Salar de Arizaro Project

NI 43-101 Technical Report and Pre-feasibility Study

Salta, Argentina

Effective Date: July 22, 2024

Prepared for:

Lithium Chile Inc.
700, 903 8th Avenue SW
Calgary, AB, Canada, T2P 0P7

Prepared by:

Ausenco Chile Limitada
Avenida Condes 11283, Floor 6
Las Condes, Santiago, Chile, CP 75550000

Montgomery & Associates
Avda Vitacura 2771, Of. 404
Las Condes, Santiago, Chile, CP 7550134

List of Qualified Persons:

Patricio Pinto, C.P., R.M., Ausenco Chile Limitada

James Millard, P. Geo., Ausenco Sustainability ULC

Michael J. Rosko P.G., R.M.-SME, E.L. Montgomery & Associates, Inc.

Brandon Schneider P.G., R.M.-SME, Montgomery & Associates Consultores Limitada

CERTIFICATE OF QUALIFIED PERSON
Patricio Pinto Gallardo, C.P.

I, Patricio Pinto Gallardo, C.P., certify that:

1. I am employed as a process manager with Ausenco Chile Ltda. ("Ausenco"), with an office address of Avenida Las Condes 11283, Floor 6, Las Condes, Santiago, Chile CP 75550000.
2. This certificate applies to the technical report titled "*Salar de Arizaro Project; NI 43-101 Technical Report and Pre-feasibility, Salta Argentina*" (the "Technical Report"), prepared for Lithium Chile Inc. (the "Company") with an effective date of July 22, 2024 (the "Effective Date").
3. I graduated from the University of Santiago in Chile, in 1987 with a Bachelor's degree in civil chemical engineering, and from Adolfo Ibañez University with a postgraduate diploma in business administration in 2004.
4. I am a Competent Person with the Qualifying Commission for Competencies in Mining Resources and Reserves (Registration No. 0440).
5. I have practiced my profession for 35 years, during which I have held roles such as process engineer, head of research and development, and project manager, focusing on mineral recovery projects from salt flats. My work includes extensive research into new processes, and detailed plant design. I participated in all phases of engineering: conceptual, basic, and detailed engineering, construction, pre-commissioning, commissioning, and start-up stages. As a consultant, I have conducted due diligence for company transactions and, as a process audit engineer, reviewed lithium carbonate plants in Chile and Argentina. I have led several lithium carbonate production projects from brines, where I was responsible for defining the salt matrix and preparing the fundamental process design data. I also develped optimal pipeline configurations, wellfield configurations and brine reservoir designs. My duties included defining the extraction capacity of each well, construction geometry, pond depths, other works, and estimating exploitation costs. Recently, I acted as the Qualified Person for sections of the "*Pozuelos-Pastos Grandes Project (Li_2CO_3), Preliminary Economic Assessment Update, in the Salta province, northwest Argentina in 2022*," and the "*Sal de Vida Project (Li_2CO_3), NI 43-101 Technical Report, in Catamarca Province, Argentina in 2022*." My experience also includes the White Project (Maricunga Salar), a Lithium Carbonate Plant Audit (Olaroz Salar), the Clayton Valley Lithium PFS, the Rhyolite Ridge Project, the Capricornio Project (Atacama Salar), the Aguas Blancas Project, the Pascua-Lama Project, and the La Negra Project (Atacama Salar).
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I visited the Salar de Arizaro Project on March 27-29, 2023.
8. I am responsible for sections 1.1 to 1.4, 1.11, 1.15 to 1.17, 1.19 to 1.22, 2.1 to 2.3, 2.4.1, 2.5 to 2.7, 3.1, 3.2, 3.4, 3.5, 4, 5, 12.2, 13, 17 to 19, 21, 22, 24, 25.1, 25.3, 25.6, 25.7, 25.9 to 25.12, 25.13.1.2, 25.13.1.4, 25.13.1.5, 25.13.1.7, 25.13.2.2, 25.13.2.4, 25.13.2.5, 25.13.2.7, 26.1, 26.5, 26.6, 26.8, and 27 of the technical report.
9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
10. I previously contributed to the Salar de Arizaro Project by co-authoring the 2023 Preliminary Economic Assessment (PEA) report, titled "Salar de Arizaro Project NI 43-101 Technical Report and Preliminary Economic Assessment, Argentina."
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 6, 2024
"Signed and sealed"
Patricio Pinto Gallardo, C.P.

CERTIFICATE OF QUALIFIED PERSON
James Millard, P. Geo.

I, James Millard, P. Geo., certify that:

1. I am employed as a Director, Strategic Projects with Ausenco Sustainability ULC, a wholly owned subsidiary of Ausenco Engineering Canada ULC ("Ausenco"), with an office address of Suite 100, 2 Ralston Avenue, Dartmouth, NS, B3B 1H7, Canada.
2. This certificate applies to the technical report titled "*Salar de Arizaro Project NI 43-101 Technical Report and Pre-feasibility Study, Salta Argentina*" (the "Technical Report"), prepared for Lithium Chile Inc. (the "Company") with an effective date of July 22, 2024 (the "Effective Date").
3. I graduated from Brock University in St. Catharines, Ontario in 1986 with a Bachelor of Science in Geological Sciences, and from Queen's University in Kingston, Ontario in 1995 with a Master of Science in Environmental Engineering.
4. I am a member (P. Geo.) of the Association of Professional Geoscientists of Nova Scotia, Membership No. 021.
5. I have practiced my profession for 25 years. I have worked for mid- and large-size mining companies where I have acted in senior technical and management roles, in senior environmental consulting roles, and provided advise and/or expertise in a number of key subject areas. These key areas included: feasibility-level study reviews; NI 43-101 report writing and review; due diligence review of environmental, social, and governance areas for proposed mining operations and acquisitions, and directing environmental impact assessments and permitting applications to support construction, operations, and closure of mining projects. In addition to the above, I have been responsible for conducting baseline data assessments, surface and groundwater quantity and quality studies, mine rock geochemistry and water quality predictions, mine reclamation and closure plan development, and community stakeholder and Indigenous peoples' engagement initiatives. Recently, I acted in the following project roles: Qualified Person for the environmental/sustainability aspects for "Puquios Project, Feasibility Study Report, La Higuera, Coquimbo Region, Chile", "Volcan Project, NI 43-101 Technical Report on Preliminary Economic Assessment, Tierra Amarilla, Atacama Region, Chile" and, "Colomac Gold Project, NI 43-101 Technical Report and Preliminary Economic Assessment, Northwest Territories, Canada"; and principal author for the environmental/sustainability sections for the "Kwanika-Stardust Project, NI 43-101 Technical Report and, Preliminary Economic Assessment, British Columbia, Canada".
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I have not visited the Salar de Arizaro Project.
8. I am responsible for 1.18, 1.21, 1.22, 3.3, 20, 25.8, 25.13.1.6, 25.13.2.6, 26.7, and 27 of the Technical Report.
9. I am independent of the Company as independence is defined in Section 1.5 of NI 43-101.
10. I previously contributed to the Salar de Arizaro Project by co-authoring the 2023 Preliminary Economic Assessment (PEA) report, titled "Salar de Arizaro Project NI 43-101 Technical Report and Preliminary Economic Assessment, Argentina."
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 6, 2024

"Signed and sealed"
James Millard, P. Geo.

CERTIFICATE OF QUALIFIED PERSON
Michael J. Rosko, P.G., R.M.-SME

I, Michael J. Rosko, P.G., R.M.-SME, certify that:

1. I am employed as a Principal Hydrogeologist with E.L. Montgomery & Associates, Inc. (M&A), with an office address of 1550 East Prince Road, Tucson, Arizona.
2. This certificate applies to the technical report titled "*Salar de Arizaro Project; NI 43-101 Technical Report and Pre-feasibility Study, Salta, Argentina"* (the "Technical Report"), prepared for Lithium Chile Inc. (the "Company") with an effective date of July 22, 2024 (the "Effective Date").
3. I graduated from the University of Illinois in 1983 with a Bachelor of Science degree in Geology. I obtained a Master of Science in Geology (Sedimentary Petrology focus) from the University of Arizona in 1986.
4. I am a professional geologist in the states of Arizona (license no. 25065), California (license no. 5236), and Texas (license no. 6359). I am also a Registered Member of the Society for Mining, Metallurgy, and Exploration (license no. 4064687), and am a member of the National Ground Water Association, Arizona Hydrological Society, and International Association of Hydrogeologists.
5. I have practiced my profession for 37 years, with much of this time designing groundwater exploration programs in salar basins in Chile and Argentina and estimating lithium resources since 2010. Similar projects and roles have included functioning as the Qualified Person (or Competent Person for JORC projects) for Lithium One's Sal de Vida project, Millennial Lithium's Pastos Grandes project, Lithium Chile's Salar de Arizaro project, NOA Lithium's Rio Grande project, SQM's Salar de Atacama project, Lithium America's Cauchari project, Wealth Minerals' Salar de Ollaguue project, Gangfeng's Mariana project, Eramine's Centenario/Ratones project, Oasco Lithium's Sal de Oro project, Pepennini's Salar de Pular project, and other smaller projects, as well preparation of numerous third-party due diligence and independent geologist reports in Argentina, Chile, and the United States. My main responsibilities and tasks have included design and oversight of hydrogeologic exploration programs, estimation of lithium resource and reserve estimates, and support of production wellfield design.
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I have visited the Arizaro project site.
8. I am responsible for Sections 1.5 to 1.10, 1.12, 1.21, 1.22, 2.4.2, 6 to 11, 12.1, 14, 23, 25.2, 25.4, 25.13.1.1, 25.13.2.1, 26.2, 26.3, and 27 of this technical report.
9. I am independent of Lithium Chile Inc. as independence is defined in Section 1.5 of NI 43-101.
10. I have had previous involvement with the Salar de Arizaro Project acting as Qualified Person in three Technical Reports of Exploration Activities and Preliminary Lithium Resource Estimate in 2022 and 2023.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 6, 2024

"Signed and sealed"

Michael J. Rosko, P.G., R.M.-SME

CERTIFICATE OF QUALIFIED PERSON
Brandon Schneider, P.G., R.M.-SME

I, Brandon Schneider, P.G., R.M.-SME, certify that:

1. I am employed as a Senior Hydrogeologist with Montgomery & Associates Consultores Limitada (M&A), with an office address of Avenida Vitacura 2771, Of. 404, Las Condes, Santiago, Chile.
2. This certificate applies to the technical report titled "*Salar de Arizaro Project; NI 43-101 Technical Report and Pre-feasibility Study, Salta, Argentina*" (the "Technical Report"), prepared for Lithium Chile Inc. (the "Company") with an effective date of July 22, 2024 (the "Effective Date").
3. I graduated from California Lutheran University in 2011 with a Bachelor of Science degree in Geology (with Honors). I obtained a Master of Science in Geological Sciences (Hydrogeology focus) from the University of Notre Dame in 2013.
4. I am a professional in the discipline of Hydrogeology and am a Registered Professional Geologist in Arizona (license no. 61267). I am also a Registered Member of the Society for Mining, Metallurgy, and Exploration (license no. 4306449).
5. I have practiced my profession continuously since 2013. My relevant experience for the purpose of the Technical Report includes: (i) from 2013 to 2016, consulting hydrogeologist specializing in aquifer test analyses, groundwater modeling, and pumping well optimization for mining projects and sedimentary basins in Arizona, United States; (ii) since 2017, consulting hydrogeologist in Chile specializing in lithium brine reserve estimates, reserve reporting, variable density flow modeling, and optimization of brine pumping in salt flats of Argentina and Chile. I have been involved as the QP for the Sal de Vida Project of Arcadium Lithium since 2023 and was responsible for the reserve estimate and projected wellfield design. I was also involved with the reserve estimate for SQM's Salar de Atacama project, Lithium America's Cauchari project, Millennial Lithium's Pastos Grandes project and others, and I have conducted numerous third-party due diligence reviews of lithium brine deposits in Argentina and Chile.
6. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for those sections of the Technical Report that I am responsible for preparing.
7. I have not visited the Arizaro project site.
8. I am responsible for Sections 1.13, 1.14, 1.21, 1.22, 12.3, 15, 16, 25.5, 25.13.1.3, 25.13.2.3, 26.4, and 27 of this technical report.
9. I am independent of Lithium Chile Inc. as independence is defined in Section 1.5 of NI 43-101.
10. I have had previous involvement with the Salar de Arizaro Project and have aided in the preparation of the 2023 Preliminary Economic Assessment NI 43-101 Technical Report.
11. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: September 6, 2024

"Signed and sealed"

Brandon Schneider, P.G., R.M.-SME

Important Notice

This report was prepared as National Instrument 43-101 Technical Report for Lithium Chile Inc. (Lithium Chile) by Ausenco Chile Limitada and Ausenco Sustainability ULC (Ausenco), E.L. Montgomery & Associates Inc. and Montgomery & Associates Consultores Limitada, (collectively the "Report Authors"). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in the Report Authors' services, based on i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Lithium Chile subject to terms and conditions of its contracts with each of the Report Authors. Except for the purposes legislated under Canadian provincial and territorial securities law, any other uses of this report by any third party are at that party's sole risk.

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1 SUMMARY

1.1 Introduction

This technical report and Pre-feasibility Study (PFS) has been prepared for Lithium Chile Inc. (Lithium Chile) by Ausenco Chile Limitada and Ausenco Sustainability ULC (Ausenco), and E.L. Montgomery & Associates Inc. and Montgomery & Associates Consultores Limitada (M&A) to conform to the regulatory requirements of Canadian National Instrument 43-101 (NI 43-101) and in accordance with the requirements of Form 43-101 F1 Standards of Disclosure for Mineral Projects. The Arizaro Project (the Project) is found in the Central Andes of Argentina and "Lithium Triangle" of Argentina, Bolivia, and Chile. Specifically, the Project is located in the Salar de Arizaro Basin (the Salar) and within the Salta provincial boundaries of the Puna Region, northwestern Argentina. The Salar is a mature evaporite basin with demonstrated brine that is enriched with lithium.

The responsibilities of the engineering companies contracted by Lithium Chile to prepare this report are as follows:

- Ausenco managed and coordinated the work related to the report, reviewed the metallurgical test results and developed a PFS-level design and cost estimate for the process plant infrastructure, general site infrastructure, environmental and economic analysis.
- M&A completed the work related to geological setting, deposit type, exploration work, drilling, sample preparation and analysis, data verification and developed the mineral resource and reserve estimate for the Project, as well as the mine production schedule for the Project.

1.2 Terms of Reference

This report supports disclosures by Lithium Chile in a news release dated July 23, 2024, entitled, "Lithium Chile Announces Pre-Tax NPV of US$3,853,000,000 and Pre-Tax IRR of 42.1% From Pre-Feasibility Study on Arizaro Project."

This report has been prepared in accordance with NI 43-101 Standards of Disclosure for Mineral Projects and with the requirements of Form 43-101 F1.

Mineral resources and reserves are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014) and the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (CIM, 2019).The estimates also incorporate guidance provided in the 2011 Ontario Securities Commission (OSC) document entitled OSC Staff Notice 43-704 – Mineral Brine Projects and National Instrument 43-101 Standards of Disclosure for Mineral Projects (2011 OSC Staff Notice).

Units used in the report are metric units unless otherwise noted. Monetary units are in United States dollars (US$) unless otherwise stated.

This Technical Report has a number of significant dates, as follows:

- Mineral resource estimate: April 3, 2024
- Mineral reserve estimate: April 19, 2024
- Mineral tenure: June 10, 2024
- Financial analysis: July 22, 2024

The effective date of this report is based on the date of the financial analysis, which is July 22, 2024.

1.3 Property Description and Location

The Project is located in the Salar de Arizaro basin (the Salar), within the Salta province of northwest Argentina, about 230 kilometers (km) from Salta and approximately 38 km southwest of the town of Tolar Grande. The Project is in the Argentinean Puna, at an elevation of approximately 3,475 meters above sea level (m asl).

Argentum Lithium S.A. is a legally established and valid corporation under the laws of Argentina, located at Avenida del Bicentenario de la Batalla de Salta number 863, First Floor, Office 2 of Salta City, the Province of Salta, Argentina Republic.

Argentum's majority shareholder (direct and exclusive owner of 990 shares of Argentum, 99% of Argentum's capital stock) is Lithium Chile (LITH, on the TSX venture exchange), a corporation duly incorporated under the laws of the Province of Alberta, Canada, registered by Certificate of Registration issued pursuant to the Alberta Business Companies Act on October 18, 2010, No. 20156511330, with a registered office at 900,903 – 8th Avenue SW, Calgary, Alberta, Canada, T2P 0P7, registered in the Argentine Republic as a foreign company by Resolution Nº 1042 dated on September 16, 2021, issued by the General Inspection of Legal Entities of the Province of Salta.

SMG S.R.L. (herein after "SMG" or "SMG Group") is a company organized and existing under the laws of Argentina.

Litiar S.A. is an Argentinian corporation where SMG Group is a shareholder.

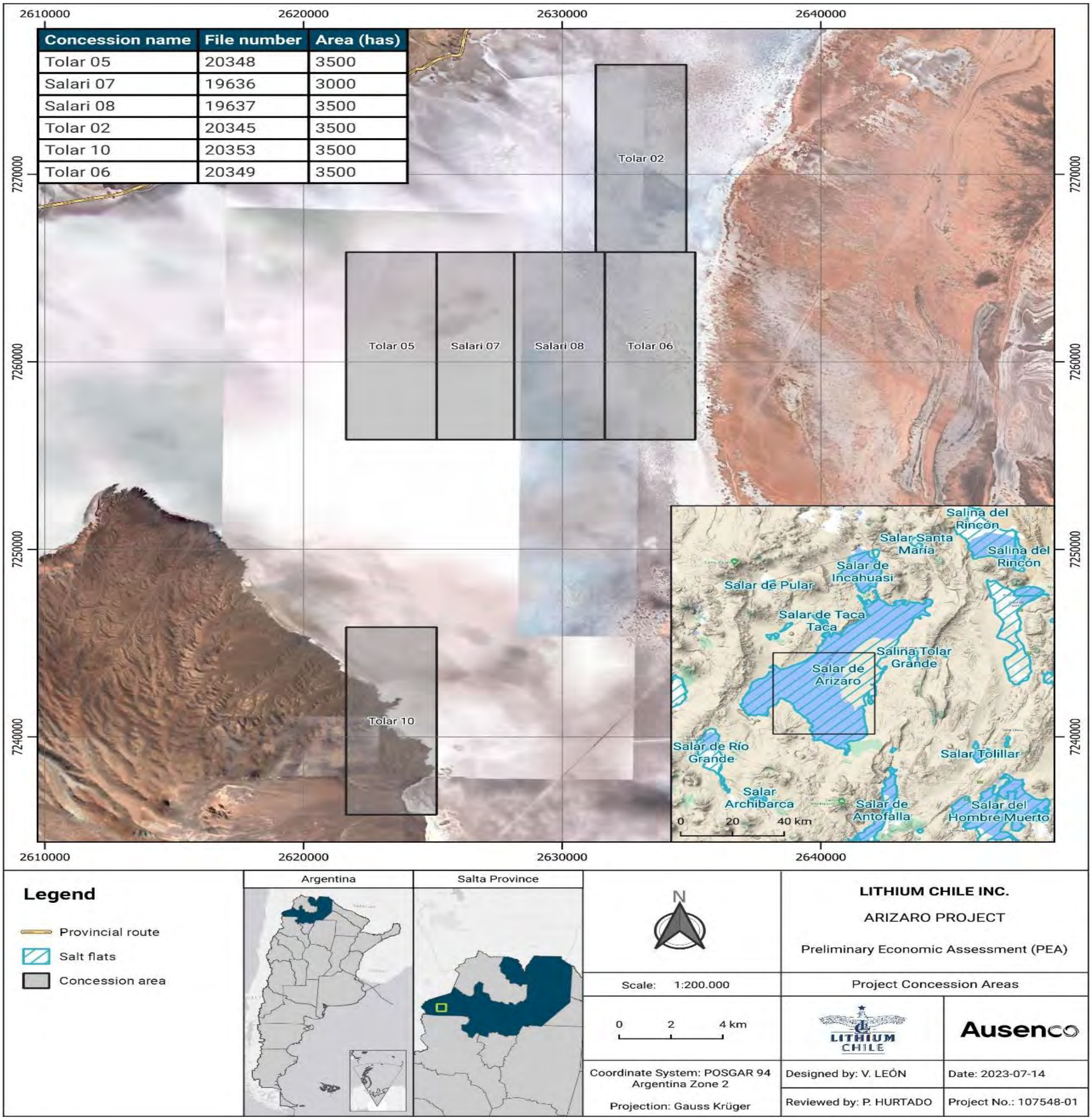
In the "Definitive Agreement," dated on August 24, 2021, Lithium Chile and Argentum on one side, and SMG and Litiar S.A. on the other side (collectively referred to as the "Parties"), have agreed on obligations regarding the properties. The subject of this agreement is the continued development, eventual exploitation, and commercialization of the mineral products obtained there.

In compliance with the Definitive Agreement (i) the Parties have established a joint venture company named ARLI S.A., CUIT 30-71767171-2; (ii) Lithium Chile and Argentum have been fulfilling their obligations under the Definitive Agreement, making the agreed payments to SMG, and executing exploratory mining activities on the Properties; (iii) SMG has transferred the properties to ARLI S.A. via a notarial deed dated December 19, 2022. These Properties are located in Salar de Arizaro, Los Andes Department, Province of Salta, Argentina; and (iv) Mario Luis Castelli, acting as lawyer under the instructions of Lithium Chile and Argentum, and based on a special power of attorney granted by SMG, will formally represent SMG in all the Property files befoe the Mining Court and governmental mining authorities of the Province of Salta, until the notarial deed of assignment from SMG to ARLI is registered by the Mining Court, and ARLI

S.A. is registered as the new owner. Currently, the registered owner is ARLI S.A., following the registration by the Mining Court of the Province of Salta, recorded in entry No. 11 of the Book of Assignments, Sales and Transfers, the shareholders of ARLI are Argentum with a 62.2% stack and Litiar with a 38,8% stack.

The Properties or mineral tenures in “Salar de Arizaro,” located in the Andes Department of Salta Province, in Argentina, comprise six (6) mining concessions. The respective files for these concessions are currently being processed by the Mining Court of Salta Province. The mining properties are illustrated in Figure 1-1, and the total area covers 20,500 hectares (Ha). Under Argentine regulations, a mining concession is granted indefinitely, provided that the stipulations of the National Mining Code are adhered to.

Figure 1-1: Location Map of The Project Concession Areas



Source: Ausenco, 2023.

1.4 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The project area is located in Salta Province, in the northwest region of Argentina. The operating season for the area is year-round, with no times of the year where access is restricted. The nearest town with services is Tolar Grande, which is about 38 km southwest, along the mining track (road to Lindero Project) and continuing on Salta provincial road, RP-27. The nearest large city is Salta, located about 234 km northeast of the project area.

Local resources in the area are very basic. Most supplies are brought from Salta or San Antonio de Los Cobres. Several mine camps occur in the area and are powered locally. There are no people living in the vicinity of the Project. Main infrastructure in the zone consists of a 375-kilovolt (kV) electrical power line, a natural gas pipeline (Gasoducto de la Puna) between Salta (Argentina) and Mejillones (Chile), and Belgrano Cargas railway between Antofagasta (Chile) and Salta (Argentina). The Project is connected to Salta, Tolar Grande, and San Antonio de Los Cobres by the way of a well-maintained paved and unpaved road network. The Project can be accessed through a mining track going south to Lindero Project after leaving RP-27, which connects with Tolar Grande. The nearest port is the port of Antofagasta, in the Republic of Chile, with a distance of 250 km away from the Project site. Another alternative is the port of Buenos Aires, 1,734 km away by land, which is the main container port in Argentina.

The physiography of the region is characterized by extensive depressions and basins separated by mountain ranges, with marginal canyons cutting through the Western and Eastern Cordilleras and numerous volcanic centers, particularly in the Western Cordillera. The Altiplano-Puna magmatic volcanic arc complex (commonly APVC in literature) is located between the Altiplano and Puna. It is associated with numerous stratovolcanoes and calderas. Locally, mine concessions of the Project are located in the central part of the Salar de Arizaro. The elevation at the surface of the Salar in the concession area is approximately 3,475 m asl.

Vegetation is often sparse and absent over large areas of both the Puna ecoregion, where the Project is located, and the surrounding High Andean ecoregion. In the Puna ecoregion, the dominant vegetation consists of shrub steppe, while vegetation in the High Andean ecoregion primarily consists of herbaceaous or grassy steppes such as *Festuca orthophylla, Festuca chrysophylla,* and *Poa gymnantha.*

The climate in the project area is characterized as a cold, high-altitude desert. The main rainy season is between December and March. Solar radiation is intense, leading to extremely high evaporation rates. Strong winds are frequent in the Puna, reaching speeds of up to 80 km/h during the dry season. During summer, warm to cool winds are generally pronounced after midday and winds are usually calm during the night.

Regarding infrastructure, the Salar de Arizaro Project will primarily consist of various civil works, on-site facilities and buildings, and infrastructure for water, gas, electricity, and steam generation. The Project will also include roadways and logistics.

The on-site facilities and buildings will encompass a wellfield, two raw brine receiving ponds, a direct lithium extraction (DLE) plant, reverse osmosis, mechanical evaporation, a chemical plant, dry product handling areas, a general utilities area, and other necessary infrastructure. These additional facilities will include an administration office, a camp area, a diner, warehouses for reagents and spare parts, a metallurgy laboratory, maintenance workshops, warehouses for products, a first-aid policlinic, and a gatehouse.

Additionally, there will be ponds to collect raw brine and raw water, a contour channel, and a safety berm to enhance the safety and efficiency of the Project. A main electrical substation will be established to ensure that a stable power supply, and water supply infrastructure will also be put in place to meet the Project's needs.

1.5 History

Several exploration activities have occurred on the Project during the last several years prior to Lithium Chile's acquisition of a majority stake in the concession in 2021. These have included the following activities developed at the instruction of the previous owner Argentina Lithium.

- A sub-surface brine sampling campaign was carried out in 2017 by Aminco (2017a) and consisted of the construction of 23 trenches: 15 in the central part of the Salar and eight in the southern part, near the Cono de Arita.
- During the first months of 2017, Conhidro (2017) conducted a Vertical Electrical Sounding (VES) geophysical survey in the Salar de Arizaro. Twenty-five VES points were surveyed, with 17 in the northern part of the Salar and eight in the southern part.
- An exploration drilling and testing program was conducted in 2017 to obtain depth-specific brine samples using an inflatable packer system. Three wells were drilled, using the Diamond Drill Hole (DDH) method, with total depths varying from 250.55 to 398 m (Aminco, 2017b).
- During the months of May and June of 2018, Geophysical Exploration & Consulting S.A. (GEC, 2018) conducted a CSAMT exploration survey consisting of 122 stations.

1.6 Geological Setting and Mineralization

Salar de Arizaro is located in the Geological Province of La Puna (Turner, 1972), within the Puna Austral Geological Sub-province (Alonso et al., 1984). One of the most important characteristics that define the Geological Province of La Puna is the presence of evaporitic basins, or "salars" where, important deposits of borates, sodium sulfate, and lithium can concentrate. Salars near the project area include Hombre Muerto, Antofalla, Ratones, Pocitos, Centenario, and Diablillos. Lithium Chile's properties are found within the Salar de Arizaro, which represents one of these endorheic (internally drained) basins.

The northern concession area, which is surrounded by Holocene alluvial and colluvial deposits, is located over recent evaporitic deposits; entire tenements are located over the Salar de Arizaro and toward the eastern side, surrounded by Holocene clay deposits. Older sediments from this northeastern area belong to Oligocene-Lower Miocene Vizcachera Formation and include sandstones, volcanic sandstones, pelites, tuffs, gypsum, and halites. Toward the northwest, older granodiorites belonging to the Upper Ordovician, Taca Taca formation, dacites, ignimbrites, and dacitic tuffs belonging to Eocene Santa Ines Volcanic Complex form the boundary of the Salar. The central mining concessions are located over recent evaporitic deposits.

1.7 Deposit Types

The deposit consists of a lithium-rich brine aquifer located in a salar basin. Based on the available information, Salar de Arizaro is a mature salar, and one of the larger salars in the Argentinean altiplano. A thick halite core exists in the basin.

Basin margins are interpreted to be fault controlled. The principal source of water entering the Project area is from surface water coming into the basin from the basin margins.

Salar basins are characterized by closed topography and interior drainage. Typically, there is not a significant amount of groundwater discharge from these basins as underflow. Effectively, all groundwater discharge that occurs within the basin is via evapotranspiration. All surface water that flows into the basin is either evaporated directly or enters the groundwater circulation system and is evaporated at a later time. Water levels tend to be relatively shallow in the flat part of the Salar.

1.8 Exploration

On May 03, 2019, NORLAB (2019a) conducted a resampling of previously drilled well AR-01 (Aminco, 2017b). This work was requested by Lithium Chile. Later in May 2019, NORLAB (2019b) returned to take additional near-surface samples.

Furthermore, a passive seismic survey was undertaken in part of the Salar de Arizaro during the period from December 01 to December 09, 2022. The purpose of this survey was to characterize and identify geophysical indicators of resources below the surface and at great depths, as well as to estimate the depth to basement rock.

1.9 Drilling

The results of the 2021, 2022, 2023, and 2024 drilling and testing programs are being reported as of the date of this report; exploration sampling activities are still ongoing. Drilling activities for exploration well Argento-01 started on September 05, 2021, reaching a depth of 470 meters below land surface (m bls) on November 28, 2021. Pumping tests were conducted at exploration well Argento-01 in December 2021 and included step-discharge and constant-discharge tests. Drilling activities for exploration well Argento-02 started on September 07, 2022, reaching a depth of 650 m bls on October 30, 2022. Pumping tests were conducted at exploration well Argento-02 in April 2023 and included step-discharge and constant-discharge tests. Furthermore, a long-term pumping test of 31 days was conducted at Argento-02 during October and November, 2023. Drilling activities for exploration well Argento-03 started on January 05, 2023, reaching a depth of 577 m bls on March 18, 2023. Pumping tests were conducted at exploration well Argento-03 in May 2023 and included step-discharge and constant-discharge tests.

In 2022, 2023, and 2024, a total of six DDH coreholes were drilled and completed: ARDDH-01, -02, -03, -04, -05, and -08. Core samples were described and collected for drainable porosity analysis, and depth-specific brine samples were obtained. The Borehole Magnetic Resonance (BMR) survey conducted by Zelandez and LCV core analysis agree reasonably well with the field lithologic descriptions of the units encountered during drilling. In addition, we believe that the ranges of the specific yield values obtained from the LCV laboratory analysis and BMR survey are reasonable and consistent with values for similar units defined in other altiplanic salars for different projects. Favorable aquifer conditions were observed at exploration coreholes, and brine chemistry and drainable porosity results were used for the estimated lithium brine resource and reserve.

Freshwater exploration to date has included the drilling and testing of Chaschas Sur 01 in the southern portion of the basin. A 72-hour pumping test yielded relatively high transmissivity values that are characteristic of marginal alluvial sediments.

1.10 Sample Preparation, Analyses and Security

Brine samples were obtained for laboratory analyses during drilling, during the pumping test, and after well construction. Two methods were used to obtain brine samples during the exploration drilling program. Brine samples were used to support the reliability of the depth-specific samples included analyses of the following:

- Pumped samples obtained at variable depths during drilling using a downhole sampling pump.
- Brine samples obtained during and at the end of the pumping test in exploration well Argento-01, Argento-02, and Argento-03.
- Hydrasleeve samples obtained at specific depths after the well was cased.
- Packer brine samples obtained during drilling at corehole ARDDH-01 and -04.

Samples were taken during drilling, during the pumping test, and after well construction. Samples taken during well pumping represent a composite brine sample taken over the entire screened interval of the well and resemble the chemistry that would be expected from that well during production pumping.

After the brine samples were sealed on site, they were stored in a cool location and shipped in sealed containers to the laboratory for analysis. Chemistry samples (brine) were not subjected to any further preparation prior to shipment to participating laboratories. Duplicate brine samples and remaining brine are stored at the ASA laboratory in Jujuy. ASA was the laboratory used for the analysis of brine samples during the 2021 exploration program, and samples were analyzed for metals using the Inductively Coupled Plasma (ICP) spectrometry analytical method. The ASA laboratories are independent of Lithium Chile, and are International Standards Organization (ISO) 9001 accredited and operate according to Alex Stewart Group international standards, consistent with ISO 17025 standards.

All samples were labeled with permanent marker, sealed with tape, and stored at a secure site, both in the field, and in Salta, Argentina. Remaining sample brine and duplicates samples obtained during drilling and testing are currently being stored in the Alex Stewart NOA laboratory in Jujuy. The field sampling of brines from the pumping tests was done in accordance with generally accepted industry standards. The brine sampling program included Quality Assurance and Quality Control (QA/QC) standard elements such as including duplicate samples. Formal traffic reports and chain of custody documents were prepared for every sample obtained and submitted for laboratory analysis.

Regarding porosity samples, retrieved core was analyzed at the LCV Laboratory in Buenos Aires, Argentina. The drainable porosity measurement procedure involved saturating the core sample with brine solution and placing them in test cells where a pressure differential was applied and the proportion of brine which can be drained was estimated. LCV is an ISO 9001-2015 accredited laboratory and is independent of Lithium Chile.

In the opinion of the Qualified Person (QP), sample preparation, security, and analytical procedures were acceptable and results from the laboratory analyses are considered adequate.

In the opinion of the QP, the data presented in this report are adequate for estimating the Probable reserves.

1.11 Mineral Processing and Metallurgical Testwork

The tests were conducted by vendors providing Direct Lithium Extraction (DLE) technologies, all well recognized in the market, such as Lanshen, Sunresin, Summit Nanotech, among others. The work carried out by these vendors meets the requirements for determining process parameters.

Regarding the other unit operations involved in the design, laboratory tests were conducted by a well-known research center in the city of Palpalá, Jujuy, namely "Centro de Investigación y Desarrollo en Materiales Avanzados y Almacenamiento de Energía de Jujuy, CIDMEJu" to verify the parameters and variables used in the design of the process to obtain a battery-grade product.

The data obtained from the adsorption tests conducted by Lanshen indicate that the brine from the Salar de Arizaro exhibits favorable behavior with the adsorption resin. The results demonstrate that the lithium adsorption resin is stable over time and selective towards lithium ions, achieving adsorption yields close to 90% for a configuration that employs a washing mixture. Additionally, it shows that temperature during adsorption does not have a significant impact, although it is important for the elution stage. The results with the resin indicate that water consumption is lower compared to other tests conducted by Lithium Chile. It is necessary to verify these results with continuous tests of longer duration to ensure consistency.

1.12 Mineral Resource Estimate

The resource estimate for the Salar de Arizaro Project consists of Measured, Indicated, and Inferred resources, and key parameters used for the estimation correspond to brine concentration and drainable porosity. The utilized method consisted of constructing concentric circles around the exploration wells and dividing them into horizontal layers as hydrogeologic units, with each layer assigned an areal extent, lithium concentration, and drainable porosity value. Consistent with the Houston et. al (2011) recommendations, a 1.5 km radius circle around the well was used to estimate a measured resource, a 3.5 km radius circle around the well was used to estimate an Indicated resource, while a maximum 5 km radius circle was used as the areal extent to estimate an Inferred resource. Depending on the polygon, measured and indicated polygons are present in the upper portion of the aquifer (below 190 m bls) based on the existence of brine chemistry, drainable porosity, or pumping test data, while most inferred polygons are found at depth, below the indicated polygons.

Table 1-1 summarizes the current Salar de Arizaro resource estimate for lithium. The mass values represent the theoretical amount of lithium that can be drained in the defined polygon area, which is not a projected amount extracted from the reservoir. These estimates were calculated by multiplying the (circle area) x (unit thickness) x (drainable porosity) by (average lithium grade). Subsequently, the resulting value was summed for each hydrogeologic unit for each area, for each assigned resource category. Measured and indicated resources are reported inclusive of mineral reserves.

A lithium cut-off grade of 200 mg/L was utilized for the resource estimate based on a conservative lithium carbonate price of US$ 8,000/t. Projected revenue and costs were reviewed to determine the lithium grade which is expected to generate a profit. However, the reader is cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability.

Table 1-1: Summary of the Resource Estimate for the Salar de Arizaro Project (Effective April 3, 2024)

Resource Category	Brine Volume (m^3)	Average Lithium Concentration (mg/L)	In-Situ Lithium Mass (kt)	Lithium Carbonate Equivalent (LCE) Mass (kt)
Measured	1.88E+08	261	49	261
Indicated	1.39E+09	302	420	2,237
Measured + Indicated	**1.58E+09**	**297**	**469**	**2,498**
Inferred	8.42E+08	362	305	1,624

Notes:
1. Kt = ktonnes
2. The conversion factor used to calculate lithium carbonate equivalent (LCE) from lithium is based on the molar weight of the elements added to generate LCE. The equation is as follows: Li x 5.3228 = LCE.
3. The cut-off grade for lithium used to report mineral resources is 200 mg/L based on a conservative lithium carbonate price of US$8,000/t LCE.
4. The comparison of values may not be exact due to rounding.

It is the QP's opinion that the resource estimation methodology complies with the Canadian Institute of Mining's Best Practice Guidelines for Resource and Reserve Estimation for Lithium Brines (CIM, 2012).

1.13 Mineral Reserve Estimate

The reserve estimate for lithium brine considers the modifying factors of converting Measured and Indicated resources to mineral reserves, including the production wellfield design, future dilution, and recovery of lithium during the processing phase. A calibrated groundwater flow and solute transport model was created to estimate the reserve because extraction of lithium-rich brine is based on physical pumping from a wellfield. A 3D numerical model was constructed in Groundwater Vistas interface Version 8 (ESI, 2020) and was simulated using the control volume finite difference code MODFLOW-USG Transport (Panday, 2023).

The active model domain encompasses the Salar de Arizaro, which covers an area of approximately 2,031 square kilometers (km^2). The 3D model domain includes a grid of node-centered, rectangular cells with more refined cells in Lithium Chile's concessions; vertically, the domain was divided into eight model layers based on the defined hydrogeologic unit contacts and amount of exploration data. Recharge was simulated in the form of direct recharge over the salt flat nucleus as well as by lateral recharge from neighboring sub-basins. Evapotranspiration was modeled using the evapotranspiration segments (ETS) package.

Prior to the simulation of future production, the numerical model was calibrated using historical data to verify modeled parameters. The numerical model was initially calibrated to steady-state or natural conditions, prior to pumping, and the solution is considered acceptable with all hydraulic head residuals (observed value minus simulated values) within 1 m and an adequate simulated groundwater flow direction and water balance. Furthermore, a transient model calibration was undertaken for the long-term pumping test (31 days) and recovery at Argento-02 to confirm the aquifer's response to pumping. The observed and simulated hydrographs during the Argento-02 test within the pumping well closely agree, and extracted concentrations from the pumping well are similar to model-simulated pumping concentrations, further strengthening the calibration.

Following the steady-state and transient calibrations, a predictive simulation was conducted with production pumping based on the projected mine plan, which includes a ramp-up during Year 1 and full production from Year 2 to Year 20 (25,000 t/y LCE). Projected production locations are spaced approximately 1 km apart and are located within Measured and Indicated Resource zones. Mineral reserves are reported at the point of reference of processed brine (rather than from the production wellheads), thus the extracted lithium mass was multiplied by a global process efficiency factor of 83%. Table 1-2 summarizes categorized mineral reserves for the Arizaro Project.

Table 1-2: Summary of the Probable Reserve Estimate for the Arizaro Project, Considering Processing Losses (Effective April 19, 2024)

Reserve Category	Time Period	Brine Volume Pumped (Mm^3)	Average Extracted Lithium Concentration (mg/L)	Extracted Lithium Mass (kt)	Extracted LCE Mass (kt)
Probable Reserves	All (Years 1 - 20)	407	273	92	490

Notes:
1. Mm^3 = million cubic meters; kt = kilotonnes; LCE = lithium carbonate equivalent.
2. Mineral Reserves are reported at a point of reference of processed brine using a global recovery factor of 83%.
3. The cut-off grade for lithium used to report Mineral Reserves is 200 mg/L based on a conservative lithium carbonate price of US$8,000/t LCE.
4. Lithium is expressed as a contained metal.
5. The conversion factor used to calculate LCE from lithium is based on the molar weight of the elements added to generate LCE.
The equation is as follows: Li x 5.3228 = LCE.
6. Minor discrepancies may exist when comparing values due to the use of averaging methods and rounding.

A lithium cut-off grade of 200 mg/L was utilized for the reserve estimate based on a conservative lithium carbonate price of US$ 8,000/t. Projected revenue and costs were reviewed to determine the lithium grade which is expected to generate a profit. Pumped brine is ultimately stored in a collection pond and transferred to the receiving ponds near the DLE plant, thus a composite grade is present prior to processing which can be approximated by a flux-weighted average concentration from the production wells. During the 20-year reserve simulation, the average extracted grade from the production wells is approximately 273 mg/L (above the 200 mg/L cut-off grade), demonstrating that production is economically viable.

The QP classified all mineral reserves as Probable reserves for the following reasons:

- Only one long-term pumping test has been conducted to date (Argento-02). Additional long-term testing will aid in understanding the feasibility of longer pumping durations in other areas of Lithium Chile's mine concessions and it will also improve the numerical model calibration.
- The numerical model does not currently simulate the future extraction of neighboring lithium operators within the Salar de Arizaro; most of that information has not been publicly disclosed, and thus it has not been analyzed to date. The inclusion of additional pumping may also require an extension of the model domain and consideration of density driven flow (as well as additional water chemistry information).
- The current study level is Pre-feasibility, with preliminary options related to the mine design, mineral processing, and permitting (CRIRSCO, 2019). A future update at the feasibility level will include a more confident mine plan and schedule, as well as optimized mineral processing and management of spent brine.

Despite sources of uncertainty, a steady-state and transient calibration of the numerical model was conducted at the current level of the Project to support a Probable reserve estimate. The numerical model results indicate that it is feasible to meet expected production during the Year 1 ramp-up (14,178 t LCE) and subsequent period from Year 2 to

Year 20 (25,000 t/y LCE). The lithium mass that can be extracted from the production wellheads, prior to processing losses, represents about 24% of the total Measured and Indicated resources.

It is the QP's opinion that the reserve estimation methodology complies with the Canadian Institute of Mining's Best Practice Guidelines for Resource and Reserve Estimation for Lithium Brines (CIM, 2012).

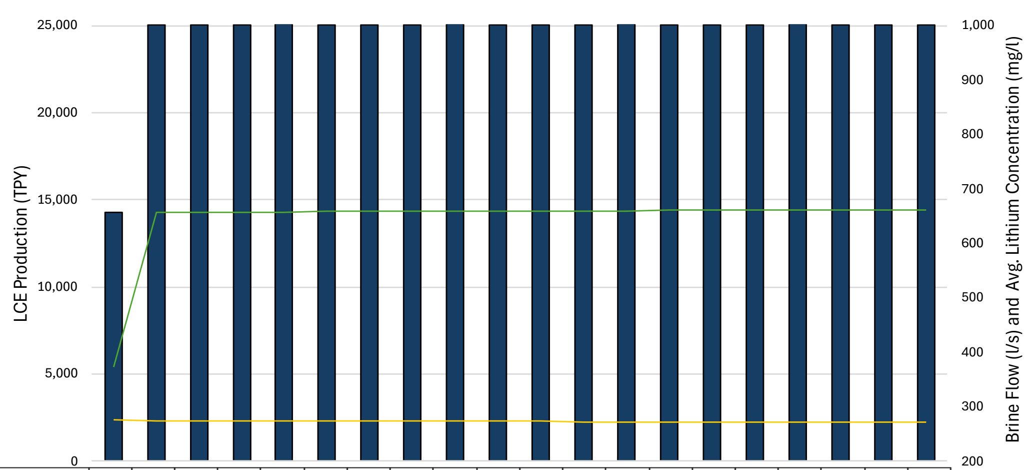
1.14 Mining Methods

The LCE production process in the Salar de Arizaro Project will operate through brine extraction wells. The brine extracted from each production well will be stored in one collection/transfer pond, from which it will be pumped through a main pipeline directly to the receiving ponds located near the DLE plant. The considerations adopted for estimating the production plan are as follow:

- A Life-of-Mine (LOM) duration of 20 years.
- A production ramp-up to 25,000 tonnes per year (t/y), which is characterized by 57% of the annual LCE production target in Year 1 (i.e., 14,178 t), followed by 100% from Year 2 to Year 20 (25,000 t/y).
- Based on the mineral processing analysis, a global process efficiency factor of 83% is assumed between the production wellheads and generation of LCE product.

Based on the predicted wellfield configuration and reserve modeling, an annual average brine feed rate of approximately 660 liters per second (L/s) is estimated following Year 1, with an average anticipated extracted lithium concentration of 273 milligrams per liter (mg/L) (Figure 1-2).

Figure 1-2: Estimated Production for the Salar de Arizaro Project



Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Total brine flow (l/s)	373	658	658	658	658	659	659	659	659	660	660	660	660	661	661	661	661	662	662	662
Weighted Li concentration (mg/L)	275	273	273	273	273	273	273	273	273	273	272	272	272	272	272	272	272	272	272	272

Source: Montgomery, 2024.

According to the results of pumping tests and reserve modeling, the maximum pumping rates of individual future brine production wells will be approximately 19 L/s for wells within the Measured and Indicated resource zones, and they will be placed approximately 1 km away from each other. To meet the target of 25,000 t/y of LCE, it is anticipated that 35 production wells will be needed by Year 2, and replacement wells should be considered after 8 to 12 years of operation. An average depth of 500 m is estimated for the production wells and 12-inch diameter stainless steel casing is considered.

Based on the conceptual water balance of the Arizaro Salt Flat, the average estimated recharge rate corresponds to approximately 524 L/s. Numerous neighboring sub-basins contribute recharge to the Salar de Arizaro, where freshwater is expected to flow from high-elevation areas toward the low elevation salar and evapoconcentrate over time. The projected wellfield is located in the southwest of Lithium Chile's mining concessions, an average of 10 km from the nearest marginal area of the Salar de Arizaro. Due to the large distance, current numerical modeling results with pumping indicate that a lateral dilution of extracted brine does not occur from the marginal freshwater zones, and projected extraction wells will be designed to inhibit the inflow of diluted brine from the upper 200 m.

Based on a conservative lithium carbonate price of US$8,000/t and anticipated brine volume that is extracted, projected costs were reviewed to determine the lithium concentration that is expected to generate a profit. For the resource estimate, no resource polygons with a lithium concentration below this 200 mg/L cut-off value were included in the summed lithium mass. Projected well screens in the reserve model were limited to 200 m bls and deeper. Based on the average anticipiated lithium grade of Probable reserves (273 mg/L), average extracted grades are above the applied cut-off grade of 200 mg/L, demonstrating that production is economically viable.

1.15 Recovery Methods

The Project considers a production of 25,000 tonnes per year (t/y) of battery-grade (BG) lithium carbonate (Li_2CO_3). To meet this objective, a raw brine flow of 64,080 m^3/d is required, which is extracted from wells located in the Salar de Arizaro. This brine is then transported to the process plant which, considering shutdowns, has an availability of 85%.

The selected process for this study combines DLE, reverse osmosis (RO), chemical precipitation, ion exchange 1, mechanical evaporation, ion exchange 2, carbonation, neutralization and dry product handling.

The process is shown in Figure 1-3 and comprises the following areas:

- Brine Extraction Area: The raw brine is extracted from different wells and collected to ensure a continuous feed to the process plant.
- Chemical Plant Area (eight stages):
  1) Direct Lithium Extraction: As much lithium as possible is extracted from the raw brine area using resins as a highly selective adsorbent.
  2) Reverse Osmosis: The lithium-enriched solution from the DLE columns passes through membranes, thus increasing the lithium concentration and recovering water.
  3) Chemical Precipitation: The concentrated brine is treated removing impurities such as Ca and Mg.

4) Ion Exchange 1: Calcium (Ca), magnesium (Mg) and boron (B) impurities are removed from the concentrated brine by means of ion exchange resins.

5) Mechanical Evaporation: The brine from ion exchange stage is passed through a vapor recompression evaporation, obtaining a concentrated lithium solution and recovering condensate.

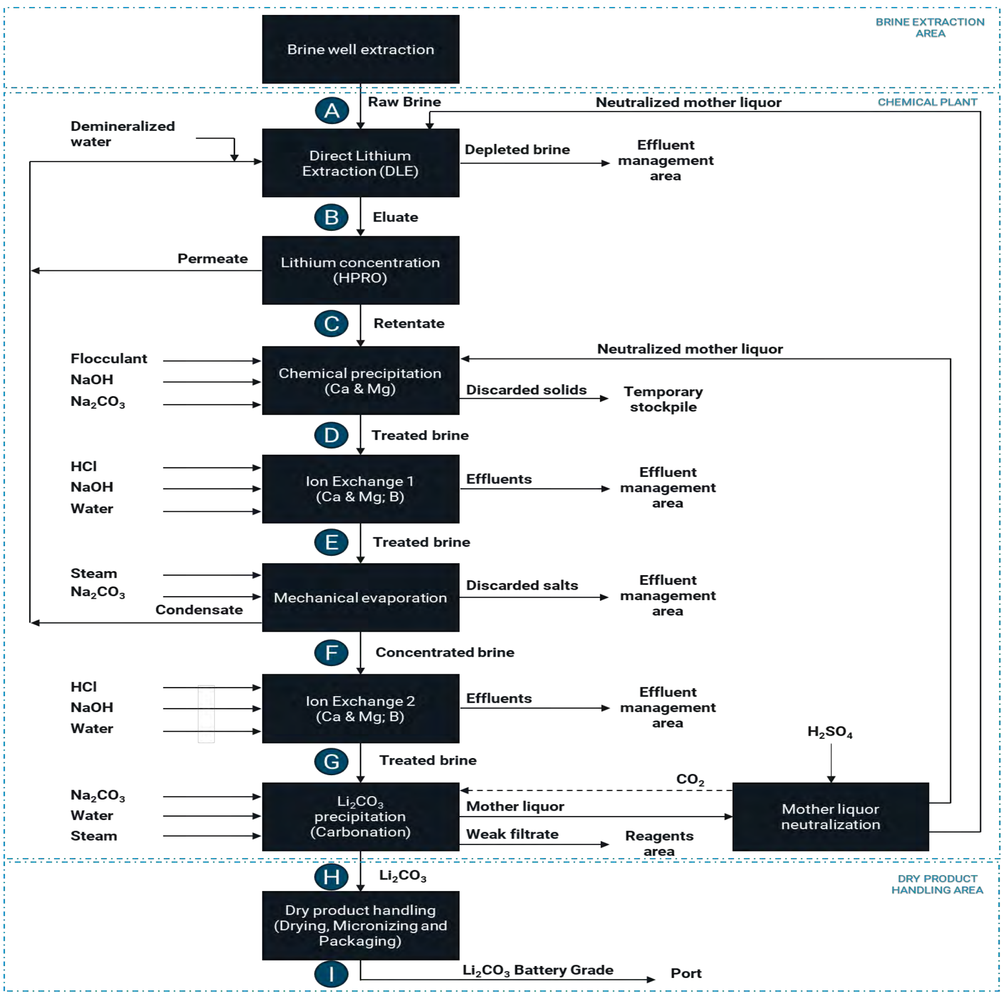
6) Ion Exchange 2: This stage intends to remove the impurities concentrated (Ca, Mg and B) in the evaporation/crystallization process.

7) Carbonation: Lithium carbonate is obtained employing soda ash.

8) Neutralization: Mother liquor (from carbonation) is neutralized with sulfuric acid eliminating carbonates.

- Dry Product Handling Area: The product undergoes moisture reduction by drying, size reduction by micronizing and then final packaging for export.

Figure 1-3: Process Block Diagram



Source: Ausenco, 2024.

1.16 Project Infrastructure

The project infrastructure consists of several buildings to maintain a sustainable and safety operation throughout the lithium carbonate production process. Different ponds for each phase of the process are considered, and located in the vicinity of the plant for the extraction, storage and waste management. The brine extraction will consider a pump capacity of 3,204 m^3/h to supply the different ponds through a 1,000 mm HDPE pipeline.

Energy will be provided by diesel and intermediate fuel oil (IFO) fuels generators to the three systems for the entire process of lithium carbonate production:

- Main electrical substation
- Brine pumping system
- Fresh water pumping system

The freshwater demand for the project (372 m^3/h) will be provided by pumping from groundwater supply wells located in the Chascha Sur sub-basin, located around 20 km to the southeast of the plant site. Between 7 and 9 pumping wells will be required to meet the demand based on the results of testing of one well already installed. Water pumped from the wells will be sent to a nearby freshwater pond and then pumped via a 500mm HDPE pipeline to the plant site.

1.17 Market Studies and Contracts

Lithium market shows that its price has been lowering mainly due the supply being sufficient for the current demand, although is expected that by 2030 this scenario will change, and the prices will be balancing up to this date and then grow as it is forecasted for the demand to surpass the supply.

1.18 Environmental, Permitting and Social Considerations

The Arizaro Project is located within the Puna and High Andean ecoregion in Los Andes Department in Salta Province, Argentina. The Puna is a highland plateau characterized by salt flats and shallow brackish lagoons, accompanied by low shrub-steppe vegetation. This area is arid and windy; solar radiation is intense, especially from October to March. Both Indigenous and non-Indigenous communities are located in proximity to the Project. The main economic activities for the region include mining, farming, and tourism.

1.18.1 Environmental Considerations

Environmental information for this report was sourced from environmental baseline studies provided by Lithium Chile through its subsidiary ARLI as part of the ongoing environmental approvals for the exploration and production phases, and occasionally complemented with publicly available online information. Environmental information was also summarized in a previously published Preliminary Economic Assessment (PEA) report completed in 2023 (Millard et.al.). Since that time, additional environmental impact reports have been developed for the process plant and pipelines areas, including community participation activities. Field based studies have been completed in the areas of climate/meteorology, air quality, noise, surface water and groundwater, flora and fauna, limnology, landscape, and cultural heritage. Studies on socio-economic, local communities, and social perception were also completed.

The Project is currently executing the exploration phase, with 12 wells exploring the aquifers in the saltflat area to characterize the Salar and search for concentrated lithium areas, but soon will be advancing into the production phase. Lithium Chile has submitted two Environmental Impact Studies, in 2019 and 2022, which presented desktop environmental information based on publicly available information to characterize the Project area and its surroundings. Fieldwork studies have recently been completed to support an environmental baseline for the next EIS to be presented in 2024 to comply with the Argentinian regulation. for which additional environmental impact studies have been presented. New EIRs that have been recently presented for the process plant and pipelines which required additional environmental baseline studies.

The Project area is located in an endorheic basin, and the rivers that feed it have a low flow with seasonal runoff fed by melting snow from the surrounding mountains, rainfall during the summer, and groundwater recharge in the highest elevation areas. The Project is located in the Puna ecoregion, however, project surroundings areas are also part of the high Andean ecoregion. In both of these ecoregions the vegetation is scarce and is often not present in widespread areas. However, their importance lies in that they serve as the principal food source for many wildlife species, and therefore form the basis of Puna ecosytem.

Los Andes department has several protected areas to support the preservation of flora and fauna. The closest to Arizaro Project is the Los Andes Natural Wildlife Reserve, which overlaps with part of the concession area. The reserve's objectives are to preserve the area's wildlife, especially the vicuña (Vicugna vicugna), the flora and soil resources, and study and apply development techniques and rational use of these natural resources. Also, near the Project are “Ojos de Mar de Tolar Grande” Provincial Wildlife Refuge, 44 km from the project area, and the Socompa Lagoon Provincial Wildlife Refuge, located 52 km from the project area.

Four archaeological sites were registered close to the Project area, consisting of rock structures that could be related to hunter-gatherer groups Two anthropological heritage sites of historical value are located near the project area.

In terms of water management, the company will provide water for human consumption using public potable water stations, which will be transported using portable water containers. Process water for the operation phase the Project will be provided from the Chascha aquifer and which will be recirculated to minimize freshwater use. A preliminary assessment indicates the recharge of this aquifer is between 3.9 and 7.1 hm^3/year, but more data is necessary to obtain a more accurate rate of recharge. Currently, Lithium Chile has developed one well, with a maximum capacity of 75 m^3/h. The permit for this well is currently in process but expected to be approved shortly. Based on the well testing conducted so far, a total of seven to nine wells will be required to meet the freshwater demand for the process. An upcoming groundwater exploration program will involve drilling 12 borehole in the Chascha Sur and surrounding sub-basins. The ongoing groundwater exploration program will confirm the number of wells and their recommended locations.

Although there are no permanent watercourses within the project area, there is the potential for episodic flooding. The Project plans involve constructing a contour channel and safety berm along east border and a drainage ditch on the north side of the process plant to prevent any runoff from entering the Project area and therefore becoming contact water.

The Project has a Waste Management Plan for the exploration and operation phases to manage emissions and wastes, with specific designated areas to temporarily store and manage wastes before final disposal. Regarding process effluents, during the exploration phase, effluents from the exploration wells are spread out in the salt flat. During the production phase, the process plant will produce several types of effluent that will be variously mixed, and treated. Ultimately, treated effluent will be transferred to the depleted brine infiltration zone for final disposal.

The project will produce low amounts of gaseous emissions, particulate matter, noise and heat emissions. The Company is currently reviewing alternatives for power generation for operation, such as liquefied natural gas, solar/thermal hybrid among others, to further reduce atmospheric emissions.

1.18.2 Permitting Considerations

Argentina, being a federation, has a first level set of regulations corresponding to the National Law and a second level corresponding to the Provincial Law, which in this case corresponds to the Salta Province. For a mining operation, the National Law requires obtaining an environmental permit and other specific ones, such as water permits, waste generation registration, chemical precursors registration, and municipal qualification for the infrastructure.

The Project is currently executing the exploration phase, with 12 wells exploring the aquifers in the Project area to characterize the saltflat and search for concentrated lithium areas, for which Lithium Chile has an environmental permit. The project is evolving into the production phase, for which additional environmental impact studies have been presented.

The Argentinian regulation requires that all mining operations submit an EIR before commencing operations, that must be updated every two years. An EIR must include a project description, the environmental components and social aspects, and presents additional information as the project progresses from exploration through to construction and operation phases. The first EIR for the Project titled “Etapa de Exploración y Explotación de Pozos de Salmueras Ricas en Litio” was submitted in July of 2019. It presented preliminary information based almost entirely on a desktop review. In February 2022, a second EIR based on a desktop review was submitted to the provincial mining authorities for the Project's pre-feasibility stage. It included environmental, social and community aspects, providing general information on the Project area. This 2022 EIS process has yet to be approved and is currently in its fourth round of questions from the authority. The company expects to complete this process in the next few months. Lithium Chile has recently finished fieldwork studies to generate an environmental baseline for the next EIS to be presented in 2024 to comply with the Argentinian regulation.

Additional permits are required for the project: including water permits, waste generation registration, chemical precursors registration, and municipal qualification for installations. Some of the permits have already been received and several remain pending but are expected to be received in the near future.

1.18.3 Social Considerations

The closest town to the Project is Tolar Grande (40 km) and the closest city is San Antonio de Los Cobres, where the authorities and primary services are located. San Antonio de los Cobres is the municipal capital and is the only population center in the municipality. There are also scattered family settlements called *puestos*, of which Antofallita and Cavi are the closest to the Salar de Arizaro Project. Based on the most recent census data (2010), Tolar Grande had a total population of 236, organized into 54 families, although local authorities set the population between 250 and 300 people. San Antonio de Los Cobres had a population of 4.763.

The 2023 EIR identifies seven indigenous communities in Los Andes Department. Comunidad Aborigen Kolla de Tolar Grande is the closest Indigenous community, which resides in Tolar Grande town. It is reported that all the people living in Tolar Grande recognize themselves as being of kolla ethnicity or part of an indigenous community.

Concerning socio-economic dynamics, Tolar Grande's main activities are mining, tourism, and subsistence livestock farming. Within this community, mining activities generate a high expectation of employment and stimulant to the local economy; however, the community is also concerned about potential environmental problems, such as noise, vibration, suspended dust, and combustion gases from equipment and vehicles.

Regarding the rural community, the main economic activity is arable and livestock farming. People perform transhumance, which is a type of nomadism, a seasonal movement of livestock between places with better summer and winter pastures. Within this group, people have positive and negative perceptions about mining; on the one hand, the people perceive that benefits are targeted at the towns, and perceive that they receive fewer benefits, on the other hand, they recognize that the assistance received from mining companies has changed their daily lives positively.

In February 2024, Lithium Chile conducted the first Participatory Environmental Monitoring with the Kolla community and the participation of the Tolar Grande Municipality and the Salta Mining Secretariat, in compliance with permit conditions.

Lithium Chile has a Corporate Social Responsibility (CSR) Plan that aims to establish a relationship between Tolar Grande, Antofallita, Cavi, and the company. The objectives include developing economic and social opportunities, maintaining fluent community participation in the decision-making process, and achieving sustainable agreements, among others. The CSR Plan has 25 activities classified that fall into into seven key areas: health, education, infrastructure, environment, economic development, culture, and transparency. Health is the area with the largest number of planned activities, followed by culture.

1.18.4 Closure and Reclamation Considerations

Currently, Argentina or Salta Province do not have any law that require an exclusive permit for closure and reclamation. However, the EIR process requires that a section about closure and reclamation be included when a project is in its operation phase. Consequently, the 2023 EIR for the production phase of the Project includes a conceptual Mine Closure Plan for the facilities, which will later evolve into a more detailed closure plan as the project progresses.

The Ministry of Production and Labor released The Good Practice Resource Guide for Mine Closure in 2019, providing definitions and guidance on how to define and value a closure plan. However, this guide does not provide a specific methodology or standard for this purpose. The guide identifies seven aspects that should be addressed in the closure plan: physical stability, chemical stability, management of tailings, water management, biodiversity management, rehabilitation and restoration, and social management of closure. Moreover, the guide indicates that the Project should design the closure measures and activities using a risk assessment approach.

The objective of the Mine Closure Plan is to establish measures to rehabilitate the area used by the Project so that it achieves environmental characteristics compatible with a healthy environment. The plan also defines the expected post-closure conditions and sets out the monitoring program, contingency measures, costs and execution schedules. Since mining operations are dynamic, the Mine Closure Plan will be reviewed every two years and adapted to any changes made and/or planned in the operation.

The closure costs estimation is presented in Section 21. This cost will be refined further during the feasibility stage of the Project, since a detailed closure cost will need to meet applicable regulatory requirements, supported by feasibility level design.

1.19 Capital and Operating Cost

1.19.1 Capital Cost Estimate

Ausenco prepared the comprehensive capital cost estimate following the Association for the Advancement of Cost Engineering International (AACE International) standards for a Class 4 estimate. This estimate relies on the costs of similar regional projects, utilizing standard values for unit rates, materials, and electrical expenses instead of contractor quotes or bids. The capital is divided into direct costs, project indirect costs, and contingency.

Table 1-3 presents the capital cost summary.

Table 1-3: Capital Cost Estimate Summary

Description	Initial Capital Cost (US$M)	Sustaining Capital Cost (US$M)	Total Capital Cost (US$M)
Brine Extraction Capital	74	68	142
Process Capital	335	-	335
General Utilities	163	5	168
Infrastructure	79	3	82
Total Direct Costs	**650**	**77**	**727**
Project Delivery	147	133	280
Owner's Cost	39	-	39
Total Indirects	**836**	**210**	**1,046**
Contingency	219	36	255
Total Project Cost	**1,055**	**246**	**1,301**

1.19.2 Operating Cost Estimate

The operating cost breakdown is detailed in Table 1-4. Reagents are the main direct cost, making up 51.2%, followed by energy at 21.2%. Combined, these costs amount to US$98.8 M annually, which is 72.4% of the total direct operating costs. For the PFS Study, Ausenco and the Client provided quotes for reagents, resin, membrane, fuel, and personnel transportation, which together including energy, account for 81.5% of the total direct operating costs.

Table 1-4: Operating Cost Estimate Summary

Description	US$ M/y	US$/t Li_2CO_3
Direct Costs		
Reagents	69.8	2,794
Resin Make up & Membrane Replacement	6.75	270
Energy	29.0	1,159
Manpower	8.07	323
Catering and Camp Services	6.22	249
Maintenance	4.87	195
Site Vehicle Costs	0.287	11
Bus-In/Bus-Out Transportation	2.74	110
Consumables	0.625	25
Li_2CO_3 Transport to Antofagasta Port	5.20	208
Direct Cost Subtotal	**133.6**	**5,344**
Indirect Costs		
General and Administration	2.84	114
Indirect Costs Subtotal	**2.84**	**114**
Total Operating Costs[1]	**136.4**	**5,457**

[1] Numbers may not add up due to rounding.

1.20 Economic Analysis

1.20.1 Economic Summary

The Project was evaluated using an 8% discounted cash flow (DCF) analysis on a non-inflated, after-tax basis. The cash flows consist of approximately 2 years of pre-production costs and 20 years of operations. Cash inflows consist of annual revenue projections for the mine calculated at considering three price scenarios as presented in Section 1.2.1. Cash outflows include capital costs, operating costs, royalties, and taxes, which are subtracted from the inflows to arrive at the annual cash flow projections.

To reflect the time value of money, annual net cash flow (NCF) projections are discounted back to the beginning of the project execution, using an 8% discount rate. The discount rate was determined using several factors, including the type of commodity and the level of risks (market risk, technical risk and political risk). The discounted present values of the cash flows are summed to arrive at the net present value (NPV).

The financial model is based on the Mineral Reserves outlined in Section 15, the mining rates and assumptions discussed in Section 16 and processing rates and recovery methods discussed in Section 13 and Section 17, respectively.

- Initial capital costs are estimated to be US$1,055 M. Over the LOM sustaining capital is estimated to be US$246 M.
- LOM operating costs are estimated to be US$2,577 M.

- Closure and reclamation costs are estimated to be US$65 M.
- LOM royalties are estimated to be US$516 M.
- For the transport of LCE, the LOM costs are estimated to be US$102 M.

The pre-tax NPV discounted at 8%, is US$ 3,853M, the internal rate of return (IRR) is 42.1%, and payback period is 2.5 years. On a post-tax basis, the NPV discounted at 8% is US$2.829M the IRR is 36.3%, and payback period is 2.7 years. A cash flow summary is included below in Table 1-5.

