brine across the width of Orocobre properties in the salar
- Downhole logging undertaken to correlate units and develop a detailed geological model for the resource estimate

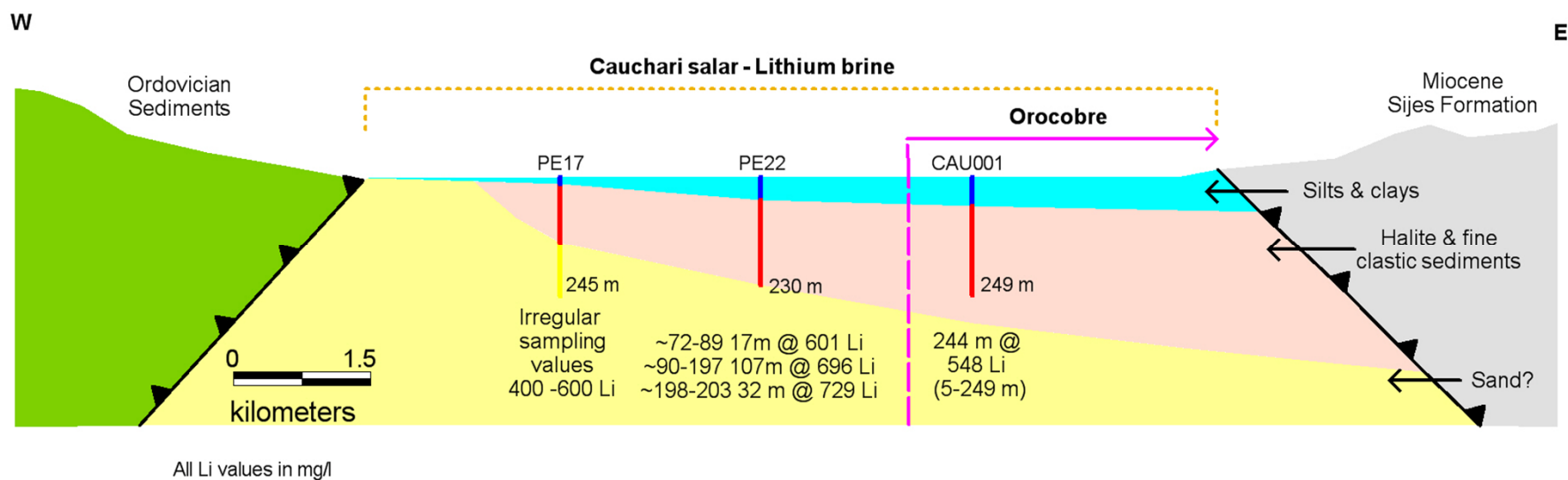
# Salar de Cauchari – Geological Interpretation



