

NI 43-101 TECHNICAL REPORT

On The

SAL DE LA PUNA LITHIUM PROJECT

Pastos Gandes Salt Lake
Salta Province, Argentina



The Almafuerte property within the SDLP Project is centered at approximately
Latitude -24.642° Longitude -66.711°

~ Report Prepared For ~



ARENA MINERALS

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1 Executive Summary

Arena Minerals (Arena) owns 65% of Sal de la Puna Holdings Ltd. (Canada), which is the 100% owner of Argentinian company Centaur Resources PG SAS which in turn owns 100% of all the claims that comprise the Sal de la Puna Project, as further described in this Report. The remaining 35% ownership of Sal de la Puna Holdings belongs to Ganfeng New Energy Technology Development (Suzhou) Co., Ltd. Arena has contracted Mr Murray Brooker of Hydrominex Geoscience (Hydrominex) and Mr Pablo Gomez of Tuareg Geological Services (Tuareg) to prepare this technical report for the Project (referred to herein as the Sal de la Puna – SDLP - Project).

This report documents exploration activities carried out on the project and the resource defined from the initial drilling in the southern part of the Pastos Grandes salar. Exploration drilling has to date only been conducted in the southernmost of these properties – Almafuerite. This report outlines the potential of this and the other properties.

The Sal de la Puna (SDLP) Project is in the province of Salta in Northern Argentina. The project is located in the Pastos Grandes Salar (salt lake) basin, within the Puna Plateau, and consists of nine properties covering a total area of 10,952 ha. When the term “SDLP” is used in this report, it refers to these nine properties. The properties are 100% owned and not subject to any further payments.

The SDLP project covers the southern and eastern parts of the Pastos Grandes hydrological basin. The project is in the early stages of exploration for lithium brine, with the Almafuerite property immediately to the south of properties that have been explored by the Canadian company Millennial Lithium and Lithica Resources, a subsidiary of Argentine company PlusPetrol S.A.

Initial exploration in the Pastos Grandes basin was undertaken by the company Eramet, who subsequently concentrated their exploration efforts in the south of the Centenario salar, further to the west and south. Since approximately 2016 more detailed exploration has occurred in the north of the Pastos Grandes salar and the adjacent Pozuelos salar, with drilling to ~600 m depth by Millennial Lithium and Lithium LSC (now PlusPetrol). This exploration has defined significant resources of lithium and these projects have completed feasibility studies and are at the financing and engineering stage.

TEM geophysics was previously undertaken across the SDLP properties. This confirms that a highly conductive target, probably representing brine, is present below an interpreted sequence of dry sediments and or fresh to brackish water. This unit is present on most of the properties, becoming progressively deeper with increasing distance from the salar.

Drilling has confirmed the TEM geophysics on the Almafuerite project, confirming the Pastos Grandes basin is a deep fault-controlled basin, hosting a thick sequence of unconsolidated sediments. Three holes were previously drilled in the Almafuerite property, with the deepest 653 m, intersecting salt, gravels and finer clastic sediments.

Observations from the drill holes indicate the Pastos Grandes Basin has coarser sediments deposited on the western side, with a transition to finer grained sediments and evaporites towards the eastern side of the salar. In the east sediments are predominantly clays and halite with variable porosity, with sands underlying this upper sequence of clay and halite. The salt lake is bounded by steeply dipping faults, which are believed to be near vertical.

Porosity information was provided from down hole geophysical logging (including bore hole magnetic resonance data), observations of drill cuttings and information from nearby properties. Drainable porosities are interpreted to be approximately 10% in the west of Almafuerite, decreasing to the east.

The evaluations conducted to date show there is also significant potential for lithium hosted within brine saturated fluvial sediments in the undrilled SDLP properties, with brine interpreted to underlie four of the properties that have not been drilled, based on TEM and the results of drilling at Almafuerite.

An initial mineral resource consisting of 560,000 tonnes Inferred lithium carbonate was defined on the Almafuerite property. The resource estimate utilised ordinary kriging for estimation of the lithium and other element concentrations. The porosity model was developed using geological logs and inverse distance squared estimation of natural gamma log data from holes, which was used to constrain the distribution of an upper halite unit and a lower clastic sediment unit. The halite unit thickens to the east across the Almafuerite property and a hard boundary for porosity data was applied at the contact.

Assay values were treated as point data and were not composited prior to estimation. There is a strong correlation between lithium, potassium and magnesium brine assays and a reasonable correlation of these elements with boron grades.

Publicly available geological information from adjacent properties was used to better constrain the geological model. Modelling utilised drill collars and SRTM elevation data. The block model extends to the base of the drill holes. However, it is recognised that the basin continues below this depth and could possibly be hundreds of metres deeper.

The block model was developed with dimensions of 500x500x20 m (E, N, RL respectively). The plan dimensions were chosen as they are around a third of the drill hole spacing and the shorter vertical dimension was chosen to reflect downhole data spacing. The search criteria used for the brine assay ordinary kriging estimates consisted of 2,000, 4,000 and 7,000 m and 100, 100 and 300 in the horizontal and vertical respectively between the first and third estimation passes.

Volume Sediments (m3)	Specific Yield Porosity	Volume Brine (m3)	Brine litres	Li (mg/l)	K (mg/l)	Mg (mg/l)	B (mg/l)	grams lithium	Tonnes Li
3,735,000,000	6.25%	230,000,000	230,000,000,000	460	3,894	2,490	619	1.058E+11	106,000

SDLP project lithium resource

Tonnes Li	Tonnes LCE
106,000	560,000

SDLP project lithium carbonate equivalent (LCE) resource

Of the properties additional to Almafuerite five are considered to have reasonable potential to host lithium resources, based on the TEM survey conducted across the properties. These properties are Graciela, Fortuna, Patovica I, Barreal II, and la Relojera.

It is recommended to drill additional holes using core drilling and rotary methods to improve the resource classification in Almafuerite to Measured and Indicated and define resources in other properties where geophysics indicates brine is present. This would require at least four additional holes at SDLP to define Measured and Indicated resources.

Future drilling should involve use of comprehensive down hole geophysical logging equipment to collect a suite of information, in particular including magnetic resonance porosity and permeability measurements, and depth specific packer sampling. Observation wells should also be installed at pumping well sites to collect additional information on aquifer storage.

Once the project has established additional resources a weather station should be installed on site, along with evaporation pans. Environmental monitoring should also be commenced to establish environmental conditions across the four seasons. Once additional resources are defined the water balance for the project area should be established, and a calibrated groundwater model should be developed for the project, to determine reserves and to develop a production schedule to support a mining project.

In parallel with these activities evaporation and process test work should be undertaken on the project brine, to allow development of an appropriate process to support project development.

Brine chemistry is relatively consistent in the drill holes and across the Pastos Grandes Basin, with a moderate average Mg/Li ratio of 5 to 5.5 and relatively low sulphate content, which is believed to be amenable to conventional processing, given the results on adjacent projects.

It is estimated that drilling, pumping tests, evaporation test work and initial development of an appropriate lithium extraction process will require a budget in the order of US\$ 5 million.

Currency referred to in this report is in US\$ (United States Dollars), with the exception of where it is denominated as Ar\$ (Argentine Pesos).

2 Introduction

2.1 Background to the Report

The Sal de la Puna (SDLP) Project is located in the south and east of the Pastos Grandes salar in Salta province, Argentina, within the Puna Plateau, between the Eastern and Western Cordillera of the Central Andes. The Project consists of nine properties. When the term “Sal de la Puna Project or SDLP” is used in this report, it refers to these nine properties, with the focus of work by the previous owner Centaur Resources Ltd (Australia) on the southernmost of the properties - Almafuerte. The project consists of early-stage exploration properties and an Inferred resource in Almafuerte.

Arena Minerals contracted QP’s Murray Brooker (Hydrominex Geoscience) and Pablo Gomez (Tuareg Geological Services) to prepare this report to document the potential of the SDLP Project for the development of a lithium brine project. This report details the exploration that has been undertaken to date on the properties and the development of the initial resource on the project. A review of the available information from adjacent properties was also undertaken and supports the potential to develop a project producing lithium on the properties.

This report has been prepared in conformance with the requirements of National Instrument 43-101 Standards of Disclosure for Mineral Projects and the associated Companion Policy 43-101CP and Form 43-101F1 of the Canadian Securities Administrators and the associated Best Practice Guidelines for Industrial Minerals and Mineral Processing as issued by the Canadian Institute of Mining and Metallurgy.

The Report also includes technical judgment of appropriate additional technical parameters to accommodate certain specific characteristics of minerals hosted in liquid brine as outlined in Best Practice Guidelines for Resource and Reserve Estimation for Lithium Brines under the CIM and the JORC Committee and as discussed by Houston (Houston et al, 2011).

2.2 Experience of the QP

This report was prepared by Mr Murray Brooker of Hydrominex Geoscience. Mr Brooker is a member of the Australian Institute of Geoscientists (AIG), a Registered Professional Geoscientist in Australia (RPGeo) and a member of the International Association of Hydrogeologists (IAH). Mr Brooker is an independent consultant to the lithium industry and a Qualified Person (QP) as defined by NI43-101 criteria.

Mr Brooker has worked extensively on lithium and potash salt lakes since the beginning of 2010, working on projects in Argentina, Chile, Australia and China. His roles have included acting as a consultant for a major lithium producer, providing advice on wellfield development, undertaking and managing drilling projects, installing exploration and production wells for lithium extraction, undertaking geological modelling and supervising the development of groundwater models and the definition of lithium resources and reserves. Mr Brooker is familiar with the project area, but has not visited the site as part of the preparation of this report, due to Covid travel restrictions.

Mr Pablo Gomez, Principal Hydrogeologist of Tuareg Geological Services. Mr Gomez is a member of the Australian Institute of Geoscientists (AIG), a practicing hydrogeologist with extensive experience exploring lithium salt lakes. Mr Gomez is a professor at the University of Salta in Argentina and has worked on multiple advanced lithium brine projects. Mr Gomez acted as a consultant to Centaur Resources Ltd (Australia), oversaw drilling activities and is independent of Arena Minerals.

Mr Gomez' roles have ranged from direct sampling and drilling supervision of exploration, conducting and analysing pumping tests, to supervising resource estimation. Mr Gomez is a Qualified Person (QP) as defined by NI43-101 criteria. Mr Gomez visited the site multiple times when drilling activities were undertaken.

2.3 Sources of Information

In addition to work conducted by previous owner Centaur Resources Ltd (Australia) details of exploration conducted on the surrounding properties is available from reports released by Canadian companies Millennial Lithium and Lithium LSC (now owned by Argentine company PlusPetrol), covering the northern and central part of the Pastos Grandes salar basin. The geology in these areas appears very similar to that encountered by the company in drilling three holes in the south of the salar, suggesting good geological continuity. Reports include:

- Phase III Measured, Indicated and Inferred Lithium and Potassium Resource Estimate Pastos Grandes Project Salta Province, Argentina, M. Rosko, Montgomery Associates, May 31, 2019
- Preliminary Economic Assessment of the Pastos Grandes Project, Salta Province, Argentina, Worley Parsons and Montgomery Associates, 23 February, 2018
- Technical Report on The Ongoing Exploration Activities Pastos Grandes Project, Salta Province, Argentina, M. Rosko, June 22, 2017
- Preliminary Economic Assessment (PEA) - Pozuelos - Pastos Grandes Project NI 43-101 Technical Report Salta, Argentina; GHD and D Haines. January 2019.

Additional more general information has been obtained from public data sources such as maps produced by the Argentine Geological Survey (Servicio Geológico Minero Argentino [SEGEMAR]), satellite imagery from sources such as Google Earth, and published scientific papers in geological journals by Argentine and international scientists.

2.4 Specific Characteristics of Lithium Brine Projects

There are essential differences between brine extraction and hard rock lithium, base or precious metal mining. Brine is a fluid hosted in an aquifer and thus has the ability to flow and mix with adjacent fluids once pumping of the brine commences. An initial in-situ resource estimate is based on knowledge of the geometry of the aquifer, and the variations in porosity and brine grade within the aquifer.

Brine deposits are exploited by pumping the brine to the surface and extracting the lithium in a specialist production plant, generally following solar evaporation of the brine in large evaporation ponds. In order to assess the recoverable reserve, further information on the permeability and flow regime in the aquifer and the surrounding area is necessary to be able to predict how the lithium contained in brine will change over the project life. These considerations are examined more fully in Houston et. al., (2011) and the CIM and JORC reporting code brine reporting guidelines and the reader is referred to these key publications for further explanation of the details of brine deposits.

Hydrogeology is a specialist discipline which involves the use of a number of specialized terms which are used frequently throughout this document. The reader is referred to the glossary in the following section for a definition of terms.

2.5 Units and Abbreviations

Metric measurement units are used in this report unless otherwise noted.

SDLP Project: Sal de la Puna Project

PP-0x-1y: Pastos Grande SDLP Drill Hole, with x as hole number and y as year

NI 43-101: Canadian National Instrument 43-101 report

NaCl: Halite

LCE: Li_2CO_3 or Lithium carbonate equivalent

Li: Lithium

CO_3 : Carbonate

m^2 : Square m unit of area

ha: Hectare = $10,000 \text{ m}^2 = 0.01 \text{ km}^2$

km^2 : Square kilometre = $1,000,000 \text{ m}^2$

L: Litre unit of volume

m^3 : Cubic meter = 1,000 L

mg: Milligram unit of mass

g: Gram = 1000 mg

kg: kilogram = 1,000 g

T: Tonne = 1,000 kg

KT: Kilotonne = 1,000 T

MT: Megatonne = 1,000,000 T

mg/L: Milligram per litre unit of concentration

g/cm^3 : Grams per cubic centimetre = 1,000,000 mg/L

g/L: Grams per litre = 1000 mg/L

ppm: Parts per million = mg/L

wt%: Weight percent = 10,000 ppm

yr: year unit of time

Ma: Megaannum or million years ago

mm/d: Millimetres per day rate of rainfall

mm/yr: Millimetres per year rate of rainfall

mm/yr: Millimetres per year rate of exhumation and sedimentation

m/kyr: Metres per thousand years = 1,000 mm/yr

m/Myr: Meters per million years = 1,000 m/kyr

°C: Degrees Celsius unit of temperature

Sy: Specific yield or Drainable Porosity unit of porosity

Ωm: Ohm-metre (ohm) unit of resistivity

\$: United States dollar unit of currency

2.6 Units and Currency

Units used in the report are metric units and the currency the US dollar, unless otherwise mentioned.

3 Reliance on Other Experts

The preparation of a technical report of this nature requires multiple technical disciplines; the authors has relied on other experts in items related to the legal status of mining properties, environmental affairs and background maps and topography.

Legal – For the purpose of this report, the author has relied on ownership information provided by Arena Minerals. This includes a report by independent lawyer, Mr Victor Figueroa Patron on behalf of Vázquez & Meroni lawyers. The report is dated April 6th, 2021 and includes information regarding the legal status of the SDLP properties, the area of the properties, the investment plans and payment of the annual canon fee. This document applies to information in Section 4 and related summaries in its entirety. The independent QP's have not investigated title or mineral rights of the Project and express no legal opinion as to the ownership status of the Properties.

Environmental – The independent QP's have not investigated the environmental status of the properties and express no legal opinion as to the environmental status of the Properties. No mining is known to have occurred on the properties, which are at an early stage of exploration and have been the subject of limited exploration activities.

Topography - The authors also rely on public topographic information obtained from publicly available data.

Technical – the authors have relied on information filed on SEDAR by Millennial Lithium and Lithium LSC relating to geological information on the adjacent properties referred to in sections 7, 8 and 23. This information, such as drilling logs and seismic and other geophysical data has not been verified by the authors but it would appear reasonable to extend this information into the immediately adjacent SDLP properties, where geological continuity is likely to exist. The authors note that mineralisation in the Millennial properties may not be comparable to that in the SDLP properties.

4 Property Location and Description

4.1 Location

The SDLP Projects is located in the Puna region of Salta Province in north-western Argentina. The project is approximately 165 km west of the city of Salta, the provincial capital, and 180 km east of the Chilean border (Figure 4.1).

In the SDLP project the key Almafuerte property is located 24 km south of the village of Santa Rosa de los Pastos Grandes, 70 km southwest of the town of San Antonio de los Cobres, and ~240 km west-northwest of the provincial capital Salta. The central point of the Almafuerte property in the south of the project area has a latitude of -24.642° and a longitude -66.711°. The average altitude of the Almafuerte property is approximately 3,780 masl, while the ground covered by the group of nine properties range from an elevation of ~3,780 to ~4,000 masl.

The nine SDLP properties totalling 10,592 ha are located in the Los Andes Department of Salta Province, north-western Argentina, on the eastern margin of the Puna region. They are located in the south and east of the Pastos Grandes salar basin. This lies immediately south of the properties where Millennial Lithium Corp and PlusPetrol (formerly Lithium LSC) have defined resources.

4.2 The Pastos Grandes Salar

Many of the Puna salar basins contain lithium mineralisation in brines present in the salar sediments, although the lithium shows a range of concentrations, with only some salars hosting economic brine mineralisation. In the immediate vicinity of the SDLP Project there are two projects which have defined lithium resources and which are at the feasibility study, engineering and financing stage. These include:

- Millennial Lithium, who have defined a resource and released a feasibility study on their Pastos Grandes project, which is located immediately north of the SDLP Project.
- PlusPetrol (Formerly Lithium LSC) who defined a resource and released a Preliminary Economic Assessment based on properties in the Pozuelos salar, located 20 km west of the SDLP project, and also in the northern part of the Pastos Grandes salar.

4.3 Argentina licensing system

Two tenement types exist in the Argentine mining regulations, Cateos and Minas. Cateos (Exploration Permits) are licenses that allow the holder to explore the tenement for a period of time that is proportional to its size. An Exploration Permit of 1 unit (500 hectares) is granted for a period of 150 days. For each additional unit (500 hectares) the period is extended by 50 days. The maximum allowed permit size is 20 units (10,000 hectares) and which is granted for a period of 1,100 days. The period begins 30 days after granting of the permit. A relinquishment must be made after the first 300 days, and a second one after 700 days. The applicant should pay a canon fee of \$1,600 Argentine pesos per unit (500 hectares) and submit an exploration work plan and environmental impact assessment.

Minas (Mining/exploitation Permits) are licenses which allow the holder to exploit the property (tenement) subject to regulatory environmental approval. Minas are of unlimited duration, providing the property holder meets its obligations under the Mining Code. The

properties held by Arena Minerals are all minas. Requirements to maintain licences in good standing include:

- Paying the annual rent (canon) payments;
- Completing a survey of the property boundaries;
- Submitting a mining investment plan; and
- Meeting the minimum investment commitment.

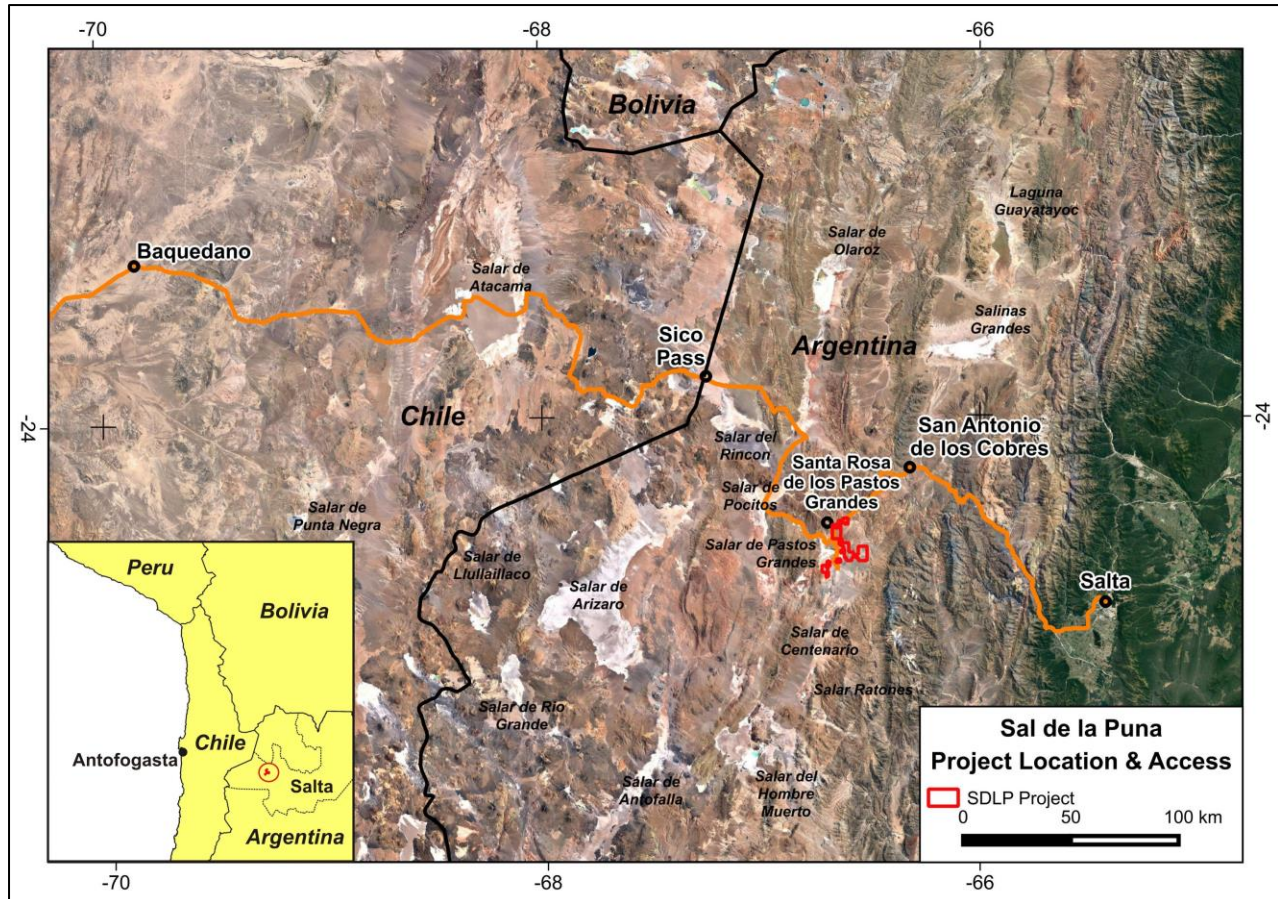


Figure 4.1 SDLP Project location

Additional details related to the properties are as follows:

- According to information provided in the applications for mining rights, all of the Project properties are located on Fiscal Lands. Fiscal Lands are state-owned lands, and allow for access for exploration and mining companies.
- All claims within a given property must be surveyed, and the maximum claim area is 100 ha.
- Investment Plans, including detailed expenditures, must be filed with the granting authority, which is the Salta province Department of Mines. The expenditure commitment detailed in the Investment Plans must be met within five years of filing the application for the properties. Twenty percent of the aggregated forecasted investments shall be incurred in each of the 1st and 2nd year of the plan.
- The Annual Mining Fee must be paid in advance, in two equal instalments due on December 31st and June 30th.

- The total required fees and expenditures are shown in Argentine pesos. The exchange rate at the close of business Monday 29 September, 2021 at 105 (seller) = US\$1 dollar, as provided by the Argentine National Bank (Banco de la Nación Argentina), as published on its website (<http://www.bna.com.ar/>).
- An Environmental Impact Report (IIA) must be submitted and approved before exploration work commences and must be updated every 2 years.
- Investment Plans must be filed for properties.

4.4 Coordinate system

The Arena Minerals properties are shown in Figure 4.2. The property co-ordinates (and all other co-ordinates used in this report) are in the Argentine coordinate system, which uses the Gauss Krueger Transverse Mercator projection and the Argentine Posgar 94 datum. The properties are located in Argentine GK Zone 3.

4.5 Property status

Centaur Resources PG SAS holds 9 mining licences in the southern and eastern part of the Pastos Grandes Basin. These are at various stages of granting, as not all the properties have had the official surveying completed and accepted. The mining licences are summarised in Table 4.1 below, with the property names, file numbers and details of the approvals related to each of the licences.

All information regarding the legal status of the SDLP properties was provided by Mr Victor Figueroa Patron, a lawyer in the province of Salta, for Vázquez & Meroni lawyers. The status of properties has not been independently verified by the QP's, who take no responsibility for the legal status of the properties.

The nine properties are owned by Centaur Resources PG SAS (the local Argentine company purchased by Arena Minerals, that hold the properties in Argentina).

Mine Name	File #	Title Owner	Title % Interest	Title Acquisition	Registration	Tenure Type	Status of Concession	Proceedings Surveyed	Minerals	Area Hectares	Claims	EIS Expiry	Royalty
Fortuna II	20,120	Victor F.Marmol. Transferred to Centaur Resources PG SAS (pending registration).	100%	Purchase	Registered	Exploration Concession	Yes	Filed but not approved yet	Borates, Lithium	321 ha 3321 m2	4	New EIR filed on 13/11/20. Not approved yet	No
La Relojera	22,820	Victor F.Marmol. Transferred to Centaur Resources PG SAS (pending registration).	100%	Purchase	Registered	Exploration Concession	Yes	Filed but not approved yet	Borates	1997 ha 7753m2	20	New EIR filed on 13/11/20. Not approved yet	No
Barreal 01	22,878	Victor F.Marmol. Transferred to Centaur Resources PG SAS (pending registration).	100%	Purchase	Registered	Exploration Concession	Yes	No	Lithium and Potassium	2683 ha 879m2	27	New EIR filed on 13/11/20. Not approved yet	No
Barreal 02	22,879	Victor F.Marmol. Transferred to Centaur Resources PG SAS (pending registration).	100%	Purchase	Registered	Exploration Concession	Yes	No	Lithium and Potassium	413 ha 3379m2	5	New EIR filed on 13/11/20. Not approved yet	No
Barreal 03	22,880	Victor F.Marmol. Transferred to Centaur Resources PG SAS (pending registration).	100%	Purchase	Registered	Exploration Concession	Yes	Filed but not approved yet	Lithium and Potassium	1456 ha 2943m2	15	New EIR filed on 13/11/20. Not approved yet	No
Almafuerte	18,792	Centaur Resources PG SAS	100%	Purchase	Registered	Exploration Concession	Yes	Yes	Lithium and Potassium	1000 ha	10	New EIR filed on 13/11/20. Not approved yet	No
Graciela	6,189	Centaur Resources PG SAS	100%	Purchase	Registered	Exploration Concession	Yes	Yes	Borates	299 ha 900 m2	3	New EIR filed on 13/11/20. Not approved yet	No
Patovica	20,902	Centaur Resources PG SAS	100%	Purchase	Registered	Exploration Concession	Yes	Yes	Borates, Lithium	256 ha 9300 m2	3	New EIR filed on 13/11/20. Not approved yet	No
Roberta	23,098	Victor F.Marmol. Transferred to Centaur Resources PG SAS (pending registration).	100%	Purchase	Registered	Exploration Concession	Yes	No	Borates	2523 ha 1944m2	26	New EIR filed on 13/11/20. Not approved yet	No

Table 4.1 SDLP Project property details

N°	Mine	File	Investment Plan			Mining Canon	
			Submitted	Accepted	US\$ Investment Required	US\$ Amount	Payment
1	Fortuna II	20,120	3/07/2012	Yes	Expenditure met	65	Up to 1° Semester 2021
2	La Relojera	22,820	27/05/2019	Yes	205,076	341	Up to 1° Semester 2021
3	Barreal 01	22,878	21/08/2020	No	263,959	439	To pay as from 1° Semester 2022
4	Barreal 02	22,879	31/08/2018	Yes	48,731	81	Up to 1° Semester 2021
5	Barreal 03	22,880	31/08/2018	Yes	146,193	244	Up to 1° Semester 2021
6	Almafuerte	18,792	N/A	Yes	Expenditure met	162	Up to 1° Semester 2021
7	Graciela	6,189	N/A	Yes	Expenditure met	49	Up to 1° Semester 2021
8	Patovica 1	20,902	N/A	Yes	Expenditure met	49	Up to 1° Semester 2021
9	Roberta	23,098	18/07/2019	Yes	294,416	422	To pay as from 2° Semester 2021

Table 4.2 Summary of the required mining fees and investment requirements for the nine SDLP properties. This is based on the US\$ exchange rate stated in section 4.3 above

4.6 Environmental Liabilities

As the properties are not known to have been explored or mined historically, prior to rent drilling of the three holes on the property, it is considered unlikely there are environmental liabilities. Due diligence by Arena shows there is no investigation, claim or sanction against PG SAS and that no environmental liability was stated in these reports.

4.7 Permits

Environmental impact reports have been submitted to allow drilling and other activities on the properties. Environmental approvals for drilling are issued for a period of 2 years and can be renewed subsequent to the original approval. Centaur Resources PG SAS applied to renew the drilling approval on the property in November 2020 and Arena is currently waiting for confirmation of the approval of renewal. Approval was received to construct a mining road (huella minera) to access the Almafuerte property. Additional approvals are required for mining to begin, principally submission and approval of a comprehensive project EIA.

4.8 Royalties

There is a 3 percent mine mouth (boca de mina) royalty on the value of production to the provincial Salta government, considered the value of the brine after the deduction of the costs of extraction, processing and transportation.

There are no other royalties, back in rights or remaining payments or encumbrances on the Arena Minerals properties.

There is an export fee of 8% on the FOB price by a mining company, as regulated by Decree Nr. 785/20. This tax has been set up until December 31, 2021.

4.9 Other Significant Factors and Risks

Exploration for minerals is an activity with a high risk that the target mineral commodity will not be defined in sufficient quantity or quality to justify development of a mining project.

A number of general risk factors are associated with the SDLP Project. These risks include, but are not limited to:

- **Properties.** The risk that properties might not be fully granted due to administrative errors or failure to make the annual property payments.

- **Assays.** The risk that assay results are not representative of the fluid present in sediments within the properties, due to the small number of samples taken during drilling, despite consistent results between drill holes.
- **Geophysics.** Interpretation of the geology outside the Almafuerte property in the SDLP project is heavily reliant on TEM geophysics and passive seismic, for which multiple interpretations of the data are possible. Definition of the limits of the Pastos Grandes Basin depends on the TEM and passive seismic geophysics. Consequently, there is a risk that the actual geology and thickness of the sediments within the SDLP properties not subject to drilling is different to that interpreted from the geophysical data. This would result in differences in the volume of brine which could be contained in the other SDLP properties where drilling has not been undertaken yet.
- **Fluid sampling.** Brine sampling entails risks of contamination from drilling fluid. Although results suggest this is not the case depth specific brine samples can potentially be contaminated by drilling fluid.