Table 1-5: Economic Analysis Summary

General	Base Case	High Case	Conservative Case
Li_2CO_3 Price (US$/t)	$30,513	$32,424	$27,940
Operational Years (years)	20.0	20.0	20.0
Production - LOM			
Process Efficiency (%)	83.0%	83.0%	83.0%
LOM Li_2CO_3 BG (t/a)	24,459	24,459	24,459
Full Production Li_2CO_3 BG (t/a)	25,000	25,000	25,000
Total Payable Li_2CO_3 BG (t)	489,178	489,178	489,178
Operating Costs			
Processing Cost (US$/t Li_2CO_3)	$5,267	$5,267	$6,228
Transport Cost (US$/t Li_2CO_3)	$208	$208	$208
Total Operating Cost (Processing Cost + Transport Cost) (US$/t Li_2CO_3)	$5,475	$5,475	$6,436
Cash Costs (US$/t Li_2CO_3)*	$6,529	$6,606	$7,358
AISC (US$/t Li_2CO_3)**	$7,165	$7,242	$7,063
Capital Costs			
Initial Capital (US$ M)	$1,055	$1, 055	$1, 055
Sustaining Capital (US$ M)	$246	$246	$246
Closure Capital (US$ M)	$65	$65	$65
Financials – Pre-Tax			
Pre-Tax NPV (8%) (US$ M)	$3,853	$4,426	$3,090
Pre-Tax IRR (%)	42.1%	49.2%	33.0%
Pre-Tax Payback (years)	2.5	2.2	3.1
Financials – Post-Tax			
Post-Tax NPV (8%) (US$ M)	$2,829	$3,258	$2,256
Post-Tax IRR (%)	36.3%	42.1%	28.9%
Post-Tax Payback (years)	2.7	2.4	3.3

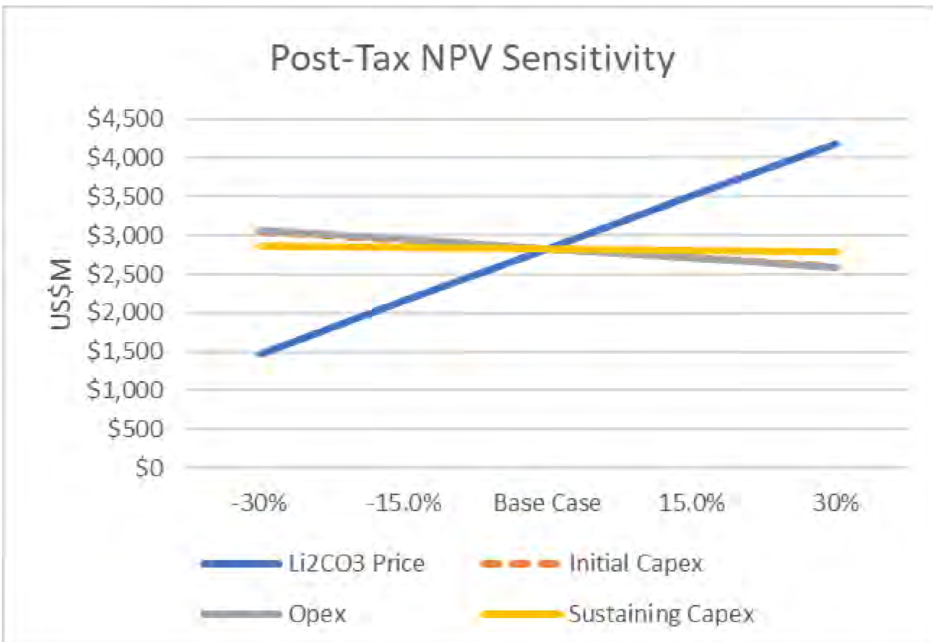
* Cash costs consist of mining costs, processing costs, general and administrative (G&A) cost, transport cost and royalties.
** AISC includes cash costs plus sustaining capital and closure cost.

1.20.2 Sensitivity Analysis

A sensitivity analysis was conducted on pre-tax and post-tax NPV and IRR of the Project, examining the following variables: battery-grade lithium carbonate price, sustaining capital costs, initial capital costs, and operating costs. The analysis revealed that the Project is most sensitive to fluctuations in lithium carbonate prices, with lesser sensitivity to changes in initial capital costs, operating costs, and sustaining capital costs, as shown in Figure 1-4 to Figure 1-6.

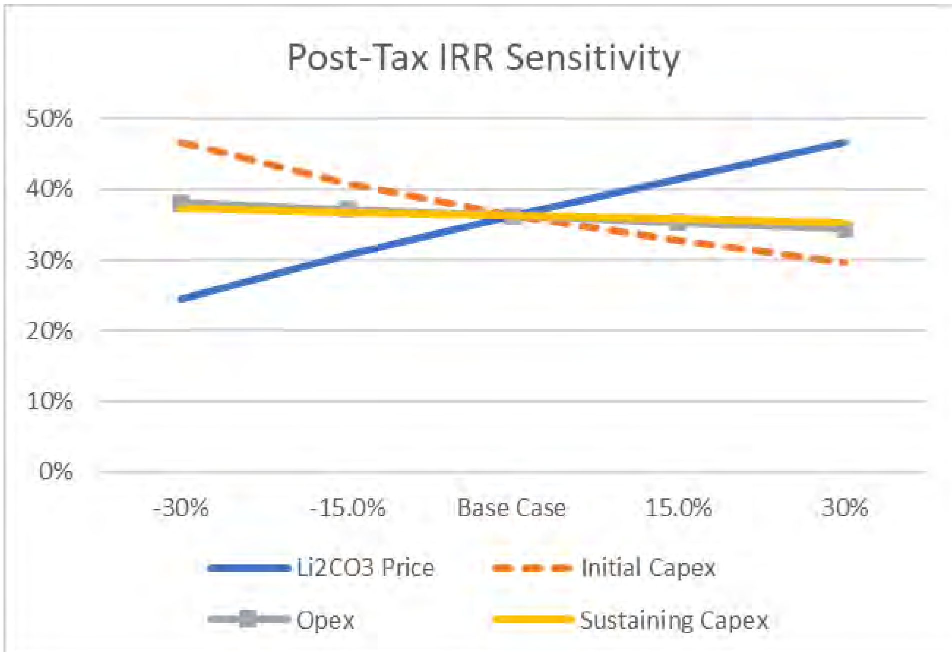
Table 1-6 presents the findings of the pre-tax sensitivity analysis, and Table 1-7 shows the post-tax results.

Figure 1-4: Sensitivity Analysis Post-Tax NPV



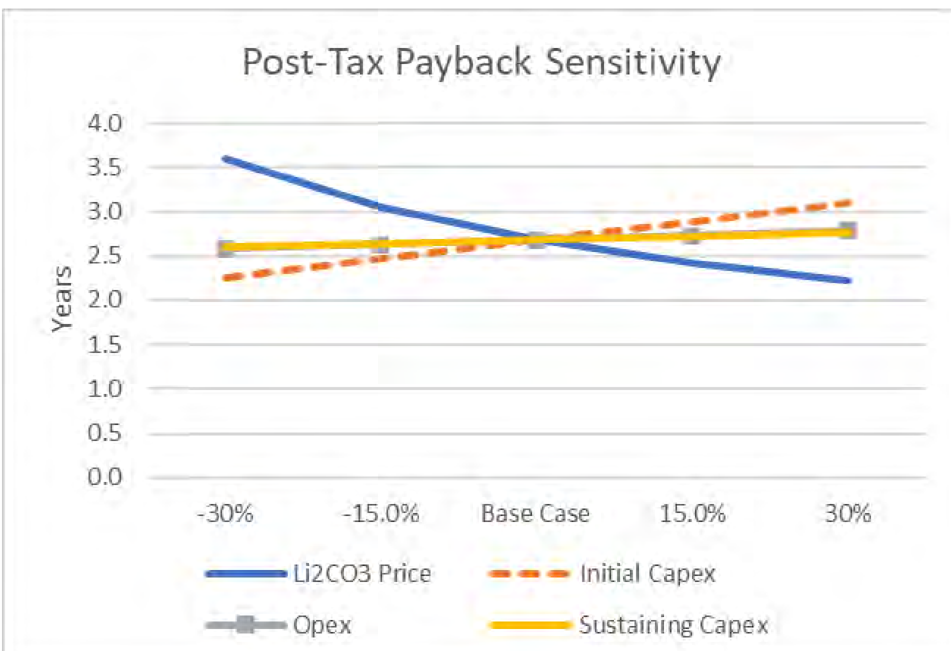
Source: Ausenco, 2024.

Figure 1-5: Sensitivity Analysis Post-Tax IRR



Source: Ausenco, 2024.

Figure 1-6: Sensitivity Analysis Post-Tax Payback



Source: Ausenco, 2024.

Table 1-6: Pre-Tax Sensitivity

Li_2CO_3 Price	Pre-Tax NPV (8%)	Initial Capex		Opex		Sustaining Capex	
	Base Case	(-25%)	(25%)	(-25%)	(25%)	(-25%)	(25%)
-30%	$2,045	$2,277	$1,813	$2,310	$1,780	$2,089	$2,000
-15%	$2,949	$3,181	$2,717	$3,214	$2,684	$2,994	$2,904
0%	$3,853	$4,085	$3,621	$4,118	$3,588	$3,898	$3,809
15%	$4,758	$4,990	$4,525	$5,023	$4,493	$4,802	$4,713
30%	$5,662	$5,894	$5,430	$5,927	$5,397	$5,707	$5,617
Li_2CO_3 Price	Pre-Tax IRR	Initial Capex		Opex		Sustaining Capex	
	Base Case	(-25%)	(25%)	(-25%)	(25%)	(-25%)	(25%)
-30%	28.2%	35.4%	23.4%	30.4%	26.1%	29.1%	27.4%
-15%	35.5%	44.0%	29.6%	37.4%	33.5%	36.4%	34.6%
0%	42.1%	52.0%	35.5%	44.0%	40.3%	43.1%	41.2%
15%	48.4%	59.4%	40.9%	50.2%	46.7%	49.5%	47.4%
30%	54.4%	66.5%	46.1%	56.0%	52.7%	55.4%	53.3%

Table 1-7: Post-Tax Sensitivity

Li_2CO_3 Price	Post-Tax NPV (8%)	Initial Capex		Opex		Sustaining Capex	
	Base Case	(-25%)	(25%)	(-25%)	(25%)	(-25%)	(25%)
-30%	$1,471	$1,660	$1,282	$1,670	$1,272	$1,506	$1,435
-15%	$2,151	$2,338	$1,962	$2,350	$1,951	$2,186	$2,115
0%	$2,829	$3,015	$2,642	$3,027	$2,630	$2,864	$2,794
15%	$3,506	$3,693	$3,320	$3,705	$3,308	$3,541	$3,471
30%	$4,184	$4,370	$3,997	$4,382	$3,985	$4,219	$4,149
Li_2CO_3 Price	Post-Tax IRR	Initial Capex		Opex		Sustaining Capex	
	Base Case	(-25%)	(25%)	(-25%)	(25%)	(-25%)	(25%)
-30%	24.5%	30.6%	20.3%	26.3%	22.6%	25.2%	23.8%
-15%	30.7%	37.9%	25.7%	32.3%	28.9%	31.5%	29.9%
0%	36.3%	44.6%	30.7%	37.9%	34.7%	37.1%	35.5%
15%	41.6%	50.8%	35.3%	43.0%	40.1%	42.5%	40.7%
30%	46.6%	56.8%	39.7%	48.0%	45.2%	47.5%	45.7%

1.21 Interpretations and Conclusions

Based on the assumptions and parameters presented in this report, the PFS study shows positive economics (i.e., $2.83 billion (B) post-tax NPV (8%) and 36.3% post-tax IRR). The PFS study supports a decision to carry out additional detailed studies.

1.22 Recommendations

The financial analysis of this PFS demonstrates positive economics. It is recommended to continue developing the project through additional studies, including a feasibility study. Items required to be completed in advance of, and as inputs to, a feasibility study are indicated as such in the respective sections below.

Table 26-1 summarizes the proposed budget to advance the project through the PFS study stage, considering the recommendations discussed in this Section and a PFS study budget of $4.0 M.

Table 1-8: Budget for Recommendations

Program Companet	Estimated Total Cost (US$ M)
Exploration and Drilling	2.5
Mineral Resource Estimate	0.08
Metallurgical Testwork Program	0.2
Project Infrastructure	0.5
Environmental, Permitting and Social Considerations	0.8
Feasibility Study	4.0
Total	**8.1**

2 INTRODUCTION

2.1 Introduction

This technical report and Pre-feasibility Study (PFS) have been prepared for Lithium Chile Inc. (Lithium Chile) by Ausenco Chile Limitada and Ausenco Sustainability ULC (Ausenco), and E.L. Montgomery & Associates Inc. and Montgomery & Associates Consultores Limitada (M&A) to conform to the regulatory requirements of Canadian National Instrument 43-101 (NI 43-101) and in accordance with the requirements of Form 43-101 F1 Standards of Disclosure for Mineral Projects. The Arizaro Project (the Project) is found in the Central Andes of Argentina and "Lithium Triangle" of Argentina, Bolivia, and Chile. Specifically, the Project is located in the Salar de Arizaro Basin (the Salar) and within the Salta provincial boundaries of the Puna Region, northwestern Argentina. The Salar is a mature evaporite basin with demonstrated brine that is enriched with lithium.

The responsibilities of the engineering companies contracted by Lithium Chile to prepare this report are as follows:

- Ausenco managed and coordinated the work related to the report, reviewed the metallurgical test results and developed a PFS-level design and cost estimate for the process plant infrastructure, general site infrastructure, environmental and economic analysis.
- M&A completed the work related to geological setting, deposit type, exploration work, drilling, sample preparation and analysis, data verification and developed the mineral resource and reserve estimate for the Project as well as the mine production schedule for the Project.

2.2 Terms of Reference

This report supports disclosures by Lithium Chile in a news release dated July 23, 2024, entitled, "Lithium Chile announces Pre-Tax NPV of US$3,853,000,000 and Pre-Tax IRR of 42.1% From Pre-Feasibility Study On Arizaro Project".

This report has been prepared in accordance with NI 43-101 Standards of Disclosure for Mineral Projects and with the requirements of Form 43-101 F1.

Mineral resources and reserves are reported in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014) and the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (CIM, 2019). The estimates also incorporate guidance provided in the 2011 Ontario Securities Commission (OSC) document entitled OSC Staff Notice 43-704 – Mineral Brine Projects and National Instrument 43-101 Standards of Disclosure for Mineral Projects (2011 OSC Staff Notice).

Units used in the report are metric units unless otherwise noted. Monetary units are in United States dollars (US$) unless otherwise stated.

2.3 Qualified Persons

The Qualified Person's for the report are listed in Table 2-1. By virtue of their education, experience and professional association membership, they are considered Qualified Person as defined by NI 43-101.

Table 2-1: Report Contributors

Qualified Person	Professional Designation	Position	Employer	Independent of Lithium Chile	Report Section
Patricio Pinto	C.P., R.M.	Principal Process Engineer	Ausenco Chile Limitada	Yes	1.1 to 1.4, 1.11, 1.15 to 1.17, 1.19 to 1.22, 2.1 to 2.3, 2.4.1, 2.5 to 2.7, 3.1, 3.2, 3.4, 3.5, 4, 5, 12.2, 13, 17 to 19, 21, 22, 24, 25.1, 25.3, 25.6, 25.7, 25.9 to 25.12, 25.13.1.2, 25.13.1.4, 25.13.1.5, 25.13.1.7, 25.13.2.2, 25.13.2.4, 25.13.2.5, 25.13.2.7, 26.1, 26.5, 26.6, 26.8, 27
James Millard	P.Geo.	Director, Strategic Projects	Ausenco Sustainability, UCL	Yes	1.18, 1.21, 1.22, 3.3, 20, 25.8, 25.13.1.6, 25.13.2.6, 26.7, 27
Michael J. Rosko	P.G., R.M.-SME	Principal Hydrogeologist	E.L. Montgomery & Associates, Inc.	Yes	1.5 to 1.10, 1.12, 1.21, 1.22, 2.4.2, 6 to 11, 12.1, 14, 23, 25.2, 25.4, 25.13.1.1, 25.13.2.1, 26.2, 26.3, 27
Brandon Schneider	P.G., R.M.-SME	Senior Hydrogeologist	Montgomery & Associates Consultores Limitada	Yes	1.13, 1.14, 1.21, 1.22, 12.3, 15, 16, 25.5, 25.13.1.3, 25.13.2.3, 26.4, 27

2.4 Site Visits and Scope of Personal Inspection

2.4.1 Site Inspection by Patricio Pinto

Mr. Patricio Pinto conducted a visit to the Lithium Chile Inc.'s head office in Salta on March 27, 2023, followed by a visit to the Project site on March 28 and 29, 2023. During his time at the project site, Mr. Pinto examined the current wells, road accessibility, site office, exploration camps, as well as potential areas for constructing the processing plant and other necessary infrastructure.

Mr. Patricio Pinto conducted a visit to the "Centro de Investigación y Desarrollo en Materiales Avanzados y Almacenamiento de Energía de Jujuy, CIDMEJu", a well-known research center in the city of Palpalá, Jujuy, on January 31, 2024. During the visit, Mr. Pinto inspected the center's facilities to verify that the required equipment, implements, personnel and supplies were available to perform metallurgical testing of the different areas of the proposed process design.

Mr. Patricio Pinto conducted a visit to the Lanshen and Summit Nanotech Pilot plant facilities, both located in Santiago, Chile prior to the commencement of the testwork on November 07, 2023. Mr. Pinto had a second visit to the Lanshen Pilot plant on March 13, 2024. During his time there, Mr. Pinto had the opportunity to inspect the pilot plant facilities and witness the development of metallurgical tests live. He was able to observe the procedures that the team applied in their work

2.4.2 Site Inspection by Michael J. Rosko

Mr. Rosko has been to the Salar de Arizaro multiple times in the past, but not during drilling of exploration well Argento-01. Because of travel restrictions due to the COVID global pandemic, visiting the site during the ongoing exploration program has not been possible. However, M&A employees in Argentina were able to visit the site on November 10, 2021, and confirm exploration activities. Drill cuttings were reviewed by M&A geologists in Salta. Since then, Mr. Rosko, as QP, completed a personal inspection of the concession on March 22, 2022. The site visit consisted of visiting the well location, measuring depth to water, and obtaining a duplicate sample for future laboratory analysis, if needed.

2.5 Effective Dates

This Technical Report has a number of significant dates, as follows:

- Mineral resource estimate: April 3, 2024
- Mineral reserve estimate: April 19, 2024
- Mineral tenure: June 10, 2024.
- Financial analysis: July 22, 2024

The effective date of this report is based on the date of the financial analysis, which is July 22, 2024.

2.6 Information Sources and References

This Technical Report is based on internal reports provided by the client, maps, published government reports, and other public information as listed in Section 27. Additionally, it is based on information cited in Section 3.

2.6.1 Previous Technical Reports

The following Technical Reports related to the Salar de Arizaro Project were filed on SEDAR:

- Rosko. (2023). Results of Years 2021, 2022 and 2023 Exploration Activities and Preliminary Lithium Resource Estimate Salar de Arizaro Project Salta Province, Argentina. Prepared for Lithium Chile Inc. Effective date is June 27, 2023.

- Rosko. (2022). Results of Years 2021 and 2022 Exploration Activities and Preliminary Lithium Resource Estimate Salar de Arizaro Project Salta Province, Argentina. Prepared for Lithium Chile Inc. Effective date is December 15, 2022.
- Rosko. (2022). Results of Years 2021 Exploration Activities and Preliminary Lithium Resource Estimate Salar de Arizaro Project Salta Province, Argentina. Prepared for Lithium Chile Inc. Effective date is February 08, 2022.
- Millard, J., Pinto, P., Rosko, M, Brooker, M. (2023). Salar de Arizaro Project NI 43-101 Technical Report and Preliminary Economic Assessment, Argentina. Prepared for Lithium Chile Inc. Effective date is August 04, 2023.

2.7 Definitions

Common standard abbreviations and unit of measurements were used wherever possible as it follows in Table 2-2 and Table 2-3.

Table 2-2: Abbreviations and Acronyms

Abbreviation	Description
A&A	Argañaraz & Associates
AACE	Association for the Advancement of Cost Engineering
ADJ	Adjacent
AIS	Air-Insulated Switchgear
AISC	All-in sustaining costs
APVC	Altiplano-Puna magmatic volcanic arc complex
ARLI	ARLI S.A.
ASA	Alex Stewart Laboratories
B	Boron
BG	Battery-grade
bls	below land surface
BMR	Borehole magnetic resonance
BV	Bed volume or resin filling volume
Ca	Calcium
$CaCO_3$	Calcium carbonate
Capex	Capital Expenditures
CF	Cash flow
CIM	Canadian Institute of Mining
CIP	Clean in Place
CITES	Convention on International Trade in Endangered Species
CO_2	Carbon dioxide
CODELCO	National Copper Corporation of Chile
CSAMT	Controlled-Source Audio-frequency Magnetotelluric
DDH	Diamond drill hole

Abbreviation	Description
DIA	Declaration of Environmental Impact
DL	Detection limit
DLE	Direct lithium extraction
E	East, indicating a directional trend
E & C	Engineering and Contingency
EA	Economic assessment
EC	Electrical Conductivity
EIR	Environmental Impact Report
EIS	Environmental Impact Study
EMP	Environmental Management Plan
Eramet	Établissements Peugeot Frères Company
EU	European Union
EVs	Electric vehicles
FAA	Federal Aviation Administration
FCGB	General Belgrano Railroad Company
FFCC	Ferrocarril (Railway)
FIBC	Flexible intermediate bulk containers
FLI	Forward-Looking Information
FOB	Free on Board
GAIA	GAIA Mining Services S.R.L.
GIS	Gas-Insulated Switchgear
GPS	Global Positioning System
H_2SO_4	Sulfuric acid
HCl	Hydrochloric acid
HDPE	High-Density Polyethylene
HMN	Hombre Muerto Norte
HMW	Hombre Muerto West
HPRO	High-pressure Reverse Osmosis
HSE	Health, Safety, and Environment
IBA	Important Bird and Biodiversity Area
ICP	Inductively coupled plasma
IRR	Internal Rate of Return
ISO	International Standards Organization
IX	Ion exchange
JUJ	Gobernador Horacio Guzmán International Airport
K	Potassium
KCl	Potassium Chloride

Abbreviation	Description
LAT	Latitude
LCE	Lithium Carbonate Equivalent (standard unit of measurement used in the lithium industry to express the amount of lithium in terms of their equivalent in lithium carbonate (Li_2CO_3); 1 t LCE = 1 t Li_2CO_3).
Li	Lithium
Li_2CO_3	Lithium carbonate
Lithium Chile	Lithium Chile Inc.
LOI	Letter of Intent
LOM	Life-of-Mine
LONG	Longitude
LPG	Liquid Petroleum Gas
LSC	LSC Lithium Corporation
M&A	Mergers and Acquisitions
Mg	Magnesium
$Mg(OH)_2$	Magnesium hydroxide
$MgCO_3$	Magnesium carbonate
Mica	Lepidolite mineral, which contains Lithium
MR	Mineral Resource
MSDS	Material Safety and Toxicology Data Sheet
MTO	Material take-off
NA	Not Applicable
Na_2CO_3	Soda ash
NaOH	Caustic soda
NDVI	Normalized Difference Vegetation Index
NE	Northeast, indicating a directional trend
NE-SW	Northeast-southwest, indicating a directional trend
NI 43-101	National Instrument 43-101
No.	Number
NPV	Net Present Value
N-S	north-south, indicating a directional trend
NSR	Net Smelter Return
NT	Sample ID for Brine samples
NW-SE	northwest-southeast, indicating a directional trend
O/F	Overflow
OC	Ownership Certificate
OR	Ownership Report
PEA	Preliminary Economic Assessment
pH	Potential of hydrogen
PM	Particulate matter

Abbreviation	Description
POSGAR	Geodetic reference system used in Argentina
Q1	First quarter
Q2	Second quarter
QA/QC	Quality Assurance/Quality Control
QP	Qualified Person
REMSa	Energy and Mining Resources of Salta
RIGI	Régimen de Incentivo a las grandes Inversiones
RN	National Route
RNPQ	National Register of Chemical Precursors
RO	Reverse Osmosis
RP	Provincial Route (highway)
SAC	San Antonio de Los Cobres
SASA - ICAO	Code for Martín Miguel de Guemes International Airport
SEDAR	System for Electric Document Analysis and Retrieval
SEV	Survey point code
SGS	SGS Laboratory of Salta
SGS	Société Générale de Surveillance
SLA	Martín Miguel de Guemes International Airport
SLTO	Social licence to operate
SME	Society for Mining, Metallurgy, and Exploration
SMG	SMG S.R.L.
ST	Sample ID for Brine and Soil samples
STC	Station code
SW	Southwest
TBD	To be determined
TDS	Total dissolved solids
TL	Station code
TPH	Total Petroleum Hydrocarbons
U/F	Underflow
US	United States
USD/US$	United States Dollars
US EPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VES	Vertical Electrical Sounding
W	West, indicating a directional trend.
WB	World Bank
WBALT	Well name or identifier

Abbreviation	Description
WBS	Work Breakdown Structure
W-E	West-east, indicating a directional trend.
X	Coordinate
Y	Coordinate

Table 2-3: Unit Abbreviations

Abbreviation	Description
%	percent
°C	degrees Celsius
BV/h	bed volume (expressed in milliliters) per hour
cc	cubic centimeter
d	day
g	grams
g/cm^3	grams per cubic centimeter
g/L	grams per liter
GWh	gigawatt hour
Ha	hectare
h	hour
hm^3	cubic hectometer
hm^3/a	cubic hectometers per annum
kg	kilogram
km	kilometer
km^2	square kilometer
kPa	kilopascal
kt	kilotonne (metric)
kV	kilovolt
kW	kilowatt
L	liters
L/s	liters per second
L/s/m	liters per second per meter
M	million
m	meter
m^2	square meter
m^2/d	square meters per day
m^3	cubic meter
m^3/a	cubic meters per annum
m^3/d	cubic meters per day
m^3/h	cubic meters per hour
Ma	mega-annum (unit of geological time equal to one million years)

Abbreviation	Description
masl	meters above sea level
mamsl	meters above mean sea level
mbmp	meters below measuring point
mbls	meters below land surface
mg/L	milligrams per liter
Mg/Li	magnesium to lithium ratio
mL	milliliter
mm	millimeter
mm/y	millimeters per year
mS	milliSiemens
Mt	million metric tonnes
t	metric tonne
MW	megawatt
MWh	megawatt hour
ppb	parts per billion
ppm	parts per million
t/a	metric tonnes per annum
t/y	metric tonnes per year
% w/w	weight/weight percentage
y	year

3 RELIANCE ON OTHER EXPERTS

3.1 Introduction

The QPs have relied upon the following other expert reports, which provided information regarding mineral rights, surface rights, property agreements, royalties, environmental, permitting, social license, taxation, and marketing for sections of this Report.

3.2 Property Agreements, Mineral Tenure, Surface Rights and Royalties

The QPs have not independently reviewed ownership of the Project area and any underlying property agreements, mineral tenure, surface rights, or royalties. The QPs have fully relied upon, and disclaim responsibility for, information derived from Lithium Chile and legal experts retained by Lithium Chile for this information through the following documents:

- Lopez Arias, Castelli Reston & Asociados Abogados, (2024). *PROPERTY DESCRIPTION AND LOCATION Rev DNR 10Jun24 CM*. June 10, 2024. 12 p.

This information is used in Section 4 of the Report. The information is also used in support of sections 1.3, 14, 20, 22 of the Report.

3.3 Environmental, Permitting, Closure, and Social and Community Impacts

The QPs have fully relied upon, and disclaim responsibility for, information supplied by Lithium Chile and experts retained by Lithium Chile for information related to environmental (including tailings and water management) permitting, permitting, closure planning and related cost estimation, and social and community impacts as follows:

- Conhidro S.R.L. (2023): *Estudio de la Recarga en Salar de Arizaro*. Internal document prepared for Lithium Chile.
- EC & Asociados. (2023a): Línea de Base Ambiental y Social, Proyecto Arizaro, Salar de Arizaro, Departamento de Los Andes. Internal document prepared for Lithium Chile. June 2023.
- EC & Asociados. (2023b): Informe de Impacto Ambiental, Proyecto Arizaro, Salar de Arizaro, Etapa de Explotación, Salar de Arizaro, Departamento de Los Andes. Environmental Impact Report for the production phase submitted to the environmental authority. December 2023.
- Olañeta, M., Jakoniuk, M. (2022): *Estudio de Impacto Ambiental y Social, etapa Prefactibilidad*. Prepared for the Secretary of Mining, Salta Province. February 2022.
- Lithium Chile. (2023): Plan de Relacionamiento Comunitario de la Empresa. Internal document.
- Lithium Chile. (2022): Procedimiento de Gestión de Residuos y Efluentes en Campamento Arizaro. Internal document.

- Saravia, H. (2024): Informe de Impacto Ambiental, Servidumbre de Acueducto Expediente N° 827.992, Salar de Arizaro, Tolar Grande, Departamento Los Andes. Environmental Impact Report (EIR) for the Arizaro Project water pipeline submitted to the environmental authority.
- Saravia, H. (2024): Informe de Impacto Ambiental, Servidumbre de Electroducto Expediente N° 840.120, Salar de Arizaro, Tolar Grande, Departamento Los Andes. Environmental Impact Report (EIR) for the Arizaro Project power line submitted to the environmental authority.
- Saravia, H. (2024): Informe de Impacto Ambiental, Servidumbre de Salmueroducto Expediente N° 829.279, Salar de Arizaro, Tolar Grande, Departamento Los Andes. Environmental Impact Report (EIR) for the Arizaro Project brine pipeline submitted to the environmental authority.

This information is used in Section 20 of this Report. The information is also used in support of Sections 1.18, 14, and 22 of the report.

3.4 Taxation

The QPs have fully relied upon, and disclaim responsibility for, information supplied by Lithium Chile for information related to taxation as applied to the financial model as follows:

- "Arizaro PFS - Modelo Económico" received by email sent by Santillan & Quiroga Contadores on July 22, 2024.

This information is used in Section 22 of the Report. The information is also used in support of Sections 1.20, 22 and 25.

3.5 Markets

The QPs have not independently reviewed the marketing or price projection information. The QPs have fully relied upon, and disclaim responsibility for, information derived from Lithium Chile and experts retained by Lithium Chile for this information through the following documents:

- Benchmark Mineral Intelligence. (2024): Lithium-Forecast-Report-Q1-2024-Benchmark-Mineral-Intelligence. Report prepared for Lithium Chile, April 10, 2024. 64 pp.
- Benchmark Mineral Intelligence. (2024): Lithium-Forecast-Q1-2024-Benchmark-Mineral-Intelligence. Data prepared for Lithium Chile, April 10, 2024
- Benchmark Mineral Intelligence. (2024): Lithium-Price-Forecast-Q1-2024-Benchmark-Mineral-Intelligence. Data prepared for Lithium Chile, April 10, 2024
- Benchmark Mineral Intelligence. (2024): Lithium-Total-Cost-Model-Q1-2024-Benchmark-Mineral-Intelligence. Data prepared for Lithium Chile, April 10, 2024
- Benchmark Mineral Intelligence, founded in 2014 by industry experts, is a company that specializes in assessing market prices, supply chain data, forecasting, and strategic advisory for technologies and supply chains central to the energy transition.

- The QP has reviewed these analyses and results support the assumptions in the Technical Report. It must be noted that commodity prices can be volatile, and there is the potential for deviation from the forecast.

This information is used in Section 19 of this Report. The information is also used in support of Sections 1.17, 1.20, 19 and 22 of the Report.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Introduction

The Project is located in the Salar de Arizaro basin, (The Salar) within the Province of Salta, in northwest Argentina, about 230 km from Salta, and approximately 38 km southwest of the town of Tolar Grande. Arizaro coordinates are shown in Table 4-1.

The Project is in the Argentinean Puna, at an elevation of approximately 3,475 m asl. Project location is shown on Figure 4-1.

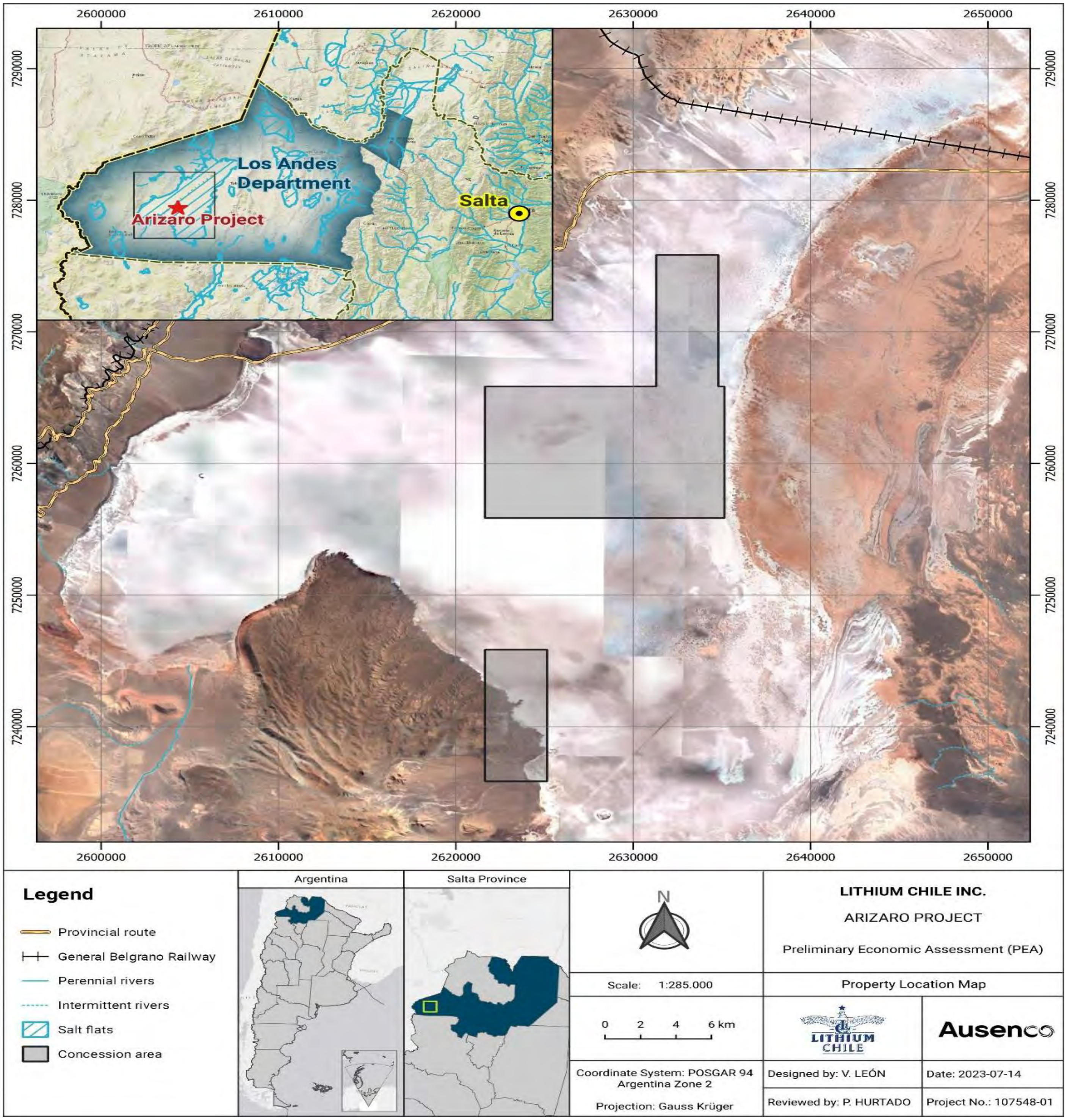
To access the project area, travel from Salta on the national route N°51 to the town of San Antonio de Los Cobres. From there, continue along the aforementioned route to Paraje de Cauchari, then travel along provincial route N° 27 passing through Tolar Grande. From this last town, the road runs southwest, about 38 km to the Salar area where the mining concessions are located.

Table 4-1: Salar de Arizaro Coordinates

Description	Unit	Value
UTM Zone	-	19 J
UTM East Coordinate	M	632,074.0 m E
UTM North Coordinate	M	7,263,850.0 m S
Latitude	°	-24.77 °
Longitude	°	-67.54 °

The Salar de Arizaro Project currently consists of six exploration and exploitation concessions (minas) and exploration permits (cateos) totaling 20,500 Ha registered in the Province of Salta.

Figure 4-1: Regional Location Map of The Project Concession Areas



Source: Ausenco, 2023.

4.2 Project Ownership

Argentum Lithium S.A. is a legally established and valid corporation under the laws of Argentina, located at Avenida del Bicentenario de la Batalla de Salta number 863, First Floor, Office 2 of Salta City, the Province of Salta, Argentina Republic.

Argentum's majority shareholder (direct and exclusive owner of 990 shares of Argentum, 99% of Argentum's capital stock) is Lithium Chile Inc. (LITH), a corporation duly incorporated under the laws of the Province of Alberta, Canada, registered by Certificate of Registration issued pursuant to the Alberta Business Companies Act on October 18, 2010, No. 20156511330, with a registered office at 900,903 – 8th Avenue SW, Calgary, Alberta, Canada, T2P 0P7, registered in the Argentine Republic as a foreign company by Resolution Nº 1042 dated on September 16, 2021, issued by the General Inspection of Legal Entities of the Province of Salta.

SMG S.R.L. (herein after "SMG" or "SMG Group") is a company organized and existing under the laws of Argentina.

Litiar S.A. is an Argentinian corporation where SMG Group is a shareholder.

In the "Definitive Agreement," dated on August 24, 2021, Lithium Chile and Argentum on one side, and SMG and Litiar S.A. on the other side (collectively referred to as the "Parties"), have agreed on obligations regarding the properties. The subject of this agreement is the continued development, eventual exploitation, and commercialization of the mineral products obtained there.

In compliance with the Definitive Agreement (i) the Parties have established a joint venture company named ARLI S.A., CUIT 30-71767171-2; (ii) Lithium Chile and Argentum have been fulfilling their obligations under the Definitive Agreement, making the agreed payments to SMG, and executing exploratory mining activities on the Properties; (iii) SMG has transferred the properties to ARLI S.A. via a notarial deed dated December 19, 2022. These Properties are located in Salar de Arizaro, Los Andes Department, Province of Salta, Argentina; and (iv) Mario Luis Castelli, acting as lawyer under the instructions of Lithium Chile and Argentum, and based on a special power of attorney granted by SMG, will formally represent SMG in all the Property files befoe the Mining Court and governmental mining authorities of the Province of Salta, until the notarial deed of assignment from SMG to ARLI is registered by the Mining Court, and ARLI S.A. is registered as the new owner. Currently, the registered owner is ARLI S.A., following the registration by the Mining Court of the Province of Salta, recorded in entry No. 11 of the Book of Assignments, Sales and Transfers, the shareholders of ARLI are Argentum with a 62.2% stack and Litiar with a 38,8% stack.

Under Argentine regulations, a mining concession is granted indefinitely, provided that the stipulations of the National Mining Code are adhered to.

4.3 Mineral Tenure

The Properties, or mineral tenures, are located in "Salar de Arizaro," Los Andes Department, Salta Province, Argentina. They consist of six (6) mining concessions, with their respective files currently being processed by the Mining Court of the Province of Salta. The mining properties are shown in Table 4-2.

Table 4-2: File Information for The Project Property Areas

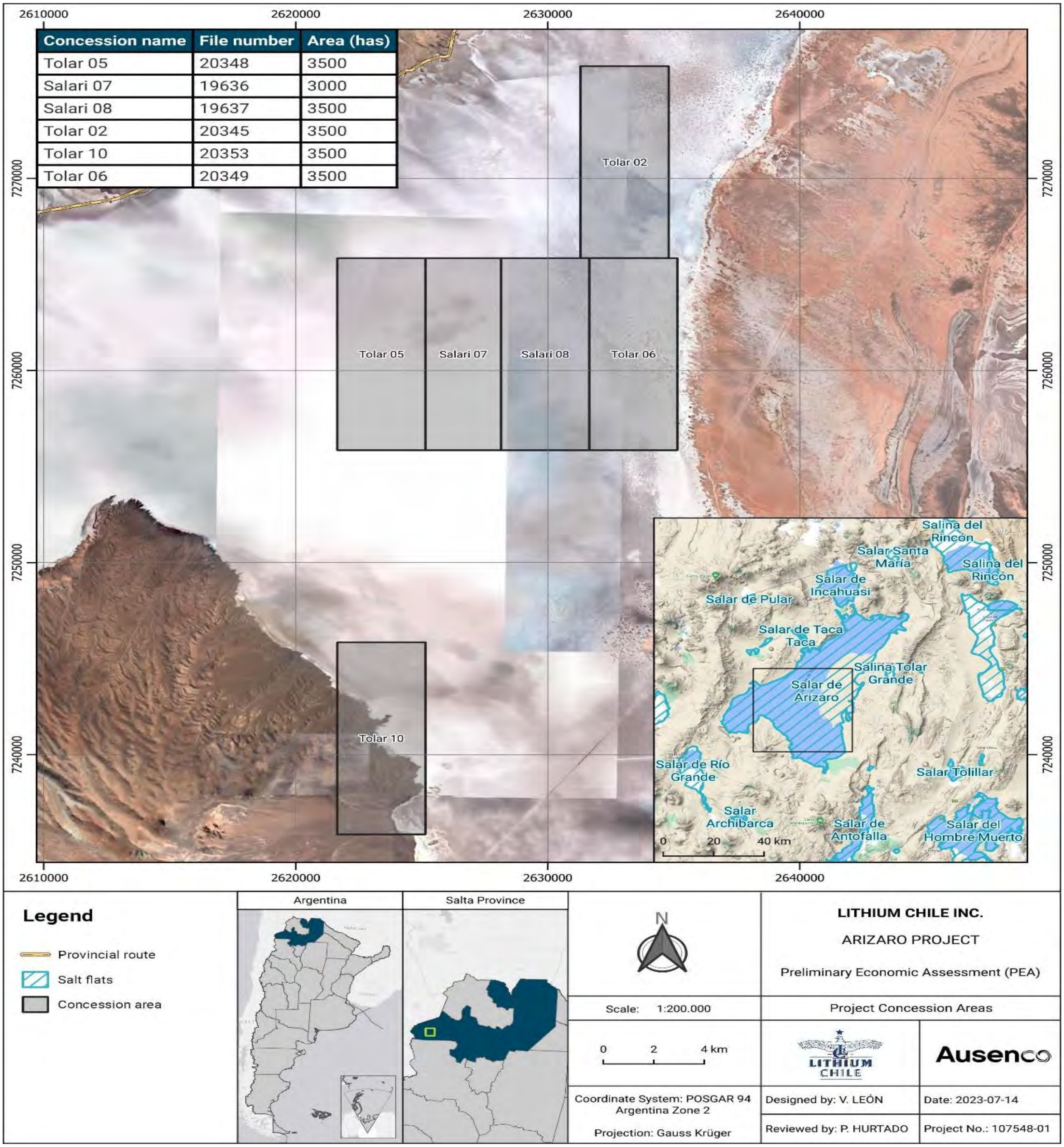
No.	Mining Properties	Record #	Class of Mineral	Area (Ha)	Units
1	Tolar 05	20,348	First And Second Class of Minerals	3,500	35
2	Salari 07	19,636	First And Second Class of Minerals	3,000	30
3	Salari 08	19,637	First And Second Class of Minerals	3,500	35
4	Tolar 02	20,345	First And Second Class of Minerals	3,500	35
5	Tolar 10	20,353	First And Second Class of Minerals	3,500	35
6	Tolar 06	20,349	First And Second Class of Minerals	3,500	35
	Total			**20,500**	

The coordinates for each concession are shown in Table 4-3 and their location in Figure 4-2.

Table 4-3: Gauss Krüger – Posgar Coordinates for the Project

No.	File No.	Concession Name	Area (has)	Property Coordinates	
				X	Y
1	20,348	Tolar 05	3,500	2,625,147	7,265,850
				2,625,147	7,255,850
				2,621,647	7,255,850
				2,621,647	7,265,850
2	19,636	Salari 07	3,000	2,628,147	7,265,850
				2,628,147	7,255,850
				2,625,147	7,255,850
				2,625,147	7,265,850
3	19,637	Salari 08	3,500	2,631,647	7,265,850
				2,631,647	7,255,850
				2,628,147	7,255,850
				2,628,147	7,265,850
4	20,345	Tolar 02	3,500	2,634,800	7,275,850
				2,634,800	7,265,850
				2,631,300	7,265,850
				2,631,300	7,275,850
5	20,353	Tolar 10	3,500	2,625,147	7,245,850
				2,625,147	7,235,850
				2,621,647	7,235,850
				2,621,647	7,245,850
6	20,349	Tolar 06	3,500	2,635,147	7,265,850
				2,635,147	7,255,850
				2,631,647	7,255,850
				2,631,647	7,265,850

Figure 4-2: Location Map of The Project Concession Areas



Source: Ausenco, 2023.

4.3.1 Registration of Property Rights Before the Mining Court

Tolar 05 File No. 20,348: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on September 10, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the registration of the assignment processed under File No. 22,793 before the Mining Court, and the assignment was recorded as entry No. 33 in the Mining Court's Record of Sales and Transfers No. 14. The Mining Court registered the transfer in the Mine file on October 12, 2016.

Salari 07 File No. 19,636: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on September 10, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the registration of the assignment processed under File No. 22,793 before the Mining Court, and the assignment was recorded as entry No. 33 in the Mining Court's Record of Sales and Transfers No. 14. The Mining Court registered the transfer in the Mine file on October 12, 2016.

In April 2024, the Mining Court – at the request of the Mining Secretary – legally mandated SMG through judicial file "Salari 07 – File No. 19.636," to provide technical and accounting documentation for the 4th and 5th investment periods, covering December 2018 to December 2020.

In April 2024, ARLI, on behalf of SMG, submitted the required accounting and technical documentation before the Mining Court, requesting that the investment be considered for the entire Properties as a whole, rather than for each mine individually. This submission, along with the accompanying documentation provided by SMG, is currently being reviewed by the authority and has not yet been resolved.

Salari 08 File No. 19,637: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on March 30, 2015. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the registration of the assignment processed under File No. 22,793 before the Mining Court, and the assignment was recorded as entry No. 33 in the Mining Court's Record of Sales and Transfers No. 14. The Mining Court registered the transfer in the Mine file on October 12, 2016.

Tolar 02 File No. 20,345: This mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on May 21, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the registration of the assignment processed under File No. 22,793 before the Mining Court, and the assignment was recorded as entry No. 33 in the Mining Court's Records of Sales and Transfers No. 14. The Mining Court registered the transfer in the Mine file on October 12, 2016.

In March 2023, the Mining Court – at the request of the Mining Secretary – legally mandated SMG, through judicial file "Tolar 02 – File No. 20.345," to provide technical and accounting documentation for the 4th and 5th investment periods, covering December 2018 to December 2020.

In March 2023, SMG submitted the required accounting and technical documentation before the Mining Court, requesting that the investment be considered for the entire Properties as a whole, rather than for each mine individually. This submission, along with the accompanying documentation provided by SMG, is currently being reviewed by the authority and has not yet been resolved.

Tolar 10 File No. 20,353: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on September 10, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on

September 20, 2016, the registration of the assignment processed under File No. 22,793 before the Mining Court, and the assignment was recorded as entry No. 33 in the Mining Court's Record of Sales and Transfers No. 14. The Mining Court registered the transfer in the file of the Mine on October 12, 2016.

In December 2023, the Mining Court – at the request of the Mining Secretary – legally mandated SMG, through judicial file "Tolar 10 – File No. 20,353," to provide technical and accounting documentation for the 4th and 5th investment periods, covering December 2018 to December 2020.

In February 2024, ARLI on behalf of SMG, submitted the required accounting and technical documentation before the Mining Court, requesting that the investment be considered for the entire Properties as a whole, rather than for each Mine individually. This submission, along with the accompanying documentation provided by SMG, is currently under review by the authority and has not yet been resolved.

Tolar 06 File No. 20,349: This Mine was requested by Ramón Núñez as a vacant mine. It was granted to him by the authority on September 10, 2014. Ramón Núñez transferred the Mine to SMG, by an assignment on September 20, 2016, the registration of the assignment processed under File No. 22,793 before the Mining Court, and the assignment was recorded as entry No. 33 in the Mining Court's Record of Sales and Transfers No. 14. The Mining Court registered the transfer in the Mine file on October 12, 2016.

On December 29, 2020, as stated in an affidavit submitted by SMG to the authority, all committed investments for the five periods were completed. However, the investments made are still subject to regulatory oversight by the authority.

On September 07, 2022, the Mining Court – at the request of the Mining Secretary – legally mandated SMG, through judicial file "Tolar 06 – File No. 20.349," to provide technical and accounting documentation for the 4th and 5th investment periods, covering December 2018 to December 2020.

On October 20, 2022, SMG submitted the required accounting and technical documentation before the Mining Court, requesting that the investment be considered for the entire Properties as a whole, rather than for each mine individually. This submission, along with the accompanying documentation provided by SMG, is currently being reviewed by the authority and has not yet been resolved.

Currently the titular of all the Mining Properties is ARLI S.A., pursuant to Section 4.2

4.3.2 Mining Easements:

The following mining easements, requested by ARLI, are currently being processed by the Mining Court:

- ArLi S.A. – Camp Site Easement No. 809580/23, submitted in May 2023
- ArLi S.A. – Road Easement File No. 806592/23, submitted in May 2023
- ArLi S.A. – Drilling Fields File No. 827.990/23, submitted in September 2023
- ArLi S.A. – Electroduct File No. 840/120/23 submitted in December 2023
- ArLi S.A. – Salmueroduct File No. 829.279/23 submitted in October 2023

- ArLi S.A. – Acueduct File No. 827.992/23 submitted in September 2023
- ArLi S.A. – Quarry File No. 843.818/24 submitted in February 2024.

4.4 Surface Rights

Provinces in Argentina control property mineral resources, so they have authority to grant mining rights to private applicant entities and have the authority to implement the National Mining Code and to regulate its procedural aspects and to organize each enforcement authority within its territory. Two types of mineral tenure granted by provinces according to Argentina mining laws are Exploitation Concessions and Exploration Permits.

1. Exploitation Concessions, sometimes referred to as "Minas" or "Mining Permits," are licenses that allow the property holder to exploit the mineral resources of the property, providing environmental approval is obtained. These permits have no time limit as long as obligations in the National Mining Code are abided.

2. Exploration Permits referred to as "Cateos" have time limits that allow the property holder to explore the property for a period of time that is related to the size of the property. Exploration Permits also require environmental permitting.

Depending on the province, Exploitation Concessions are granted by either a judicial or administrative decision. An Exploration Permit can be transformed into an Exploitation Concession any time before its expiration period by filing a report and paying a canon fee. The Exploitation Concessions are held indefinitely, contigent upon that the fullfillment of annual payments.

Exploration and exploitation cannot commence without obtaining the Environmental Impact Assessment (EIA) permit. Permits for drilling in areas under both types of mineral tenure must specify the type of mineral that the holder intends to explore and exploit. It is not permissible to stake new claims specifying different minerals over existing claims.

There are no private owners of surface rights in the project area; instead, the surface area is owned by the province in which each concession is located. According to the Argentinean Mining Code, the surface of the mining concession is subject to direct easement, and the ownership of the public surface may be assigned free of charge to the holder of the mining concession.

4.5 Water Rights

According to the Provincial Water Code, a natural or legal person can request: 1) water use permits, which are subject to revocation by the authority without any compensation, and 2) water concessions, defined as a legal-administrative act or law, that grants the holder the subjective right to use public water. Water concessions are granted by the authority and cannot be revoked without valid cause. The right and obligation conferred by concessions to individuals are for the "productive use" of water, as in the case of "mining use."

The Secretary of Water Resources is the competent authority for all water-related requests.

In order to obtain water concessions, the regulations permit the execution of Exploratory Water Wells with prior authorization from the Secretary of Water Resources.

Ownership of the Mining Property grants exclusive rights to explore and exploit the mineralized material specified in the National Mining Code. However, ownership of the Mining Property does not entail ownership of the water resource, which is regulated by the Secretary of Water Resources, the authority responsible for granting water-related permits.

The public water concession will authorize its holder to request the necessary easements to exercise their rights properly concerning the granted concession.

Lithium Chile, through its subsidiaries, currently holds the following water-related rights or requests in process:

- Water Use Permit granted under Res. 132/23 for 1,460 m^3 (4 m^3/d) to supply potable water (for sanitary purposes) to the Salar de Arizaro Project operations.
- Permit to execute exploratory water wells “SRH 1678” and “SRH 1679,” granted on August 23, 2023.
- Application for a water concession for Pozo “Chascha Sur 01,” processed under File N° 0090034- 254783/2022-0.
- Permit to execute exploratory water well “Chascha 02,” processed under File N° 0090034- 46927/2024.
- Permit to execute exploratory water well “Chascha 03,” processed under File N° 0090034- 46912/2024.
- Permit to execute exploratory water well “Chascha 04,” processed under File N° 0090034- 46895/2024.
- Permit to execute exploratory water well “Chascha 05,” processed under File N° 0090034- 46938/2024.
- Permit to execute exploratory water well “Chascha 06,” processed under File N° 0090034- 46495/2024.
- Permit to execute exploratory water well “Chascha 07,” processed under File N° 0090034- 46436/2024.
- Permit to execute exploratory water well “Chascha 08,” processed under File N° 0090034- 46948/2024.
- Permit to execute exploratory water well “Arita 01,” processed under File N° 0090034-55637/2024.
- Permit to execute exploratory water well “Arita 02,” processed under File N° 0090034-55625/2024.
- Permit to execute exploratory water well “Arita 03,” processed under File N° 0090034-55613/2024.
- Permit to execute exploratory water well “Cori 01,” processed under File N° 0090034-55618/2024.
- Permit to execute exploratory water well “Tolar 01,” processed under File N° 0090034-55603/2024.

4.6 Canon

According to article 216 of the Mining Code, the canon is an annual fee that must be paid in advance. It is divided into two semesters, each paid in equal installments, and expiration dates of June 30, and December 31 of each year.

The Mining Court will declare the expiration of the rights over the Properties due to non-payment of an annuity (two semesters), following a two-month period from the expiration date.

All the Properties have fulfilled the canon payment until second semester of 2024, and that was informed in timely manner in all the files of the Properties.

4.7 Royalties and Encumbrances

Litiar shall have a royalty right on net smelter return derived from the products mined, extracted, and commercialized by JV Corporation from the mining project containing the Properties (the "Royalty"), to be paid by JV Corporation, annually to the Royalty holder. The Royalty shall be equal to 1% of net smelter returns on the Properties, and Lithium Chile and Argentum shall have an option right to purchase such Royalty, which can be exercised for a purchase price of US$1,500,000, by giving written notice and paying such amount to the Galli Company within a period of two years after Production has started.

All titles set out in Table 4-2 are subject to a 3% NSR royalty payable to the Province of Salta.

4.8 Environmental Impact Report (EIR)

An EIR for the properties was presented as a single document covering all mines, and it was approved by the Mining and Energy Secretary of Salta. The approval was granted through the Resolution of DIA (Declaration of Environmental Impact) N° 26 on January 17, 2020, and the holder was notified in February 2020.

In accordance with Article 256 of the Mining Code, SMG submitted an updated EIR to the Court of Mines in February 2022. The Court - following procedural laws - forwarded this update to the Secretary of Mining and Energy for evaluation and approval of the updated DIA.

In June 2022, SMG submitted an addendum to the previously mentioned EIR, which included activities related to the installation of mining camps and water wells.

In December 2022, SMG submitted another addendum to the previously mentioned EIR, which included activities related to Pre-Concentration Demo Ponds for Brine Evaporation.

In February 2023, SMG was notified by the Mining Court with a Legal Report from the Secretary of Mining Energy stating that our EIR was deemed insufficient.

In March 2023, ARLI submitted a response to the Mining Court addressing the requests of the Secretary of Mining and Energy.

In December 2023, ARLI submitted the EIR (Annex III), for production and construction of the litihium plant.

In January 2023, ARLI received a notification from the Mining Court containing a Legal Report of the Secretary of Mining Energy, which deemed the EIR insufficient.

In March 2024, ARLI submitted an addendum of the EIR that was initially filed with the Mining Court in February 2022, in accordance with the requests made by the Secretary of Mining and Energy.

In April 2024, ARLI submitted the consolidation of the exploration and exploitation phases under administrative File No. 302-225393, to the Secretary of Mining and Energy.

4.9 Environmental Considerations

There are no known environmental liabilities associated with the property. Detailed information on the environmental studies and management measures is provided in Section 20 of this report.

4.10 Permitting Considerations

Additional environmental permits and other authorizations are required for operation. Information on the environmental permits can be found in Section 20 of this report.

The other authorizations are:

- Permit for the consumption of water for process and human consumption.
- Registration in the Registry of Hazardous Waste Generators.
- Registration in the National Register of Chemical Precursors (RNPQ).

More information can be found in Section 20 of this report.

4.11 Social License Considerations

Indigenous communities have been identified near the project area. Social License Considerations and community-related activities are included in Section 20 of this report.

4.12 Project risks and Uncertainties

To the extent known, there are not any foreseeable risks or uncertainties regarding property ownership, surface/legal access, environmental issues, and social license.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Physiography

The Project is located in a Puna environment corresponding to a high elevated plateau within the Central Andes that covers parts of the Argentinean provinces of Jujuy, Salta, and Catamarca. It is characterized as a high Andean desert with elevations that ranged between 3,600 m asl in the depressions to about 6,000 m asl in the high mountains of the volcanic arc. The physiography of the region is characterized by extensive depressions and basins separated by mountain ranges, with marginal canyons cutting through the western and eastern Cordilleras and numerous volcanic centers, particularly in the western Cordillera. The Altiplano-Puna magmatic volcanic arc complex (commonly APVC in literature) is located between the Altiplano and Puna. It is associated with numerous stratovolcanoes and calderas. Studies have shown that the APVC is underlain by an extensive magma chamber at 4 to 8 km deep (de Silva, 1989) and potentially the ultimate source of anomalously high values of lithium in the region. In general terms, it is a zone with low humidity and limited soil development.

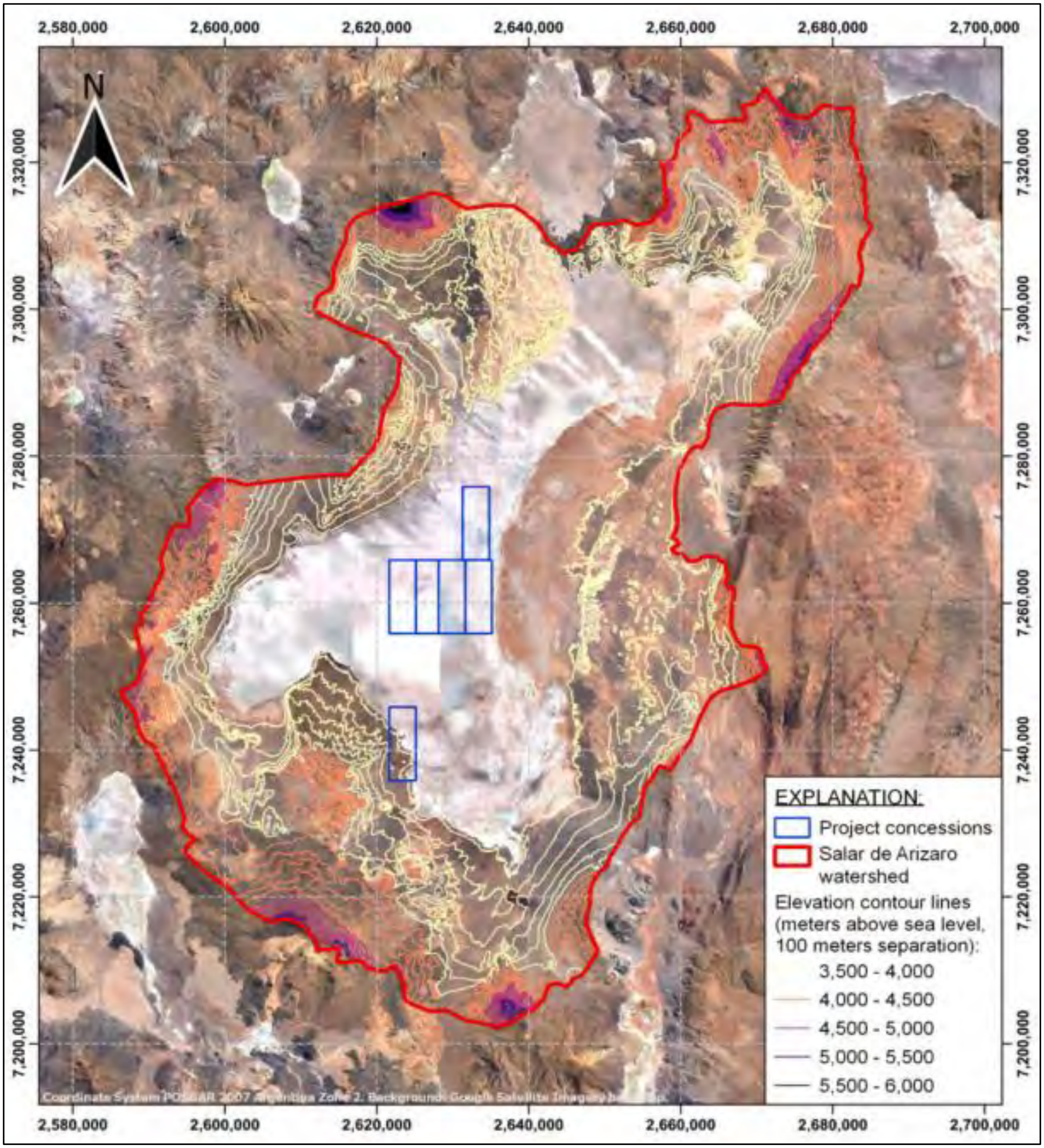
Locally, the Project is in the Salar de Arizaro Basin. The Salar is located within a closed endorheic basin. Surface water inflow to the Salar is marked by seasonal precipitation events, mainly in the period between October and March.

Vegetation is often sparce and absent over large areas of both in the Puna ecoregion, where the Project is located, and the surrounding High Andean ecoregion. The following highlights the vegetation in each ecoregion:

- Puna Ecoregion: The dominant vegetation is shrub steppe. In the Project area, typical vegetation includes *Acantholippia punensis Botta* (“rica rica”), *Adesmia horridiuscula* (“añagua”); *Atriplex microphylla* (“cachiyuyo”), *Baccharis incarum* (“lejía”), and *Artemisia copa* (“copa copa”).
- High Andean Ecoregion: The dominant vegetation is herbaceous or grassy steppe, such as *Festuca orthophylla, Festuca chrysophylla*, and *Poa gymnantha.* These are sometimes associated with woody plants such as *Baccharis incarum*, *Senecio punae*, *Adesmia patancana* (“cuernos de cabra”), *Azorella compacta* (“yareta”), and *Parastrephia quadrangularis*. Circular or crescent-shaped thickets, cushion or plate-like plants attached to the ground are frequently observed, often due to factors like sediment accumulation or effects of snow. All plants in these regions are highly adapted to extreme conditions and are resistant to cold and wind.

A digital elevation model a documented horizontal resolution of 30 m (ALOS PALSAR, Nicoll et al., 2014) was used to prepare contour levels and delineate the watershed of the Salar de Arizaro basin. Elevation within the watershed ranges from 3,450 to 6,100 m asl, with an estimated total area of about 6,770 km^2 and an approximate mean elevation of 3,760 m asl. The elevation at the surface of the Salar is approximately between 3,450 and 3,500 m asl (Figure 5-1) in the project concession areas.

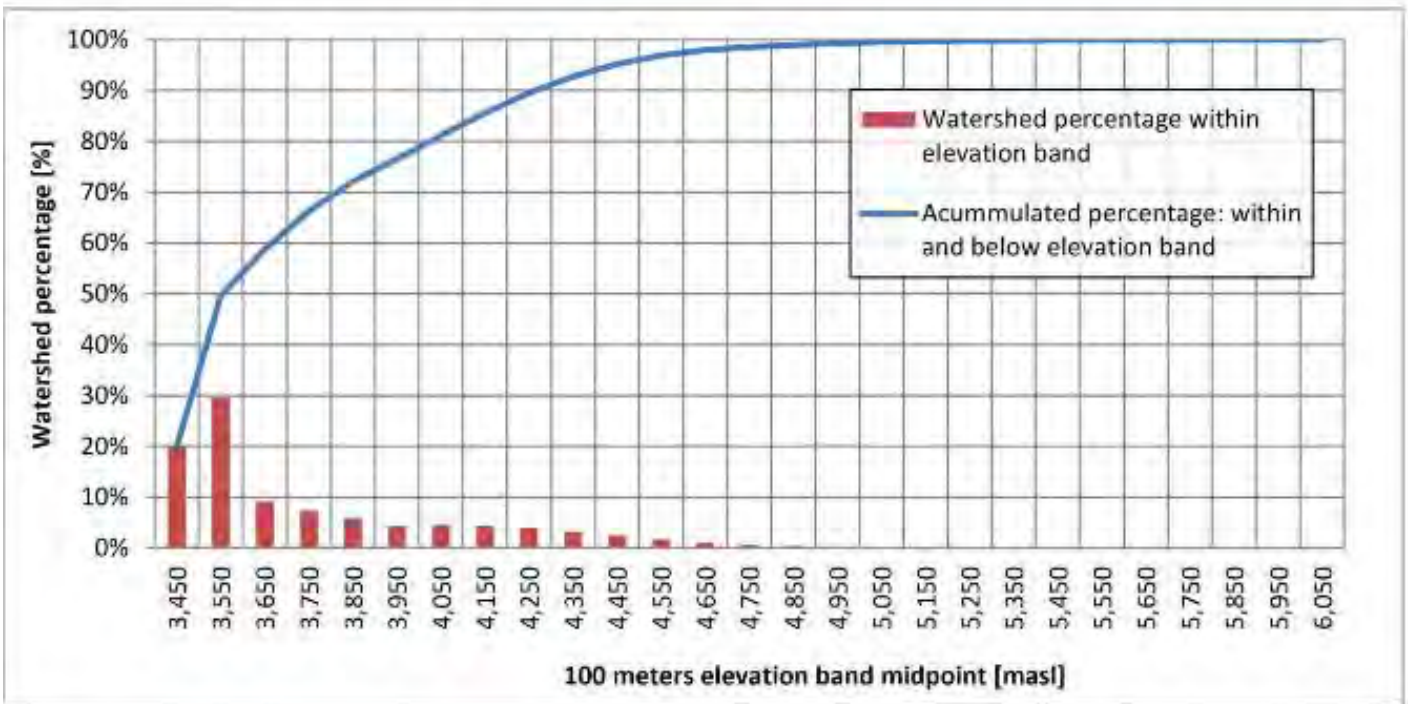
Figure 5-1: Salar de Arizaro Watershed Elevation Ranges and Projection Concessions



Source: Montgomery & Associates Technical Report, 2022.

The basin was divided in 100-m elevation bands for hypsometry analysis (Figure 5-2). From this analysis, it can be inferred that about a 50% of the basin is located in the range 3,450 to 3,600 m asl, 90% of the basin is below 4,300 m asl.