**Section A**

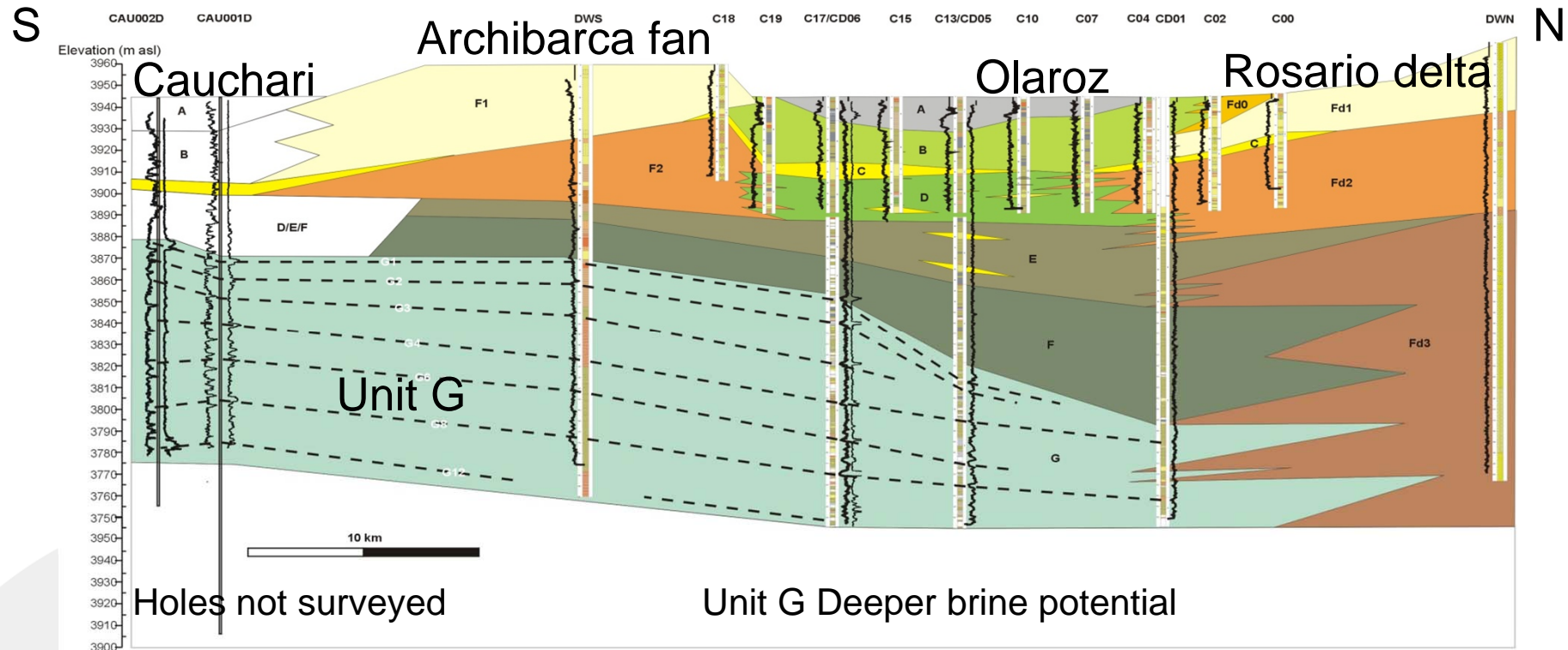


**Section B**





# Cauchari – Olaroz Stratigraphic Correlation



- Down hole geophysics and lithologies suggest the same stratigraphic units are present in Cauchari and Olaroz (AMT section South of CAU002D), with differences within units
- The deeper Unit (G) dips to the north, changing from halite dominated at Cauchari to clastic dominated, with halite interbeds, in Olaroz
- The lithium brine continues beneath the depth of drilling in Olaroz and Cauchari



## Cauchari – What's Next

- Evaluate lithium and potassium concentrations in more detail when all final results received
- Evaluate the distribution of porosity data when total porosity (Pt) and specific yield (Sy) values completed by the British Geological Survey
- Complete a resource estimate for the project – delivery estimated Q211
- Assess how Cauchari dovetails with development of Olaroz, the processing plant and the differences in brine chemistry
- Obtain additional environmental and government approvals to allow further drilling and permeability testing to evaluate flow rates



# Salinas Grandes (Cangrejillos) – Incremental Lithium Target

## Extensive Landholding in Salinas Grandes Salar

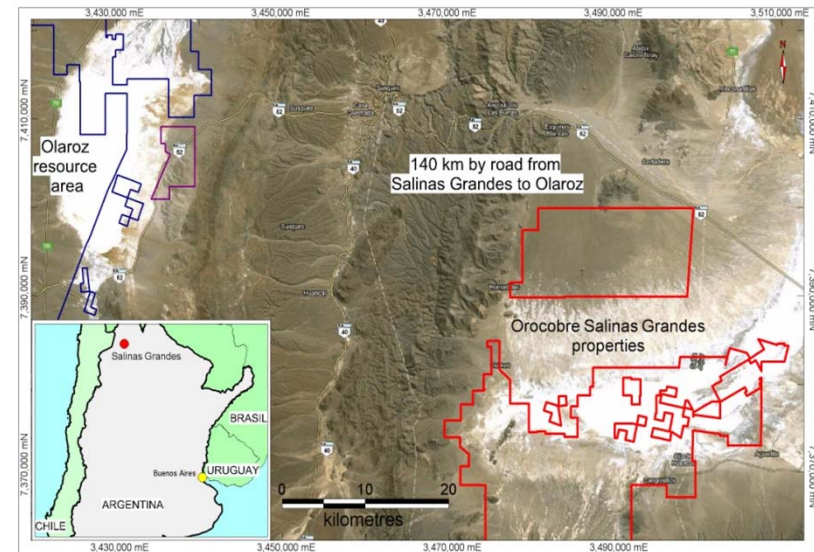
- 85% interest via South American Salars, a JV with local interests
- Orocobre holds largest land position including +13,500 hectares in the salar nucleus
- Located in Salta Province
- Good access to key infrastructure including port, gas pipeline, road and rail