More generally there are risks that:

- Environmental and community-related approvals for drilling and subsequent activities will not be received from the necessary authorities in a timely manner or at all.
- Necessary licences and permits will not be received from the necessary authorities in a timely manner on acceptable terms or at all.
- Changes in federal or provincial laws and their implementation, impacting activities on the properties.
- Unseasonal rainfall could occur, which could temporarily delay planned exploration.
- The company is unable to meet its obligations for expenditure and maintenance of property licences.
- Future changes in lithium price, which could affect the economics of lithium production in the event that sufficient lithium was defined in the project area that could potentially be produced economically.
- Economic and political conditions in Argentina could change, such that the country risk profile is different to that which is currently assessed by relevant experts

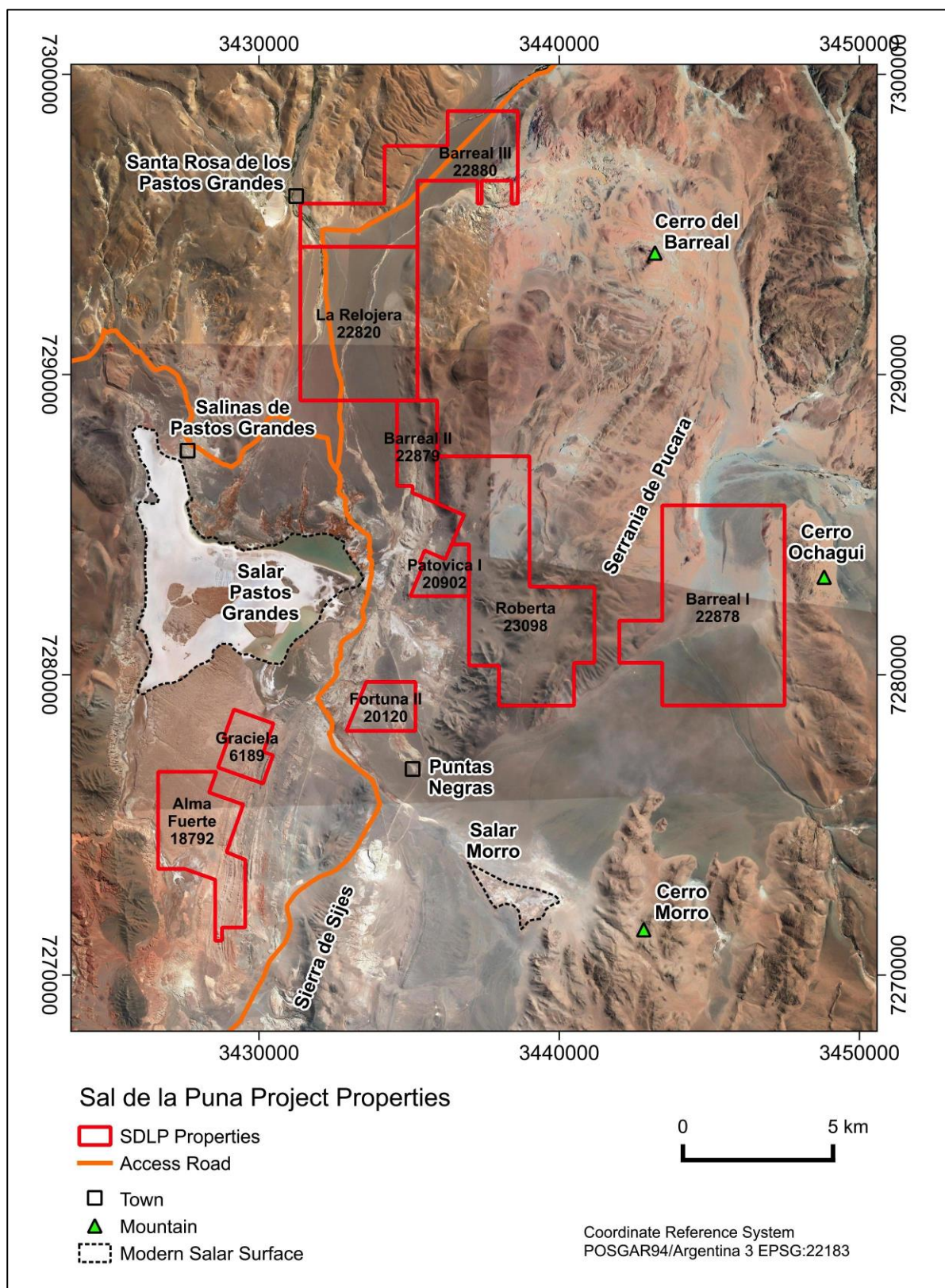


Figure 4.2 Location of the SDLP Project properties

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

The most straightforward route to access the project area is from the city of Salta, which has an international airport and a range of hotels and services. To drive from Salta, one follows mostly paved Route 51 ~170 km northwest from Salta to the town of San Antonio de los Cobres, and then ~ 15 km further to turnoff onto the gravel provincial highway Route 129, continuing southwest for approximately 45 km to the village of Santa Rosa de los Pastos Grandes (Figure 5.1). The properties are located to the south and east of the village and are accessed from existing local and mining roads. The southern SDLP property, Almafuerte, is located 24 km south of the village and to the west of the Borax Argentina mining operations.

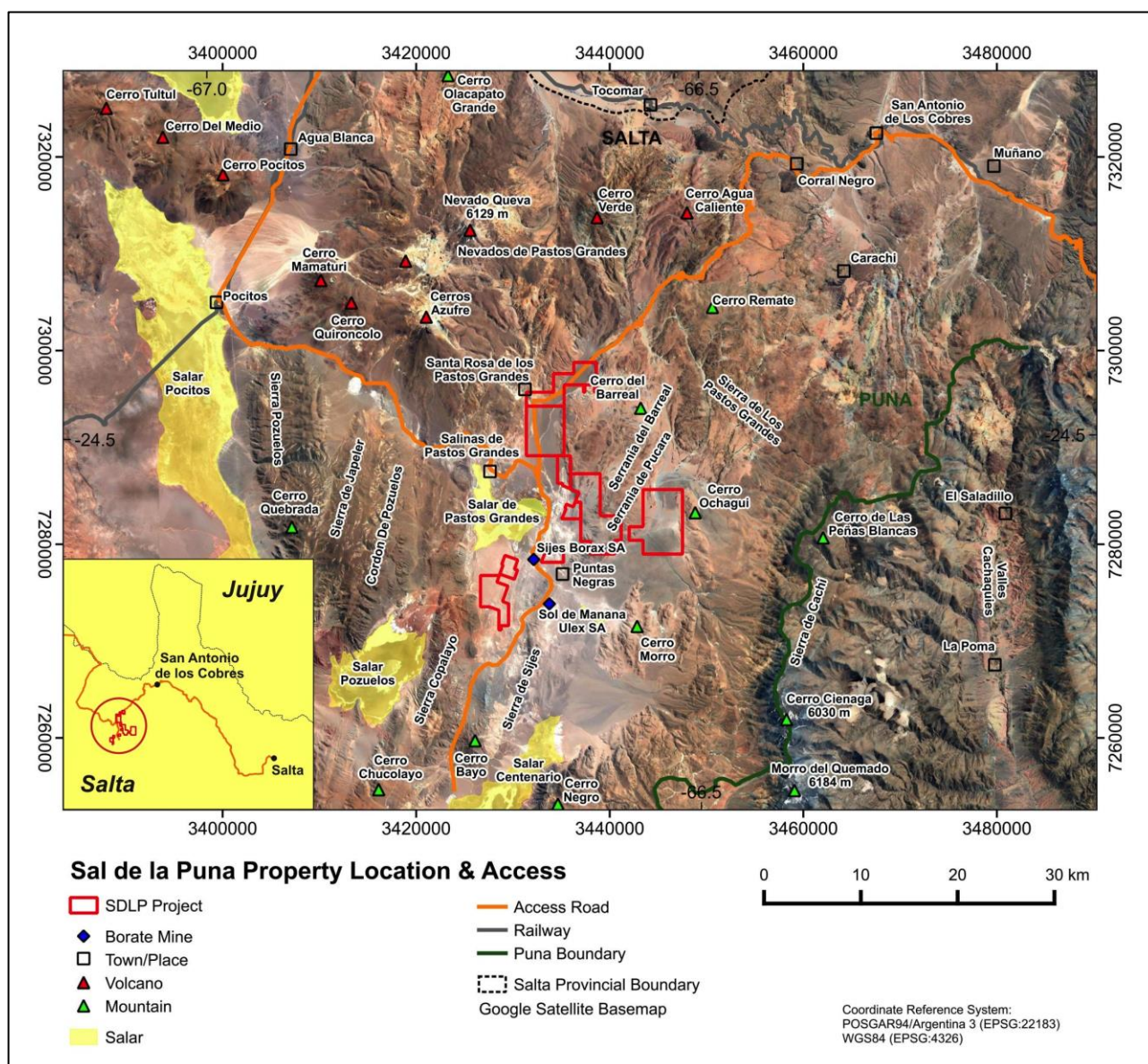


Figure 5.1 Location of the SDLP properties.

5.2 Physiography

The Pastos Grandes salar covers an area of approximately 36 km², consisting predominantly of flat sandy silty salt crust. Several remnants of outcropping sandy, silty, clayey sediments of the Blanca Lila Formation are preserved in the centre of the salar as “islands” that are topographically higher than the surrounding salt crust, with this unit deposited on the salar and now partially eroded. This unit is present through the Almafuerte and Graciela properties. The Blanca Lila unit is noted to be hydraulically connected to the surrounding salar (Millennial Lithium, 2018).

The physiography of the project area is illustrated in Figure 5.2. The general elevation of the salar surface is ~3,780 m asl, with the “islands” having a typical elevation 10 to 15 m above the salt crust. The Almafuerte and Graciela properties are located over the Blanca Lila formation and the Pozuelos Formation on the eastern boundary of the salar. The other properties are located further east of the salar and reach elevations of up to ~4000 m at the highest points off the salar in areas of recent gravel and alluvial fan sediments. Surrounding the salar are approximately north-south trending mountain ranges that have been raised by faults, interpreted to be inverse faults related to the development of the Puna plateau, forming the boundaries of the Pastos Grandes Basin, which has no drainage outlet

The Pastos Grandes salar basin has dimensions of approximately 40 km east-west and 30 km north-south and hosts a salar in the west of the basin. The salar has an approximately triangular form, between the outcrops of the Blanca Lila Formation and the surrounding mountain ranges. The SDLP project Almafuerte and Graciela properties are covered by the Blanca Lila formation lacustrine silty sediments and evaporites in contact with the older Pozuelos Formation. The other properties are covered by gravel and recent sediments that are off the current extent of the salar.

The salar basin is bounded by a chain of extinct volcanoes to the north that are up to 2300 m above the Pastos Grandes salar surface, the Sierra de Cachi and Cumbres de Luracatao of the Eastern Cordillera in the east that are up to 2200 m but more typically 1700 m above the salar surface, and the range including Cerro Chocoyayo and the Cordon de Pozuelos to the west that are approximately 600 m above the surfaces of the salar. The extinct volcano Nevado Quevar (elevation 6140 masl) is immediately northeast of the Pastos Grandes Salar, and is the highest mountain in the immediate area.

Soils in the Pastos Grandes area are poorly developed, have a high salt and very low organic content, a coarse texture and low fertility.

5.3 Climate

The SDLP Project is located in a severe climate with winds reaching 80 km/h, temperatures ranging between sub-zero and 14°C, extremely arid conditions, and intense solar radiation. These conditions lead to high evaporation rates, especially during summer, which can be used to concentrate naturally occurring brines found in the Puna region salars.

The “winter” months are considered to be from May to August and the warmer “summer” months are November to February. As no climate data are available for the salar data from other Puna locations are presented below to illustrate the likely range of climatic conditions at the SDLP Project. The climate allows for year-round operations, although climate effects the efficiency of activities in winter.

Precipitation – Rainfall in the area decreases markedly from east to west, with snow falling in the area occasionally or occasional summer storms. Information on average seasonal precipitation at different locations in the Puna region is shown in Figure 5.3. The two closest locations to the SDLP Project are Salar de Pocitos (approximately 35 km northwest) and

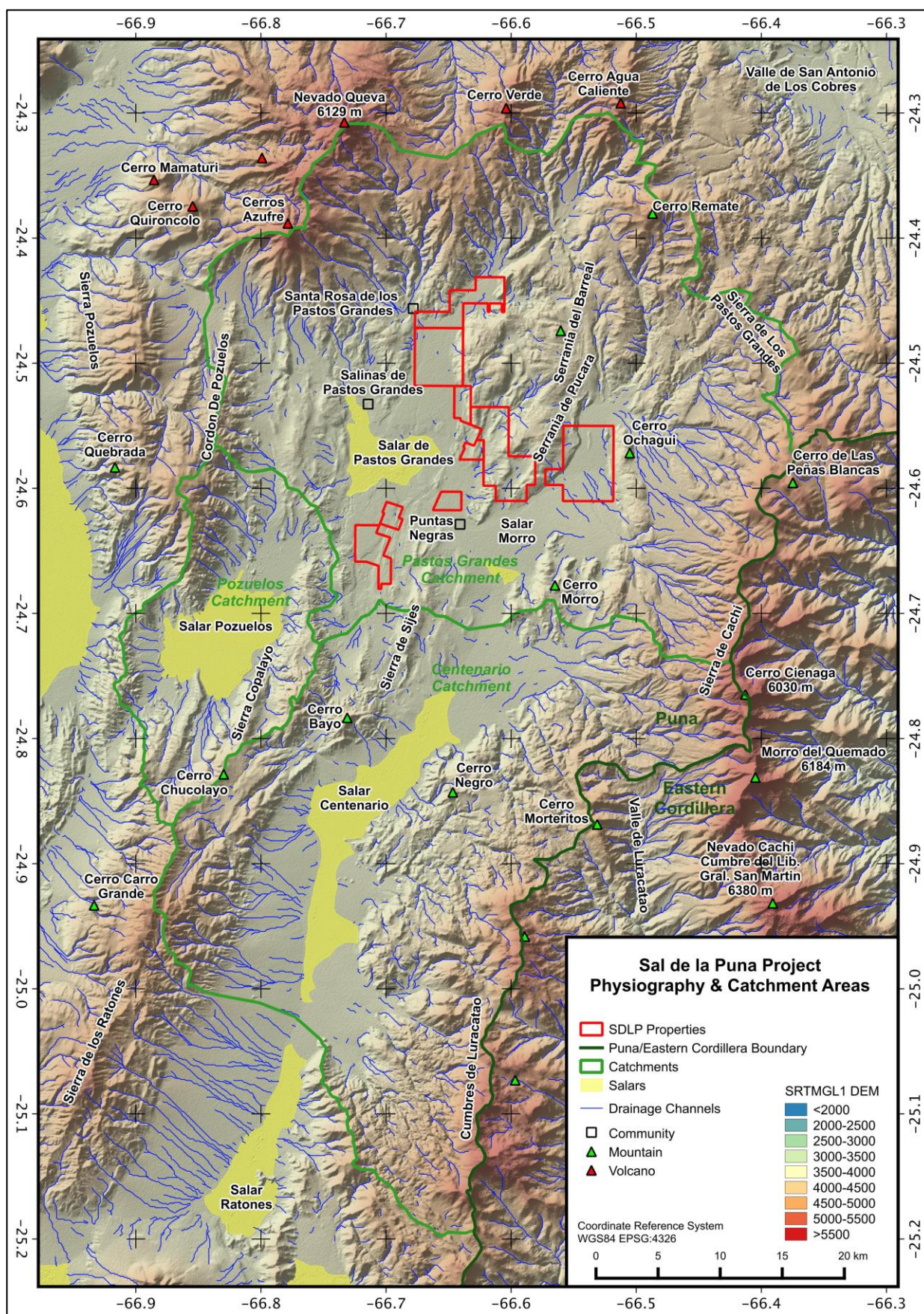


Figure 5.2 Physiography of the SDLP project area and project properties

Olacapato (60 km north). Figure 5.3 shows that precipitation is negligible from May to September and the maximum rainfall occurs in December, January and February.

The project area falls between the average 50 and 100 mm Isohyets of rainfall, based on government meteorological data. The project is located closer to the 50 mm Isohyet, with the rainfall varying between years that exceed this range of rainfall and years with significantly less precipitation.

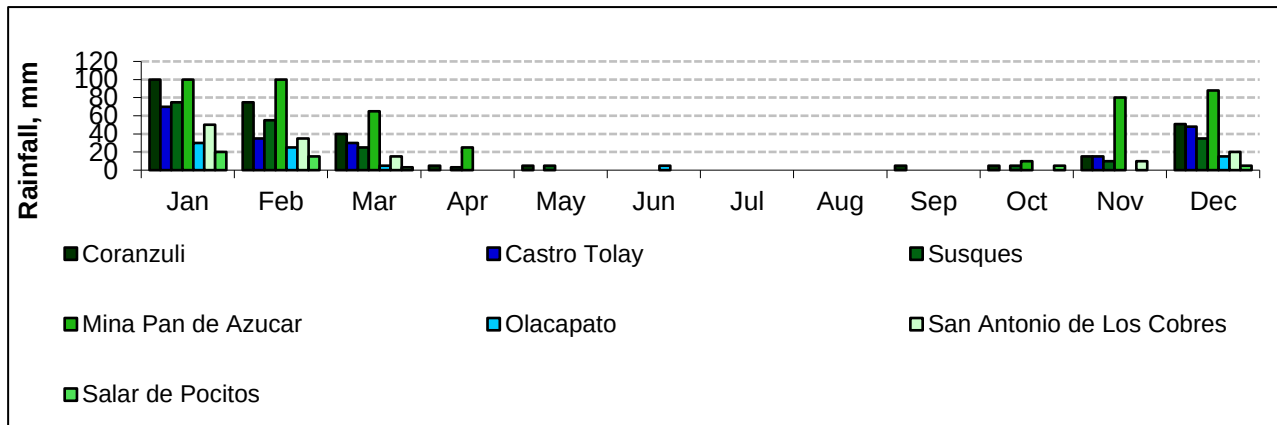


Figure 5.3 Average precipitation from Puna region locations (after King, 2016)

Wind – Measurements from a weather station in the Cauchari Salar (Figure 5.4), located approximately 100 km north of the SDLP Project illustrate wind conditions that are expected at the project location. Average winds are strongest from June to October, although maximum winds are more variable and strong winds occur in all months. Short term fluctuations reflect a typical daily increase in wind speed during the day and a decrease at night, although strong winds may persist after dark.

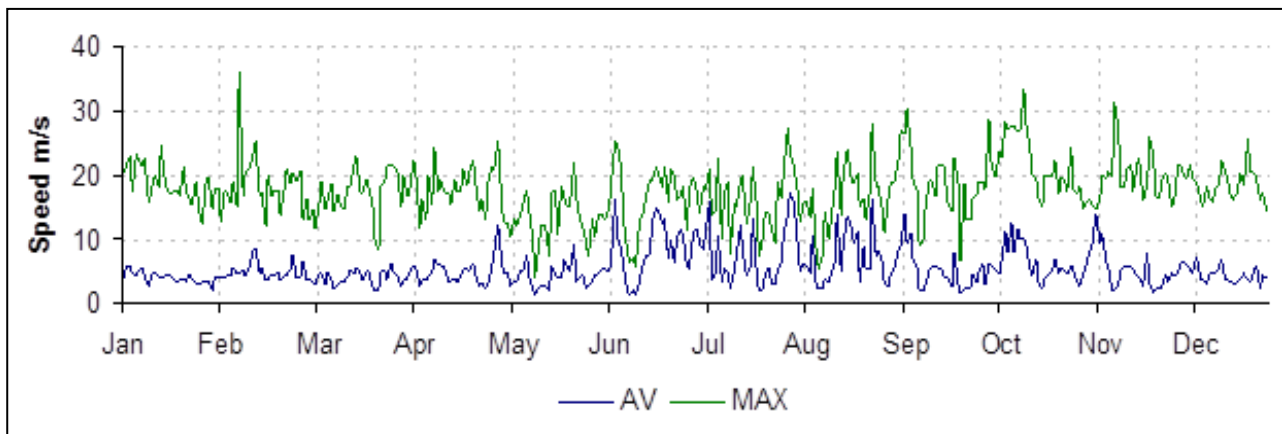


Figure 5.4 Wind monitoring results from the Vaisala Station in the Cauchari Salar (after King, 2016)

Temperature – General average seasonal temperature data in the Puna region is shown in Figure 5.5. As mentioned, the two closest locations to the SDLP Project are the Salar de Pocitos (approximately 35 km northwest) and the Olacapato (60 km north) weather stations. As shown in the figure, the coldest months are June and July, and the warmest time of the year is from November to February.

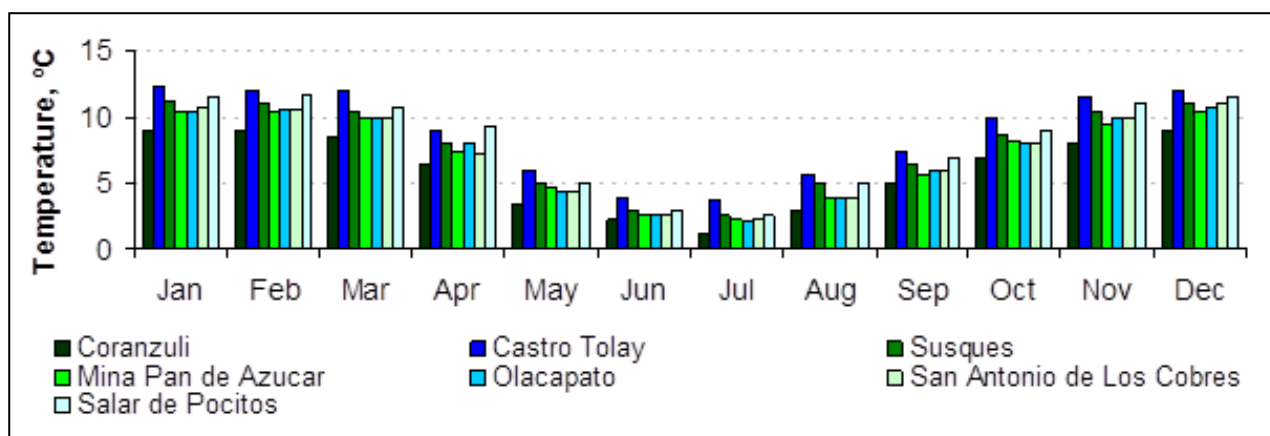


Figure 5.5 Average temperature from Puna locations (after King, 2016)

Evaporation – Salars in the Puna region have high potential evaporation rates, due to the combination of dry air, high winds, low precipitation, and high solar radiation. General conditions at the SDLP Project can be inferred using results from two nearby salars: The Diablillos salar is located 65 km south, and Cauchari Salar approximately 110 km to the north of the SDLP Project.

Using the estimation methods of Houston (2006), Larrondo et al. (2011) calculated a series of site-specific potential evaporation estimates for Diablillos which were presented in Reidel (2016), including the following:

A freshwater pan evaporation rate of 2004 mm/yr, with the maximum evaporation occurring in January (230 mm) and the minimum in July (105 mm).

Estimated evaporation of the Diablillos brine at 1304 mm/yr, with the maximum estimated as 150 mm in January with a minimum of 68 mm in July

At Diablillos it was estimated the amount of evaporation that would actually occur from a brine pond corresponds to a brine pan rate factor of 0.66 Reidel (2016) for a likely total annual evaporation of 859 mm/yr.

In drawing conclusions from a year of pan measurements at two different locations in the Cauchari Salar, LAC (2017) reported initial average evaporation rate of 2554 mm/yr from freshwater pans and 1273 mm/yr from brine pans, corresponding to average daily evaporation of 7 and 3.5 mm daily respectively. More recent evaporation studies at this site have concluded that average evaporation of freshwater occurs at 4.48 mm/day and of brine 2.52 mm/day for expected evaporation from brine ponds of 920 mm/yr.

The rates noted above are potential rates of evaporation from brine ponds, in that they would only occur if water is continuously available for evaporation in a pond. In a natural salar setting, actual evaporation rates are highly variable, as a function of water availability. Rates are highest where water occurs on the ground surface. Evaporation of water below the ground surface from the water table is lower and decreases with an increase in the water table depth, becoming negligible when the water is deeper than approximately two metres below the surface.

5.4 Local Resources and Infrastructure

There is currently no camp at the project site, with personnel for the project accommodated at the town of Pocitos, to the northwest of the project. Basic first aid, accommodation and food can be obtained at the village of Sta Rosa de Pastos Grande (population ~128) approximately 20 km north of the project area. The town of Pocitos has a similarly small population and the largest town in the area is San Antonio de los Cobres, with a population

of approximately 5,500, this regional centre, approximately 1.5 hours from the project, offers more extensive but basic services in the form of accommodation, restaurants, repairs, a medical clinic and communications.

The town of Pocitos is the end point of an important Gasoducto de Puna pipeline bringing gas to mining projects in the Puna region. The town also has a station on the Antofagasta (Chile) -Salta (Argentina) Railway line, which is a potential transportation route for materials and end product from the project. A 375 KV electrical transmission line running from Argentina to Chile is located approximately 50 km north of Pastos Grandes, close to where a solar energy project is being developed in Jujuy province to the north. The availability of gas from the pipeline has not been confirmed but between this and the solar project they offer power opportunities for a future production project.

There is believed to be water available in the area surrounding the project for a future mining project. Mining personnel for a mining project could be sourced from the surrounding towns of San Antonio, Pastos Grandes and from the city of Salta and adjoining provinces. Brine evaporation ponds and a processing site could be constructed in surrounding properties.

5.5 Flora and Fauna

Flora

Due to the extreme weather conditions in the region, the predominant vegetation is of the high-altitude xerophytic type adapted to high levels of solar radiation, winds and severe cold. The vegetation is dominated by woody herbs of low height from 0.40 - 1.5 m, grasses, and cushion plants. With high salinity on its surface, the nucleus of the salar is devoid of vegetation.

To date no specific vegetation survey has been completed out in the Project area, although this is being carried out as part of the Project's environmental assessment.

Fauna

Fauna is adapted to the extreme living conditions of high aridity, intense sunlight and very low nightly temperatures. Many animals are nocturnal or have acquired certain physiological features and behaviours that allow them to survive in the harsh environment. The most significant mammals in the region are the vicuña (*Vicugna Vicugna*) and llama (*Lama Glama* - which are domesticated) cameloid species, foxes (*Dusicyon*, *Lycalopex*) are present and prey on small rodents such as the mole (*Oculito* or *Tuco-Tuco* - *Ctenomys Opimus*) and the Puna mouse (*Auliscomys Sublimis*).

Birds in the region include the Parina or Andean flamingo, living in moist and salty lagoons, and the Andean Goose, Guayata or Huallata (*Chloephaga Melanoptera*). The Nandu enano (*Rhea*) is also present. The Donkey (*donEquus Africanus Asinuskey*) is a common and feral species introduced to the general area.

6 History

All the SDLP properties are now fully owned by Arena Minerals, who acquired 100% of Centaur Resources PG SAS, which owns the 9 properties. Centaur Resources PG SAS acquired the properties outright by making option payments from 2018 to 2020. The properties were purchased from local individuals.

The Pastos Grande salar has historically been exploited by the local population for the production of salt, with pits excavated in the salt lake surface and brine allowed to crystallise in the pits, which are harvested for the sale of salt. A few of the properties were previously held for borate exploration, but were not explored for lithium brine.

With the recognition that salars in Northern Argentina contain lithium dissolved in brine Pastos Grandes was explored by the company Eramine, which conducted an exploration program in the central and northern parts of the salar in 2011 and 2012 (Millennial, 2019). This consisted of the following activities, although none were carried out in the SDLP properties.

- Surface geochemical sampling;
- Drilling as deep as 160 m, pumping tests and brine sampling in at least five locations (Millennial, 2019); and
- Geophysical surveys including seismic refraction, CSAMT and Vertical Electrical Soundings.

However, the properties now held by Arena Minerals are not thought to have been explored for lithium prior to the TEM geophysics carried out by the company in 2018, and before the drilling completed in the Almafuerte property in 2019/2020. There has been no prior resource or reserve defined on the properties and no historical production.

7 Geological Setting and Mineralisation

7.1 Geomorphology

The SDLP properties are located around the Pastos Grandes catchment in the south of the Salar and to the east and north east off the salar. The ground covered by the group of nine properties ranges from 3,780 to 4,000 masl and is shown in Figure 7.1

All of the properties lie within the Pastos Grandes drainage basin (Figure 5.2), with the Almafuerte property in the south and the Barreal III property along the river flowing from the north into the basin, which is the principal surface water inflow into the basin.

The Pastos Grandes basin has a catchment area of ~1,671 km² and the Salar de Pastos Grandes has a surface area of 30 km². The exposed salar is triangular shaped, with a north-south fault-bounding the western margin and another similar fault on the east side of the salt lake. The catchment is bounded by the Cerro Agua Caliente-Cerro Verde-Nevado Queva-Cerro Azufre chain of extinct volcanoes to the north, the Cordon de Pozuelos in the west, and the Sierra de los Pastos Grandes and Cordon de Incamayo in the east. The altitude of the salar is approximately 3,780 masl, and the maximum elevation of the catchment area is 6,140 masl, Nevado Quevar, which is the highest peak in the immediate area.

7.2 Regional Geology

The SDLP Project is located in the elevated Altiplano-Puna plateau of the Central Andes (Allmendinger et al., 1997). The Puna plateau of north-western Argentina comprises a series of dominantly NNW to NNE trending reverse fault-bounded ranges up to 5000-6000 m high, with intervening internally drained basins with an average elevation of 3700 m. The plateau is approximately 300 km wide at the latitude of the Project area and is bounded to the west by the Central Volcanic Zone magmatic arc of the Western Cordillera, and to the east by the reverse faulted Eastern Cordillera (Jordan et al., 1983). This elevated plateau is a continental hinterland basin that has developed behind the main magmatic arc since the late Oligocene approximately 28 Ma (B. Carrapa et al., 2005; DeCelles and Horton, 2003; Horton, 2012; Jordan et al., 1983).

Uplift and exhumation of the hinterland commenced in the late Oligocene when deformation was transferred from the west to the east towards the South American craton, compartmentalising the former foreland region of the arc into reverse fault-bounded ranges and intervening internally drained basins, and transferring foreland sedimentation further east to what is today the Eastern Cordillera (Bosio et al., 2010; Carrapa et al., 2005; Coutand et al., 2001, 2006; Gorustovich et al., 2011).

Timing of deformation and exhumation of each basement range in the hinterland appears to have been controlled by local structural or volcanic conditions (Alonso, 1992; Segerstrom and Turner, 1972; Vandervoort, 1993). Four main phases of deformation have been recognised: D1 28-25 Ma, D2 20-17 Ma, D3 13-9 Ma, and D4 5-2 Ma (Carrapa et al., 2005). Rapid uplift and exhumation of the hinterland since the mid Miocene may be related to mantle delamination (Allmendinger et al., 1997; DeCelles et al., 2015; Kay and Kay, 1993; Kay et al., 1994; Wang et al., 2015), with the plateau reaching up to 2500 m by 10 Ma, and 3500 m by 6 Ma (Garzione et al., 2008).

During the late Oligocene to middle Miocene continental red bed sediments approximately 1-6 km thick were deposited in the isolated, internal drained depocentres separated by mountain ranges within the hinterland, bounded in turn by the major watersheds of the Cordilleras to the west and east (Alonso, 1992; Boll and Hernández, 1986; B. Carrapa et al., 2005; Coutand et al., 2001; DeCelles et al., 2015; Gorustovich et al., 2011; Jordan and Alonso, 1987). Sedimentation in the basins consisted of alluvial fans formed from the uplifted ranges with progressively finer fluvial sedimentation and lacustrine sediments deposited towards the low energy centres of the basins.

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During the late Miocene to Pliocene most tectonic deformation was transferred further east to the subandean Santa Barbara thrust and fold belt (Echavarria et al., 2003; Jordán et al., 1983). However, uplift and exhumation related to mantle delamination continued during this time and another 1-5 km of red bed sediments have accumulated in the hinterland basins in the last 8 Myr (Alonso, 1992; Boll and Hernández, 1986; Coutand et al., 2001; DeCelles et al., 2015).

High evaporation together with reduced precipitation has led to the deposition of evaporites in many of the Puna basins since 15 Ma, with borate deposition occurring for the past 8 Myr (Alonso et al., 1991). Precipitation of salts and evaporites has occurred in the centre of basins where evaporation is the only means of water escaping from the hydrological system. Evaporite minerals including halite (NaCl), gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) and ulexite ($\text{B}_5\text{O}_9\text{CaNa} \cdot 8\text{H}_2\text{O}$) occur disseminated within clastic sequences in the salar basins and as discrete evaporite beds. In some mature salars, such as the Hombre Muerto salar, very thick halite sequences up to 900 m have also formed (Vinante and Alonso, 2006).

Several Miocene-Pliocene volcanic centres, known as the Altiplano-Puna Volcanic Complex (De Silva, 1989), cross the plateau along NW-SE crustal megafractures (Allmendinger et al., 1983, 1997; Chernicoff et al., 2002; Riller et al., 2001). It has been suggested that the Miocene-Pliocene volcanism, particularly tuffs and ignimbrites, are the source of lithium, potassium, and boron, which is released into the salar basins from hot springs leaching these elements from the volcanic sequences (Godfrey et al., 2013; Risacher and Fritz, 2009).

Large changes in moisture availability also occurred on ~100 ka (eccentricity) cycles, synchronous with global glacial cycles. This is most clearly observed in drill cores from Lake Titicaca that record advances of glaciers in the Eastern Cordillera of the Andes and positive water balance in the lake coincident with global glacial stages, whereas glacial retreat and major lake-level decline was coincident with global interglacial periods (Fritz et al., 2007). In contrast, the tropical Andes north of the equator were cold and dry, with low lake levels, during glacial stages and wet and warm in the interglacial stages (Torres et al., 2013). The global glacial stages apparently were also the wettest periods in the western Amazon (Cheng et al., 2013).

In their speleothem record, Cheng et al. (2013) found that the highest $\delta^{18}\text{O}$ values of the last 250 ka occurred during the mid-Holocene, implying that this was the interval of lowest precipitation over that period. In the Lake Titicaca drill core records, based on the abundance of saline diatom taxa and calcium carbonate, earlier interglacial periods were more saline than the Holocene and based on unconformities observed in seismic data (D'Agostino et al., 2002), lake levels were far lower during Marine Isotope Stage 5 than during the mid-Holocene. These low lake levels and highly elevated salinities are a result of negative water balance for a sustained period, requiring a combination of low precipitation and high evaporation, conditions that dropped lake-level below its outlet and caused the gradual build-up of dissolved solids (Cross et al., 2000; Fritz et al., 2007). The greater extremes of salinity and lake levels relative to the mid Holocene could reflect more extreme aridity, but more likely reflects longer-lasting aridity in the former period relative to the latter.