Figure 5-2: Salar de Arizaro Watershed Hypsometry



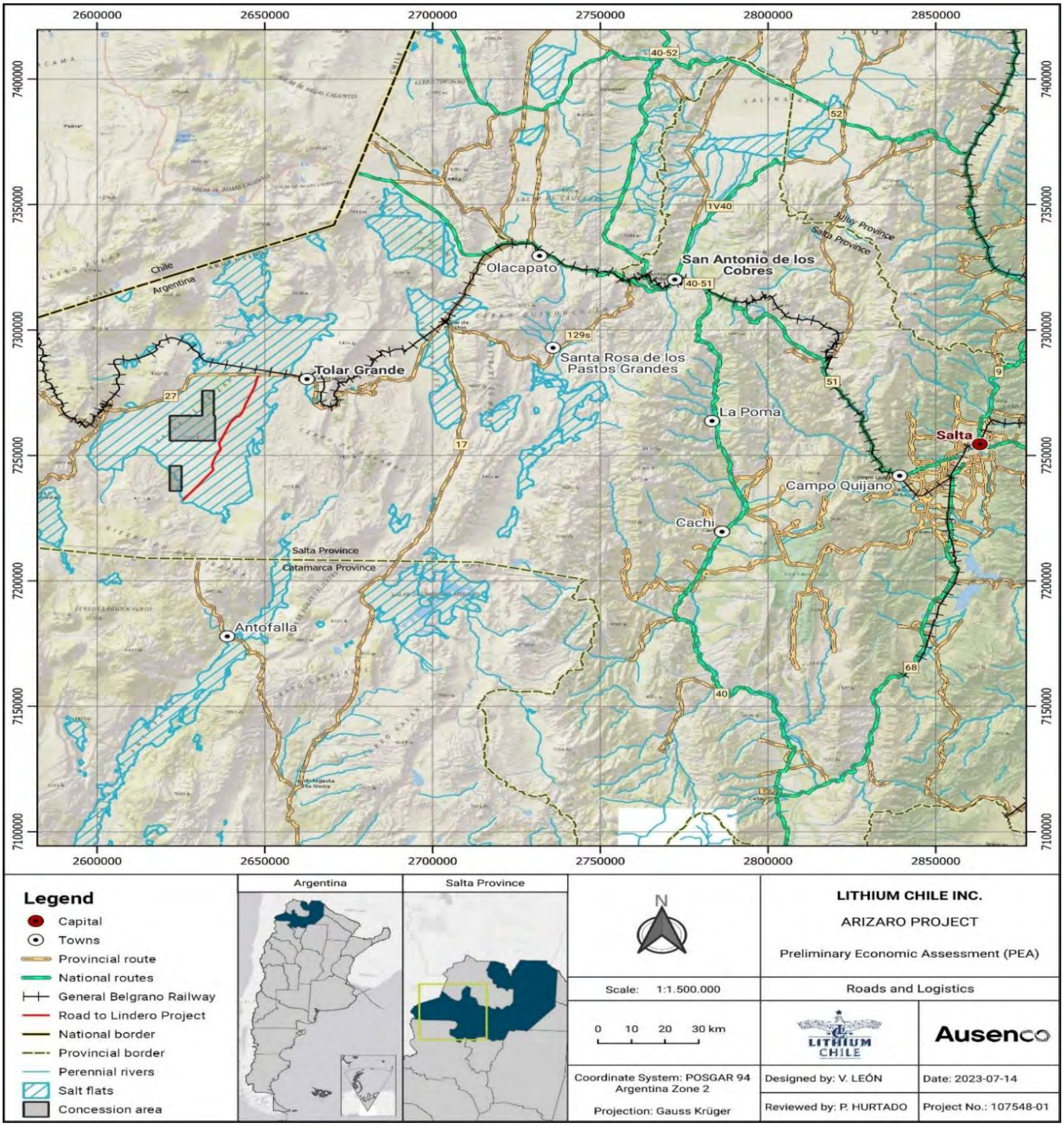
Source: Montgomery & Associates Technical Report, 2022.

5.2 Accessibility

The Project area is located in the Salta Province. The operating season for the area is year-round, with no times of the year where access is restricted. The nearest town with services is Tolar Grande, which is about 50 km north along mining track (road to Lindero Project) and continuing on Salta provincial road RP-27. Tolar Grande has a population of 210 inhabitants with services such as a health clinic, lodging facilities, and a school. The nearest large city is Salta, located about 170 km to the northeast of the Project area. Local resources in the area are very basic.

Most supplies are brought from Salta or San Antonio de Los Cobres. Several mine camps are present in the area and are powered locally. There are no people living in the vicinity of the Project. A 3 km long airstrip, certified by the Argentina Air Force, is located at the Lindero mine camp, but it is not a commercial airstrip. The most common access to the Project is from the city of Salta, along national route RN-51, passing through the towns of Campo Quijano and San Antonio de Los Cobres. About 70% of Route 51 is paved and the remainder is in fairly good condition.

Figure 5-3: Salar de Arizaro Project Access Routes



Source: Ausenco, 2023.

5.3 Climate

The climate in the project area is characterized by a cold, high-altitude desert, with scarce vegetation. Solar radiation is intense, particularly during the summer months of October through March, leading to extremely high evaporation rates. Strong winds are frequent in the Puna, reaching speeds of up to 80 km/h during the dry season. During the summer, warm to cool winds are generally pronounced after midday while the nights are usually calm.

The main rainy season is between December and March. The period between April and November is typically dry. Key features of the seasonal precipitation from December through January period include intense surface heating and the establishment of upper-level easterly winds that carry moist air from the interior of the continent (Garreaud, 2009). Regional precipitation trends in the Argentinean and Chilean Puna show a general decrease toward the southwest due to the increasing distance from the moisture source, and the moisture lost to orographic rainfall over the N-S trending mountain ranges. A positive correlation between elevation and precipitation (Minetti et al., 2005) can also be observed.

Throughout the rest of the year, the prevailing westerly winds are too dry to support convective precipitation. Monthly precipitation data was obtained from a database published by the Instituto Nacional de Tecnología Agropecuaria (INTA) (Bianchi et al., 2005), public NI 43-101 technical reports for other projects in the vicinity, and historic information from nearby meteorological stations, including those at Salar de Pocitos and El Fenix. The average annual rainfall at these stations is shown in Table 5-1.

Snow precipitation records in the Puna are scarce, but anecdotal evidence and remote sensing of snow-covered areas suggest that multiple snowstorms are not uncommon during the austral winter (June to August). The accumulation of snow is often significant enough to result in road closures at the international border for several days. Snowfall is probably underestimated or overlooked by the meteorological stations in the area because the rain gauges used to measure rainfall are not designed to measure snowfall. For instance, Vuille (1996) documented snowmelt and sublimation depths for 15 snowstorms that occurred between 1990 and 1993 in El Laco, which is situated at an elevation of approximately 4,200 m asl and 50 km west of Salar del Rincon. On average, snow precipitation totaled 61 millimeters per year (mm/y), with about 60% lost to sublimation, leaving approximately 25 mm/y to snowmelt. The portion of snow precipitation that can contribute to aquifer recharge is limited to snowmelt because sublimation results in direct loss to the atmosphere.

Table 5-1: Project Average Rainfall - Climatological Conditions

Station	Elevation (m asl)	Easting (m)	Northing (m)	Record Length of Time	Percent Record Complete	Annual Rainfall (mm)
Unquillal	4,000	3,737,330	7,287,070	1950-1990	79%	44
Salar de Pocitos	3,600	3,398,980	7,304,890	1950-1990	78%	46
Olacapato	3,820	3,427,140	7,333,570	1950-1990	88%	74
Mina Concordia	3,770	3,459,360	7,324,470	1950-1990	95%	115
San Antonio de los Cobres	3,775	3,467,830	7,322,640	1950-1990	100%	115
El Fénix Camp	3,990	3,388,550	7,181,910	1992-2016	100%	77
Tincalayu	4,000	3,393,770	7,204,800	1979-2003	45%	64
Salar del Rincón	3,730	3,393,700	7,344,690	2007-2015	-	64

5.4 Local Resources and Infrastructure

5.4.1 Electrical Power

A 600-megawatt (MW), 345 kilovolt (kV) power line connecting Salta and Mejillones in Chile runs approximately 150 km north of the Property. The line reportedly transmits 110 MW from Mejillones to the Argentina Interconnection System. Aditionally, two photovoltaic plants, La Puna Solar and Altiplano, are located near the town of Olacapato (east of Pocitos), in Los Andes Department. Both plants have been linked to the Argentina Interconnection System since October 2021.

The new power stations add 500 MW to the system. The closest power source is located in the town of Tolar Grande via diesel generators. The TermoAndes high-voltage line, with a transport capacity of 600 MW, which feeds the national interconnected system, is 100 km north of the Project. Two solar power generating plants were recently commissioned: one near the town of Olacapato in the Province of Jujuy, and another immediately south of the edge of the Salar de Cauchari in the Province of Salta. Both of these are connected to the TermoAndes line.

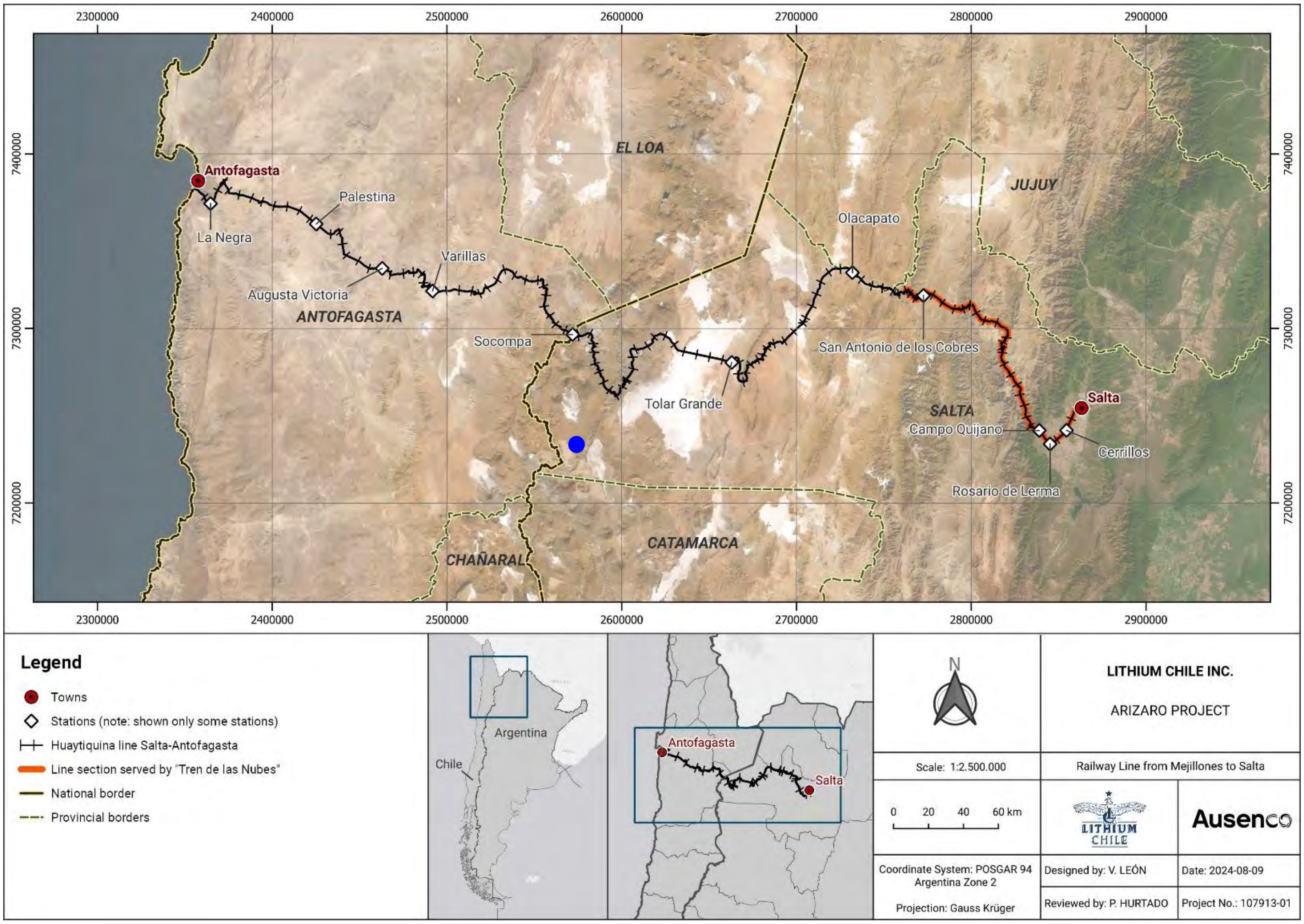
5.4.2 Natural Gas Pipeline

A natural gas pipeline (Gasoducto de la Puna) passes along provincial highway RP-17, south of Salar de Pocitos. This pipeline is 70 km to the east of the Project, and supplies dual generators (gas and diesel) to the Minera del Altiplano Plant and to the camp at the Salar del Hombre Muerto.

5.4.3 Railway Line Antofagasta-Salta

The nearest rail line in the region is an existing narrow-gauge railway between Salta, Argentina and Antofagasta, Chile. Figure 5-4 shows the location of the track. Two companies manage it: the Chilean Ferrocarril Antofagasta – Bolivia (Chilean Luksic Group) and the Argentinian state-owned Ferrocarril General Belgrano. Currently, the track from La Polvorilla to Salta is operated by the Tren de las Nubes and is not currently in use east of San Antonio de Los Cobres.

Figure 5-4: Railway Line from Mejillones to Salta



Source: Ausenco, 2024.

5.4.4 Road Connections

The Project is connected to Salta, Salar de Pocitos, and San Antonio de los Cobres by the way of a well-maintained, paved and unpaved road network. The Project can be accessed through a mining track going to Lindero Project after leaving RP-27, which connects with Tolar Grande.

5.4.5 General Services

Communities: The nearest community with services is the town of Tolar Grande, located northeast of the Project along RP-27. The nearest town with full services, including fuel and medical services, is San Antonio de Los Cobres, which is a 4-hour drive from the site and Salta, located about 6 hours from the site.

Water Supply: Potential freshwater supply is limited to the alluvial cones at the periphery of the Salar de Arizaro, with no public studies available on freshwater exploration and exploitation. Additionally, there are no permanent surface watercourses that feed into the salt flat basin. At the moment, the only known source of groundwater in the basin is located in the alluvial fan of the Chascha sub-basin. This source provides freshwater via a series of wells to the Lindero Gold Deposit at the southern end of the Salar de Arizaro.

Camp: There is currently a camp on site (Tolar 10) to support ongoing activities, providing facilities for up to 70 workers.

Communications: Currently, only satellite phone communication is available at the project location.

Nearby mining operations: Currently, there is a gold mine operating in the southern part of the Salar basin, and a world-class copper project located 15 km to the northwest of the concessions.

Sufficiency of surface rights: Lithium Chile's exploration target covers a surface of 233 km^2 and has sufficient surface rights, particularly compared to its peers, for future potential mining operations.

5.5 Seismicity

In accordance with the guidelines outlined in the IMPRES-CIRSOC 103 Standard, which define the criteria for structures susceptible to dynamic loads from seismic activities, the territory of the Republic of Argentina is divided into five (5) zones based on the level of risk posed by such events. The area under study would fall within Zone II, classified as having a moderately dangerous seismic risk.

6 HISTORY

Prior to Lithium Chile gained majority control of the concessions, Argentina Lithium and Energy Corporation was the previous owner. As described in Section 4, Lithium Chile acquired control of the concessions in 2021.

6.1 Sub-Surface Brine Sampling - 2017

A sub-surface brine sampling campaign was undertaken in 2017 by Aminco (2017a) at the instruction of the previous owner, Argentina Lithium. The campaign consisted of the construction of 23 trenches; 15 of them in the central part of the Salar and eight in the southern part, near the Cono de Arita. The size of each one is approximately 1.5x1.5 to 2x4 meters; detailed lithological descriptions were completed by Aminco geologists. The depth of those trenches varied from 0.7 to 3 m. According to the lithological descriptions, the Salar has an evaporitic crust (mostly halite) with depths of 0.2 to 0.5 m, and an underlying clastic unit of sand and clay to the total depth. The water depth ranged from 0.2 to 0.5 m, except in trenches 14 and 15, where water level was not reached. Locations for the samples are given in Table 6-1. In trenches where water level was reached, field parameters were measured on site (temperature in Celsius (°C), electrical conductance (EC), pH, total dissolved solids (TDS), density and NaCl (%). Field parameters measured on site varied with a pH of 6.48 to 7.02, and a temperature between 15 and 23°C. The reports do not indicate if the samples obtained were sent to a lab for chemical results.

Table 6-1: Locations for 2017 Trench Sampling Program

Sample ID	Latitude	Longitude
Ari 1	S 24º48’51.17”	W 67º41’2.6”
Ari 2	S 24º47’30.06”	W 67º41’3.81”
Ari 3	S 24º46’8.71”	W 67º41’4.31”
Ari 4	S 24º46’8.21”	W 67º39’49.5”
Ari 5	S 24º44’47.93”	W 67º41’4.92”
Ari 6	S 24º43’26.69”	W 67º41’5.87”
Ari 7	S 24º42’5.58”	W 67º41’7.68”
Ari 8	S 24º40’43.6”	W 67º41’7.98”
Ari 9	S 24º39’22.2”	W 67º41’8.85”
Ari 10	S 24º38’1.85”	W 67º41’9.97”
Ari 11	S 24º46’9.17”	W 67º42’32.95”
Ari 12	S 24º46’10”	W 67º44’2.02”
Ari 13	S 24º46’11.36”	W 67º45’31.02”
Ari 14	S 24º46’13”	W 67º47’14.39”
Ari 15	S 24º46’14.22”	W 67º47’49.73”
Ari 16	S 24º55’45.87”	W 67º47’1.63”
Ari 17	S 24º56’26.12”	W 67º46’5.87”
Ari 18	S 24º56’44.03”	W 67º45’40.6”
Ari 19	S 24º57’11.6”	W 67º45’39.7”

Sample ID	Latitude	Longitude
Ari 20	S 24º57’38.12”	W 67º45’38.8”
Ari 21	S 24º58’4.63”	W 67º45’38.9”
Ari 22	S 24º58’53.68”	W 67º45’38.6”
Ari 23	S 24º98’28.97”	W 67º45’37.6”
Ari 24	S 24º59’43.4”	W 67º45’37.6”

Source: Aminco, 2017a

6.2 2017 VES Geophysical Survey

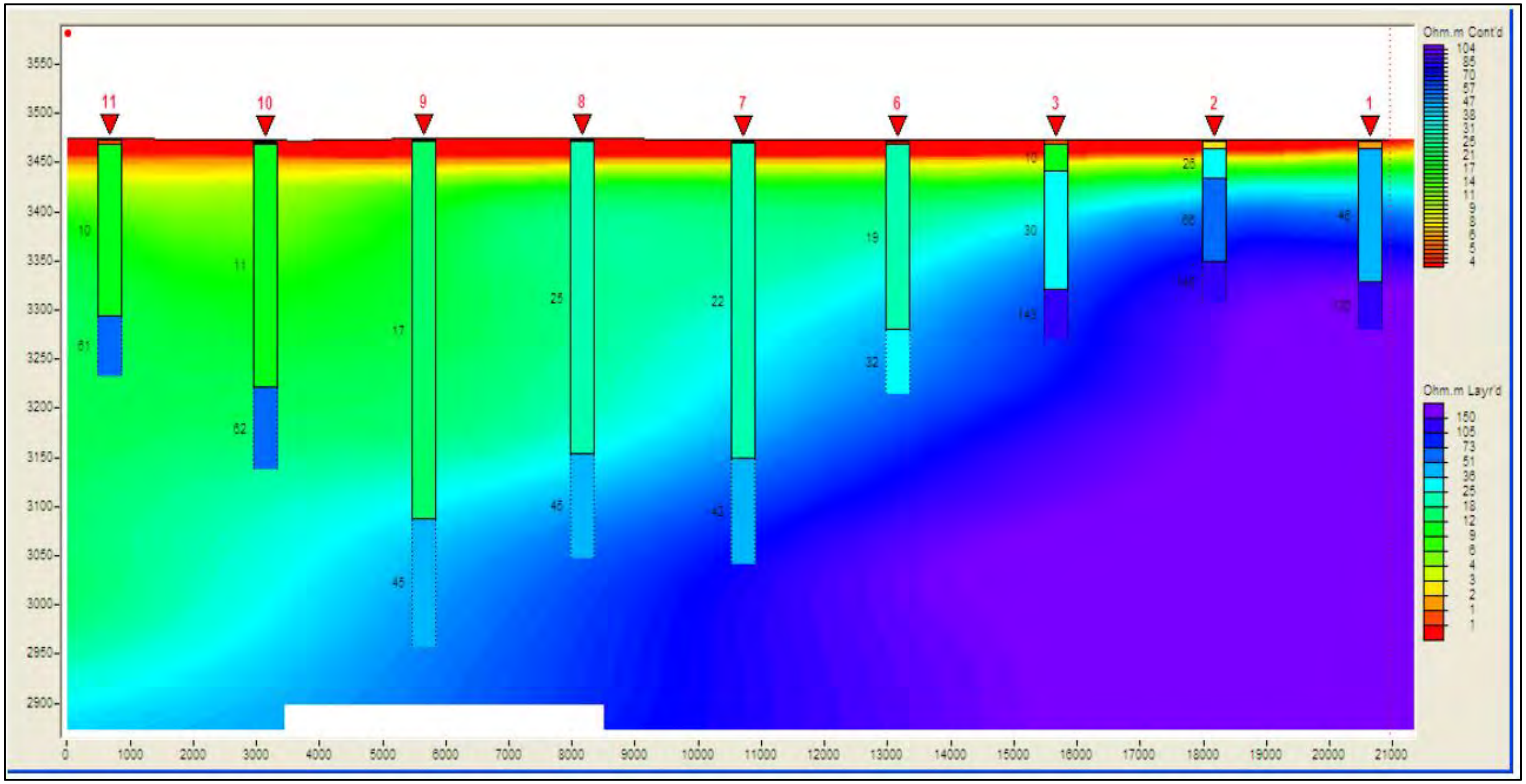
During the first months of 2017, Conhidro (2017) conducted a Vertical Electrical Sound (VES) geophysical survey in the Salar de Arizaro. Twenty-five VES points were surveyed; 17 of them were in the northern part of the Salar (Figure 6-1) and the other 8 were located in the southern portion. Two profiles were prepared and are shown in Figure 6-2 and Figure 6-3. The first profile had a N-S orientation and the second one a E–W orientation. The N-S profile has a length of approximately 20 km, and according to the geophysical results, four zones can be identified:

1. Upper-conductive Zone: very low resistivity values, interpreted to be evaporitic facies with minor presence of clastic.
2. Semi-conductive Zone: low resistivity values interpreted to be mostly fractured halite.
3. Semi-resistive Zone: moderate resistivity values interpreted as weakly fractured evaporitic facies.
4. Resistivity Zone: high resistivity values; recognized mostly in the southern part of the profile. It was interpreted as evaporitic facies consisting mostly of low permeable halite (Figure 6-2).

Figure 6-1: Location of VES Profiles in The North Part of The Salar

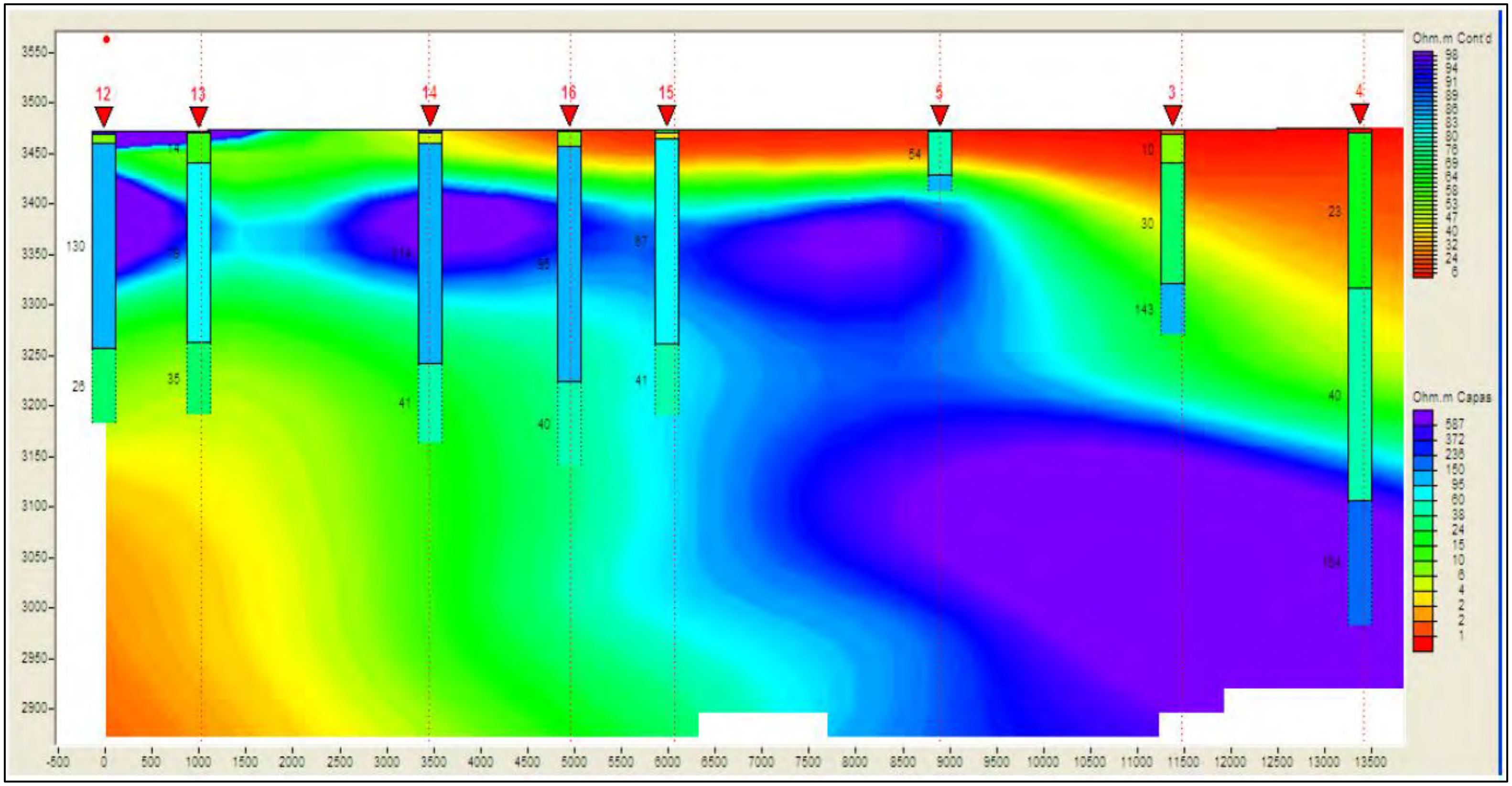
Source: Conhidro, 2017.

Figure 6-2: North – South VES Profile



Source: Lithium S Corporation (NI 43-101), March 2018.

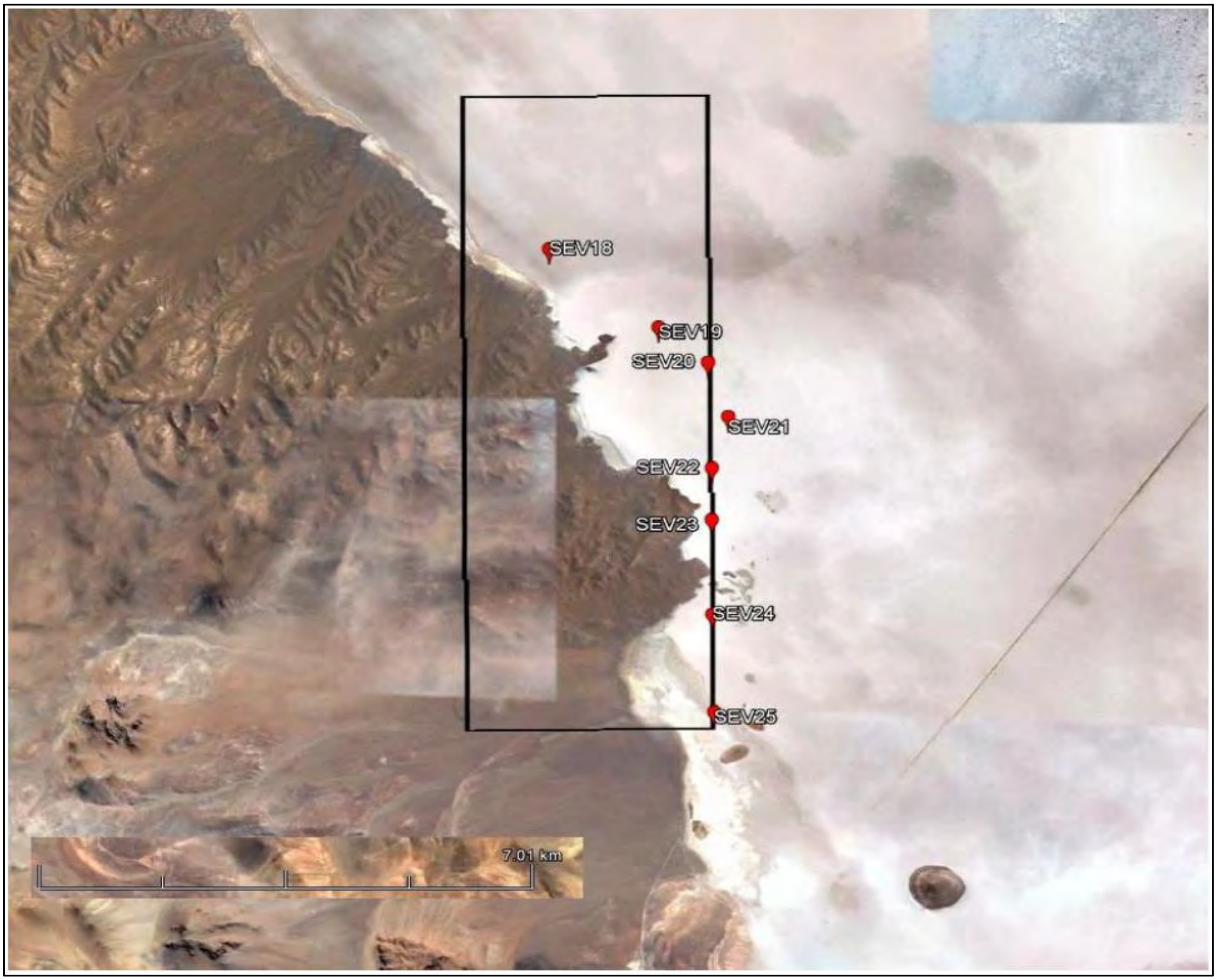
Figure 6-3: East – West VES Profile



Source: Lithium S Corporation (NI 43-101), March, 2018.

Eight (8) VES points were measured in the southern part of the Salar (Figure 6-4).

Figure 6-4: VES Station Locations in The South Part of The Salar

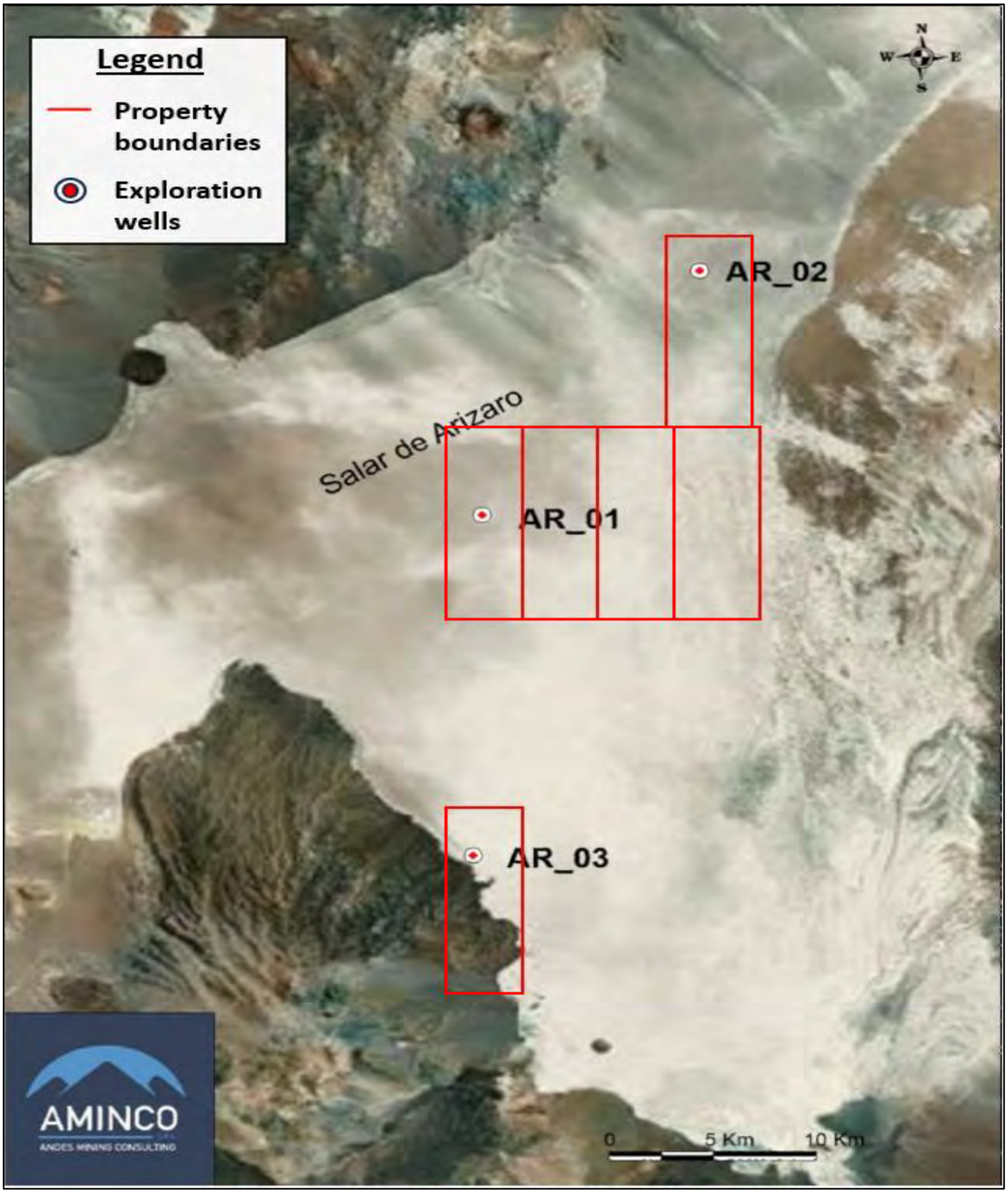


Source: Conhidro, 2017.

6.3 2017 Drilling and Testing Program

The 2017 exploration drilling and testing program was designed to obtain depth-specific brine samples using an inflatable packer system. Three wells (AR-01, AR-02, and AR-03) were drilled using the DDH method, with total depths varying from 250.55 to 398 m (Aminco, 2017b). Locations for the wells are given in Table 6-2 and shown on Figure 6-5.

Figure 6-5: Location Map for 2017 Exploration Wells



Source: Aminco, 2017b (property boundaries added by Ausenco, 2023).

Table 6-2: Location Map for 2017 Exploration Wells

ID	Coordinates[1]		Elevation (mamsl)[2]	Depth (m)[3]
	East	North		
AR-01	2,623,400	7,260,800	3,495	398.0
AR-02	2,633,050	7,273,350	3,495	298.4
AR-03	2,622,870	7,243,100	3,495	250.55

1: Coordinates in Posgar 94, Zone 2.
2: Elevation in meters above mean sea level.
3: Depth, in meters.

The following represents a brief summary of the equipment and methods utilized during construction of the well:

- Drilled using the DDH method, with HQ and NQ diameter, conventional circulation and with drilling fluid (polymer-based).
- Cores samples were obtained, 1.5 m in length, and described by Aminco's geologist.
- Eighteen (18) brine samples were obtained in well AR-01, 41 samples in well AR-02, and 15 samples in well AR-03. Not all samples appear to have been submitted for laboratory analysis. The laboratory results for lithium concentrations are shown in Table 6-3.
- Water levels were measured in each well; 0.9 m for well AR-01, 1.23 m for well AR-02, and 1.05 m for well AR-03.

Table 6-3: Summary of Lithium Concentrations for Depth-Specific Samples at Exploration Wells AR-01 and AR-02

Well ID	Sample ID	Date	Depth (m bls)	Li (mg/L)
AR-02	61251	26/10/2017	298	17
AR-02	61255	26/10/2017	205	50
AR-02	61259	26/10/2017	108	19
AR-02	61263	26/10/2017	76.3	230
AR-02	61266	26/10/2017	15.25	125
AR-01	61269	30/10/2017	368	26
AR-01	61273	30/10/2017	356	179
AR-01	61277	30/10/2017	326	204
AR-01	61281	30/10/2017	308	225
AR-01	61284	30/10/2017	238	236
AR-01	61287	30/10/2017	190	217

Because the results are not consistent in regard to increasing lithium concentrations with depth, and they are not consistent at similar depths or adjacent samples (for example, 179 mg/L at 356 m, and then dropping to 17 mg/L at 30 m below), the QP does not place a high degree of confidence in these results.

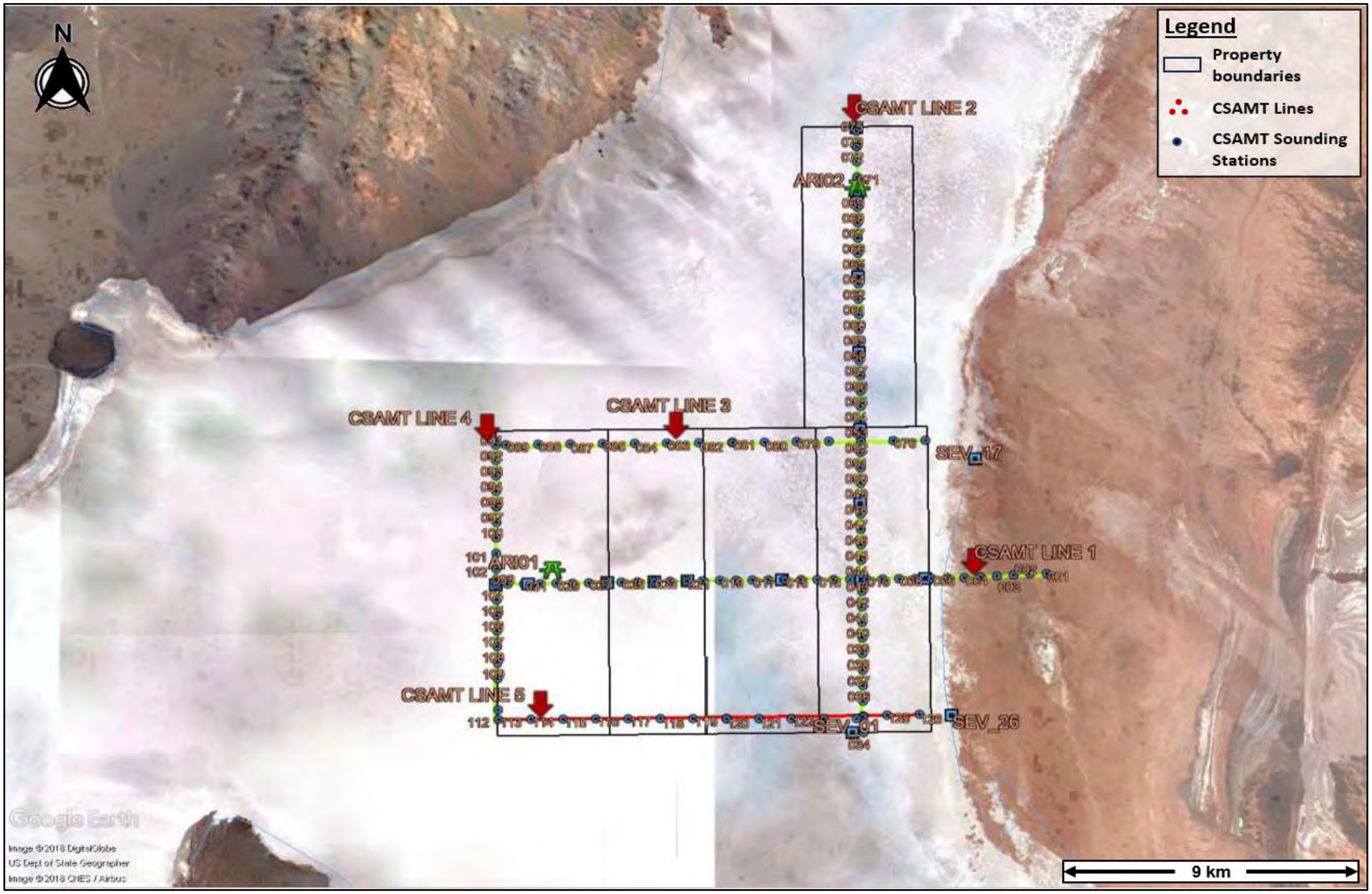
6.4 2018 CSAMT Exploration Survey

During the months of May and June 2018, at the request of Argentina Lithium, GEC – Geophysical Exploration & Consulting S.A. (GEC, 2018) – conducted a controlled-source audio-frequency magnetotelluric (CSAMT) exploration survey consisting of 122 stations. Station locations are shown on Figure 6-6.

The CSAMT technique is one of the most common methods for investigating shallow geological structures and subsoil conditions. This technique allows for the identification of brine bearing formations and geologic units. Five profiles were made; three in the E - W direction and two in the N-S direction (Figure 6-7 through Figure 6-11).

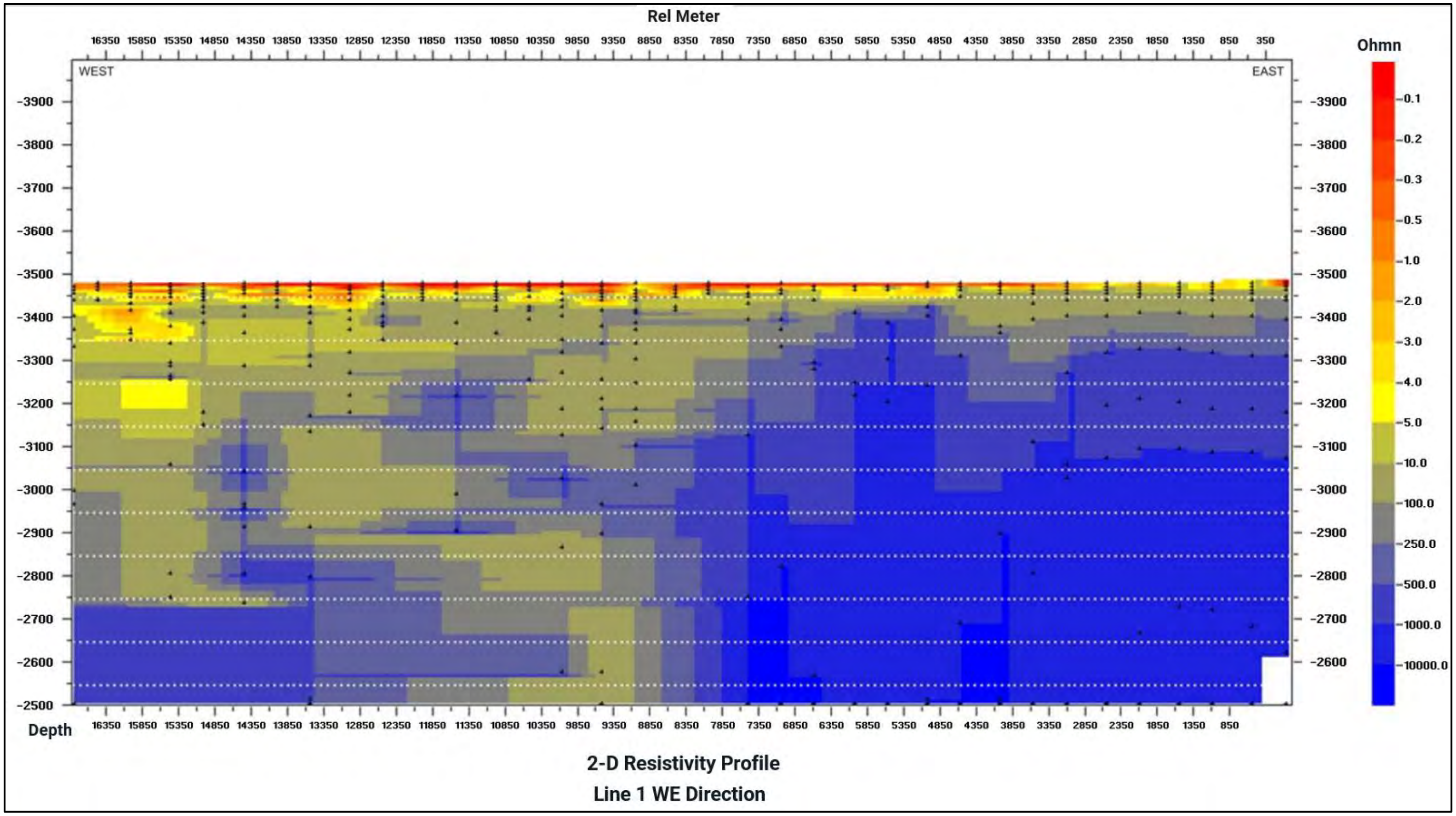
The results of the surveys indicate the presence of brine at depth and the presence of freshwater or unsaturated material in the upper part. Without additional exploration well information to help calibrate the results, most of the results are somewhat inconclusive.

Figure 6-6: CSAMT Grid and CSAMT Station Locations



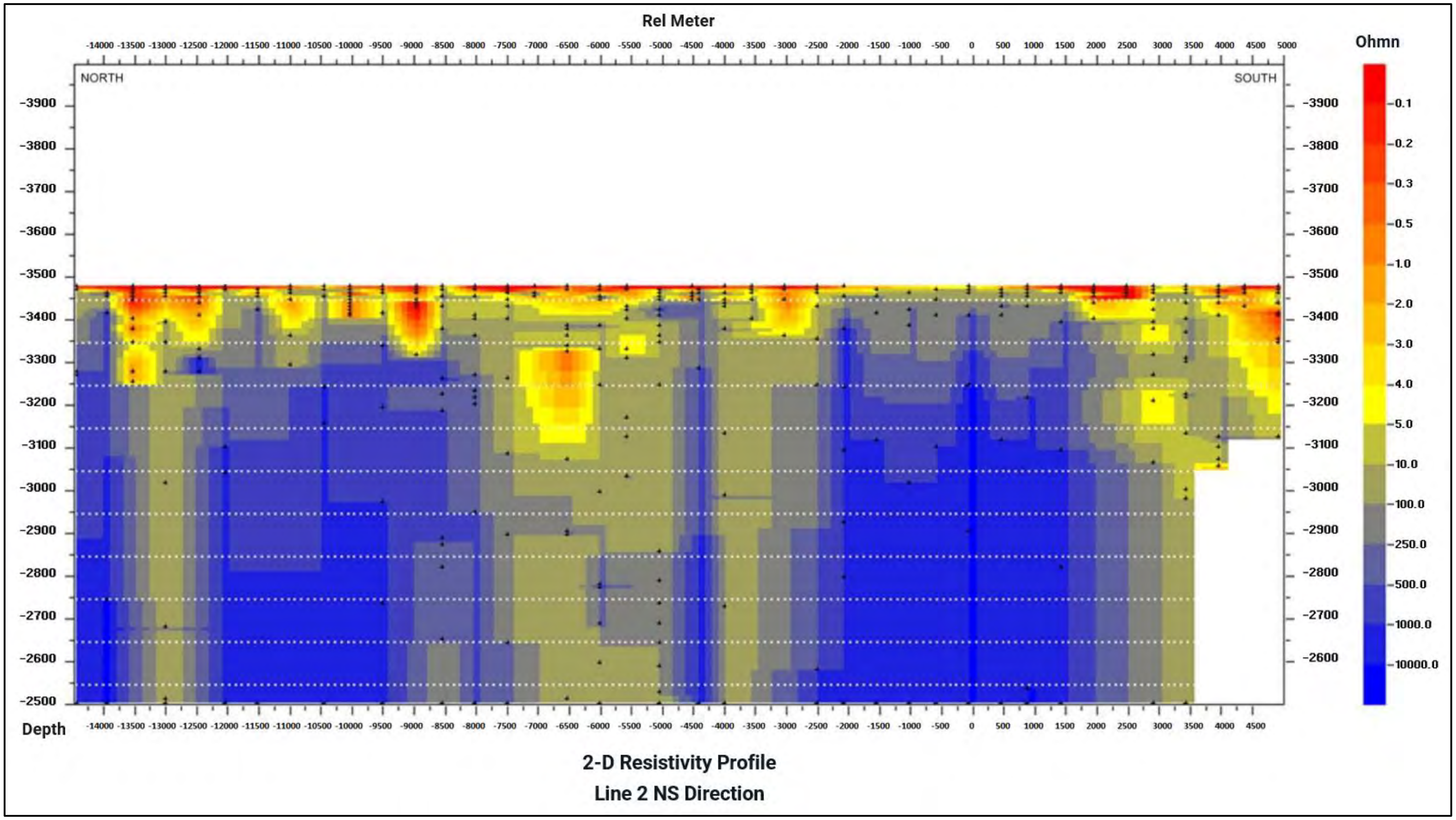
Source: GEC, 2018.

Figure 6-7: CSAMT Line 1. W – E Direction



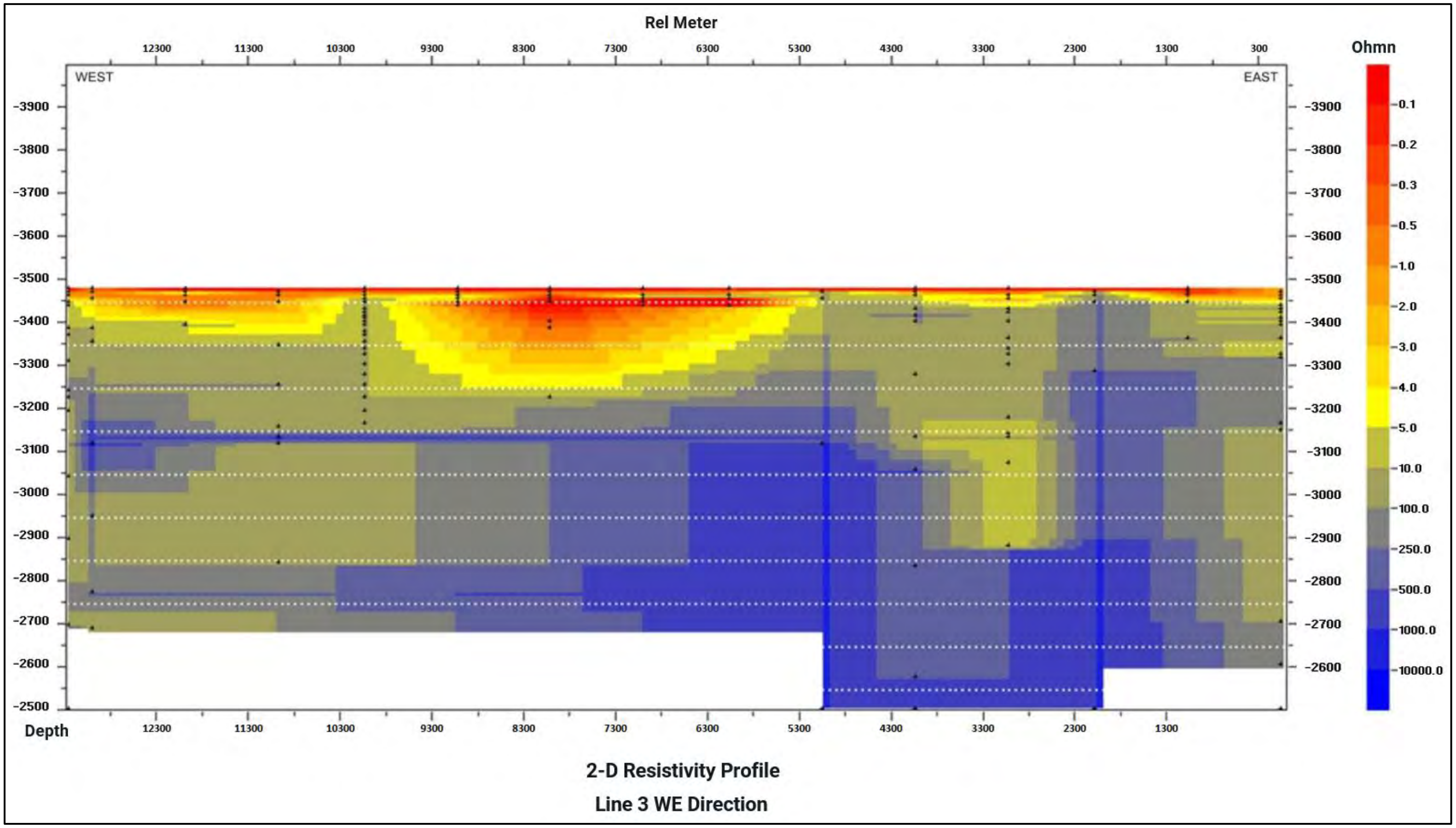
Note: Land surface at approximately 3,470 m asl; vertical scale extends to approximately 2,500 m asl.
Source: GEC, 2018.

Figure 6-8: CSAMT Line 2. N – S Direction



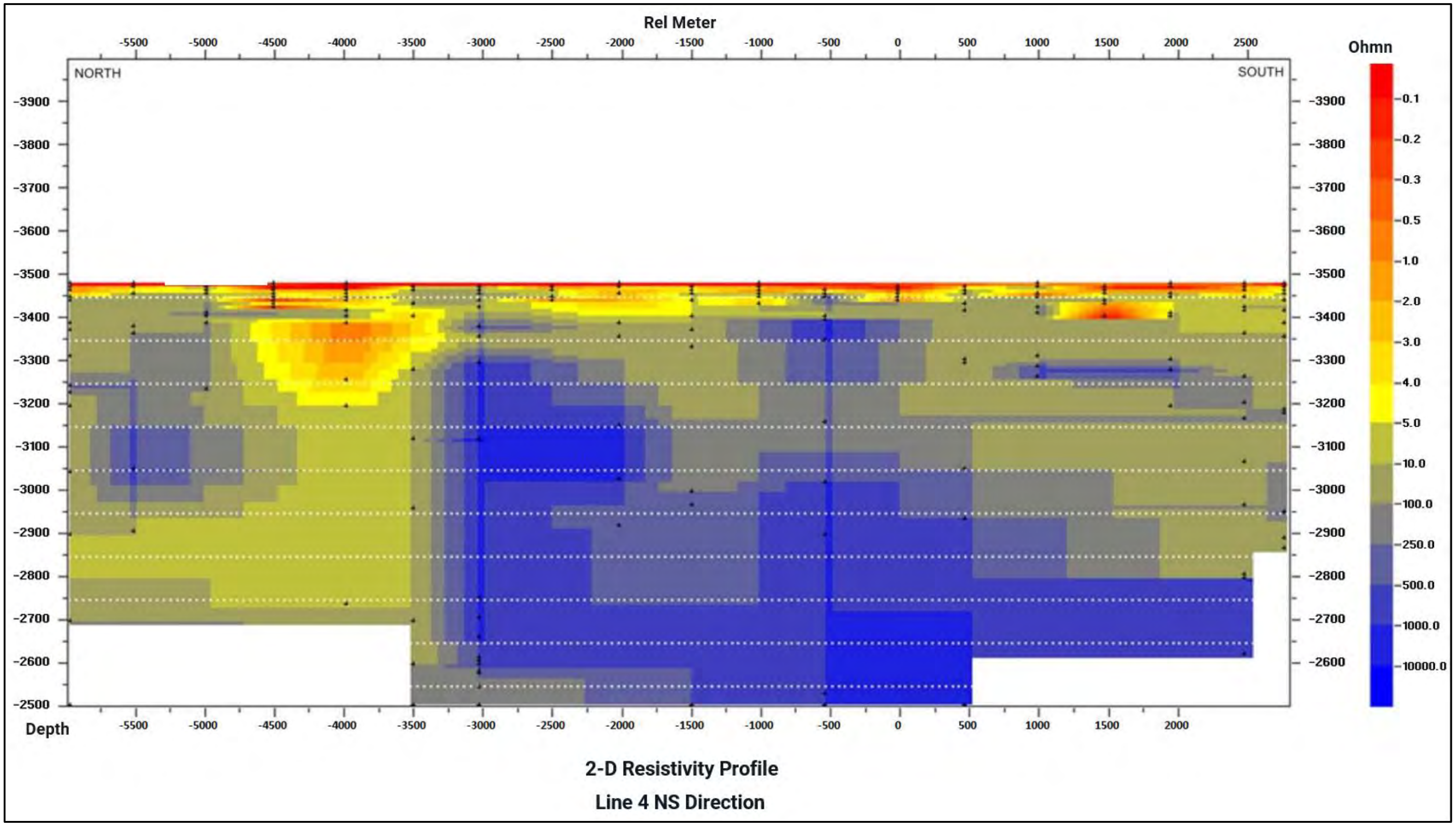
Note: Land surface at approximately 3470 m asl; vertical scale extends to approximately 2500 m asl.
Source: GEC, 2018.

Figure 6-9: CSAMT Line 3. W – E Direction



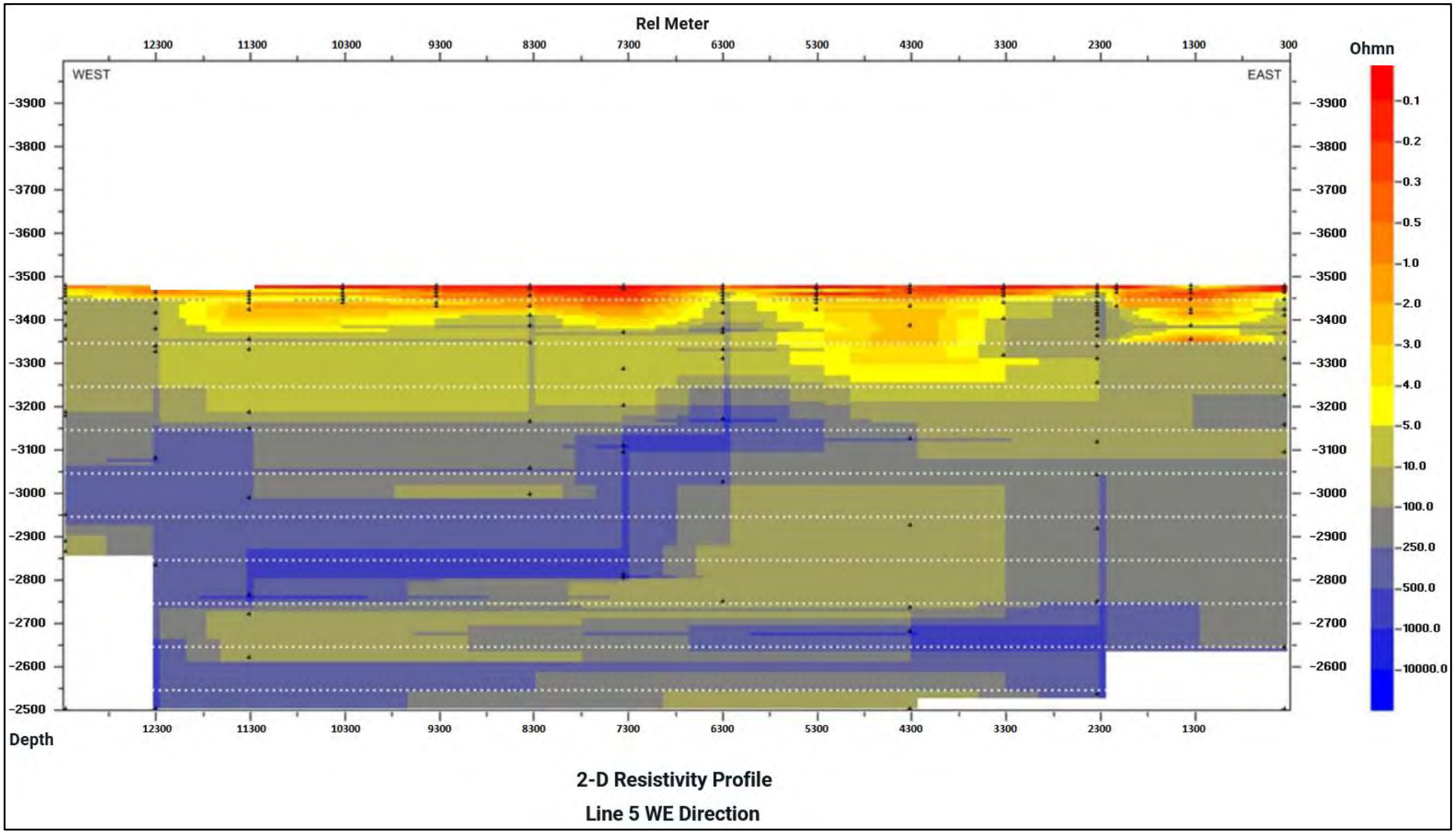
Note: Land surface at approximately 3470 m asl; vertical scale extends to approximately 2500 m asl.
Source: GEC, 2018.

Figure 6-10: CSAMT Line 4. N – S Direction



Note: Land surface at approximately 3470 m asl; vertical scale extends to approximately 2500 m asl.
Source: GEC, 2018.

Figure 6-11: CSAMT Line 5. W – E Direction



Note: Land surface at approximately 3470 m asl; vertical scale extends to approximately 2500 m asl.
Source: GEC, 2018.

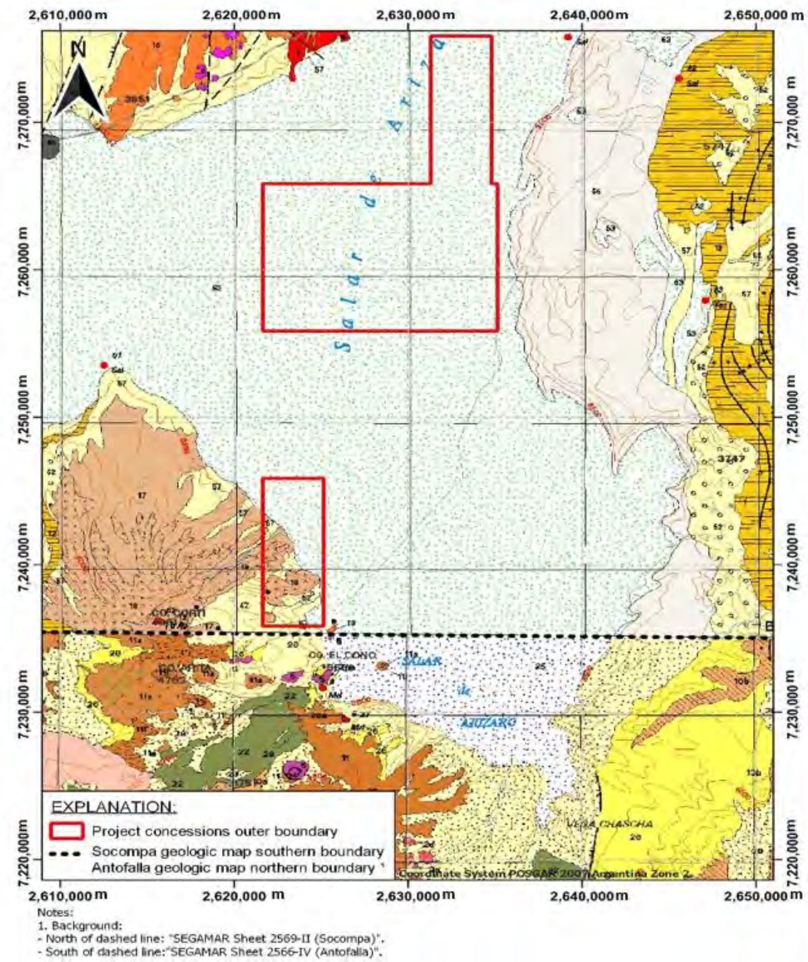
7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Salar de Arizaro is located in the Geological Province of La Puna (Turner, 1972) and within the Puna Austral Geological Sub-province (Alonso et al., 1984). One of the most important characteristics that define the Geological Province of Puna, is the presence of evaporitic basins, or “salars,” where important deposits of borates, sodium sulfate, and lithium can concentrate. Salars near the Project area, not within the property boundaries, include Salar del Hombre Muerto, Antofalla, Ratones, Pocitos, Centenario, and Diablillos. The Salar de Arizaro occupies one of these endorheic (internally drained) basins. Figure 7-1 shows the surface geology map for the area and associated stratigraphic explanations for the units.

The geology of the Project area (Figure 7-1) was described based on two sources: Segemar (2001) Sheet 2569-II (Socompa), and from Segemar (2007) Sheet 2569-IV (Antofalla).

Figure 7-1: Geological Map of The Project Area



Lithologic descriptions and symbology based on "SEGEMAR Sheet 2569-II (Socompa)"

NUMBER	DESCRIPTION	SYMBOLOGY
60	HOLOCENE, MONOGENIC ERUPTIVE CENTERS. Basalt.	60
57	HOLOCENE. DETRITICS, ALLUVIAL, AND COLUVIAL DEPOSITS. Boulders, sands and clays.	57
56	HOLOCENE. SALAR BOUNDARY CLAY DEPOSITS. Red clays.	56
54	HOLOCENE. LANDSLIDE DEPOSITS. Fanglomerate.	54
53	HOLOCENE. EVAPORITIC DEPOSITS. Halites, borates, sufates with interbedded clays.	53
52	PLEISTOCENE. OLD PIEDMONT DEPOSITS. Medium to coarse fanglomerates.	52
19	OLIGOCENO-LOWER MIOCENE. CORI VOLCANIC COMPLEX. Andesites	19
17	OLIGOCENO-LOWER MIOCENE. CORI VOLCANIC COMPLEX. Tuffs and conglomerates.	17
12	OLIGOCENO-LOWER MIOCENE. SEDIMENTARY VIZCACHERA. Sandstones, volcanic sandstones, siltstones, pelites, tuffs, gypsums, halites.	12
10	EOCENE. SANTA INÉS VOLCANIC COMPLEX. Dacites, ignimbrites, dacitic tuffs. 10a, Rhyodacitic and Rhyophysical dikes and porphyries.	10
6	PERMIC LLULLAILLACO PLUTONIC COMPLEX. Granites and granitic porphyries.	6
3	UPPER ORDOVICIAN. TACA-TACA FORMATION. Granodiorite	3

Lithologic descriptions and symbology based on "SEGEMAR Sheet 2566-IV (Antofalla)"

NUMBER	DESCRIPTION	SYMBOLOGY
29	HOLOCENE. COLUVIAL DEPOSITS. Deposits of silt, sand and conglomerates with little transport, not connected, on slopes of hills and piedmont flats.	29
26	HOLOCENE. OLD TERRACE DEPOSITS	26
26a	HOLOCENE. TERRACE DEPOSITS WITH TRAVERTINES. Deposits with travertines. Very coarse conglomerates, polymictic, moderate consolidation. Around the formation of Arita is cemented by carbonates and travertines.	26a
25	HOLOCENE. EVAPORITIC DEPOSITS: Saline and chloride deposits and minor proportion of sulphates and borates.	25
22	PLEISTOCENE BASALTS. Olivines basalts with xenocryst of quartz and plagioclases located in lavaflows of small extensions produced by eruptions of monogenic volcanic apparatus and by eruptions through fissures.	22
11a	LOWER MIOCENE VOLCANICS. Deeply eroded volcanoes, porphyritic lavas, dykes and volcanic necks, participation of tuffs, agglomerates, ignimbrites and dacitic porphyries. It is included olivine basalts from Cerro Leon Muerto and located to the west of Cerro Plegado. 11a: Lower member: Complexes of Santa Ines, Cori and Cavi.	11a
11i	LOWER MIOCENE VOLCANICS. Deeply eroded volcanoes, porphyritic lavas, dykes and volcanic necks, participation of tuffs, agglomerates, ignimbrites and dacitic porphyries. It is included olivine basalts from Cerro Leon Muerto and located to the west of Cerro Plegado. 11i: Ignimbrites facies.	11i
10b	MID MIOCEN. VIZCACHERA FORMATION. 10b Upper member. Pellites, sandstones and red conglomerates with interlayers of gypsum. Pellites show biodisturbances and cracks from dehydration. Sandy banks show erosion at its base and asymmetric waves of water flow.	10b
10a	MID MIOCEN. VIZCACHERA FORMATION. 10a Lower member. Conglomerate sandstones and fine to medium conglomerates of reddish to grayish colors arranged in medium stratification.	10a
5	UPPER PALEOZOIC. LA TABLA FORMATION. Porphyries, breccias and dacitic lavas with abundant content of plagioclases phenocrysts, amphiboles and boitites, glassy matrix intruded by fine grain dacitic to andesitic dykes.	5
2b	PALEOZOIC. GRANITE ANTOFALLA	2b

H:\projects\3546\48.Arizaro\01.GIS\QG_Arizaro_aux.qgz (Layout: Geologia Dic2022)

Note: Coordinates are presented in meters.
North Source: Segemar Sheet 2569-II (Socompa) - South Source: Segemar Sheet 2569-IV (Antofalla).