## Synergies with flagship Olaroz Project

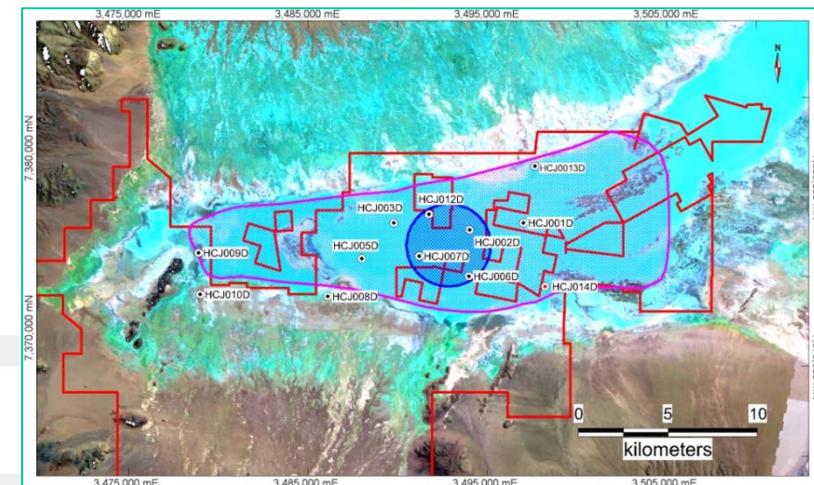
- Salinas Grandes is 70 km south-east of Olaroz and has potential to be partly integrated into the flagship Olaroz Project

## Two Brine Bodies

- Diamond drilling confirmed a shallow brine body (<25 m) across the salar, with a deeper brine body (extending to 50-80 m) in the centre of the salar



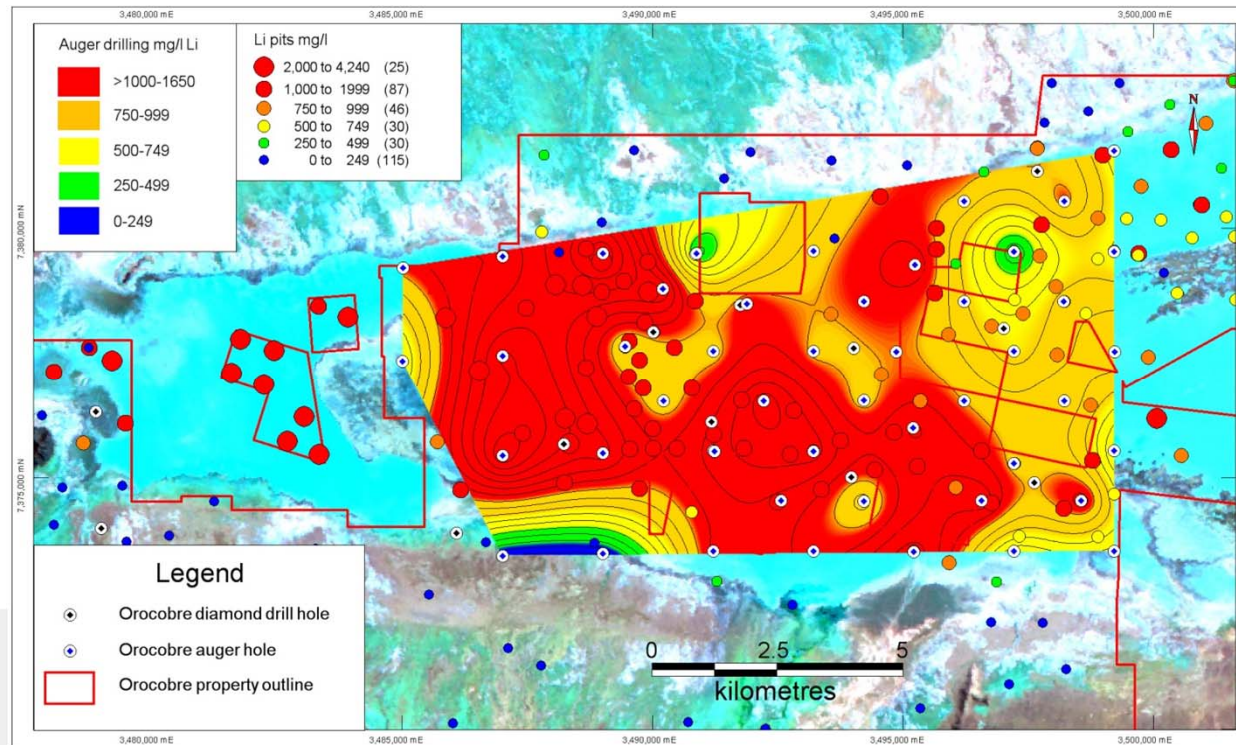
Above: The location of the Salinas Grandes and Olaroz projects in northern Argentina