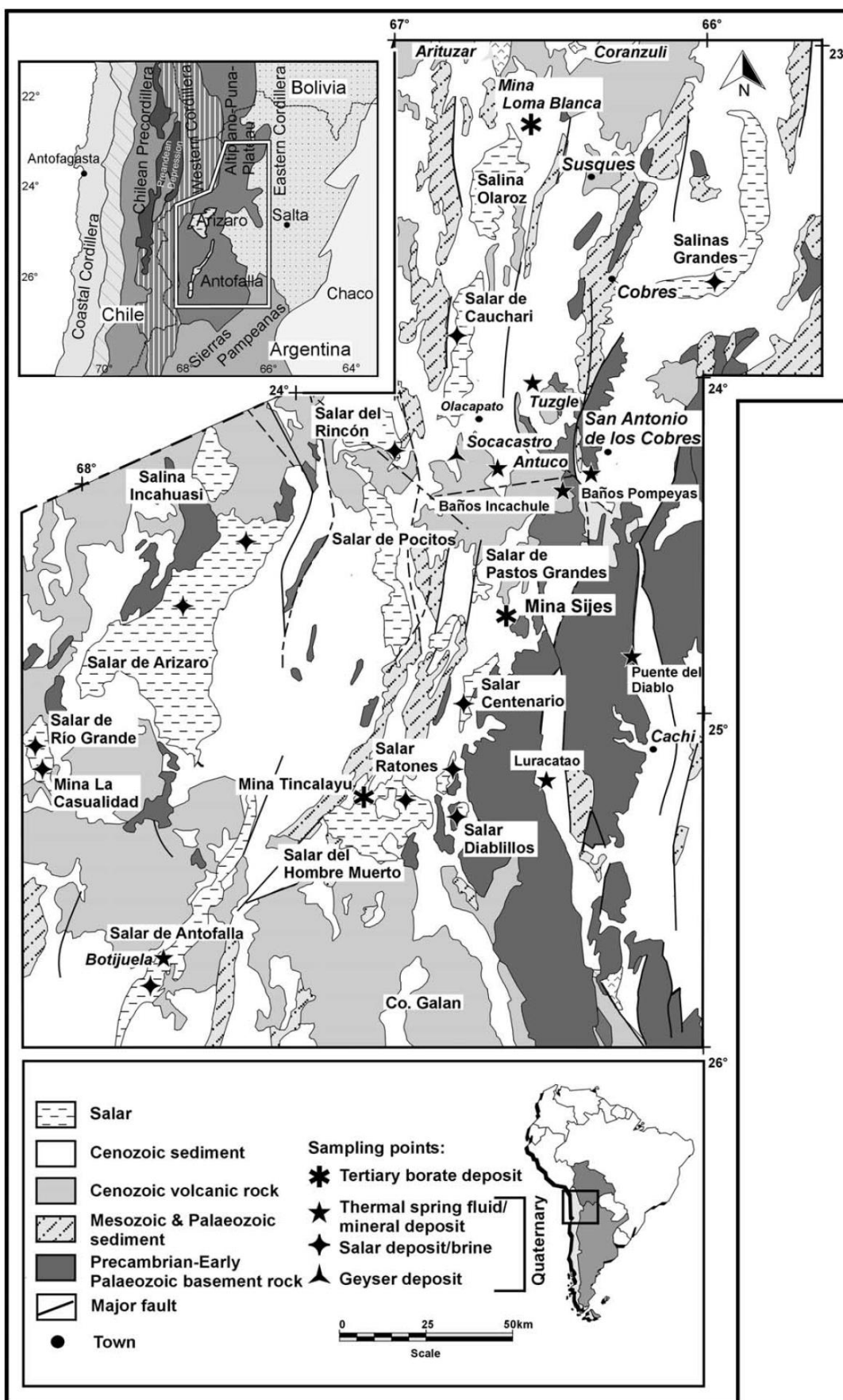


Figure 7.2 Simplified regional geology map (from Kasemann et al., 2004)

7.3 Structural Setting

The SDLP area is structurally complex (Figure 7.3), located at the juncture between a series of NNE trending basins and associated ranges and N to NNW trending faults.

The Salar Pocitos and Salar de Pastos Grandes basins are separated by the N to NNW trending Sierra Pozuelos and Cordon de Pozuelos.

In the project area TEM geophysics and geological interpretation confirms that there is a series of approximately north-south trending faults that are potentially bounding thrust to transpressive faults, raising blocks of older rocks on the margins of the salar, with the salars subsiding relative to the surrounding older rocks. Uplift on the north-south controlling faults most likely controlled the deposition of the Blanca Lila Formation at Pastos Grandes.

Better understanding the structural control on this sedimentation and the geometry of brine bodies hosted by these sediments that are also controlled by these structures is important to assessing the distribution of sediments and porosity in the properties.

In the immediate vicinity of the Project area NNE striking reverse faults bounding the Ratones and Centenario basins branch and change their orientation to the NE and then back to the NNE (Figure 7.3).

7.4 Project Bedrock Geology

In the uplifted ranges surrounding the Pastos Grandes salar basin units consist of: Neoproterozoic meta-sediment slates and phyllites of the Puncoviscana Formation, and diabases and amphibolites of the Centenario Igneous/Metamorphic Complex; Ordovician turbidites (shales and sandstone) of the Coquena Formations, serpentinites and gabbros of the Ojo de Colorados Basic Complex, and metadacites and diabases of the Burruyacu and Quebuyacu formations; and Ordovician/Silurian granitoids of the Oire Eruptive Complex (the in the Centenario salar).

The Neoproterozoic Puncoviscana Formation meta-sediments, and diabases and amphibolites of the Centenario Igneous/Metamorphic Complex are exposed in the ranges to the east and west of the Centenario salar south of the Property area.

Ordovician turbidites of the Coquena Formation are exposed in Cerro Chucolayo and the Sierra Copalayo west of the Centenario salar, and in the Cordon de Pozuelos to the west of Pastos Grandes salar, where serpentinites and gabbros of the Ojo de Colorados Basic Complex are also exposed. Ordovician metadacites of the Burruyacu formation are exposed in Cerro Negro south of the property area.

Ordovician/Silurian granitoids of the Oire Eruptive Complex outcrop in Cerro Morro immediately to the south east of the Property area.

Tertiary continental red-bed sedimentary units of the Pastos Grandes Group are exposed in the Sierra de Sijes immediately to the east of the Project area and to the north and west of the Pastos Grandes salar. They are the dominant lithologies exposed in the southwest corner of the Pastos Grandes catchment.

Tertiary (Oligocene-Pliocene) continental red-bed sedimentary units of the Pastos Grandes Group, comprising the Pozuelos, Sijes, Singuel, and Pastos Chicos formations (Alonso, 1992; Blasco et al., 1996) occur around the salar. The Pastos Grandes Group consists of claystones, siltstones, sandstones, and conglomerates, with tuffs, halite, borates and gypsum, and it is interpreted to underlie the modern sedimentary Pastos Grandes and Centenario salar basins.

To the west of the Pastos Grandes salar the Formation Geste outcrops, and consists of conglomerates, clayey sandstones and sandy fanglomerates or reddish to red colour. The Formation is estimated to be up to 1500 m thick.

The Pozuelos Formation consists of alluvial and aeolian sandstones and siltstones and tuffs, with gypsum and salt layers. The Upper Pozuelos Formation is 1800 m thick and has been dated at 7.6 to 6.8 Ma (Alonso et al., 1991; Voss, 2002). This unit is mapped occurring along the eastern side of the salar and the Almafuerte and Graciela properties. It is observed in satellite images to be steeply dipping.

The Formation is composed of interbedded conglomerates, sandstones, sandy fanglomerates, claystones and evaporites of red brown, light brown, reddish and greyish colors. In the lower part of the unit conglomerates predominate with sandy fanglomerates, with claystones and evaporites present towards the top of the unit. The middle part is covered by saline deposits, while the upper third contains a deformed rock salt mass described as the Pastos Grandes mega salt body (Alonso et al., 1984). In the upper part of the Formation there are interbeds of gypsum, tuffs and borates.

The Sijes Formation occurs further to the east and unconformably overlies the Pozuelos Formation and consists of sandstones, claystones and tuffs, with a thick conglomerate member defined in the middle of the formation, with the Sijes Formation also containing gypsum and borate evaporite facies. The formation is 1600 m thick and has an age range from 6.81 to 4.0 Ma (Alonso et al., 1991; Alonso, 1999; Voss, 2002). The Sijes formation is folded and deformed along NS to NNE trending fold axes. Borate bearing facies in the Sijes Formation are being exploited in hard rock mining operations east of the Almafuerte property.

The Singuel Formation unconformably overlies the Sijes Formation and consists of moderately to well-sorted terrestrial conglomerates and sandstones. The conglomerates are well imbricated and deposited with cross-bedded sandstones. The Singuel Formation is noted to consist of friable, highly porous sandstones where it outcrops west of the Pocitos salar. The Singuel Formation is 200 m thick and has been dated from 3.2 to 2.9 Ma (Kraemer et al., 1999; Vandervoort, 1993).

The Tertiary sedimentary units are overlain by Upper Miocene volcanics including dacitic lava flows and subvolcanic intrusions of the Aguas Calientes Formation; dacitic tuffs and ignimbrites of the Tajamar Formation (Blasco et al., 1996).

The Pleistocene Blanca Lila Formation occurs as a terrace in the south and north of the salar and appears to overlie and hide the southern extension of the salar and surrounding sediments. Beneath the Blanca Lila drilling has intersected clastic sediments, similar to those found further north in the salar, confirming the southern extension of the salar.

A 55 km east-west chain of large Late Miocene to Pleistocene volcanic centres including Cerro Agua Caliente, Cerro Verde, Nevado Queva, Cerro Azufre, Cerro Mamaturi, Cerro Quironcolo, Cerro Pocitos, and Cerro del Medio lies to the north of the Pastos Grandes salar, and partially forms the northern catchment boundary of the Pastos Grandes basin. Tajamar, Rumbiola and Abra del Gallo formation volcanics outcrop extensively in the northern half of the catchment area including within the Serrania de Pucara and Cerro Barreal immediately to the north of the Project area.

7.5 Pastos Grandes Basin Fill Sediments

The modern Pastos Grandes salar basin is filled by Pleistocene (and possibly older) to Recent proximal unconsolidated alluvial and colluvial sediments that have formed on the sides of the ranges, medial fluvial deposits, and distal lacustrine and saline pan sediments,

including evaporites represented by halite (NaCl), gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) and ulexite ($\text{B}_5\text{O}_9\text{CaNa} \cdot 8\text{H}_2\text{O}$), that have formed within the salar basin.

Pleistocene terrace deposits include lacustrine deposits of the Blanca Lila Formation and alluvial fan terrace deposits. The Blanca Lila Formation is exposed within the Pastos Grandes salar. This unit consists of sub-horizontal terraces of clastic sand, silt and clay with interbedded evaporites (halite and minor borate). Its thickness is 30 to plus 50 metres (Alonso, 1992; Alonso and Menegatti, 1990; Vandervoort, 1997, 1993). Younger alluvial terrace deposits in the region have been dated at 0.44 Ma (Voss, 2002).

Interpretation of drilling and TEM electrical geophysics (see discussion of geophysics and permeability in following sections) confirms the thickness of the Blanca Lila Formation (Figure 7.3) is approximately 50 m, and the total thickness of the Pleistocene to Recent deposits reaches more than 600 m. The Blanca Lila Formation has been dated from 1.6 to 0.33 Ma (Vandervoort, 1993; Voss, 2002) (Vandervoort, 1993), indicating this is a minimum age for the underlying sediments. It is not clear that the basement rocks to the Pastos Grandes Basin have been intersected to date in drilling.

The Almafuerte and Graciela properties overly the Blanca Lila and underlying salar sediments, with the eastern part of these sediments extending over the Pozuelos Formation.

The other SDLP project properties cover recent unconsolidated alluvial and colluvial areas and Formation Pastos Grandes sediments, including the Tertiary Sijes Formation continental sediments.

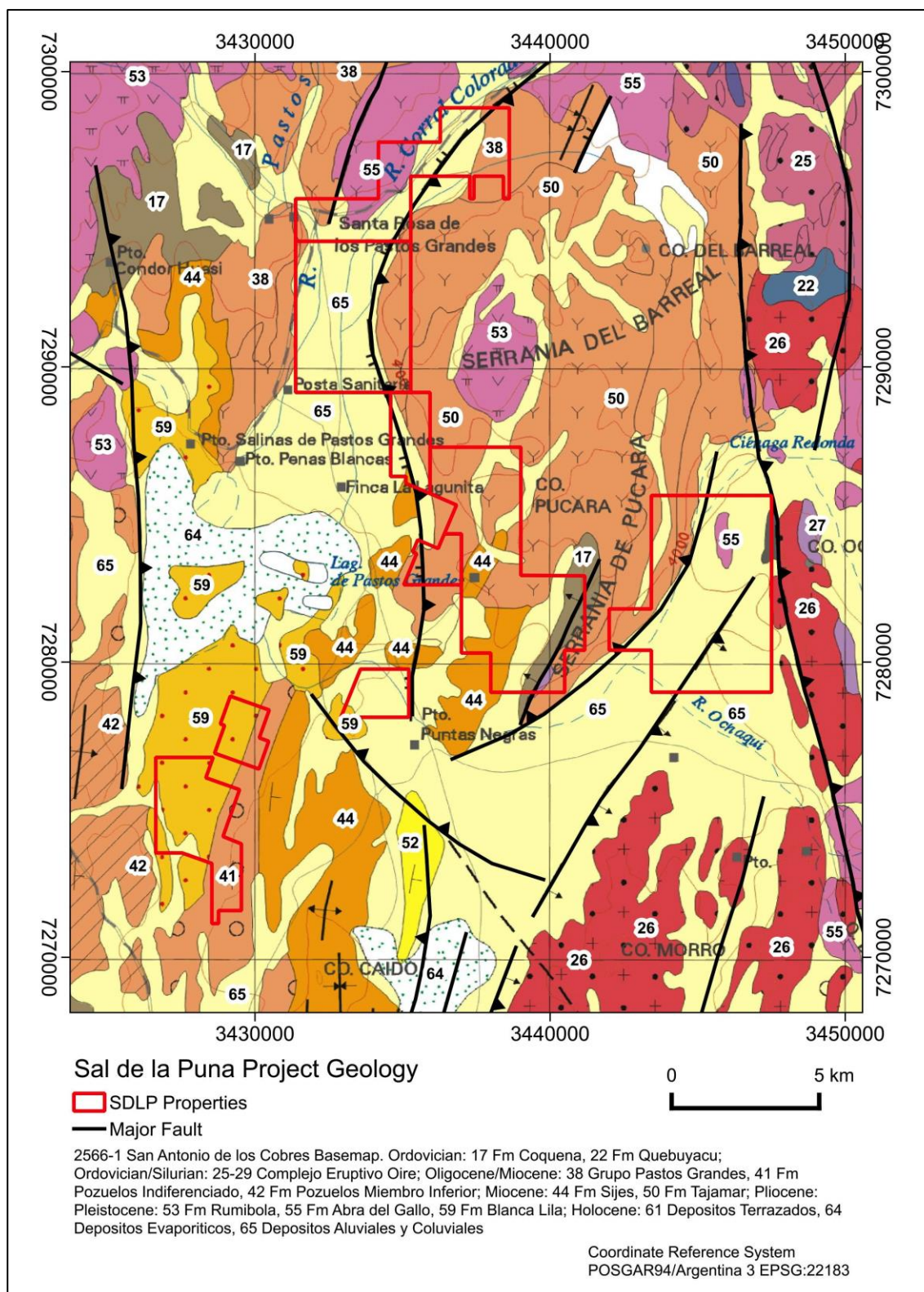


Figure 7.3 Bedrock geology to the SDLP project, showing the SDLP properties in red (after Blasco et al, 1996)

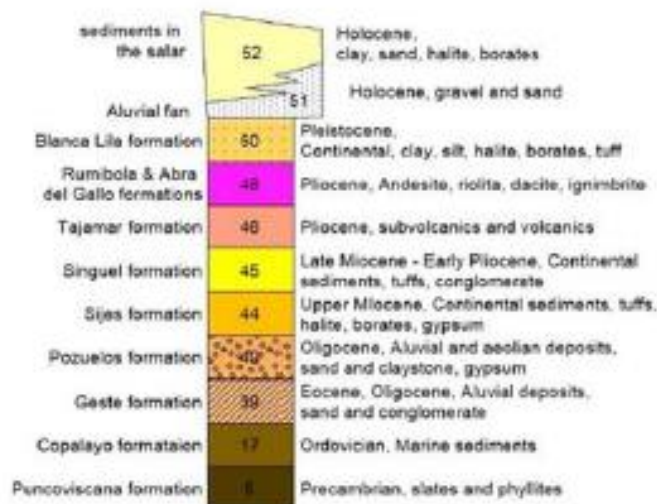


Figure 7.4 Generalised stratigraphic section in the vicinity of the Pastos Grande Project (from Orti and Alonso, 2000)

7.6 Pastos Grandes Geological Units

Drilling by Centaur Resources PG SAS and evaluation of information published by Millennial Lithium and PlusPetrol further to the north shows that the geology effectively consists of two units beneath the Blanca Lila Formation, which is present only in places across the salar. Drilling and geophysical logs show that the upper levels of the salar consist of an extensive predominantly halite unit, that contains interbedded relatively minor horizons of sand, silt and clay. This unit is thinner in the west of the salar and thickens considerably to the east, showing considerable asymmetry in the basin, which is probably related to basin tectonics. Beneath the halite unit is a clastic unit that consists of gravels and sedimentary breccias on the western margin of the basin, becoming predominantly sandy and fining towards the eastern side of the basin. This is a pattern observed in many salt lake basins in Argentina.

A schematic stratigraphic column for the SDLP Project is presented in Figure 7.5.

Unit 1 – Halite Dominated - typically 0-200 m

The upper salar unit is predominantly halite and consists of more porous and compact units within it. In the area drilled by Millennial up to four subunits appear to be present in the halite dominated sequence, with a lower fine-grained clastic unit of clay and silt present in some holes as a transition to the underlying coarser clastic unit. It appears the primary salar depocenter for evaporites and low energy sediments was on the east of the basin throughout the basin development. This unit appears to increase in thickness from the north to the south.

Geophysical logging shows the halite sequence as having a relatively high resistivity, due to the lower porosity of the halite compared to clastic sediments and this is very distinctive compared with the underlying clastic sediments. The halite unit varies from 40 m thickness in the west of the basin in hole PP02-2019 to >440 m in the east. It is possible the eastern part of the basin is down-dropped by a fault, relative to the west, however no such fault has yet been identified within the salar.

Unit 2 – Clastic Sediments >400 m

The clastic sediments are extensive in thickness and continue from beneath the halite unit to the base of drilling (with the deepest hole drilled by Centaur to 653 m), where in the north of the salar Millennial has intersected compact sand units described as sandstone.

The clastic material is principally fine sand with a fine-grained matrix, although coarser grained sand intervals are recognised.

In the west of the salar in the SDLP, Millennial and PlusPetrol properties coarser grained sediments consisting of gravels and red sedimentary breccias have been intersected. These are likely to be colluvial and alluvial material sourced from the western side of the basin and does not appear to be present in the east.

Around 300 m depth in SDLP holes PP01-2018 and PP02-2019 a unit with poor drilling recovery is possibly a volcanic tuff unit within the broad sequence of sandy sediments.

7.7 Mineralisation

The Pastos Grande brine solutions are saturated in sodium chloride with an average concentration of total dissolved solids (TDS) of 300,000 mg/l. The average density is 1.20 g/cm³. The major components of the Pastos Grandes brine are: Na, K, Li, Mg, Ca, Cl, SO₄ and B.

Table 7.2 shows a breakdown of the major components of the Pastos Grandes brine, with the average, maximum and minimum values, based on the 105 brine samples used in the brine resource estimate collected during 2018-2019 drilling.

Analyte	Li	K	B	Na	Ca	Mg	SO ₄	Density
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	g/cm ³
Mean	502	4,379	607	109,399	809	2,567	9,218	1.20
Minimum	365	2,578	531	96,904	679	1,917	6,663	1.19
Maximum	629	5,684	903	115,955	1,089	2,798	11,367	1.23
Std.Dev.	64	1,036	59	4,622	84	187	896	0.01

Table 7.1 Average, maximum and minimum concentrations of the Pastos Grandes brine

The concentrations of lithium and potassium show a high correlation. Brine quality is evaluated through the relationship of lithium and other components of the brine that constitute impurities, such as Mg, Ca and SO₄. The calculated ratios for the averaged brine chemical composition are shown below.

- Mg/Li = 5.2; SO₄/Li = 16.3; K/Li = 8.6

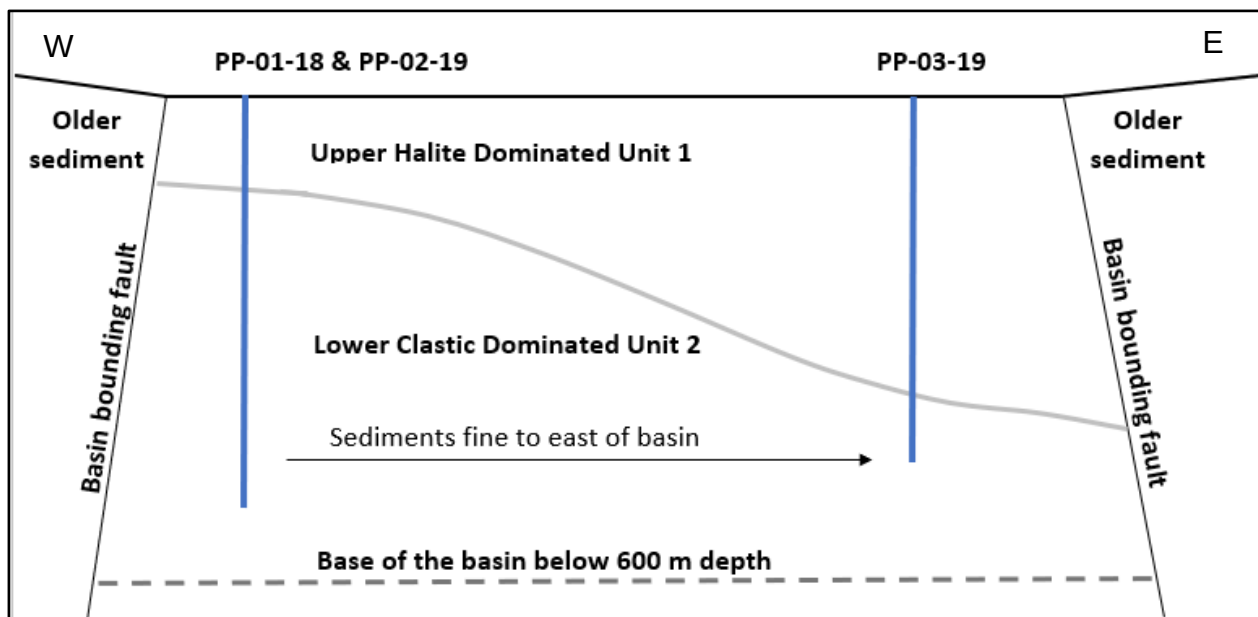


Figure 7.5 Schematic representation of the major geological units looking north through the basin (with significant vertical exaggeration)

8 Brine Deposit Characteristics

8.1 General comments on brine deposits

Lithium is found in a number of different geological deposit types. The most common are pegmatite bodies, associated with granitic intrusive rocks, and continental brines in salt lakes (salars). Pegmatite bodies are found in a diverse range of countries, including Australia, Canada, Congo, Russia, USA and Zimbabwe. Continental lithium brines in salars are found principally in Argentina, Chile, Bolivia and China.

Lithium production from salar brines has a number of advantages over hard rock mining of pegmatites. The principal advantage is the lower operating costs for lithium salar operations, based on the economics of the operating lithium salar producers in Chile and Argentina (Lagos, 2009; Yaksic, 2008) and the production of a directly saleable end product.

Salar Types

Lithium brine projects can also be subdivided into two broad 'deposit types' with different characteristics (Houston et. al., 2011 – Figure 8.1 below), which consist of:

- Mature salars (those containing extensive thicknesses – up to hundreds of meters - of halite (salt), such as the Salar de Atacama (Chile), and the Livent Hombre Muerto operation (northern Catamarca, Argentina) and:
- Immature salars, which are dominated by clastic sediments, with limited thicknesses of halite, such as the Olaroz salar project in Jujuy Argentina and the Silver Peak deposit in Nevada, USA, where brine is extracted from porous volcanic ash units.

Historical development of salar lithium brine projects in Chile and Argentina focused on the development of large Mature salars, as these required only shallow drilling and provided excellent brine flow rates from shallow wells. Projects developed at this time (Lithium production from the Salar de Atacama, in northern Chile, and from the Salar del Hombre Muerto in Argentina dates from 1984 and 1997 respectively) had the most favourable brine chemistry of the Mature salars. More recent developments of salar projects are predominantly Immature salars, which are more common and which can host extractable brine resources to depths of hundreds of metres.

The characteristics of these two different salar types influence the distribution of the contained brine and brine extraction. It should be noted there may be immature and mature areas within the same salar basin (such as in the Hombre Muerto salar in Argentina, south of the SDLP Project).

8.2 Mature salars

Brine in mature salars is hosted in pore spaces, caverns and fractures within salt (halite). The salt was deposited by evaporation of the brine at the surface of a lake. Mature salt dominated salars (i.e. Atacama salar) are characterized by having porosities in the 8 to 12% range within the surficial salt units (Houston et. al., 2011), with the porosity and permeability decreasing with depth, such that by a depth of approximately 50 m the drainable porosity in matures salars has decreased to several percent (Houston et al., 2011).

In these salars the brine resources are principally contained between surface and 50 m below surface, as below this depth there is limited permeability in the salt, due to salt recrystallization and cementation of fractures.

8.3 Immature salars

Immature salars conversely have brine hosted in pore spaces controlled by the porosity and permeability associated with individual layers within the salar sequence. A degree of compaction occurs with increasing depth below surface, but unlike in mature samples significant porosity and permeability characteristics may continue to depths of hundreds of meters in these salars (such as the producing Olaroz salar and the adjacent Cauchari salar in Northern Argentina and at the Silver Peak lithium brine mine in Nevada).

The porosity and permeability characteristics may be highly variable between units and units with low productivity for brine extraction can alternate with more productive units due to differences between sediments such as sand and gravel and finer grained silts and clays and compact halite. The presence of different stratigraphic units in clastic salars typically results in differences in the distribution of the contained brine and influences the recovery of brine as reserves from the defined brine resource, with lower resource to reserve conversion ratios than are typical in hard rock mining operations. It is very important to consider the characteristics of the host aquifers in each salar, together with the aquifer geometry and physical properties, particularly specific yield and specific storage hydrogeological characteristics.

The characteristics of lithium production from the Silver Peak deposit in Nevada are of importance to aspiring salar brine developers, as many salar deposits currently under evaluation are immature salars which will face the same challenges as Silver Peak, which has been operating since 1966 (Lagos, 2009).

The typical architecture of Puna salar basins (Figure 8.1, after Houston et. al. 2011) consists of:

- Coarser grained sediments on the margins of a salar basin, with successive inner shells of finer grained clastic units.
- Where evaporation is highest an inner nucleus of halite occurs in the approximate centre of the salar (depending on the salar geometry and freshwater inflows into the basin) and is surrounded by deposits of mixed sulphate and carbonate chemical sediments, together with fine grained clastic sediments.

Salars in the Argentina Puna region often have an upper sequence of halite, overlying a lower clastic sequence, so they are essentially mixed salars, with this development controlled by tectonic and climatic changes.

8.4 Off salar brine extent

Brine is denser than fresh water, which is present on the margins of salars, topographically above the brine body. The difference in density between the fresh water and brine limits mixing between the two fluids. Consequently, the brine body frequently extends beyond the salar beneath alluvial fans and recent sediments, such as suggested by geophysics on the off-salar properties held by Arena.

Brine is known to exist beneath alluvial fans in the nearby project owned by French company Eramet in the Centenario and the Ratones salar basins. Arena's properties Fortuna, Patovica I and Barreal II occupy a similar environment to those of Eramet.

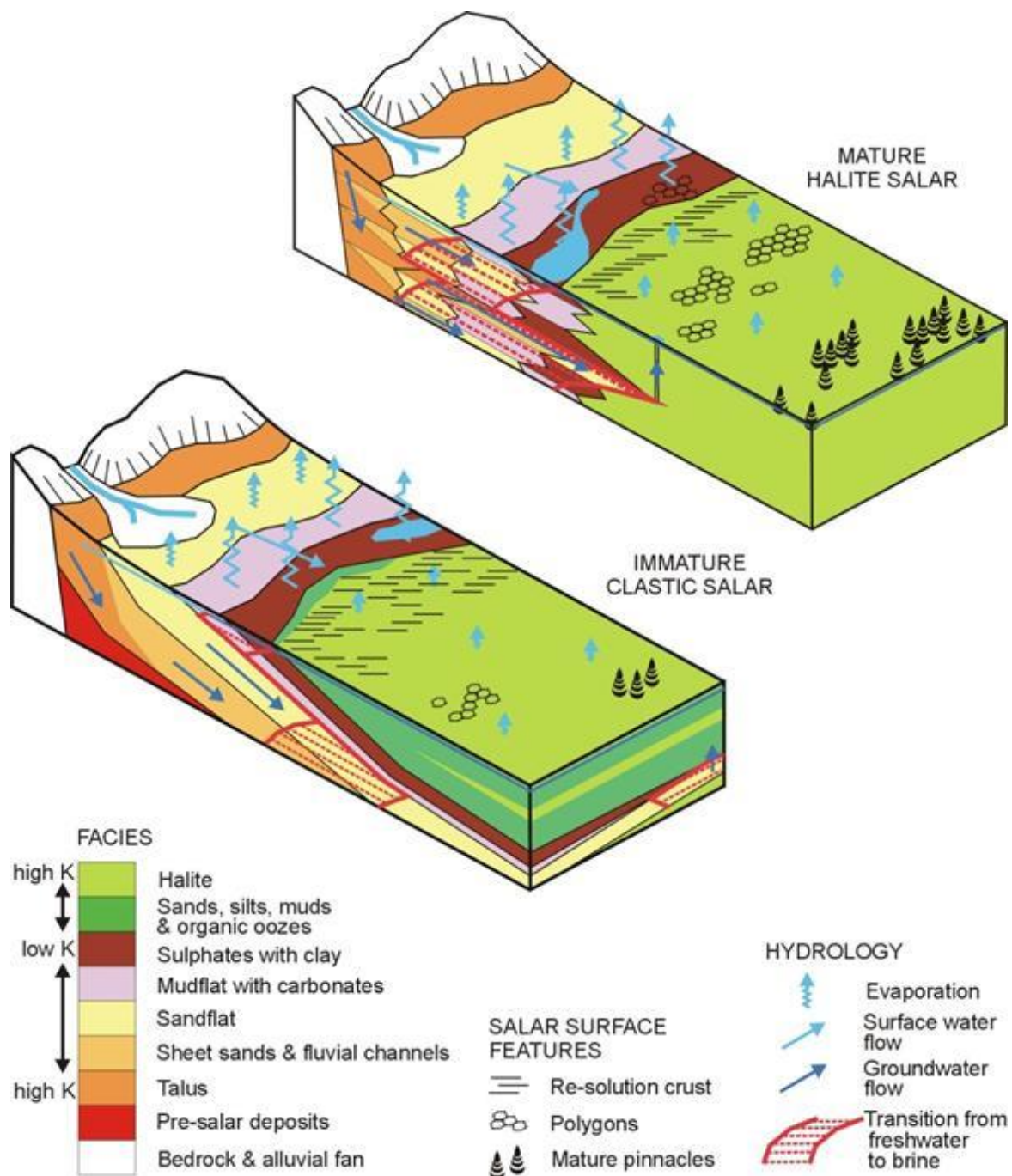


Figure 8.1 Model showing the difference between mature and immature salars (from Houston et al., 2011)

8.5 Hydrology and Hydrogeology

The Pastos Grandes salar occupies the low point within the closed drainage basin where there is no flow of water to outside of the catchment (i.e. there are no rivers or creeks that flow out from this basin, with all creeks directed internally, flowing towards the salar surface). The largest surface water body in the basin is the salar salt pan surface which is subject to periodic flooding.