7.1.1 Northern Area

The northern area, which is surrounded by Holocene alluvial and colluvial deposits (Number 57 in stratigraphic description), is located over recent evaporitic deposits. The entire tenements are located over the Salar de Arizaro; toward the eastern side, they are surrounded by Holocene clay deposits or red clays (Number 56 in stratigraphic description). Older sediments in the northeastern area belong to the Oligocene-Lower Miocene Vizcachera Formation, consisting of sandstones, volcanic sandstones, pellites, tuffs, gypsum, and halites (Number 12 in stratigraphic description). Toward the northwest, older granodiorites belonging to the Upper Ordovician, Taca Taca Formation (Number 3 in the stratigraphic description), and dacites, ignimbrites, and dacitic tuffs belonging to Eocene Santa Ines Volcanic Complex (Number 10 in the stratigraphic description) form the boundary of the Salar. The central mining concessions are located over recent evaporitic deposits.

According to bibliography extracted from the Socompa geologic map, a summary of the local geologic units that outcrop in the northern area is described in Table 7-1.

Table 7-1: Geologic Units for Northern Area

Number	Description
01	Lower Ordovician; sediments and volcanics, sandstones, shellstone, and metabasalts.
03	Upper Ordovician, Taca Taca Formation; granodioritic intrusive rocks.
06	Permian Llullaillaico Plutonic Complex; granites, and granitic porphyries.
10	Eocene Santa Ines Volcanic Complex; dacites, ignimbrites, dacitic tuffs.
12	Oligocene-Lower Miocene Vizcachera Formation; sedimentary rocks, sandstone and volcanic sandstones, siltstones and pelites, tuffs, gypsum, and halite.
17-19	Oligocene- Lower Miocene, Cori Volcanic Complex; tuffs and conglomerates (17) and andesites (19).
52	Pleistocene deposits; piedmont sediments, or alluvium fans, and fanglomerates.
53	Holocene evaporite deposits; halites, borates, sulfates, with interbedded clay.
57	Holocene clastic deposits; alluvium and colluvium deposits, landslides, sand, and clay.
56	Holocene clay deposits; reddish clay sediments common at salar borders.
60	Holocene volcanic eruption centers; basaltic lavas.

7.1.2 Southern Area

In the southern area corresponding to Segemar Sheet 2569-IV (Antofalla), Holocene colluvial deposits and conglomerates (Number 29 in the stratigraphic description) occur. Toward the south, the area is bounded by Pleistocene basalts (Number 22 in the stratigraphic description). Toward the east, outcrops of Holocene terrace deposits are found (Number 26-26a in the stratigraphic description). According to bibliography extracted from Antofalla geologic map, a summary of the local geologic units that crop out in the southern area is described in Table 7-2.

Table 7-2: Geologic Units for Southern Area

Number	Description
2a	Paleozoic Archibarca Granite.

2b	Paleozoic Antofalla Granite.
2d	Paleozoic Cerro Plegado Granite; granites and granodiorites cut by pegmatite and aplite veins and dikes.
5	Upper Paleozoic La Tabla Formation; porphyries, breccias and dacitic lavas.
8	Upper Jurassic sediments and volcanics; eolian sandstones and limestones interlayered with basaltic lavas.
10b	Mid-Miocene upper member of the Vizcachera Formation; mudstones, sandstones, and red conglomerates with interlayers of gypsum.
11-11a	Lower Miocene volcanics; Deeply eroded volcanoes, porphyritic lavas, dikes, tuffs, agglomerates, ignimbrites, and dacitic porphyries. It also includes basalts from Cerro Leon Muerto. Lower member 11a; Santa Ines, Cori and Cavi complexes.
13b	Upper Miocene Sijes Formation; medium to fine sandstones and conglomerates.
22	Pleistocene basalts; olivine basalts.
25	Holocene evaporite deposits.
26-26a	Holocene terrace deposits; travertine and coarse conglomerates.
27	Upper Holocene alluvium; unconsolidated deposits of silt, sand, and gravel, associated with alluvial fans, rivers, and valleys.
29	Holocene colluvial deposits; mostly unconsolidated silt, sand, and gravel.

7.2 Property Geology

The local geology of Lithium Chile's mine concessions is constituted by surface evaporates, namely halite, which are roughly 200 to 500 m thick from southwest to northeast, respectively. Where secondary porosity is not present, the halite is massive and exhibits a low drainable porosity, however the southernmost area of the Project concessions presents highly fractured halite based on core samples obtained from diamond drillholes. Unconsolidated clastic sediments underlie the halite unit and are characterized by silt to sand grain sizes with trace amounts of evaporites, generally with a higher drainable porosity than the overlying halite. In localized areas, clay lenses were found in addition to unconsolidated gravel mixed with the fine to medium sized sediments. At the greatest depths of drilling (roughly 500 to 600 m), the medium-coarse grained sized clastic sediments encountered on the southwestern portion of the concessions grade to a clay which can be characterized by a low drainable porosity. Crystalline or highly consolidated basement rock has not been reached by drilling to date and has only been inferred from the conducted geophysics.

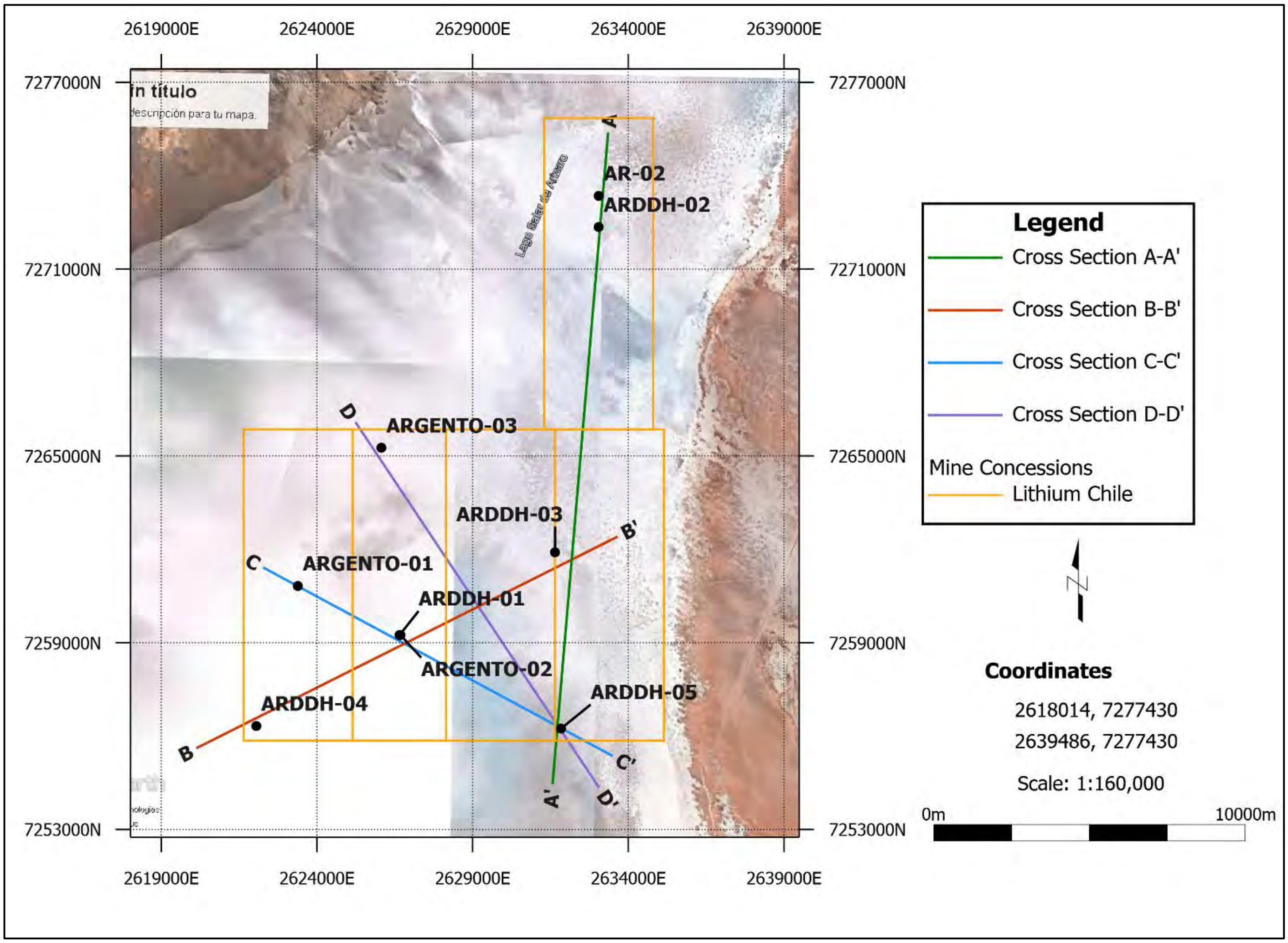
7.2.1 Hydrogeological Sections

Using information from the surface geology map, results from exploration drilling, and geophysical interpretations, hydrogeological sections have been prepared for the immediate area of the Project. Figure 7-2 shows a base map with the locations of the sections. Hydrogeological sections are shown in Figure 7-3 through Figure 7-6.

Figure 7-3 shows the relatively consistent thickness of halite that occurs in the east part of the concession area. Only in the southwest part of the concession, clastic sediments were encountered at depth. Figure 7-4 and Figure 7-5 show the increasing thickness of halite from west to east. Hydrogeological section D-D' (Figure 7-6) also shows a slight thickening of the halite to the east, but it is less pronounced because exploration well Argento-03 has a fairly large halite thickness. Overall, the potential for pumping large amounts of lithium brine in the northern and eastern parts of the concessions appears to be low based on the large thicknesses of halite encountered in these areas.

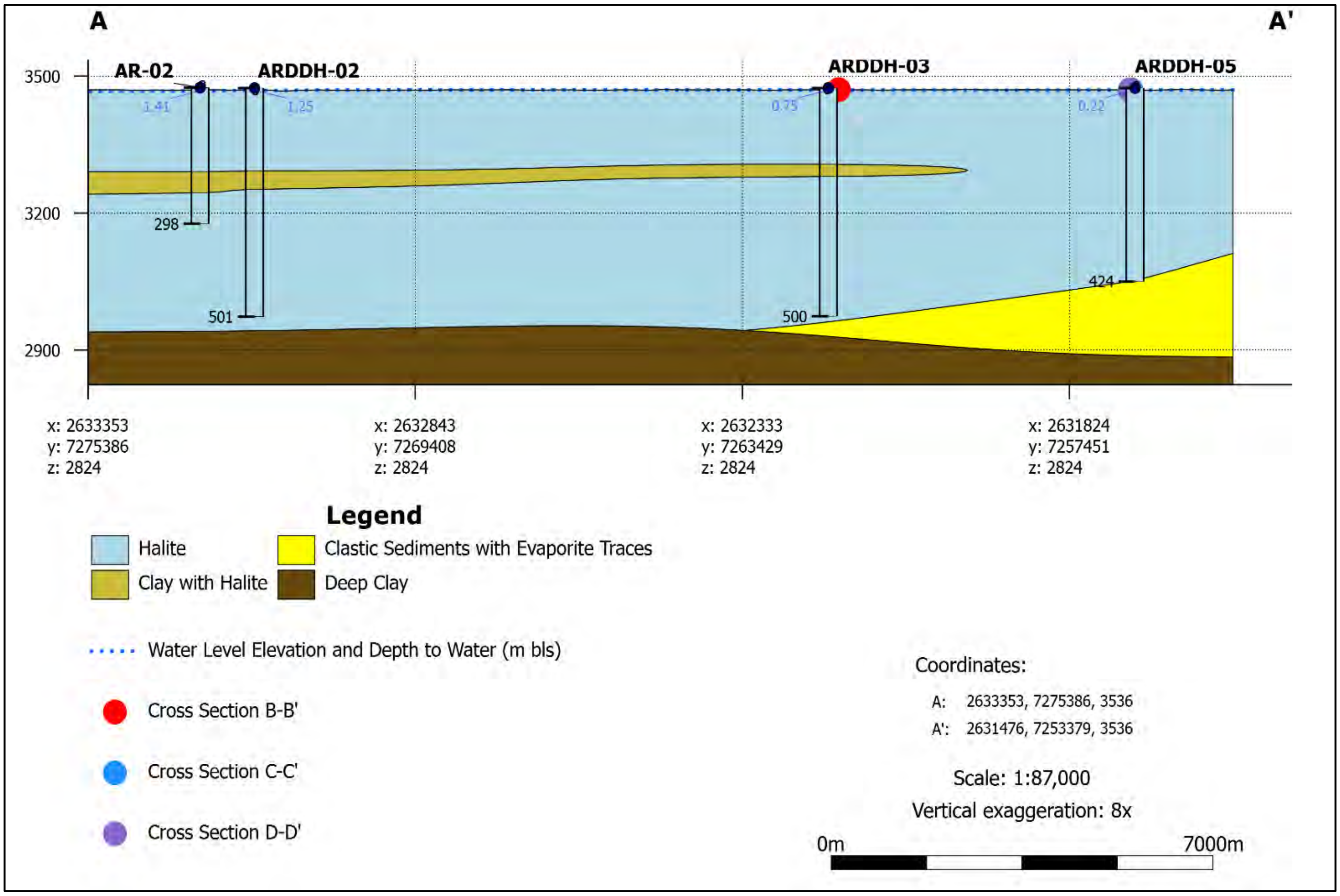
Figure 7-5 includes exploration borehole ARDDH-01 that penetrated the deeper clay unit below the clastics that underlie the halite. The deeper clay unit was penetrated by Argento-03 (Figure 7-6), but in the northern part of the concession the clastic zone is apparently missing. It is interpreted that this unit continues laterally, however it is unknown. The clastic sediments underlying the halite consistently occur in the exploration holes drilled in the southern half of the concessions.

Figure 7-2: Map Showing Locations of The Hydrogeological Sections



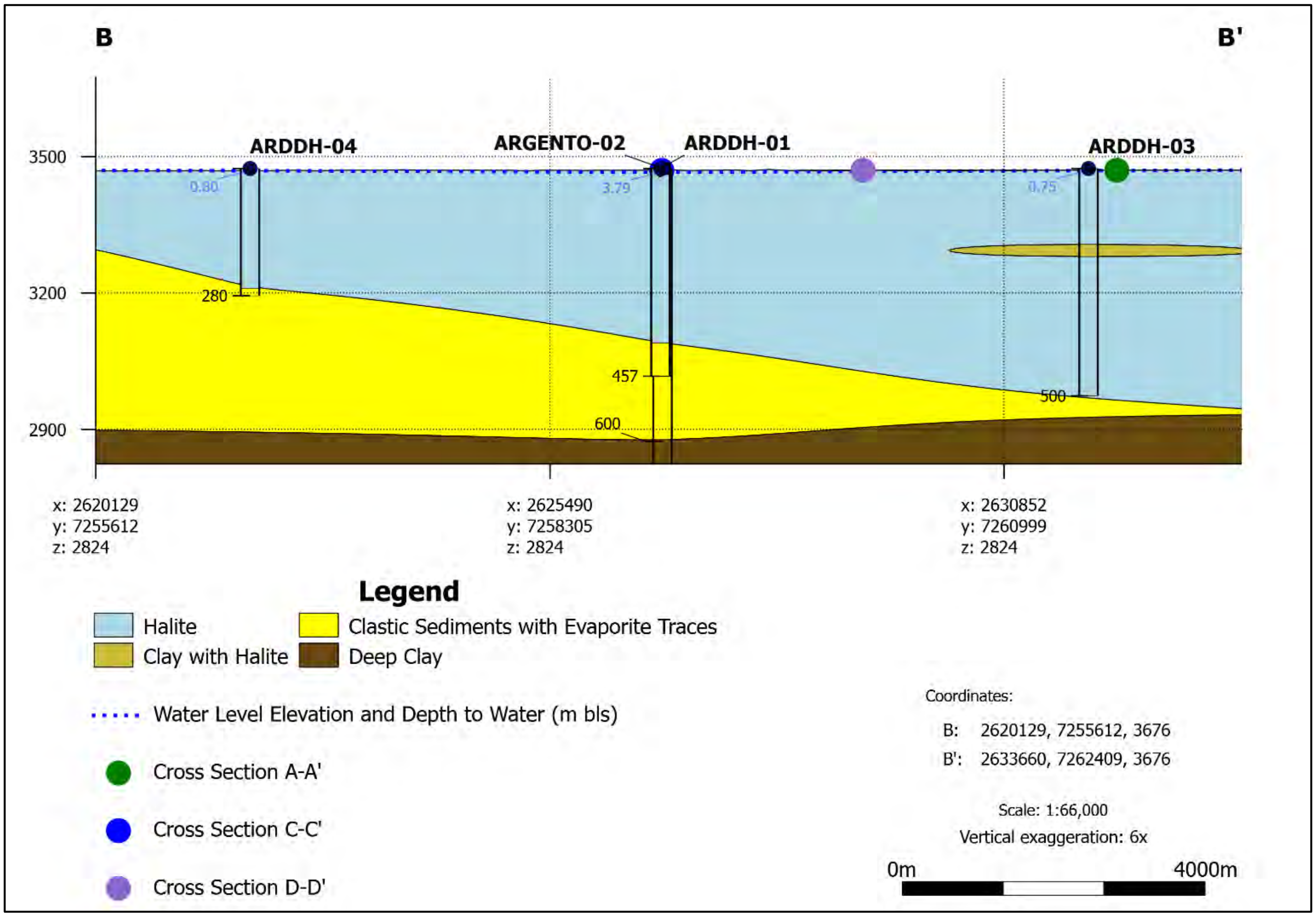
Note: All unit breaks are approximate and uncertain.
Source: Litica, 2024.

Figure 7-3: North-South Hydrogeological Section A-A'



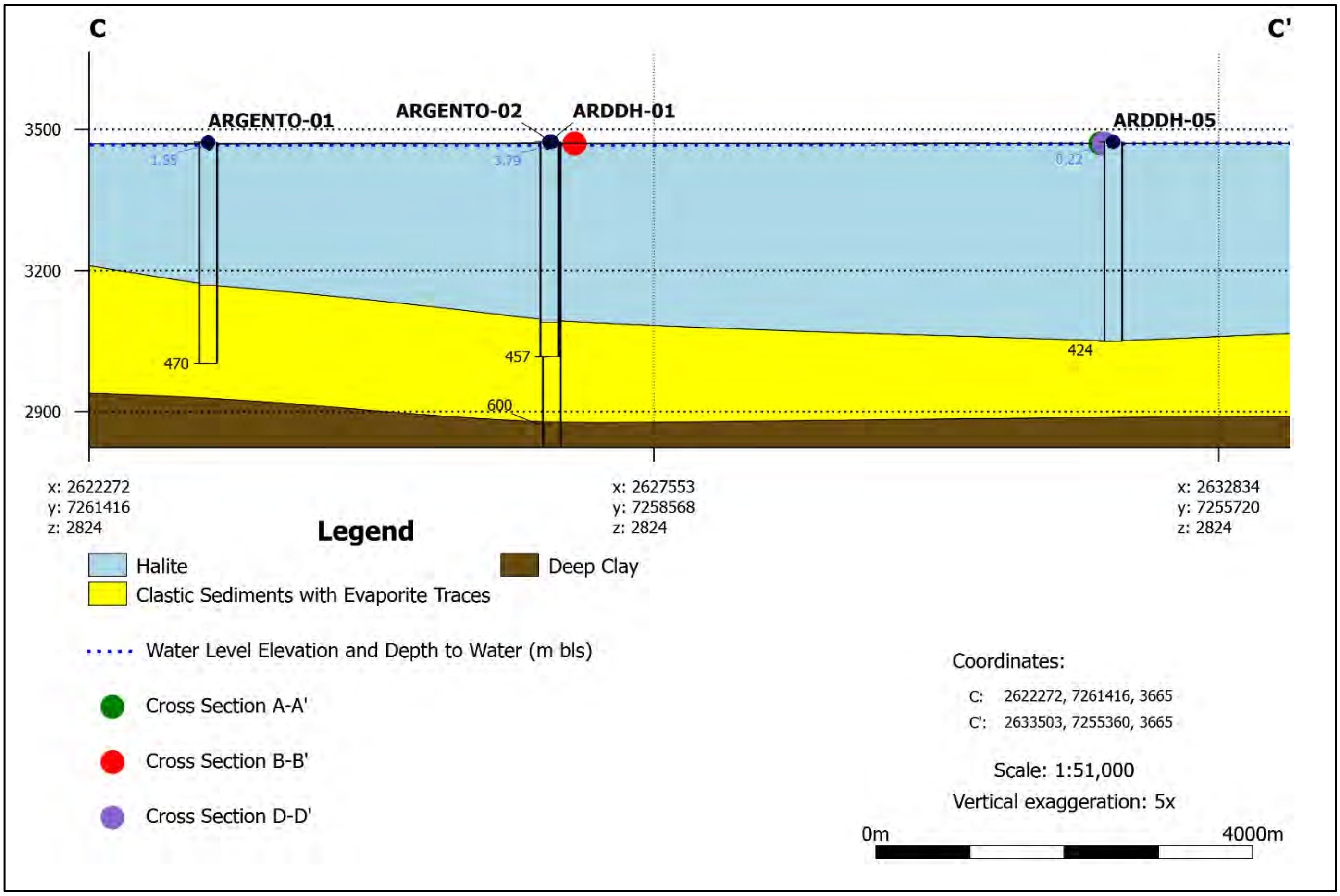
Note: All unit breaks are approximate and uncertain.
Source: Litica, 2024.

Figure 7-4: Southwest-Northeast Hydrogeological Section B-B'



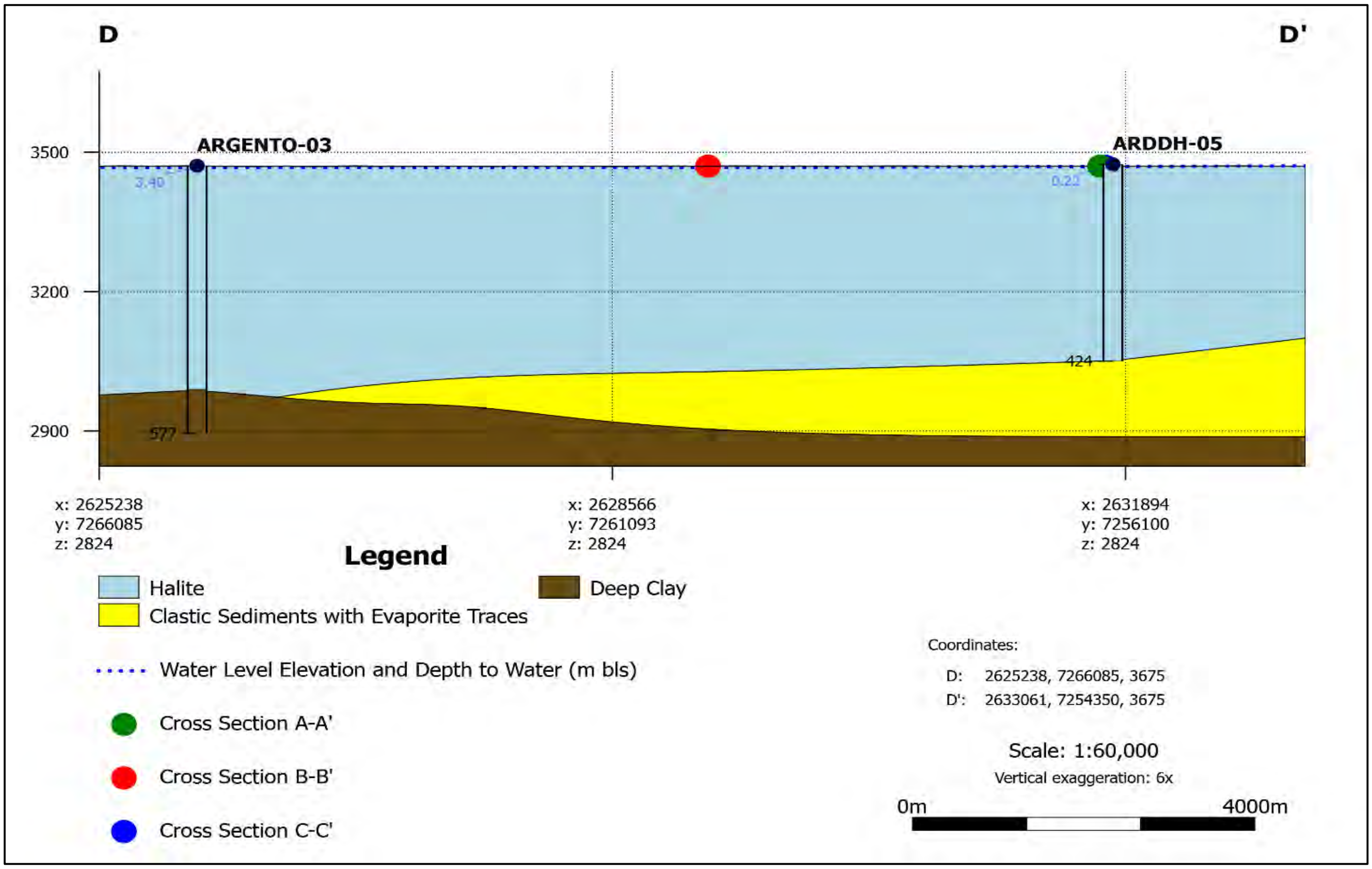
Note: All unit breaks are approximate and uncertain.
Source: Litica, 2024.

Figure 7-5: Northwest-Southeast Hydrogeological Section C-C'



Note: All unit breaks are approximate and uncertain.
Source: Litica, 2024.

Figure 7-6: Northwest-Southeast Hydrogeological Section D-D'

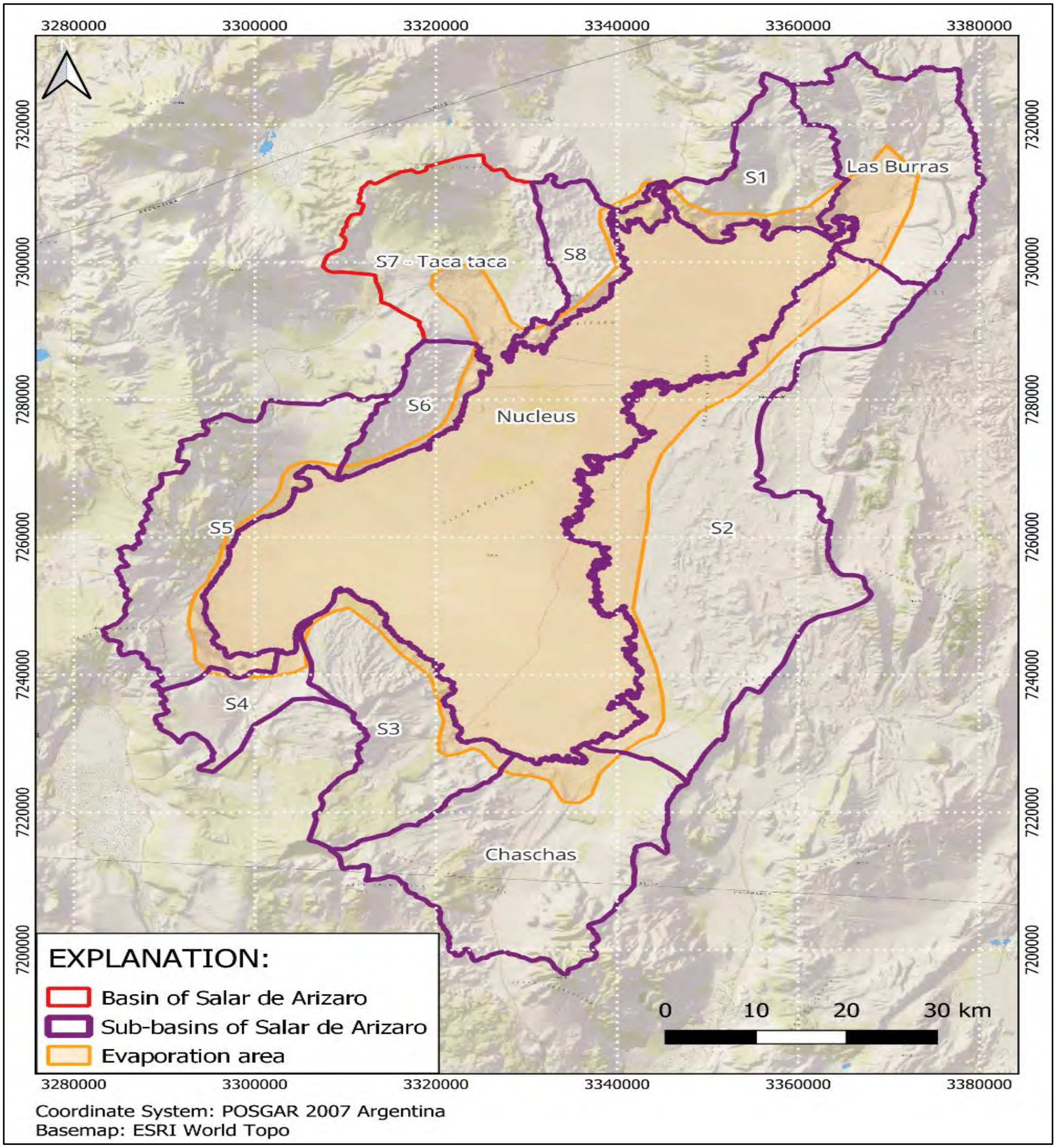


Note: All unit breaks are approximate and uncertain.
Source: Litica, 2024.

7.3 Conceptual Water Balance

The conceptual model for the Salar de Arizaro closed basin assumes that average historical precipitation recharge and evaporation discharge are equal (with the absence of brine extraction). Because the salar is a closed basin, evapotranspiration is the only discharge mechanism for groundwater when considering the basin as a whole. The Taca Taca Salar in the western part of the basin is not considered in the conceptual water balance due to its probable hydrogeological disconnection with the Salar de Arizaro. The Arizaro Basin watershed, sub-basins and evapotranspiration area limits are presented in Figure 7-7.

Figure 7-7: Arizaro Basin and Sub-Basin Limits



Source: Litica, 2024.

Assuming that storage is constant in the basin, the water balance equation is:

Precipitation recharge + Snowmelt recharge = Evaporation Discharge

Precipitation is highly variable in space and time, as well as the amount of infiltration recharge that is associated with it. Aside from differences in the type and scale of atmospheric processes driving precipitation, there are local and regional influences due to topography and wind direction at the time a storm occurs. This effect is exacerbated in areas prone to convective storms, such as the Puna, with short precipitation records. The effect of basin precipitation on recharge estimates is compounded by conceptual uncertainties regarding the processes involved in rainfall infiltration, runoff, evaporation and seepage to the aquifer that lead to the use of empirical "infiltration factors" to compute a preliminary recharge estimate. The infiltration factor is the fraction of the volumetric precipitation on the basin that becomes aquifer recharge. The literature reports infiltration factors ranging from 5 to 20% for semi-arid to arid basins (Hogan et al., 2004). The DGA-DICTUC (DGA et al., 2009) method is used to reduce the recharge range, which divides the basin into direct, lateral and runoff recharge zones, defining infiltration coefficients based on geology and morphology. Snow precipitation and its recharge fraction are at least as uncertain as the liquid precipitation estimate.

On the other hand, the evaporative discharge of the water that reaches the basin fill occurs within a few hundred meters from the salar surface, and concentrates on areas with vegetation, open water and moist soils that do not change much over time. Remote sensing and regional reference values were used to provide estimate potential evaporation rates for open water and reference evapotranspiration rates, which can be used in addition to field characterizations to estimate actual evaporation rates from different soil coverd. The evaporation discharge term of the water balance can be estimated with less uncertainty than the precipitation recharge, therefore, the evaporative discharge is used to provide a primary estimate of recharge, while precipitation and snowmelt potential recharge are used to provide reasonable recharge constraints to the evaporative discharge estimate.

7.3.1 Precipitation Recharge Estimate

Average annual rainfall is approximately 26 mm/y. Snow precipitation water equivalent was roughly estimated as 7 mm/y, from which only the snowmelt, 2 mm/y, is available for recharge, and the rest is lost to sublimation. Thus, the total calculated precipitation on the basin is about 28 mm/y, or 5,500 L/s as a volumetric rate (Table 7-3). Recharge in basins like Salar de Arizaro has been preliminary estimated to range from 5% to 20% of its volumetric precipitation (Hogan et al., 2004); therefore, the initial estimated recharge is likely to be between 270 L/s and 1,100 L/s. Using the DGA method, the range was narrowed between 5.4% and 14%, with a recharge estimate between 300 and 790 L/s.

Table 7-3: Precipitation Estimates for Salar de Arizaro (1981-2020)

Elevation (m asl)			Area	Rainfall	Snow Water Equivalent	Sublimation	Snowmelt	Total Precipitation (Rainfall + Snormelt)	
From	To	Midpoint	km^2	mm/y	mm/y	%	mm/y	mm/y	L/s
3,450	3,550	3,500	2446.5	16.6	0.0	0%	0.0	16.6	1,282
3,550	3,650	3,600	815.6	20.0	0.0	0%	0.0	20.0	515
3,650	3,750	3,700	500.1	23.4	0.0	0%	0.0	23.4	370
3,750	3,850	3,800	439.1	26.8	0.0	0%	0.0	26.8	372
3,850	3,950	3,900	345.5	30.2	0.0	0%	0.0	30.2	330
3,950	4,050	4,000	254.2	33.6	0.0	0%	0.0	33.6	270
4,050	4,150	4,100	239.2	37.0	0.0	0%	0.0	37.0	280
4,150	4,250	4,200	242.5	40.4	0.0	0%	0.0	40.4	310
4,250	4,350	4,300	213.5	43.8	0.0	0%	0.0	43.8	296
4,350	4,450	4,400	175.8	47.2	60.0	60%	24.4	71.6	398
4,450	4,550	4,500	153.4	50.6	63.4	66%	21.8	72.5	351
4,550	4,650	4,600	110.5	54.1	66.8	72%	19.2	73.3	256
4,650	4,750	4,700	65.4	57.5	70.2	78%	15.8	73.3	152
4,750	4,850	4,800	38.7	60.9	73.6	83%	12.4	73.3	90
4,850	4,950	4,900	27.5	64.3	77.0	89%	8.3	72.5	63
4,950	5,050	5,000	20.2	67.7	80.4	95%	4.1	71.8	46
5,050	5,150	5,100	17.4	71.1	83.8	98%	2.0	73.1	40
5,150	5,250	5,200	15.1	74.5	87.2	100%	0.0	74.5	36
5,250	5,350	5,300	8.2	77.9	90.7	100%	0.0	77.9	20
5,350	5,450	5,400	5.6	81.3	94.1	100%	0.0	81.3	14
5,450	5,550	5,500	1.8	84.7	94.1	100%	0.0	84.7	5
5,550	5,650	5,600	0.9	88.1	94.1	100%	0.0	88.1	2
5,650	5,750	5,700	0.5	91.5	94.1	100%	0.0	91.5	1
Total	-	-	**6,138**	-	-	-	-	-	**5,495 (~5,500)**
Weighted Average		**3,790**	-	**26**	**7**	**8%**	**2**	**28**	-
5% of total precipitation (L/s)									**275 (~270)**
20% of total precipitation (L/s)									**1,100 (~1,100)**

Source: Montgomery, 2024.

7.3.2 Evapotranspiration

The result of the analysis with satellite images and characterized evaporation of rates is to estimate the total discharge due to evaporation in the study area, at the seasonal and annual level. The volumetric evaporation rate of each surface coverage was estimated by multiplying each seasonal effective evaporation rate by the corresponding area. Total value corresponds to the sum of discharges from all coverage:

$$Q_{evap}^{j} = \sum_{i} E_{eff}^{i,j} * A^{i,j}$$

Where Q_{evap}^{j} represents the volumetric evaporation or evapotranspiration rate for season *j*, $E_{Eff}^{i,j}$ the effective evaporation rate for surface cover *i* during season *j*, and $A^{i,j}$ the area of surface cover *i* during season *j*.

Seasonal and annual volumetric evaporative discharge estimates are presented in Table 7-4. The first three columns show the surface cover class areas estimated from the satellite image analysis, which are in each scenario multiplied by the corresponding effective evaporation rates to evaluate volumetric discharge.

Table 7-4: Evaporative Discharge Estimates (2013-2020)

Surface Cover	Area	Potential Rate	Lower Estimates		Medium Estimates		Upper Estimates	
	km²	mm/day	mm/day	L/s	mm/day	L/s	mm/day	L/s
Summer								
Vegetation	3.28	7.6	2.18	83	2.52	96	2.87	109
Water	0.00	5.0	4.51	0	4.01	0	3.51	0
Low Moisture Soil	146.92	5.0	0.00	6	0.00	5	0.00	5
Medium Moisture Soil	28.37	5.0	0.02	7	0.05	17	0.08	27
High Moisture Soil	24.88	5.0	1.29	370	2.31	666	3.34	963
Total	**203.5**			**466**		**785**		**1,104**
Fall								
Vegetation	5.90	4.9	1.00	68	1.22	84	1.45	99
Water	0.04	3.5	3.15	1	2.80	1	2.45	1
Low Moisture Soil	319.54	3.5	0.00	8	0.00	7	0.00	6
Medium Moisture Soil	44.52	3.5	0.01	7	0.03	17	0.05	27
High Moisture Soil	34.23	3.5	0.80	317	1.44	570	2.08	824
Total	**404.2**			**402**		**679**		**957**
Winter								
Vegetation	2.80	4.9	0.74	24	1.01	33	1.28	41
Water	0.20	3.3	3.00	7	2.66	6	2.33	5
Low Moisture Soil	333.70	3.3	0.00	9	0.00	8	0.00	7
Medium Moisture Soil	50.78	3.3	0.01	8	0.03	20	0.05	31
High Moisture Soil	32.99	3.3	0.83	315	1.49	567	2.15	820
Total	**420.5**			**363**		**634**		**904**
Spring								
Vegetation	2.80	4.9	1.69	44	2.09	54	2.48	65
Water	0.20	3.3	4.86	0	4.32	0	3.78	0
Low Moisture Soil	333.70	3.3	0.00	6	0.00	5	0.00	5
Medium Moisture Soil	50.78	3.3	0.02	7	0.05	17	0.08	27

Surface Cover	Area	Potential Rate	Lower Estimates		Medium Estimates		Upper Estimates	
	km²	mm/day	mm/day	L/s	mm/day	L/s	mm/day	L/s
High Moisture Soil	32.99	3.3	1.27	380	2.28	684	3.30	988
Total	**420.5**			**437**		**761**		**1,084**
Average	**308.1**			**417**		**715**		**1,012**

Source: Montgomery, 2024.

The evaporation discharge estimated from the 2013-2020 satellite images is 417 L/s for the low evaporation scenario, 715 for the medium evaporation scenario, and 1,012 for the high evaporation scenario. These values are then adjusted by the 0.72 long-term factor to obtain the long-term evaporation estimates: 300 L/s, 515 L/s and 730 L/s for the low, medium, and high evaporation scenarios (Table 7-5).

Table 7-5: Evaporative Discharge Summary

Parameter	Units	Scenarios		
		Low	Medium	High
Evaporation Discharge (2014-2019)	(L/s)	417	715	1,012
Long-term precipitation factor	(%)	72%	72%	72%
Adjusted long-term evaporation discharge	(L/s)	300	515	730
% of liquid precipitation[1]	(%)	8.1%	13.9%	19.7%
% of precipitation[2]	(%)	7.6%	13.0%	18.4%

Notes:
1. An Estimated volumetric value for liquid precipitation = 5,133 L/s.
2. Estimated volumetric value for total precipitation (rainfall + snowmelt) = 5,500 L/s.

Source: Montgomery & Associates, 2024.

7.3.3 Surface Water

Perennial surface runoff in the Puna is rare, and in the Salar de Arizaro, perennial streams do not represent a significant inflow, however summer storms can cause brief floods and pulses of groundwater recharge when arriving to alluvial fans or salar surfaces. The objectives of this water balance do not take into account extreme flood events.

7.3.4 Sub-Basin Recharge Estimates

To estimate recharge in the sub-basins, the DGA-DICTUC-Aquaterra method was employed (DGA-DIHA PUC, 2009 and Aquaterra, 2013). This method utilizes precipitation data, morphological parameters of the basin, and infiltration characteristics to determine potential recharge in the sub-basins under average conditions. Precipitation was spatially distributed respecting the spatial gradient of precipitation from the ERA5 atmospheric reanalysis (Hersbach, 2020). This analysis determines low, medium, and high basin recharge estimates of 290, 524 and 760 L/s, respectively.

Due to anomalies in the sub-basin recharge values, the proportion of rainfall that globally converts into recharge was used. This ratio was initially 7.6%, 13.0%, and 18.4% of precipitation in the low, medium, and high scenarios. Additionally, recharge in the salar nucleus was determined to be 5% of the total precipitation over this surface based on verified infiltration characteristics in the field. Consequently, when excluding this area, the proportion of rainfall converted into recharge varies between 5.3%, 10.7%, and 16.0% in the low, medium, and high scenarios, respectively.

It is noted that there is agreement between the values of evaporation (ranging from 300 to 730 L/s) and recharge (ranging from 290 to 760 L/s), which is common in basins of the Puna. The sub-basins recharge results obtained are presented in Table 7-6, where it is identified that the largest recharge is in sub-basin 5 and the lowest is found in sub-basin 4. The recharge values for the Chaschas sub-basin vary between 46 and 137 L/s, with an average value of 91 L/s.

Table 7-6: Sub-Basin Recharge Results

Sub-Basin Recharge Estimate (L/s)				
Sub-basin	**Total Precipitation [1]**	**Low [2]**	**Medium[2]**	**High [2]**
Salar nucleus	1100.8	55	55	55
S1	308.3	16	33	49
S2	712.6	38	76	114
S3	451.5	24	48	72
S4	160.1	9	17	26
S5	795.9	42	85	128
S6	209.0	11	22	34
S8	206.9	11	22	33
Chascha	851.7	46	91	137
Las Burras	698.7	37	75	112
Basin Recharge	**5,500**	**290**	**524**	**760**

Notes:
1. Total precipitation (rainfall + snowmelt) = 5,500 L/s.
2. Sub-basin Estimated values in L/s.

Source: Montgomery & Associates, 2023.

7.3.5 Water Balance Summary

The following elements can be summarized regarding the water balance and recharge estimate:

- Liquid and solid (snowmelt) precipitation in the Salar de Arizaro basin is estimated to be about 28 mm/y, or as a volumetric rate, 5,500 L/s. Using 5.4% to 14% of the annual volumetric precipitation, an estimated range of precipitation recharge is likely between 300 L/s to 790 L/s.
- Low, medium, and high evaporation estimates for Salar de Arizaro basin are estimated to be 300 L/s, 515 L/s and 730 L/s, respectively. The higher evaporation estimate (730 L/s) is slightly lower compared to the upper bound of the precipitation recharge estimate (790 L/s). In addition, the lower bound of the precipitation recharge estimate (300 L/s) is equivalent compared to the lower evaporation estimate (~300 L/s).
- The DGA-DICTUC method was used to estimate recharge within the distinct sub-basins of the Arizaro Basin watershed. The intersection of these bounds with the evaporative discharge estimate provides an approximate range for studied sub-basin recharge; a total recharge value of 524 L/s was obtained for the medium scenario which is assumed to be representative of average climatic conditions.

7.4 Mineralization

The mineralization for the project consists of a lithium-enriched brine, generally below 190 m bls, that is contained within the pore spaces of the basin-fill sedimentary strata in the salar basin. Also, with this deep brine, boron and potassium enrichment may be considered as having future potential for economic extraction. The mineralization of the brine has occurred over a long period of time via evapo-concentration in the Salar, and the near-surface portion is believed to be diluted by precipitation and freshwater recharge. Laterally, the brine is continuous throughout the mine concessions given the depositional environment and topographical low point where evapo-concentration occurs.

Based on the exploration to date within the Project concessions, the aquifer system is a lithium-enriched brine with generally consistent grades that are higher at depth. Approximate average lithium concentration in undiluted brine below 190 m ranges from about 200 – 360 mg/L, with elevated values in the southeast portion of the property below 110 m bls (exceeding 500 mg/L with depth).

The boundaries of the mineralization are suspected to be the basin hard rock, fault-bounded boundaries, although some lithium-enriched brine may be contained in the fractures and/or pores of the rocks that form the basin boundary. Aside from lithium, the distribution and chemical composition of the brine in the entire salar sediments is not currently known, even though this type of information exists for the Lithium Chile concessions.

8 DEPOSIT TYPES

The deposit type corresponds to a brine aquifer within a salar basin.

8.1 Conceptual Model of Salar Basins

The conceptual model for salar basins, and associated brine aquifer, is based on exploration and studies of similar salar basins in Chile, Argentina, and Bolivia, as well as on information from the recent exploration drilling and testing. Salar basin locations and basin depths are typically structurally controlled but may be influenced by volcanism that may alter drainage patterns. Basin-fill deposits within salar basins typically contain bedded evaporite deposits, together with thin to thickly bedded low-permeability lacustrine clays. Coarser-grained, higher permeability deposits associated with active alluvial fans can typically be observed along the edges of the salar. Similar alluvial fan deposits, associated with ancient drainages, may occur buried in the basin-fill deposits.

Salar basins are characterized by closed topography and internal drainage. Typically, no significant amount of groundwater discharges from these basins as underflow. Effectively, all groundwater discharge that occurs in the basin is via evapotranspiration. All surface water that flows into the basin is either evaporated directly or enters the groundwater circulation system and is evaporated at a later time. Water levels tend to be relatively shallow in the flat part of the salar.

8.2 Conceptual Model of The Salar de Arizaro

Based on the available information, Salar de Arizaro is a mature salar, and one of the larger salars in the Argentinean altiplano. A thick halite core exists in the basin with underlying clastic sediments, forming the basis for the ongoing exploration program. Basin margins are interpreted to be fault controlled. The principal sources of water entering the project area are from groundwater coming into the basin from the basin margins. Some groundwater inflow from natural recharge along the mountain fronts via alluvial fans is also believed to exist. In both cases, there appears to be limited mixing of the freshwater and brine in the basin due to density differences, although the mixing is believed to be more pronounced in the shallowest portion of the aquifer. As such, the freshwater entering the Project tends to stay in the upper part of the aquifer system on the edges of the basin, without moving to the central deep portion of the salar. These freshwater discharge areas tend to support altiplanic vegetation, especially along the margin.

9 EXPLORATION

9.1 2019 Resampling

On May 3, 2019, NORLAB (2019a) conducted a resampling of previously drilled well AR-01 (Aminco 2017b). This work was requested by Lithium Chile Inc. prior to final purchase of the majority stake in the project from Argentina Lithium. NORLAB reported taking three samples from well AR-01; document control was maintained by Carlos Galli of NORLAB, which is a laboratory independent of the Issuer. These three samples were analyzed for common constituents. Field measurements are given in Table 9-1.

Table 9-1: Field Measurements for Samples AR19-003, -004, and -005

Sample ID	pH	Temperature (°C)	Density (g/cm^3)	Date and Hour
Ar19-003	5-6	16°	1.225	05/03/2019 12:53
Ar19-004	4-5	16°	1.225	05/03/2019 17:14
Ar19-005	4-5	16°	1.225	05/03/2019 17:20

Reported lithium concentration ranged from 864 to 871 mg/L.

Later in May 2019, NORLAB (2019b) returned to take additional near-surface samples. Field measurements for these samples are given in Table 9-2.

Table 9-2: Field Measurements for Samples AR19-006, -007, -008, and -009

Sample ID	pH	Temperature (°C)	Density (g/cm^3)	Date and hour
Ar19-006	5-6	12,5°	1.220	05/23/2019 15:53
Ar19-007	4-5	12°	1.225	05/23/2019 17:00
Ar19-008	4-5	10°	1.225	05/24/2019 8:20
Ar19-009	4-5	9°	1.225	05/24/2019 9:48

Reported lithium concentrations ranged from 778 to 868 mg/L.

Although these two sampling programs have similar results and appear to confirm the reported results, the QP is not convinced that these samples are representative of the aquifer because all other samples obtained from AR-01 were all less than 300 mg/L. The large lithium concentrations may be the result of near-surface evapoconcentration. Therefore, these values were not considered in the resource estimate.

9.2 Passive Seismic Survey

Argentum Lithium S.A. contracted Geoservicios to conduct a passive seismic survey on part of Salar de Arizaro during the period from December 01 through December 09, 2022 (Geoservicios, 2022). Passive seismic tomography is a geophysical technique that measures the propagation of seismic waves inside the Earth to infer a velocity model and interpret existing internal properties and/or anomalies. These velocity contrasts may correspond to lithological differences. The average maximum depth of these investigations is 400 meters, but they can reach a maximum of 1,000 meters if detailed data processing is achieved (Geoservicios, 2022).

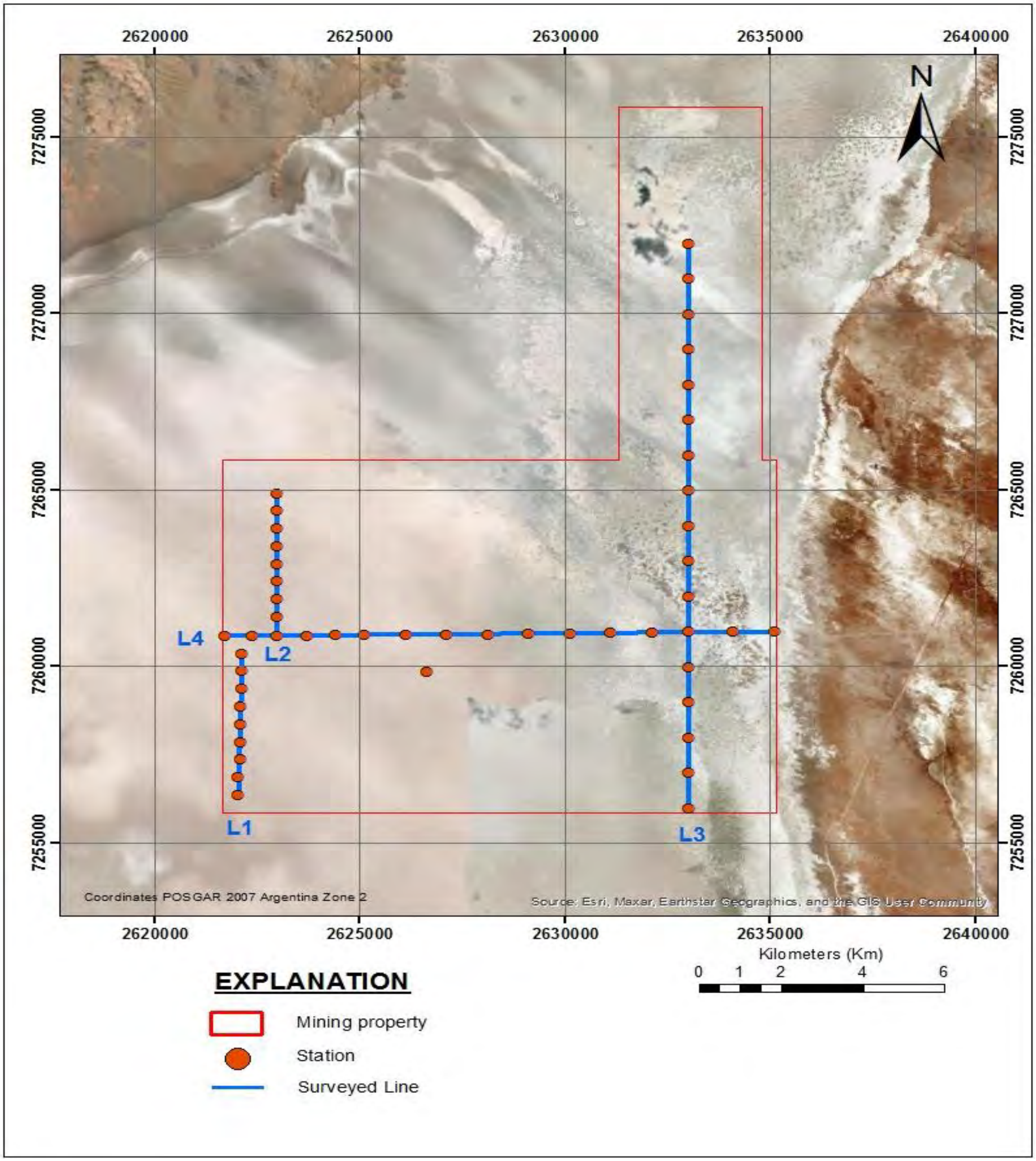
The objective of the passive seismic survey was to characterize and identify geophysical indicators of resources below the surface and also estimate the depth of the basement (Geoservicios, 2022). The horizontal-to-vertical spectral ratio (HVSR) method was used. This method allows for the characterization and zonation of the subsoil using the frequency differences that are related to the various lithologies present in a geological environment.

The survey included data acquisition along three north-south and one east-west trending lines for a total of 50 stations (Figure 9-1). A location map showing the passive seismicity survey sites and transects is shown in Figure 9-1. The distance between each measurement station varies between 500 and 1000 meters. To analyze the data, an S-wave velocity inversion model (Vs) and a depth projection model of HVSR curves were performed. The results are visualized in velocity profiles of S waves (Vs) of variable depth and moderate resolution (Figure 9-2 to Figure 9-5; Geoservicios, 2022). Interpreted results of the survey are shown on Figure 9-2 through Figure 9-5.

Inspection of the transect line sections indicates that at shallow levels, less than 100 meters, low Vs values are related to the presence of a relatively porous halite, with interbedded sand and silt, or a greater abundance or fine sediments (silt, clay).

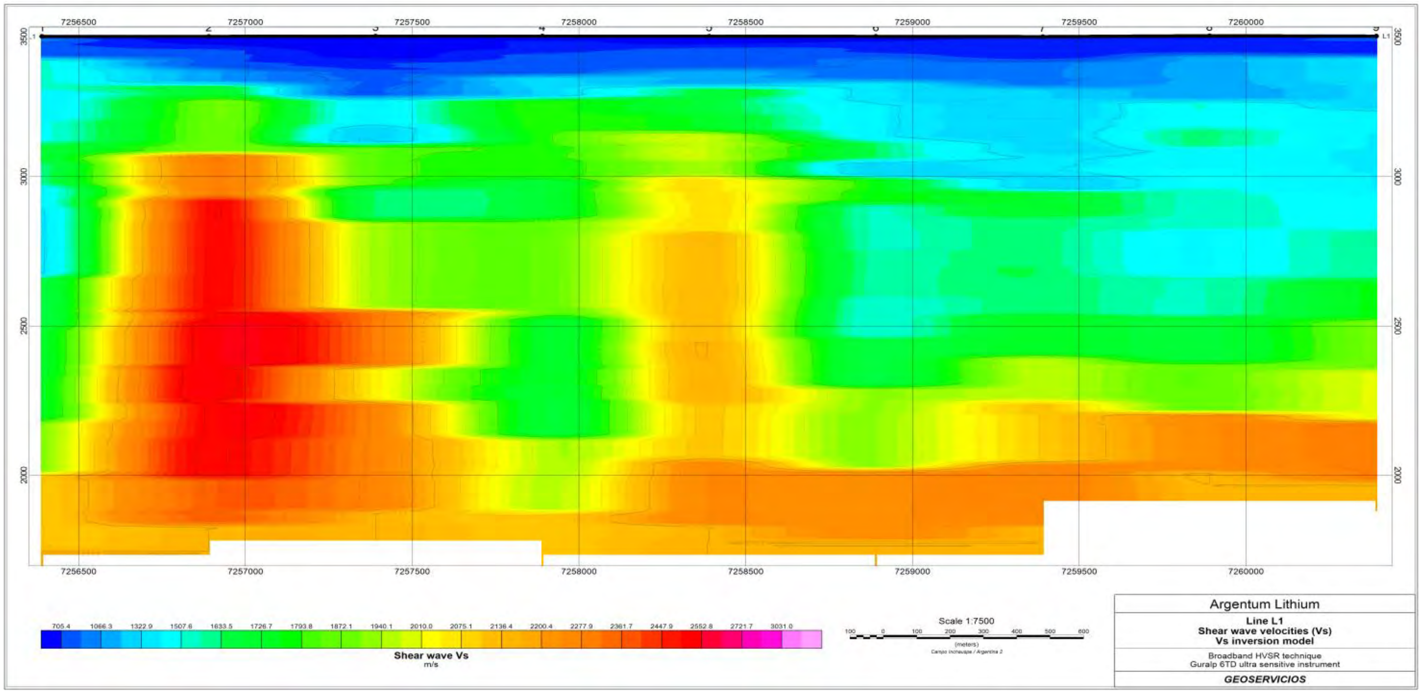
The velocities in profiles 1 and 2 (Figure 9-2 and Figure 9-3) are generally in the range of 1,500 to 2,500 m/s, which corresponds to halite with different degrees of compaction and porosity, interbedded sediments, and saturated conditions. Higher velocity values, as observed in transect 3 (Figure 9-4), could be associated with less permeable basement rock and are found at depths of approximately 1,000 meters (Geoservicios, 2022).

Figure 9-1: Location Map of Passive Seismic Stations and Survey



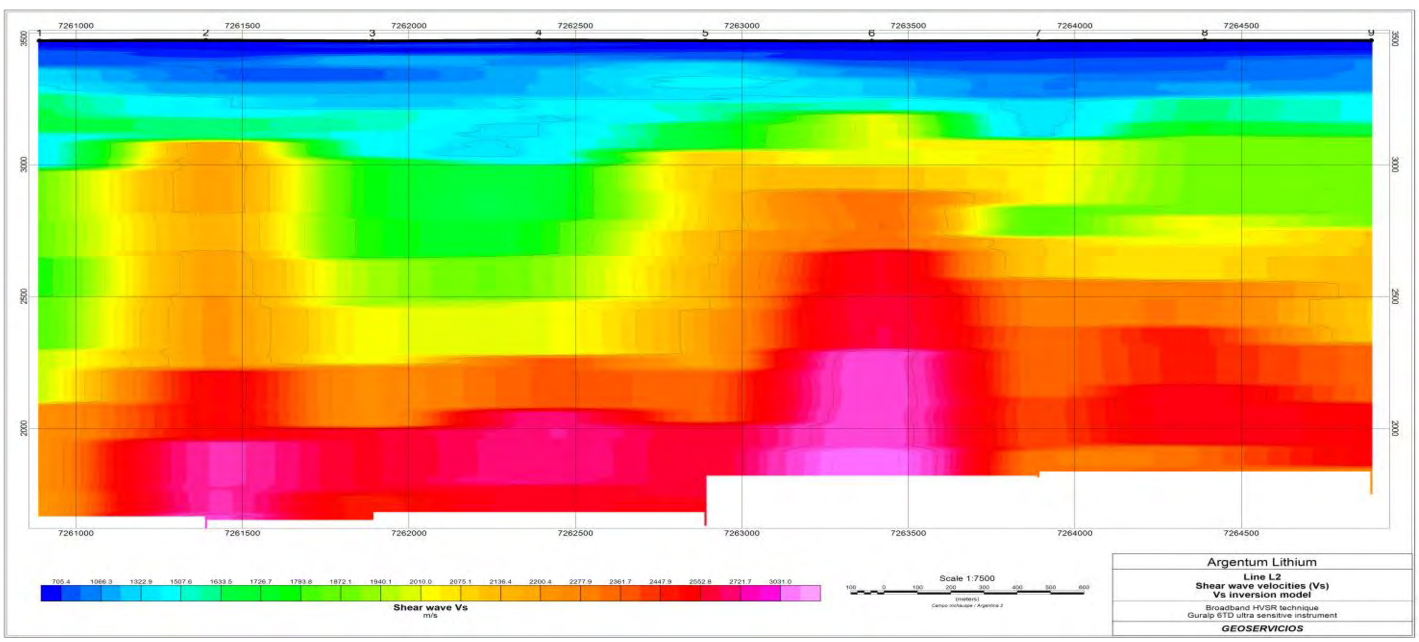
Source: Geoservicios, 2022.

Figure 9-2: Transect Line 1 of Shear Wave Velocities (Vs) Inversion Model



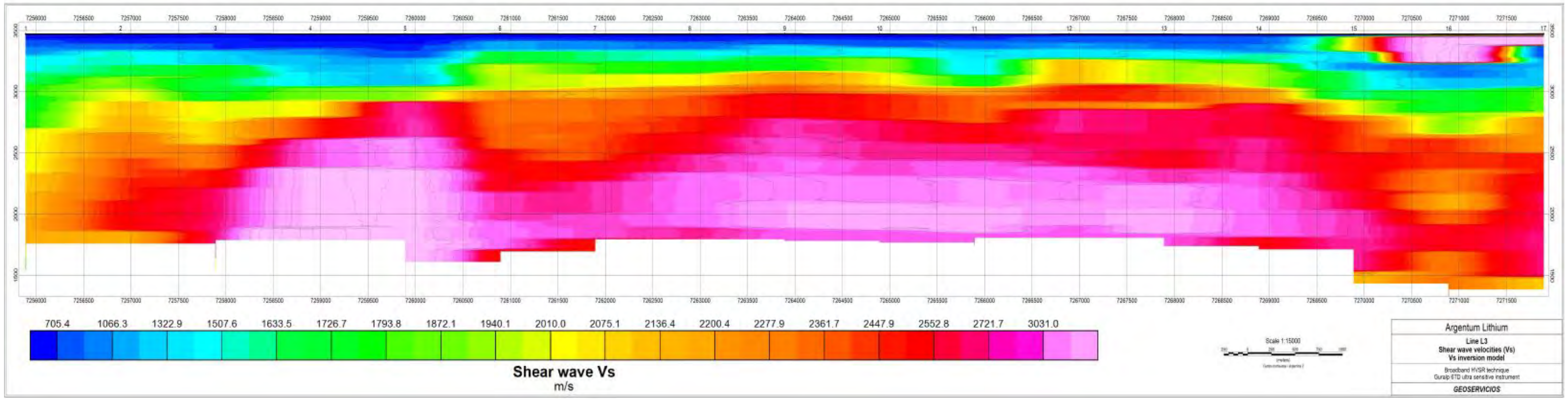
Source: Geoservicios, 2022.

Figure 9-3: Transect Line 2 of Shear Wave Velocities (Vs) Inversion Model



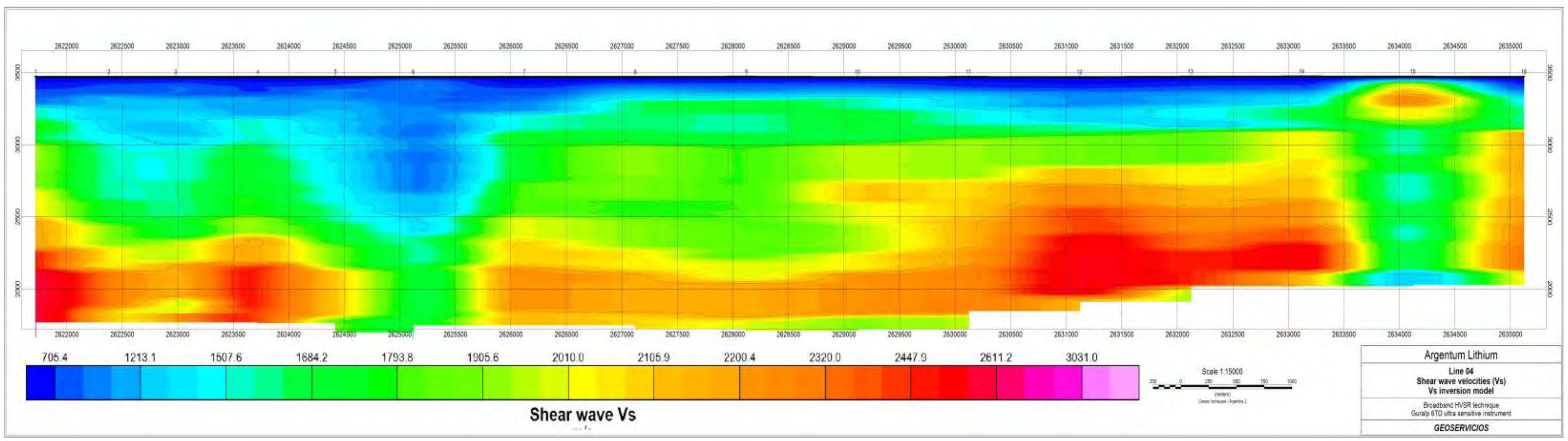
Source: Geoservicios, 2022.

Figure 9-4: Transect Line 3 of Shear Wave Velocities (Vs) Inversion Model



Source: Geoservicios, 2022.

Figure 9-5: Transect Line 4 of Shear Wave Velocities (Vs) Inversion Model



Source: Geoservicios, 2022.