Above: The location of drill holes at Salinas Grandes within the Orocobre tenements



## Salinas Grandes (Cangrejillos) – Auger Drilling



Above: The location of auger holes at Salinas Grandes within the Orocobre tenements

- 47 auger holes drilled to between 2 & 20 m to obtain more shallow brine data. Average hole spacing 1.7 km spacing
- Auger results average 9,950 mg/l K, 825 mg/l Li over an average hole depth of 9.6 m.
- Drilling identified higher permeabilities in sand on the north side of the salar
- 10 pump tests completed across the salar

# Salinas Grandes (Cangrejillos) – What's Next

## Attractive Brine Chemistry

- Brine geochemistry in the salar is favourable for high Li and K recoveries with a simple, low operating cost, process route
  - Low Mg/Li ratio - 2.8
  - Low SO<sub>4</sub>/Li ratio – 8.7
  - High K/Li ratio - 13
- A year of evaporative test work has been completed. Brine is fully adaptable to the process used by SQM and Chemetall at the Salar de Atacama

## What's next?

- Further assessment of pump test results and potential means of brine extraction
- JORC resource estimate expected in Q1/2012
- Evaluation of potential processing and the economics of processing at the Olaroz plant



Drill rig at Salinas Grandes, Salta Province



## Summary

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- **Portfolio of attractive projects in renowned lithium-potash producing region of Argentina**
  - Attractive infrastructure - port, rail, road , gas pipeline, people
  - Pro-mining provinces with mining traditions
- **Olaroz Project - Jujuy**
  - DFS confirms high grade, low production costs, long project life project based on large resource (6.4 million tonnes LCE, 19.3 million tonnes potash)
  - 12 months of battery grade lithium carbonate production at Olaroz from pilot plant
  - Management negotiations completed with Toyota Tsusho Corporation on its involvement. Debt finance package being finalised with Mizuho Corporate Bank and JOGMEC
  - First commercial production targeted for mid 2013\* with first stage 16,400tpa
- **Project Pipeline**
  - Cauchari - Jujuy
    - 6 hole program completed with positive results
    - Resource estimate – Q2/2012\*
  - Salinas Grandes - Salta
    - Phase one drilling and pump tests completed
    - Resource estimate - Q1/2012\*
- *\* Target dates*



Detailed DFS Results – Flagship Olaroz Project

# APPENDICES

OROC

## DFS - Resource Estimate Summary

- Olaroz Project has very large resource base which has potential to support long project life
- Combined Measured and Indicated Resource of:
  - 6.4 million tonnes of lithium carbonate
  - 19.3 million tonnes of potash (potassium chloride)

Resource Category	Area	Thickness	Mean specific yield	Brine volume	Concentration			Tonnes of Contained Metal		
					Lithium	Potassium	Boron	Lithium	Potassium	Boron
	sq. kms	metres	%	cubic kms	mg/L	mg/L	mg/L	Million Tonnes	Million Tonnes	Million Tonnes
Measured Resource	93	54	8.4%	0.42	632	4930	927	0.27	2.08	0.39
Indicated Resource	93	143	10.0%	1.33	708	6030	1100	0.94	8.02	1.46
<b>Measured and Indicated Resource</b>	<b>93</b>	<b>197</b>	<b>9.6%</b>	<b>1.75</b>	<b>690</b>	<b>5730</b>	<b>1050</b>	<b>1.21</b>	<b>10.10</b>	<b>1.85</b>

Measured and Indicated Resources of 1.75 cubic kilometres at 690mg/ lithium, 5,730 mg/l potassium and 1050mg/l boron from surface to 197m depth estimated by John Houston, Consulting Hydrogeologist. The information in this report that relates to Exploration Results or Mineral Resources is based on information prepared by, or under the supervision of Mr Richard Seville who is a member of the Australasian Institute of Mining and Metallurgy. Mr Seville is a Director of Orocobre Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves,' and as a "qualified person" under NI 43-101. Mr Seville consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. The conversion rate used is 1 tonne of lithium metal produces 5.32 tonnes of lithium carbonate and 1 tonne of potassium produces 1.91 tonnes of muriate of potash