Water entering the Pastos Grandes salar basins originates either as direct input from precipitation (rain or snow), flow through the river that enters in the north of the basin, surface runoff from the surrounding mountains, or subsurface inflow from the surrounding mountains. In addition to river inflow subsurface flow through alluvial fans extending into the salar is expected to be the primary route of salar inflow, with inflow somewhat proportional to the size of the alluvial fans. The ground and surface waters that flow into the salar are concentrated by evaporation around the margins of the salar and on the salar surface, becoming progressively concentrated to become brine.

The brine present in salars is interpreted to sink over time, due to the higher density of the brine relative to the inflowing relatively fresh waters. Migration of brine within the salar is controlled by topography, brine concentration (density) and the porosity and permeability of the host sediments. It is likely the brine body extends away from the Pastos Grandes Salar and becomes progressively deeper with increasing distance from the salar.

Exploration in the Puna region suggests brine may extend to the base of salar basins and have an extensive volume. This has been confirmed in drilling on the SDLP properties.

8.5.1 Aquifer units

The halite unit in Pastos Grandes is interpreted to form one aquifer unit across the upper part of the salar. The lower clastic unit is interpreted to form a separate aquifer, with generally higher permeability and porosity. There is likely to be interconnection between the aquifers, which will influence how brine extraction evolves over time during extraction.

8.6 General Concept of Drainable Porosity

Porosity and permeability characteristics are strongly dependent on the type of sediment. Sediments such as clays and fine-grained materials generally have high total porosity, however much of this is “bound water” or specific retention and cannot be extracted during pumping. Coarser grained sediments and evaporites with large pores or fractures generally have lower total porosity, however much more extractible water. This leads to the concept of specific yield or drainable porosity (specific yield), water that can be extracted during pumping.

Drainable porosity analyses are generally carried out on undisturbed core samples obtained by diamond drilling. However, due to difficulties with diamond drilling of unconsolidated sandy materials such as those in the Pastos Grandes salar it was decided to drill using the tricone (rotary) method and conduct geophysical logging of the drill holes, to obtain information on the in-situ porosity of the sediments.

Drainable porosity values were assigned to the specific lithological units defined in the geological model as described in Section 7.6. The analysis of drainable porosity is discussed in detail in Section 11.

9 Exploration

9.1 SDLP Overview

From 2018 to 2019, Centaur Resources PG SAS conducted exploration over the nine properties in the project, concentrating in the southern properties. Activities included:

- Geological and structural interpretation
- TEM geophysics
- Drilling of two rotary holes using diamond drilling equipment, with installation of 2" monitoring wells (discussed in Section 10)
- Drilling of one test pumping well (discussed in Section 10)
- Geophysical logging and porosity evaluation (discussed in Section 10)
- Brine analyses from drilling (discussed in Section 10)
- One pumping test on PP-03-19 (discussed in Section 10)
- Resource Estimation (discussed in Section 14)
- Preparation of this report

Other information sources in the area include:

- An NI 43-101 compliant technical report on the resource and a subsequent PFS prepared for Millennial Lithium Corp titled - Phase III Measured, Indicated and Inferred Lithium and Potassium Resource Estimate Pastos Grandes Project Salta Province, Argentina by Montgomery & Associates (Rosko, 2019).
- Preliminary Economic Assessment (PEA) - Pozuelos - Pastos Grandes Project. NI 43-101 Technical Report Salta, Argentina by GHD for LSC Lithium Corporation

9.2 Geological and Structural Interpretation

The Pastos Grandes salar is bounded by important faults to the west and east that have controlled accumulation of sediments within the Pastos Grandes Basin. Structures were interpreted from GoogleEarth and compared with structural mapping by Segemar.

9.3 TEM Survey 2018

A TEM survey (Figure 9.1) was conducted across the properties by experienced geophysical contractor Quantec in 2018, to evaluate the presence of brine. For the Almafuerte and Graciela properties the TEM shows a highly conductive unit from close to surface (within 50 m). The sequence consists of a high conductivity (low resistivity) response of up to 1 ohm-m, known to coincide with brine in the salar, based on the drilling. There is a slightly more conductive unit (0.5 ohm-m) identified in these two surveys, which on the Fortuna property may be represents a more porous halite unit at 100 m depth.

The TEM survey confirmed that in the properties off the Pastos Grandes salar and to the north and east there is fresh to brackish water in the alluvial fans and recent sediments. This overlies a deeper very conductive response which is considered to be the continuation of brine away from the salar, as indicated by third party drilling. However, in the case of the Barreal I, Barreal III and La Relojera properties the highly conductive response is not significant, as these properties are some distance from the salar, and the TEM shows the more conductive unit deepens to the north. The individual TEM profiles are shown in Figure 9.2 below. Interpretation of the brine body continuing away from the salar into the Fortuna

II, Patovica I and Barreal II properties is supported by Vertical Electrical Soundings carried out by Millennial Lithium on neighbouring properties.

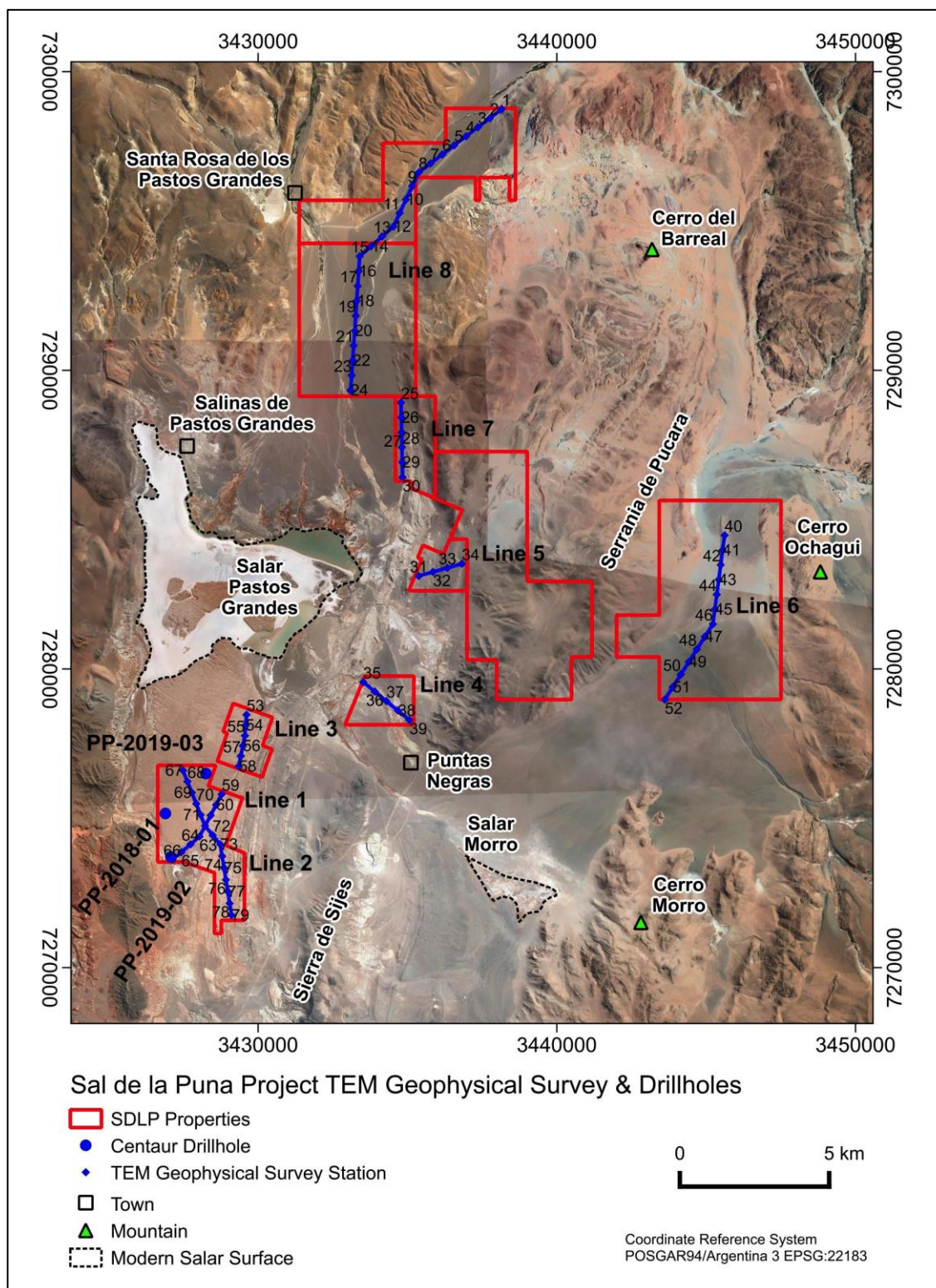
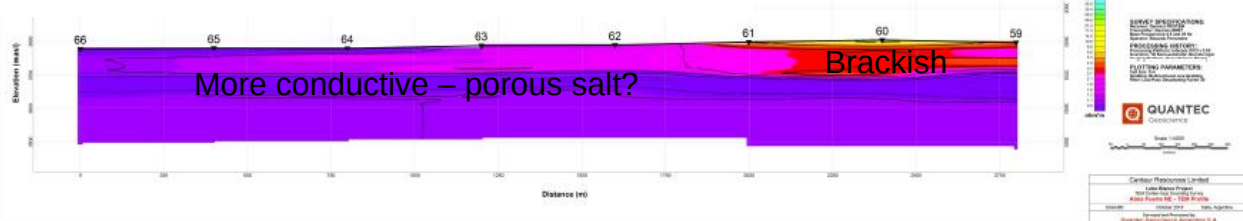
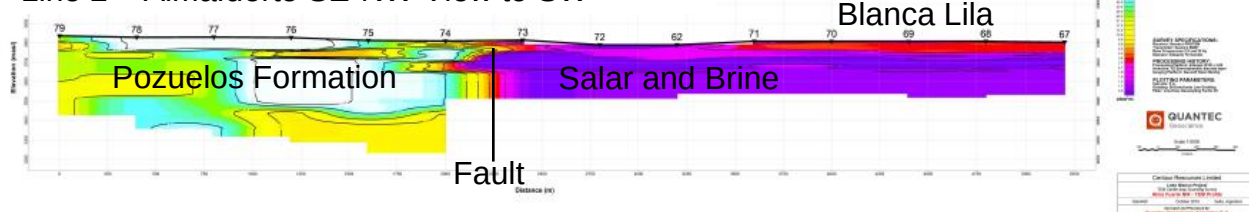


Figure 9.1 The location of the SDLP project properties where TEM lines were surveyed

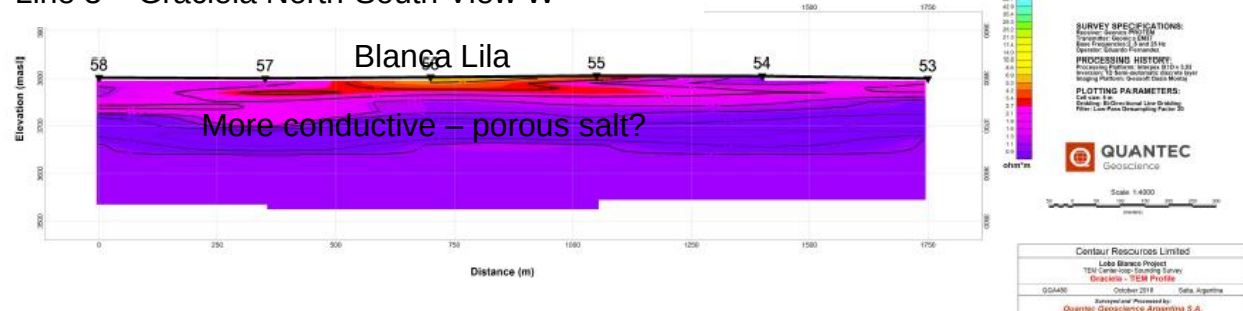
Line1 – Almafuerte SW-NE View to NW



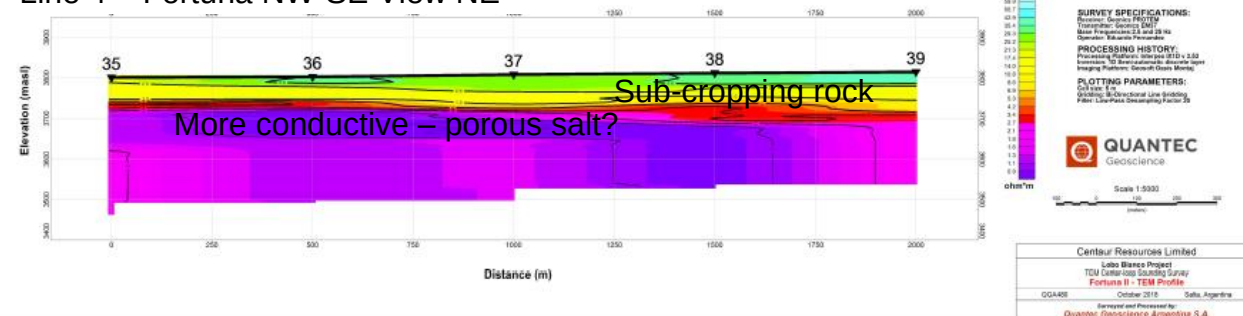
Line 2 – Almafuerte SE-NW View to SW



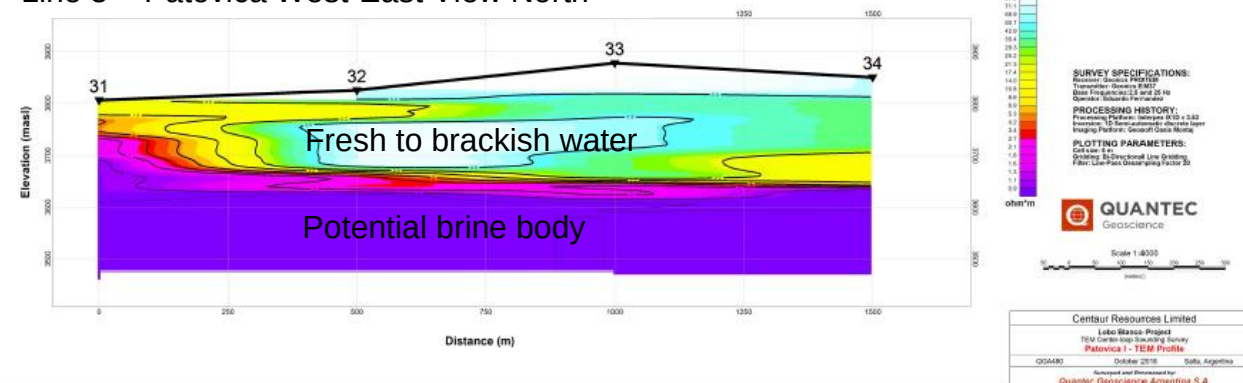
Line 3 – Graciela North-South View W



Line 4 – Fortuna NW-SE View NE



Line 5 – Patovica West-East View North



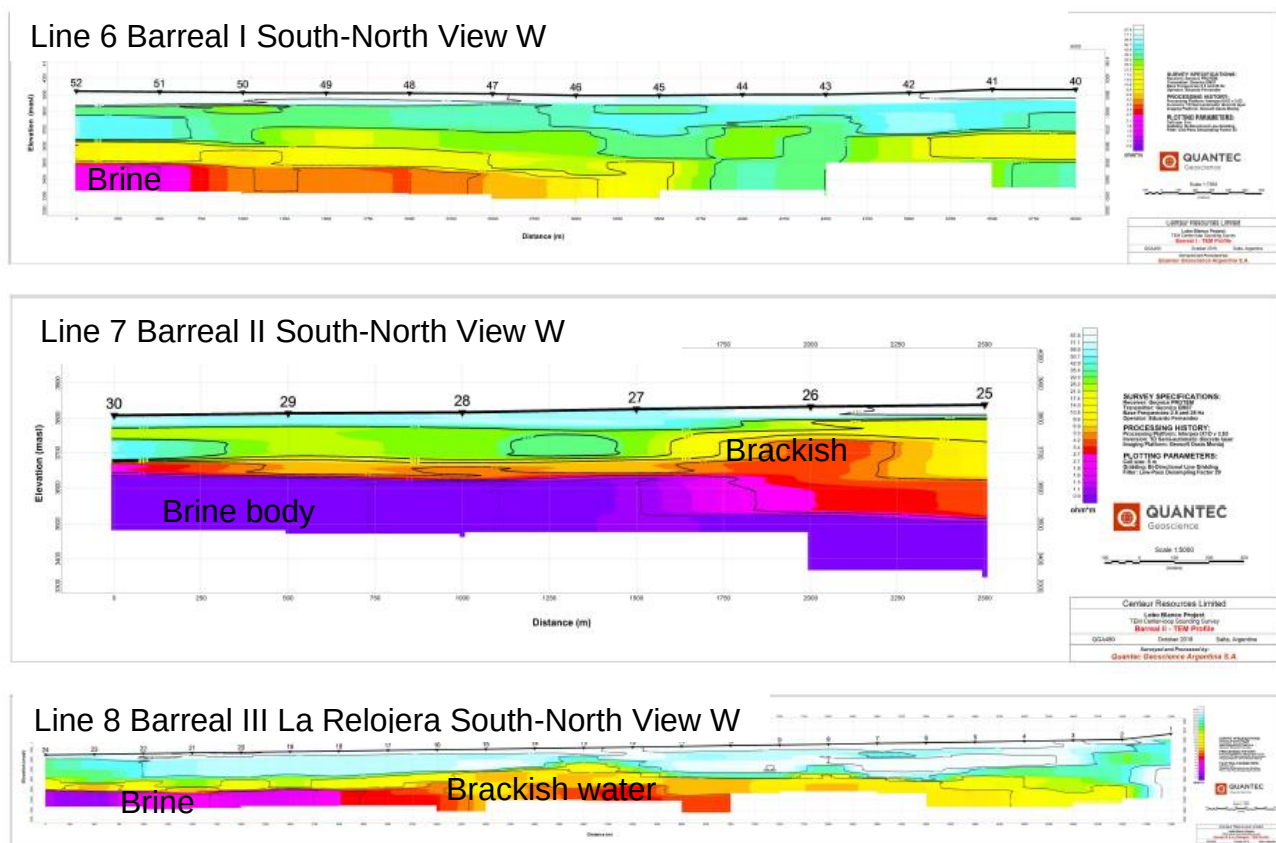


Figure 9.2 TEM section lines through the properties with the conductive unit interpreted as brine in purple

9.4 Passive Seismic Survey 2019

The HVSR passive seismic technique is based on vertically travelling ambient shear waves (SH waves) which become trapped in softer and slow velocity regolith cover sediments and weathered bedrock that overlies harder and higher velocity bedrock. The frequency of the trapped waves occurs at a resonant frequency which is related to the shear wave velocity (V_s) and thickness of the soft cover deposit layer. A strong acoustic impedance (AI) contrast interface (product of density multiplied by velocity) between each layer is required to generate this seismic trapping and accompanying resonance. Resonance does not occur if only a subtle change in AI contrast exists between the layers.

Passive seismic surveying involves recording ambient or naturally occurring seismic vibrations over a broad range of frequencies and a specific time period (e.g. 10-30 min). The Tromino® seismometer records 3 axial components of vibration: two horizontal (relative X and Y axes) and one vertical (Z axis) components. The recorded time-series vibration data are transformed into frequency spectra by using a Fast Fourier Transform (FFT) and are then presented as a frequency-power spectrum plot for all 3 receiver components.

A survey with 10 west-east survey lines was carried out over the SDLP property to attempt mapping of the basement rocks beneath the salar sequence and to confirm the location of faults at the boundary of the salar with older sediments. Measurements were taken with 400 m spacing and checked for quality control by sending data to the consultant geophysicist. Repeat measurements of stations were made when it appears the readings were affected by high winds disturbing the sensor.

In general, the survey in the SDLP area did not consistently identify a contact with basement rocks and while this may be because of the depth of the salar (>650 m) it probably reflects

a poor seismic contrast between the salar sequence and the basement rocks here (lithified salt lake sediments – rather than igneous or metamorphic rocks). This survey method did not adequately distinguish between basin sediments and older surrounding rocks.

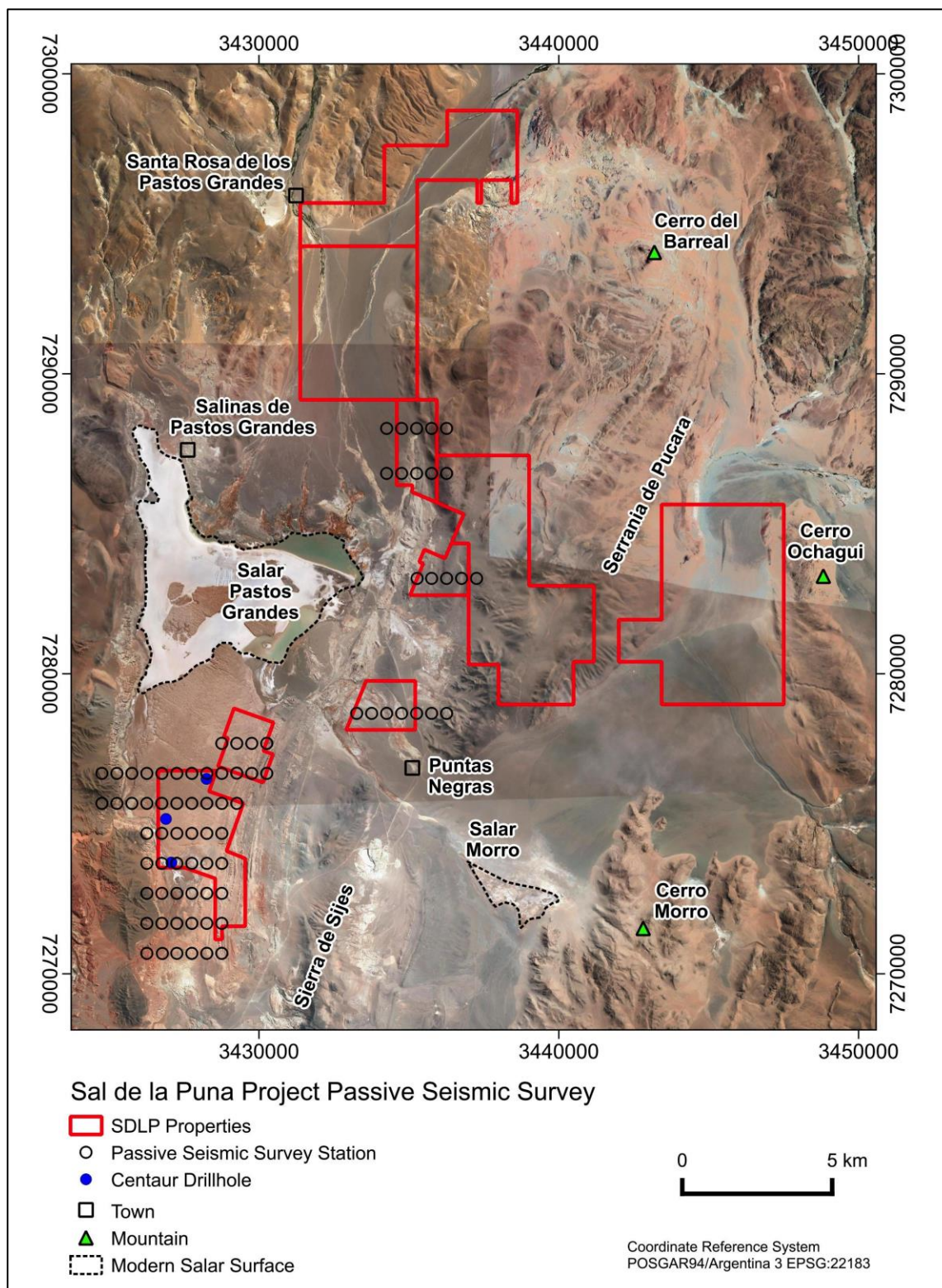


Figure 9.3 Location of passive seismic measurement stations in the SLDP projects, blue points are SDLP drill holes

10 Drilling

10.1 Drilling Overview

Every technical aspect of the drilling and construction of wells was under the supervision of and based on the design of Tuareg Geological Services SRL, an experience geological consulting company based in the north of Argentina. In general terms, there were three distinct stages. The first consisted of the construction of the exploratory wells, with the respective on-site description of the potential aquifer levels, control of drilling metres and brine sampling. The second consisted of geophysical well loggings, to assist correlation between drill holes and geological modelling. The third step consisted in the design, installation, washing and development of wells and conducting a pumping test in PP-03-19 to determine hydraulic parameters of the well. Finally, an analysis was conducted of the hydrogeological characteristics of the aquifers in the study area, with integration of the data from all the wells and evaluation of data from adjacent projects.

10.2 Exploration Drilling

Three holes were drilled to develop an initial resource estimate. Because of knowledge regarding significant drilling difficulties experienced by adjacent third parties in the salar and the general experiences of other explorers drilling deep holes in salars in Argentina it was decided to drill using a tricone and diamond drilling equipment for drilling of holes PP-01-18 and PP-02-19 (Figure 10.1). Using this methodology core would not be obtained, but this would be offset by the use of geophysical logging to obtain information of the lithology and porosity. The locations of the holes are shown in Table 10.1.

The staff of Tuareg Geological Services SRL were in charge of the drilling campaign for SDLP drilling, undertaking the following data collection and controls:

- Controlling the location of the drilling rig with a hand-held Global Positioning System (GPS) system device.
- Control of the fluid and circulation systems on the drilling rig. Additives used for drilling were controlled, to ensure they comply with the provisions of the approved environmental impact reports, and the needs of the company with regards to installing and pumping wells. The construction of the mud sumps was controlled to fit with specifications as outlined in the drilling contract and Environmental and Occupational Health and Safety protocols. The volume of drilling fluid was controlled to establish how much fluid was used during the drilling process.
- Control of the drilling, recording the condition of drilling tools used. The geologist in charge in the corresponding shift (day / night) registered the depth and drilling maneuvers, indicating the number of rods in the hole at any one time. In addition, a standardized record was made for each meter of advance, which includes more detailed observations.
- Description of drilling cuttings was undertaken, indicating form, colour and, texture.

10.3 Well Construction and Installation

In the case of holes PP-01-18 and PP-01-19 the holes were drilled using HQ drill rods and a tricone bit. Upon reaching the target depth the holes were installed as monitoring wells with 2 inch PVC machine slotted pipe. The pipe was wrapped in geotextile, to prevent inflow of fine material into the well, to allow subsequent sampling if necessary. Because of the depth of the holes and the friable sandy host sediments in the lower part of the hole no

gravel pack was installed with these holes, which were allowed to collapse naturally around the PVC.

Hole PP-03-19 was drilled as a test production well, and was installed at a larger diameter, in order to install a pump to conduct a pumping test in the hole. The hole was drilled in several stages at different diameters (Figure 10.2). The upper part of the hole was drilled to 73 m to a diameter of 28 inches, with this part of the hole cemented around the casing. The hole was then drilled at a diameter of 18.5 inches to 208 m, with installation of 10-inch casing and screen to this depth. The cementing was continued to a depth of 145 m. Below 208 m the diameter of the hole was reduced to diameters of 13.5 and 12.25 inches down hole, with installation of 6 inch screen and casing. The standing water level was at a depth of 43 m in the hole.

An initial pilot hole of was drilled at a diameter of 8 $\frac{3}{4}$ inches, which was geophysically logged before reaming to the final diameters and installing screen and casing. The well was completed to a depth of 542.3 m, with the base of the well at 536 m. The interval between 184 and 530 m is predominantly filters. A total of 208 m of filters were installed in the hole, with a 6 m solid lower section to allow suspended material to settle out. The upper 208 m of the hole forms a chamber for the pump to be installed, with the depth depending on the productivity of the hole. Filter locations were selected based on the geophysical logging of the hole with a magnetic resonance tool to measure porosity and permeability.

The pump well was constructed using a larger drilling rig capable of reaming and installing the hole to the 542 m depth.

Once the steel pipe was installed in place the gravel pack was carefully installed around the well, with 1-3 mm diameter gravel. The volume of gravel installed in the well was carefully controlled. Before completing the gravel pack installation procedures were initiated to develop the well to clean drilling fluid from the well and to ensure that the gravel pack was fully settled. This involves using a hydrojet and compressor. Cleaning was carried out until the water obtained from the formation was clear. Finally, an electric pump, without the retention valve, was installed to carry out the final development of the well. It started with low flow rates, increasing as the water extracted is clear and without solid entrainment. The development was accompanied by hydraulic blows produced by sudden stoppages of the pump. The development was considered satisfactory when at the maximum required pumping flow, the water extracted was clear and without entrainment of any nature three (3) minutes after the pumping equipment has been started.

Hole	Easting WGS84 Zone 19S	Northing WGS84 Zone 19s	Elevation
PP-01-2018	730562	7272562	3813
PP-02-2019	730712	7271106	3813
PP-03-2019	731946	7273869	3813

Table 10.1 Location of the drill holes, with elevations from Google Earth

10.4 Geophysical Logging of Holes

The first two holes in the program were drilled using diamond drilling equipment and a tricone drill bit. These holes were installed as monitoring wells using 2-inch PVC. This PVC diameter was insufficient to allow the use of the magnetic resonance tool for measurements of porosity in these holes. Geophysical logs undertaken in all three holes included resistivity and spontaneous potential and natural gamma, which was undertaken to check the correlation between these drill holes.

The third hole PP-03-19, which has been used for the pumping test, was profiled with a range of down hole tools that included magnetic resonance (for porosity and permeability data), natural gamma, resistivity and temperature and conductivity. Measurement was done in three stages during drilling of that well.

Natural gamma and resistivity data clearly differentiated the upper halite dominated sequence from the lower clastic sequence, which appears to be finer grained in PP-03-19 than in holes PP-01 and 02 to the west, which is consistent with the geological interpretation for the basin. The geophysical logging improved the geological logging from drilling cuttings and confirmed the correlation between the geological units.

The magnetic resonance profile of the hole established the range of porosity parameters for the upper halite and lower clastic units, as an input for the resource model. These are summarised in section 11, where the porosity data is discussed.

10.5 Packer Sampling for Brine Collection

Brine sampling was undertaken using a packer system to isolate different intervals of the open hole to allow sampling of the fluid from the walls of the drill hole. The use of double or single packer tests was determined by the way drilling was carried out. Single packer tests were completed at the base of the hole as it advanced and double packer tests were carried out when sampling was conducted from bottom to top of the hole.

The length of the tested chambers of the simple packer intervals was defined by the Tuareg geologist in charge of the drilling rig, with the packer interval 1.0 m, to minimize the amount of fluid that it was necessary to purge in order to purge 3 times the volume of the hole sealed off by the packer. The location of packer samples was guided by knowledge of the lithology in the hole, as it is generally not possible to obtain samples from clay units or very compact halite units, as the permeability of these is too low to allow sampling in the time frame available for packer sampling.

Fluorescein dye was used as a tracer during the drilling process, with this added to the drilling fluid, so that when samples were taken with the packer it could be established if drilling fluid was present. If drilling fluid was present in the samples, they were not considered representative of the brine present in the sediments.

The packers are inflated using nitrogen from industrial gas bottles. The packer and gauges are checked for leakage prior to each use and inflation of the packer, which is checked to ensure it is fully inflated and securely in position. The packer depth is adjusted for the depth of the packer setting and the brine density, to ensure it is inflated sufficiently to seal the hole.

The pressurized air from a compressor, that is used to pump the brine sample to the surface, is also checked for leaks prior to operation for each sample. This airlift packer system transports brine to the surface, where it is checked for the presence of Fluorescein prior to disposal of the fluid and eventual collection of the sample when sufficient fluid has been purged from the packer interval. During the sampling the static water level in the drill rods is monitored to evaluate if there is any change that could indicate the packer is not correctly sealed.

Because the packer system is being used in brine it is necessary to wash the packer unit and other elements of the equipment, to ensure they are not cemented with salt which could prevent the equipment working properly.

Samples of brine were collected in 1 liter bottles, with three bottles taken for each sample, one being sent to the laboratory and the other samples being used as field duplicates and as backup samples. When fluid is purged from the packer the physical parameters are monitored at the beginning and throughout the test, to evaluate how these change over time and when they stabilize. Physicochemical parameters measured during sampling include conductivity (mS), pH, density (g/ml) and temperature (C), each 15 minutes, until the parameters stabilize and the required volume has been purged.

In addition, the flow rate is measured for each of the intervals sampled with the packer, controlling the filling time of containers of known volume. Before collecting the brine sample, the geologist in charge will ensure its representativeness by checking the physical parameters measured and by extracting more than 3 times the volume stored in the chamber of the packer.