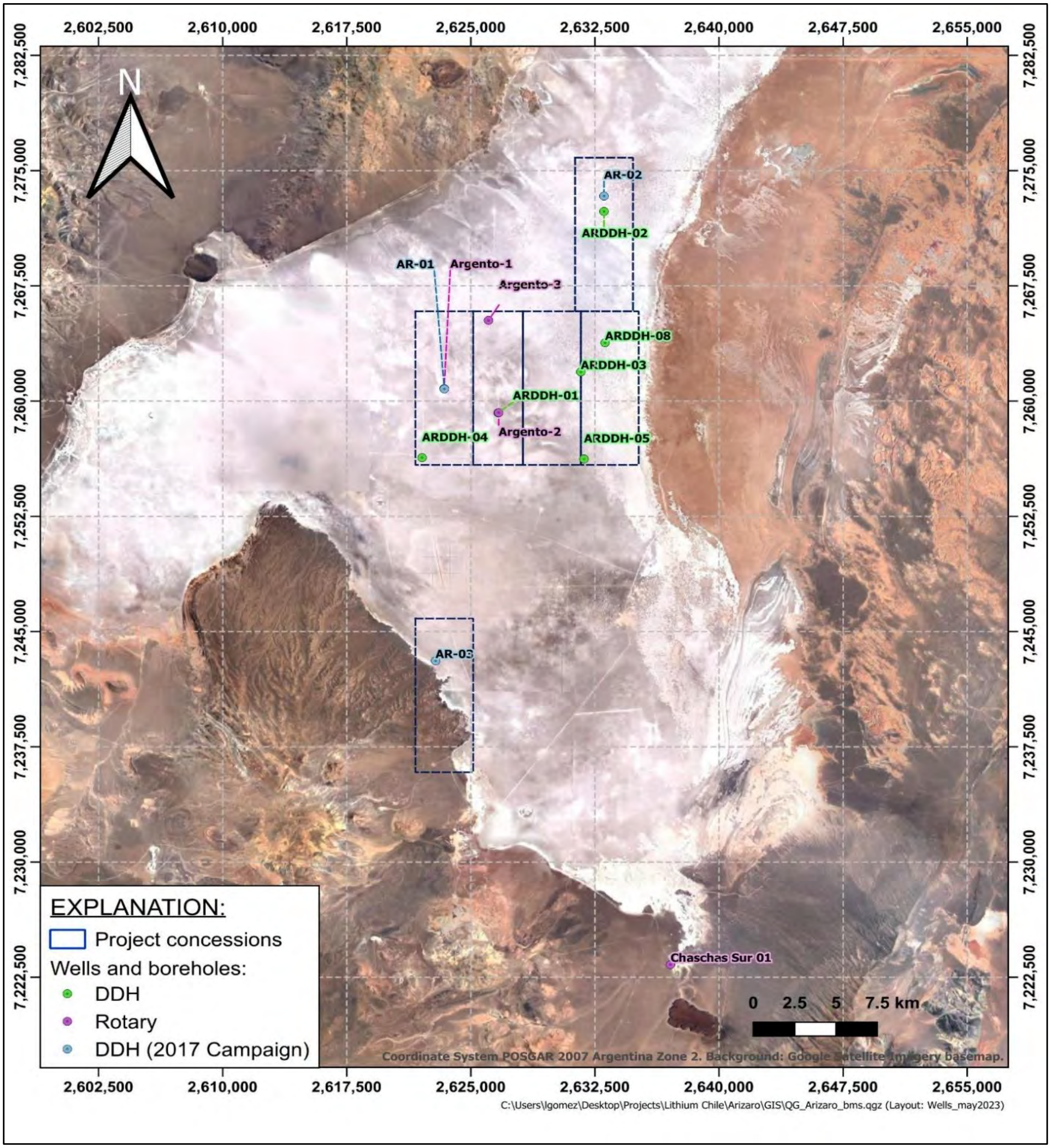
10 DRILLING

Preliminary results of 2021, 2022 and 2023 drilling and testing programs are being reported as of the date of this report; exploration sampling activities are still ongoing. The current exploration well program is designed to obtain aquifer hydraulic parameters, help support development a conceptual hydrogeological model, and determine the potential for a lithium resource within the mining concessions. Locations for the exploration wells currently drilled are shown in Figure 10-1, and location coordinates and depths for wells drilled from 2021 to 2023 are given in Table 10-1. Wells were either drilled as pumpable wells using rotary drilling methods, or as smaller diameter boreholes using DDH methods. All boreholes and wells are vertical, and depths drilled represent true thicknesses.

Table 10-1: Location and Depth Drilled for Years 2021, 2022, and 2023 Exploration Wells

Well	Drilling Method	Northing1 (m, POSGAR 94)	Easting1 (m, POSGAR 94)	Total Depth Drilled (m)
Argento-01	Rotary	7,260,821	2,623,387	470
Argento-02	Rotary	7,259,244	2,626,683	650
Argento-03	Rotary	7,265,262	2,626,069	577
ARDDH-01	DDH	7,259,244	2,626,653	457
ARDDH-02	DDH	7,272,399	2,633,102	501
ARDDH-03	DDH	7,261,783	2,631,593	500
ARDDH-04	DDH	7,256,325	2,622,052	280
ARDDH-05	DDH	7,256,206	2,631,750	424
ARDDH-08	DDH	7,263,802	2,633,114	603
CHASCHAS SUR 01	Rotary	7,223,330	2,637063	120

Figure 10-1: Exploration Well Location Map



Source: Montgomery, 2024.

10.1 Argento-01

Drilling activities for exploration well Argento-01 started on September 05, 2021, reaching a depth of 470 m bls on November 28, 2021. Drilling was done using conventional circulation mud rotary methods. Drilling fluid was a polymer mud mixed with brine. The time to drill one meter was recorded to monitor penetration rate. Drill cuttings were described by Andina personnel in the field and were reviewed by M&A hydrogeologists in Salta. Unwashed and washed drill cuttings were described and stored in labeled plastic cutting boxes. A summary of lithologic descriptions for drill cuttings samples obtained during drilling at exploration well are provided in Table 10-2. Construction schematic for well Argento-01 is shown on Figure 10-3.

Table 10-2: Summary of Lithologic Descriptions for Drill Cutting Samples

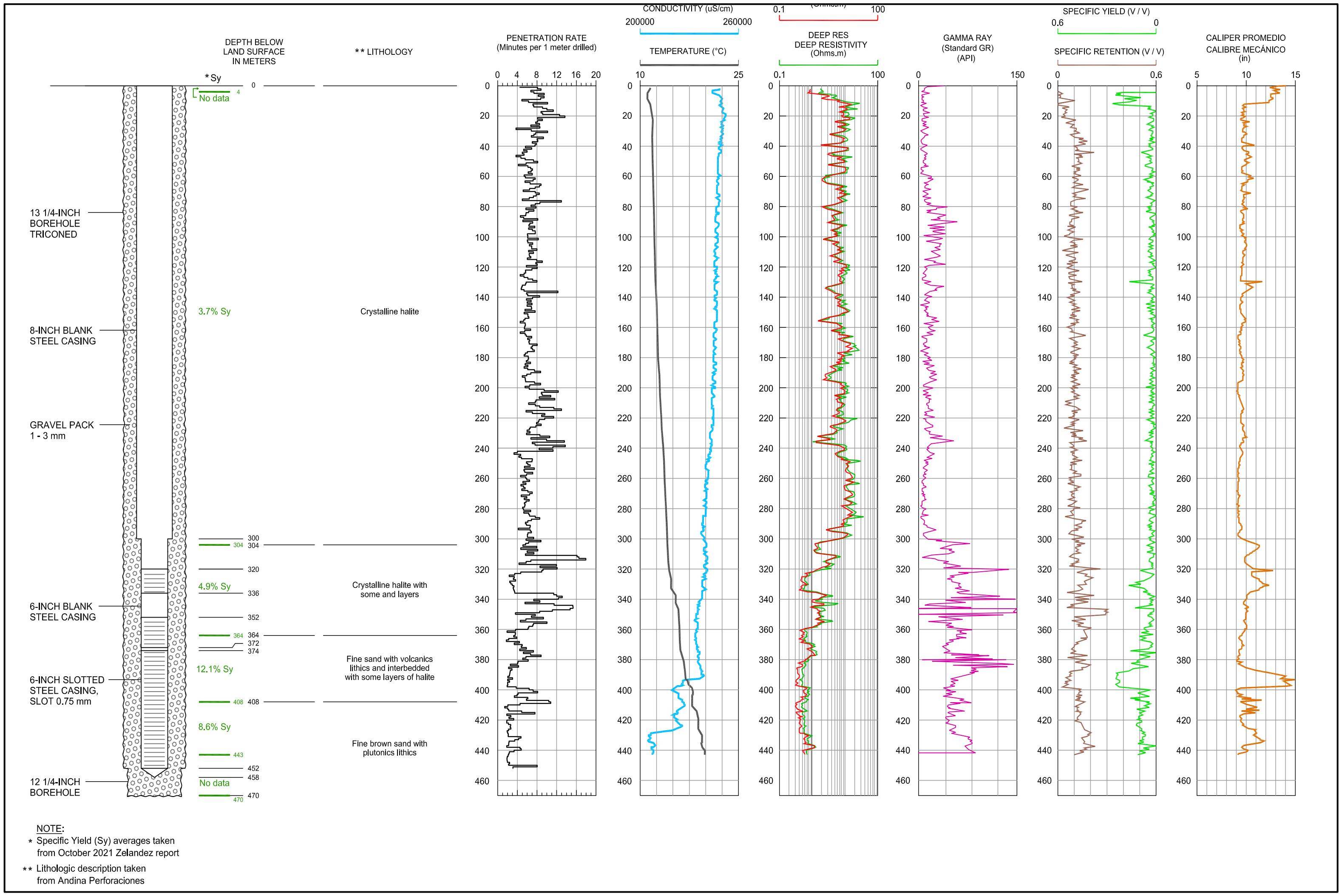
From (m bls)	To (m bls)	Summary Log
0	304	Crystalline halite
304	364	Crystalline halite with some sand interbeds
364	408	Fine sand with volcaniclastics and interbedded with halite
408	470	Fine brown sand

Example of drill cuttings obtained and used to identify the hydrogeologic units are shown on Figure 10-2.

Figure 10-2: Example of Drill Cuttings from Exploration Well Argento-01

Source: Lithium Chile, 2021.

Figure 10-3: Well Schematic Diagram for Exploration Well Argento-01



Source: Montgomery, 2021.

The following represents a brief summary of the construction of exploration Well Argento-01:

- The 8½-inch diameter pilot borehole was drilled from land surface to 470 m bls. Once drilled to total depth the borehole was reamed with 13 1/4-inch from land surface to 452 m and then reamed to 12 1/4-inch to total depth.
- Geophysical surveys were conducted after the pilot borehole drilling was completed. The surveys were performed by Zelandez Services Argentina, S.R.L. (Zelandez, 2021), a consulting firm based in Salta, Argentina. Geophysical logs performed by Zelandez included mechanical caliper, spectral gamma ray, short-normal resistivity, long-normal resistivity, electrical conductivity, temperature, and borehole magnetic resonance (BMR). Results are shown on Figure 10-2 and are detailed later in the section.
- Once drilling was completed, an 8-inch blank and screened, galvanized steel casing was installed (with a slot size of 0.75 millimeters (mm)) from land surface to 458 m bls. Perforated intervals were installed from 320 to 336 m bls, 352 to 372 m bls, and from 374 to 452 m bls. Blank casing intervals were set from 0 to 320 m bls, 336 to 352 m bls, and from 372 to 374 m bls.
- Gravel pack (1-3 mm diameter) was installed in the annular space surrounding the well screen from 0 to 470 m bls.

Following gravel packing, the polymer mud was also broken-down using 400 liters of sodium hypochlorite solution and displaced with brine injection. No time was recorded during hypochlorite solution injection, but the well was allowed to rest for 36 hours after emplacement of sodium chloride mixture. The well was developed over the entire screened interval using hydrojet, airlift and pumping methods to remove drilling mud and fine sediments from the gravel pack.

10.1.1 Aquifer Testing and Analysis

Pumping tests were conducted at exploration well Argento-01 in December 2021, and included step-discharge and constant-discharge tests. Pumping test equipment was provided by drilling and testing contractor Andina Perforaciones, a local drilling contractor based in Salta, Argentina.

The step-discharge test was conducted to evaluate drawdown and specific capacity at different pumping rates for determination of sustainable pumping capacity of the well, both for the constant-discharge tests, and for selection of long-term sustainable pumping rate. The constant-discharge test was conducted to further evaluate sustainable yield and also to provide data to estimate aquifer hydraulic parameters. Graphs are shown on Figure 10-3 and Figure 10-4. Brine samples were obtained during the constant-discharge test and were submitted for laboratory chemical analysis.

On December 22, 2021, a step-discharge test was conducted at the well to evaluate drawdown and well efficiency at different pumping rates for the determination of sustainable pumping capacity. Pumping for the step-discharge test commenced at 00:00. Average pumping rate, drawdown and computed specific capacity for each 180-minute step are summarized in Table 10-3. The step-discharge test consisted of three 180-minute steps; pre-pumping water level was at a depth of 6.62 m below the measuring point.

Table 10-3: Summary of The Step-Discharge Test at Exploration Well Argento-01

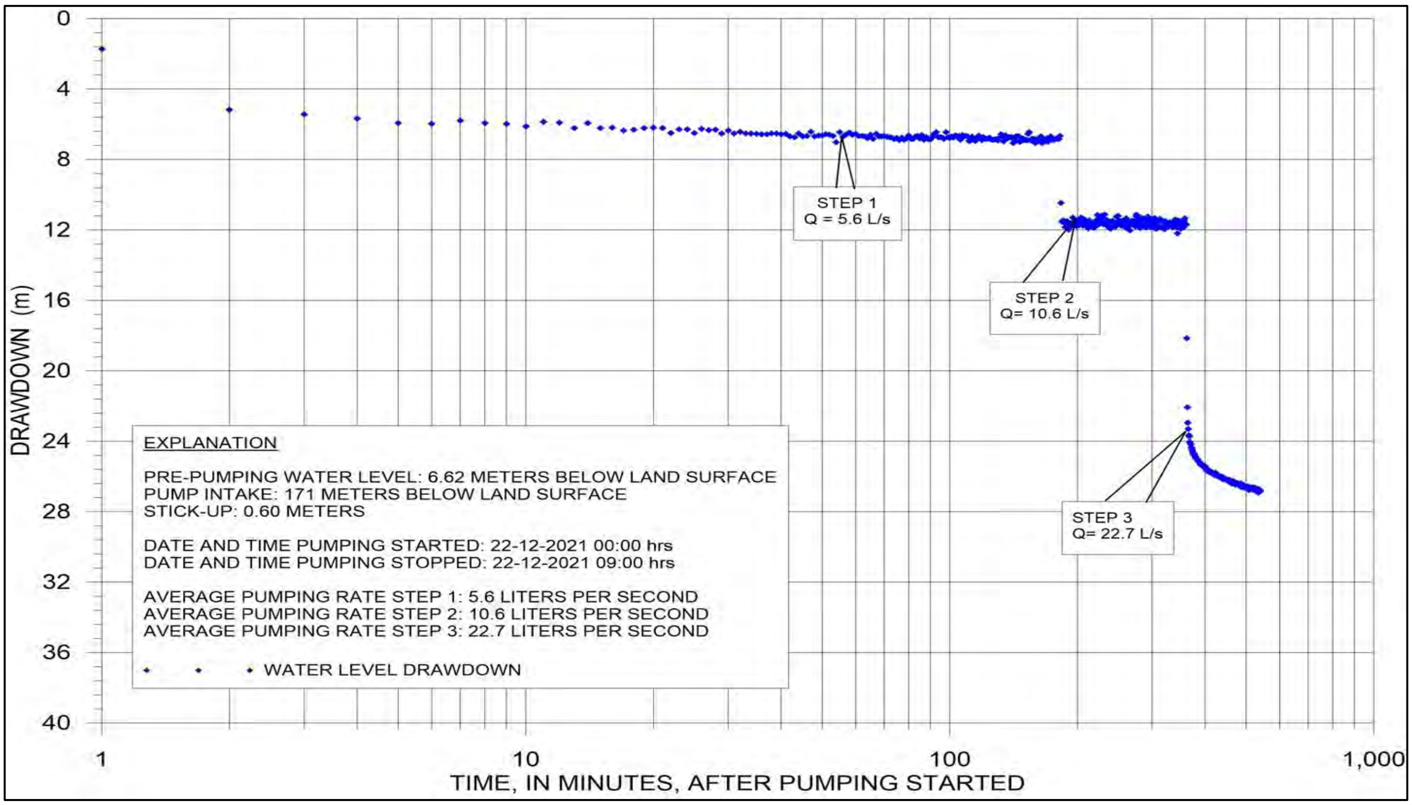
Well	Test Date	Step	Average Pumping Rate (L/s)[1]	Maximum Drawdown (m)	Specific Capacity (L/s/m)[2]
Argento-01	12/22/2021	1	5.6	6.54	0.86

Well	Test Date	Step	Average Pumping Rate (L/s)[1]	Maximum Drawdown (m)	Specific Capacity (L/s/m)[2]
		2	10.6	11.38	0.93
		3	22.7	26.54	0.86

1. L/s = liters per second.
2. L/s/m = liters per second per meter of drawdown.

Specific capacity of a well is computed by dividing the average pumping rate by the maximum water level drawdown at that rate and is expressed as liters per second per meter (L/s/m) of drawdown. A semi-logarithmic graph, showing drawdown for the step-discharge test at well Argento-01, is shown on Figure 10-4.

Figure 10-4: Semi-Logarithmic Graph, Showing Drawdown for The Step-Discharge Test at Well Argento-01



Source: Montgomery, 2021.

A constant-rate pumping test at well Argento-01 started on December 20, 2021, with an average flow rate of 21.9 liters per second (L/s); pre-pumping water level was 4.07 meters below measuring point. A summary of the test is given in Table 10-4. The pumping test stopped on December 20, 2021, after 17:40 hours; water level recovery measurements were then manually measured for 1:09 hours.

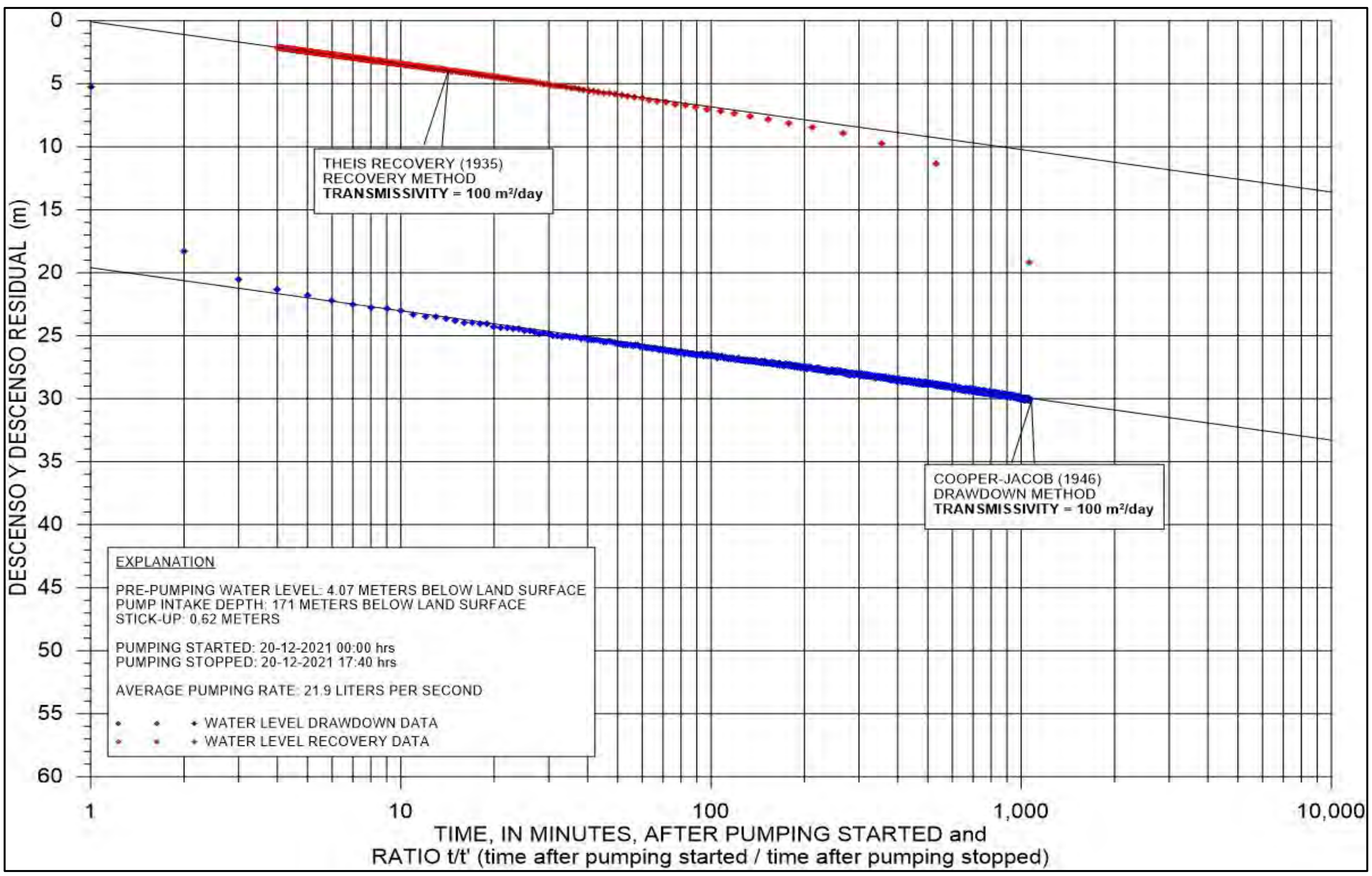
Table 10-4: Pumping Test Summary for Exploration Well Argento-01

Well Identifier	Date Pumping Started	Pumping / Recovery Duration (h)	Pre-Pumping Water Level (m bls)	Average Pumping Rate (L/s)	Drawdown After 17 Hours of Pumping (m)	Residual Drawdown After 1.09 Hours of Recovery (m)	Specific Capacity (L/s/m)
Argento-01	12/20/2021	17.40/1.09	4.07	21.9	29.96	3.78	0.73

Drawdown data was analyzed for aquifer transmissivity using the semi-logarithmic graphical method developed by Cooper and Jacob (1946), using Aqtesolv software (HydroSOLVE, 2008) and was also verified manually. The Theis (1935) recovery method was used for the recovery data. Calculated transmissivities for both the drawdown and recovery periods agree.

A semi-logarithmic drawdown and recovery graph for pumping test results is shown on Figure 10-5.

Figure 10-5: Semi-Logarithmic Drawdown and Recovery Graph for Argento-01 Pumping Test.



Source: Montgomery, 2021.

A summary of computed aquifer parameters is given in Table 10-5. Analysis of the groundwater level drawdown trend for the period 80 minutes after pumping started until end of the test indicates a transmissivity of about 100 square meters per day (m^2/d). Analysis of the trend of groundwater level recovery for the late period after pumping stopped indicates a transmissivity of about 100 m^2/d. Analysis for calculation of transmissivity was performed using recovery data only for a period of 1 hour. A reasonable estimation of the operative transmissivity for well Argento-01 is considered by M&A to be 100 m^2/d.

Table 10-5: Summary of Computed Aquifer Parameters at Well Argento-01

Pumped Well	Average Pumping Rate (L/s)[1]	Cooper-Jacob (1946) Drawdown Method Transmissivity (m^2/d)[3]	Theis (1935) Recovery Method Transmissivity (m^2/d)[3]
Argento-01	21.94	100	100

1. L/s = liters per second
2. m = meter
3. m^2/d = square meters per day

10.1.2 BMR Logging and Estimate of Specific Yield

The main objective of the BMR downhole geophysical survey conducted at Argento-01 was to estimate the specific yield values for the hydrogeologic units encountered during exploration drilling. Specific yield (also referred to as drainable porosity) is one of the parameters needed to estimate the lithium resource.

Zelandez (2021) conducted the BMR survey October 19-20, 2021, at exploration well Argento-01 from land surface to a final depth of 443 m bls.

Figure 10-5 shows the results of the geophysical survey conducted at well Argento-01. Based on these results, Zelandez defined four distinct zones. These four zones are defined based on changes to gamma ray, uranium, and thorium decay, as well as total porosity, specific yield, and specific retention. Figure 10-5 (first column) also shows that the well is acceptably straight with less than 2% deviation from vertical.

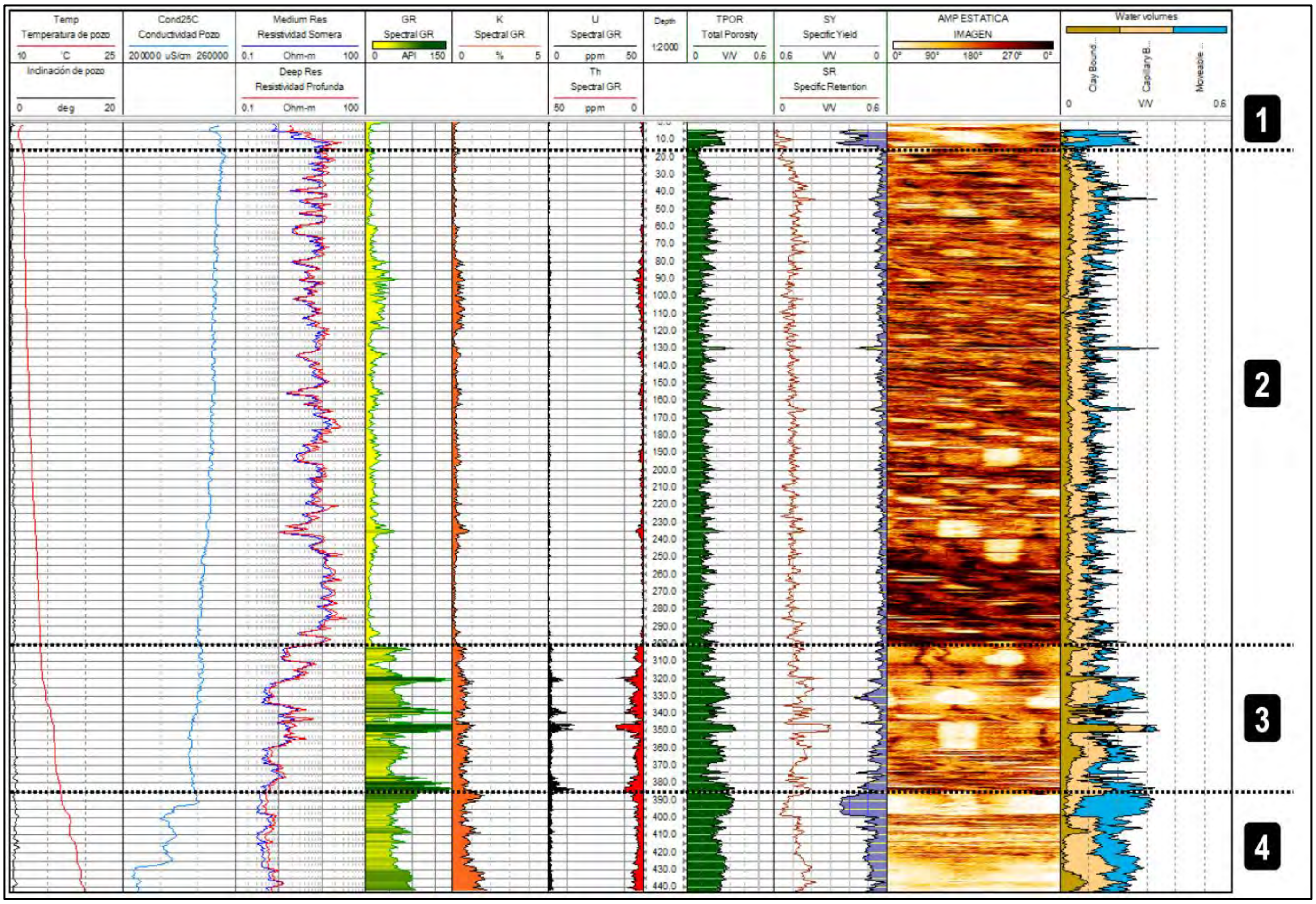
Descriptions of the lithologic units only roughly agree with the zones defined by Zelandez. Zone 1 from Zelandez is a zone of high specific yield and agrees in general with the Andina descriptions of a disaggregated halite. Porous halite occurs from land surface to about 12 m and is in agreement with Zelandez's Zone 1. It is the experience of M&A that the near-surface, young halite units tend to have a large amount of inter-crystalline porosity with a relatively large permeability. The older and deeper halite gets more compact and cemented it becomes over time, decreasing the specific yield values. The BMR survey results support this conceptualization.

Zone 2 is effectively the main halite unit that was described by Andina geologists during drilling. Massive halite occurs from 12 m bls to about 225 m bls. Below 225 m bls to about 316 m bls, the halite is interbedded with silt and sand and is the lower part of Zone 2 as defined by Zelandez.

Below 316 m bls, Andina described a single unit consisting of black sand with interbedded clays. This unit was defined roughly by Zelandez as Zones 3 and 4. Zelandez separated the black sand unit based on an increase in porosity of the sand unit below a depth of about 385 m bls.

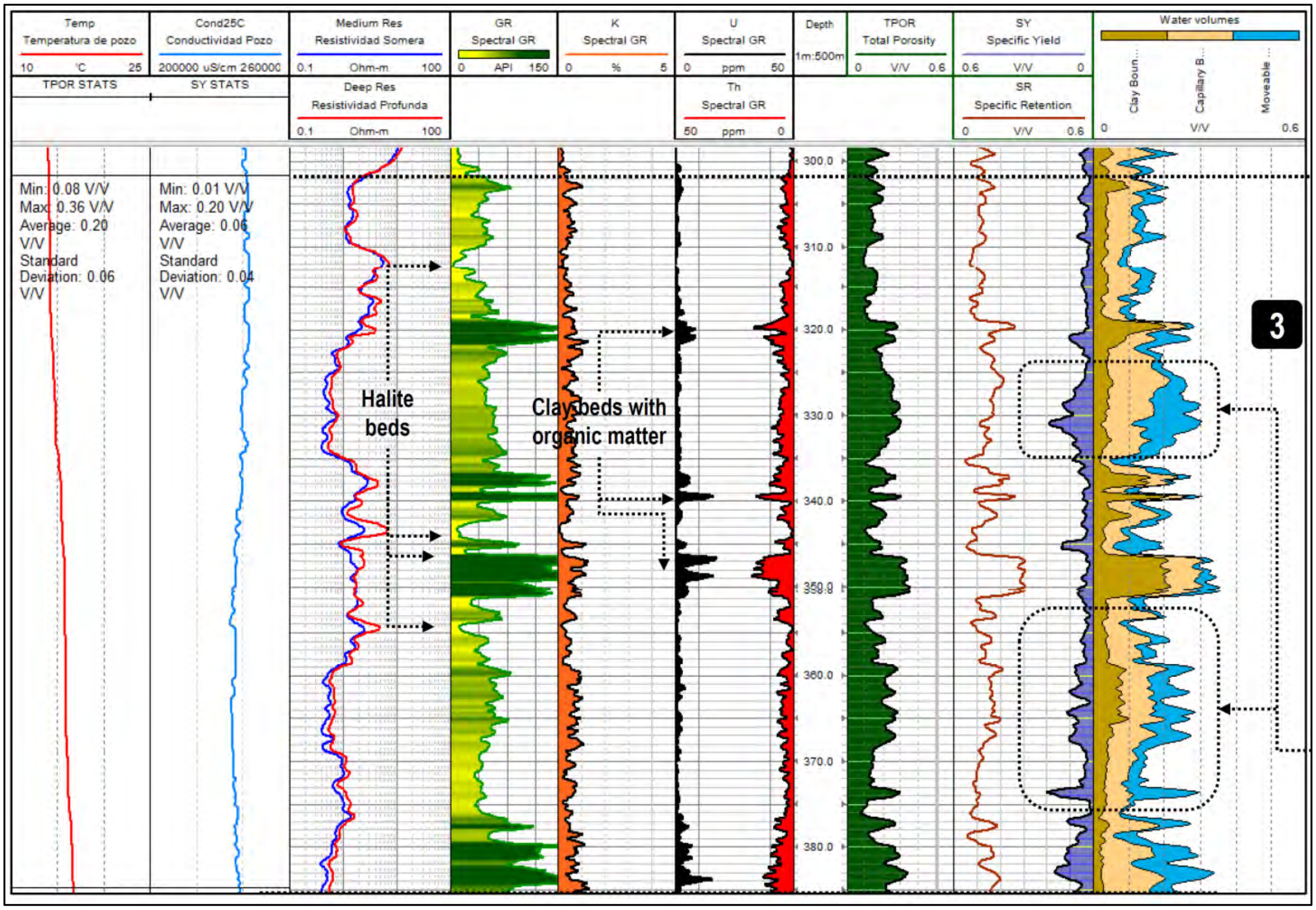
According to a more detailed evaluation of specific yield ranges, M&A believes it is justified to split Zelandez Zones 3 and 4 into three zones – 3, 4, and 5. Figure 10-6 and Figure 10-7 show the proposed changes in units based mostly on differences in specific yield. It is possible to see with more detail, changes in gamma ray and specific yield values. For these reasons, and because of lithologic descriptions that show some breaks or changes in lithology, five zones are being defined by M&A, as well as slightly changed depths for the unit breaks.

Figure 10-6: Geophysical Survey Results for Well Argento-01, Showing Four Zones as Defined by Zelandez



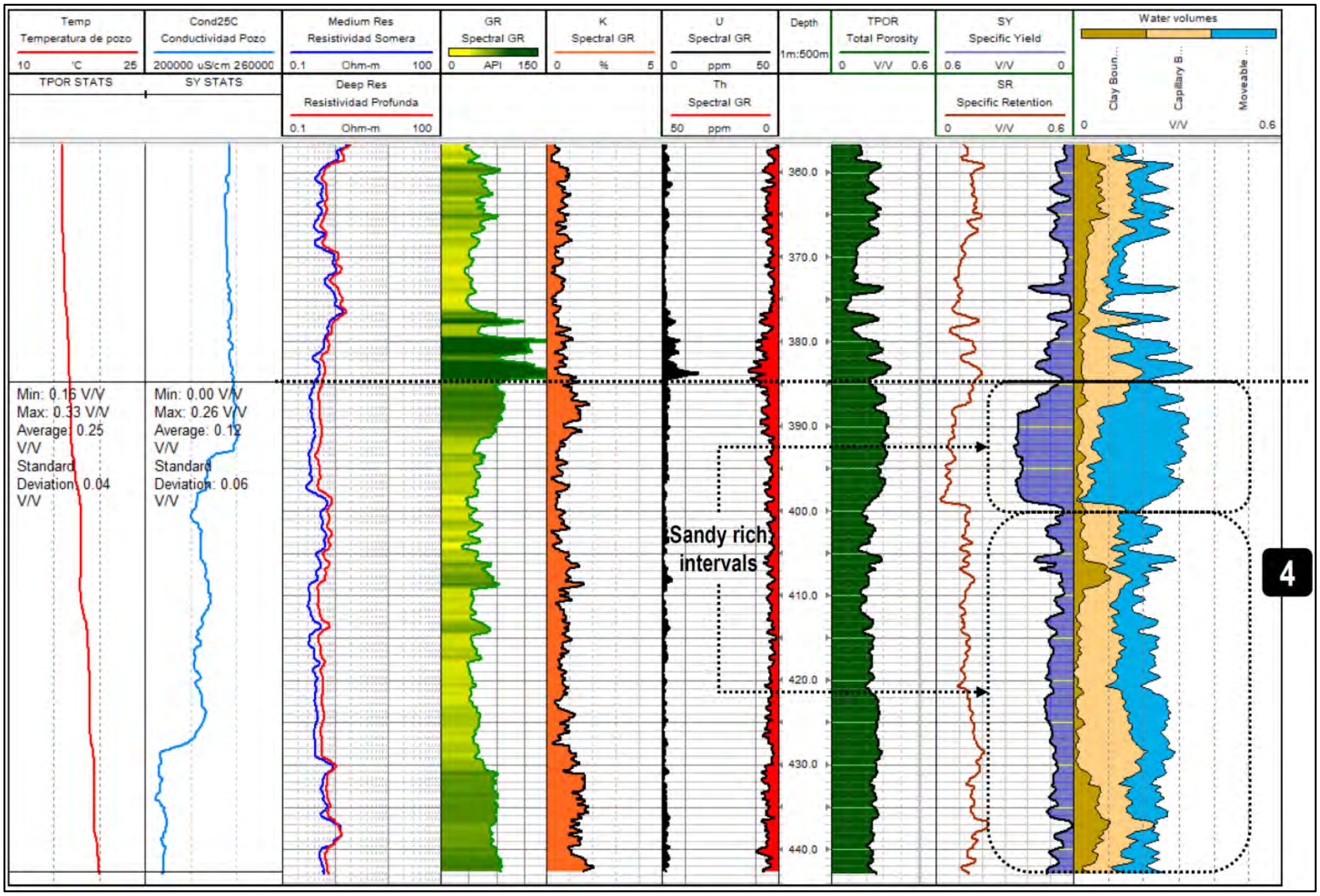
Source: Zelandez, 2021.

Figure 10-7: BMR Geophysical Survey Showing Redefined Zone 3



Source: Zelandez, 2021.

Figure 10-8: BMR Geophysical Survey Showing Redefined Zone 4 and 5



Source: Zelandez, 2021.

These following specific yield values were computed for the new units as defined by M&A solely based on the BMR results:

- Zone 1 (Land surface to 12 m) Sy values ranges from 15-23%; average 18%.
- Zone 2 (12 m to 320 m) Sy values ranges from 3-7%; average 3%.
- Zone 3 (320 m to 380 m) Sy values ranges from 6-12%; average 6%.
- Zone 4 (380 m to 400 m) Sy values ranges from 15-22%; average 18%.
- Zone 5 (400 m to 443 m) Sy values ranges from 7-13%; average 9%.

Although similar, different units were used to calculate the estimated lithium resource. The units used to calculate the resource included lithologic description and penetration rate data, and not solely geophysical results.

The BMR survey conducted by Zelandez agrees reasonably well with the field lithologic descriptions of the units encountered during drilling. In addition, we believe that the ranges of the specific yield values obtained from the BMR survey are reasonable and consistent with values for similar units defined in other altiplanic salars for different projects. Slight variations in depths for the units, and the number of units proposed by M&A as compared to those of Zelandez is not intended to suggest that the results of the BMR survey, or the interpretation of the survey by Zelandez is not acceptable. Furthermore, the minor differences between the field geologists, the geophysical logger, and M&A hydrogeologists is relatively small and has an immaterial effect on the resource estimate.

Based on the results, we believe that the lower clastic unit below a depth of 304 m is the most favorable unit for production pumping. We recommend that future exploration wells attempt to target these lower clastic zones, and if possible, drill to depths larger than 470 m bls. It is also recommended that core samples be obtained to compare geophysical specific yield values to laboratory drainable porosity values.

10.1.3 Brine Sample Results for Argento-01

Lithium Chile has collected and received laboratory results for composite brine samples collected from well Argento-01 obtained during the drilling of the well, during aquifer testing, after testing using a sampling pump, and using Hydrasleeve depth-specific samples as well as inflatable packers obtained after the construction and testing of the well was complete.

10.1.3.1 Brine Samples Obtained During Drilling

Table 10-6 is a summary table for the laboratory results from 27 brine samples obtained during the period September 05 through October 20, 2021. The methodology used to sample the well consisted of lowering a 5 HP pump at the depth reached while drilling and pumping the water volume from the well. Because of the open borehole conditions during sampling, the samples are not considered to be truly depth-specific samples. This operation was repeated three times before finally taking the sampling after water levels recovered.

Table 10-6: Summary of Laboratory Chemical Results for Brine Samples Obtained During Drilling at Well Argento-01

Sample ID	Date	Depth (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
1	09/11/2021		<10	102	786	<10
2 a	09/16/2021	50	11	91	837	<10
2 b	09/16/2021	50	<10	76	738	<10
3 a	09/23/2021	100	17	156	1077	<10
3 b	09/23/2021	100	14	135	981	<10
4 a	09/24/2021	150	29	253	1525	<10
4 b	09/24/2021	150	21	167	1110	<10
AR0921-01	09/24/2021	150	20	166	1093	<10
AR0921-243-01	10/01/2021	243	97	1507	3181	<10
AR0921-243-02	10/02/2021	243	52	684	2081	<10
AR0921-300-01	10/11/2021	300	87	1291	2852	<10

Sample ID	Date	Depth (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
AR0921-300-02	10/11/2021	300	235	3621	5709	20
AR1021-300-01	10/21/2021	300	39	375	1784	<20
AR1021-300-02	10/21/2021	300	44	416	1882	<20
AR1021-300-03	10/21/2021	300	117	1778	4854	<20
AR1021-300-04	10/21/2021	300	195	3127	7910	33
AR1021-300-05	10/21/2021	300	201	3193	8152	34
AR1021-300-06	10/22/2021	300	203	3227	8229	34
AR1021-300-07	10/22/2021	300	201	3205	8118	34
AR1021-300-08	10/22/2021	300	204	3273	8327	36
AR1021-300-09	10/22/2021	300	204	3255	8245	35
AR1021-300-10	10/22/2021	300	206	3301	8255	35
AR1021-300-11	10/22/2021	300	205	3309	7983	35
AR1021-300-12	10/22/2021	300	210	3347	8424	34
AR1021-300-13	10/22/2021	300	210	3407	8245	38
AR1021-300-14	10/23/2021	300	208	3409	8318	35
AR1021-300-15	10/23/2021	300	209	3434	8346	36

Our assessment of the chemistry results obtained during drilling is that the samples may have been diluted by lithium-poor brine from the upper part of the borehole. The values obtained at 300 m may also have been diluted, but are at least consistent, suggesting a better, or consistent sampling methodology at that depth. The values obtained from the pumping test (which was from brine exclusively from below 320 m) have lithium concentrations that are larger, consistent, and believed to be the most reliable samples obtained to date.

10.1.3.2 Composite Brine Samples Obtained During the Pumping Test at Argento-01

Table 10-7 is a summary table for the laboratory results from four brine samples obtained during pumping test operations conducted at pumping well Argento-01 during the testing period. Samples of pumped brine were obtained directly from the discharge pipe and are believed to be more representative of the brine chemistry in the lower units than the pumped samples obtained in an open borehole.

Table 10-7: Summary of Laboratory Chemical Results of Brine Samples Obtained During the Pumping Test at Well Argento-01

Sample ID	Date	Li (mg/L)	Mg(mg/L)	K(mg/L)	B(mg/L)	Mg/Li[1]
AZ-EE-01	12/20/2021	256	4,005	11,151	51	15.6
AZ-EE-02	12/20/2021	280	4,023	11,369	51	15.5
AZ-EE-03	12/20/2021	260	4,028	11,360	51	15.5
AZ-EE-04	12/20/2021	261	3,902	11,467	52	15.0
Duplicate	12/20/2021	258	4,033	11,349	53	15.6
AVERAGE		259	3,998	11,339	52	15.4

1. Mg/Li = magnesium to lithium ratio.

10.1.4 Brine Sampling Using the Hydrasleeve Depth-Specific Sampling Tool

During January 06 and 07, 2022, depth-specific brine samples were obtained by Andina Drilling personnel using Hydrasleeve HS-2 disposable samplers. Samples were taken from top to bottom to avoid mixing of the brine within the well; this was done to obtain representative brine samples for each selected depth. The Hydrasleeve sample bags were lowered into the well using a manual winch with a 3-mm diameter cable marked every 5 m and mounted on an iron stand. As a cable guide, a sheave was mounted on an iron stand over the wellhead. The results of the sampling program are summarized in Table 10-8. Sometimes multiple samples were obtained at the same depth.

Table 10-8: Summary of Hydrasleeve Samples Obtained at Well Argento-01

Sample ID	Specific Depth Sampled (m bls)	Li (mg/L)	K (mg/L)
AZ-HS-32 7- 327	327	287	9,682
AZ-HS-327 (B) - 327	327	440	11,704
AZ-HS XXX - 327	327	446	11,735
AZ-HS-333 - 333	333	307	9,852
AZ-HS-357.5 – 357.5	357.5	300	9,759
AZ-HS-370 - 370	370	398	10,883
AZ-HS-376 - 376	376	385	11,051
AZ-HS-388 - 388	388	315	10,842
AZ-HS-400 - 400	400	326	11,267
AZ-HS-412.5 – 412.5	412.5	299	10,597
AZ-HS-425 - 425	425	324	11,141
AZ-HS-437 - 437	437	291	10,984
AZ-HS-437 – 437 (duplicate)	437	294	10,999
AZ-HS-449 (1) – 449	449	287	11,000
AZ-HS-449 (2) – 449	449	272	11,039

10.1.5 Brine Sampling Using an Inflatable Packer

Brine samples were obtained from January 15 to January 20, 2022 by Andina Drilling personnel using an inflatable packer system. Samples were taken from top to bottom. Because there was no packer seal, due to the fact that the samples were obtained in a screened well, brine from outside the packer could flow into the sampling area. Therefore, the samples are not true depth-specific samples and may have been diluted from the upper aquifer brine. The results of the sampling program are summarized in Table 10-9.

A split sample was made by the lab for the sample from the 436-m depth sample and is a true duplicate. Results for the analyses for the two split samples agreed very well with each other for all analyzed constituents. A duplicate was obtained during pumping at a depth of 448 m bls by field personnel.

Table 10-9: Summary of Packer Samples Obtained at Well Argento-01

Sample ID	Specific Depth Sampled (m bls)	Li (mg/L)	K (mg/L)
AZ-FP-327	327	555	13,159
AZ-FP-333	333	361	12,122
AZ-FP-357	357	334	12,213
AZ-FP-369	369	314	12,131
AZ-FP-375	375	308	12,032
AZ-FP-387	387	296	11,858
AZ-FP-399	399	286	11,772
AZ-FP-411	411	281	11,696
AZ-FP-424	424	278	11,474
AZ-FP-436	436	267	11,255
AZ-FP-436 (lab duplicate)	436	271	11,451
AZ-FP-448	448	278	11,435
AZ-FP-XXX (field duplicate)	448	279	11,475

10.1.6 Summary and Conclusions of Brine Sampling at Argento-01

Many brine samples were obtained during the 2021-2022 drilling and sampling program. Each of the sampling methods were different, and all are considered to have some potential for not being representative of the brine chemistry in the aquifer due to potential mixing of water in the well or downward flow of low lithium brine from above. That said, the QP considers the sample results from the Hydrasleeve program to be most reliable and least prone to being mixed with brine from other intervals. Therefore, the brine chemistry used to estimate the lithium resource was from the Hydrasleeve sampling method.

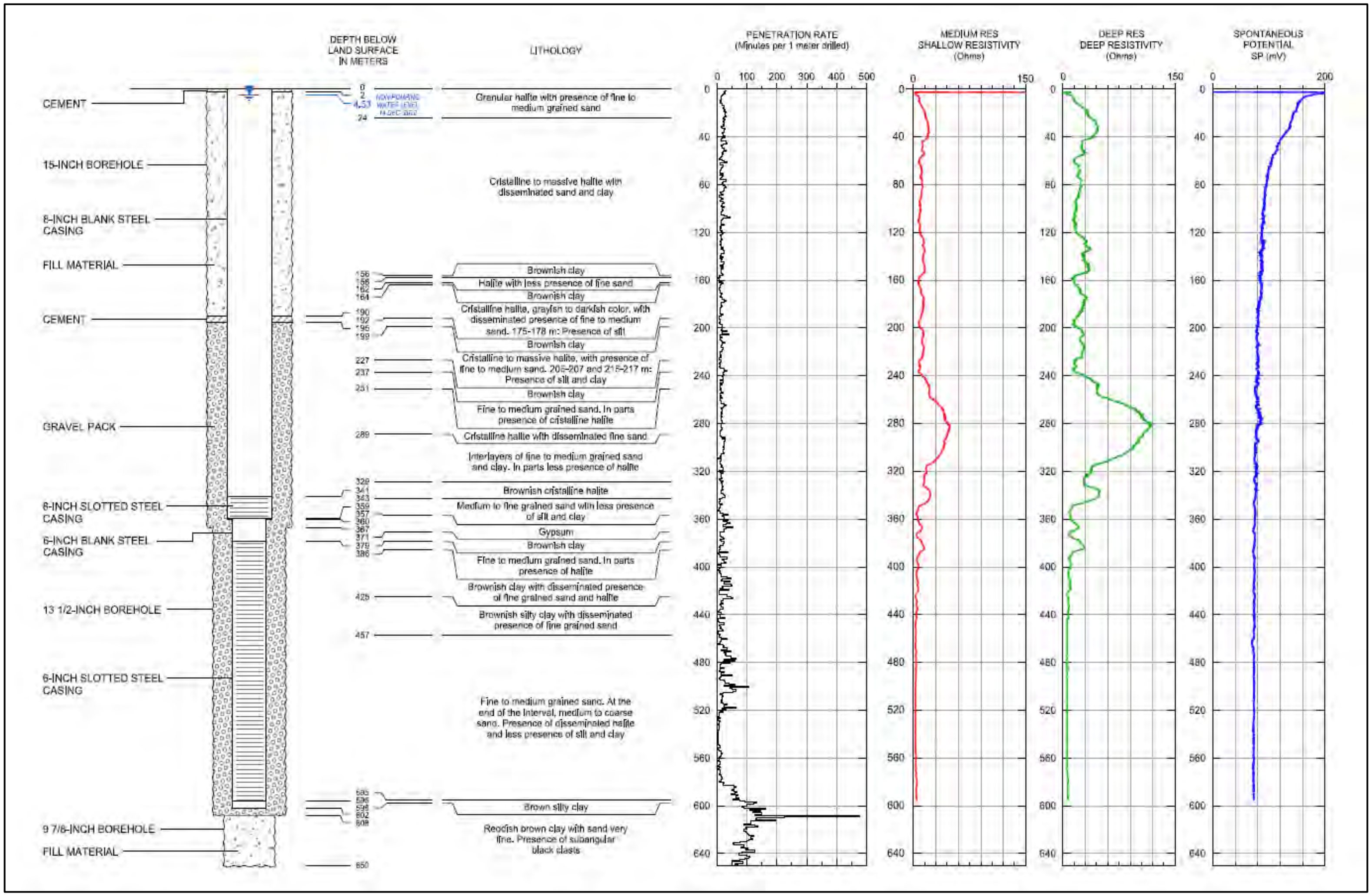
10.2 Argento-02

Drilling activities for exploration well Argento-02 started on September 07, 2022, reaching a depth of 650 m bls on October 30, 2022. Drilling was done using conventional circulation mud rotary methods. Drilling fluid was a polymer mud mixed with brine. The time to drill one meter was recorded to monitor the penetration rate. Drill cuttings were described by Lithium Chile personnel in the field and were reviewed by M&A hydrogeologists. Unwashed and washed drill cuttings were described and stored in labeled plastic cutting boxes. A summary of lithologic descriptions for drill cuttings samples obtained during drilling at exploration well Argento-02 are provided in Table 10-10. Construction schematic for well Argento-02 is shown on Figure 10-8.

Table 10-10: Summary of Lithologic Descriptions for Drill Cuttings Samples for Argento-02

From (m)	To (m)	Summary Log
0	24	Granular halite, with presence of medium and fine-grained sand.
24	96	Granular to massive halite, with presence of medium, fine and very fine-grained sand, minor presence of silt and clay.
96	146	Granular to massive halite, high presence of silt and clay, with presence of fine and very fine-grained sand.
146	227	Halite with minor presence of medium to very fine sand, interbedded with clay and silt layers.
227	237	Clay with medium sand and minor percentages of halite
237	289	Halite with medium to very fine sand interbedded with halite sand layers
289	291	Brownish clay with sand and halite
291	357	Halite with medium to fine sand interbedded with fine sand and clay layers
357	371	Very soft to touch sample, beige colored, gypsum.
371	425	Halite with medium to fine sand interbedded with clay, sand and some gypsum.
425	427	Brownish silty clay with very fine to medium sand, with predominance of dark colored subrounded grains. Presence of very fine gravel sized lithics and halite.
427	450	Brownish silty clay with very fine to medium sand with presence of very fine gravel sized, gypsum, lithics and halite crystals.
450	457	Dark brownish Clay with very fine to coarse sand with predominance of dark grains. Presence of very fine gravel sized lithics and halite.
457	462	Very fine to coarse dark brownish sand with predominance of coarse grained subrounded grains. With presence of very fine to fine gravel sized lithics and halite.
462	467	Brownish fine to very coarse subrounded sand. Presence of dark, very fine to fine sized gravel, lithics.
467	472	Dark brownish very fine to fine sand with sand, with predominance of subrounded black grains. Presence of very fine sized gravel dark colored lithics.
472	473	Brown reddish clay with very fine to medium sand. Sand grains are subrounded and black colored.

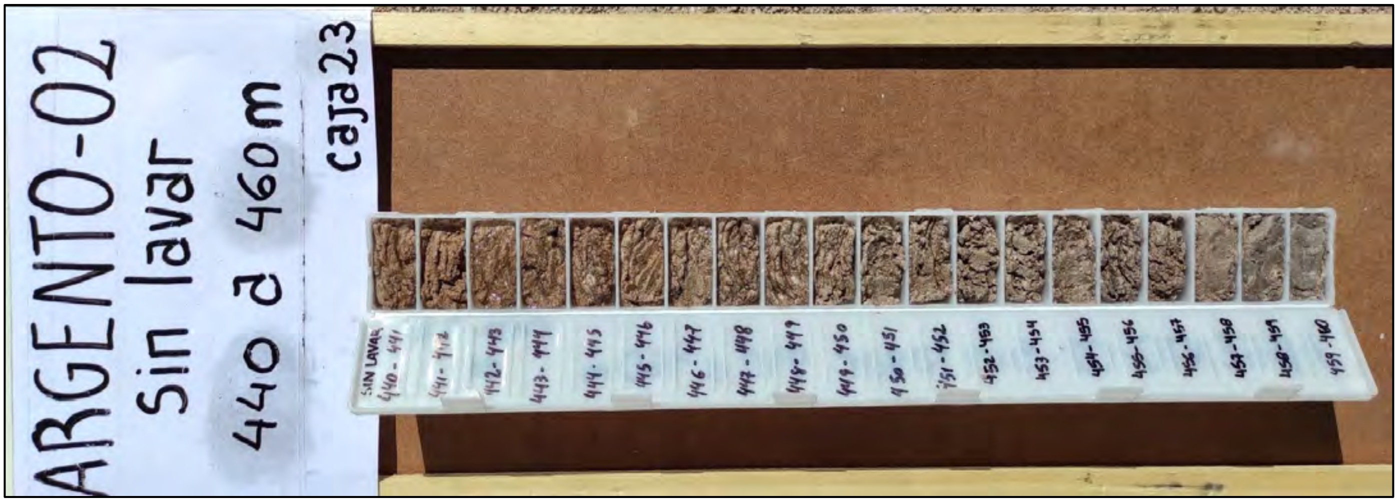
Figure 10-9: Schematic Diagram of Exploration Well Argento-02



Source: Montgomery, 2022.

Example of drill cuttings obtained and used to identify the hydrogeologic units are shown in Figure 10-10.

Figure 10-10: Example of Drill Cuttings from Exploration Well Argento-02



Source: Lithium Chile, 2022.

The following represents a brief summary of construction of exploration well Argento-02.

- The 9 7/8-inch diameter pilot borehole was drilled from land surface to the total depth. Once drilled to total depth the borehole was reamed with 13 ½ -inch from land surface to 608 m and then reamed to 15-inch from land surface to 367 m.
- Geophysical surveys were conducted after pilot borehole drilling was completed. The surveys were performed by Wichi Toledo. Geophysical logs included short-normal resistivity, long-normal resistivity, and spontaneous potential. Results are shown on Figure 10-2 and are detailed later in the section.
- Once drilling was completed, 8- and 6-inch blank and screened galvanized steel casing were installed (with a slot size of 0.75 mm) from land surface to 602 m bls. Perforated intervals were installed from 341 to 359 m bls and 379 to 596 m bls. Blank casing intervals were set from 0 to 341 m bls, 359 to 379 m bls, and from 596 to 602 m bls.
- Gravel pack (1-3 mm diameter) was installed in the annular space surrounding the well screen from 0 to 195 m bls. From 195 to 192 m bls, a cement seal was installed to then complete the annular space with drill material.
- Following gravel packing, the polymer mud was also broken-down using 400 L of sodium hypochlorite solution and displaced with brine injection. No time was recorded during hypochlorite solution injection, but the well was allowed to rest for 24 hours after emplacement of sodium chloride mixture. The well was developed over the entire screened interval using hydrojet, airlift and pumping methods to remove drilling mud and fine sediments from the gravel pack.

10.2.1 Aquifer Testing and Analysis

10.2.1.1 Short-Term Pumping Test

Pumping tests were conducted at exploration well Argento-02 in April 2023, and included step-discharge and constant discharge tests. Pumping test equipment was mostly provided by drilling and testing contractor Wichi Toledo; some of the equipment was provided by Lithium Chile.

The step-discharge test was conducted to evaluate drawdown and specific capacity at different pumping rates for determination of sustainable pumping capacity of the well, both for the constant-discharge tests and for selection of a long-term sustainable pumping rate. The constant-discharge test was conducted to further evaluate sustainable yield and to provide data an estimate of hydraulic parameters. Drawdown and recovery graphs are shown on Figure 10-10. Brine samples were obtained during the constant-discharge test and were submitted for laboratory chemical analysis.

On April 25, 2023, a step-discharge test was conducted at well Argento-02 to evaluate drawdown and well efficiency at different pumping rates for determination of sustainable pumping capacity of the well for the constant-discharge test. Pumping for the step-discharge test commenced at 16:00. Average pumping rate, drawdown and computed specific capacity for each 120-minute step are summarized in Table 10-11. The step-discharge test consisted of three 120-minute steps; pre-pumping water level was at a depth of 4.80 m below measuring point.

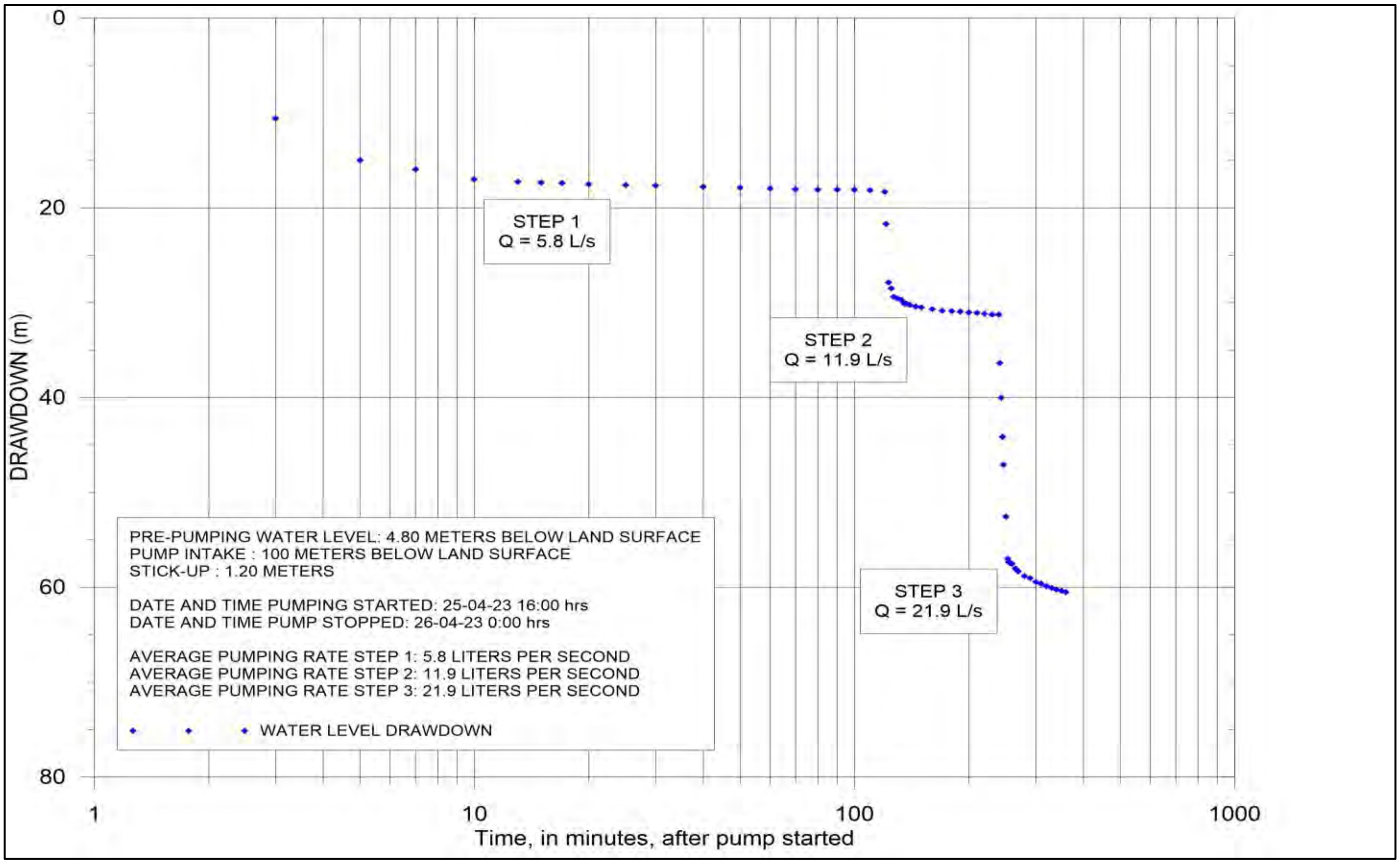
Table 10-11: Summary of the Step-Discharge Test at Exploration Well Argento-02

Well	Test Date	Step	Average Pumping Rate (L/s)[1]	Maximum Drawdown (m)	Specific Capacity (L/s/m)[2]
Argento-02	04/25/2023	1	5.8	13.52	0.43
		2	11.9	26.48	0.45
		3	21.9	55.72	0.39

1. L/s = liters per second.
2. L/s/m = liters per second per meter of drawdown.

Specific capacity of a well is computed by dividing the average pumping rate by the maximum water level drawdown at that rate and is expressed as liters per second per meter of drawdown (L/s/m). A semi-logarithmic graph, showing drawdown for the step-discharge test at well Argento-02, is shown on Figure 10-11.

Figure 10-11: Semi-Logarithmic Graph, Showing Drawdown for The Step-Discharge Test at Well Argento-02



Source: Montgomery, 2023.

A constant-rate pumping test at well Argento-02 started on April 26, 2023, with an average flow rate of 13.3 L/s; pre-pumping water level was 4.80 m below measuring point. A summary of the test is given in Table 10-12. The pumping test stopped on April 29, 2023, after 72 hours; water level recovery measurements were then manually measured for 35 hours.

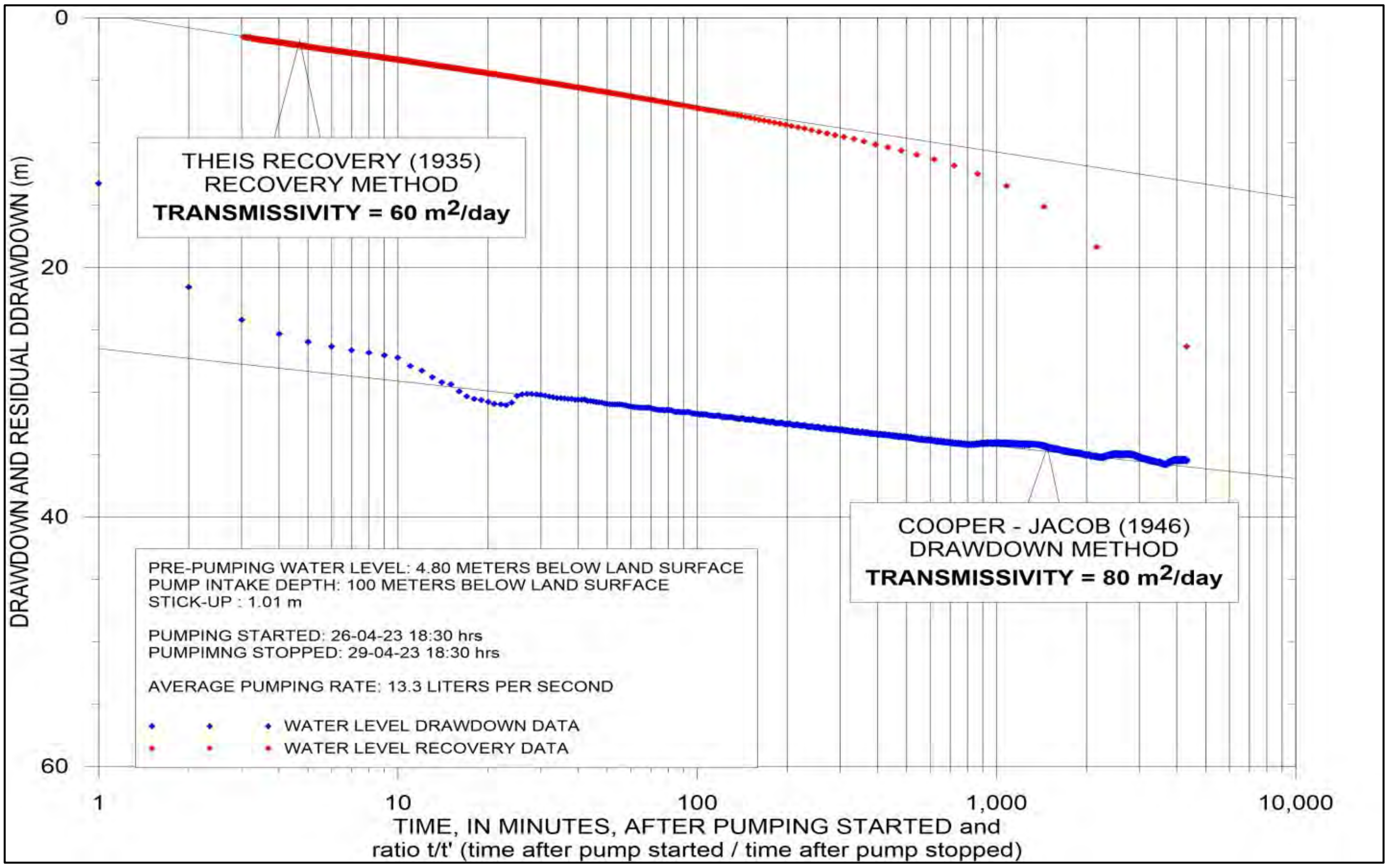
Table 10-12: Short-Term Pumping Test Summary for Exploration Well Argento-02

Well	Date Pumping Started	Pumping / Recovery Duration (h)	Pre-Pumping Water Level (m bls)[1]	Average Pumping Rate (L/s)[2]	Drawdown After 72 Hours of Pumping (m)	Residual Drawdown After 35 Hours of Recovery (m)	Specific Capacity (L/s/m)[3]
Argento-02	04/26/2023	72 / 35	4.80	13.3	35.45	1.51	0.38

1. m bls = meters below land surface.
2. L/s = liters per second.
3. L/s/m = liters per second per meter of drawdown.

Drawdown data were analyzed for aquifer transmissivity using the semi-logarithmic graphical method developed by Cooper and Jacob (1946), using Aqtesolv software (HydroSOLVE, 2008), and verified manually. The Theis (1935) recovery method was used for the recovery data. Calculated transmissivities for both the drawdown and recovery periods agree. A semi-logarithmic drawdown and recovery graph for pumping test results is shown on Figure 10-12.

Figure 10-12: Semi-Logarithmic Drawdown and Recovery Graph for Argento-02 Pumping Test



Source: Montgomery, 2023.

A summary of computed aquifer parameters is given in Table 10-13. Analysis of the trend of groundwater level drawdown for the period 30 minutes after pumping started until minute 1,000 indicates a transmissivity of about 80 m^2/d. Analysis of the trend of groundwater level recovery for the late period after pumping stopped indicates a transmissivity of about 60 m^2/d. Analysis for calculation of transmissivity was performed using recovery data only for a period of one hour. A reasonable estimation of the operative transmissivity for well Argento-02 is considered by M&A to be 60 m^2/d.

Table 10-13: Summary of Computed Aquifer Parameters at Well Argento-02 (Short-Term Pumping Test)

Pumped Well Identifier	Average Pumping Rate (L/s)[1]	Cooper-Jacob (1946) Drawdown Method Transmissivity (m^2/d)[3]	Theis (1935) Recovery Method Transmissivity (m^2/d)[3]
Argento-02	21.9	80	60

1. L/s = liters per second
2. m = meter
3. m^2/d = square meters per day

10.2.1.2 Long-Term Pumping Test

An additional pumping test was conducted at exploration well Argento-02 well for approximately 31 days during October and November, 2024. This constant-discharge test was conducted to further evaluate sustainable yield for the reserve estimate and future production, to confirm the estimated hydraulic parameters, and to verify extracted brine chemistry from the aquifer during long-term pumping.

On October 16-17, 2023, an initial step-discharge test was conducted at well Argento-02 to evaluate drawdown and well efficiency at different pumping rates for determination of sustainable pumping capacity of the well for the constant-discharge test. Pumping for the step-discharge test commenced at 19:00. Average pumping rate, drawdown and computed specific capacity for each 120-minute step are summarized in Table 10-14. The step-discharge test consisted of three 120-minute steps; pre-pumping water level was at a depth of 3.55 m below measuring point. The step-discharge test was conducted to evaluate drawdown and specific capacity at different pumping rates for determination of sustainable pumping capacity of the well, both for the constant-discharge tests and for selection of a long-term sustainable pumping rate.