## DFS - Capital Costs Estimates

Capital Cost Estimate - 16,400 tpa Lithium Carbonate		
Direct Costs		US\$million
	Brine Production Wells and Pipelines	7.1
	Evaporation Ponds	38.0
	Processing Plant	26.5
	Utilities (Power Station, Gas, Water, Communication)	27.3
	Infrastructure	11.9
	Contrators Distributables	15.0
	<b>Sub-Total Direct Costs</b>	<b>125.7</b>
Indirect Costs		
	EPCM	22.6
	Third Party Services including freight, construction camp, catering etc	18.3
	Owners Costs to Production	17.9
	<b>Sub-Total Indirect Costs</b>	<b>58.8</b>
<b>Total Capital</b>		<b>184.5</b>
	Contingency	22.1
<b>Total Capital including Contingency</b>		<b>206.7</b>
Potash Plant Option		14.5



- Capital cost estimate allows for production of battery grade product
- Allows for detailed engineering design, EPCM and working capital
- Capital costs may be reduced by optimisation in design and alternative methodology
- Estimated by Sinclair Knight Merz



## DFS – Very Low Operating Cost Estimates

<b>Fixed Costs</b>		<b>US\$million per annum</b>	<b>US\$/t Lithium Carbonate</b>
	Personnel Charges	5.5	335
	Other	2.4	147
<b>Variable Costs</b>			
	Supplies and Reagents	15.6	951
	Energy	1.1	78
	Materials Handling	0.0	0
<b>Total Operating Costs</b>		<b>24.8</b>	<b>1,512</b>
Incremental cost for Potash Option		1.3	79
Incremental benefit for Potash Option		5.9	361
<b>Total Net Operating Cost</b>		<b>20.2</b>	<b>1,230</b>



Lithium only

Includes potash option

- Materially less than hard rock mineral projects
- Competitive with existing brine producers

## DFS – Key Economic Findings

Economic Modelling - Olaroz Project			
		Lithium Carbonate Only	With Potash By Product
Modeled Project Life	Years	40	40
Production Rate	TPA	16400	10000
Capital Cost	US\$million	207	221
Payback	Years	3	3
Cash Operating Cost	US\$/t Li C	1512	1230
IRR after tax, 60% debt	%	52%	56%
IRR after tax, no debt	%	26%	27%
NPV, after tax, ungeared			
Discount Rate 7.5%	US\$million	415	449
Discount Rate 10%	US\$million	273	298
Discount Rate 15%	US\$million	121	136

\* Modeling does not consider cost inflation and assumes constant exchange rate of US\$1 – ARG\$4

## Competent Person's and Qualified Person's Statement and Technical Information

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*The resource estimate on the Olaroz Project described in this presentation was undertaken by John Houston who is a Chartered Geologist and a Fellow of the Geological Society of London. John Houston is a hydrogeologist and has sufficient relevant experience 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. He is also a "Qualified Person" as defined by Canadian Securities Administrators' National Instrument 43-101("NI 43-101"). The Feasibility Study on the Olaroz project was prepared by Mr. Houston and industry consultants Michael Gunn (Consulting Processing Engineer) and Peter Ehren (Consulting Processing Engineer), together with Sinclair Knight Merz and the Orocobre technical group. Mr. Houston and Mr. Gunn prepared the technical report entitled "Technical Report – Salar de Olaroz Lithium-Potash Project, Argentina" dated May 30, 2011 (the "Olaroz Report") under NI 43-101 in respect of the Feasibility Study, and each of Messrs. Houston and Gunn was a Qualified Person under NI 43-101, and independent of the company, at the date such report was prepared. The information that relates to the Olaroz project has been reviewed by Mr Neil Stuart is a geologist and is a Fellow of Australasian Institute of Mining and Metallurgy and a Member of the Australian Institution of Geoscientists. Mr Stuart is a Director of the Company. Neil Stuart has sufficient relevant experience 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. He is also a "Qualified Person" as defined in NI 43-101. Neil Stuart has reviewed and approved the contents of this presentation relating to the Olaroz Project*

*The technical information in this presentation relating to Salinas Grandes and Cauchari Projects has been prepared by Murray Brooker. Murray Brooker is a geologist and hydrogeologist and is a Member of the Australian Institute of Geoscientists. Murray Brooker has sufficient relevant experience 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. He is also a "Qualified Person" as defined in NI 43-101. Murray Brooker has reviewed and approved the contents of this news release relating to the Salinas Grandes and cauchari Projects.*

*Additional information relating to the Company's projects is available in the Olaroz Report, the "Technical Report – Salinas Grandes Project" dated April 30, 2010 and the "Technical Report – Salar de Cauchari Project, Argentina" dated April 30, 2010, respectively, which have each been prepared by John Houston, Consulting Hydrogeologist, together with, in the case of the Olaroz Report, Mike Gunn, Consulting Processing Engineer, in accordance with NI 43-101.*