In PP-02-19 samples were taken every 12, m with some exceptions, where samples were taken every 24 or 36 m. Samples in PP-01-18 were taken with spacings between 15 and 50 m vertically, depending on conditions in the hole during the packer sampling. In hole PP-03-19 samples were taken with a bailer once the hole had been purged by pumping and allowed to recover. This sampling method is not as rigorous as the sampling in the other two holes to obtain depth specific samples and could be influenced by different flow rates into the hole from different units of sediment and possible stratification in the hole following pumping.

10.6 Pumping Test and Interpretation

A pumping test was conducted in well PP-03-19, the results of which are outlined in the following section.

An initial step (variable rate) test was conducted on the well, consisting of three steps, with each conducted for 180 minutes before the pumping rate was increased. The pumping steps were carried out at 6, 10 and 20 m³/hour (corresponding to 1.7, 2.8 and 5.6 l/s), based on observations from the pumping rate during the cleaning of the well. Following completion of the step test the standing water level was allowed to recover to the pre-pumping water level in the well. The results are summarised in Table 10.2. The pumping steps are shown in Figure 10.3.

During the test an evaluation of losses for the well construction and the aquifer were estimated. These are summarised in Table 10.3. The Flow rate versus drawdown of the dynamic level is presented in Figure 10.3.

Once the well had largely recovered the constant rate pumping test was initiated for a total of 72 hours, with a flow rate of 5.6 l/s, selected based on performance of the step test. During the pumping test, brine samples will be collected at regular intervals (outlined below) and stored in 1 litre bottles, identified and protected according to the quality protocols for the project.

During the tests, a record of the hydrochemical variations of the brine was kept, measuring the physical-chemical parameters in situ: Conductivity (mS), pH, Density (g/ml) and Temperature (°C). Once the parameters were stabilized, sample were collected. In addition, control of the flow rate was carried out continually throughout the pumping tests, to maintain the flow rate as steady as possible. During the variable rate test brine samples were taken at 10, 20, 30, 60, 90, 120, 180 minutes. During the constant rate samples were taken at these intervals and also 6, 9, 12, 18, 24, 36, 48, 60 and 72 hours, following initiation of the test.

Interpretation of the step test showed that the well has a specific capacity of 0.29 m³/h/m (Figure 10.4, Table 10.2). Interpretation of the pumping test is based only on the pumping well, as there is no observation well to make measurements of pumping drawdown. Interpretation of the drawdown curve showed that the well has hydraulic conductivity of 0.005 m/day.

The 21 brine samples from the step test averaged 536 mg/l over the nine hours of the test, with a Mg/Li ratio of 5.0. Over the period of the constant rate pumping test lithium averaged 532 mg/l lithium, with a Mg/Li of 4.8. The lithium concentrations in this well are consistent with the bailer sampling conducted following the cleaning of the well, which averaged 542 mg/l lithium. These lithium concentrations are higher than the sampling from wells PP-01-2018 and PP-02-2019 in the west of the Almafuerte property, indicating that grades increase towards the eastern side of the basin, where the drainable porosity is lower in lower energy finer grained sediments.

Static Level (m)	Flow Rate m ³ /h	Flow Rate l/s	Dynamic Level (m)	Pumping time (minutes)	Final drawdown m	Specific Capacity
43	6	1.7	62	180	19	0.32
	10	2.8	76	180	33	0.3
	20	5.6	111	180	68	0.29

Table 10.2 Summary of the step (variable rate) pumping test

Flow Rate m ³ /h	6	10	20
Final drawdown m	19	33	68
Aquifer losses m	17.32	28.86	57.73
Well losses m	0.99	2.77	11.08
Efficiency %	94.55	91.24	83.89
Specific capacity (m ³ /h/m)	0.32	0.3	0.29

Table 10.3 Summary of well losses and specific drawdown

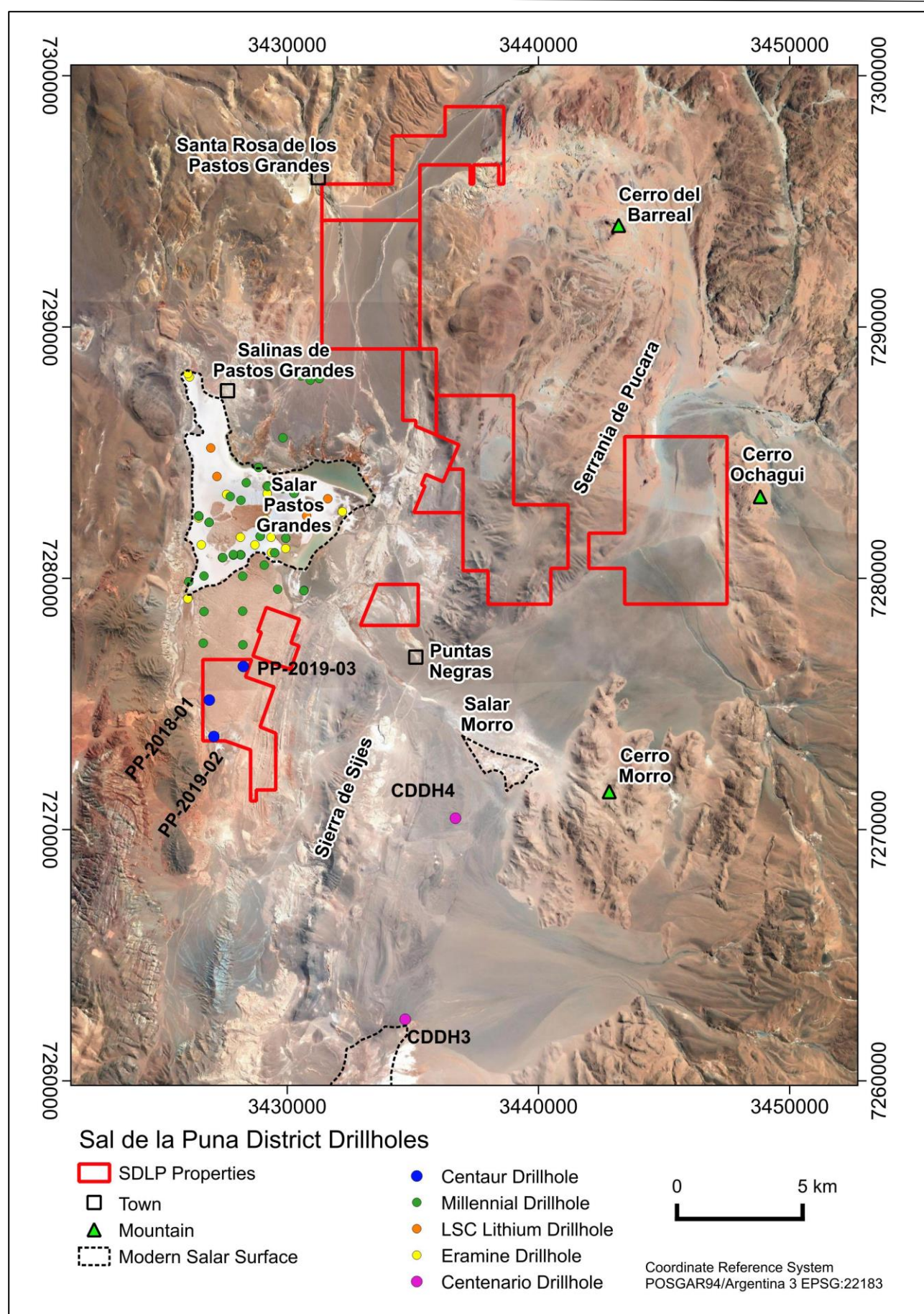


Figure 10.1 Location of SDLP and neighbouring property drill holes

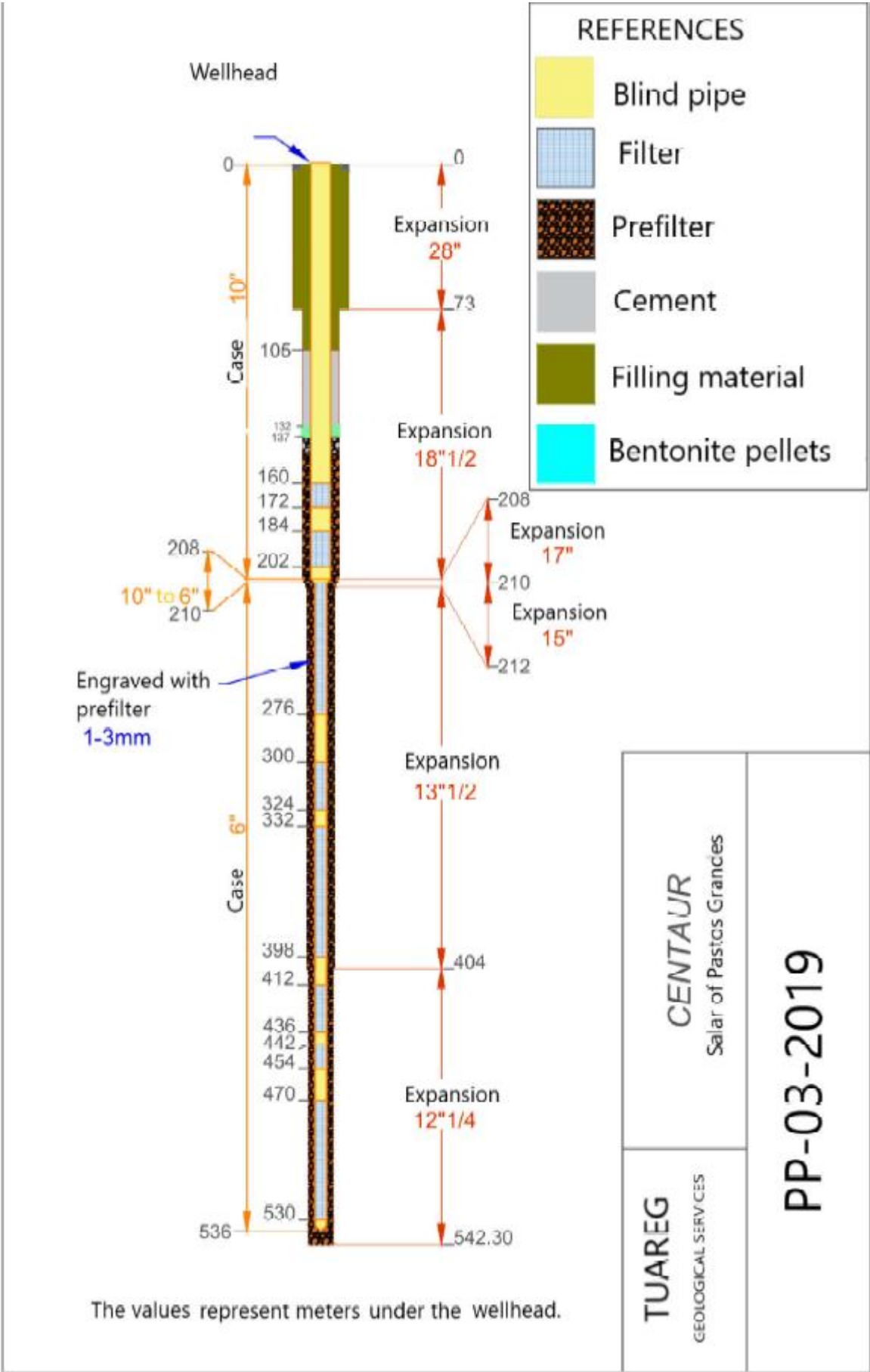


Figure 10.2 Design of hole PP-03-19, showing the location of filters and casing intervals

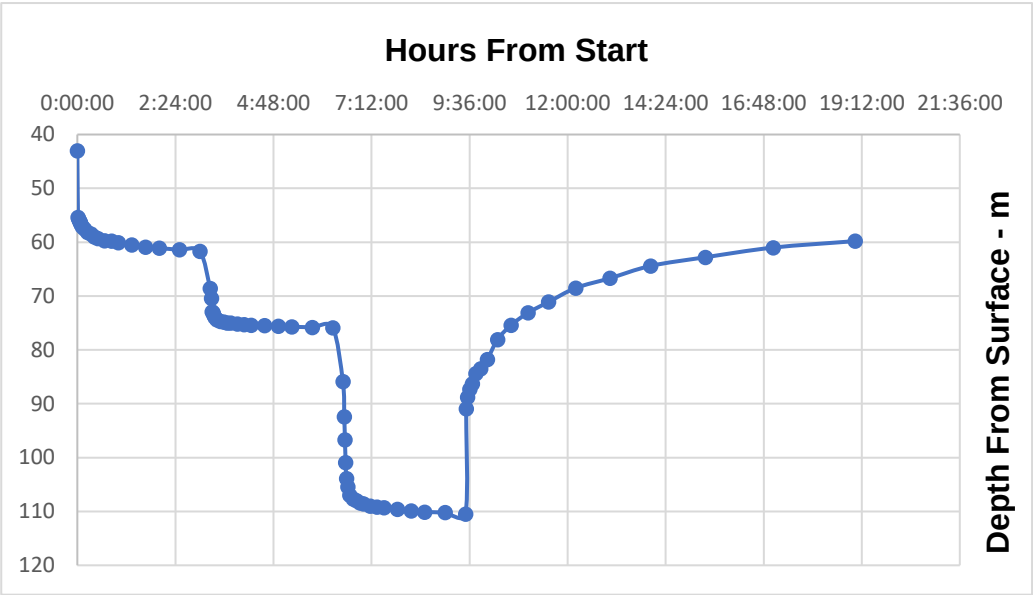


Figure 10.3 Drawdown with time over the three steps of the variable rate test

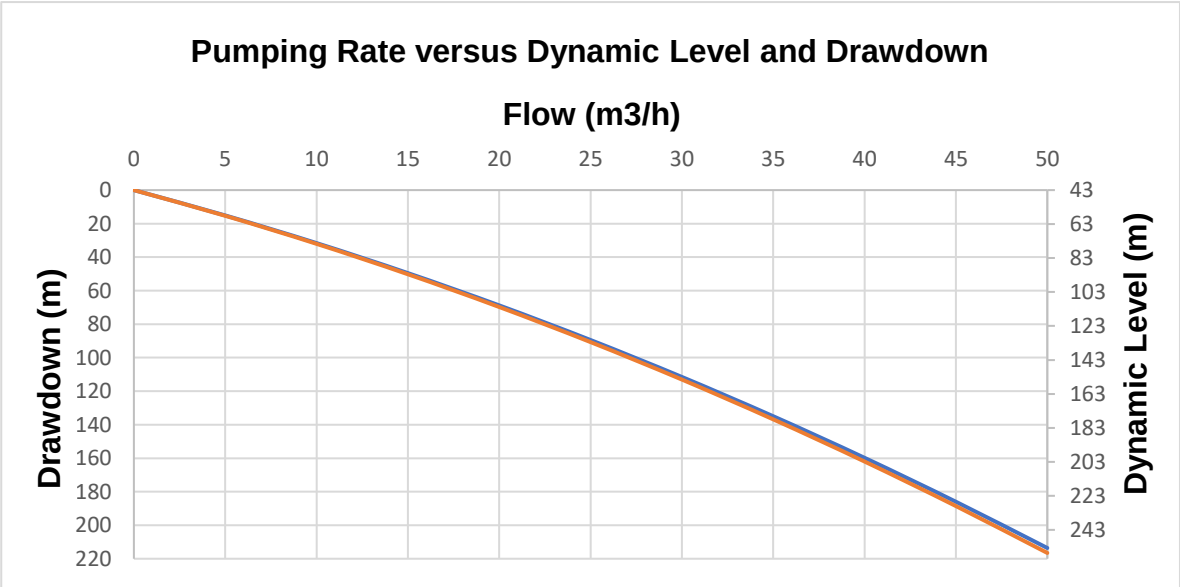


Figure 10.4 Graph of specific capacity with pumping rate versus drawdown

11 Sample Preparation, Analysis and Security

11.1 Brine Sample Collection – Packer sampling

Brine samples were collected using packer devices during the drilling process. Single packer samples were taken on the way down the hole and double packers, to isolate intervals were taken on the way out of the hole. Brine samples were taken by purging the volume of the sampling cylinder 3 times, to ensure brine that did not correspond to the sample was removed from the interval before sampling was undertaken. All samples were taken as triplicate samples. Further details of sample collection are provided in Section 10.

11.2 Brine Sample Handling, Security and Analysis

Once brine samples were collected, they were transferred to the project camp for security. Samples were maintained in the camp until there was a sufficient number of samples to form a batch, which was taken to Salta by Tuareg personnel. From the Salta office of Tuareg samples were delivered directly for analysis at the primary and secondary laboratories.

11.3 Brine Analysis and Quality Control

Brine samples were collected during sampling and the pumping test. Field duplicate samples were collected along with the primary samples and submitted for analysis along with the primary samples, laboratory prepared standards and blanks. The samples were analysed with the ICP-MS method by Alex Stuart laboratories in Jujuy, Argentina, a laboratory with extensive experience analysing brine. The detection limits and method types for individual analyses are shown in table 11.1.

The sampling program consisted of a total of 76 exploration samples were sent for the three drill holes. In addition, there were 21 samples from the variable rate test and 16 samples from the constant rate test. Samples were accompanied by 9 blank samples, 6 Standard A (excluding the Round Robin analyses), 5 Standard B analyses and 12 duplicates for the 76 primary samples. The total of 76 samples does not include duplicate samples for hole PP-03-2019, for which a duplicate of every sample was sent to the Alex Stuart laboratory in Mendoza for analysis.

Prior to the commencement of the program Standards-A and B were sent to four different laboratories for analysis in a “round-robin” evaluation of the value of each standard. The variability in results was noted from analysis of three samples of the same standard. The average for Standard A was 702 mg/l Li and 6930 mg/l K; while for standard B the average was 357 mg/l Li and 3677 mg/l K.

The principal laboratory selected for brine sample analysis during the program was the Alex Stuart laboratory (ASANO S.R.L.) in the city of Palpalá, province of Jujuy. ASANO is associated with Alex Stewart Assayers (Argentina) S.A. (ASi) and, in this way, operates according to Alex Stewart Group standards consistent with ISO 17025 methods at other laboratories.

Analysis	ASANO Method	Detection Limit
Sample preparation		
Filtration		
Physical Parameters		
Density	IMA-28 Determination by picnometry	0.001 g/ml
Electrical conductivity	SM-2510-B Electrical Conductivity by potentiometry	0.05 m/Scm
pH	SM-4500-H+B by potentiometry	0.1 UpH
Temperature	Thermometer	
Total dissolved solids	SM-2540-B-Gravimetry Drying at 180°C	2500 mg/L
Anions		
Chloride (Cl)	SM-4500-Cl-B Determination by argentometry	250 mg/l
Sulfates (SO ₄)	SM-4500.SO ₄ =-C Gravimetric determination	10 mg/l
Bicarbonate (HCO ₃)	Volumetry	10 mg/l
Alkalinity	SM-2320-B: Total Alkalinity	10 mg/l
Cations		
Barium (Ba)	ICP-OES-13 Brines and samples TDS > 0.05%	0.2 mg/l
Boron (B)	ICP-OES-13 Brines and samples TDS > 0.05%	0.5 mg/l
Calcium (Ca)	ICP-OES-13 Brines and samples TDS > 0.05%	0.25 mg/l
Iron (Fe)	ICP-OES-13 Brines and samples TDS > 0.05%	0.1 mg/l
Lithium (Li)	ICP-OES-13 Brines and samples TDS > 0.05%	0.5 mg/l
Magnesium (Mg)	ICP-OES-13 Brines and samples TDS > 0.05%	0.5 mg/l
Manganese (Mn)	ICP-OES-13 Brines and samples TDS > 0.05%	0.5 mg/l
Potassium (K)	ICP-OES-13 Brines and samples TDS > 0.05%	2.5 mg/l
Sodium (Na)	ICP-OES-13 Brines and samples TDS > 0.05%	1 mg/l
Strontium (Sr)	ICP-OES-13 Brines and samples TDS > 0.05%	0.5 mg/l

Note: these are limits that apply to samples prior to dilution and the actual limits are consequently different in some analytical reports

Table 11.1 Analytical methods used for brine samples and detection limits by method

The laboratory uses methods based upon the American Public Health Association (APHA), Standard Methods for Examination of Water and Wastewater, Environmental Protection Agency (EPA), and American Society for Testing Materials (ASTM) protocols. Determination of lithium, potassium, calcium, sodium and magnesium is achieved by fixed dilution of filtered samples and direct aspiration into an induced coupled plasma instrument. The suite of analytes and the laboratory method requested have been the same for the analyses of all the samples in this project, although the detection limits advised by the laboratory have varied from batch to batch, depending on the concentration of samples and the dilution that was required to carry out the analysis.

In the laboratory density, conductivity, pH, temperature and total dissolved solids were measured to provide a check on field parameters.

11.3.1 Brine Standards

Two brine standards were prepared at the Alex Stuart Jujuy laboratory for use throughout the sampling program. The performance of these standards was monitored to evaluate the quality and repeatability of the assays. The standards consist of a medium concentration standard STD-B and a high concentration standard STD-A, with results presented in Table 11.2.

The standards prepared at the ASANOA laboratory were sent for analysis there, along with samples from the three drill holes. The standard samples were also sent to three other laboratories as part of the “round robin” check on the standard values in different laboratories. These laboratories included Alex Stewart Assayers in Mendoza (ASi – Mza), INDUSER in Salta and SGS laboratory in Buenos Aires (SGS – BA). Table 11.3 shows the results of each laboratory and the basic statistics for each.

Analysis of the performance of the standards shows that the reproducible percent differences (RPD's) for the samples analysed in the different laboratories are generally low, with the highest RPD values for calcium, boron, sulphate and bicarbonate. The results show a good level of correlation between the laboratories with generally low RPD values. Higher RPD values can be seen for INDUSER laboratory results mainly for calcium and bicarbonate for both high and medium-range standards. Note also that RPD values are generally higher in all laboratories for the medium-range standard, which is reasonable given the lower ionic strength of this standard.

It can be seen from the statistical analysis that for the high-range standard, RPD is high for calcium, bicarbonate, strontium and boron. For medium-range standards, RPD is high for lithium, boron and bicarbonate. The high RPD registered for iron in both high-range and medium-range standards can be explained by the low values of this element in the samples, below the detection levels of some of the laboratories in several cases.

Mean and Standard Deviation analysis of lithium for high-range and medium-range reference samples (Standards) show that almost all reference sample results fall within ± 2 SD of the mean (result of the Round Robin mean), which is considered the primary control limit. For medium-range standards, high variability of results from INDUSER laboratory determines that these results fall close to or outside the ± 2 SD range.

The results of standard samples analysed outside the round robin check analyses are shown in Table 11.4. Graphs showing the mean and standard deviation of different elements are presented in Figures 11.1 to 11.4.

Sample Type	Lab	Li	Ca	Mg	Na	K	B	SO ₄ =	Cl ⁻	Bicarb. HCO ₃ ⁻	Cations	Anions	Ionic Balance
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/l	mequiv/l	mequiv/l	%
STD-A	ASA NOA	715	614	4615	109774	6974	874	12974	183938	922	5466	5485	0.333
STD-A	ASA NOA	715	624	4707	109975	6998	889	13076	183298	932	5484	5469	-0.272
STD-A	ASA NOA	717	624	4714	109964	7037	889	13162	183120	913	5485	5466	-0.361
STD-A	ASA NOA	719	617	4701	109689	6980	877	12924	183511	930	5471	5472	0.018
STD-A	ASA NOA	704	613	4678	112349	7176	855	13079	187589	924	5587	5590	0.041
STD-A	ASA NOA	708	602	4570	111178	6902	848	13018	187873	935	5521	5596	1.367
STD-A	ASA MZA	716	561	4701	108320	7066	871	12373	177482	954	5410	5291	-2.237
STD-A	ASA MZA	695	511	4456	103494	6992	804	12661	181875	926	5173	5419	4.654
STD-A	ASA MZA	694	521	4527	102382	6952	802	12653	181875	950	5130	5419	5.495
STD-A	ASA MZA	720	567	4725	108235	7088	878	12414	180118	970	5410	5366	-0.814
STD-A	INDUSER	682	482	4410	112800	6830	743	13060	198890	769	5566	5904	5.889
STD-A	INDUSER	689	479	4330	110670	6560	746	13390	197550	769	5461	5873	7.272
STD-A	INDUSER	680	496	4370	113000	6940	778	13500	196100	768	5575	5835	4.557
STD-A	SGS in BA	695	608	4460	107000	6850	823	12562	190707	811	5327	5665	6.146
STD-A	SGS in BA	700	611	4490	108000	6890	829	12538	191191	811	5375	5678	5.485
STD-A	SGS in BA	697	618	4470	107000	6860	825	12671	190604	811	5329	5664	6.100
STD B	ASA NOA	360	336	2452	58149	3613	467	6978	98305	500	2892	2932	1.379
STD B	ASA NOA	360	337	2473	58957	3599	463	6984	98091	505	2929	2926	-0.075
STD B	ASA NOA	359	334	2475	58434	3617	464	6916	98447	508	2906	2935	0.990
STD B	ASA MZA	359	274	2351	54704	3708	408	6717	97967	504	2733	2917	6.496
STD B	ASA MZA	360	274	2343	53919	3690	405	6668	97967	499	2698	2916	7.750
STD B	ASA MZA	360	275	2346	54065	3693	418	6660	97967	499	2705	2916	7.503
STD B	INDUSER	384	264	2400	61710	3860	441	7010	100970	419	3049	3006	-1.401
STD B	INDUSER	327	254	2390	60810	3770	397	7060	101270	411	2998	3015	0.578
STD B	INDUSER	320	263	2330	60060	3670	454	7200	103180	404	2957	3073	3.830
STD B	SGS in BA	367	328	2410	59000	3650	440	6541	100325	435	2927	2979	1.746
STD B	SGS in BA	360	339	2380	59000	3620	435	6556	100444	435	2924	2982	1.994
STD B	SGS in BA	363	326	2400	59000	3640	439	6523	99424	435	2925	2953	0.936
STD-B	ASA NOA	365	329	2426	57803	3434	460	6824	98258	500	2871	2928	1.966

Table 11.2 Round Robin standard analyses from the primary and three check laboratories

STD-A		Li	Ca	Mg	Na	K	B	SO ₄ =	Cl ⁻	HCO ₃ ⁻
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/l
ASANOA	Overall Average	703	572	4558	108989	6943	833	12878	187233	881
	Average	713	615	4664	110488	7011	872	13039	184888	926
	RPD %	1	7	2	1	1	5	1	1	5
ASi MZA	Average	706	540	4602	105608	7024	839	12525	180338	950
	RPD %	0	6	1	3	1	1	3	4	8
INDUSER	Average	684	486	4370	112157	6777	756	13317	197513	769
	RPD %	3	16	4	3	2	10	3	5	14
SGS in BA	Average	697	612	4473	107333	6867	826	12590	190834	811
	RPD %	1	7	2	2	1	1	2	2	8
STD-B		Li	Ca	Mg	Na	K	B	SO ₄ =	Cl ⁻	HCO ₃ ⁻
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/l
ASANOA	Overall Average	357	303	2398	58124	3659	438	6818	99432	466
	Average	361	334	2456	58336	3566	463	6925	98275	503
	RPD %	1	10	2	0	3	6	2	1	8
ASi MZA	Average	360	274	2347	54229	3697	411	6682	97967	501
	RPD %	1	10	2	7	1	6	2	1	7
INDUSER	Average	344	260	2373	60860	3767	431	7090	101807	411
	RPD %	4	15	1	5	3	2	4	2	12
SGS in BA	Average	363	331	2397	59000	3637	438	6540	100064	435
	RPD %	2	9	0	1	1	0	4	1	7

Table 11.3 Interlaboratory results from standards

		Li	Ca	Mg	B	Na	K	SO ₄ =	Cl ⁻
Sample N°	Standard	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
CPP-000074	STD-A	704	613	4678	855	112349	7176	13079	187589
CPP-000101	STD-A	708	602	4570	848	111178	6902		
CPP-000127a	STD-A	708	638	4678	876	111571	7047	13582	180537
CPP-000127b	STD-A	714	648	4539	879	113349	6921	12891	188659
CPP-000159	STD-A	709	621	4607	855	111710	6677	13047	186010
CPP-000183	STD-A	710	614	4590	843	107783	6625	12896	184039
Average		709	623	4610	859	111323	6891	13099	185367
Standard Deviation		3	17	57	15	1893	211	283	3213
CPP-000091	STD-B	365	329	2426	460	57803	3434	6824	98258
CPP-000116a	STD-B	377	326	2462	456	58345	3652	7024	95696
CPP-000116b	STD-B	381	322	2474	471	59569	3895	6651	101858
CPP-000173	STD-B	370	324	2394	450	58952	3491	6832	96948
CPP-000197	STD-B	369	326	2379	448	57841	3518	6983	97254
Average		372	325	2427	457	58502	3598	6863	98003
Standard Deviation		6	3	41	9	757	184	148	2341

Table 11.4 Standard sample results from outside the round robin analysis

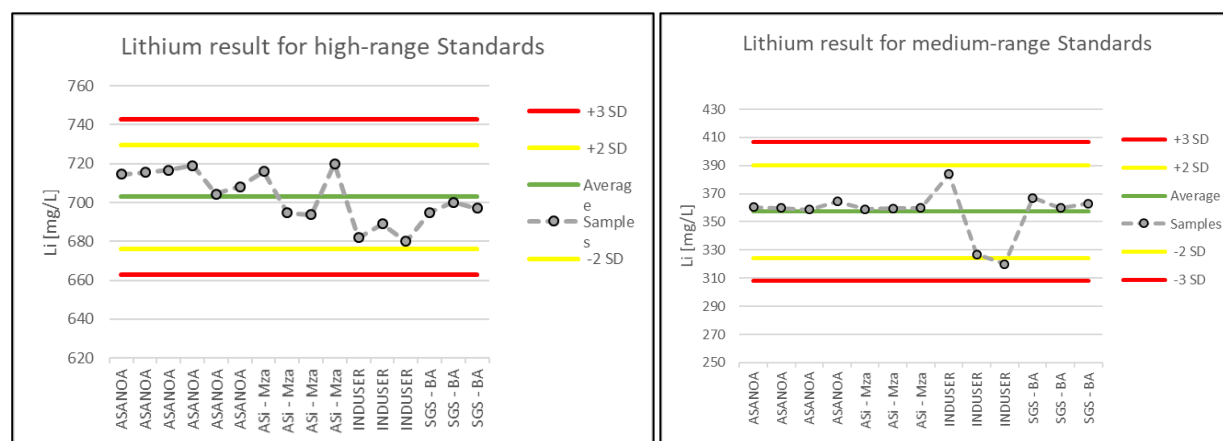


Figure 11.1 Mean and standard deviation plots for lithium in standards

Mean and Standard Deviation analysis of calcium for high-range and medium-range Standards show that ASANO and SGS-BA values are higher than ASI-Mza and INDUSER, resulting in higher variability for this element for the standards between the laboratories. This explains the high RPD results for calcium for both of the standards (25 and 28% respectively).

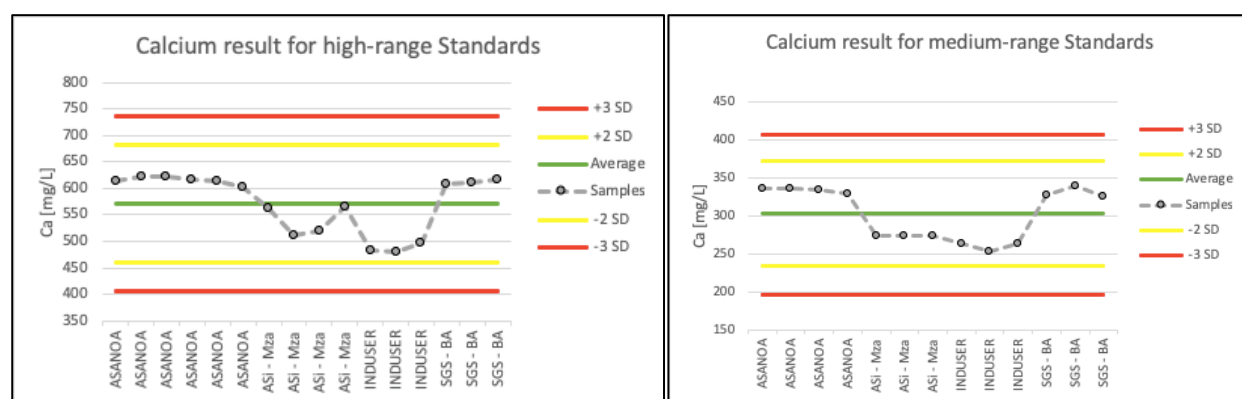


Figure 11.2 Mean and standard deviation plots for Calcium in standards

Mean and Standard Deviation analysis of boron for high-range and medium-range Standards plotted below show also lower values for ASI-Mza and INDUSER compared with ASANO and SGS-BA, although this is not as clear as for calcium.