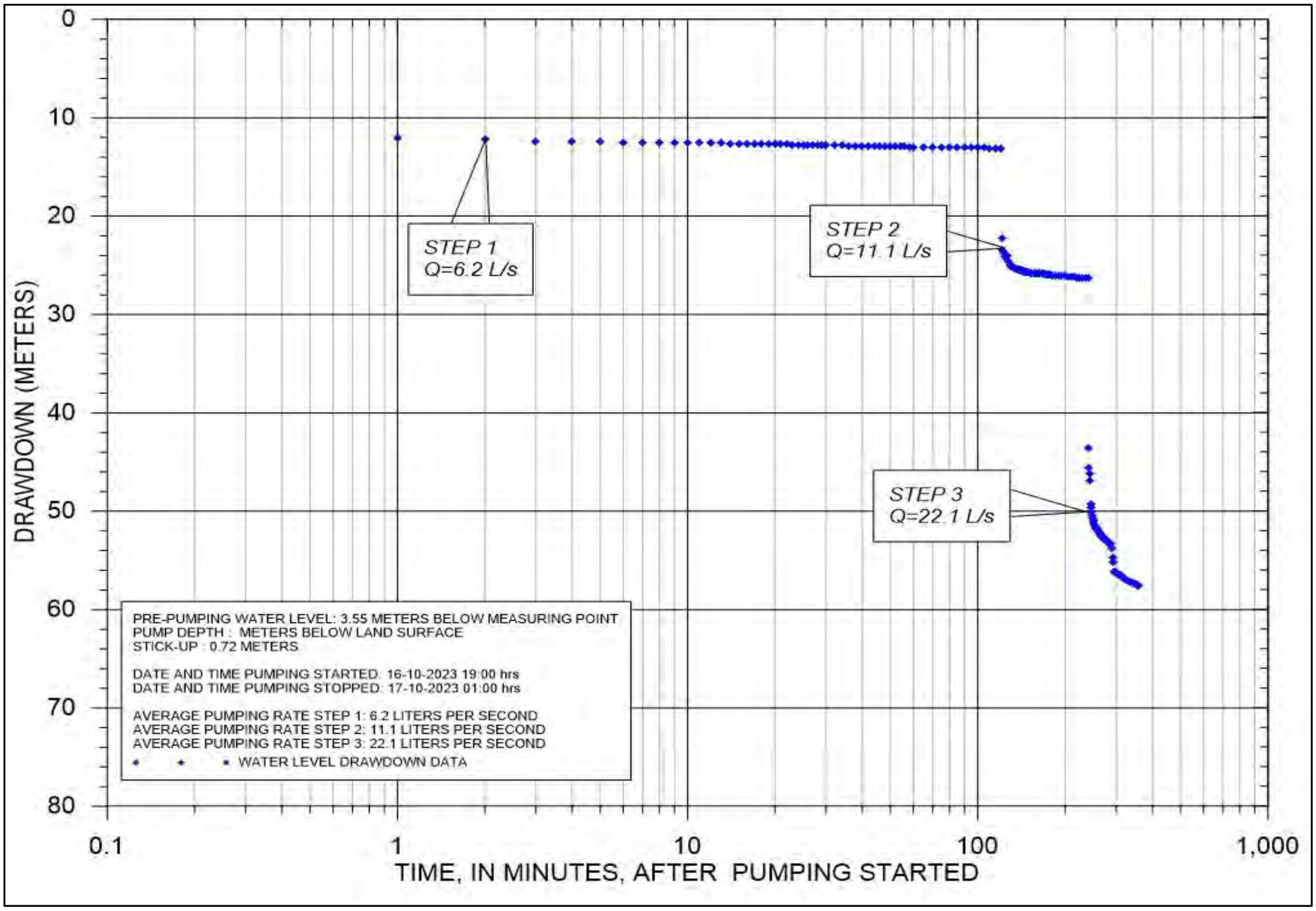
Table 10-14: Summary of the Step-Discharge Test at Exploration Well Argento-02

Well	Test Date	Step	Average Pumping Rate (L/s)[1]	Maximum Drawdown (m)	Specific Capacity (L/s/m)[2]
Argento-02	10/16/2023	1	6.2	13.08	0.47
		2	11.1	26.31	0.42
		3	22.1	57.58	0.39

1. L/s = liters per second
2. L/s/m = liters per second per meter of drawdown

Specific capacity of a well is computed by dividing the average pumping rate by the maximum water level drawdown at that rate and is expressed as liters per second per meter of drawdown (L/s/m). A semi-logarithmic graph, showing drawdown for the step-discharge test at well Argento-02, is shown on Figure 10-13.

Figure 10-13: Semi-Logarithmic Graph, Showing Drawdown for The Step-Discharge Test at Well Argento-02



Source: Montgomery, 2023.

A long-term constant-rate pumping test at well Argento-02 started on October 18, 2023, with an average flow rate of 12.4 L/s; pre-pumping water level was 4.53 m below measuring point. A summary of the test is given in Table 10-18. The pumping test stopped on November 18, 2023, after 752 hours; water level recovery measurements were then manually measured for 45 hours.

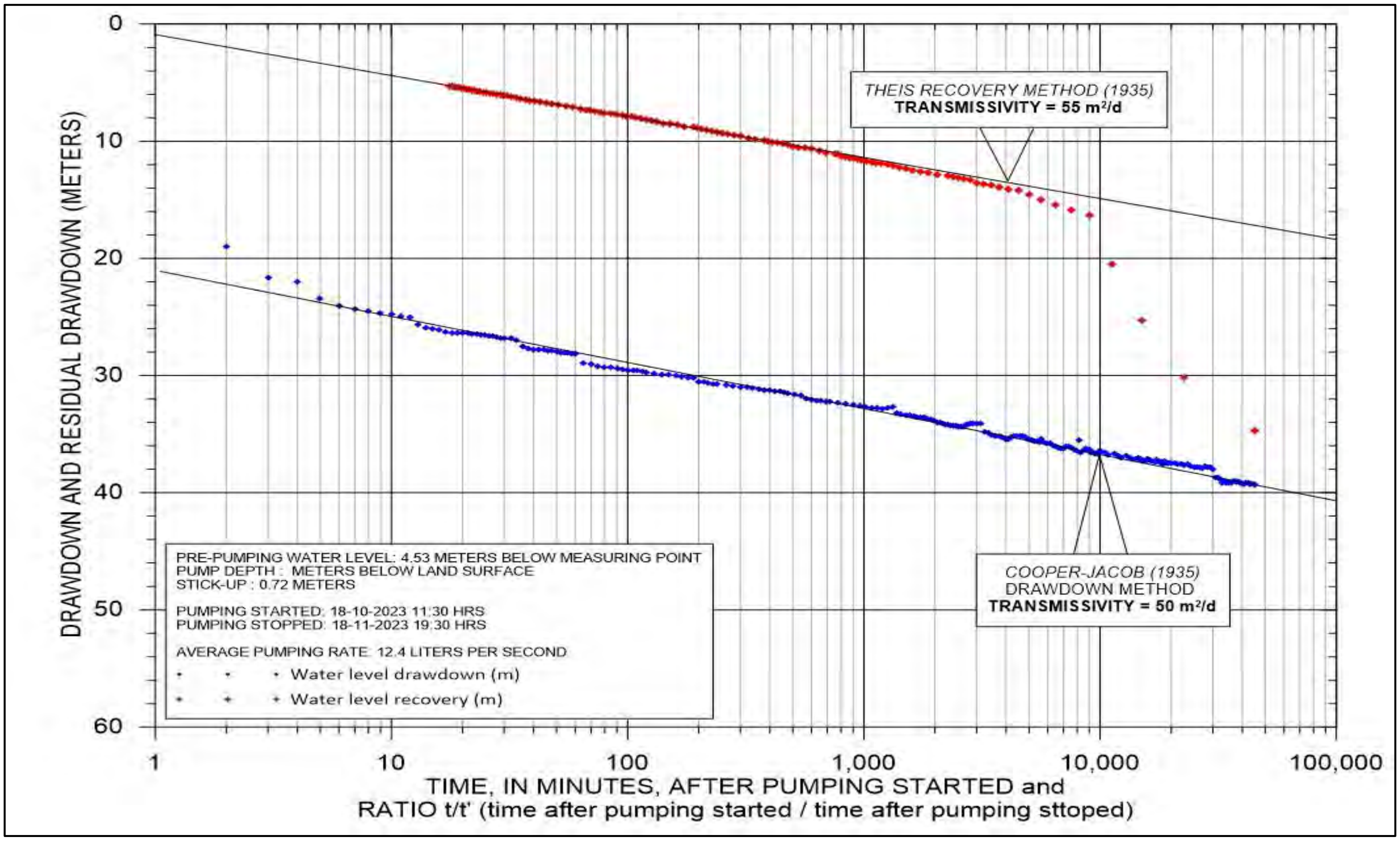
Table 10-15: Long-Term Pumping Test Summary for Exploration Well Argento-02

Well	Date Pumping Started	Pumping / Recovery Duration (h)	Pre-Pumping Water Level (m bls)[1]	Average Pumping Rate (L/s)[2]	Drawdown After 744 Hours of Pumping (m)	Residual Drawdown After 45 Hours Of Recovery (m)	Specific Capacity (L/s/m)[3]
Argento-02	10/18/2023	752 / 45	4.53	12.4	39.35	5.3	0.32

1. m bls = meters below land surface.
2. L/s = liters per second.
3. L/s/m = liters per second per meter of drawdown

Drawdown data were analyzed for aquifer transmissivity using the semi-logarithmic graphical method developed by Cooper and Jacob (1946), using Aqtesolv software (HydroSOLVE, 2008), and were verified manually. The Theis (1935) recovery method was used for the recovery data. Calculated transmissivities for both the drawdown and recovery periods agree. A semi-logarithmic drawdown and recovery graph for pumping test results is shown on Figure 10-16.

Figure 10-14: Semi-Logarithmic Drawdown and Recovery Graph for Argento-02 Pumping Test



Source: Montgomery, 2023.

A summary of computed aquifer parameters is given in Table 10-19. Analysis of the trend of groundwater level drawdown indicate a transmissivity of about 50 m^2/d. Analysis of the trend of groundwater level recovery for the late period after pumping stopped indicates a transmissivity of about 55 m^2/d. A reasonable estimation of the operative transmissivity for well Argento-02 is considered by M&A to be 55 m^2/d.

Table 10-16: Summary of Computed Aquifer Parameters at Well Argento-02 (Long-Term Pumping Test)

Pumped Well Identifier	Average Pumping Rate (L/s)[1]	Cooper-Jacob (1946) Drawdown Method Transmissivity (m^2/d)[3]	Theis (1935) Recovery Method Transmissivity (m^2/d)[3]
Argento-02	12.4	50	55

1. L/s = liters per second
2. m = meter
3. m^2/d = square meters per day

10.2.2 Brine Sample Results for Argento-02

Lithium Chile has collected and received laboratory results for composite brine samples collected from well Argento-02 obtained during aquifer testing, after testing using Hydrasleeve depth-specific samples once construction and testing of the well was complete.

10.2.2.1 Brine Sampling Using the Hydrasleeve Depth-Specific Sampling Tool

During December 22, 2022, depth-specific brine samples were obtained using Hydrasleeve HS-2 disposable samplers. Samples were taken from top to bottom to avoid mixing of the brine within the well; this was done to obtain representative brine samples for each selected depth. The Hydrasleeve sample bags were lowered into the well using a manual winch with a 3-mm diameter cable marked every 5 m and mounted on an iron stand. As a cable guide, a sheave was mounted on an iron stand over the wellhead. The results of the sampling program are summarized in Table 10-17.

Table 10-17: Summary of Hydrasleeve Samples Obtained at Well Argento-02

Sample ID	Specific depth sampled (m bls)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
AZ-HS-01-22	578	267	4,216	9,846	52
AZ-HS-04-22	428	275	4,223	9,968	54
AZ-HS-07-22	348	246	3,879	9,052	49

10.2.2.2 Composite Brine Samples Obtained During the Pumping Test at Argento-02

Table 10-18 is a summary table for the laboratory results from four brine samples obtained during pumping test operations conducted at pumping well Argento-02 during the testing period. Samples of pumped brine were obtained directly from the discharge pipe and are believed to be more representative of the brine chemistry in the lower units than the pumped samples obtained in an open borehole.

Table 10-18: Summary of Laboratory Chemical Results of Brine Samples Obtained During the Pumping Test at Well Argento-02

Sample ID	Date	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)	Mg/Li[1]
ARLI0027	04/25/2023	265	3833	9610	51	14.5
ARLI0030	04/25/2023	273	4057	9649	53	14.9
ARLI0033	04/25/2023	277	4172	9659	54	15.1
ARLI0035	04/26/2023	277	4173	9693	54	15.1
ARLI0038	04/27/2023	275	4148	9671	53	15.1
ARLI0041	04/27/2023	273	4139	9676	53	15.2
ARLI0044	04/28/2023	274	4121	9665	54	15.0
ARLI0047	04/28/2023	273	4105	9686	53	15.0

Sample ID	Date	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)	Mg/Li[1]
ARLI0050	04/28/2023	274	4085	9699	53	14.9
ARLI0053	04/29/2023	272	4077	9695	52	15.0
ARLI0279	11/03/2023	265	3,902	9,561	51	14.7
ARLI0280[1]	11/03/2023	263	3,872	9,420	50	14.7
ARLI0297	11/06/2023	270	3,851	9,781	51	14.3
ARLI0315	11/09/2023	268	3,948	9,437	52	14.7
ARLI0333	11/12/2023	267	3,918	9,415	51	14.7
ARLI0351	11/15/2023	268	3,901	9,438	51	14.6
ARLI0369	11/16/2023	266	3,899	9,424	50	14.7
AVERAGE		271	4,012	9,599	52	14.8

1. Mg/Li = magnesium to lithium ratio.

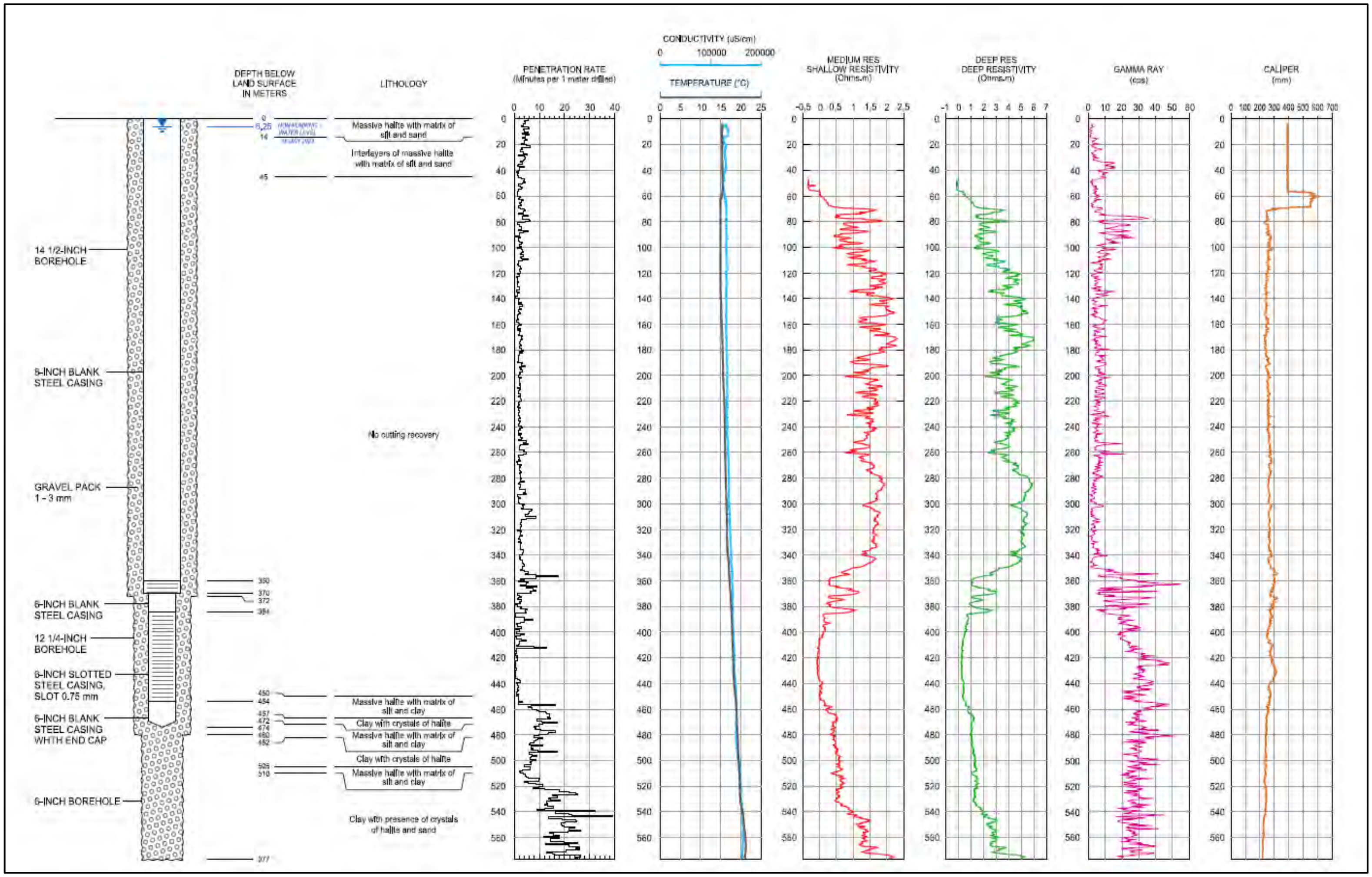
10.3 Argento-03

Drilling activities for exploration well Argento-03 started on January 05, 2023, reaching a depth of 577 m bls on March 18, 2023. Drilling was done using conventional circulation mud rotary methods. Drilling fluid was a polymer mud mixed with brine. The time to drill one meter was recorded to monitor penetration rate. Drill cuttings were described by Lithium Chile personnel in the field and were reviewed by M&A hydrogeologists. Unwashed and washed drill cuttings were described and stored in labeled plastic cutting boxes. A summary of lithologic descriptions for drill cuttings samples obtained during drilling at exploration well are provided in Table 10-19. Construction schematic for well Argento-03 is shown on Table 10-19.

Table 10-19: Summary of Lithologic Descriptions for Drill Cuttings Samples for Argento-03

From (m bls)	To (m bls)	Summary Log
0	14	Massive halite with a matrix of silt and sand
14	45	Interlayers of massive halite with a matrix of silt and sand
45	450	No cutting recovery
450	467	Massive halite with a matrix of silt and clay
467	472	Clay with crystals of halite
472	482	Massive halite with a matrix of silt and clay
482	505	Clay with crystals of halite
505	510	Massive halite with a matrix of silt and clay
510	577	Clay with the presence of crystals of halite and sand

Figure 10-15: Schematic Diagram of Exploration Well Argento-03



Source: Montgomery, 2023.

The following represents a brief summary of construction of exploration Well Argento-03:

- The 9 7/8-inch diameter pilot borehole was drilled from land surface to total depth. Once drilled to total depth the borehole was reamed with 12 ¼ -inch from land surface to 480 m and then reamed to 14 ½ -inch from land surface to 372 m.
- During drill operation, they were not able to obtain cutting from interval 45 – 450 m due to loss of mud fluid circulation.
- Geophysical surveys were conducted after pilot borehole drilling was completed. The surveys were performed by Aminco. Geophysical logs included RLLS, RLLD, ILLS, ILLD, electrical conductivity, temperature and caliper.
- Once drilling was completed, an 8- and 6-inch blank and screened galvanized steel casing was installed (with a slot size of 0.75 mm) from land surface to 474 m bls. This well was drilled until 577 m, but by decision of Lithium Chile the casing was installed only up to 474 m. Perforated intervals were installed from 360 to 370 m bls, and 384 to 454 m bls. Blank casing intervals were set from 0 to 360 m bls, 370 to 384 m bls, and from 454 to 474 m bls.
- Gravel pack (1-3 mm diameter) was installed in the annular space surrounding the well screen from 0 meters to land surface. No bentonite seal was installed at this well.
- Following gravel packing, the polymer mud was also broken-down using 400 L of sodium hypochlorite solution and displaced with brine injection. No time was recorded during hypochlorite solution injection, but the well was allowed to rest for 24 hours after emplacement of sodium chloride mixture. The well was developed over the entire screened interval using hydrojet, airlift, and pumping methods to remove drilling mud and fine sediments from the gravel pack.

10.3.1 Aquifer Testing and Analysis

Pumping tests were conducted at exploration well Argento-03 in May 2023, and included step-discharge and constant discharge tests. Pumping test equipment was provided by drilling and testing contractor Wichi Toledo and part of the equipment was provided by Lithium Chile.

The step-discharge test was conducted to evaluate drawdown and specific capacity at different pumping rates for determination of sustainable pumping capacity of the well, both for the constant-discharge tests, and for selection of long-term sustainable pumping rate. The constant-discharge test was conducted to further evaluate sustainable yield and to provide data to estimate aquifer hydraulic parameters. Drawdown and recovery graphs are shown on. Brine samples were obtained during the constant-discharge test and were submitted for laboratory chemical analysis.

On May 15, 2023, a step-discharge test was conducted at well Argento-03 to evaluate drawdown and well efficiency at different pumping rates for determination of sustainable pumping capacity of the well for the constant-discharge test. Pumping for the step-discharge test commenced at 11:40. Average pumping rate, drawdown and computed specific capacity for each 120-minute step are summarized in Table 10-20. The step-discharge test consisted of three 120-minute steps; pre-pumping water level was at a depth of 6.33 m below the measuring point.

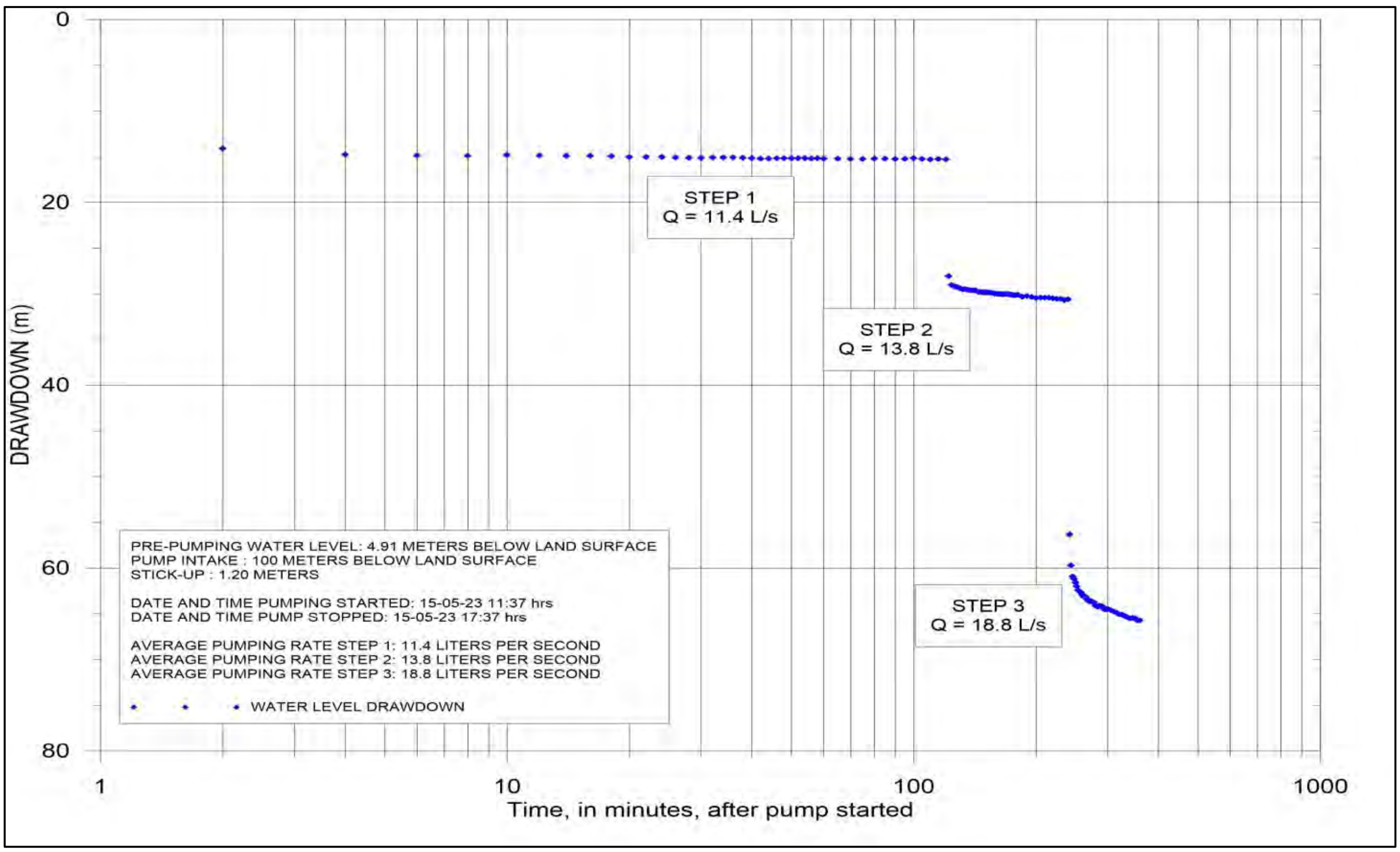
Table 10-20: Summary of The Step-Discharge Test at Exploration Well Argento-03

Well	Test Date	Step	Average Pumping Rate (L/s)[1]	Maximum Drawdown (m)	Specific Capacity (L/s/m)[2]
Argento-03	05/15/2023	1	11.4	15.29	0.75
		2	13.8	30.57	0.45
		3	18.8	65.70	0.29

1. L/s = liters per second
2. L/s/m = liters per second per meter of drawdown

Specific capacity of a well is computed by dividing the average pumping rate by the maximum water level drawdown at that rate and is expressed as L/s/m. A semi-logarithmic graph, showing drawdown for the step-discharge test at well Argento-03, is shown on Figure 10-16.

Figure 10-16: Semi-Logarithmic Graph, Showing Drawdown for The Step-Discharge Test at Well Argento-03



Source: Montgomery, 2023.

A constant-rate pumping test at well Argento-03 started on May 16, 2023, with an average flow rate of 14.3 L/s; pre-pumping water level was 6.25 m below the measuring point. A summary of the test is given in Table 10-21. The pumping test stopped on May 19, 2023, after 72 hours; water level recovery measurements were then manually measured for 50 hours. A summary of the pump test is given in Table 10-21.

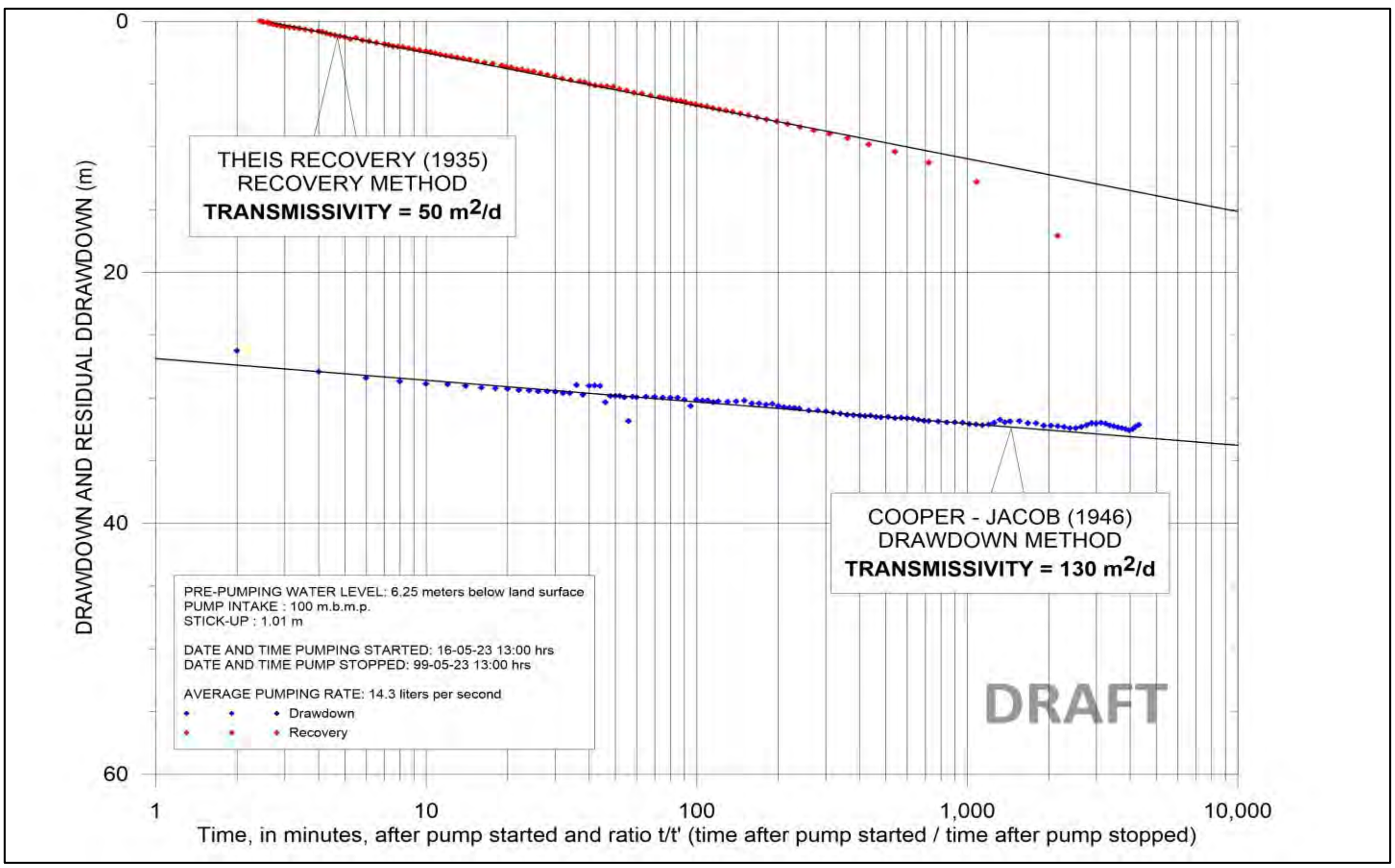
Table 10-21: Pumping Test Summary for Exploration Well Argento-03

Well	Date Pumping Started	Pumping / Recovery Duration (h)	Pre-Pumping Water Level (m bls)[1]	Average Pumping Rate (L/s)[2]	Drawdown After 72 Hours of Pumping (m)	Residual Drawdown After 50 Hours Of Recovery (m)	Specific Capacity (L/s/m)[3]
Argento-03	05/16/2023	72 / 50	6.25	14.3	32.13	-0.02	0.45

1. m bls = meters below land surface.
2. L/s = liters per second.
3. L/s/m = liters per second per meter of drawdown.

Drawdown data was analyzed for aquifer transmissivity using the semi-logarithmic graphical method developed by Cooper and Jacob (1946), and the Aqtesolv software (HydroSOLVE, 2008) was utilized for verification purposes. The Theis (1935) recovery method was used for the recovery data. The calculated transmissivities for both the drawdown and recovery periods are not similar, likely since the recovery period was shorter and the water level trend had not stabilized completely during the measurement period. A semi-logarithmic drawdown and recovery graph for pumping test results is shown on Figure 10-17.

Figure 10-17: Semi-Logarithmic Drawdown and Recovery Graph for Argento-03 Pumping Test



Source: Montgomery, 2024.

A summary of computed aquifer parameters is given in Table 10-25. The analysis of the trend of groundwater level drawdown for the period of three minutes after pumping started until minute 1,000, indicates a transmissivity of about 130 m^2/d. Analysis of the trend of groundwater level recovery for the late period after pumping stopped indicates a transmissivity of about 50 m^2/d. A reasonable estimation of the operative transmissivity for well Argento-03 is considered by M&A to be approximately 50 m^2/d.

Table 10-22: Summary of Computed Aquifer Parameters at Well Argento-03

Pumped Well	Average Pumping Rate (L/s)[1]	Cooper-Jacob (1946) Drawdown Method Transmissivity (m^2/d)[3]	Theis (1935) Recovery Method Transmissivity (m^2/d)[3]
Argento-03	14.3	130	50

1. L/s = liters per second
2. m = meter
3. m^2/d = square meters per day

10.3.2 Brine Sample Results for Argento-03

Lithium Chile has collected and received laboratory results for composite brine samples collected from well Argento-03 obtained during aquifer testing.

10.3.2.1 Composite Brine Samples Obtained During the Pumping Test at Argento-03

Table 10-23 is a summary table for the laboratory results from four brine samples obtained during pumping test operations conducted at pumping well Argento-03 during the testing period. Samples of pumped brine were obtained directly from the discharge pipe and are believed to be more representative of the brine chemistry in the lower units than the pumped samples obtained in an open borehole.

Table 10-23: Summary of Laboratory Chemical Results of Brine Samples Obtained During the Pumping Test at Well Argento-03

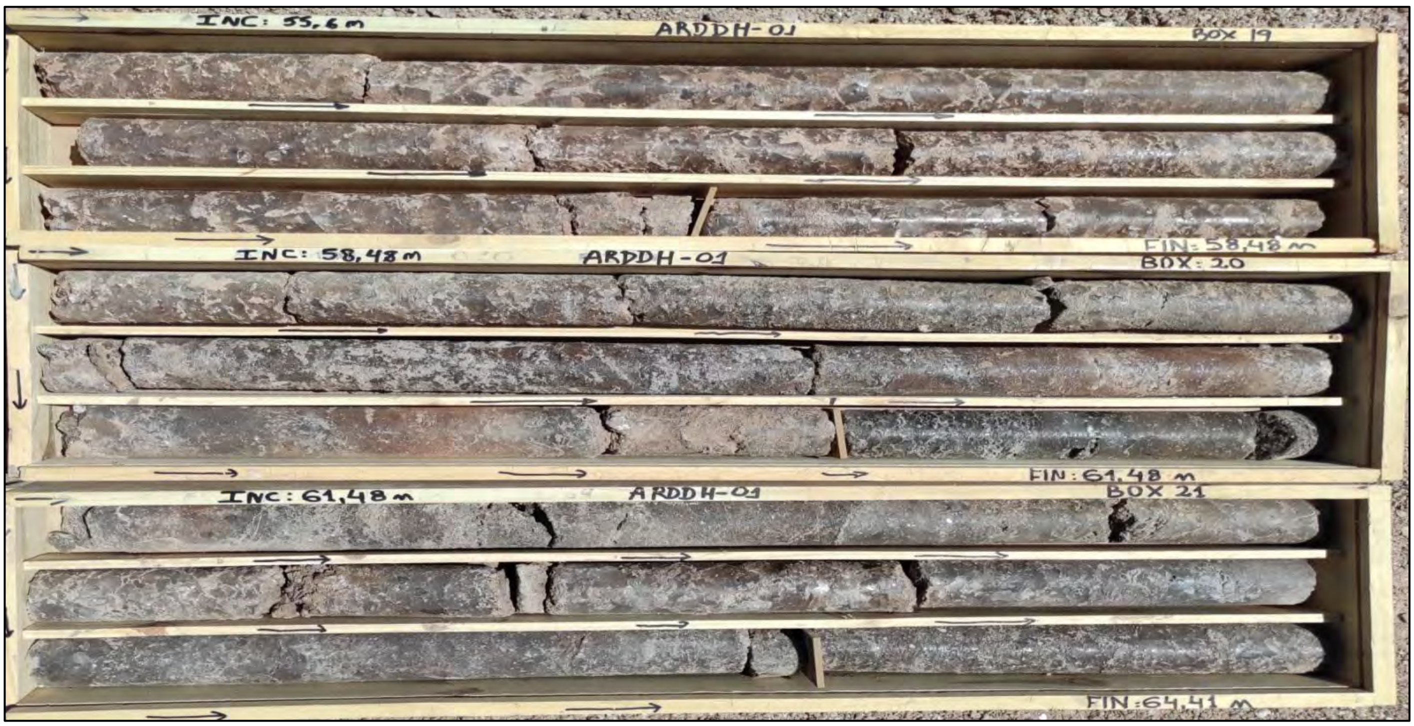
Sample ID	Date	Li (mg/L)	Mg(mg/L)	K(mg/L)	B(mg/L)	Mg/Li[1]
ARLI0067	05/15/2023	204	2341	8518	36	11.48
ARLI0070	05/15/2023	211	2689	8752	39	12.74
ARLI0073	05/15/2023	211	2695	8735	39	12.77
ARLI0076	05/16/2023	200	2259	8340	35	11.30
ARLI0079	05/17/2023	209	2697	8674	38	12.90
ARLI0082	05/17/2023	208	2656	8606	38	12.77
ARLI0085	05/18/2023	208	2652	8649	38	12.75
ARLI0088	05/18/2023	206	2594	8614	38	12.59
ARLI0091	05/19/2023	208	2630	8753	40	12.64
ARLI0094	05/19/2023	207	2335	8763	39	11.28
AVERAGE		207	2555	8640	38	12.32

1. Mg/Li = magnesium to lithium ratio.

10.4 ARDDH-01

Drilling activities for exploration borehole ARDDH-01 started on July 07, 2022, reaching the final depth of 457 m below land surface on August 04, 2022. The drilling contractor was CR Perforaciones S.R.L., based in Salta, Argentina. This borehole was drilled using a DDH system. This well was drilled with HQ diameter from land surface to 295 m, and with NQ diameter from 295 to 457 m. No surface casing was installed in this borehole. During drilling, core samples were obtained for laboratory analysis and brine samples for chemical analysis. Core samples were stored in wooden boxes, and labeled with the borehole name and depth. Lithological descriptions were done by geologists of Lithium Chile and M&A. Figure 10-18 shows some of the drill core obtained; Table 10-24 is the summary log for this borehole and Figure 10-19 shows the construction schematic.

Figure 10-18: Core Samples Obtained from Borehole ARDDH-01



Source: Lithium Chile, 2022.

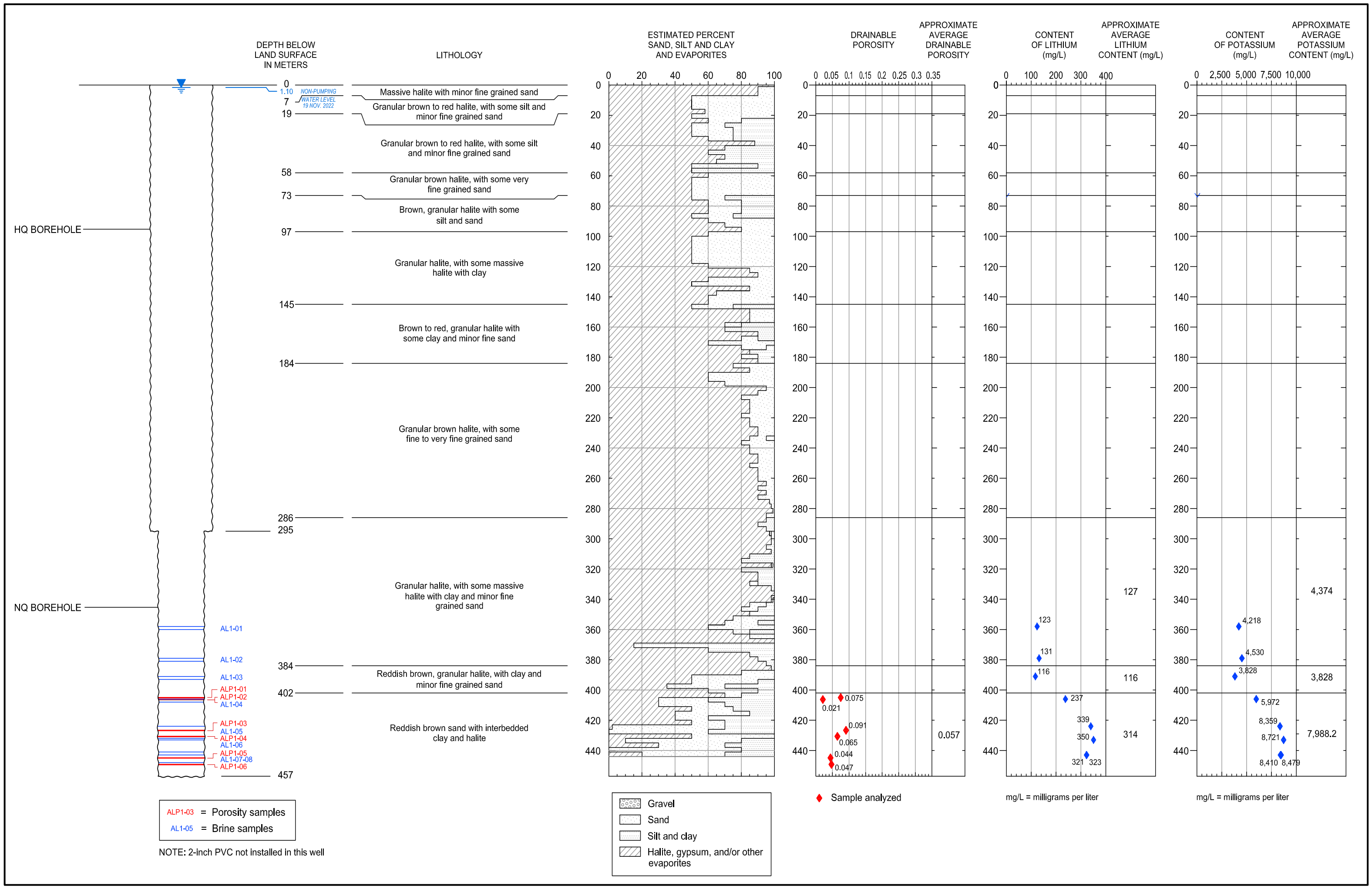
Table 10-24: Summary of Lithologic Description of Borehole ARDDH-01

From (m)	To (m)	Summary log
0	7	Massive halite with minor fine-grained sand
7	19	Granular brown to red halite, with some silt and minor fine-grained sand
19	58	Granular brown to red halite, with some silt and minor fine-grained sand
58	73	Granular brown halite, with some very fine-grained sand
73	97	Brown, granular halite with some silt and sand
97	145	Granular halite, with some massive halite with clay

From (m)	To (m)	Summary log
145	184	Brown to red, granular halite with some clay and minor fine sand
184	286	Granular brown halite, with some fine to very fine-grained sand
286	384	Granular halite, with some massive halite with clay and minor fine-grained sand
384	402	Reddish brown, granular halite, with clay and minor fine-grained sand
402	457	Reddish brown sand with interbedded clay and halite

As of the date of this report, the exploration borehole has not been cased and borehole geophysical surveys have not been completed.

Figure 10-19: Construction Schematic for Borehole ARDDH-01



Source: Montgomery, 2022.

10.4.1 Packer Brine Sample Results for ARDDH-01

During drilling, it was possible to obtain seven brine samples. Each sample was obtained using a packer system, which allows samples to be obtained at 2 m intervals. For each case, the volume of the well was pumped at least one time before to obtain the sample. The sample was filled in 500 ml plastic bottle, labeled, and sealed for avoid any interference than can affect the results. Those samples were analyzed in Alex Stewart laboratories in Jujuy, Argentina.

For all the samples obtained, temperature and density were measured. pH was not measured in any samples due the absence of pH-meter and electrical conductivity was measured only in the last three samples. Table 10-25 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-25: Field Parameters Measured During Brine Sampling at ARDDH-01

Sample ID	Interval	Type	Date	T(°C)	pH	CE (mS/cm)
AL1-01	358 – 360	Brine	07/25/2022	5.0	---	---
AL1-02	379 - 381	Brine	07/27/2022	9.0	---	---
AL1-03	391 – 393	Brine	07/29/2022	9.0	---	---
AL1-04	406 – 408	Brine	07/29/2022	10.0	---	---
AL1-05	424 – 432	Brine	07/30/2022	10.0	---	210.2
AL1-06	433 – 441	Brine	07/31/2022	12.0	---	226.6
AL1-07	443 – 448	Brine	08/01/2022	11.0	---	232.5
AL1-08	443 - 448	Duplicate	08/01/2022	---	---	---

Lithium Chile collected and received laboratory results for depth-specific brine samples collected from well ARDDH-01 obtained during the drilling of the well using inflatable packers. Table 10-26 is a summary table for the laboratory results from brine samples obtained during the period September 05 through October 20, 2022.

Table 10-26: Summary of Laboratory Chemical Results for Brine Samples Obtained from Borehole ARDDH-01

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
AL1-01 358 360	07/25/2022	358 – 360	123	1,557	4,218	<20
AL1-02 379 381	07/27/2022	379 - 381	131	1,523	4,530	<20
AL1-03 391 393	07/29/2022	391 – 393	116	1,198	3,828	<20
AL1-04 406 408	07/29/2022	406 – 408	237	2,824	5,972	29
AL1-05 424 432	07/30/2022	424 – 432	339	4,835	8,359	73
AL1-06 433 441	07/31/2022	433 – 441	350	5,101	8,721	76
AL1-07 443 448	08/01/2022	443 – 448	321	4,871	8,479	67
AL1-08 443 448	08/01/2022	443 - 448	323	4,861	8,410	68

Our assessment of the chemistry results obtained during drilling is that the most favorable lithium-rich brine at this location occurs below about 400 m bls. However, new samples need to be collected to determine if there is a dilution of the samples above 400 m during the sampling.

10.4.2 Porosity Sampling Results for ARDDH-01

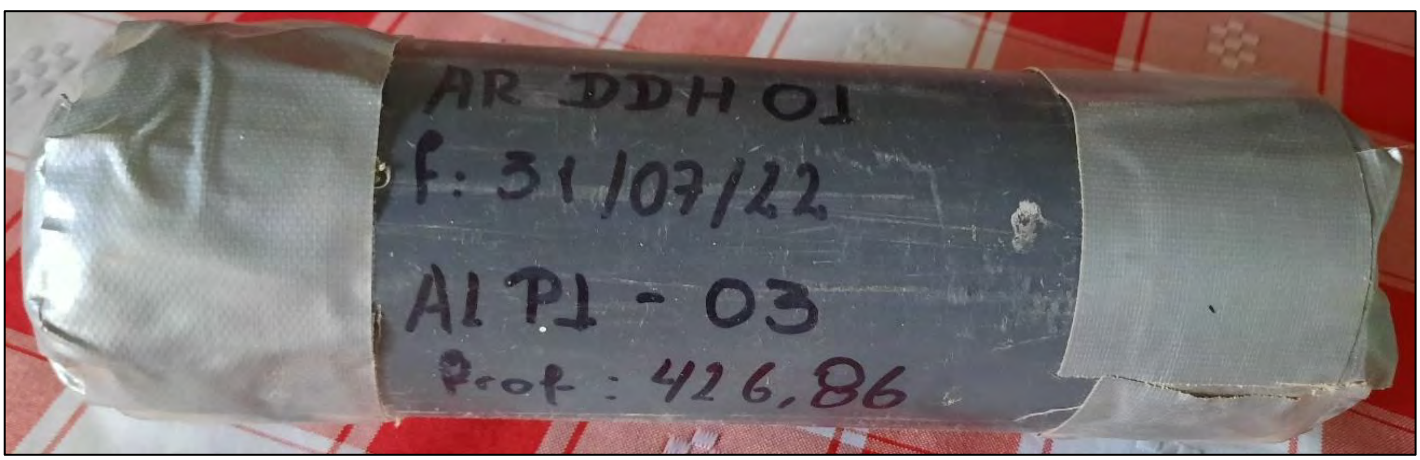
Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, six core samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-27 summarizes depth intervals of the samples obtained and

Figure 10-20 shows one of the sealed core samples. At the time of writing this report, laboratory results for drainable and total porosity were not available.

Table 10-27: Core Samples Obtained for Porosity Analysis from ARDDH-01

Sample ID	Interval (m)	
	From	To
ALP1-01	405.01	405.21
ALP1-02	406.3	406.5
ALP1-03	426.66	426.86
ALP1-04	430.65	430.85
ALP1-05	444.85	445
ALP1-06	449.2	449.4

Figure 10-20: Core Sample Obtained for Porosity Analysis



Source: Lithium Chile, 2022.

10.4.3 Conclusions and Recommendations for ARDDH-01

The lithology in the upper 402 m at this location is all halite with minor sand and clay layers. Below this evaporitic unit, a clastic unit of sand occurs. The brine samples obtained in this borehole indicate the best potential production zone is the clastic unit, with values of lithium of 300 mg/L or more.

It is suggested to install 2-inch slotted PVC in the borehole and use this location as an observation well for future pumping tests at other wells.

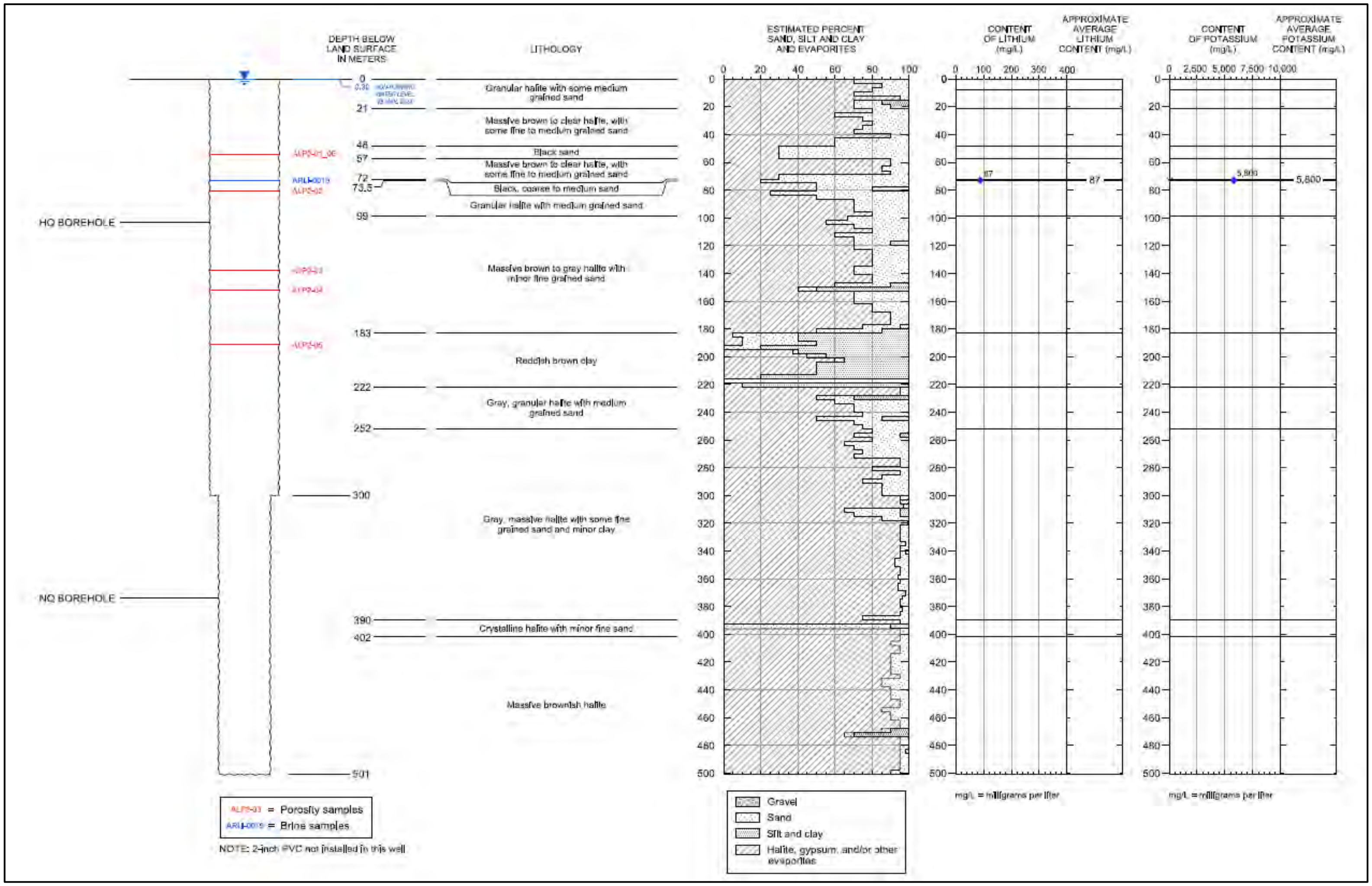
10.5 ARDDH-02

Drilling activities for exploration borehole ARDDH-02 started on September 02, 2022, reaching the final depth of 501 m bls on September 09, 2022. The drilling contractor was CR Perforaciones S.R.L., based in Salta, Argentina. This borehole was drilled using the DDH method. This borehole was drilled with HQ diameter from land surface to 300 m, and with NQ diameter from 300 to 501 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes and labeled with the well name and depth. Lithologic descriptions were done by geologists of Lithium Chile and M&A. Figure 10-21 shows some of the core samples obtained; Table 10-28 is the summary log for this well and Figure 10-22 shows the schematic diagram for this borehole.

Figure 10-21: Core Samples Obtained During Drilling at Borehole ARDDH-02

Source: Lithium Chile, 2022.

Figure 10-22: Schematic Diagram for Exploration Borehole ARDDH-02



Source: Montgomery, 2022.

Table 10-28: Summary of Lithologic Descriptions for ARDDH-02

From (m)	To (m)	Summary log
0	21	Granular halite with some medium-grained sand
21	48	Massive brown to clear halite, with some fine- to medium-grained sand
48	57	Black sand
57	72	Massive brown to clear halite, with some fine- to medium-grained sand
72	73.5	Black, coarse to medium sand
73.5	99	Granular halite with medium-grained sand
99	183	Massive brown to gray halite with minor fine-grained sand
183	222	Reddish brown clay
222	252	Gray, granular halite with medium-grained sand
252	390	Gray, massive halite with some fine-grained sand and minor clay
392	402	Crystalline halite with minor fine sand
402	501	Massive brownish halite

As of the date of this report, the exploration borehole has not been cased and borehole geophysical surveys have not been completed.

10.5.1 Brine Sampling for ARDDH-02

During drilling, brine samples could not be obtained. Depth-specific packers were installed at different depths, but in all cases, no brine was collected. In each case, airlift from the packer was conducted for several hours, but there was only brine flowing for a couple of minutes with a volume equivalent to the brine stored in the annular space. Several tries were done at this borehole with the same results.

On March 05, 2023, a brine sample was obtained in this well with a hydrasleeve system. The sample was filled in 500 ml plastic bottle, labeled, and sealed. That samples was analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, electrical conductivity, pH and density were measured in the field. Table 10-29 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-29: Field Parameters Measured During Brine Sampling at ARDDH-02

Sample ID	Interval	Type	Date	T(°C)	pH	CE (mS/cm)	Density (g/mL)
ARLI0019	71 – 73	Brine	03/05/2023	16.2	6.6	258	1.212

Lithium Chile collected and received laboratory results for depth-specific brine sample collected from well ARDDH-02 obtained with hydrasleeve. Table 10-30 is a summary table for the laboratory results from brine sample obtained.

Table 10-30: Summary of Laboratory Chemical Results for Brine Sample Obtained from Borehole ARDDH-02

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0019	05/03/2023	71 – 73	87	3,399	5,800	31

Our assessment of the chemistry results obtained during drilling is that the most favorable lithium-rich brine at this location occurs below about 100 – 200 m bls. However, new samples need to be collected to determine if this assessment is reliable.

10.5.2 Porosity Sampling for ARDDH-02

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, six core samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-31 summarizes depth intervals of the samples obtained and Figure 10-23 shows one of the sealed core samples. These core samples were not submitted for laboratory analysis.

Table 10-31: Core Samples Obtained for Porosity Analysis

Sample ID	Interval (m)	
	From	To
ALP2-01	54	54.15
ALP2-02	80.57	80.77
ALP2-03	137.8	138
ALP2-04	151.92	152.12
ALP2-05	191.27	191.5
ALP2-06	54	54.15

Figure 10-23: Core Sample Obtained for Porosity Analysis From ARDDH-02

Source: Lithium Chile, 2022.

10.5.3 Conclusions and Recommendations for ARDDH-02

The lithology in the upper 500 m at this location is effectively all halite with minor sand and clay layers. The presence of a clastic aquifer similar to the exploration wells farther to the west was not observed; this is the reason why brine samples could not be obtained; However, it is possible that a clastic unit could be encountered below the halite, but it is not recommended to drill this location again attempting to encounter a deep clastic unless the other parts of the Lithium Chile concessions would not be adequate for development of the Project.

It is suggested to install 2-inch slotted PVC and use this location as an observation well for future pumping tests at other wells.

10.6 ARDDH-03

Drilling activities for exploration borehole ARDDH-03 started on August 10, 2022, reaching the final depth of 500 m bls on August 31, 2022. The drilling contractor was CR Perforaciones S.R.L., based in Salta, Argentina. This well was drilled using the DDH method. This well was drilled with HQ diameter from land surface to 300 m, and with NQ diameter from 300 to 500 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes, and labeled with the well name and depth. Lithological descriptions were done by geologists of Lithium Chile and M&A. Figure 10-24 shows some of the core samples obtained; Table 10-32 is the summary log for this borehole and Figure 10-27 shows the construction schematic for this borehole.

Figure 10-24: Core Samples Obtained During Drilling of Borehole ARDDH-03

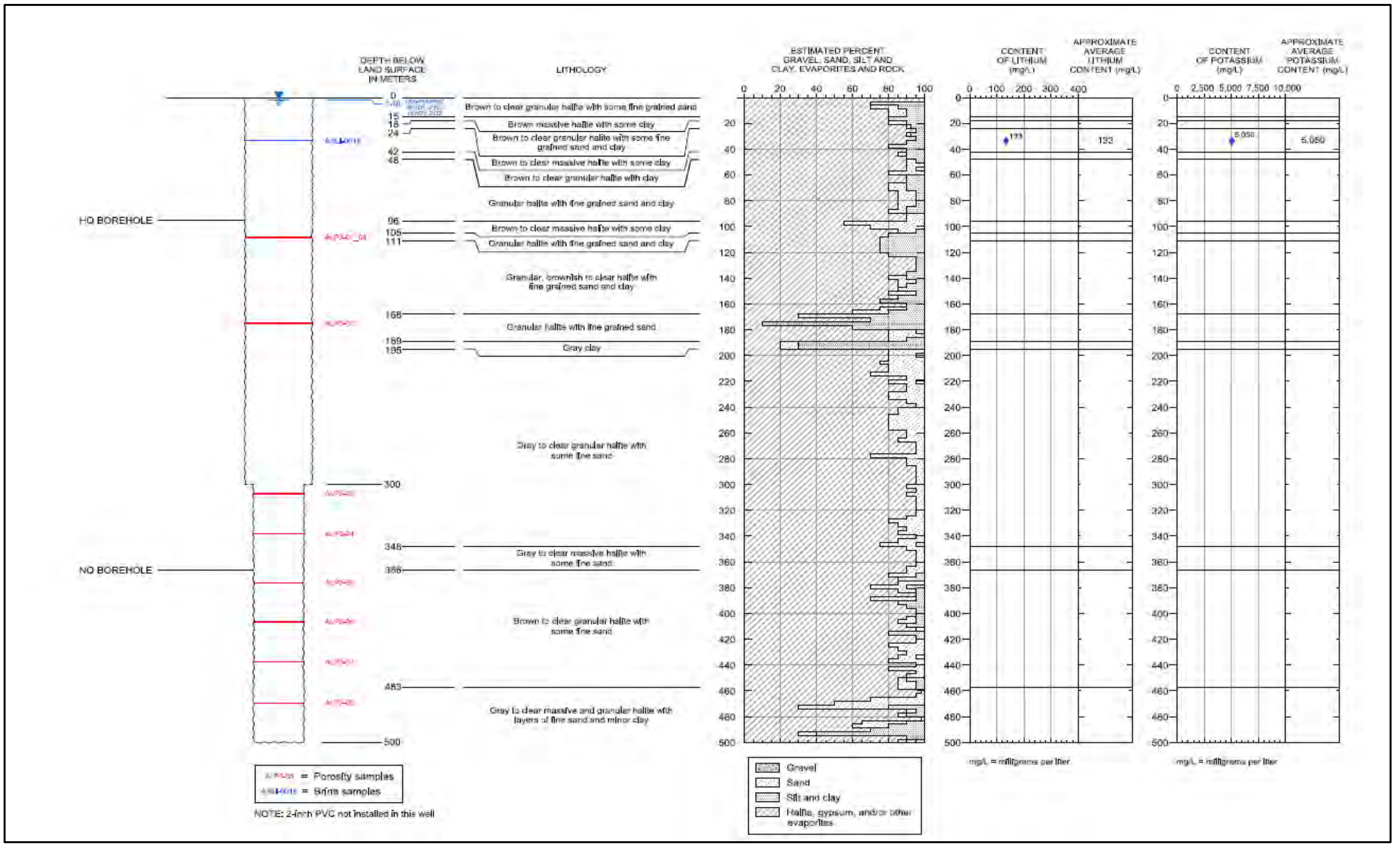
Source: Lithium Chile, 2022.

Table 10-32: Summary of Lithologic Descriptions for Borehole ARDDH-03

From (m)	To (m)	Summary log
0	15	Brown to clear granular halite with some fine-grained sand
15	18	Brown massive halite with some clay
18	24	Brown to clear granular halite with some fine-grained sand and clay
24	42	Brown to clear massive halite with some clay
42	48	Brown to clear granular halite with clay
48	96	Granular halite with fine-grained sand and clay
96	105	Brown to clear massive halite with some clay
105	111	Granular halite with fine-grained sand and clay
111	168	Granular, brownish to clear halite with fine-grained sand and clay
168	189	Granular halite with fine-grained sand
189	195	Gray clay
195	348	Gray to clear granular halite with some fine sand
348	366	Gray to clear massive halite with some fine sand
366	483	Brown to clear granular halite with some fine sand
483	500	Gray to clear massive and granular halite with layers of fine sand and minor clay

As of the date of this report, the exploration borehole has not been cased and borehole geophysical surveys have not been completed.

Figure 10-25: Construction Schematic for Borehole ARDDH-03



Source: Montgomery, 2022.

10.6.1 Brine Sampling for ARDDH-03

During drilling, brine samples could not be obtained. Depth-specific packers were installed at different depths, but in all cases, brine could not be collected. In each case, the packer was airlifted for several hours, but there was only brine flowing for a couple of minutes with a volume equivalent to the brine stored in the annular space. Several tries were done in this borehole with the same negative results.

On March 04, 2023, a brine sample was obtained in this well by Lithium Chile with a Hydrasleeve system. The sample was filled in a 500 mL plastic bottle, labeled, and sealed. The sample was analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, electrical conductivity, pH and density were measured in the field. Table 10-33 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-33: Field Parameters Measured During Brine Sampling at ARDDH-03

Sample ID	Interval	Type	Date	T(°C)	pH	CE (mS/cm)	Density (g/mL)
ARLI0018	33 – 33.5	Brine	03/04/2023	13.9	6.8	259	1.209

Table 10-34 is a summary table for the laboratory results from brine sample obtained.

Table 10-34: Summary of Laboratory Chemical Results for Brine Sample Obtained from Borehole ARDDH-03

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0018	03/04/2023	33 – 33.5	113	2,129	5,050	10

Our assessment of the chemistry results obtained during drilling is that the most favorable lithium-rich brine at this location occurs below about 100 m bls. However, new samples need to be collected to determine if this assessment is reliable.

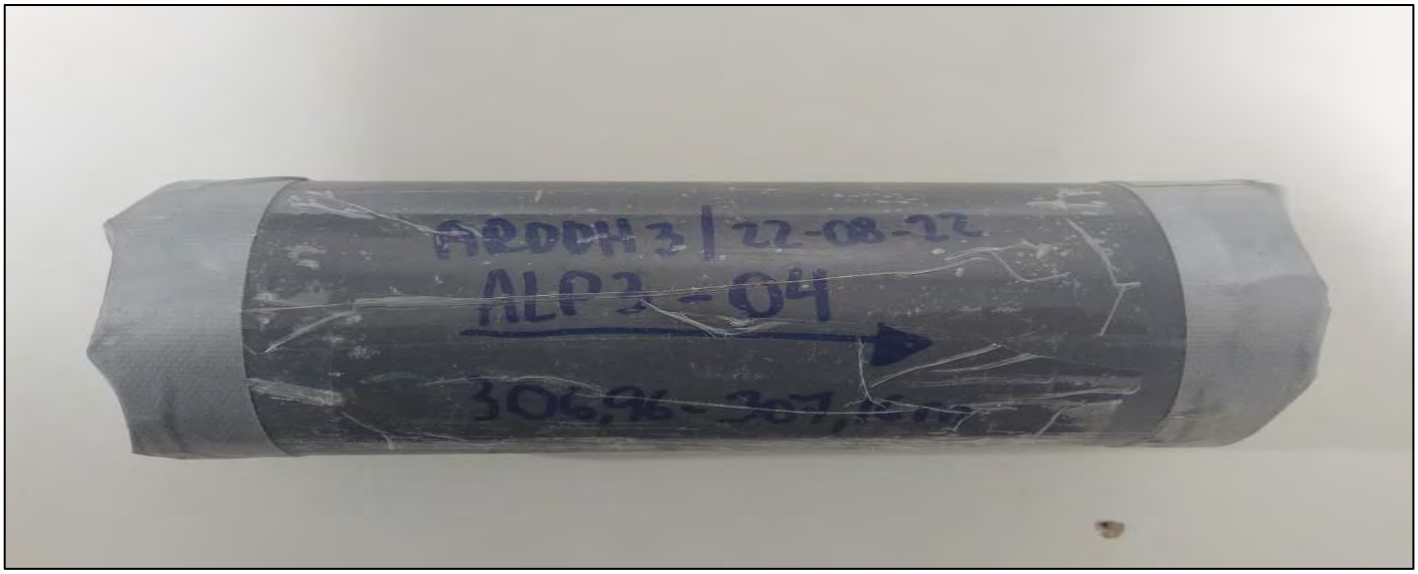
10.6.2 Porosity Sampling for ARDDH-03

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, nine cores samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-35 summarizes depth intervals of the samples obtained and Figure 10-26 shows one of the sealed core samples. By decision of Lithium Chile, those core samples were not submitted for laboratory analysis.

Table 10-35: Core Samples Obtained for Porosity Analysis From ARDDH-03

Sample ID	Interval (m)		Total Porosity	Specific Yield	General Lithology
	From	To			
P0036	512.03	512.21	0.2682	0.035	Halite
P0037	526.87	527.06	0.2758	0.026	Halite
P0038	546.70	546.90	0.2544	0.021	Halite
P0039	577.58	577.76	0.2565	0.050	Halite
P0040	579.60	579.81	0.2541	0.023	Halite
P0041	600.40	600.60	0.2581	0.031	Halite

Figure 10-26: Core Sample Obtained for Porosity Analysis



Source: Lithium Chile, 2023.

10.6.3 Conclusions and Recommendations for ARDDH-03

The lithology in the upper 500 m at this location is effectively all halite with minor sand and clay layers. The presence of a clastic unit was not observed, and is the reason why brine samples could not be obtained, However, it is possible that a clastic unit could be encountered below the halite. However, it is not recommended to drill this location again expecting a deep clastic unless the other parts of the Lithium Chile concessions would not be adequate for development of a Project.