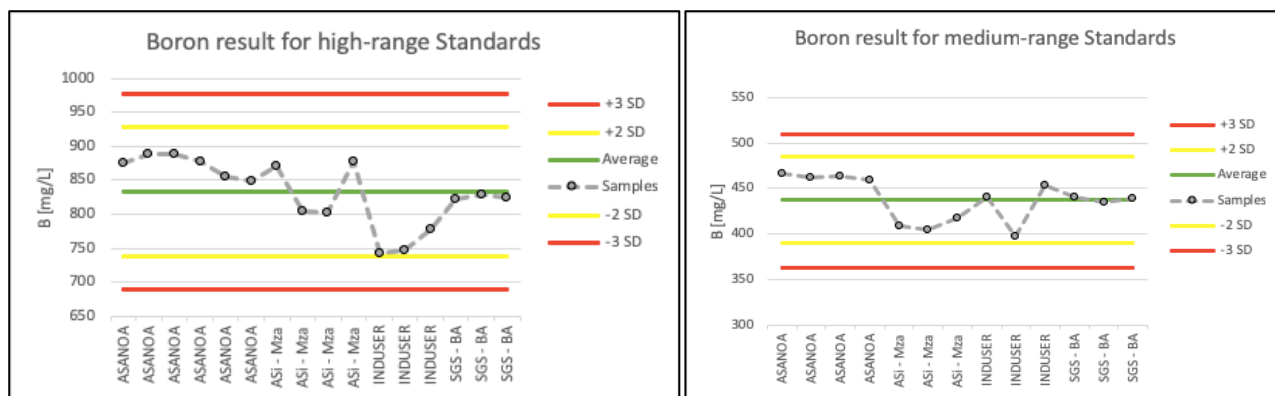


Figure 11.3 Mean and standard deviation plots for Boron in standards

Mean and Standard Deviation analysis of bicarbonate for high-range and medium-range Standards plotted below show more consistent results between ASANOVA and ASI-Mza, but larger standard deviations for INDUSER and SGS-BA.

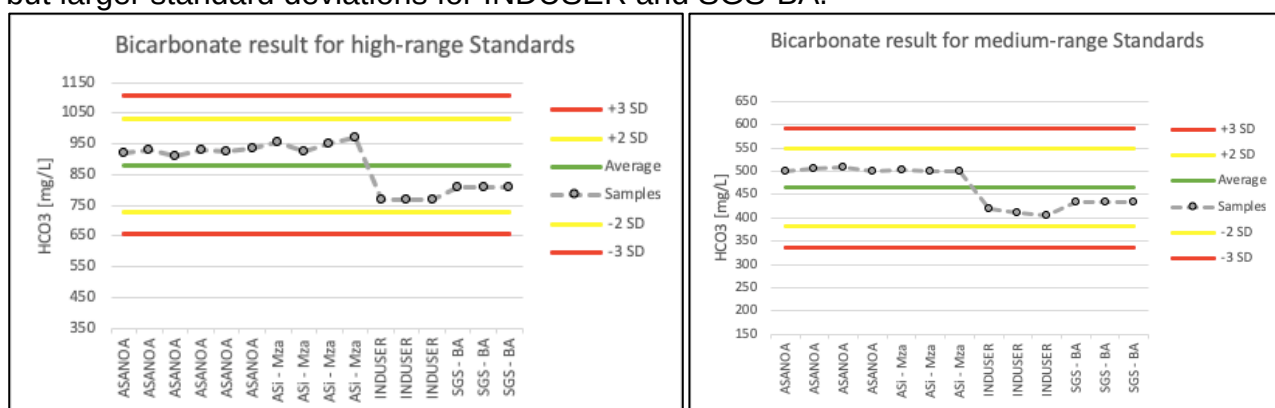


Figure 11.4 Mean and standard deviation plots for Bicarbonate in standards

11.3.2 Duplicate Samples

Duplicate samples were monitored through the submission of field duplicate samples. Eleven sets of duplicate samples were fully analysed and are presented below in Table 11.5 with the comparison of the primary and duplicate samples from these holes. These results showed only minor variation between the primary sample and the field duplicate, with the largest variation associated with the bicarbonate analyses. In general differences were less than 2% and often <1%, with a maximum of 13.6% and 13.7% in the Na content of two samples analysed by the Alex Stuart Mendoza laboratory. A further 10 laboratory duplicates were completed as part of the ASANOVA laboratory QA/QC. These showed RPD% values of 2% or less, confirm that the analyses by ASANOVA are highly reproducible.

Samples from hole PP-03-2019 (the pumping test hole) were analysed as duplicates at the ASANOVA laboratory and the Alex Stuart Mendoza laboratory. Results shown in Table 11.6. The Relative Percentage Differences are generally 2% or less, but differences are larger for sulphate, sodium and calcium. In general, for lithium values are less than 2.5%.

Arena Minerals SDLP Lithium Project

	Li	Ca	Mg	B	Na	K	SO ₄ =	Cl ⁻		Li	Ca	Mg	B	Na	K	SO ₄ =	Cl ⁻
Duplicate pair	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Duplicate pair	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
CPP-000071	412	1034	2179	611	104473	2887	8118	166352	CPP-000131b	539	772	2762	601	113128	5394	8709	187774
CPP-000070	410	1032	2177	610	104343	2894	8142	166605	CPP-000126b	528	745	2668	586	99527	5217	8446	186002
RPD%	0.5%	0.2%	0.1%	0.2%	0.1%	-0.2%	-0.3%	-0.2%	RPD%	2.1%	3.6%	3.5%	2.6%	13.7%	3.4%	3.1%	1.0%
CPP-000084	578	793	2500	572	104700	4422	9517	172446	CPP-000143a	553	798	2770	614	114699	5214	9027	180980
CPP-000080	585	802	2519	577	104437	4472	9604	172302	CPP-000139a	546	790	2737	604	112816	5116	8739	180404
RPD%	-1.2%	-1.1%	-0.8%	-0.9%	0.3%	-1.1%	-0.9%	0.1%	RPD%	1.3%	1.0%	1.2%	1.7%	1.7%	1.9%	3.3%	0.3%
CPP-000097	628	804	2377	568	105411	4806			CPP-000143b	542	795	2725	601	113838	5410	8561	186888
CPP-000093	625	805	2390	570	106182	4811			CPP-000139b	532	809	2686	600	99997	5364	8777	188659
RPD%	0.5%	-0.1%	-0.5%	-0.4%	-0.7%	-0.1%			RPD%	1.9%	-1.7%	1.5%	0.2%	13.8%	0.9%	-2.5%	-0.9%
CPP-000121a	536	789	2733	605	113315	5180	8835	181069	CPP-000179	543	764	2672	591	115160	4950	8616	184669
CPP-000117a	532	792	2711	593	110082	4984	8794	180901	CPP-000178	542	760	2681	593	113861	4920	8602	184939
RPD%	0.8%	-0.4%	0.8%	2.0%	2.9%	3.9%	0.5%	0.1%	RPD%	0.1%	0.5%	-0.4%	-0.3%	1.1%	0.6%	0.2%	-0.1%
CPP-000121b	544	735	2628	600	115023	5414	8759	187774	CPP-000191	532	770	2564	587	110786	4928	8657	184066
CPP-000117b	547	738	2643	603	115955	5461	8298	186888	CPP-000190	535	771	2572	586	110845	4902	8657	183408
RPD%	-0.5%	-0.4%	-0.6%	-0.5%	-0.8%	-0.9%	5.6%	0.5%	RPD%	-0.6%	-0.1%	-0.3%	0.1%	-0.1%	0.5%	0.0%	0.4%
CPP-000131a	552	803	2753	610	113068	5195	9000	181645									
CPP-000126a	529	765	2679	587	111059	5187	8877	181220									
RPD%	4.3%	5.0%	2.8%	3.9%	1.8%	0.2%	1.4%	0.2%									

Table 11.5 Field Duplicate results from drilling and sampling of holes PP-01 and PP-02

Duplicate pair	Li	Ca	Mg	B	Na	K	SO ₄ =	Cl ⁻	Duplicate pair	Li	Ca	Mg	B	Na	K	SO ₄ =	Cl ⁻
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
CPP-000111a	549	789	2734	608	113891	5163	9055	182283	CPP-000130a	540	784	2699	598	112166	5070	9357	180316
CPP-000111b	537	753	2692	591	114730	5332	8726	186888	CPP-000130b	532	740	2654	590	112945	5302	8495	190431
	2.2%	4.8%	1.6%	2.9%	-0.7%	-3.2%	3.8%	-2.5%		1.5%	5.9%	1.7%	1.4%	-0.7%	-4.4%	10.1%	-5.3%
CPP-000112a	534	765	2676	589	112934	5042	9288	181911	CPP-000131a	552	803	2753	610	113068	5195	9000	181645
CPP-000112b	539	747	2662	592	104161	5373	8528	191317	CPP-000131b	539	772	2762	601	113128	5394	8709	187774
	-0.9%	2.4%	0.5%	-0.5%	8.4%	-6.2%	8.9%	-4.9%		2.4%	4.0%	-0.3%	1.5%	-0.1%	-3.7%	3.3%	-3.3%
CPP-000114a	538	792	2741	600	114273	5092	9357	184347	CPP-000132a	549	800	2744	607	113772	5125	9000	181680
CPP-000114b	540	770	2739	603	114964	5424	8462	188659	CPP-000132b	539	754	2718	596	114815	5374	8759	186888
	-0.4%	2.9%	0.1%	-0.5%	-0.6%	-6.1%	10.6%	-2.3%		1.9%	6.1%	1.0%	1.8%	-0.9%	-4.6%	2.8%	-2.8%
CPP-000115a	535	798	2752	600	112854	5075	8657	181361	CPP-000133a	545	794	2732	606	112750	5133	9247	181512
CPP-000115b	523	777	2745	592	111511	5322	8495	187774	CPP-000133b	538	816	2638	600	114852	5397	8627	188659
	2.3%	2.7%	0.3%	1.4%	1.2%	-4.6%	1.9%	-3.4%		1.3%	-2.7%	3.6%	1.0%	-1.8%	-4.9%	7.2%	-3.8%
CPP-000117a	532	792	2711	593	110082	4984	8794	180901	CPP-000135a	539	791	2712	597	111599	5032	8849	181149
CPP-000117b	547	738	2643	603	115955	5461	8298	186888	CPP-000135b	534	750	2680	581	113839	5331	8627	186888
	-2.7%	7.3%	2.6%	-1.7%	-5.1%	-8.7%	6.0%	-3.2%		0.9%	5.5%	1.2%	2.8%	-2.0%	-5.6%	2.6%	-3.1%
CPP-000118a	533	769	2697	593	110866	5031	8835	180670	CPP-000136a	546	780	2714	600	112417	5065	9288	180626
CPP-000118b	539	741	2655	591	114888	5391	8775	189545	CPP-000136b	573	799	2649	638	109645	5684	8528	187774
	-1.1%	3.8%	1.6%	0.3%	-3.5%	-6.7%	0.7%	-4.7%		-4.7%	-2.4%	2.5%	-6.0%	2.5%	-10.9%	8.9%	-3.8%
CPP-000119a	544	778	2710	597	111144	5080	8767	181379	CPP-000137a	545	787	2730	602	112136	5064	9412	179253
CPP-000119b	539	743	2658	590	109206	5380	8874	186888	CPP-000137b	534	733	2635	589	111725	5310	8430	188659
	0.9%	4.7%	2.0%	1.2%	1.8%	-5.6%	-1.2%	-2.9%		2.1%	7.4%	3.6%	2.2%	0.4%	-4.6%	11.6%	-5.0%
CPP-000120a	540	781	2693	595	111684	5093	8890	182815	CPP-000138a	549	785	2735	604	112542	5113	9192	181680
CPP-000120b	537	752	2661	586	112645	5348	8248	187774	CPP-000138b	540	792	2663	610	111818	5392	8545	186888
	0.6%	3.9%	1.2%	1.5%	-0.9%	-4.8%	7.8%	-2.6%		1.7%	-0.9%	2.7%	-1.0%	0.6%	-5.2%	7.6%	-2.8%
CPP-000121a	536	789	2733	605	113315	5180	8835	181069	CPP-000139a	546	790	2737	604	112816	5116	8739	180404
CPP-000121b	544	735	2628	600	115023	5414	8759	187774	CPP-000139b	532	809	2686	600	99997	5364	8777	188659
	-1.5%	7.3%	4.0%	0.8%	-1.5%	-4.3%	0.9%	-3.6%		2.6%	-2.3%	1.9%	0.7%	12.8%	-4.6%	-0.4%	-4.4%
CPP-000122a	543	792	2729	605	113983	5112	9110	179607	CPP-000140a	543	798	2745	609	113900	5171	9137	180892
CPP-000122b	536	848	2574	583	110782	5316	8397	191317	CPP-000140b	540	759	2658	599	113668	5395	8479	190431
	1.3%	-6.6%	6.0%	3.8%	2.9%	-3.8%	8.5%	-6.1%		0.6%	5.1%	3.3%	1.7%	0.2%	-4.2%	7.8%	-5.0%
CPP-000123a	534	796	2725	598	108023	4968	8849	181645	CPP-000141a	548	780	2725	598	112089	5084	9041	181184
CPP-000123b	539	750	2669	586	114887	5355	8594	190431	CPP-000141b	542	787	2641	597	114331	5412	8611	190431
	-0.9%	6.1%	2.1%	2.0%	-6.0%	-7.2%	3.0%	-4.6%		1.1%	-0.9%	3.2%	0.2%	-2.0%	-6.1%	5.0%	-4.9%
CPP-000124a	539	791	2712	600	111018	5078	9233	180139	CPP-000142a	548	785	2706	595	112593	5024	8643	177525
CPP-000124b	544	747	2674	598	115771	5445	8298	186888	CPP-000142b	541	756	2723	599	114023	5360	8594	186888
	-0.9%	5.9%	1.4%	0.3%	-4.1%	-6.7%	11.3%	-3.6%		1.3%	3.8%	-0.6%	-0.7%	-1.3%	-6.3%	0.6%	-5.0%
CPP-000125a	540	791	2740	606	112970	5141	9302	180094	CPP-000143a	553	798	2770	614	114699	5214	9027	180980
CPP-000125b	532	860	2591	583	113323	5350	8677	189545	CPP-000143b	542	795	2725	601	113838	5410	8561	186888
	1.5%	-8.0%	5.8%	3.9%	-0.3%	-3.9%	7.2%	-5.0%		2.0%	0.4%	1.7%	2.2%	0.8%	-3.6%	5.4%	-3.2%
CPP-000126a	529	765	2679	587	111059	5187	8877	181220	CPP-000144a	547	788	2733	603	113015	5116	9069	180971
CPP-000126b	528	745	2668	586	99527	5217	8446	186002	CPP-000144b	536	746	2651	586	105895	5337	8611	186888
	0.2%	2.7%	0.4%	0.2%	11.6%	-0.6%	5.1%	-2.6%		2.1%	5.6%	3.1%	2.9%	6.7%	-4.1%	5.3%	-3.2%
CPP-000128a	544	795	2730	605	112283	5125	8959	179430	CPP-000145a	546	810	2798	613	111762	5053	9014	181246
CPP-000128b	521	731	2615	567	111484	5228	8446	185117	CPP-000145b	538	754	2698	582	114519	5378	8462	186002
	4.4%	8.8%	4.4%	6.7%	0.7%	-2.0%	6.1%	-3.1%		1.5%	7.4%	3.7%	5.3%	-2.4%	-6.0%	6.5%	-2.6%
CPP-000129a	541	783	2693	600	112206	5096	9192	181787	CPP-000146a	553	806	2760	605	112196	5076	9302	180537
CPP-000129b	533	740	2642	589	113848	5345	8726	190431	CPP-000146b	536	737	2648	582	107421	5305	8759	187774
	1.5%	5.8%	1.9%	1.9%	-1.4%	-4.7%	5.3%	-4.5%		3.2%	9.4%	4.2%	4.0%	4.4%	-4.3%	6.2%	-3.9%

Table 11.6 Interlab duplicate sample from PP-03-2019

	Li	Ca	Mg	B	Na	K	Ba	Sr	Fe	Mn	TDS	SO ₄ =	Cl ⁻	Bicarb. HCO ₃ ⁻
	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
NOA Analysis Code														
Technique	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	ICP-OES	Gravimetry	Argentometria	Volumetry
Detection limit	200.5/	0.25/40	0.5/20	Jan-20	Jan-80	2.5/40	0.2/0.01	0.05/10	0.4/6	0.5/0.2	2500	10	250/5	<10
Blank	<0,5	<0,25	1.4	1.3	<1	<2,5	<0,2	<0,05	0.4	<0,5	<2500	<10	<250	<10
Blank	<0,5	<0,25	<1	1.3	<1	<2,5	<0,2	<0,05	0.46	<0,5	<2500	<10	<250	<10
Blank	<0,5	<0,25	<0,5	1	<1	<2,5	<0,2	<0,05	0	<0,5				
Blank	<20	<40	<20	<20	<40	<40	<0.20	<5.0	<6.0	<0.10		<10	<250	
Blank	<20	<2	<20	<20	<80	95	<0.01	<10.0	<6.0	<0.01		12	<5	
Blank	<20	<40	<20	<20	<40	<40	<0.20	<5.0	<6.0	<0.10		<10	<250	
Blank	<20	<2	<20	<20	<80	81	<0.01	<10.0	<6.0	<0.01		<10	<5	
Blank	<20	<40	<20	<20	<40	<40	<0.20	<10	<6.0	<0.20		<10	<250	
Blank	<20	<40	<20	<20	<40	<40	<0.20	<10	<6.0	<0.20		<10	<250	

Table 11.7 Blank sample results

11.3.3 Blank Samples

Blank samples are samples of drinking water that are submitted to determine whether they report any significant concentration of salts, which would potentially indicate contamination during the analytical process. Three blank samples were sent to ASANOVA for analysis along with the exploration samples, as part of the QA/QC program. The table below shows the analysis results for the blanks samples, and the detection level of the analysis methodology used by the laboratory. It can be seen that the values are, for the main components, below the detection levels, as expected for blanks.

11.3.4 Ionic Balances

Ionic balances were evaluated for all the analyses to ensure they have differences of <5%, which would indicate analyses of poor and unreliable quality. The results (Figure 11.5) showed that samples are of reasonable quality, although there is a slight imbalance of 2% in favour of the anions.

QA/QC analysis of all labs was performed using ion balance. Ion balance calculations work on the principle that the total amount of cations (positive ions) in a sample must balance out the total amount of anions (negative ions). This is specially the case for samples with high ionic strength fluids such as brines. The figure below shows the ion balance for the primary brine samples.

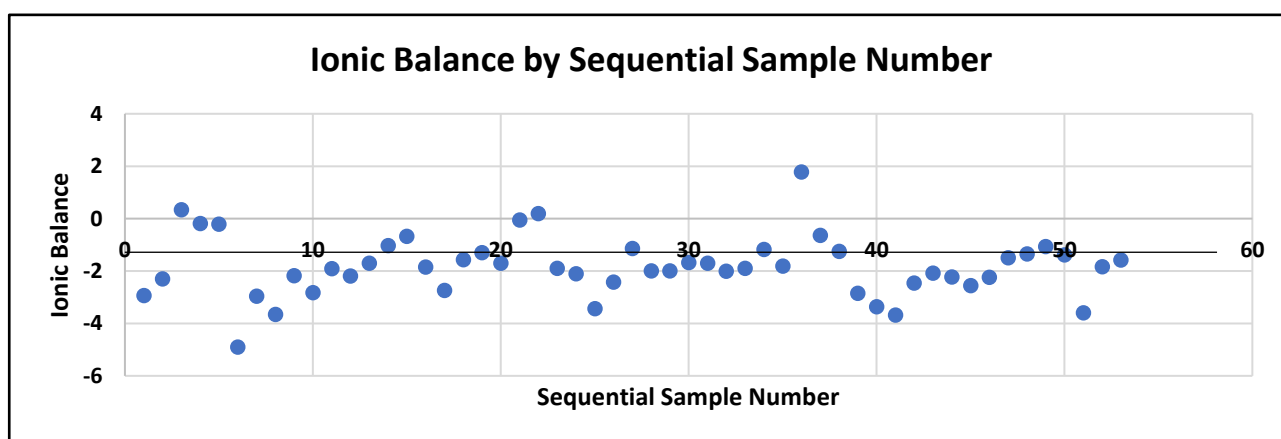


Figure 11.5 Ionic balance for SDLP drill holes

11.3.5 Interlaboratory Analyses

Standards were prepared by the ASANOVA laboratory and used throughout the program for batches of samples sent to the primary laboratory and a "round robin" analysis of samples

was carried out between laboratories at the beginning of the program. Duplicate samples were submitted to the Alex Stuart laboratory in Mendoza for all the bailer samples of hole PP-03. The check samples between the laboratories are considered to be acceptable.

11.4 Drainable Porosity Data Collection and Analysis

Drainable porosity samples were not collected from conventional diamond coring, as personnel responsible for drilling were aware of the considerable drilling problems that had been encountered in Pastos Grandes by both Millennial Lithium and PlusPetrol acquiring cores in the extensive lower sandy sequence and by other companies in other salars, where similar materials were encountered.

Consequently, the company decided to proceed drilling holes with HQ core equipment, but with a tricone bit, resulting in cuttings that were logged by the project geologists to establish the stratigraphic sequence in each hole. Down hole geophysical logging was conducted on all three holes to supplement the information obtained from drilling cuttings, although the more comprehensive suite of down hole logs including the magnetic resonance tool (which provides a direct measurement of drainable porosity) were only available to use in PP-03-2019, as the first two holes were installed with 2-inch PVC that did not permit use of this tool.

The drainable porosity information from PP-03-2019 was averaged by lithological unit (upper halite, lower clastic) to develop averages for the geological units in this hole. The results are summarised in Table 11.8 below, and show very similar values for both the halite and underlying clastic sequence, confirming the sediments are much finer grained, with lower drainable porosity, than in holes PP-01 and PP-02. These porosities are considered to be porosities representative of the finer grained and more halite dominated eastern part of the of the Almafuerde property and not representative of the significantly coarser grained sediments in the west of the property.

An example of the down hole logging information obtained from PP-03-2019 is shown in Figure 11.6 below, with the drainable porosity the thin blue line below the heading porosity. The porosity values for drainable porosity measurements were made in-situ with the magnetic resonance tool. The porosity results are compared to other information from the Pastos Grandes salar and other salars in Table 11.9. The average values of drainable porosity across different salar projects are summarised in Table 11.10 below.

Unit	Average drainable porosity	Maximum drainable porosity	Minimum drainable porosity	Standard deviation	Average total porosity
Upper halite	4.1%	15.6%	0.0%	2.3%	20.8%
Lower clastic	4.1%	15.7%	0.2%	2.9%	28.1%

Table 11.8 Drainable porosity data from the magnetic resonance profile of the hole

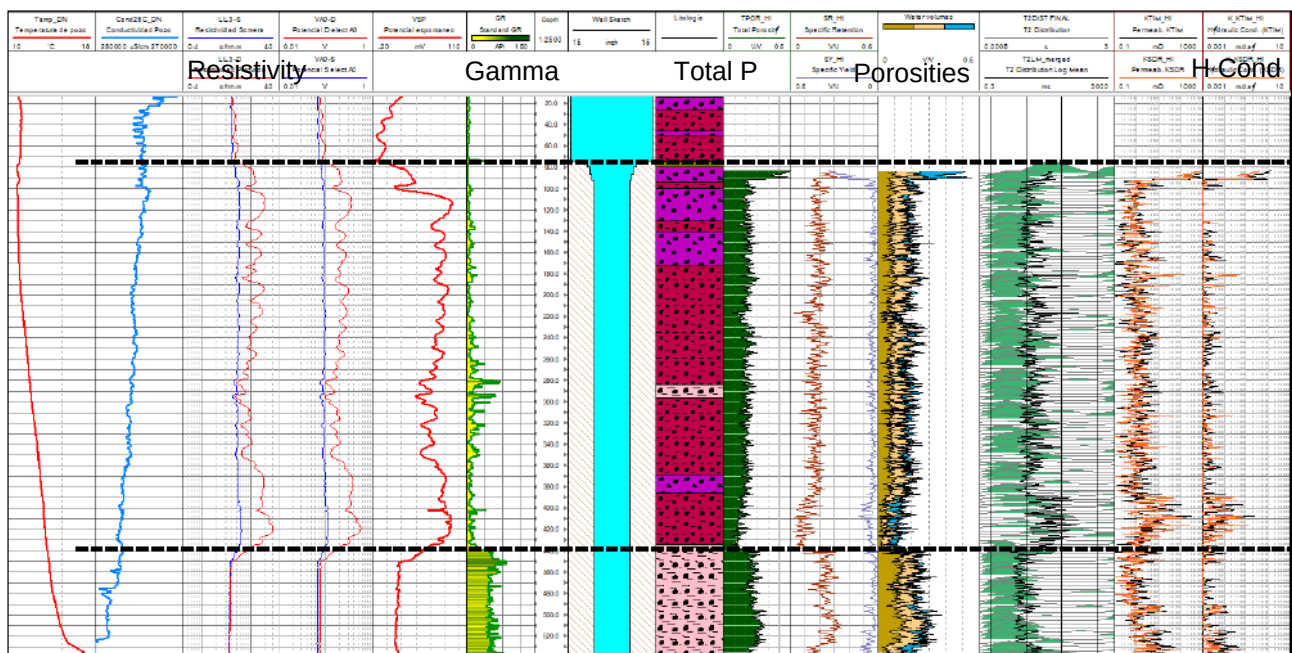


Figure 11.6 Down hole logging results from hole PP-03-2019 at Pastos Grandes

11.5 Drainable Porosity Data Comparison

Obtaining reliable drainable porosity (Specific Yield) data is one of the key challenges of exploring salt lakes. Typically diamond drilling is carried out to obtain core samples that are sent for analysis at a laboratory, with check duplicate samples submitted for analysis in another laboratory. However, obtaining reliable core samples of sandy material in salt lakes can be very challenging, considering the friable or fragile nature of the sediments. An alternative to obtaining drill core is measuring porosity in-situ. This can be done using a magnetic resonance tool for in-hole measurements of porosity, lowering the tool into the hole and making progressive measurements every 8 cm vertically as the tool is raised in the hole.

There is also now a considerable body of porosity data that has been obtained from porosity measurements in other brine projects that has been reported by the property holders in public reports. This information provides a reasonable supplement to the project specific information at Pastos Grandes that was collected using the Magnetic Resonance tool (in PP-03-2019), which has also been used on a number of other salars. This is a tool developed for the oil industry for in-situ porosity and permeability measurements, which has been miniaturised for applications in the water industry and direct applicability for measurements in salars.

Specific Yield - Average Values & Ranges							
Project	Owner	Salt porous	Salt compact	Clay	Sand-Silt	Sand	Gravel
Olaroz 2011	Orocobre	N/A	4+/-2	2+/-2	6+/-4	13+/-7	
Cauchari 2017	LAC/SQM		5.2	5.2	14-16	16-24.9	
Cauchari 2018	AAL/ORE	9-16	2	1	4-6	15.6	
Rincon 2016	ENERGI	11.9	2	2		8.6-10.1	
Diablillos 2016	LithiumX			0.1-4 (1.6)		9-15 (13.2)	9-29
Maricunga 2017	LPI/MSB	6.5		2.2	6	6-10.3	14.8
Pastos Grandes 2019	Millennial		3 - Mixed halite	2	14 Mixed sand - silt	16 Sand/ stone	16 Gravel & Breccia
Pastos Grandes 2018	PlusPetrol/Litica	8.88	0.23 - 0.5	0.2 - 13.8 with Silt & sand	0.6 - 13.8 with Silt & sand	9.2 - 10.5	
Pozuleos 2018	PlusPetrol/Litica	10 RBRC Pump 19-32	2 - 8	3 - 6 Clay, some sand			
Pastos Grandes 2019	Arena Minerals		4.1 - Low porosity	4.1 - some silt, sand			

Table 11.9 Specific yield values and ranges from different lithium projects, compared with results from PP-03-2019 – which is only representative of the eastern part of Almafuerde

	Salt porous	Salt compact	Clay	Sand-Silt	Sand	Gravel
Average value	10	3	2.5	9	13.5	16

Table 11.10 Typical average values for different lithologies based on third party drilling and sampling in Pastos Grandes and other salt lake projects in Argentina and Chile

On the basis of the results from the magnetic resonance log of hole PP-03-2019 and the porosity values shown in Table 11.8 and 11.9, and information from Millennial Lithium and PlusPetrol, who have properties further north in the Pastos Grandes Salar, the following values have been selected for use in the resource estimate:

- Values of 3 % for the upper sequence of halite and finer grained clastic sediments across the salar
- In the west where the lower clastic unit sediments are coarser grained values for 10% for sandy and gravelly units, decreasing towards the east

11.5.1 Permeability

Values of permeability have been determined in hole PP-03-2019, based on the down hole magnetic resonance data, using the two algorithms available for calculation of this parameter. For the upper halite unit values averaged these are between 0.002 and 0.004 m/day, with a value of 0.003 m/day for the fine grained lower clastic sequence indicating both sequences are relatively low permeability compared to sediments described further to the west, out of the core of the salar.

Additional permeability data was obtained from the pumping test in PP-03-2019, with a hydraulic conductivity of 0.005 m/day derived from the pumping test. It's important to highlight the lithological conditions found in the eastern sector of the property are lower than those expected in the west.

12 Data Verification

Standards, blanks and field duplicates were submitted in the sample batches as a check on laboratory performance and sample integrity. This was maintained throughout the drilling program, with samples sent to the Alex Stuart Mendoza laboratory as the check laboratory. The first batch of samples did not include duplicates or blanks but accompanied standard samples of the round robin. Overall comparison between the duplicate samples did not show any significant errors.

The geology of the drill holes was reviewed and holes compared to the geophysical logs, to make sure the interpretation was reasonable and consistent.

The QP's believes the quality of the information is adequate to support resource estimation and the classification of resources as outlined in Section 14.

13 Mineral Processing and Metallurgical Testing

No brine processing test work has been completed to date. Based on published information brine chemistry is broadly similar to that on the adjacent projects of Millennial Lithium and PlusPetrol, where project Feasibility and Pre-Feasibility studies have been completed, including evaluations of brine processing. Test work by these companies indicates lithium carbonate can be produced from the Pastos Grande salar meeting international lithium sales criteria.

14 Mineral Resource Estimate

An initial resource has been defined in the Almafuerte property in the south of the Pastos Grandes salar by drilling three holes. Considering the information available in this property the Resource here has been classified as Inferred. However, the drilling on adjacent properties provides a high level of confidence the Almafuerte resource can be upgraded to a higher resource classification with some additional drilling and resources can be defined in Graciela and other properties

Exploration potential remains for the definition of resources in at least five of the other properties, including Graciela, Fortuna, Patovica I, Barreal II and La Relojera. The exploration potential is based on information provided by the TEM geophysical survey and consideration of information from adjacent properties.

The lithium, potassium, magnesium and boron concentrations were estimated by Ordinary Kriging (OK). The block rock type composition was estimated using an inverse distance indicator model. These values were then weighted by the assumed porosity for each sediment type in order to assign a porosity to each block. All estimates were carried out using Micromine software.

Data from a total of five drill holes were used to estimate the gamma, lithium, potassium, magnesium and boron values of the Almafuerte property. The red points in Figure 14.1 mark the collar locations of drill holes used in the estimate. The black points are collars of drill holes that were not used in the estimate.

14.1 Basin boundaries

The resource estimate was developed by building a geological model with the results from SDLP drill holes and evaluating the publicly available information from Millennial Lithium and Lithium LSC further to the north. The geological model (Figure 14.1) included development of a block model for resource estimation, extending across the Arena Minerals Almafuerte property.

A 3D wireframe solid was constructed in order to constrain the estimates. The edge of the basin sediments at surface was defined using topography and satellite imagery and can be seen as the red line in Figure 14.1. The dip orientation of the faults on the edges of the basin is unknown but drilling near the basin edge to the north of the Almafuerte licence area indicates that the boundaries must be very steep. The thickness of the basin sediments is also unknown as none of the drill holes in the basin have reached the basement. The deepest drill hole in the whole basin has been drilled in the Almafuerte licence area and reaches a depth of 653 m.

In order to model the sides of the basin the surface boundary was contracted by 100 m (into the salar) and projected 500 m downward, which results in boundary edges of around 79°. The base of the centre of the basin was assumed to be 10 m deeper than the drill holes. This is considered to be a conservative approach to estimating the volume of the basin, which may be significantly deeper than the drilled depth. Additional work may involve drilling deeper in order to intercept the basin basement in the centre and around the edges and geophysical surveys to map the base of the sediments.

14.2 Lithological domains

The basin sediments are composed of layers of halite, gravel, sand, clay and silt. The sediment type does not appear to have any relationship to the brine grades however it has a strong influence on the downhole gamma readings. Figure 14.2 shows a boxplot of the composited downhole gamma readings for each logged sediment type.

Broadly speaking, the basin can be split into

- Unit 1 – upper halite dominant zone and
- Unit 2 – lower sand and interbedded finer clastic dominated zone. The contact nominally dips around 5° towards the east.

A surface was created representing this contact and used to split the basin wireframe into two zones. A cross-section showing the zone wireframes, drill hole logs and down hole gamma values is shown in Figure 14.3.

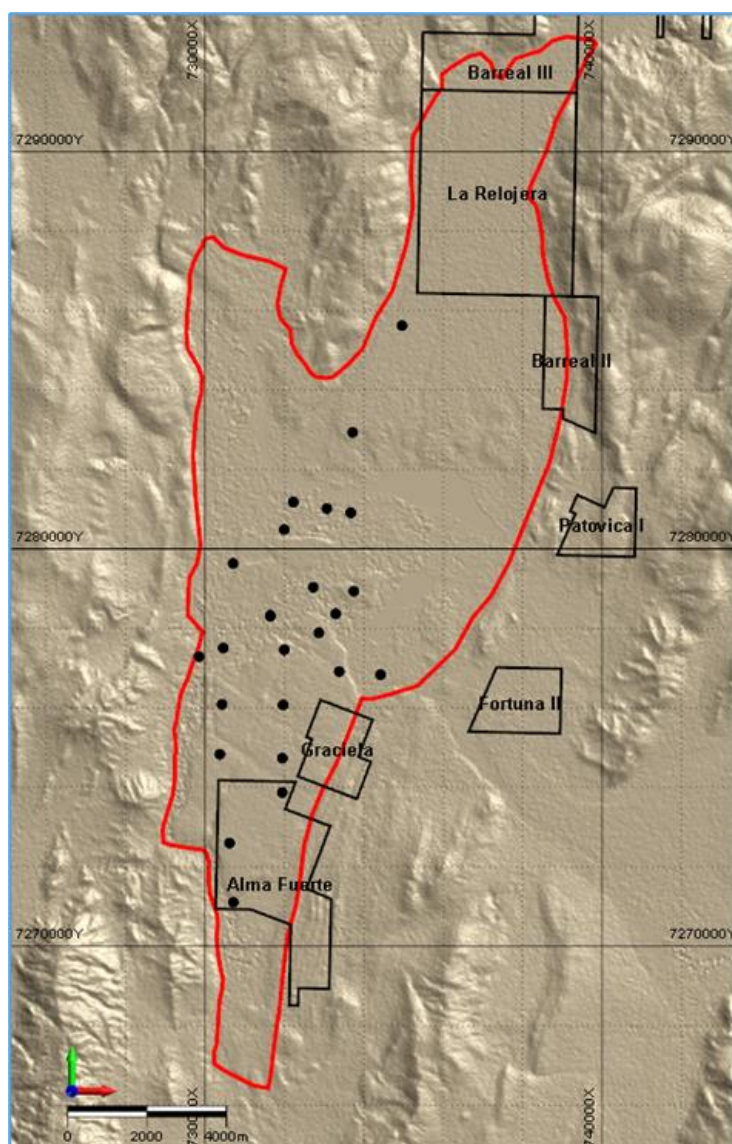


Figure 14.1 Location of drill holes in the Pastos Grandes Basin and outline of the salar basin. Note other SDLP properties are likely to host coarse sediments that may also host brine. WGS84 Z19S

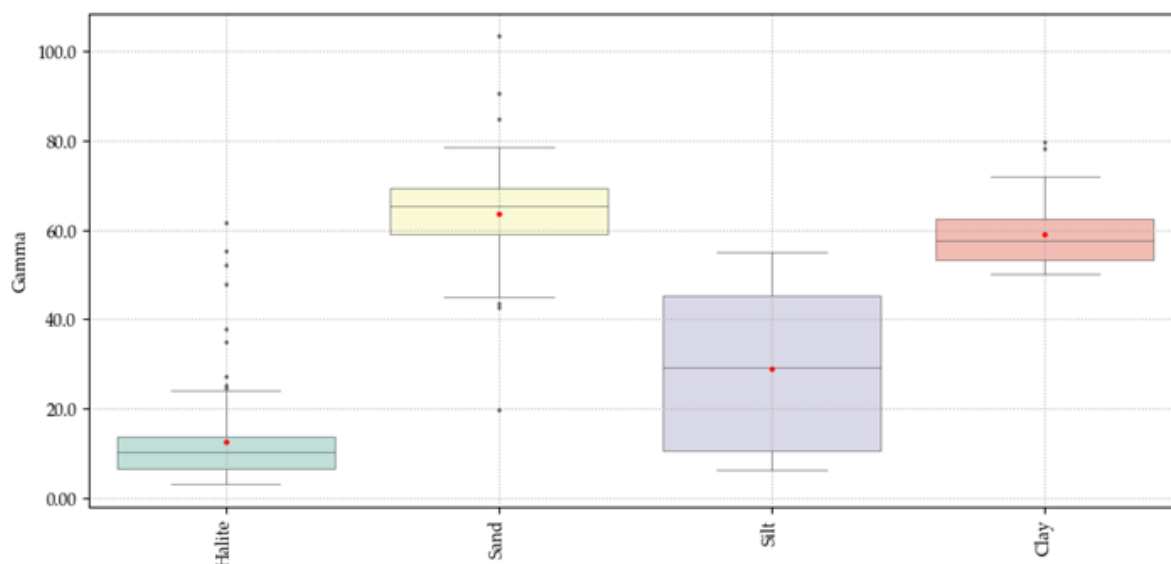


Figure 14.2 Boxplot showing downhole gamma readings by logged sediment type

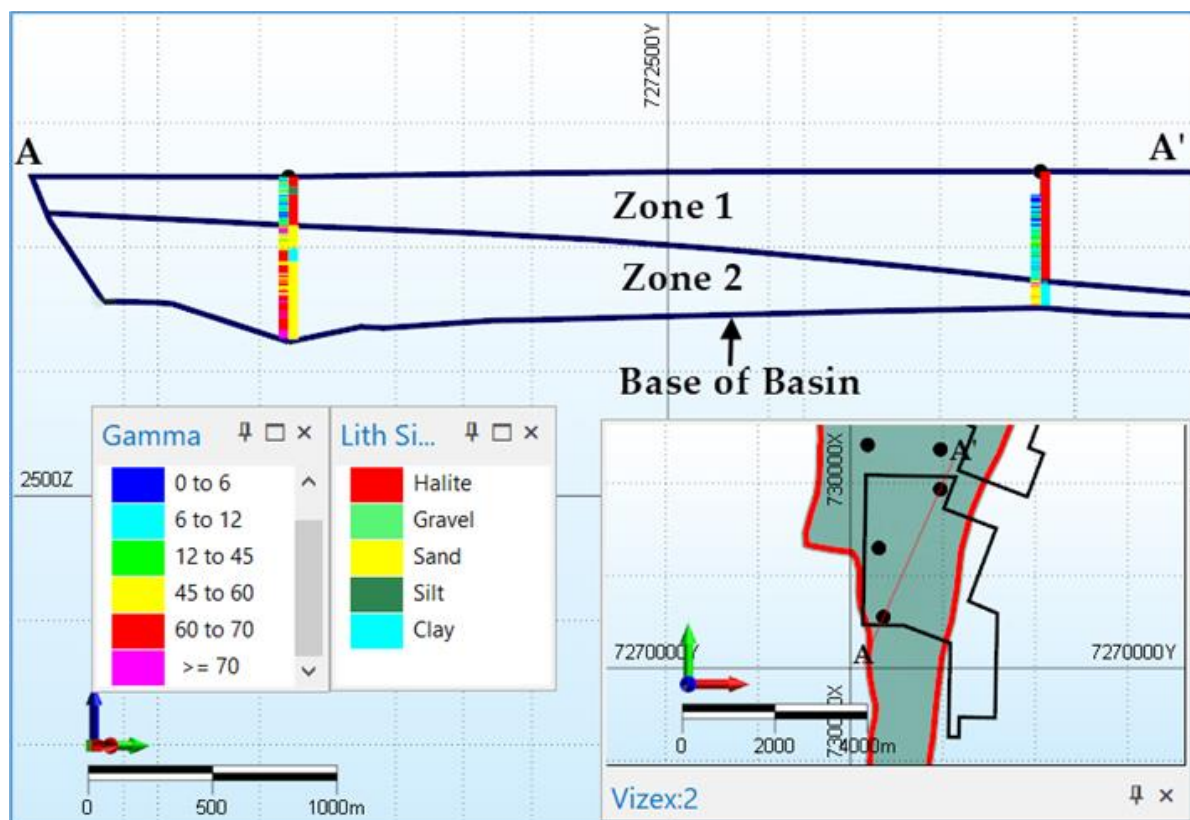


Figure 14.3 Cross-section showing domain wireframes and drill hole data

(Left drill hole: Gamma values, right drill hole logged sediment type). Coordinates WGS84 Z19S

Figure 14.4 presents a boundary plot showing downhole gamma values across the halite-sand boundary. It clearly shows a large difference in values on either side of the contact. The surface was therefore treated as a hard boundary for the purposes of estimating the gamma values across the basin, as a reflection of sediment type.

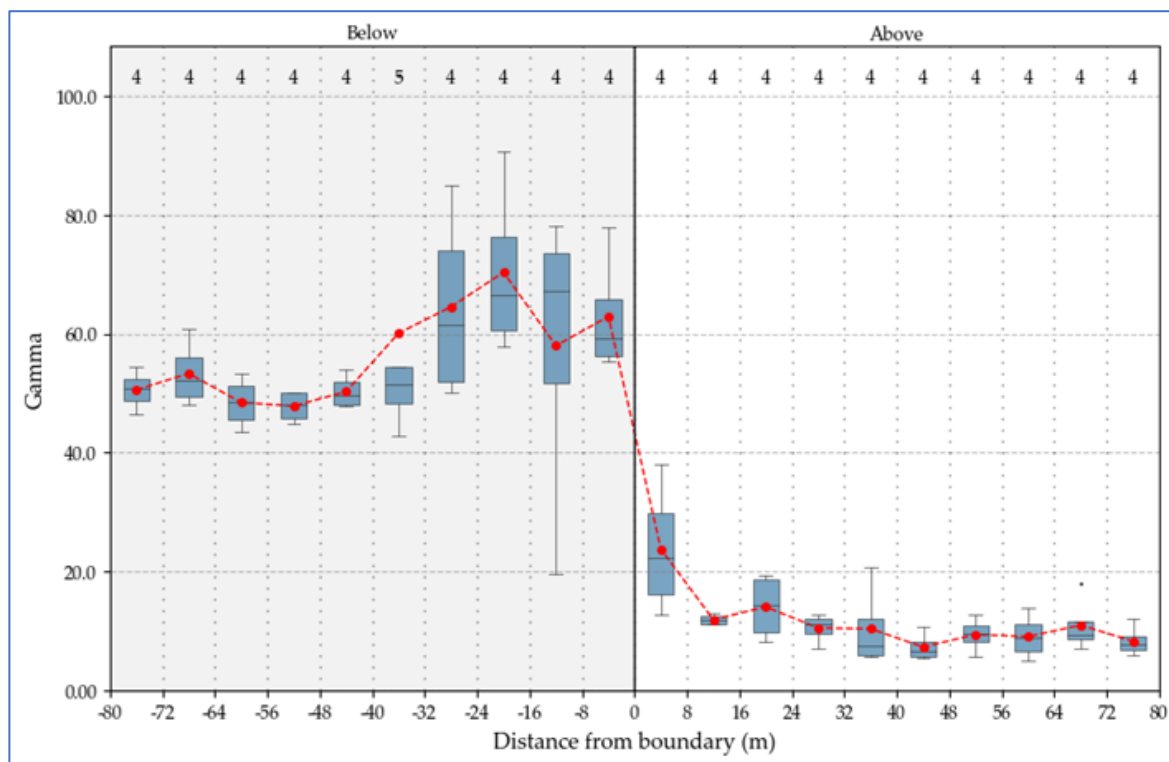


Figure 14.4 Contact plot showing downhole gamma readings across the halite-sand boundary

The resource model extents are controlled by the drilling information and geological interpretation. Because properties such as Almafuerte and Graciela appear to straddle a faulted contact between salar sediments and older pre-salar Tertiary sediments (to the east) the interpreted faults are used to split productive and barren non-porous rocks within the properties.

14.3 Topography

A detailed local topographic survey has not been carried out. The elevation data from the Shuttle Radar Topographic Mission (SRTM) was downloaded and compared against the drill hole collar elevations from the entire basin. There appeared to be reasonably good agreement between the elevation data and the collar elevations but a few drill holes showed elevation differences of as much as 8.6 m. It should be noted that the collar elevations of the five drill holes used in the estimate were all within 2 m of the SRTM elevation data. In order to maintain internal consistency a topographic surface was created using drill hole collar coordinates for use in the resource estimate.

The upper surface of the block model is the topography less a constant depth of 10 m, representing the depth of the water table below surface. The block model extends to the base of the drill holes. However, it is recognised that the basin continues below this depth and could possibly be hundreds of metres deeper.

14.4 Assayed intervals used for estimation

Three holes were drilled in the Almafuerte licence area. An additional 23 drill holes have been drilled to the north of the Almafuerte area on permits owned by another company. The collar locations, logging and brine assay results of these additional drill holes are available in the public domain. The locations of all the drill holes in the Pastos Grandes basin are shown in Figure 14.1.

14.4.1 Brine assays

For the purposes of estimating the brine concentrations in the Almafuer property, data from the three SDLP drill holes was combined with data from the southernmost two drill holes from the neighbouring property

For the purposes of estimating the brine concentrations in the Almafuer property, data from the three drill holes was combined with data from the two drill holes nearest the SDLP properties. The drill holes used can be seen in Figure 14.1. It was considered that the inclusion of these data is likely to improve the estimate and information from the adjacent property was considered to have been collected in a reasonable manner, overseen by reputable companies, although it was not independently verified by the QP.

Brine assays were taken with fixed lengths, with some variability in the fixed length and distance between samples. For this reason, the brine assay values were treated as point data and were not composited prior to estimation. Some large intervals remain un-assayed, especially at the top of the drill holes. There are also large intervals in the middle of drill holes that lack brine assays, due to problems in recovering a brine sample during drilling. These issues reduce the confidence in the estimate and all measures should be taken in the future to improve and standardise sampling.

It is to note that the brine sampling in drill hole PP0319, which is the northernmost SDLP drill holes, was completed after the well was installed and consequently was sampled in a different way. The range in grades is significantly smaller in this hole, compared to other holes.

	Li (mg/l)	K (mg/l)	Mg (mg/l)	B (mg/l)
Count	101	101	101	101
Metres	221.4	221.4	221.4	221.4
Minimum	274	2,578	1,710	497
Maximum	629	5,187	3,290	903
Mean	481	4,298	2,595	591
Median	462	4,170	2,606	593
STD	68	895	314	44
CV	0.14	0.21	0.12	0.07

Table 14.1 Summary statistics for brine assays used in estimate

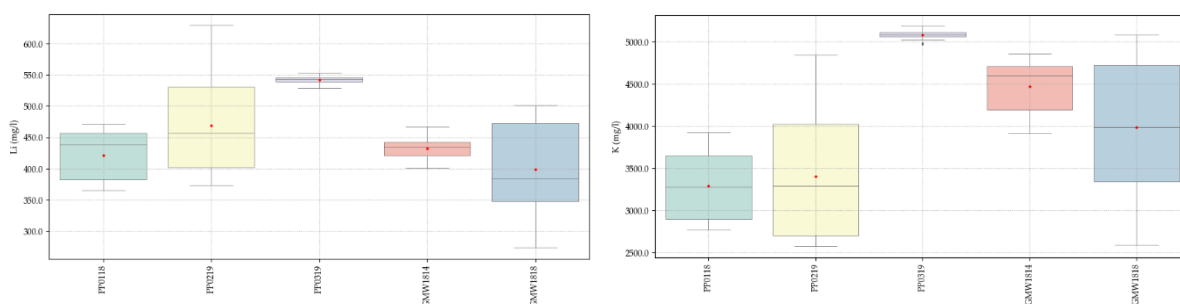


Figure 14.5 Boxplot showing brine assays by drill hole

(left: lithium grades, right: potassium grades)

There is a strong correlation between lithium, potassium and magnesium brine assays and a reasonable correlation of these elements with boron grades. The Pearson correlation matrix of brine assays used in the estimate are shown in Table 14.2

	Li	K	Mg
K	0.93		
Mg	0.89	0.91	
B	0.58	0.58	0.60

Table 14.2 Pearson correlation matrix of brine assays

14.5 Gamma values – representing lithology

Downhole gamma values were only available from two drill holes, PP0219 and PP0319. Values from PP0219 covered almost the entire hole whereas coverage only started at a depth of 91.47 m for PP0319. Data was collected continuously downhole on 1 cm intervals. For the purposes of estimation, the 1 cm data was composited to 4 m intervals as this provided a reasonable number of samples considering the block height of 20 m.

Due to the large difference across the halite-sand boundary discussed in above in 14.1 the two zones were estimated independently. The summary statistics can be seen in Table 14.3.

14.6 Sediment type indicators for specific yield porosity

Specific yield data for the project was collected by direct measurement in-situ using a Borehole Magnetic Resonance (BMR) downhole logging geophysical tool. This tool was designed and built in Australia for use in highly saline conditions and is well suited for use in the salar environment. The geophysical data collected in test production hole 3 was compared with data from the more limited geophysical logs collected in holes 1 and 2 and the geological logging to define the two geological units used for the resource estimation. BMR porosity values were then applied from hole 3 to the other two holes.

The BMR data from the clastic unit towards the base of hole 3 is lower than drainable porosity results obtained by Millennial and Plus Petrol in laboratory tested samples from holes drilled in the west of the basin, in similar locations to SDLP holes 1 and 2, so the porosities in these holes are likely to be higher than those BMR measurements in hole PP-03-19.

The porosity is expected to vary according to the sediment type, with lower porosities expected in finer grained sediments and evaporitic sediments. Unfortunately, down hole specific yield porosity data was only available from one drill hole, PP0319 (profiled with the BMR tool), and this data displays a more complicated down hole variation than was reflected by the logged sediment type. It was therefore decided to use assumed specific yield porosities for each sediment type as shown in Table 14.4. These drainable porosity values are based on published feasibility studies from a number of Argentine brine projects, with porosity values determined by laboratory test work, from similar sediments in a similar salar setting to the SDLP.

	Zone 1	Zone 2	Total
Count	135	139	274
Metres	540	554	1,094
Minimum	3.0	19.6	3.0
Maximum	55.0	103.5	103.5
Mean	12.6	62.2	37.7
Median	10.3	63.0	46.4
STD	9.5	10.0	26.7
CV	0.8	0.2	0.7

Table 14.3 Summary statistics for gamma values used in estimate

Sediment Type	Specific Yield Porosity
Sand/Gravel	10%
Silt	5%
Clay	3%
Halite	3%

Table 14.4 Assumed specific yield porosities for each sediment type

In order to assign these values to the block model an inverse distance indicator model was created. This involved compositing the geological logging to 4 m intervals and then creating a column for each sediment type. The value 1 was assigned to the column corresponding to the logged sediment type while all other columns were assigned a zero. These values were then interpolated into the block model using an inverse distance method described above. The halite-sand boundary discussed in Section 14.1 was treated as a hard boundary. The specific yield porosities were then calculated by taking the weighted average porosity for each sediment type.

14.7 Variogram models

Variography was carried out for the brine assays using all drill hole data from the basin, including data to the north of the area estimated. The variograms generated were reasonably poorly structured owing to the widely and irregularly spaced data, and variable continuity of grades. Despite this, the variogram models showed longer ranges along the long axis of the salt lake and shorter ranges across the width of the salt lake. The shortest axis was vertical. This matches the expected relative anisotropy. A graphical representation of the lithium variogram model can be seen in Figure 14.6 and the variogram details are shown in Table 14.5. All variogram structures are exponential.

Element	Z Rotation	X Rotation	Y Rotation	Nugget	Partial Sill	Y Axis Range	X Axis Range	Z Axis Range
Li	282	90	0	0.01	0.20	193	1,117	170
					0.30	687	1,126	1,481
					0.49	1,710	5,306	2,539
K	282	90	0	0.01	0.20	193	1,117	170
					0.30	847	1,126	1,481
					0.49	1,775	5,306	2,539
Mg	282	90	0	0.01	0.20	82	1,117	170
					0.30	677	1,126	1,181
					0.49	1,275	4,171	2,424
B	282	90	0	0.01	0.20	52	1,117	170
					0.30	677	1,126	1,481
					0.49	1,275	4,256	2,539

Table 14.5 Variogram information

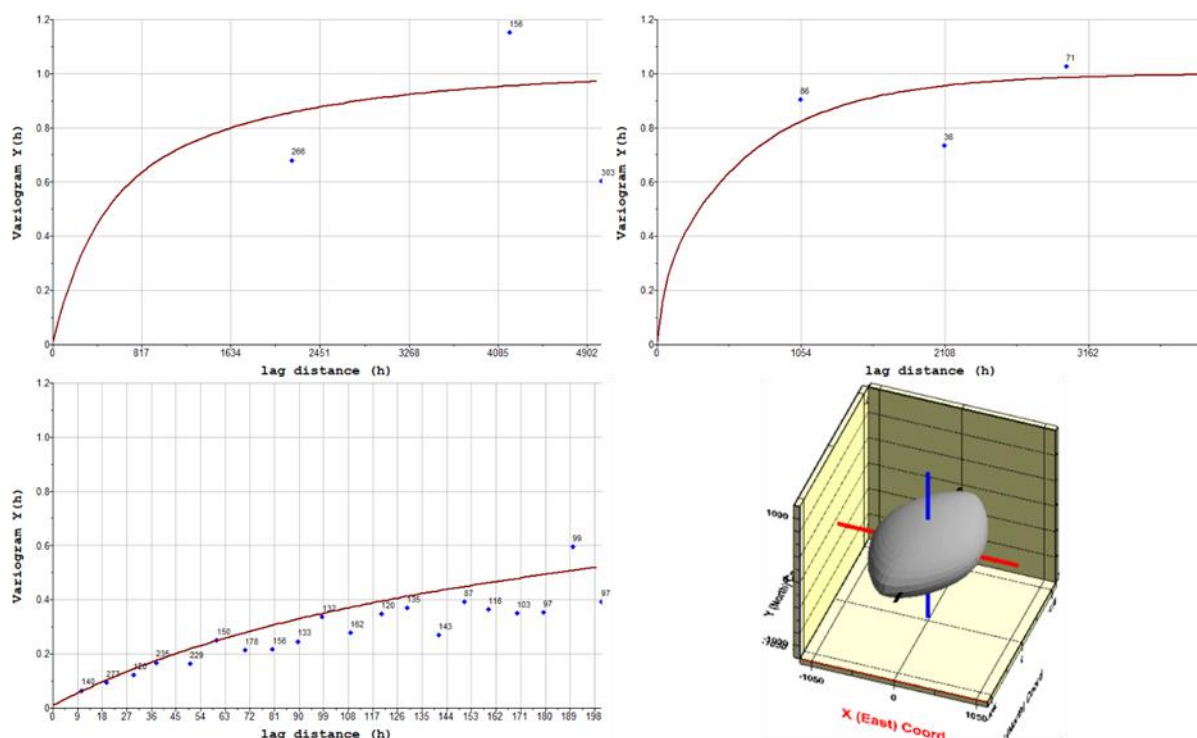


Figure 14.6 Lithium variograms

(Top left: Az=012°, top right: Az= 102°, bottom left: vertical, bottom right: 3d variogram model)

14.8 Block model

The drill holes in Almafuerte are positioned around 1.5 km apart. A block model was created using blocks sized 500x500x20 m (E, N, RL respectively). The plan dimensions were chosen as they are around a third of the drill hole spacing and the shorter vertical dimension was chosen to reflect downhole data spacing. The block model definition is provided in Table 6. Coordinates denote block centroid positions and are recorded in UTM WGS 84 Zone 19 (Southern Hemisphere). Discretisation was set to 5x5x5 (E, N, RL respectively).

The wireframes representing upper halite dominant and lower sand dominant zones were used to flag the block model. Sub-blocking was allowed, with the minimum dimensions of

250m x 250m x 10m (East x North x RL respectively). Blocks outside the salt lake were deleted. The proportion of the block below the topographic surface was assigned to the block model using a block factor. The proportion of the block inside the Almafuer property was also assigned. Reported estimates must be weighted by proportion below topography multiplied by proportion in properties.

	East	North	RL
Minimum	725,250	7,266,250	3,050
Maximum	739,750	7,290,250	3,850
Size	500	500	20
Count	30	49	41

Table 14.6 Block model definition – coordinates in WGS84 Zone 19 South

14.9 Search criteria

The search criteria used for the brine assay OK estimates are shown in Table 14.7. The search ellipses were rotated parallel to the variogram axis, which were shown in Table 14.5.

Axis	Pass 1	Pass 2	Pass 3
Axis 1 (Y axis)	100 m	100 m	300 m
Axis 2 (X axis)	2,000 m	4,000 m	7,000 m
Axis 3 (Z axis)	2,000 m	4,000 m	7,000 m
Composite Data Requirements			
Minimum data points (total)	12	12	3
Max points (total)	24	24	24
Total Sectors	4	4	4
Max points (per sector)	6	6	6
Max data per drill hole	6	6	6
Minimum number of drill holes	2	2	1

Table 14.7 Ordinary Kriging Search criteria

Gamma values were only available from two holes so these were estimated using an inverse distance weighting method to the power of two. The sediment type indicators were also estimated using the same method. Both of these estimates treated the halite-sand boundary as a hard boundary so that only composites from one zone were used to estimate blocks in the corresponding zone. The search criteria for the inverse distance weighting estimates were effectively the same as the kriging search criteria except that the minimum number of data points was set to 6 for each pass.

The maximum extrapolation distance of the lithium estimates is 1.7 km and extrapolated estimates form around 40% of the reported estimate.

14.10 Reported estimate

The final block model was reviewed visually and it was concluded that the block model fairly represents the grades observed in the drill holes.

No mining or extraction has occurred in the Pastos Grande basin. No external audits or reviews of the Mineral Resource estimates have been completed.

The entire estimate is classified as Inferred due to the relatively large distances between drill holes and the lack of good geological and grade continuity between drill holes. The relatively low variability of brine assays adds some confidence to the estimates.

The estimates can be improved by additional drilling to improve understanding of the controls on geological and grade continuity as well as better information on the depth of the basin as well as slope angles around the edge of the basin.

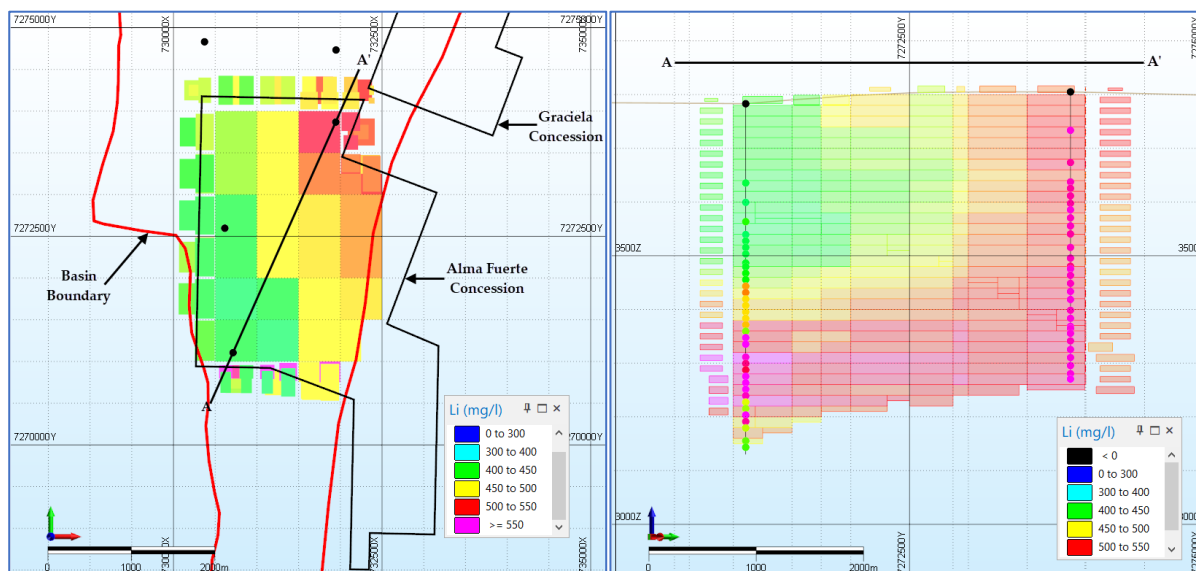


Figure 14.7 Views of block model showing lithium grades

(Left: Plan view, Right: Cross-section showing drill hole grades)

Volume Sediments (m3)	Specific Yield Porosity	Volume Brine (m3)	Brine litres	Li (mg/l)	K (mg/l)	Mg (mg/l)	B (mg/l)	grams lithium	Tonnes Li
3,735,000,000	6.25%	230,000,000	230,000,000,000	460	3,894	2,490	619	1.058E+11	106,000

Table 14.8 Inferred estimate at 0.0 mg/l Li cut-off

* Numbers may not add due to rounding

Lithium values converted to Lithium Carbonate Equivalent (LCE) multiplying by 5.32 conversion factor

Tonnes Li	Tonnes LCE
106,000	560,000

Table 14.9 Inferred estimate as tonnes of lithium carbonate equivalent (LCE)

14.1 Sensitivity Analysis

A simple sensitivity analysis was conducted evaluating the relationship of lithium grade and brine volume at different cut-off grades. This shows there is no difference between a 0 mg/l or 300 mg/l cut-off grade for the Almafuerte property, with the brine volume decreasing above 350 mg/l, as the lithium grade increases.

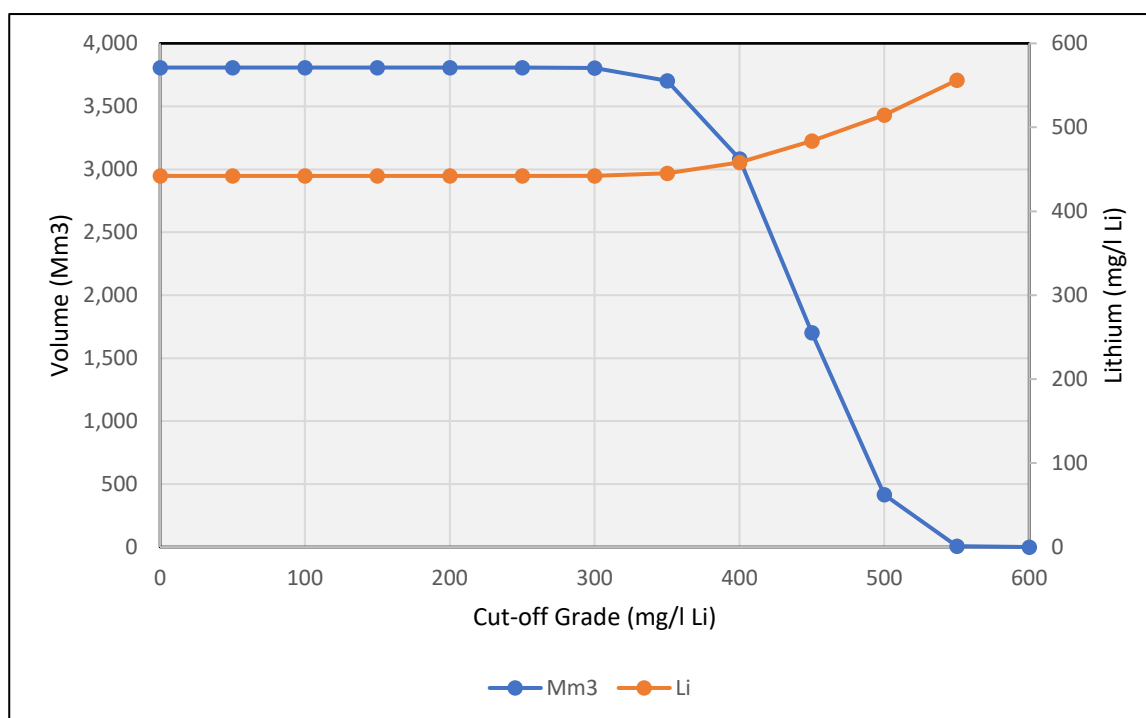


Figure 14.8 Grade tonnage curve for the Almafuerte property

14.2 Exploration Potential

Exploration has only been conducted with drilling on the Almafuerte property, which is a direct southern extension of the Millennial Lithium properties and resource. Arena holds a further eight properties where no drilling has been conducted. A geophysical survey was conducted across all of the properties, except Roberta, by geophysical contactor Quantec, who has extensive experience working in salar environments.