It is suggested to install 2-inch slotted PVC and use this location as an observation well for future pumping tests at other wells. To determine the chemistry at this location, it is recommended to obtain brine sample at different depths using a hydrasleeve or a depth-specific bailer.

10.7 ARDDH-04

Drilling activities for exploration borehole ARDDH-04 started on January 05, 2023, and a final depth of 280 m bls was reached on February 21, 2023. The independent drilling contractor was AGV Falcon Drilling, based in Salta, Argentina. This well was drilled using the DDH method. This well was drilled with HQ diameter from land surface to 280 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes, and labeled with the well name and depth. Lithological descriptions were made by geologists of Lithium Chile and M&A. Figure 10-27 shows some of the core samples obtained; Table 10-36 is the summary log for this borehole and Figure 10-28 shows the construction schematic for this borehole.

Figure 10-27: Core Samples Obtained During Drilling of Borehole ARDDH-04

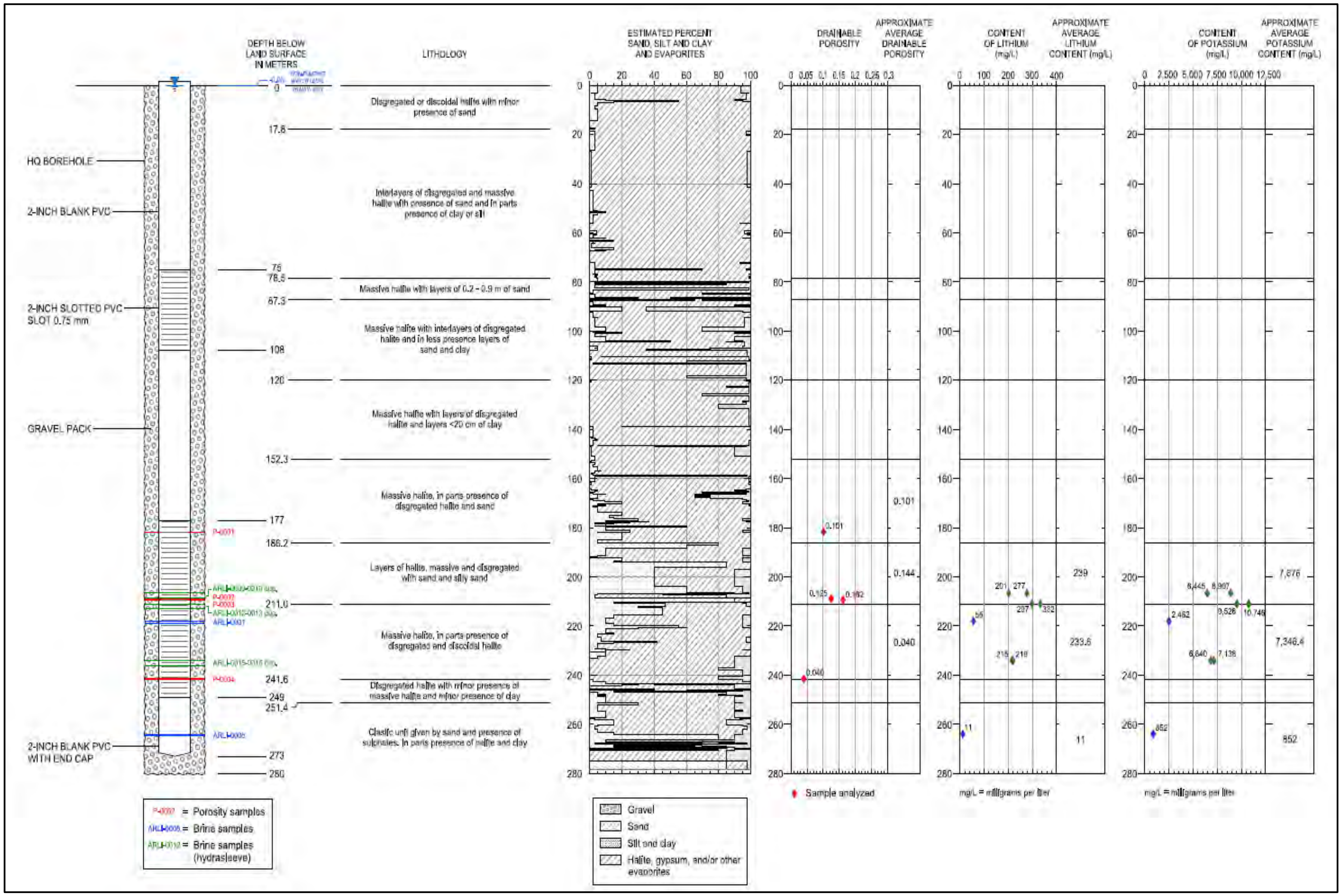
Source: Lithium Chile, 2023.

Table 10-36: Summary of Lithologic Descriptions for Borehole ARDDH-04

From (m)	To (m)	Summary log
0	17.8	Disaggregated or discoidal halite with minor sand.
17.8	78.5	Interlayers of fractured and massive halite with sand and minor clay and silt
78.5	87.3	Massive halite with layers of 0.2 – 0.9 m of sand
87.3	120.0	Massive halite with interlayers of fractured halite with minor layers of sand and clay
120	152.3	Massive halite with layers of fractured halite and layers <20 cm of clay
152.3	186.2	Massive halite with minor fractured halite and sand
186.2	211.0	Layers of halite, massive and fractured with sand and silty sand
210.0	241.6	Massive halite with minor fractured halite and sand
241.6	251.4	Fractured halite with minor massive halite and clay
251.4	280	Clastic sand unit with minor evaporites. Minor halite and clay

Once drilling was completed, 2-inch blank and screened PVC was installed (slot size 0.75 mm) from land surface to 273 m bls. Perforated intervals were installed from 75 to 108 m bls and 177 to 249 m bls. Blank casing intervals were set from 0 to 75 m bls, 108 to 177 m bls, and from 249 to 273 m bls.

Figure 10-28: Construction Schematic for Borehole ARDDH-04



Source: Montgomery, 2023.

10.7.1 Brine Sampling for ARDDH-04

After the well was drilled, two brine samples were obtained using a packer system, which allows samples to be obtained at 0.75 m intervals. Each sample was filled in 500 ml plastic bottle, labeled, and sealed for avoid any interference than can affect the results. Those samples were analyzed in Alex Stewart laboratories in Jujuy, Argentina. Temperature, pH, electrical conductivity and density were measured in the field. Table 10-37 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-37: Field Parameters Measured During Brine Sampling at ARDDH-04

Sample ID	Interval (m)	Type	Date	T(°C)	pH	CE (mS/cm)	Density (g/mL)
ARLI0001	218 – 218.75	Brine	02/16/2023	11.2	7.3	252	1.220
ARLI0005	264 – 264.75	Brine	02/18/2023	18.5	7.4	255	1.210

Lithium Chile collected and received laboratory results for depth-specific brine samples collected from well ARDDH-03 obtained with a Hydrasleeve bailer. Table 10-38 is a summary table for the laboratory results from brine samples obtained.

Table 10-38: Field Parameters Measured During Brine Sampling at ARDDH-04

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0001	02/16/2023	218 – 218.75	55	959	2,482	5
ARLI0005	02/18/2023	264 – 264.75	11	138	852	5

10.7.2 Hydrasleeve Brine Sample Results for ARDDH-04

After the well was drilled and cased, three brine samples were obtained by Lithium Chile using a Hydrasleeve bailer, which allows samples to be obtained at 2 m intervals. The samples were filled in 500 mL plastic bottle, labeled, and sealed. The samples were analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, pH, electrical conductivity, and density were measured in the field.

Table 10-39 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-39: Field Parameters Measured During Brine Sampling at ARDDH-04

Sample ID	Interval (m)	Type	Date	T(°C)	pH	CE (mS/cm)	Density (g/mL)
ARLI0009	206.5 – 208.5	Brine	02/26/2023	18.5	6.1	249	1.217
ARLI0012	211 – 213	Brine	02/27/2023	13.7	6.1	249	1.22
ARLI0015	234 – 236	Brine	02/28/2023	16.0	6.1	237	1.21

Table 10-40 is a summary table for the laboratory results from obtained brine samples.

Table 10-40: Summary of Laboratory Chemical Results for Brine Samples Obtained from Borehole ARDDH-04

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0009	02/26/2023	206.5 – 208.5	277	7,116	8,907	10
ARLI0012	02/27/2023	211 – 213	297	7,776	9,526	10
ARLI0015	02/28/2023	234 - 236	219	5,541	7,138	10

10.7.3 Porosity Sampling for ARDDH-04

Core were collected and described by personnel of Lithium Chile. According to the different lithologic units recognized, four core samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, which was subsequently labeled and sealed. Table 10-41 summarizes depth intervals of the samples obtained for analysis as well as the laboratory results from LCV.

Table 10-41: Core Samples Obtained for Porosity Analysis from ARDDH-04

Sample ID	Interval (m)		Total Porosity	Specific Yield	General Lithology
	From	To			
P0001	181.69	181.91	0.125	0.101	Halite
P0002	208.83	208.98	0.316	0.125	Sand with halite
P0003	209.37	209.52	0.305	0.162	Sand with halite
P0004	241.48	241.62	0.049	0.040	Halite

10.7.4 Conclusions and Recommendations for ARDDH-04

The lithology in the upper 250 m at this location is effectively all halite with minor sand and clay layers. The presence of a clastic unit was observed below 250 m and consists of mostly sand with minor halite and clay. It is suggested that more brine samples be obtained with a Hydrasleeve bailer in this well, from the surface to the bottom at intervals of 20 m in order to determine if there is a zone with low lithium content. Similarly, it is suggested that new samples be obtained at 200, 210, 220 and 260 m bls to determine if the variations in measured lithium concentration are due to sampling variability.

10.8 ARDDH-05

Drilling activities for exploration borehole ARDDH-05 started on February 27, 2023, reaching the final depth of 424.8 m bls on March 25, 2023. The drilling contractor was AGV Falcon Drilling, based in Salta, Argentina. This well was drilled using the DDH method. This well was drilled with HQ diameter from land surface to 424.8 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes, and labeled with the well name and depth. Lithological descriptions were done by geologists of Lithium Chile and M&A.

At a depth of 413 m, the drillings rods uncoupled. AGV Falcon Drilling retreived them and continued drilling until a depth of 424.8 m. At that depth, aproximately 200 m the rods uncoupled again, and could not be retrieved from the borehole. The decision of Lithium Chile was to stop drilling and install 2-inch PVC from surface to about 215 m. Perforated intervals were installed from 99.5 to 111.5 m bls and 177.5 to 210.5 m bls. Blank casing intervals were set from 0 to 99.5 m bls, 111.5 to 177.5 m bls, and from 210.5 to 215 m bls.

Figure 10-29 shows some of the core samples obtained; Table 10-42 is the summary log for this borehole and Figure 10-30 shows the construction schematic for this borehole.

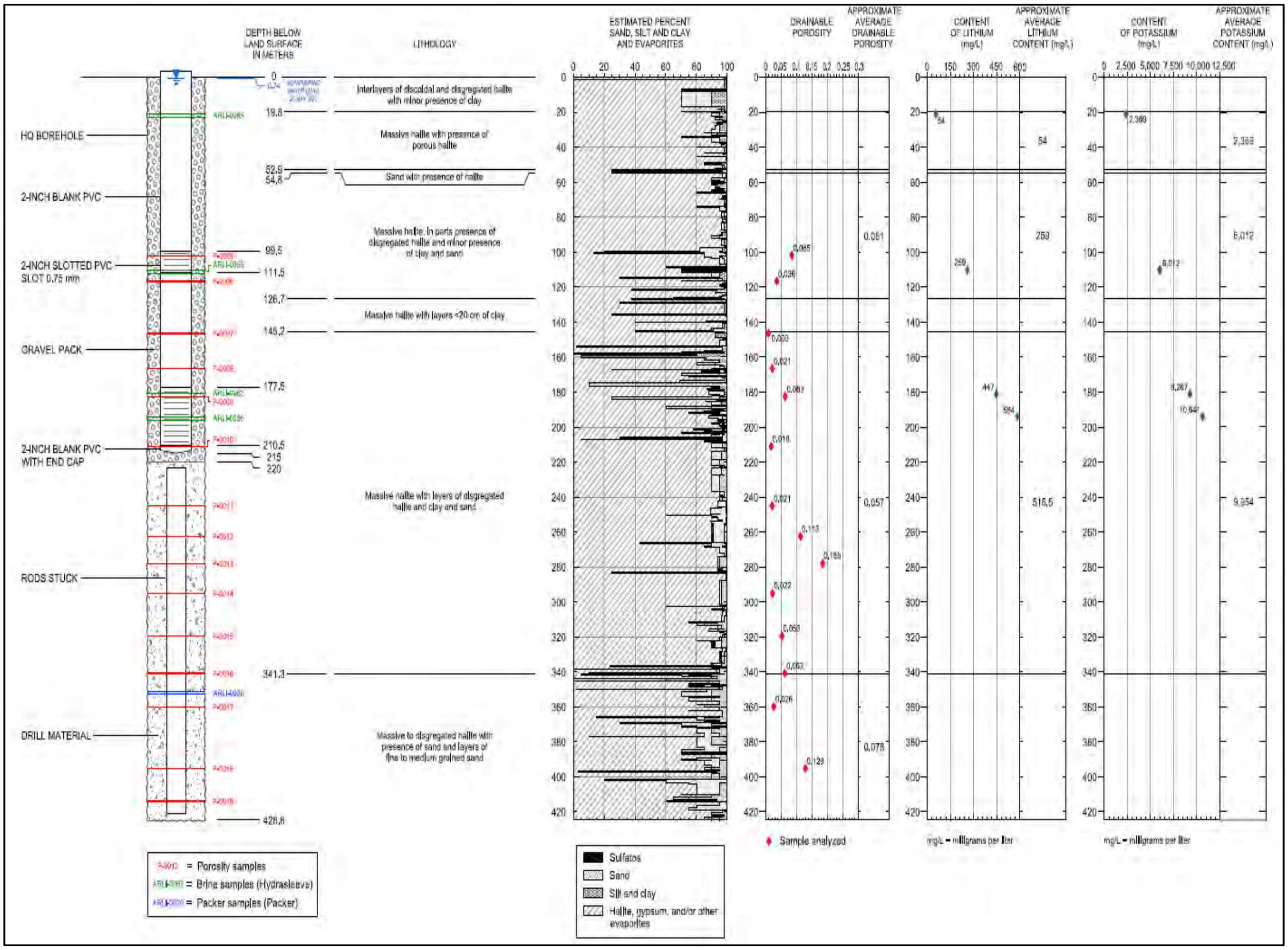
Figure 10-29: Core Samples Obtained During Drilling of Borehole ARDDH-05

Source: Lithium Chile, 2023.

Table 10-42: Summary of Lithologic Descriptions for Borehole ARDDH-05

From (m)	To (m)	Summary log
0	19.8	Interlayers of massive and fractured halite with minor presence of clay
19.8	52.9	Massive halite with some porous halite
52.9	54.8	Sand with minor halite
54.8	126.7	Massive halite, with minor fractured halite and clay and sand
126.7	145.2	Massive halite with <20 cm layers of clay
145.2	341.3	Massive halite with layers of fractured halite and minor clay and sand
341.3	424.2	Massive to fractured halite with sand and layers of fine to medium-grained sand

Figure 10-30: Construction Schematic for Borehole ARDDH-05



Source: Montgomery, 2023.

10.8.1 Brine Sampling for ARDDH-05

After the well was drilled, one brine sample was obtained using a packer system, which allows samples to be obtained at 0.75 m intervals. Each sample was filled in 500 ml plastic bottle, labeled, and sealed for avoid any interference than can affect the results. That sample was analyzed in Alex Stewart laboratories in Jujuy, Argentina. At the time this report is written, laboratory results from the packer system are not available. Temperature, pH, electrical conductivity, and density were measured in the field. Table 10-43 summarizes field parameters measured and depth interval of the sample obtained.

Table 10-43: Field Parameters Measured During Packer Sampling at ARDDH-05

Sample ID	Interval (m)	Type	Date	T(°C)	pH	CE (mS/cm)	Density (g/mL)
ARLI0020	351.5 - 353	Brine	03/23/2023	12.1	6.9	260	1.210

10.8.2 Hydrasleeve Brine Sample Results for ARDDH-05

After the well was drilled and cased, four brine samples were obtained using a Hydrasleeve system, which allows samples to be obtained at 2 m intervals. The samples were filled in 500 mL plastic bottle, labeled, and sealed. The samples were analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, pH, electrical conductivity, and density were measured in the field. Table 10-44 summarizes field parameters measured and depth interval of the samples obtained.

Table 10-44: Field Parameters Measured During Hydrasleeve Sampling at ARDDH-05

Sample ID	Interval (m)	Type	Date	T(°C)	pH	CE (mS/cm)	Density (g/mL)
ARLI0056	110 – 112	Brine	04/28/2023	14.8	6.8	251	1.222
ARLI0059	194 – 196	Brine	04/28/2023	15.1	7.5	251	1.222
ARLI0062	181 – 183	Brine	04/28/2023	14.1	6.6	250	1.222
ARLI0065	21 – 23	Brine	04/28/2023	15.8	7.3	246	1.222

Lithium Chile collected and received laboratory results for depth-specific brine samples collected from well ARDDH-05 using a Hydrasleeve system. Table 10-45 is a summary table for the laboratory results from brine samples obtained.

Table 10-45: Summary of Laboratory Chemical Results for Brine Samples Obtained from Borehole ARDDH-05

Sample ID	Date	Interval (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0056	04/28/2023	110 – 112	259	2552	6012	10
ARLI0059	04/28/2023	194 – 196	584	6462	10641	10
ARLI0062	04/28/2023	181 – 183	447	4601	9267	10
ARLI0065	04/28/2023	21 – 23	54	566	2369	10

10.8.3 Porosity Sampling for ARDDH-05

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, 15 cores samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-46 summarizes depth intervals of the samples obtained and laboratory results.

Table 10-46: Core Samples Obtained for Porosity Analysis from ARDDH-05

Sample ID	Interval (m)		Total Porosity	Specific Yield	General Lithology
	From	To			
P0005	101.85	102.05	0.121	0.085	Halite
P0006	116.65	116.80	0.106	0.036	Halite
P0007	146.30	146.50	0.044	0.009	Halite
P0008	166.50	166.70	0.043	0.021	Halite
P0009	182.60	182.80	0.078	0.063	Halite
P0010	211.10	211.30	0.027	0.018	Halite
P0011	245.05	245.25	0.081	0.021	Halite
P0012	262.45	262.65	0.327	0.113	Halite
P0013	278.00	278.20	0.257	0.185	Halite
P0014	295.05	295.20	0.029	0.022	Halite
P0015	319.65	319.80	0.100	0.053	Halite
P0016	340.76	340.95	0.078	0.062	Halite
P0017	359.85	360.05	0.032	0.026	Halite
P0018	395.30	395.40	0.163	0.129	Halite
P0019	413.94	414.11	0.274	0.040	Halite

10.8.4 Conclusions and Recommendations for ARDDH-05

The lithology in this well is essentially all halite with minor sand and clay layers. According to the values obtained at this well, which are the highest obtained in Lithium Chile's concessions, it is suggested that a new exploration well be drilled in this area, with a depth of 400 m or more. This well needs to be cased and with new samples obtained. One of those samples need to be obtained at a depth of approximately 200 m for verify the lithium concentration at this depth and new samples below that depth, at regular intervals of 50 m. The results obtained in this new well will allow to verify the higher lithium values in this area and increase the resources of the project. In case of not possible to drill a new well, it is suggested to obtain new samples at depths of 180, 200 and 220 m to validate the lithium values obtained, as well as to collect samples deeper than 220 m.

10.9 ARDDH-08

Drilling activities for exploration borehole ARDDH-08 started on January 05, 2024, and a final depth of 603.0 m bls was reached on February 05, 2024. The drilling contractor was GAIA Mining Services S.R.L., based in Salta, Argentina. This well was drilled using the DDH method and HQ diameter from land surface to 603.0 m. Surface casing was not installed at this borehole. During drilling, core samples were obtained for laboratory analysis. Core samples were stored in wooden boxes and labeled with the well name and depth. Lithological descriptions were done by geologists of Lithium Chile.

The original ARDDH-08 well was abandoned due to drilling problems and it was decided a new ARDDH-08-bis well be drilled in close proximity (which for simplicity is referred to here as ARDDH-08). The final ARDDH-08 well was drilled to 603 m with HQ diameter and cased with 2-inch PVC casing. Perforated intervals were installed from 35 to 53 m, from 65 to 83 m, from 95 to 107 m, from 197 to 215 m, from 221 to 230, from 481 to 493 m, and from 572 to 584 m bls. Blank casing intervals were set from 0 to 35 m, from 53 to 65 m, from 83 to 95 m, from 107 to 197 m, from 215 to 221 m, from 230 to 481 m, from 493 to 572 m, and from 584 to 593 m bls.

Figure 10-31 shows select core samples obtained; Table 10-47 is the summary log for this borehole and Figure 10-32 shows the construction schematic for this borehole. The lithological descriptions were made with the samples obtained from the ARDDH-08 well.

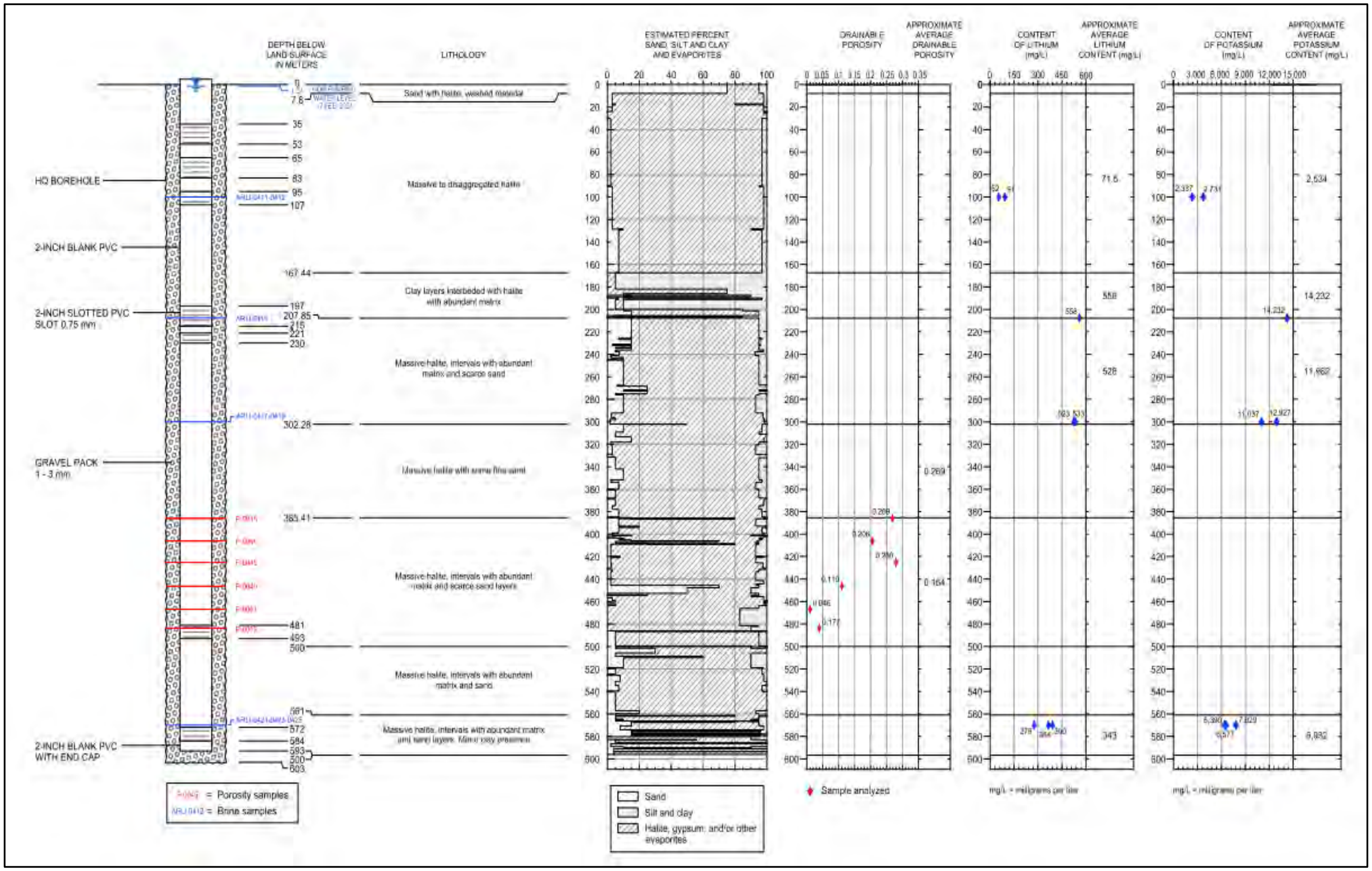
Figure 10-31: Core Samples Obtained During Drilling of Borehole ARDDH-08

Source: Lithium Chile, 2023.

Table 10-47: Summary of Lithologic Descriptions for Borehole ARDDH-08

From (m)	To (m)	Summary log
0	7.8	Sand with halite, washed material
7.8	167.44	Massive to disaggregated Halite
167.44	207.85	Clay layers interbedded with Halite with abundant matrix
207.85	302.28	Massive Halite, intervals with abundant matrix and scarce sand
302.28	385.41	Massive halite with some fine sand
385.41	500	Massive Halite, intervals with abundant matrix and scarce sand layers
500	561	Massive Halite, intervals with abundant matrix and sand
561	596.7	Massive Halite, intervals with abundant matrix and sand layers. Minor clay presence

Figure 10-32: Construction Schematic for Borehole ARDDH-08



Source: Montgomery, 2024.

10.9.1 Hydrasleeve Brine Sample Results for ARDDH-08

After the well was drilled and cased, four brine samples were obtained using Hydrasleeves, which allow samples to be obtained at 2 m intervals. The samples were filled in 500 mL plastic bottle, labeled, and sealed. The samples were analyzed at Alex Stewart laboratories in Jujuy, Argentina. Temperature, pH, electrical conductivity, and density were measured in the field. Table 10-48 summarizes field parameters measured and the depth interval of the obtained samples.

Table 10-48: Field Parameters Measured During Brine Sampling at ARDDH-08

Sample ID	Approximate Depth (m)	Type	Date	T(°C)	pH	CE (mS/cm)	Density (g/mL)
ARLI0393	300	Brine	08/02/2024	15.4	6.5	250	1.21
ARLI0395	400	Brine	08/02/2024	15.8	6.4	253	1.21
ARLI0397	380	Brine	02/13/2024	15.1	6.5	256	1.21
ARLI0399	200	Brine	02/13/2024	16.3	6.2	260	1.21
ARLI0401	50	Brine	02/13/2024	14.8	6.3	256	1.21
ARLI0411	100	Brine	03/01/2024	17.2	6.9	256	1.22
ARLI0412	100	Brine	03/01/2024	17.2	6.9	256	1.22
ARLI0415	200	Brine	03/01/2024	17.0	7.0	260	1.22
ARLI0417	200	Brine	03/01/2024	16.5	6.7	255	1.21
ARLI0419	300	Brine	03/01/2024	15.8	7.1	257	1.22
ARLI0421	300	Brine	03/01/2024	15.8	7.1	254	1.22
ARLI0423	570	Brine	03/03/2024	15.5	6.8	256	1.215
ARLI0425[2]	570	Brine	03/03/2024	15.7	6.7	2.57	1.22

Lithium Chile collected and received laboratory results for depth-specific brine samples collected from well ARDDH-08 using Hydrasleeves. Table 10-49 presents a summary table for the laboratory results from brine samples obtained.

Table 10-49: Summary of Laboratory Chemical Results for Brine Samples Obtained from Borehole ARDDH-08

Sample ID	Date	Approximate Depth (m)	Li (mg/L)	Mg (mg/L)	K (mg/L)	B (mg/L)
ARLI0411	03/01/2024	100	52	809	2,337	<20
ARLI0412	03/01/2024	100	91	1,427	3,731	<20
ARLI0415	03/01/2024	200	558	7,248	14,232	33
ARLI0417	03/01/2024	300	533	6,326	11,037	38
ARLI0419	03/01/2024	300	523	8,808	12,927	67
ARLI0421	03/02/2024	570	390	6,571	7,829	60
ARLI0423	03/03/2024	570	364	10,285	6,577	113
ARLI0425	03/05/2024	570	275	6,295	6,390	63

10.9.2 Porosity Sampling for ARDDH-08

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, 10 cores samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-50 summarizes the depth intervals of the obtained samples and laboratory results.

Table 10-50: Core Samples Obtained for Porosity Analysis from ARDDH-08

Sample ID	Interval (m)		Total Porosity	Specific Yield	General Lithology
	From	To			
P0045	385.96	386.11	0.269	0.030	Halite
P0046	405.98	406.15	0.206	0.036	Halite
P0048	425.15	425.25	0.280	0.033	Halite
P0049	446.30	446.45	0.110	0.028	Halite
P0051	466.76	466.94	0.046	0.021	Halite
P0052	483.66	483.81	0.177	0.018	Halite
P0054	486.13	486.25	0.203	0.071	Halite
P0055	509.21	509.37	0.324	0.052	Halite
P0057	526.16	526.30	0.025	0.014	Halite
P0058	567.15	567.27	0.248	0.051	Halite

10.9.3 Conclusions and Recommendations for ARDDH-08

The lithology in this well is essentially all halite with minor sand and clay layers between 167 and 207 m. The lithium concentration values obtained between 200 and 300 m are among the highest for those measured in the eastern sector of the concessions. Given the high lithium grades obtained at depth, it is recommended that a pumping well be installed in the area of ARDDH-08 to determine feasible pumping rates.

10.10 Freshwater Well CHASCHAS SUR 01

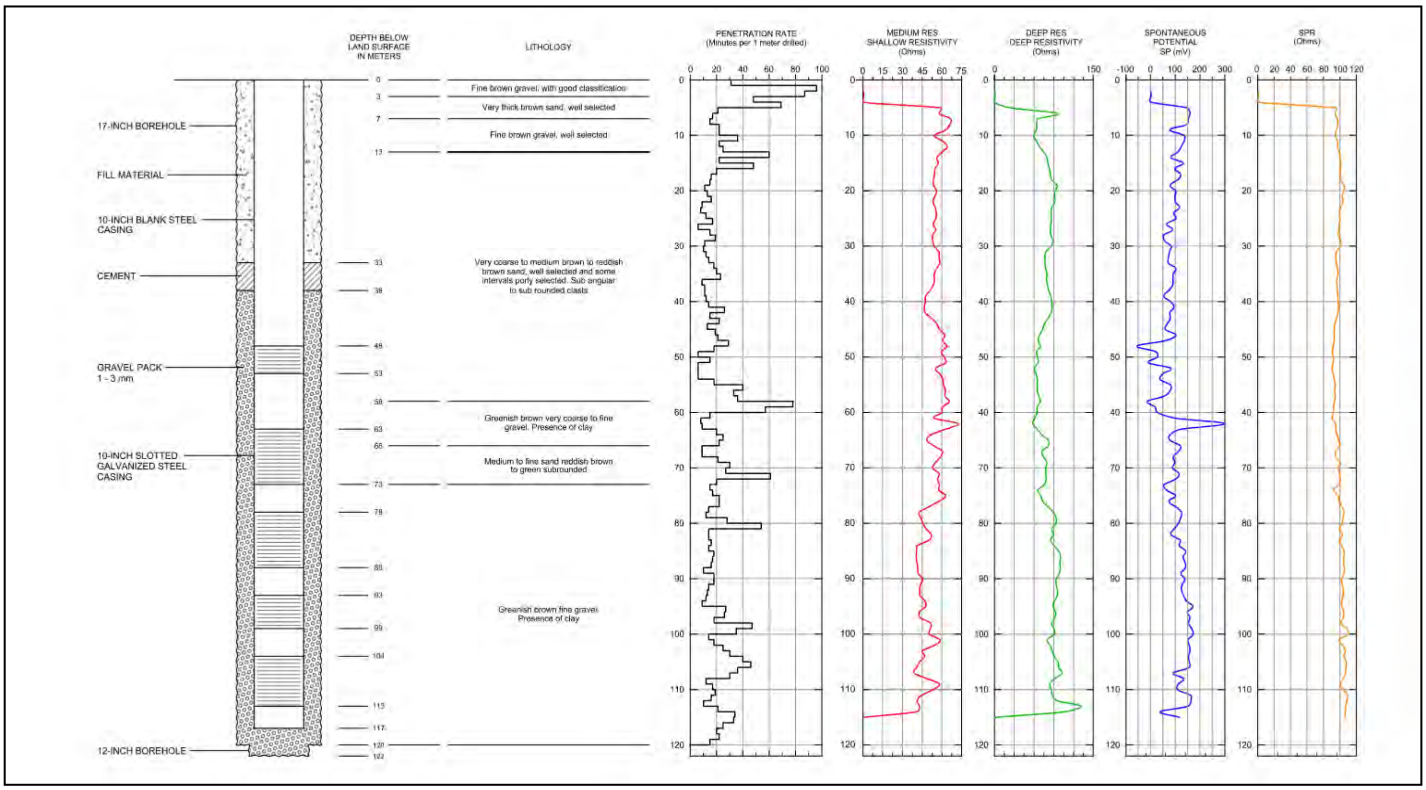
Drilling activities for exploration well CHASCHAS SUR 01 started on June 27, 2022, and a final depth of 120 m bls was reached on July 24, 2022. Drilling was done using conventional circulation mud rotary methods. Drilling fluid was a polymer mud mixed with brine. The time to drill one meter was recorded to monitor penetration rate. Drill cuttings were described by Lithium Chile personnel in the field. Unwashed and washed drill cuttings were described and stored in labeled plastic cutting boxes. Construction schematic for well CHASCHAS SUR 01 is shown on Figure 10-33.

The following is a summary of the equipment and methods used during the well's construction:

- The borehole was drilled from the land surface to 120 m with a 12-inch tricone bit.
- Once drilled to total depth, the borehole was reamed with 17-inch tricone bit until 122 m.

- Borehole geophysical logs were performed by Amaru Mining Services (Amaru), including resistivity, spontaneous potential, and single point resistance until a depth of 115 m.
- Once drilling was completed, 10-inch blank carbon steel and screened galvanized steel casing was installed (slot size of 0.7 mm) from land surface to 117 m. Gravel pack (2-4 mm diameter) was installed in the annular space surrounding the well screen from total depth to 38. Then an annulus between steel-galvanized casing and borehole was grouted in the interval from 38 to 30 m and filling material in the interval from 33 m to land surface.
- Following gravel packing, the polymer mud was also broken with a sodium hypochlorite solution into the screened area. The well was allowed to rest after emplacement of sodium hypochlorite mixture for a limited time.
- Pumping tests were conducted at exploration well CHASCHAS SUR 01 in October 2022. Pumping test equipment was mostly provided by drilling and testing contractor Amaru; some of the equipment was provided by Lithium Chile. The pumping tests were performed by Amaru's staff.

Figure 10-33: Construction Schematic for Borehole CHASCHAS SUR 01



Source: Montgomery, 2024.

On October 19, 2022, a step-discharge test was conducted at well CHASCHAS SUR 01 to evaluate drawdown at different pumping rates for determination of sustainable pumping capacity of the well for the constant-discharge test. The step-discharge test consisted of three 180-minute steps and the pre-pumping water level was at 6 meters above the land surface. Average pumping rate, drawdown, and computed specific capacity for each step are summarized in Table 10-51.

Table 10-51: Summary of The Step-Discharge Test at Exploration Well CHASCHAS SUR 01

Well ID	Test Date	Step	Average Pumping Rate (L/s)	Maximum Drawdown (m)	Specific Capacity (L/s/m)
CHASCHAS SUR 01	10/19/2022	1	3.6	6.35	0.57
		2	6.9	13.47	0.51
		3	14.2	32.32	0.44

Source: Amaru, 2022.

A constant-rate pumping test at well CHASCHAS SUR 01 started on October 20, 2022, with an average flow rate of 14.2 L/s; pre-pumping water level was -6 mbmp (Amaru, 2022). A summary of the test is given Table 10-52. The pumping test stopped on October 23, 2022, after 72 hours; water level recovery measurements were then manually measured during the following 12 hours.

Table 10-52: Pumping Test Summary for Exploration Well CHASCHAS SUR 01

Well ID	Date Pumping Started	Pumping Duration (h)	Pre-Pumping Water Level (mbgs)	Average Pumping Rate (L/s)
CHASCHAS SUR 01	10/20/2022	72	-6	14.2

Source: Amaru, 2022.

Drawdown data were analyzed for aquifer transmissivity using the semi-logarithmic graphical method developed by Cooper and Jacob (1946), while for the analysis of the residual drawdown the Theis (1935) recovery method was used (Amaru, 2022).

A summary of computed aquifer parameters is given in Table 10-53. Analysis of the trend of groundwater level drawdown for the duration of the test, performed by Amaru (2022), indicates a transmissivity of about 167.9 m^2/d. Analysis of the trend of groundwater level recovery period after pumping stopped indicates a transmissivity of about 180.8 m^2/d (Amaru, 2022).

Table 10-53: Summary of Computed Aquifer Parameters at Well CHASCHAS SUR 01

Pumped Well ID	Average Pumping Rate (L/s)	Cooper-Jacob (1946) Drawdown Method Transmissivity (m^2/d)	Theis (1935) Recovery Method Transmissivity (m^2/d)
CHASCHAS SUR 01	14.2	167.9	180.8

Source: Amaru, 2022.

10.10.1 Conclusions and Recommendations for CHASCHAS SUR 01

Analysis of the CHASCHAS SUR 01 pumping test indicates a relatively high transmissivity that is characteristic of marginal alluvial sediments. It is recommended that further freshwater exploration be undertaken with additional wells and testing.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

The following section applies to the sampling program that occurred during the drilling and testing program of Argento -01 in 2021, Argento-02 and -03 in 2023, ARDDH-01 to -08 in 2022, 2023, and 2024. Brine samples were obtained for laboratory analyses. Samples were taken both during drilling, during the pumping test, and after well construction.

11.1 Brine Sampling Methodology

Four methods were used to obtain brine samples during the exploration drilling program. Brine samples were used to support the reliability of the depth-specific samples included analyses of the following:

- Pumped samples obtained at variable depths during drilling using a downhole sampling pump.
- Brine samples obtained during and at the end of the pumping test in exploration wells Argento-01, -02 and -03.
- Hydrasleeve samples obtained at specific depths after the wells were cased.
- Packer brine samples obtained during drilling at corehole ARDDH-01 and -04.

11.1.1 Brine Sampling During Drilling

The methodology used to sample the well consisted of lowering a 5 HP pump at the depth reached while drilling and pumping the water volume from the well. Because of the open borehole conditions during sampling, the samples are not considered to be truly depth-specific samples. This operation was repeated three times before finally taking the sampling after water levels recovered.

11.1.2 Brine Sampling During Exploration Well Pumping Test

Brine samples were collected during the pumping test conducted at Argento-01, -02 and -03. Samples were typically obtained during testing and at the end of the pumping period: brine samples were collected at approximately 12-hour intervals during pumping. The purpose of sampling was to document the chemistry of brine from pumping wells, and to document changes in chemistry, if any, during the initial pumping periods. Unlike depth-specific samples, brine samples collected during well pumping are a composite chemistry sample for the entire screened interval of the well and are more representative of the chemistry that would be expected from that well during production pumping.

Brine samples were collected directly from the discharge line. Temperature (°C), electrical conductivity (EC), pH, and brine density were monitored during pumping. Brine samples from current pumping test program along with duplicate samples were sent to ASA Laboratory, Salta, Argentina; brine samples from 2018 drilling and testing program were sent to Alex Stewart NOA Laboratory in San Salvador de Jujuy, Argentina. The laboratory is independent of the Issuer.

11.1.3 Brine Sampling Using Hydrasleeve Sampling Bags

Samples were taken from top to bottom to avoid mixing of the brine within the well; this was done to obtain representative brine samples for each selected depth. The Hydrasleeve sample bags were lowered into the well using a manual winch with a 3-mm diameter cable marked every 5 m and mounted on an iron stand. As a cable guide, a sheave was mounted on an iron stand over the wellhead.

11.1.4 Brine Sampling Using an Inflatable Packer

An inflatable double packer was lowered into the cased well to the zone identified for sampling. The packer was inflated to attempt isolation of the aquifer zoned to be sampled. Brine samples were collected from the zone between the two packers.

11.1.5 Brine Sample Preparation

After the brine samples were sealed on site, they were stored in a cool location, then shipped in sealed containers to the laboratory for analysis. Chemistry samples (brine) were not preserved, and were not subjected to any further preparation prior to shipment to participating laboratories. Duplicate brine samples and remaining brine are stored at the Alex Stewart NOA in Jujuy.

11.1.6 Brine Sample Analyses

Alex Stewart NOA has their main offices in Mendoza, Argentina, and corporate offices in Great Britain. Alex Stewart NOA has extensive experience analyzing lithium-bearing brines. The Alex Stewart NOA laboratories are ISO 9001 accredited and operate according to Alex Stewart Group international standards, consistent with ISO 17025 standards. The laboratory is independent of the Issuer. Samples were analyzed at the Alex Stewart laboratory using the Inductively Coupled Plasms (ICP) spectrometry analytical method for the determination of lithium, calcium, magnesium, boron, sodium, barium, strontium, iron, and maganese; furthermore, argentometry was used to quantify chloride and gravimetric methods were used to determine the sulfate content.

11.1.7 Quality Control Results and Analyses

Analytical quality was monitored through the use of duplicate and blank samples. Sample duplicates were obtained during sample collection in the field and also via laboratory split samples done by the laboratory. Duplicates were analyzed during each of the sampling programs during drilling, during the pumping test, during Hydrasleeve sampling, and during the inflatable packer sampling. Table 11-1 presents original and duplicate sample analytical results and statistics for selected constituents. Table 11-2 presents percentage of difference between original and duplicate samples for selected constituents.

All percentage differences between the original and the duplicate are low and considered within an acceptable range.

11.2 Core Sampling Methodology

Lithologic descriptions of the core were done by personnel of Lithium Chile. According to the different lithologic units recognized, six core samples were selected for porosity (total and drainable) analysis. For each sample, 15 to 20 cm of unaltered core was selected and stored in a plastic tube, with the same diameter of the core, labeled and sealed. Table 10-27 summarizes depth intervals of the samples obtained and Figure 10-18 shows one of the sealed core samples.

To determine specific yield (i.e., drainable porosity) and total porosity, retrieved core was analyzed at the LCV Laboratory in Buenos Aires, Argentina. The measurement procedure involved saturating the core sample with brine solution and placing them in test cells where a pressure differential was applied and the proportion of brine which can be drained was estimated along with the total porosity. LCV is an ISO 9001-2015 accredited laboratory, and independent of the Issuer.

11.2.1 Quality Control Results and Analyses

For the same lithology, LCV laboratory results at ARDDH-04 and ARDDH-05 were compared with the Zelandez BMR results from Argento-01 to confirm overall consistency. The halite unit generally shows an acceptable agreement (3% average from the Zelandez results versus 4-5% average from the LCV results), and future BMR logs and drainable porosity testing is recommended to better confirm the obtained drainable porosity values.

11.3 Sample Security

All samples were labeled with permanent marker, sealed with tape, and stored at a secure site, both in the field and in Salta, Argentina. Remaining sample brine and duplicates samples obtained during drilling and testing are currently being stored in the Alex Stewart NOA laboratory in Jujuy.

11.4 QA/QC Conclusions

The field sampling of brines from the pumping tests was done in accordance with generally accepted industry standards. The brine sampling program included Quality Assurance and Quality Control (QA/QC) standard elements such as including duplicate and blank samples. Formal traffic reports and chain of custody documents were prepared for every sample obtained and submitted for laboratory analysis. In the opinion of the QP, sample preparation, security, and analytical procedures were acceptable and results from the laboratory analyses are considered adequate.

Table 11-1: Percentage Difference Between Original and Duplicate Sample Results for Li, K, and Mg

Sample ID Original/Duplicate	Li (mg/L)	Duplicate	% Difference	K (mg/L)	Duplicate	% Difference	Mg (mg/L)	Duplicate	% Difference
[1]AR0921-01/AR0921-01[1,6]	20	20	0.0	1,093	1,106	1.2	166	162	2.4
[1]AR0921-243-01/AR0921-XXX(243) [1,7]	97	97	0.0	3,181	3,128	1.7	1,507	1,505	0.1
[1]AR0921-XXX/AR0921-XXX(243) [1,6]	97	97	0.0	3,128	3,135	0.2	1,505	1,498	0.5
[1]AR0921-XXX/AR0921-XXX(300) [1,6]	94	94	0.0	3,209	3,211	0.1	1,286	1,284	0.2
[1]AR1021-300-10/AR1021-300-10[1,6]	206	201	2.4	8,255	8,058	2.4	3,301	3,345	1.3
AL1-08443448/AL1-07443448	321	323	0.6	8,479	8,410	0.8	4,871	4,861	0.2
ARLI0009/ARLI0010	277	201	27.4	8,907	6,445	27.6	7,116	4,556	36.0
ARLI0012/ARLI0013	297	332	11.8	9,526	10,746	12.8	7,776	9,051	16.4
ARLI0015/ARLI0016	219	215	1.8	7,138	6,840	4.2	5,541	5,105	7.9
[2]AZ-EE-04/AZ-EE-04[2,6]	261	258	1.1	11,467	11,349	1.0	3,992	4,033	1.0
[3]AZ-HS-437- 437/AZ-HS-437- 437[3,6]	291	294	1.0	10,984	10,999	0.1	4,879	4,940	1.3
[4]AZ-HS-327 (b)- 327/AZ-HS-XXX- 327[4,7]	440	446	1.4	11,704	11,735	0.3	7,414	7,481	0.9
[5]AZ-FP-436/AZ-FP-436[5,4]	267	271	1.5	11,255	11,451	1.7	3,967	3,976	0.2
[5]AZ-FP-448/AZ-FP-XXX[5,7]	278	279	0.4	11,435	11,475	0.3	4,099	4,131	0.8
ARLI0076/ARLI0077[8]	200	200	0	8,340	8,414	0.9	2,259	2,196	2.8
ARLI0279/ARLI0280	265	263	-0.8	3,902	3,872	-0.8	9,561	9,420	-1.5

1. Sample taken during drilling September-October 2021.
2. Sample taken during Pumping Test December 2021.
3. Sample taken during Hydrasleeve on January 06, 2022.
4. Sample taken during Hydrasleeve on January 07, 2022.
5. Packer samples taken on January 15-20, 2022.
6. Duplicate sample made by laboratory Alex Stewart NOA.
7. Duplicate sample made by field personnel of Argentum Lithium.
8. Sample taken during May 2023 pumping test.

Table 11-2: Percentage Difference Between Original and Duplicate Sample Results for Ca, Na, and B

Sample ID Original/Duplicate	Ca (mg/L)	Duplicate	% Difference	Na (mg/L)	Duplicate	% Difference	B (mg/L)	Duplicate	% Difference
[1]AR0921-01/AR0921-01[1,6]	819	828	1.1	118,256	118,071	0.2	<10	<10	---
[1]AR0921-243-01/AR0921-XXX(243) [1,7]	1,206	1,225	1.6	111,770	110,570	1.1	<10	<10	---
[1]AR0921-XXX/AR0921-XXX(243) [1,6]	1,225	1,216	0.7	110,570	111,435	0.8	<10	<10	---
[1]AR0921-XXX/AR0921-XXX(300) [1,6]	1,117	1,114	0.3	114,901	113,447	1.3	13	13	0.0
[1]AR1021-300-10/AR1021-300-10[1,6]	683	688	0.7	112,554	110,645	1.7	35	35	0.0
AL1-08443448/AL1-07443448	849	831	2.1	109,820	112,458	2.4	67	68	1.5
ARLI0009/ARLI0010	2704	2045	24.4	106,628	111,819	4.9	10	10	0
ARLI0012/ARLI0013	2743	3230	17.8	105,824	103,536	2.2	10	10	0
ARLI0015/ARLI0016	2675	2251	15.9	109,263	110,311	0.1	10	10	0
[2]AZ-EE-04/AZ-EE-04[2,6]	483	484	0.2	104,808	105,397	0.6	52	53	1.9
[3]AZ-HS-437- 437/AZ-HS-437- 437[3,6]	812	824	1.5	105,596	105,722	0.1	49	50	2.0
[4]AZ-HS-327 (b)- 327/AZ-HS-XXX- 327[4,7]	2,409	2,431	0.9	98,249	101,040	2.8	44	44	0.0
[5]AZ-FP-436/AZ-FP-436[5,4]	505	509	0.8	110,182	111,078	0.8	49	49	0.0
[5]AZ-FP-448/AZ-FP-XXX[5,7]	557	554	0.5	109,708	108,918	0.7	49	50	2.0
ARLI0076/ARLI0077[8]	469	466	0.6	113,560	115,272	1.5	35	35	0
ARLI0279/ARLI0280	481	477	-0.8	111,542	110,717	-0.7	51	50	-2.0

1. Sample taken during drilling September-October 2021.
2. Sample taken during Pumping Test December 2021.
3. Sample taken during Hydrasleeve on January 06, 2022.
4. Sample taken during Hydrasleeve on January 07, 2022.
5. Packer samples taken on January 15-20, 2022.
6. Duplicate sample made by laboratory Alex Stewart NOA.
7. Duplicate sample made by field personnel of Argentum Lithium.
8. Sample taken during May 2023 pumping test.

12 DATA VERIFICATION

12.1 Exploration Methods and Resource Estimate

Michael Rosko (independent QP) conducted the following forms of data verification:

- Provided QA/QC and protocol documents for brine sampling in accordance with industry standards.
- Provided methods for pumping test and brine sampling; verified their implementation.
- Instructed Salta-based M&A geologists to visit the site and collect an independent brine sample during drilling. The QP could not travel to Argentina due to COVID restrictions. The QP visited the site on March 22, 2022, to verify well locations and depth to water. A subsequent visit on February 17, 2023, involved reviewing exploration activities.
- Instructed Salta-based M&A geologists to review cuttings and verify that lithologic descriptions were accurate.
- Reviewed regular correspondence from the field to ensure that recommended drilling and testing methods were being adhered to.
- Cross-checked all values in the summary chemistry and drainable porosity tables in the report against original laboratory reports.
- Verified adequacy of the laboratory based on comparison of duplicate sample results.

In the opinion of the QP, data presented in this report is accurate and adequate for estimating the Measured, Indicated, and Inferred resources.

12.2 Mineral Processing and Infrastructure

Patricio Pinto, an independent QP, made several visits to different sites related to Lithium Chile's project. He first visited their head office in Salta on March 27, 2023, and the project site on March 28 and 29, 2023, where he examined various aspects of the site including wells, road access, and potential locations for infrastructure.

On January 31, 2024, he visited the CIDMEJu research center in Palpalá, Jujuy, inspecting the facilities and verifying the availability of necessary resources for metallurgical testing.

Mr. Pinto also visited the Lanshen and Summit Nanotech Pilot plant facilities in Santiago, Chile, once before the start of testwork on November 07, 2023. He visited Lanshen's pilot plant facilities again on March 13, 2024 where he inspected the facilities and observed the development of metallurgical tests.

The QP verified the information from Lithium Chile and confirmed its reasonableness and compliance with industry standards.

12.3 Reserve Estimate and Mining Methods

Brandon Schneider (independent QP) conducted the following forms of data verification:

- Reviewed pumping test, brine sampling, and drainable porosity results.
- Reviewed basin-wide water balance and supporting hydrogeological analyses for construction of reserve model.
- Reviewed criteria used for planned production and extraction wells.

In the opinion of the QP, data presented in this report is adequate for estimating the Probable reserves.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

The technology selected by Lithium Chile to extract lithium from the Salar de Arizaro corresponds to the DLE technology through adsorption resins. This process involves bringing brine into contact with resin packed in columns, where the lithium (Li^+) ions are adsorbed and adhere to the resin surface through a weak physical force known as the "Van der Waals force." This allows the process to be reversible by desorption (elution) using a water stream that releases and drags the Li^+ ions generating an aqueous solution (eluate) that is diluted in lithium and some contaminants such as calcium, magnesium and boron, among others. The eluate is then concentrated by reverse osmosis, followed by a chemical precipitation stage, and an ion exchange stage to remove impurities prior to the next process of mechanical evaporation to further concentrate the lithium. The concentrated brine is sent to a second impurity removal stage using ion exchange, followed by a carbonation process where sodium carbonate is added to produce technical-grade lithium carbonate. In the following area of dry product handling, this technical-grade lithium carbonate is dried and micronized to produce battery-grade lithium carbonate.

Work has been carried out in close collaboration with different suppliers of direct extraction technology, using adsorption resins to assess the efficiency of lithium extraction from the Salar de Arizaro brine. This includes evaluating the contribution of contaminants in the product solution, the water consumption required for the extraction process, the effect of temperature, and other performance-influencing parameters. Additionally, laboratory tests have been performed to verify the parameters and variables used in the process design to obtain a battery-grade product.

13.2 Metallurgical Testwork

The metallurgical testwork performed and presented in this section are divided into historical metallurgical testwork and recent metallurgical testwork. Historical metallurgical testwork, realized during 2022 and the first half of 2023, focused on DLE using adsorption resins. Recent metallurgical testwork, realized between the end of 2023 and during the year 2024, considered continuous DLE operations, along with verification of other process areas involved in the design, such as mechanical evaporation, impurity removal, and carbonation.

13.2.1 Historical Metallurgical Testwork

Historical metallurgical testwork (Table 13-1) focused on DLE technology with brine from the Salar de Arizaro using adsorption resins, given their importance in the lithium extraction process and the chemical quality of the product brine. In August 2022, a brine sample was extracted from the Salar and sent to Sunresin, Summit Nanotech and Mineria Positiva for laboratory testing summarized in this section. In the case of Adionics, a simulation was performed taking as input the characterization of the same brine sample, supplied by Lithium Chile. The sample used in the various tests were point samples and not necessarily representative of the entire brine from Salar de Arizaro. However, the Salar does not exhibit significant variation in the composition of its different ions, which means that the differences in composition are not relevant for the results obtained.

Historical metallurgical testwork is summarized below and detailed in the Salar de Arizaro Project NI 43-101 Technical Report and Preliminary Economic Assessment, Argentina, prepared for Lithium Chile Inc. on August 04, 2023.

Table 13-1: Historical Metallurgical Testwork Summary Table

Year	Laboratory/Location	Testwork Performed
2022 & 2023	Sunresin Application Laboratory/ China	DLE with resins (adsorption and elution stages)
2022	Summit Nanotech Laboratory/ Canada	DLE with resins (adsorption and elution stages)
2022	Minería Positiva Laboratory/ Jujuy, Argentina	DLE with resins (adsorption and elution stages)
2023	Adionics Laboratory/ France, Paris	Lithium Solvent Extraction (SX)

13.2.1.1 Sunresin Testwork

The following sections present the results of DLE testing performed by Sunresin in 2022 and again in 2023.

13.2.1.1.1 Sunresin Direct Lithium Extraction Testwork, 2022

In 2022, Sunresin conducted tests in two stages: single-column testing, and continuous column testing (Sunresin, 2022).

These tests aimed to verify the adsorption and desorption process of lithium, its stability over several cycles and to provide data for process design. Table 13-2 shows the chemical composition of the Salar de Arizaro brine used for the two 2022 tests conducted by Sunresin.

Table 13-2: Chemical Composition of the Salar de Arizaro brine, Sunresin 2022 Testwork

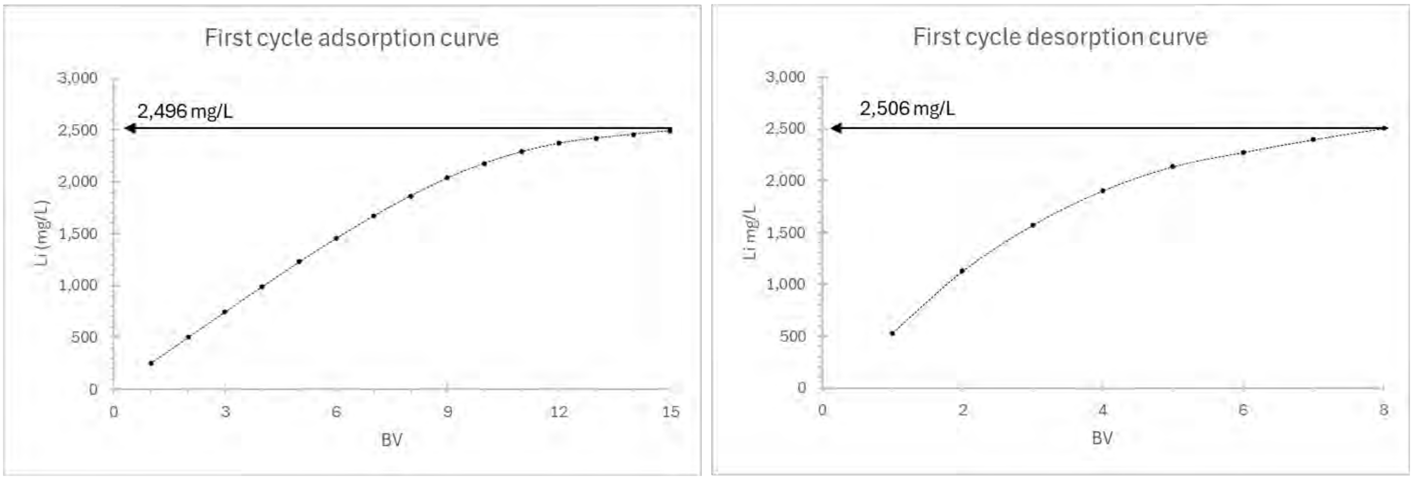
Component	Li	Na	K	Ca	Mg	B	Cl	pH
Content (mg/L)	252	84,532	22,375	239	1,288	0.04	186,330	5.12

Both single-column and continuous column tests began with resin conditioning or pre-treatment, which was performed by flushing the resin with pure water for 1 hour at a flow rate of 20 BV/h (BV: Bed Volume or resin filling volume). For column preparation, exactly 50 ml of lithium adsorbent resin, pre-treated with water, was placed in a test tube. For adsorption, or lithium loading on the resin, 15 BV of raw brine was used at a flow rate of 3 BV/h. For desorption, or lithium unloading, 8 BV of water was used at a flow rate of 4 BV/h.

13.2.1.1.1.1 Single-column Test (Test Tube)

The single-column test was repeated for nine cycles, with samples taken during cycle 1, 5 and 9 to compare results. Figure 13-1 presents the adsorption and desorption curves for the first cycle, which showed that the amount of lithium adsorbed by the resin was 2,496 mg/L while the amount of lithium desorbed with water was 2,506 mg/L.

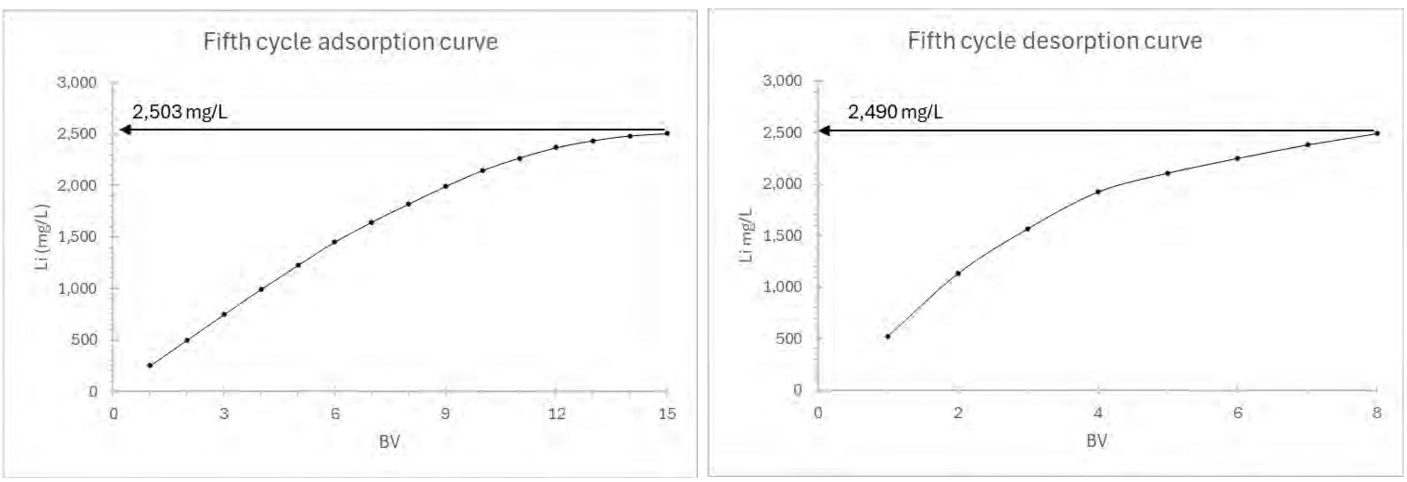
Figure 13-1: Adsorption and Desorption Curves for the First Cycle



Source: Ausenco, 2024.

The results of the cycle 5 are shown in Figure 13-2. The curves indicate that the amount of lithium adsorbed by the resin was 2,503 mg/L while the amount of lithium desorbed with water was 2,490 mg/L.

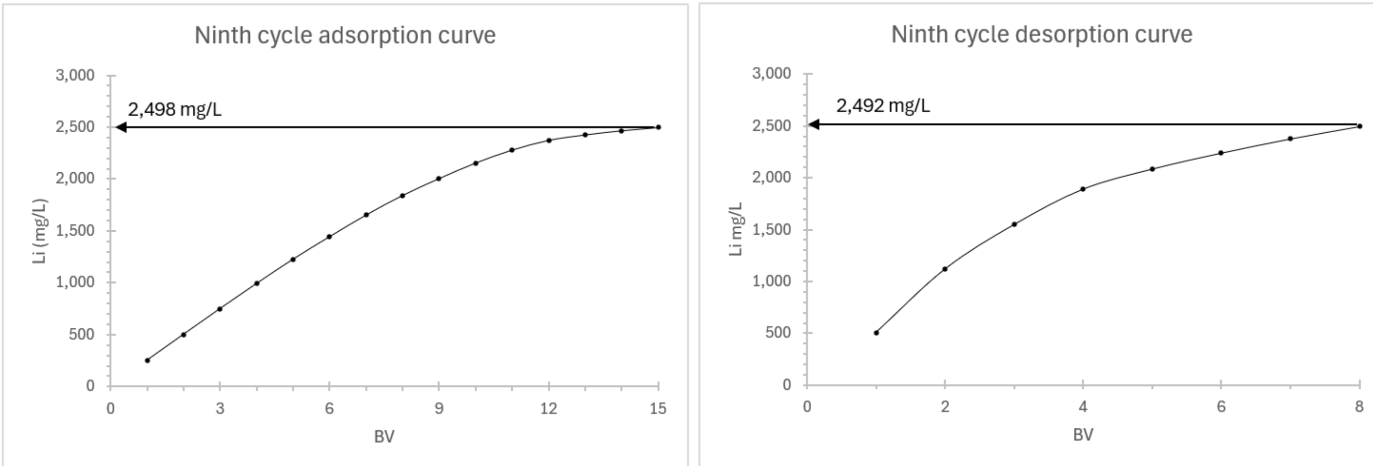
Figure 13-2: Adsorption and Desorption Curves for the Fifth Cycle



Source: Ausenco, 2024.

The results of the cycle 9 are shown in Figure 13-3. The curves indicate that the amount of lithium adsorbed by the resin was 2,498 mg/L and the amount of lithium desorbed with water was 2,492 mg/L.

Figure 13-3: Adsorption and Desorption Curves for the Ninth Cycle



Source: Ausenco, 2024.

Table 13-3 summarizes the results of the single-column tests, showing that the amount of lithium adsorbed onto the resin can be stabilized at around 2,500 mg/L throughout the process.

Table 13-3: Summary of Single-column Test Results, Sunresin 2022

Parameter	Units	1st Cycle	5th Cycle	9th Cycle
Adsorbed lithium	mg/L	2,496	2,503	2,498
Desorbed lithium	mg/L	2,506	2,490	2,492

13.2.1.1.1.2 Continuous Column Test with Multiport Valve

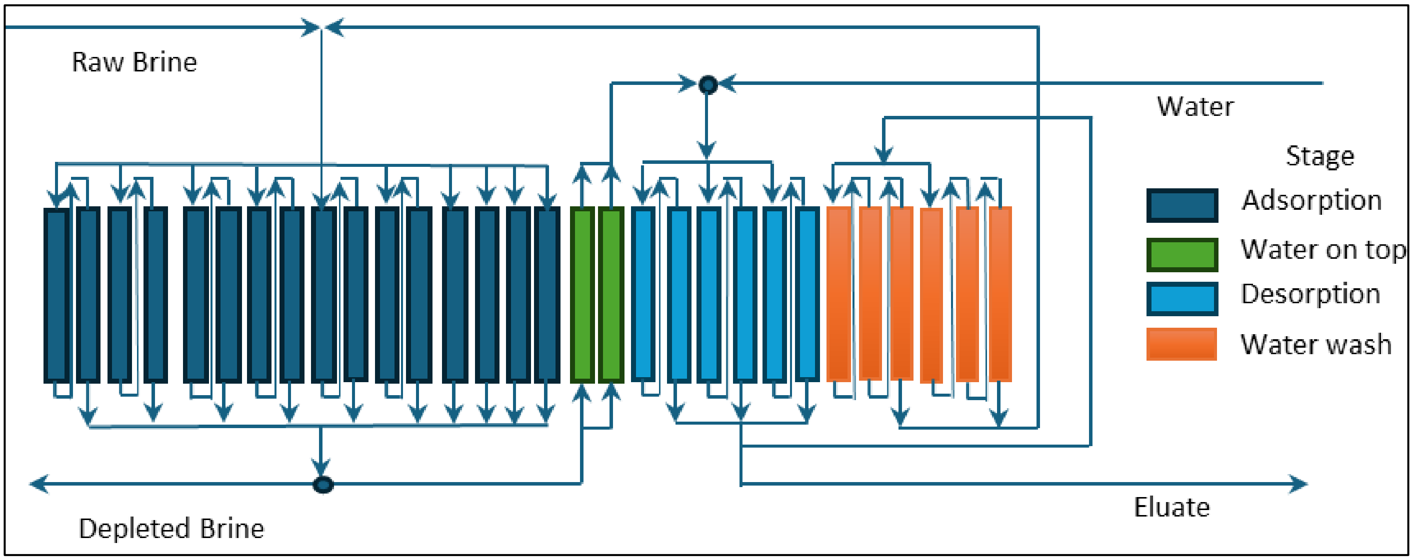
This test built upon the data from the Single-column Test (Test Tube), simulating continuous adsorption technology as used in industrial production. The process carried out in the direct extraction tests with adsorption resin in continuous columns was divided into four main stages, which are shown in the circuit diagram in Figure 13-4 and are described below.

- Adsorption Stage: This stage consisted of columns arranged in series and grouped in sets of eight operating in parallel. When the adsorption columns became saturated, they were transferred to the regeneration stage, while columns with unsaturated resins advanced to replace the saturated columns, ensuring continuous operation of the circuit.
- Water Recovery on Top Stage: For resin regeneration, the adsorption column was filled with pure water. To reduce water consumption, the water in the column was recycled by pushing it out of the column in reverse using the adsorbent liquid.
- Desorption Stage: Pure water was used as the desorbent for the resin. This stage involved columns arranged in series and grouped in the same way similarly to the adsorption stage. This configuration maximized efficiency,

reduced water consumption, and minimized the entry of magnesium and sodium into the eluate solution (product solution).