Of the nine properties the Barreal 1 and Barreal III properties do not show significant conductive areas (no survey was conducted over Roberta) that could represent brine. However, the remaining properties Graciela, Fortuna II, Patovica I, Barreal II and La Relojera all show TEM responses that are indicative of brine. This appears to be present beneath dry sediments and sediments hosting fresh and brackish water, that extend to depths of up to ~250 m, away from the salar. The depth of evaluation of the TEM survey is limited by the conductive unit, which is likely to continue to greater depth.

These responses can logically be interpreted as a continuation of the brine body away from the salar at greater depth. This interpretation is consistent with the TEM geophysics over Almafuerte and observations from the nearby drilling and geophysics conducted by adjacent property owner Millennial Lithium. Similar patterns have been observed around many other salars using TEM geophysics.

Due to the proximity to Almafuerte and the Millennial property, and the TEM response, the Graciela and Fortuna II properties are a high priority for drilling. Brine interpreted to occur in the Patovica I, Barreal II and southern end of the La Relojera properties (Figure 4.2) is also considered a target for future drilling to expand resources. Interpretation of brine in these properties is consistent with the interpretation of a vertical electrical soundings survey carried out by neighbours Millennial Lithium and other electrical geophysics carried out historically in the Pastos Grandes salar.

15 Reserve Estimate

No reserve has yet been defined for the project.

16 Mining Methods

Lithium bearing brine hosted in pore spaces within sediments in the salar would be extracted by pumping using a series of production wells. Depending on the processing and engineering evaluations if the project advances to a feasibility study, brine would be pumped to evaporation ponds for solar concentration of the brine or pumped to a plant from which the lithium is extracted directly.

The number of production wells will depend on further drilling and processing evaluations, and cannot be estimated at this stage of the project. For development of a lithium project any wellfield would be operated 24 hours a day, throughout the year, using submersible pumps with scheduled maintenance periods for wells, allowing wells to be taken out of service periodically for cleaning.

17 Recovery Factors

Recovery factors are yet to be determined, as metallurgical and processing studies have not yet commenced.

18 Project Infrastructure

The project lies in the province of Salta and is accessed from the provincial capital of the same name by Route 51 that passes through the town of San Antonio de los Cobres as a good quality mostly paved road and continues higher into the Andes as a moderate quality gravel road, before turning south onto Route 129 which passes the town of Santa Rosa de Pastos Grandes, before reaching the salar Pastos Grandes. The Arena Minerals properties are located in the south and along the eastern boundary of this salar, west of the Borax Argentina mining camp Sijes.

There is currently no infrastructure in the project properties other than access roads.

The village of Santa Rosa de los Pastos Grandes has a population of approximately 168 persons, and is a small historical local settlement for agriculture. There is a gas pipeline that terminates at the town of Pocitos, approximately 46 km by road from the north of the Pastos Grandes salar to Pocitos. The status of gas availability from this pipeline is uncertain, although it is noted that it is considered in the development plans of other companies. A larger solar farm has been developed by the government of the neighbouring province of Jujuy, approximately 62 km north of the project area. This project has a stated initial output of 80 MW and there is possible development of another facility close to this by the Salta government.

The project is located approximately 140 km SE of the unpaved Sico Pass, which crosses to San Pedro de Atacama and Calama in Chile and allows access to ports in the Antofagasta area which are used to import raw materials for other lithium projects and to export lithium carbonate. From the project area this is a distance of approximately 700 km. An alternative transport connection is via Route 129, Route 51 and the new Route 70B, constructed for the solar park, follows the eastern side of the Cauchari salar for approximately 55 km, reaching the paved international road near the Olaroz lithium operation. The international highway continues approximately 70 km to the Jama Pass border crossing. From the Jama Pass the mostly paved and good quality road leads to the large Chilean mining town of Calama, before continuing to the ports in the Antofagasta area.

There is also a railway terminus in the small town of Pocitos to the NW of the project and this provides a rail connection to Antofagasta in Chile, which could potentially be used to export lithium product and import reagents for lithium production.

19 Marketing Studies and Contracts

No project specific marketing studies have been completed. Current marketing dynamics and information provided by the major producers indicates prices are increasing and there is increased interest in brine projects over higher cost hard rock producers, as well as a shift in favour of lithium carbonate production.

20 Environmental Studies, Permitting and Social and or Community Impact

All the individual properties have valid Environmental Impact Statements which are referred to locally as IIA reports (Informe de Impacto Ambiental) and which have been submitted to the provincial Argentine environmental regulator in Salta Province. The company held a valid IIA environmental permit for drilling in the Almafuerte property, which was valid for two years. A renewal of this permit was submitted in November 2020 and the confirmation paperwork is awaited by the company. These reports can be readily updated with the Salta mining authorities to extend them for further periods of two years.

In addition to the IIA reports submitted for the properties the company has approval for the construction of access road (huella minera – resolution 355/18) at SDLP.

No environmental baseline studies have yet been completed at the project. These will be commenced when the project moves to the next stage and will include measurements of surface and groundwater, water quality, soils, flora and fauna, air quality and other relevant measurements.

21 Capital and Operating Costs

Given the relatively early stage of the project capital and operating costs have not yet been established. However, useful comparative information is available from other projects in the vicinity.

22 Economic Analysis

SDLP has similar characteristics to nearby lithium projects where PEA and feasibility level studies have been completed, although economic analysis has not yet been carried out on SDLP.

23 Adjacent Properties

The SDLP project is literally in the heart of the lithium triangle, surrounded by a number of advanced lithium projects that are at feasibility stage or at the construction stage. Field observations confirm the potential of the SDLP projects for future lithium production. However, it should be noted the Qualified Persons have not verified the information available from these third parties and this information is not necessarily indicative of the mineralisation in the properties that are the subject of this technical report.

23.1 Millennial Lithium

Millennial Lithium holds most of the central part of the Pastos Grandes salar (Figure 23.1), and since 2016 has been drilling to define resources, with approximately 33 holes drilled, to a maximum depth of 641 m. This drilling by Millennial has shown the Pastos Grandes basin, while relatively narrow, is fault controlled and contains a thick accumulation of unconsolidated sediments. The basin has accumulated a lower unit of sandy material which is hundreds of metres thick, a feature of many salars in Argentina. The upper unit consists of variable porosity halite that is thinner in the west and thickens progressively towards the east of the basin.

Millennial drilling shows the basin is highly asymmetric, with coarse gravels and sedimentary breccias on the western margin of the basin, with the western and central parts of the basin predominantly sandy material, grading progressively into a core of halite and clay on the eastern side of the basin, which appears to have been the historical salar depocenter, where low energy sediments and evaporites were deposited. This has been confirmed in the drilling on the Arena properties.

Millennial has defined a resource (Table 23.1) in both lithological units, with the majority of the resource in the lower sandy unit. The significant thickness of unconsolidated sandy material has proven very challenging to drill and obtain core samples for porosity testing. Because of difficulties encountered during drilling Millennial elected to drill the later holes in their program using a tricone and diamond drilling equipment. Millennial have used this methodology in the southern property, to define Indicated Resources, based on the continuity with other areas where drill core and porosity data is available.

The Almafuerde property, where drilling has been conducted, is located directly south of the southern property held by Millennial and has a common boundary. The results of SDLP drilling are consistent with the results released by Millennial, in terms of lithology, assay and brine chemistry results, which adds to the company's confidence in the geological model. Arena's Graciela property is directly adjacent to the Millennial resource and it is expected similar brine to the Almafuerde property will continue east to the basin boundary that passes through this property. The Barreal II property is also adjacent to a Millennial Lithium property which has not been drilled, but there are reasonable expectations that the property would host potentially economic grade mineralised brine.

Millennial Lithium released a DFS in 2019, which plans to use conventional pond evaporation concentration for production of lithium.

Phase II Resource Category	Brine Volume (m ³)	Avg Li (mg/l)	In situ Li (tonnes)*	Li ₂ CO ₃ Equivalent (tonnes)*	Avg. K (mg/l)	In situ K (tonnes)*	KCl Equivalent (tonnes)*
Measured	9.5E+08	446	425,000	2,262,000	4,734	4,508,000	8,597,000
Indicated	8.6E+08	406	349,000	1,858,000	4,114	3,357,000	6,745,000
M + 1	1.8E+09	427	774,000	4,120,000	4,440	8,045,000	15,342,000
Inferred	3.5E+08	428	150,000	798,000	4,457	1,559,000	2,973,000

Table 23.1 Pastos Grandes October 2018 resource estimate – Millennial properties

Reserve Category	Time Period (years)	Average Li Concentration (mg/l)	Tonnes Li*	Tonnes Equivalent Li ₂ CO ₃
Proven	1 - 8 (8 years total)	470	34,000	179,000
Probable	9 - 40 (32 years total)	431	143,000	764,000
TOTAL	40 years total	439	177,000	943,000

Table 23.2 Pastos Grandes October 2018 reserve estimate – Millennial properties

23.2 PlusPetrol

PlusPetrol acquired properties in the north of the Pastos Grandes salar (Figure 23.1) and in the adjacent Pozuelos salar in 2018, through the acquisition of the company Lithium LSC. That company conducted extensive drilling in the Pozuelos salar, and at least 6 holes in the Pastos Grandes properties to 572.5 m depth (based on their 2018 resource report), in addition to a number of shallower holes drilled previously by the company Eramine, which conducted the original exploration in Pastos Grandes.

Lithium LSC noted the Pastos Grandes salar is structurally controlled by faults on the western and eastern margins. LSC completed an extensive program of geophysics, sampling and drilling in the adjacent Pozuelos salt lake; with lesser drilling in their Pastos Grandes properties. In their Pastos Grandes properties Eramine previously conducted SEV, TEM and CSAMT geophysics, pit sampling and a refraction seismic survey. Lithium LSC subsequently completed additional SEV geophysics and refraction seismic.

The drilling on the PlusPetrol properties shows the same pattern as the Millennial and SDLP properties, with an upper halite unit with associated clay that thickens to the east, coarse gravels on the western margin of the basin and sand present further to the east below the halite, in what appears to be the basin-wide sedimentation pattern. Porosity testing of 190 samples returned porosity ranges as follows for the different units:

- Dense halite 0.23-8.88 % (87 samples)
- Clay and silt with halite, gravel with clay 0.2-13.18% (69 samples)
- Sand – compact (sandstone) to soft and with silt and halite 0.6-10.5% (28 samples)

PlusPetrol has a resource defined in their properties presented in Table 23.2, with five lithological/hydrostratigraphic units used in the resource. These consist of an upper halite, upper sand, and beneath this halite, sand and gravel units. Measured Resources were defined with a 2 km distance from drill holes with brine samples and porosity data, Indicated Resources were defined where the upper 50 m was removed, as low lithium material, with

the depth to 150 m included as Indicated for all holes. The remaining resource outside of the salar extent at surface was classified as Inferred to the base of the salar interpreted from the seismic surveys.

Salar and Resource Classification	Total Brine Volume	Li	Ca	Mg	K	SO4	RBRC	Available Brine	Li (tons)	LCE Equivalent ³
PASTOS GRANDES ¹	Million [m ³]	[mg/L]	[mg/L]	[mg/L]	[mg/L]	[mg/L]	%	Million [m ³]	Metric tonnes	Metric tonnes
Pastos Grandes - Measured	7353	465	682	3093	4783	9847	4.83	355	168,090	894,720
Pastos Grandes - Indicated	508	452	727	2909	4479	9533	3.51	18	8,335	44,360
Pastos Grandes - M & I	7862	464	685	3081	4763	9827	4.74	373	176,425	939,080
Pastos Grandes - Inferred	2515	467	681	3084	4775	9879	4.81	121	57,760	307,500

Table 23.3 Pastos Grandes October 2018 resource estimate – PlusPetrol properties

23.3 Eramine

The French company has been extensively exploring the Centenario and Ratones salars directly to the east of the Pastos Grandes salar, through its subsidiary Eramine Sudamerica, drilling and establishing a lithium resource in this area. The lithium concentrations are noted to be similar to those of the Pastos Grandes Basin, although little public information is available regarding the project. The company has publicly announced they are commencing with an initial investment to develop the project, which is stated to contain 9 Mt of LCE (Eramet website, 2021). It is understood that the resource is mostly hosted in clastic sediments.

23.4 Borax Argentina

Borax Argentina is a well-established borate producer in Argentina and that company mines borates from Tertiary salar deposits of the Sijes Formation from where they outcrop adjacent to some of the company's SDLP properties.

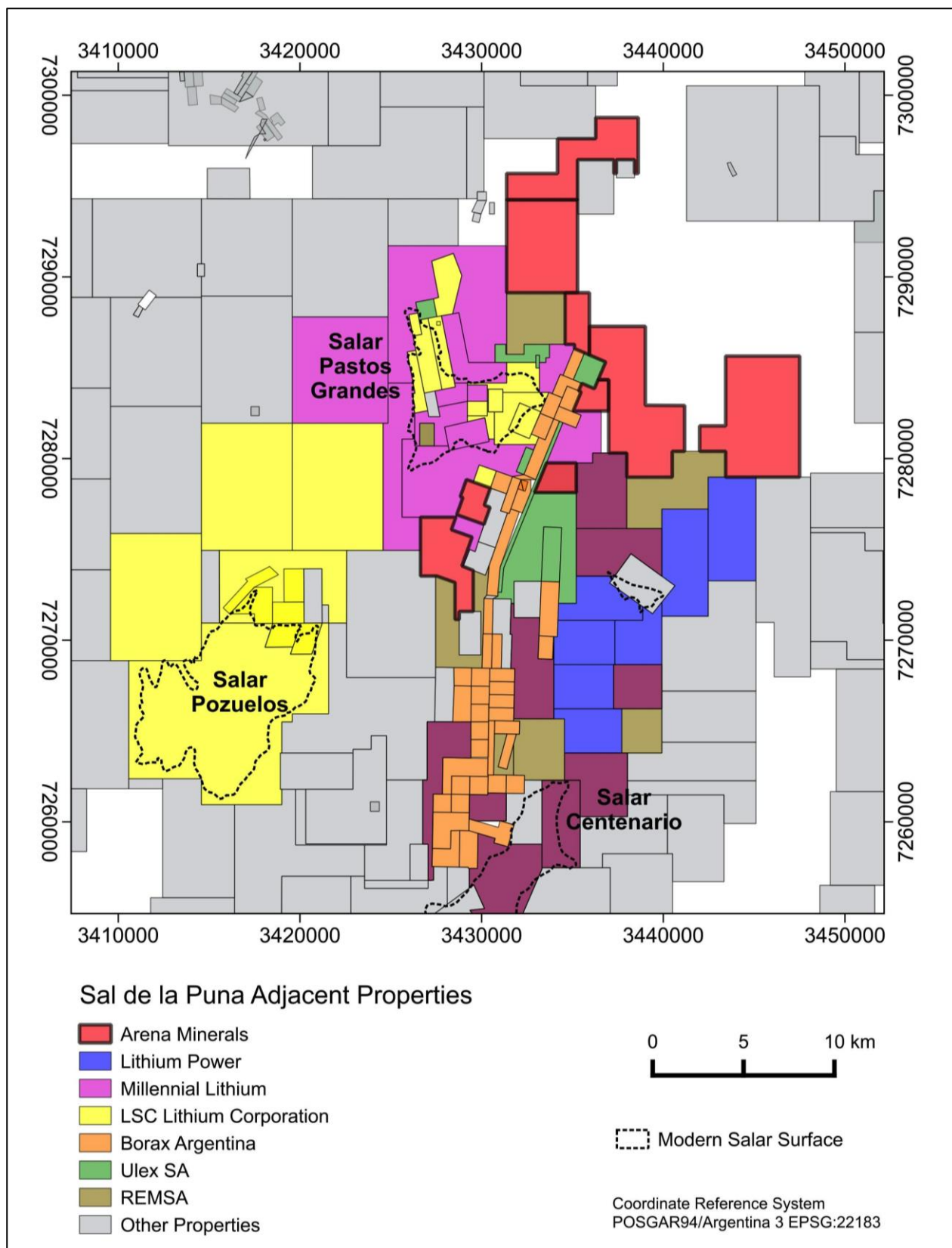


Figure 23.1 SDLP project and adjacent properties

24 Additional Relevant Information

There is no additional relevant information to be included in this section

25 Interpretation and Conclusions

The Pastos Grandes Basin is a deep basin that is controlled by several approximately north-south faults. The underlying Upper Halite unit overlies a Lower unit of Clastic sediments. Brine is present in the project area extending to depth from within the surficial Blanca Lila unit.

The Upper Halite unit thickens from west to east across the Pastos Grandes basin, and the historical halite and clay depocenter appears to be located in the east of the basin, with coarser material being sourced from the western boundary of the salar, becoming progressively finer grained to the east. Some gravel units have been identified in the west of the salar, representing the most coarse-grained sediments.

The Upper Halite and Lower Clastic unit both host lithium mineralised brine, with fresh to brackish water in the upper parts of the salar in the east (based on observations from Millennial Lithium) further north. The brine quality in the Almafuerde property is relatively homogeneous and is directly comparable to drilling results on adjacent properties. Brine has migrated off the salar and beneath the surrounding alluvial fans, becoming progressively deeper to the north and east, where it is interpreted in TEM geophysics in other SDLP properties where drilling has yet to be conducted.

Measurements of porosity and permeability in Almafuerde indicated that porosities are higher on the western side of the Pastos Grandes basin, reaching 10-12% drainable porosity, decreasing towards the eastern margin of the basin, in contact with pre-salar sediments.

The pumping well PP-03-2019 installed in the Almafuerde property in the SDLP project is located in lower drainable porosity and permeability sediments and sustained a flow rate of 5.6 l/s. Pumping rates are expected to be significantly higher in the western part of the property where porosity and permeability is considered to be higher.

Using geological information from SDLP drill holes, and information published by Millennial Lithium and PlusPetrol, a geological model was built for the Pastos Grandes salar to support resource estimation. This model defined an Inferred resource of 560,000 tonnes LCE in the Almafuerde property. There is reasonable potential to add additional resources in the Graciela, Fortuna, Patovica I, Barreal II and La Relojera properties. Lithium brine is also expected to continue below the resource in the Almafuerde property.

Volume Sediments (m3)	Specific Yield Porosity	Volume Brine (m3)	Brine litres	Li (mg/l)	K (mg/l)	Mg (mg/l)	B (mg/l)	grams lithium	Tonnes Li
3,735,000,000	6.25%	230,000,000	230,000,000,000	460	3,894	2,490	619	1.058E+11	106,000

SDLP project lithium resource

Tonnes Li	Tonnes LCE
106,000	560,000

SDLP project lithium carbonate resource

Brine chemistry is relatively consistent across the basin, with a moderate average Mg/Li ratio of 5 to 5.5 and relatively low sulphate content, which is amenable to conventional processing.

26 Recommendations

It is recommended to drill additional holes using core drilling and rotary methods to improve the resource classification in Almafuerte to Measured and Indicated and define resources in the five other properties where the TEM geophysics suggests there are reasonable prospects for the definition of resources. The Graciela and Fortuna properties are the highest priority for drilling. Expansion of resources and upgrading the resource classification would require at least four additional holes at SDLP to define Measured and Indicated resources.

Future drilling should involve use of comprehensive down hole geophysical logging equipment to collect a suite of information, in particular including magnetic resonance porosity and permeability measurements, and depth specific packer sampling. Observation wells should also be installed at pumping well sites to collect additional information on aquifer storage.

Once the project has established additional resources a weather station should be installed on site, along with evaporation pans. Environmental monitoring should also be commenced to establish environmental conditions across the four seasons. Once additional resources are defined the water balance for the project area should be established, and a calibrated groundwater model should be developed for the project, to determine reserves and to develop a production schedule to support a mining project.

In parallel with these activities evaporation and process test work should be undertaken on the project brine, to allow development of an appropriate process to support project development.

It is estimated that drilling, pumping tests, evaporation test work and initial development of an appropriate lithium extraction process will require a budget in the order of US\$ 5 million.

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28 Date and Signature Pages – Certificate of Author

I, Murray Brooker, M.Sc., Geol., M.Sc. Hydro, do hereby certify that:

1. I am an independent consultant of: 63 Carlotta St, Greenwich, NSW 2065, Australia.
2. I have the following academic and professional qualifications:

Academic:

- I. B.Sc. (Honours) in Geology from Victoria University of Wellington, New Zealand in 1988
- II. M.Sc. in Geology from James Cook University of North Queensland, Australia, in 1992
- III. M.Sc. in Hydrogeology from the University of Technology, Sydney, Australia, in 2002.

Professional:

- I. Australian Registered Professional Geoscientist (RPGeo) in the fields of mineral exploration and hydrogeology
 - II. Member of the Australian Institute of Geoscientists (MAIG)
 - III. Member of the International Association of Hydrogeologists (IAH)
3. I have practiced my profession for thirty years.
 4. I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, past relevant work experience, and affiliation with a professional association (as defined in NI 43-101) I fulfil the requirements to be a “qualified person” for the purposes of NI 43-101. This report is based on my personal review of information provided by the Issuer and on discussions with the Issuer’s representatives. My relevant experience for the purpose of this report is:

- 2010-Present Principal Hydrominex Geoscience Consultants
- 2006-2010 Principal Geoscientist – Global Ore Discovery – Mining Industry Consultants
- 2004-2006 Acting Manager Hydrogeology – Parsons Brinckerhoff.
- 2003-2004 Hydrogeologist, Otek Environmental
- 2002-2003 Hydrogeologist, Parsons Brinckerhoff
- 1991-2000 Exploration Geologist and Exploration Manager, North Limited, Argentina, Chile, Mexico, Australia

I have previously been involved in the following brine resource projects:

- Olaroz for Orocobre, Argentina (2010 to present)
- Cauchari for Advantage Lithium and Orocobre from 2016-2019
- Salar Salinas Grandes for Orocobre, Argentina (2010-2013)
- Salar de Centenario (2011, 2016-2021) for Lacus Minerals and Lithium Power
- Salar de Pocitos (2011, 2016) for Lacus Minerals
- Salar de Maricunga for Lithium Power International, Argentina (2016-2021)
- Lake Mackay, Western Australia for Agrimin (2015-2016)
- Numerous other salt lake project due diligence and consulting assessments

5. I am responsible for the technical report entitled "Technical Report on the Sal de la Puna Lithium Project" (the "Technical Report") prepared for Arena Minerals and dated effective September 29, 2021.
6. I am independent of Arena Minerals. I have previously visited the project area but due to Covid travel restrictions have not visited the site as part of the preparation of this report.
7. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
8. I have read NI 43-101 and Form 43-101F1 (the "Form"), and the Technical Report has been prepared in compliance with NI 43-101 and the Form. I have no personal knowledge, as of the date of this certificate, of any material fact or material change which is not reflected in this Technical Report

Effective Date: September 29, 2021
Date of Signing: September 29, 2021
Original signed and sealed
(Signed) "Murray Brooker"



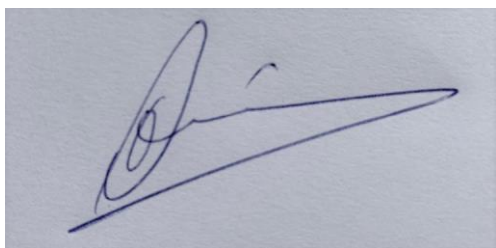
I, Pablo Gómez Martínez do hereby certify that:

- 1) I am employed as Principal Hydrogeologist and General Manager by Tuareg SRL – Argentina, residing at Avenida Reyes católicos 1330, Dpto 24, Tres Cerritos, Salta.
- 2) I have the following academic and professional qualifications and experience:
 - a. I am a graduate of the Universidad Nacional de Salta (UNSa), Salta Argentina, with a B.Sc. in Geology.
 - b. I worked in mining and mineral exploration continuously 3 years before graduation from university.
 - c. I am a Member of the Australian Institute of Geoscientist (AIG)

Experience relevant to this Report:

- 3) I have worked in the Argentina Puna on hydrogeology and mineral deposits for 15 years
- 4) I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, past relevant work experience, and affiliation with a professional association (as defined in NI 43-101) I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101. This report is based on my personal review of information provided by the Issuer and on discussions with the Issuer’s representatives. My relevant experience for the purpose of this report is:
 - i. Understanding of the geology and hydrogeology of mineral deposits present in the Argentinean Puna for over 15 years;
 - ii. I was manager in 2 drilling companies, and worked in 10 different salars.
 - iii. I worked as a consultant for Orocobre Limited in the Olaroz salar for the preparation of the NI43-101 in 2011, related to the project feasibility study.
 - iv. My professional thesis is “Hydrogeology of the Diablillos salar basin”
- 5) I am responsible for co-writing the technical review and writing of the report entitled “Sal de la Puna Lithium Project, Salta Province, Argentina” with an effective date of September 29, 2021.
- 6) I am independent of the Pastos Grandes Property and independent of Arena Minerals. I visited the Pastos Grandes Project several times in 2018, 2019 and 2020.
- 7) I state that, as at the date of the certificate, to the best of my qualified knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;
- 8) I have no personal knowledge, as of the date of this certificate, of any material fact or material change which is not reflected in this Technical Report;

Effective Date: September 29, 2021
Date of Signing: September 29, 2021
Original signed and sealed
(Signed) "Pablo Gomez M"

A handwritten signature in blue ink, appearing to be "Pablo Gomez M", is shown on a light blue background. The signature is stylized with a large, looped initial "P" and a long, sweeping horizontal stroke extending to the right.

APPENDIX 1 - Photos

Photo 1: Drilling rig using the diamond method with tricone adaptation.



Photo 2: Packer testing.



Photo 3: In situ measurement of physicochemical parameters of brine.



Photo 4: Platform and drilling tower for the PP-03-2019 well.



Photo 5: Samples described (0-542 m depth), labelled and stored sequentially in cutting boxes.



Photo 6: Descent of tools in the exploratory well, used to obtain geophysical records.



Photo 7: Geophysical logging.



APPENDIX 2 – Glossary

Aeolian: Sediments deposited by wind.

Alluvial: Sediments deposited in fans at the base of slopes by water flowing off mountain ranges.

Aquifer: An underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, or silt) from which groundwater can be extracted using a well or bore.

Borates: Evaporite minerals that contain a borate anion group.

Brine: Water saturated or nearly saturated with salts (i.e. sea water, water in salars).

Colluvial: Unconsolidated sediments that have been deposited at the base of slopes by either rainwash, sheetwash, downslope creep, or a combination of these processes.

Darcy: A unit for permeability.

DEM: Digital elevation model representing the 3D surface of a terrain.

EPSG 22183: Geodetic Parameter Dataset. POSGAR94/Argentina 3 projected coordinate reference system measured in meters, for Argentina between 67°30'W and 64°30'W, that uses the Posiciones Geodesicas Argentinas 1994 datum and WGS84 reference ellipsoid.

EPSG 4326: Geodetic Parameter Dataset. Geographic coordinate reference system measured in degrees using latitude and longitude coordinates on the WGS84 datum and reference ellipsoid.

Evaporite: Sediments chemically precipitated due to evaporation of an aqueous solution and may be marine or non-marine. Common evaporites can be dominated by halite, anhydrite, gypsum and borates.

Facies Association: A group of sedimentary facies used to define a particular sedimentary environment.

Facies: Sedimentary facies are bodies of sediment distinct from adjacent sediments.

Fluid: Liquid substance which flows when subject to a gradient.

Fluvial: Sediments deposited by rivers and streams.

Foreland Basin: A sedimentary basin that develops in convergent orogens when the lithosphere bends in response to crustal thickening associated with the evolution of the mountain belt.

Gravity Survey: The gravity field on the Earth's surface varies with the distribution of the mass of materials below the surface. A Gravity survey indirectly calculates the density of subsurface materials.

Hinterland Basin: Elevated continental sedimentary basins that form in convergent orogens away from low-elevation foreland basins and fold thrust belts.

Lacustrine: Sediments deposited within or around lakes.

Lithium carbonate: Inorganic white salt with the formula Li_2CO_3 . It is the common saleable lithium product. 1 tonne Li_2 = 5.3228 tonnes Li_2CO_3 .

Lithosphere: The rigid outer part of the earth, consisting of the crust and upper mantle.

Magmatic Arc: A chain of magmatism and volcanoes formed above a subducting plate.

masl: Metres above sea level. All elevations reported in this document have been taken from the SRTMGL1 V003 S25W067 DEM. Measured elevations for the three drill hole collars (CDDH1, 3 & 4) in the Project area vary from the DEM by an average of +14.7 m.

NI 43-101: Canadian National Instrument 43-101 set of standards governing the reporting of technical information regarding mineral projects.

Permeability: A measure of the ability of a porous material to allow fluids to pass through it. The permeability of a medium is related to the porosity, but also to the shapes of the pores in the medium and their level of connectedness. A unit for permeability is the Darcy (d).

Playa lake: An arid zone basin, transitional between playa and lake, neither dry more than 75 % of the time nor wet more than 75 % of the time. Clastic lacustrine sediments will be deposited in playa lakes when they are wet. When dry, the basin qualifies as a saline pan or playa.

Playa: See saline pan.

Porosity: Measure of the void spaces in a material, and is a fraction of the volume of voids over the total volume, between 0 and 1, or as a percentage between 0 and 100%.

POSGAR94/Argentina 3: A projected coordinate reference system for Argentina between 67°30'W and 64°30'W measured in meters, that uses the Posiciones Geodesicas Argentinas 1994 datum and WGS84 reference ellipsoid.

Reserve: Mineral reserves are resources known to be economically feasible for extraction. Reserves are either Probable Reserves or Proven Reserves.

Resistivity: An intrinsic property that quantifies how strongly a given material opposes the flow of electric current. A low resistivity indicates a material that readily allows the flow of electric current. Electrical resistivity is measured in the ohm metre (Ωm).

Resource: Mineral resources are economic mineral concentrations that have undergone enough scrutiny to quantify their contained metal to a certain degree. Mineral resources are sub-divided, in order of increasing geological confidence, into inferred, Indicated and measured categories.

Salar: Spanish term for salt flat, saline pan or playa. Playa lakes or lagoons of brine or fresh water may be present adjacent to salt flats and together these constitute a salar in the general usage of the term.

Saline pan: Saline pan and playa can be used interchangeably. An intercontinental arid zone basin with a negative water balance for over half of each year, dry for over 75 % of the time, with a capillary fringe close enough to the surface such that evaporation will cause water to discharge, usually resulting in deposition of evaporates.

Specific yield: The amount of fluid stored in a formation that will drain from the formation under gravity during pumping. Specific yield of a formation will always be smaller than the porosity of that formation and is given as a percentage.

SRTMGL1: NASA Shuttle Radar Topography Mission Global 1 arc second (~30 m) digital elevation model (DEM).

TEM: Transient Electro Magnetics. A geophysical exploration technique in which electric and magnetic fields are induced by transient pulses of electric current and the subsequent decay response measured.

Tenement: An exploration or mining license granted to a company or individual.

VES: Vertical Electrical Sounding. An electrical geophysical technique used for mapping flat lying geological units and brine. Sondaje Electrica Vertical (SEV) in Spanish.

WGS84: An Earth-centered, Earth-fixed terrestrial coordinate reference system, geodetic datum, and set of reference points, used to locate places on the Earth. The geographic coordinate reference system (latitude and longitude) uses the WGS84 datum and reference ellipsoid.

APPENDIX 3 - Company/Organization List

ERAMET: ERAMET S.A. French multinational mining and metallurgy company.

ERAMINE: ERAMINE SUDAMERICA. Argentinean subsidiary of ERAMET.

Hydrominex Geoscience Consulting: Australian hydrogeology and mineral exploration consultancy.

LSC: LSC Lithium Corp: Canadian exploration and development company.

Millennial: Millennial Lithium Corp. Canadian exploration and development company.

Montgomery & Associates: US Water resource consultants.