- Water Washing Stage: The column with saturated resin and brine was displaced with water. This recovered brine was recirculated into the adsorption process, allowing for partial recovery of the wash water and enhancing lithium recovery from the system.

Figure 13-4: Circuit Diagram for Continuous Column Test



Source: Ausenco, 2024.

Continuous adsorption tests were conducted over a period of 6 days achieving an average lithium concentration of 11.0 mg/L in the depleted brine and an adsorption yield for lithium ions in the brine of over 90%. The tests also showed that the adsorption of lithium on the resin remained stable over time. Regarding the product solution (eluate), an average lithium ion concentration of 613 mg/L was obtained, while the concentrations for magnesium and sodium ions were 35.9 mg/L and 187 mg/L, respectively.

13.2.1.1.2 Sunresin Direct Lithium Extraction Testwork, 2023

In 2023, Sunresin repeated a single-column test (Sunresin, 2023) to evaluate the feasibility of extracting lithium from the Salar de Arizaro brine using their adsorption resins. This test intended to gather essential data for future industrial-scale design. The chemical composition of the Salar de Arizaro brine used for the two 2023 tests conducted by Sunresin is detailed in Table 13-4.

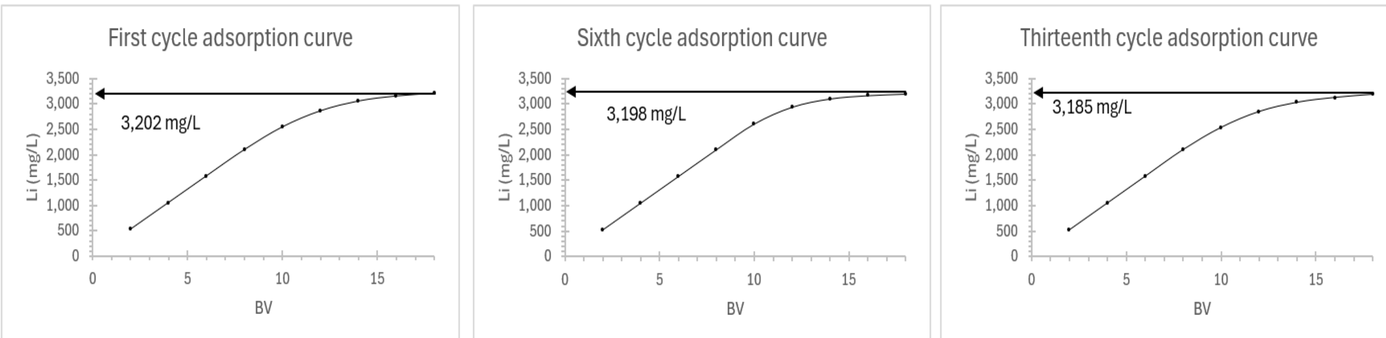
Table 13-4: Chemical Composition of the Salar de Arizaro brine, Sunresin 2023 Testwork

Component	B	Li	Na	K	Ca	Mg	SO_4^{2-}	Cl^-	pH
Content (mg/L)	41	263	104,800	10,600	781	3,650	9,880	189,150	6.7

The tests began with resin conditioning or pre-treatment, which was performed by flushing the resin with 10 BV of pure water. For column preparation, exactly 100 ml of lithium adsorbent resin, pre-treated with water, was placed in a test tube. For adsorption, or lithium loading on the resin, 10 BV of raw brine was used at a flow rate of 3 BV/h. For desorption, or lithium unloading, 8 BV of water was used at a flow rate of 5 BV/h.

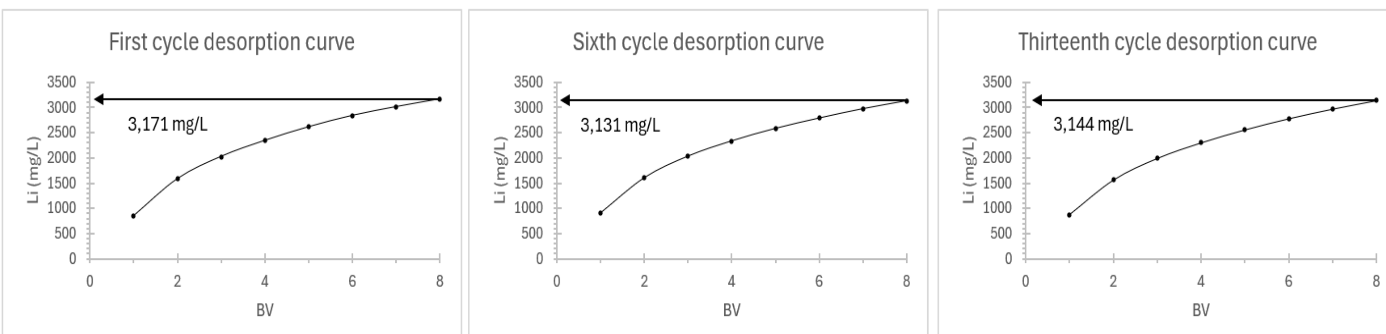
The experiment is repeated for 13 cycles, with samples taken during cycle 1, 6 and 13 to compare results. Figure 13-5 and Figure 13-6 present the results obtained from this test, demonstrating that the resin exhibited effective and stable adsorption. The desorption data further indicated consistent elution, with high concentrations in the eluate, reaching values above 850 mg/L, and the operation concluded at around 8 BV.

Figure 13-5: Adsorption Curves



Source: Ausenco, 2024.

Figure 13-6: Desorption Curves



Source: Ausenco, 2024.

13.2.1.2 Other Direct Extraction Tests (Summit Nanotech, Mineria Positiva, Adionics)

This section presents the results of DLE tests developed by Summit Nanotech (Summit Nanotech, 2022) and Mineria Positiva (Mineria Positiva, 2022), both using adsorption resins, as well as the results from Adionics' solvent extraction tests (Adionics, 2023).

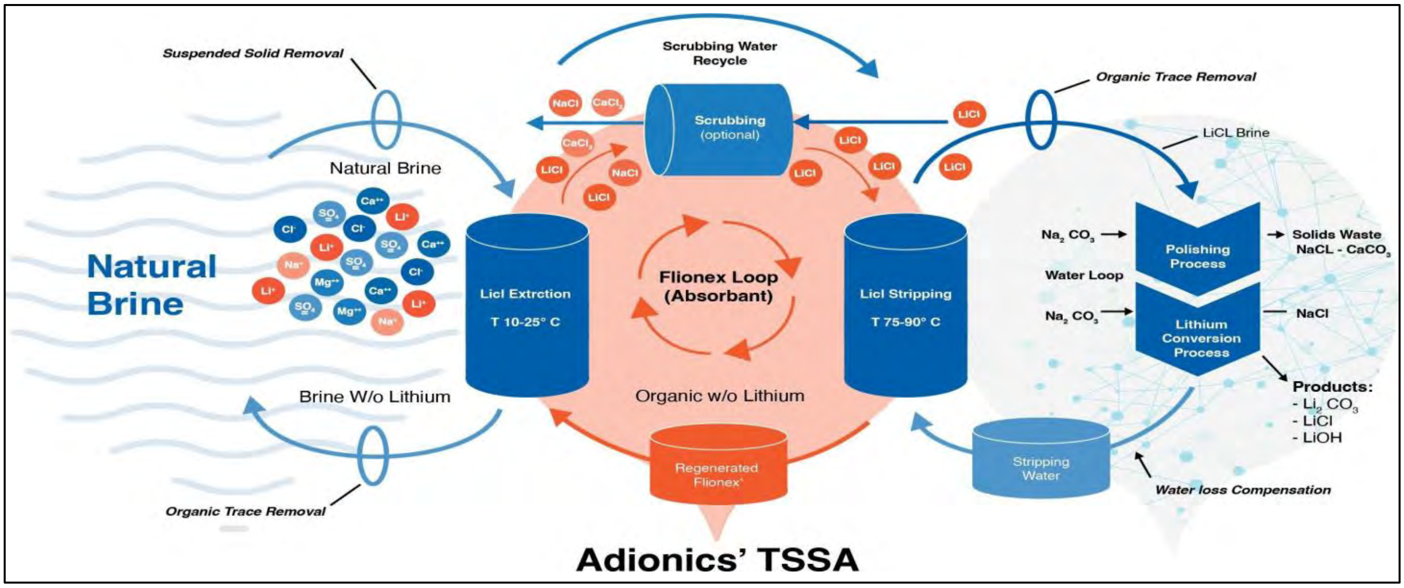
The parameters and results of the tests performed by Summit Nanotech and Mineria Positiva are summarized in Table 13-5.

Table 13-5: Direct Lithium Extraction Test Results by Summit Nanotech and Mineria Positiva

Parameter	Units	Summit Nanotech Results	Mineria Positiva Results
Temperature	°C	50.0	20.0
Bed volume (BV)	mL	72	100
Feed brine flow rate	BV/h	-	3
	mL/min	2.5	-
Feed brine volume	mL	1,800	4,080
Adsorption time (full charge)	h	-	13.0
Eluent flow rate	mL/min	2.5	-
	BV/h	-	3
Eluent volume	mL	700	2,280
Elution time	h	-	8.00
Eluent type	-	Water with lithium (180 mg/L LiCl)	Water with lithium (50 ppm of Li)
Resin mass	g	72	80
Internal diameter	cm	2.5	3.4
Packing eight	cm	15.2	13.0
Driving force	-	Pressure	Gravity
Lithium concentration in feed	mg/L	252	286
Lithium concentration in eluate	mg/L	804	937
Recovery factor	mg Li/g resin	-	5.60
Max. lithium recovery (during adsorption)	%	98.2	95.0
Lithium recovery (after elution)	%	77.4	76.4

The simulation conducted by Adionics used a brine composition provided by Lithium Chile to develop the solvent extraction process for lithium extraction. The process is shown in Figure 13-7 and the results are detailed in Table 13-6.

Figure 13-7: Process Proposed by Adionics



Source: Adionics, 2023.

Table 13-6: Direct Lithium Extraction Test Results by Adionics

Parameter	Units	Test 1 Values	Test 2 Values	Test 3 Values
Design				
Number of extraction steps	-	4	4	4
Number of scrubbing steps	-	1	2	3
Number of stripping steps	-	3	3	3
Organic/Aqueous extraction	-	1	1	1
Organic/Aqueous scrubbing	-	30	30	20
Organic/Aqueous stripping	-	10	10	10
Performances				
Li-extraction yield	%	92-95	92-95	92-95
LiCl-purity	wt%	45-50	67-73	92-96
Li-concentration in produced brine	mg/L	3,000	3,100	3,100
Production	t LCE/y	5,000	5,000	5,000
Brine flowrate	m^3/h	440	440	440
Composition of feed brine				
Lithium (Li)	mg/L	286	286	286
Sodium (Na)	mg/L	110,815	110,815	110,815
Potassium (K)	mg/L	11,828	11,828	11,828
Magnesium (Mg)	mg/L	4,049	4,049	4,049
Calcium (Ca)	mg/L	527	527	527
Chloride (Cl)	mg/L	185,598	185,598	185,598
Sulfate (SO_4)	mg/L	13,397	13,397	13,397

Parameter	Units	Test 1 Values	Test 2 Values	Test 3 Values
Boron (B)	mg/L	50	50	50
Composition of produced brine				
Lithium (Li)	mg/L	3,000	3,100	3,100
Sodium (Na)	mg/L	7,600	3,100	500
Potassium (K)	mg/L	<0.1	<0.001	<0.000001
Magnesium (Mg)	mg/L	<0.1	<0.001	<0.000001
Calcium (Ca)	mg/L	180	60	10
Chloride (Cl)	mg/L	28,000	21,000	18,000
Sulfate (SO_4)	mg/L	<0.1	<0.001	<0.000001
Boron (B)	mg/L	<0.1	<0.001	<0.000001
Composition of spent brine				
Lithium (Li)	mg/L	15	14	14
Sodium (Na)	mg/L	106,860	107,204	105,935
Potassium (K)	mg/L	11,519	11,514	11,354
Magnesium (Mg)	mg/L	3,935	3,933	3,878
Calcium (Ca)	mg/L	497	507	504
Chloride (Cl)	mg/L	178,069	178,603	176,474
Sulfate (SO_4)	mg/L	12,990	12,984	12,803
Boron (B)	mg/L	48	48	48

13.2.2 Recent Metallurgical Testwork

Recent metallurgical testwork (Table 13-7) considers continuous DLE operations using adsorption resins to assess the efficiency of lithium extraction from the Salar de Arizaro brine, including the evaluation of contaminants contribution in the product solution, the water consumption required for the extraction process, the effect of temperature in the process, and other performance-influencing parameters. Recent metallurgical testwork also includes laboratory-scale tests regarding other process areas involved in the process design to obtain a battery-grade product, such as mechanical evaporation, impurity removal, and carbonation.

Table 13-7: Recent Metallurgical Testwork Summary Table

Year	Vendor Name	Laboratory/Location	Testwork Performed
2024	Lanshen	Lanshen Application Laboratory/Chile	Single-column stationary test of direct lithium extraction with resins (Lanshentec DLE Adsorbent Li – 21)
2024	Lanshen	Lanshen Application Laboratory/Chile	Continuous cycle tests of DLE with resins (Lanshentec DLE Adsorbent Li – 21)
2024	Summit Nanotech	Summit Nanotech Laboratory/Canada	Preliminary pilot test of continuous DLE with a proprietary aluminium-based sorbent
2024	CIDMEJu[1]	Jujuy Center for Research and Development of Advanced Materials and Energy Storage/Argentina	Evaporation, Impurity Removal, and Neutralization laboratory-scale tests

1. CIDMEJu stands for "Centro de Investigación y Desarrollo en Materiales Avanzados y Almacenamiento de Energía de Jujuy".

The samples sent for the development of pilot tests correspond to a total volume of 4.5 m^3, collected from two 1,000-L bins and ten 250-L bins. The lithium concentration was 267 mg/L, while the concentrations of deleterious elements were 478 mg/L for calcium; 3,916 mg/L for magnesium, and 51 mg/L for boron. The chemical composition of this brine in the salar is not expected to change significantly during exploitation as it is a liquid compound. Therefore, the samples used in the tests are considered reliable for this pre-feasibility stage.

Recent metallurgical testwork regarding DLE use point samples of brine, so they cannot be considered representative. However, as detailed in Section 16, the concentration in the Salar shows minimal variability, indicating that the behavior in direct extraction will yield similar results on an industrial scale. Therefore, the data from these tests can considered reliable for this study. For the recent metallurgical testwork regarding the laboratory tests, synthetic brines ionically constructed based on mass balance were used to verify the parameters of the stages after direct extraction.

13.2.2.1 Lanshen Testwork

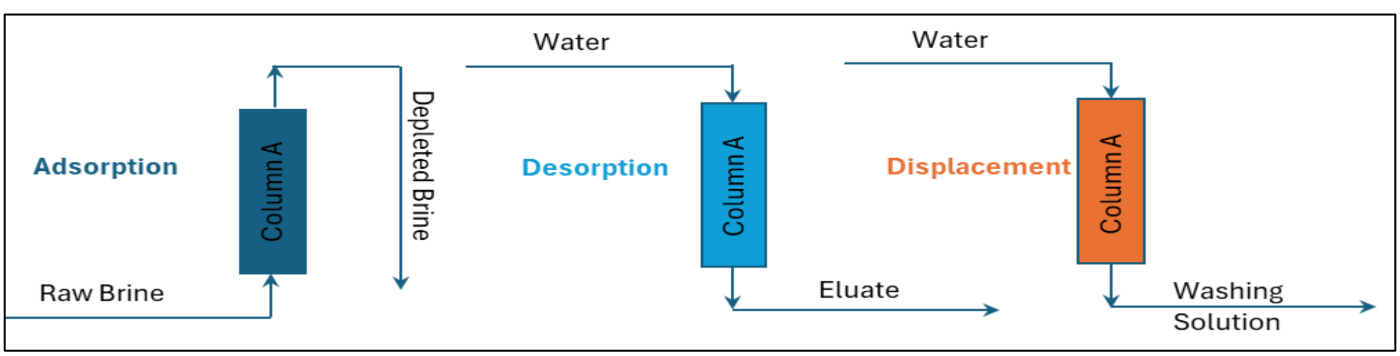
During 2024, Lanshen conducted two testing experiments at its pilot plant in Santiago de Chile, the first being stationary single-column tests and the second continuous tests, both of which involved the direct extraction of lithium with adsorption resins.

13.2.2.1.1 Single-column Stationary Test

Lanshen conducted single-column stationary tests of DLE using their proprietary adsorption resins (adsorbent) at Lanshen's pilot plant in Santiago, Chile (Lanshen, 2024a). The tests focused on gathering baseline information regarding the resin’s lithium capture capacity, desorption efficiency, degree of contaminant carryover, temperature effects on adsorption and desorption, and the resin’s chemical resistance to Arizaro brine.

The tests begin with an initial step of brine cleaning and resin conditioning, which consist of filtrate the brine in multimedia filters, conformed by five layers of quartz of different granulometry, and in a polypropylene cartridge filter. The process carried out is outlined in Figure 13-8 and comprises adsorption, desorption and displacement stages. Once the resin is free of suspended solids, the raw brine passes through the resin filled column which captures the lithium, with periodic sampling of the depleted brine. The captured lithium is then desorbed from the resin using water, resulting in a lithium-enriched brine known as the eluate, which is also periodically sampled. Following the desorption stage, water is displaced through the column producing a washing solution that is used in subsequent stages.

Figure 13-8: Scheme of Single-column Stationary Test



Source: Ausenco, 2024.

Results and information of the first single-column stationary test are detailed in this section along with a comparison of the main results obtained in the second test.

The first single-column stationary test was performed with a treated brine sample from the Salar de Arizaro whose composition is shown in Table 13-8.

Table 13-8: Post-treatment Brine Chemical Composition

Brine ID	Li (mg/L)	Na (g/L)	Density (g/cc)	Conductivity (mS/cm)	pH	TDS (g/L)
ARLI P01 AD-0	229	112	1.22	278	6.7	139

Data for the adsorption and desorption steps of the first single-column stationary test are provided below.

13.2.2.1.1.1 Adsorption Step

Table 13-9 provides the data for the adsorption module and Table 13-10 shows the lithium adsorption results. This step was conducted at an average temperature of 26.8°C.

Table 13-9: Adsorption Module Data

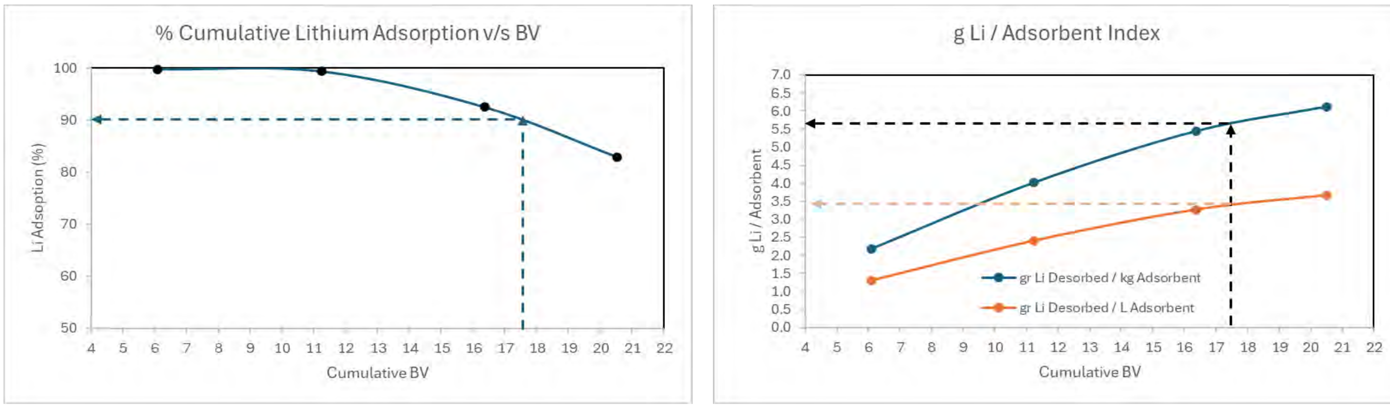
Data	Units	Value
Nº Columns	-	1
Nº Lines	-	1
Column Diameter	m	0.05
Column Height	m	1
Column Section	m^2	0.00196
Column Volume	L	1.96
Adsorbent per Column	kg	1.25
Surface Velocity per Column	m/h	4.90
Brine Flow rate per Column	L/h	9.54
Temperature	°C	26.8

Table 13-10: Adsorption Step - Lithium Adsorption Results at 26.8°C

Sample ID	Lithium in Fed Brine								Lithium in Depleted Brine			Lithium Adsorbed				
	Brine Fed	Bed Vol	Cumulative BV	Density	Conductivity	pH	Partial	Cumulative	Concen-tration	Partial	Cumu-lative	Partial Adsorbed		Cumulative Adsorbed		Adsorbent
	L	L	L	g/cc	mS/cm	-	g	g	g/L	g	g	g	%	g	%	g Li/kg
ARLI P01 AD-1	11.96	6.1	6.1	1.2	277.7	6.17	2.74	2.74	0.001	0.01	0.01	2.74	99.78	2.74	99.78	2.19
ARLI P01 AD-2	10.08	5.14	11.25	1.22	279.6	5.9	2.31	5.06	0.003	0.03	0.03	2.29	98.91	5.03	99.38	4.02
ARLI P01 AD-3	10.03	5.12	16.37	1.22	278.4	5.92	2.3	7.36	0.052	0.52	0.55	1.78	77.35	6.81	92.49	5.44
ARLI P01 AD-4	8.14	4.15	20.52	1.22	279.5	6.05	1.87	9.22	0.126	1.02	1.58	0.84	45.12	7.65	82.91	6.12

Results obtained in the adsorption step, represented in Figure 13-9, show that a 90% of lithium adsorption is achieved at 17.5 BV with a concentration of 3.5 grams of lithium per liter of adsorbent.

Figure 13-9: Lithium Adsorption Results



Source: Ausenco, 2024.

13.2.2.1.1.2 Desorption Step

The desorption and adsorbent washing steps were performed using water with the composition specified in Table 13-11.

Table 13-11: Desorption Water Data

Washing water ID	Li (mg/L)	Na (mg/L)	Density (g/cc)	Conductivity (mS/cm)	pH	TDS (mg/L)
10001 LA - 0	0.5	10.64	1.00	0.065	6.30	0.033

Table 13-12 provides the data for the desorption module and

Table 13-13Table 13-13 shows the lithium desorption results, from which an average lithium content in the desorption solution of 154.2 ppm is observed. This step was conducted at an average temperature of 27.08°C.

Table 13-12: Desorption Module Data

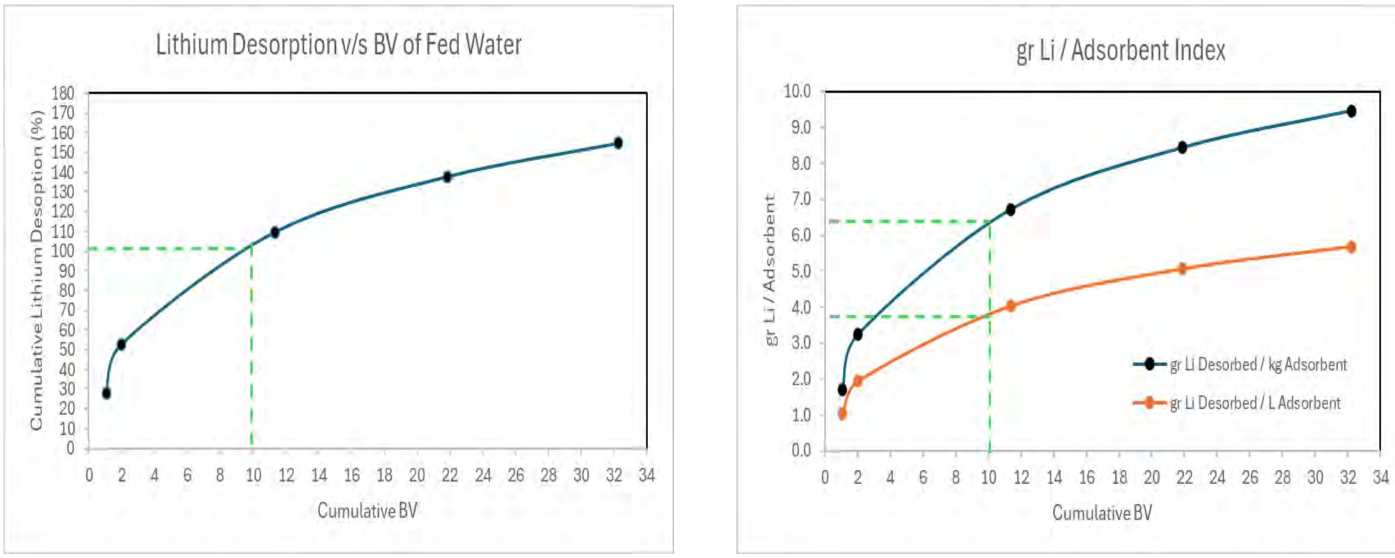
Data	Units	Adsorption
N° Columns	-	1
N° Lines	-	1
Column Diameter	m	0.05
Column Height	m	1
Column Section	m^2	0.00196
Column Volume	L	1.96
Adsorbent per Column	kg	1.25
Surface Velocity per Column	m/h	7.63
Brine Flow rate per Column	L/h	14.99
Temperature	°C	27.08

Table 13-13: Desorption Step - Lithium Desorption Results at 27.08°C

Sample	Desorption Water							Desorption Solution		Li Desorbed				
	Volume	BV cumulative	Density	Conduc-tivity	pH	Li	Li	Li	Li	Partial	Partial	Cumulative	Cumulative	Cumulative Overall 1
	L	L	g/cc	mS/cm	-	g/L	g	g/L	g	g	%	g	%	%
ARLI P01 LA-2	2.07	1.06	1	16.2	7.08	0.0005	0	0.926	1.92	1.92	25.1	1.92	25.1	52.8
ARLI P01 DE-1	20.19	11.4	1	3.97	6.62	0.0005	0.01	0.216	4.37	4.36	57.0	6.27	82.1	110
ARLI P01 DE-2	20.58	21.9	1	2.69	6.75	0.0005	0.01	0.105	2.16	2.15	28.1	8.42	110	138
ARLI P01 DE-3	20.36	32.3	1	1.10	6.93	0.0005	0.01	0.064	1.30	1.29	16.9	9.71	127	155

Results obtained in the desorption step, represented in Figure 13-10, show that 10 BV are required for desorption, with a lithium concentration of 3.5 grams per liter of adsorbent.

Figure 13-10: Water Adsorbent Washing + Desorption Steps Results



Source: Ausenco, 2024.

13.2.2.1.1.3 Effect of Temperature on Adsorption and Desorption Steps

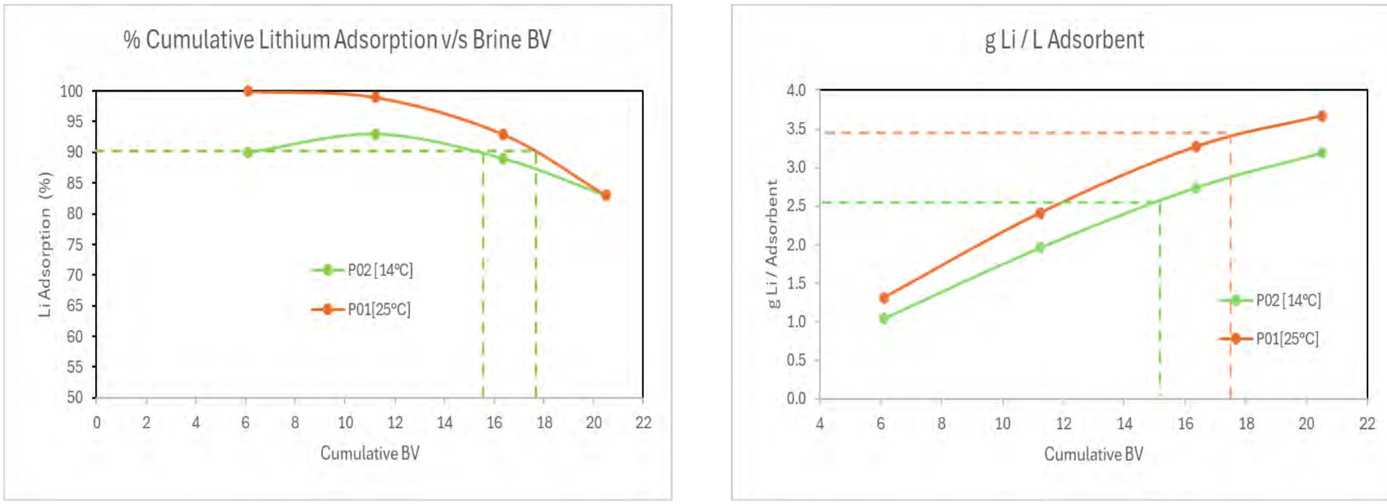
An analysis of the effect of temperature on the adsorption and desorption steps based on the results of the first and second single-column stationary tests is described below. The complete results and information of the single-column stationary tests is given in the report provided by Lanshen (Lanshen, 2024a).

The purpose of the analysis of these tests is to determine the effect of temperature on the adsorption and desorption of lithium. Figure 13-11 and Figure 13-12 shows that the water required to extract the lithium from the adsorbent or resin is notably significant: 30 bed volumes (BV) are required at a 14°C, whereas only 10 BV are required at 25°C. This shows that an increase in temperature from 14 to 25 °C decreases the amount of water required to desorb the same amount of lithium by a factor of three.

Figure 13-11 shows that the concentration of lithium captured by the resin varies approximately one point, from 2.5 g of lithium per liter of adsorbent at 14°C to 3.5 g of lithium per liter of adsorbent at 25°C.

Figure 13-12 illustrate, respectively, the adsorption and desorption results of the first single-column stationary test (P01 at 25°C) and of the second single-column stationary test (P02 at 14°C).

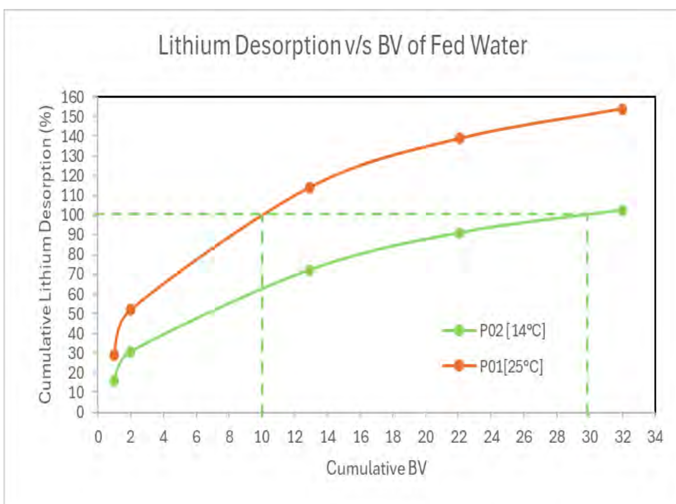
Figure 13-11: Lithium Adsorption for Different Temperatures



Source: Ausenco, 2024.

Figure 13-12 shows that the water required to extract the lithium from the adsorbent or resin is notably significant: 30 BV are required at a 14°C, whereas only 10 BV are required at 25°C. This shows that an increase in temperature from 14 to 25 °C decreases the amount of water required to desorb the same amount of lithium by a factor of three.

Figure 13-12: Lithium Desorption for Different Temperatures



Source: Ausenco, 2024.

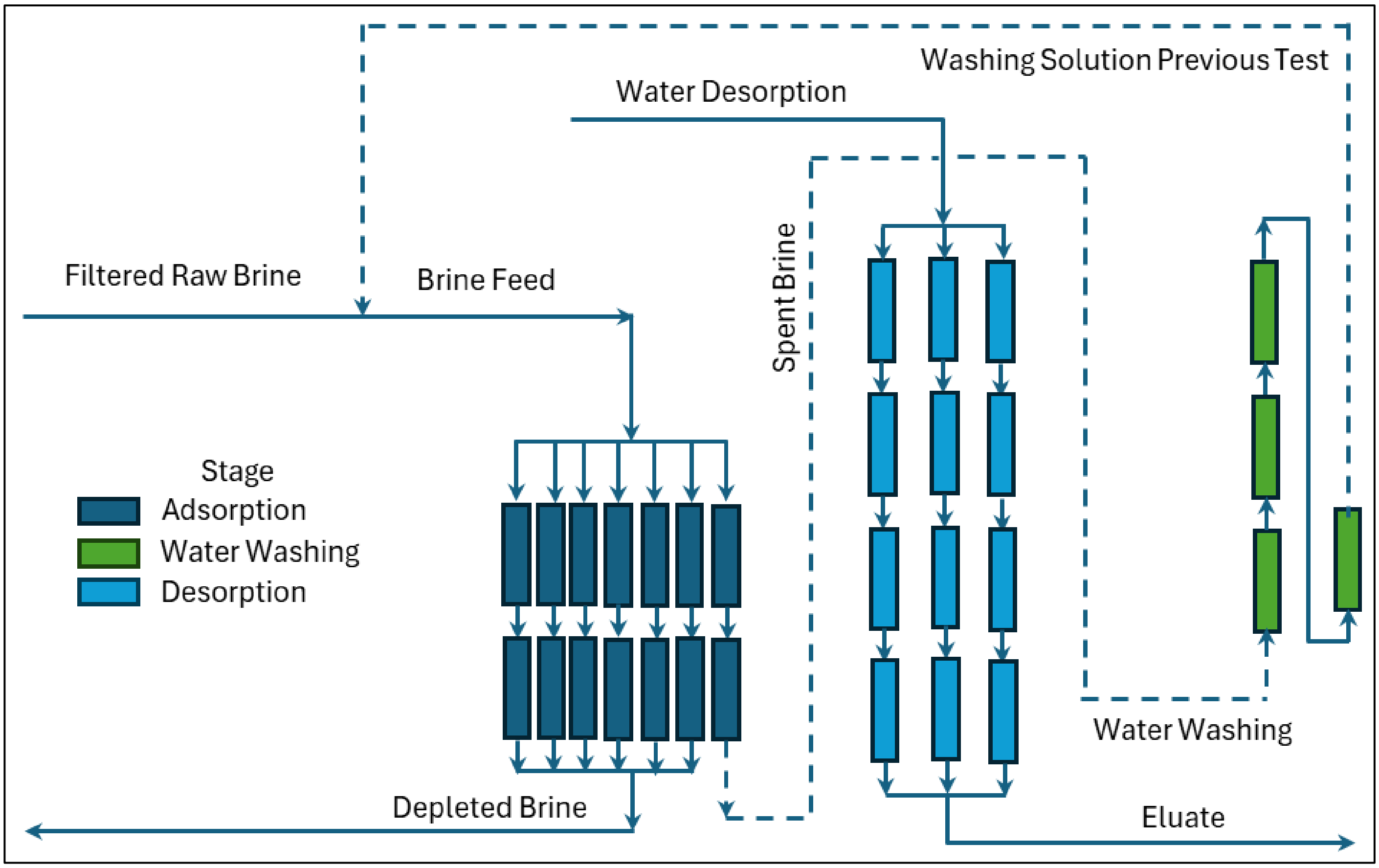
13.2.2.1.1.4 Continuous Testing of Direct Lithium Extraction Using Adsorption Resins

The continuous test of DLE with adsorption resins was conducted by Lanshen at their pilot plant in Santiago, Chile (Lanshen, 2024b). The adsorption resin columns are installed in a carousel system controlled by a computer program. This carousel rotates based on user-defined programming, accurately shifting columns between adsorption and desorption stages, while columns in the desorption stage are moved to the washing phase.

The pilot plant was designed to gather data on several key aspects, including the necessary bed volumes for lithium loading onto the resin, the bed volumes required for resin desorption, fresh water consumption, the impact of brine feed temperature on lithium adsorption, the effect of water temperature on desorption, and the optimization of the extraction configuration.

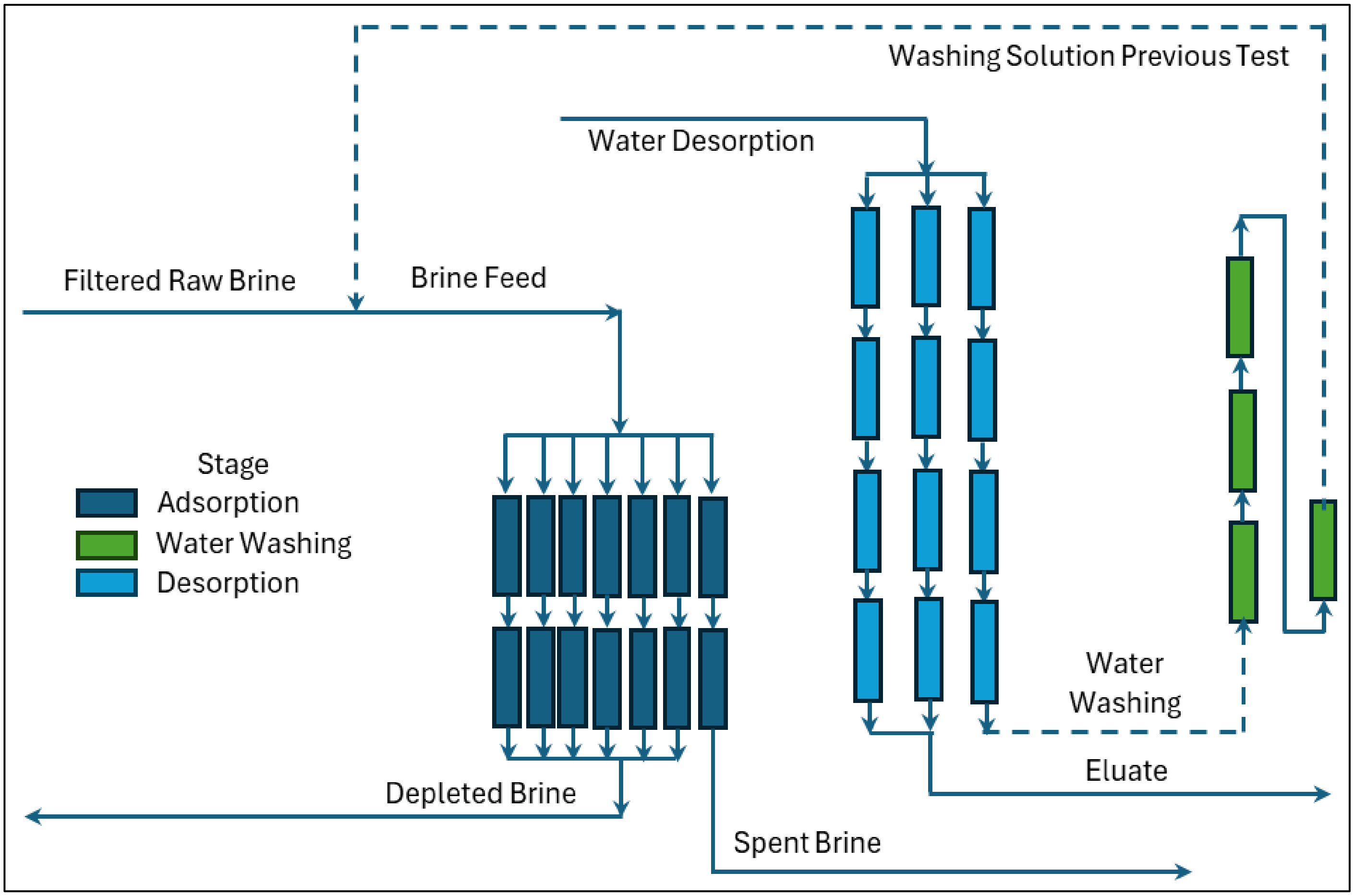
The two configurations used in the pilot tests are shown in Figure 13-13 and Figure 13-14, the first using water plus spent brine as desorbent and the second using only water.

Figure 13-13: Configuration I (use of water plus spent brine in desorption)



Source: Ausenco, 2024.

Figure 13-14: Configuration II (use of only water in desorption)



Source: Ausenco, 2024.

The pilot plant's base configuration for continuous operation involves 14 adsorption columns, arranged in seven parallel lines, each consisting of two columns in series. In the last line (line 7), the spent solution is directed to a separate tank, while the other 6 lines discharge the spent brine into a different tank designated for disposal. Additionally, there is a second set of 12 columns arranged in three lines of four columns each, used for lithium elution or desorption. The resulting product brine (eluate) is stored in a vessel for subsequent use. Lastly, a line of four columns is used to recover the remaining traces of lithium in the resin; the effluent stream from these columns is recirculated back to the adsorption stage.

This test utilizes all the carousel columns as previously described, with the resin free of solids and properly conditioned for adsorption. At the start of the operation, the columns are saturated with deionized water. The test begins with homogenizing the brine at a flow rate of 30 L/min for 1 hour to ensure that all connections, piping, instrumentation, and mechanical components of the carousel are operating properly. During the test, brine and water samples of 0.2 L each are periodically collected from the adsorption, elution, and washing stages.

At the beginning of the test, with the defined configuration in place, the carousel rotation times are adjusted, and the carousel DLE module of the adsorption, resin washing, and desorption, along with pumps, are turned on, recording the start time. The columns rotate according to the specified cycle, with each column potentially occupying 30 or more positions on the carousel. During the test, instantaneous measurements of conductivity and temperature are recorded, and the flow rate of each pump is continuously monitored and adjusted as needed.

Once the test duration is complete, a final 1-liter composite sample is collected from the feed brine, which includes resin washing water and elution (desorption) water. This sample is combined with the initial sample. After the test concludes, the total time is recorded, and each solution collection container is agitated for 30 minutes to obtain representative samples. These samples are then sent for chemical analysis, density measurement, pH, and conductivity testing. Finally, a 0.2-liter control sample is taken from each solution tank.

Figure 13-15 shows the operation of the pilot carousel columns.

Figure 13-15: Carousel System for DLE in Lanshen's Pilot Plant

Source: Ausenco, 2024.

The results obtained demonstrate that lithium is selectively extracted from the brine of Arizaro. It is also confirmed that the carousel configuration, which uses a mixture of deionized water and spent brine from the adsorption stage for resin washing, proves to be more effective in lithium extraction.

Both carousel configurations demonstrate a resin lithium capture capacity of 2.35 kg/m^3 Li, which is equivalent to 3.80 kg/t Li resin. The specific water consumption ranges from 57 m^3 to 60 m^3 of deionized water per tonne of Li_2CO_3 equivalent produced. The lithium yield varies between 86.5% and 88.8%, depending on the configuration. The lithium concentration in the eluate, given an initial feed concentration of 264.5 mg/L, ranges from 420 mg/L to 600 mg/L.

Table 13-14 summarizes the results from the nine tests conducted with the specified configurations.

Table 13-14: Summary of Continuous Direct Extraction Tests

N° Test		Cycle Tests Time	Lithium In						Lithium Out					Sodium Out	Lithium Retained by Adsorbent			Overall Result	
			Li Brine Fresh	Brine Fresh	Brine Feed	Temp	Adsorp	Conc.	Washing Solution	Desorption Solution	Temp	Li Desorp.	Desorption	Na Desorption Solution	Li in Adsorbent	Li in Adsorbent	Total Li in Adsorbent Cumulated	DLE Li Recovery	Water Cons-umption
		h	mg/L	BV	BV	°C	[%]	g Li/ kg Adsorbent	BV	BV	T °C	[mg/L]	[%]	mg/L	g	%	g	%	m^3/t LCE
P1		6.0	265	6.5	6.5	15.0	94.2	2.23	0.96	2.15	30	262	46	140	42.0	49.8	42.0	31.8	-
P2		6.0	265	6.4	7.2	14.0	96.4	2.50	1.03	2.68	19	368	80	84.6	17.9	19.2	59.9	50.4	78.7
P3		8.0	260	10.2	11.2	15.0	91.8	3.97	0.98	4.13	17	519	84	70.4	23.1	14.0	83.0	61.6	47.3
P4		8.0	276	10.3	11.3	13.0	86.5	4.15	0.97	4.05	19	608	92	73.9	12.5	6.9	95.6	65.8	45.3
P5	1	2.67	264	3.3	3.6	11.0	87.6	1.32	0.33	1.55	21	613	113	81.8	-6.0	-10.0	89.5	86.3	-
	2	2.67		3.2	3.5		84.4	1.26	0.33	1.68		608	116	69.9	-7.1	-12.0	82.4	96.4	-
	3	2.67		3.1	3.3		87.7	1.23	0.35	1.69		594	114	92.6	-6.1	-10.7	76.3	98.5	-
	Total	8	264	9.6	10.4	11.0	86.5	3.80	1.02	4.92	21	604	114	81.5	-19.2	-10.9	76.3	93.6	58.6
P6	1	2.67	281	3.3	3.6	13.0	91.2	1.47	0.33	1.67	24	489	95	81.1	2.5	4.4	78.8	88.4	-
	2	2.67		2.6	2.9		94.1	1.19	0.34	1.69		425	105	77.9	-2.2	-4.9	76.6	98.7	-
	3	2.67		3.4	3.8		85.6	1.47	0.35	1.70		432	89	105.5	5.6	9.2	82.2	75.9	-
	Total	8	281	9.3	10.3	13.0	89.9	4.13	1.02	5.06	24	449	96	88.2	5.8	3.6	82.2	86.7	53.0
P7	1	2.67	267	3.1	3.4	13.0	89.5	1.27	0.34	1.70	18	400	98	84.4	1.1	2.2	83.3	81.5	-
	2	2.67		3.1	3.4		88.0	1.25	0.33	1.69		441	104	85.3	-1.8	-3.5	81.5	89.2	-
	3	2.67		3.2	3.5		86.8	1.27	0.33	1.68		403	94	65.1	2.9	5.5	84.3	79.1	-
	Total	8	267	9.5	10.3	13.0	88.1	3.79	1.00	5.08	18	415	98	78.3	2.2	1.4	84.3	83.2	53.6
P8	1	2.67	258	3.3	3.6	11.0	89.7	1.28	0.33	1.71	16	437	102	89.7	-1.1	-2.2	83.2	88.1	-
	2	2.67		3.4	3.6		89.2	1.30	0.34	1.74		418	100	87.1	-0.2	-0.3	83.0	84.2	-
	3	2.67		3.3	3.6		87.6	1.27	0.33	1.71		407	98	70.6	0.7	1.4	83.7	80.9	-
	Total	8	258	10.0	10.8	11.0	88.8	3.85	1.00	5.16	16	421	100	82.51	-0.6	-0.39	83.74	84.36	54.3
P9	1	2.93	258	3.6	3.9	11.0	88.3	1.39	0.37	1.85	16	434	103	99.37	-1.31	-11.47	82.43	86.08	-

13.2.2.2 Summit Nanotech Testwork

Summit Nanotech has operated its adsorption pilot plant with proprietary resins in Santiago, Chile, with a 0.5 m^3/d nominal feed brine capacity for lithium extraction from the Salar de Arizaro brine. The pilot run lasted a period of 1 month, from November to December 2023 (Summit Nanotech, 2024).

The objectives of the pilot tests were to:

- Validate the technical performance of Summit's adsorption resin technology at a pilot scale.
- Gather the necessary data for a PFS of Arizaro Project.
- Project energy and freshwater requirements based on collected data.

Summit received two assays from Lithium Chile with the composition of the Arizaro brine to be used in the tests, which are detailed in Table 13-15. The brine was analyzed internally by Summit and the data obtained are shown in Table 13-20. The sorbent demonstrates a high selectivity for lithium, as evidenced by the 99.0% rejection rate of impurities from the feed brine to the eluate. The recycle stream – representing the 'mixed zone' stream between adsorption and elution – successfully retained less than 5% of the total lithium mass input and constitutes only 3% of the total feed volume (including both brine and eluent).

During continuous extraction, the pilot plant produced lithium-depleted and eluate streams of 9 mg/L and 392 mg/L lithium, respectively (see Table 13-20 for stream compositions).

Table 13-15: Average of Partial Assays Received from Lithium Chile

Partial Assays	Assay ID: NOA2327200	Assay ID: NOA2222987	Average
	Concentration (mg/L)		
Li	276	286	281
Na	111,161	110,477	110,819
K	10,960	11,820	11,390
Mg	4,031	4,031	4,031
Ca	621	527	574
Sr	14	11	12.5
Mn	1.8	1.5	1.6
Zn	2.9	-	2.9
B	51	51	51
Si	4.4	-	4.4
HCO_3	61	-	61
SO4	12,416	13,390	12,903
Cl	184,638	185,796	185,217
TDS (mg/L)	338,100	-	338,100
pH	6.6	6.4	6.5
Cond. (mS/cm)	239.9	236.7	238.3
Density (g/mL)	1.22	1.22	1.22

The tests included the phases outlined in Table 13-16.

Table 13-16: denaLi™ Pilot: DLE Testing Phases

N°	Testing Phase	Length (days)	Phase Description
1	Brine pre-treatment	N/A (continuous)	In-line filtering system to remove suspended solids prior to DLE (20-5 µm particle retention).
2	Column generation	1	Sorbent activation by flushing the bed with eluent (dilute lithium chloride solution, 200 mg/L Li).
3	Profiling	5	Determine full adsorption (loading) and elution (stripping) profiles. Four profiling cycles were executed.
4	Conditioning (stability trials)	13	Optimization of column sequencing setpoints for maximized lithium recovery and eluate purity/yield. Confirmation of long-term system stability.
5	Continuous operation	12	DLE module operation with optimal column sequencing as determined during conditioning.

The pilot DLE module is equipped with flow, pH, temperature, conductivity and pressure sensors to collect real-time data during pilot testing. Samples were regularly taken from multiple column ports and analyzed using ICP-OES and discrete analyzers to determine the complete physicochemical composition. Sampling for full cycle analysis occurred once per day (every 3 - 4 extraction cycles).

Table 13-17 outlines the operational parameters maintained consistently throughout the denaLi™ pilot testing. The DLE unit operated at 25 °C, at a volumetric flow rate of 40 L/h (equivalent to 3.3 BV/h). The selected operating conditions for the denaLi™ pilot plant took into consideration the proprietary sorbent's lithium mass transfer kinetics while optimizing daily volume throughput. Additionally, both bench and pilot scale data for the denaLi™ process have demonstrated effective DLE performance across operating temperatures from 15 - 60 °C, with 25 °C being recommended for optimal performance.

Table 13-17: Constant Operational Parameters for denaLi™ Pilot Testing with Lithium Chile's Arizaro Brine

Operational Parameter	Unit	Value
Number of Columns	-	1
Column BV	L	12
Mass of sorbent	kg	8
Operating Temperature	°C	25
Flow Rate	L/h	40
Flux Rate	m/h	5.4

As previously mentioned, the pilot using Lithium Chile's Arizaro brine was operated over a one-month period. Preliminary testing involved generating column beds, system profiling, and sequencing/conditioning, with a total of 5.3 m^3 of brine used. Following this, continuous extraction was carried out for twelve days at optimized operational parameters, processing 5.1 m^3 of Arizaro brine. The following section presents the piloting results, including but not limited to sorbent capacity, lithium recovery rate, impurities rejection and stream compositions.

For brine pre-treatment, the pilot plant was equipped with an in-line filtering system to remove suspended solids from the incoming brine. The brine was analyzed before filtration and after DLE, but not post-filtration.

The DLE module was subjected to four (4) profiling extraction cycles to assess the sorbent's maximum adsorption and elution capacities. The profiling was done prior to any sequential automated operations. Table 13-18 shows the maximum and operational capacities recorded during the four profiling cycles.

Maximum capacity is defined as the adsorption capacity achieved when the entire bed is exhausted (i.e., no more adsorption taking place). Operating to maximum capacity is primarily for profiling, as it leads to a significant lithium loss (over 50%) in the depleted stream due to full bed breakthrough. Working capacity was internally defined as the column bed's lithium adsorption capacity that reaches an outlet lithium concentration of 20 mg/L, corresponding to 7% of inlet concentration (referred to as the bed's breakpoint). Continuous operation is executed within this working capacity to minimize lithium loss.

Table 13-18: Maximum and Working Adsorption Capacity over Four Profiling Cycles

Profiling Cycle #	Max Capacity (mg/g Li sorbent)	Max Capacity (mg/g Li sorbent)	Working Capacity (mg/g Li sorbent)	Working Capacity (mg/g Li sorbent)
1	4.9	3.1	2.6	1.7
2	4.5	2.9	3	1.9
3	4.6	2.9	3.6	2.3
4	4.5	2.9	3	1.9
Average	4.6	3	3.1	2

Over the profiling period, the average maximum and working capacities were 4.6 and 3.1 mg/g Li sorbent, respectively. For comparison, at benchscale, with lower flow rates and higher temperature conditions, Summit's proprietary sorbent achieved a working capacity of up to 6 mg/g Li sorbent using Lithium Chile's Arizaro brine.

The conditioning phase lasted for 56 cycles, during which operational adjustments were made based on the lithium adsorption and elution curves obtained from the previous profiling phase. Full system stability (i.e., consistent steady-state performance) was reached after 42 conditioning cycles. During this period, the working capacity decreased from 2.8 to 2.2 mg/g as the system reached a steady state.

Summit Nanotech processed slightly over 5 m^3 of Lithium Chile's Arizaro brine during a 12-day continuous extraction phase. Throughout this period, the working capacity remained consistent, averaging 2.2 mg/g Li sorbent, which corresponded to a 96% lithium recovery rate from the brine into the extraction column. The overall lithium recovery, which represents the percentage of lithium recovered in the eluate, averaged 94% (Table 13-19).

The lithium enrichment factor, defined here as the ratio of lithium content in the feed brine (239 mg/L) and eluate (392 mg/L), is 2.0x.

Table 13-19: Continuous DLE Performance over 12 days of Operation at Optimized Parameters

Performance Metric	Unit	Value
Average adsorption time	min	120
Average elution time	min	150
Average working capacity	Mg/g Li sorbent	2.2
Lithium recovery	%	96.2
Overall recovery (brine to eluate)	%	93.6
Lithium loss	%	3.8
Impurities rejection (brine to eluate)	%	99
Enrichment factor	-	2
Lithium in recycle stream	%	4.8

The sorbent demonstrates a high selectivity for lithium, as evidenced by the 99.0% rejection rate of impurities from the feed brine to the eluate. The recycle stream – representing the 'mixed zone' stream between adsorption and elution – successfully retained less than 5% of the total lithium mass input and constitutes only 3% of the total feed volume (including both brine and eluent).

During continuous extraction, the pilot plant produced lithium-depleted and eluate streams of 9 mg/L and 392 mg/L lithium, respectively (see Table 13-20 for stream compositions).

Table 13-20: Physical and Chemical Composition of Relevant DLE Streams After the Extraction Phase

Stream	Brine	Depleted	Recycle	Eluent	Eluate
Physical Data					
pH	7.1	7.1	7.1	6.3	6.5
Density (kg/L)	1.18	1.19	1.1	1	1.04
Conductivity (mS/cm)	239	237	178	2.3	8
Volume (L)	5,056	5,068	335	6,697	6,234
Concentration (mg/L)					
Li^+	239	8.7	345	178	392
Na^+	99,826	93,976	51,621	7.4	610
K^+	8,867	8,203	4,613	0	52
Mg^{2+}	3,553	3,484	2,382	0	71
Ca^{2+}	488	473	374	0	11
B	57	47	47	0	8.7
SO_4^{-2}	14,159	14,282	4,894	1.6	35
Cl-	173,435	175,623	89,500	1,132	3,222
PO_4^{-3}	0.090	0.010	0.010	0.090	0.090

Although the eluate stream produced has a lower lithium concentration than optimal, it has a relatively low level of total dissolved solids (TDS) of approximately 5 g/L. Efforts are underway to enhance the process design, aiming to improve the composition of the eluate streams produced by the denaLi™ DLE system to increase lithium concentration while minimizing impurities carryover.

Pilot operations were paused after achieving and maintaining a stable, continuous performance over a satisfactory operational runtime of 12 days. Following a three-week downtime period, the DLE column used for Lithium Chile's pilot testing was regenerated in mid-January 2024 and underwent a second-generation phase. After conducting three profiling cycles and making necessary adjustments to operational parameters, continuous operation resumed with updated column sequencing setpoints. The working capacity and lithium recovery rate remained consistent during this period, confirming the system's stability despite the downtime and successfully validating the previous results (see Table 13-21).

Table 13-21: Continuous DLE Performance after Operations Resumption

Performance Metric	Unit	Value
Average working capacity	Mg/g Li sorbent	2.6
Lithium recovery (brine to sorbent)	%	96
Impurities reduction	%	99

Overall, lithium extraction from Lithium Chile's Arizaro brine at the pilot scale was successfully completed. The technical challenges encountered in obtaining DLE performance data for Lithium Chile's PFS created new opportunities for advancing the development of the denaLi™ technology.

Table 13-22 below summarizes the results obtained.

Table 13-22: denaLi™ Pilot Key Performance Metrics

Performance Metric	Unit	Value
Lithium recovery (brine to sorbent)	%	96
General lithium recovery (brine to elute)	%	94
Lithium loss (to depleted brine)	%	4
Reduction of impurities (sorbent selectivity)	%	99
Maximum bed capacity (with a flow rate of 5.4 m/h)	Mg/g Li sorbent	4.3
Working bed capacity (with a flow rate of 5.4 m/h)	Mg/g Li sorbent	2.0 - 2.6

The DLE working capacity reported herein (2.2 - 2.6 mg/g), although sufficient to operate in steady-state with a reasonable lithium mass throughput, is lower than benchscale results obtained with Lithium Chile's Arizaro brine (6 mg/g).

To address this discrepancy, it is necessary to:

- Enhance sorbent kinetics at higher flux rates through ongoing improvements to material formulation and processing.

- Increase overall bed utilization and efficiency by implementing multi-column denaLiTM DLE systems.

13.2.2.3 Laboratory Testwork

Various laboratory-scale tests were conducted by a well-known research center in the city of Palpalá, Jujuy, as is the "Centro de Investigación y Desarrollo en Materiales Avanzados y Almacenamiento de Energía de Jujuy, CIDMEJu", to determine equilibrium values for mechanical evaporation, impurity removal (Ca-Mg), and neutralization processes (CIDMEJu, 2024). The feed brine used in each test is prepared synthetically from the mass balance data associated to each process stage and is referred to as the 'base brine' in each table of results.

13.2.2.3.1 Forced evaporation

Table 13-23 presents the results of the equilibrium test for the forced evaporation stage corresponding to the mechanical evaporation process. This test assessed the equilibrium of chloride and calcium at temperatures of 50°C, 75°C, and 90°C using thermostat-controlled baths to maintain temperature stability. The feed brine, prepared based on mass balance, was supplemented with excess sodium chloride and sodium sulfate. It was then agitated for 90 minutes at the specified temperature. Chloride levels showed minimal variation with equilibrium temperature, averaging 246,000 mg/L, while calcium levels tended to decrease as the temperature increased.

Table 13-23: Equilibrium Concentration of Chloride and Calcium for Forced Evaporation

Temperature	Tests	Concentration (mg/L)						
		Na	Cl	Li	K	Ca	Mg	B
Base Brine	1	6,593	273,163	43,360	5,461	3,984	16,304	552
50°C	2	17,189	246,030	37,180	6,107	168	17,257	556
50°C	3	16,863	247,493	37,740	5,583	112	17,291	540
50°C	4	17,284	245,481	34,320	5,944	224	17,052	538
75°C	5	15,942	247,311	36,110	5,339	168	17,086	562
75°C	6	15,736	247,493	35,100	5,579	84	17,886	533
75°C	7	16,085	245,115	32,540	5,353	168	17,154	546
90°C	8	17,126	241,823	36,330	5,414	56	17,393	540
90°C	9	15,942	248,774	35,100	5,188	112	17,461	564
90°C	10	15,942	244,201	33,850	5,223	84	17,818	577

13.2.2.3.2 Impurity removal (Ca & Mg)

Table 13-24 presents the results of the equilibrium test for the impurity removal (Ca & Mg) process. The test is intended to demonstrate the equilibrium of calcium and magnesium in the brine when sodium hydroxide and sodium carbonate are dosed, and was conducted at three temperatures: 20°C, 30°C, and 40°C.

As shown in Table 13-24, the analytical composition of calcium could not be determined, unlike that of magnesium, for which results were obtained that show that the chemical reaction effectively reduces the levels of this impurity, achieving a relatively stable equilibrium with temperature variations, reaching an average of 12 mg/L.

Table 13-24: Equilibrium Concentration of Calcium and Magnesium Contaminants

Temperature	Tests	Concentration (mg/L)						
		Na	Cl	Li	K	Ca	Mg	B
Base Brine	1	67,527	159,142	10,362	3,692	-	1,021	241
20°C	2	66,892	146,338	8,895	2,999	-	12.2	219
20°C	3	70,704	150,911	9,486	3,577	-	12.0	221
30°C	4	75,311	147,252	9,696	4,669	-	12.5	241
30°C	5	68,004	147,618	10,125	3,037	-	12.5	224
40°C	6	64,985	146,338	8,991	3,134	-	10.3	237
40°C	7	67,845	145,423	9,024	2,626	-	12.7	233

13.2.2.3.3 Neutralization

Table 13-25 presents the results of the equilibrium test for the neutralization process. The test corresponds to the removal of carbonate from the spent solution obtained from carbonation process in order to recycle this brine back to the adsorption stage to recover lithium. The testing process involves dosing sulfuric acid into the brine, causing a reaction where carbonate is eliminated through the generation of carbon dioxide. The test is conducted at three temperatures: 50°C, 60°C, and 80°C, all of which are feasible in an industrial operation. The results shown in Table 13-25 evidence that temperature does not have a significant impact on the chemical reaction, additionally, the use of sulfuric acid is efficient in decarbonating the brine, reducing carbonate levels to an average of 57 mg/L.

Table 13-25: Concentration after Neutralizing with H_2SO_4 the Spent Brine from Carbonation

Temperature	Tests	Concentration (mg/L)							
		Na	Cl	Li	K	Ca	Mg	B	CO_3^{-2}
Base Brine	1	81,834	118,900	1,347	911	-	17	170	15,106
50°C	2	83,327	104,631	1,217	756	-	26	183	39
50°C	3	83,248	107,375	1,269	882	-	31	173	41
50°C	4	86,663	112,497	1,228	710	-	22	193	43
60°C	5	88,411	105,180	1,256	858	-	24	183	132
60°C	6	78,561	108,839	1,205	865	-	24	171	29
60°C	7	88,172	107,924	1,441	909	-	57	173	125
80°C	8	83,804	105,180	1,176	867	-	37	183	27
80°C	9	82,056	106,095	1,247	835	-	22	179	40
80°C	10	84,519	103,375	1,199	824	-	45	201	34

13.2.2.4 Other Testwork

Tests for the reverse osmosis, ion exchange, drying and micronizing stages will be carried out in the next phase with vendors, as these processes are well-established within the industry and do not require testing at this stage.

13.3 Recovery Estimates

The lithium recovery percentage used for the mining methods (Section 16) and for the development of the economic model (Section 22) corresponds to 83%. The individual recoveries of each unit operation in the proposed design result from pilot tests for the DLE plant and laboratory tests conducted for mechanical evaporation, chemical treatment, and carbonation. In the DLE process tests, performance values range between 89% (Lanshen) and 96% (Summit Nanotech). In evaporation processes, losses due to the impregnation of discarded salts lead to recoveries between 98 to 99% depending on the technology used. The loss of impurity removal efficiency is attributed to the impregnation of salts, which in this case are difficult to handle due to their hygroscopic nature and liquid retention. As a result, the performance will vary depending on the solid-liquid separation technology used, with expected efficiency ranging from 95 to 99%. The expected performance in the carbonation stage is 84% primarily because the dilute solution has a high lithium content. To improve the overall performance, the solution is sent to a recovery process (neutralization and return to the DLE stage). The performance of the reverse osmosis, ion exchange, and drying-micronizing processes is close to 99%. Based on the above and considering the mass balance results, the overall recovery from the salt flat to the production of BG lithium carbonate is expected to be 83%.

13.4 Deleterious Elements

Deleterious elements and/or impurities commonly present in brine treatment processes, which could potentially have economic impacts, include calcium, magnesium, and boron. The design takes into consideration the mitigation of these contaminants. Regarding boron, this element is found in low concentrations in the Arizaro brine. After undergoing direct extraction operations, these concentrations are further reduced, allowing for the use of ion exchange resins to minimize its impact on the product. Post-treatment with these resins results in boron levels reduced to less than 1 mg/L before carbonation.

Calcium and magnesium are contaminants that are initially reduced through chemical reactions with solutions of sodium hydroxide and sodium carbonate. Ion exchange resins are then used to further lower their concentrations to less than 1 mg/L. This ensures that the product quality remains unaffected by these contaminants.

13.5 Comments on Mineral Processing and Metallurgical Testing

The samples used in the various tests are point samples and are not necessarily representative of the entire brine from the Salar de Arizaro. However, the Salar does not exhibit significant variation in the composition of its different ions, which means that the differences in composition are not relevant for the results obtained.

The tests were conducted by reputable vendors of DLE technologies, including Lanshen, Sunresin, Summit Nanotech, among others. The work carried out by these vendors meets the requirements for determining process parameters. For other unit operations involved in the design, laboratory tests were conducted by a well-known research center in the city of Palpalá, Jujuy, as is the “Centro de Investigación y Desarrollo en Materiales Avanzados y Almacenamiento de Energía de Jujuy, CIDMEJu” to verify the parameters and variables used in the design of the process to obtain a battery-grade product.

The tests conducted by Summit Nanotech show high resin performance. However, as the resin is still in the developmental phase and under study, it cannot be considered for use in the next phase of development.

Tests on Lanshen's pilot plant for direct extraction on a single column show that temperature has significant effect on the process. At 14°C, the lithium concentration in grams per liter of resin is 2.5, whereas at 25°C, it increases to 3.5. Additionally, it is observed that the water requirement for extracting lithium from the resin is significantly lower at 25°C, approximately three times less than at 14°C.

The continuous cycle tests reveal effective selective extraction of lithium from the Arizaro brine. The results confirmed that lithium extraction efficiency (lithium yield) is higher when using the carousel configuration that washes the resin with a mixture of deionized water and spent brine from the adsorption stage. The lithium yield ranges from 86.5% to 88.8%, depending on the configuration used, the lithium capture capacity of the resin is approximately 2.35 kg Li/m^3 resin, and the water consumption ranges from 57 m^3 to 60 m^3 of deionized water per ton of Li_2CO_3.

The data obtained from the adsorption tests conducted by Lanshen indicate that the brine from the Salar de Arizaro exhibits favorable behavior with the adsorption resin. The results demonstrate that the lithium adsorption resin is stable over time and selective towards lithium ions, achieving adsorption yields close to 90% for a configuration that employs a washing mixture. Additionally, it shows that temperature during adsorption does not have a significant impact, although it is important for the elution stage. The results with the resin indicate that water consumption is lower compared to other tests conducted by Lithium Chile. It is necessary to verify these results with continuous tests of longer duration to ensure consistency.

14 MINERAL RESOURCE ESTIMATES

14.1 Overview

The resource estimate for the Salar de Arizaro Project consists of Measured, Indicated, and Inferred lithium resources. Key parameters used to compute the resources of the Project include brine grade and drainable porosity. The Canadian Institute of Mining (CIM) Best Practice for Reporting of Lithium Brine Resources and Reserves (2012) were considered when estimating the lithium resource.

14.2 Methodology

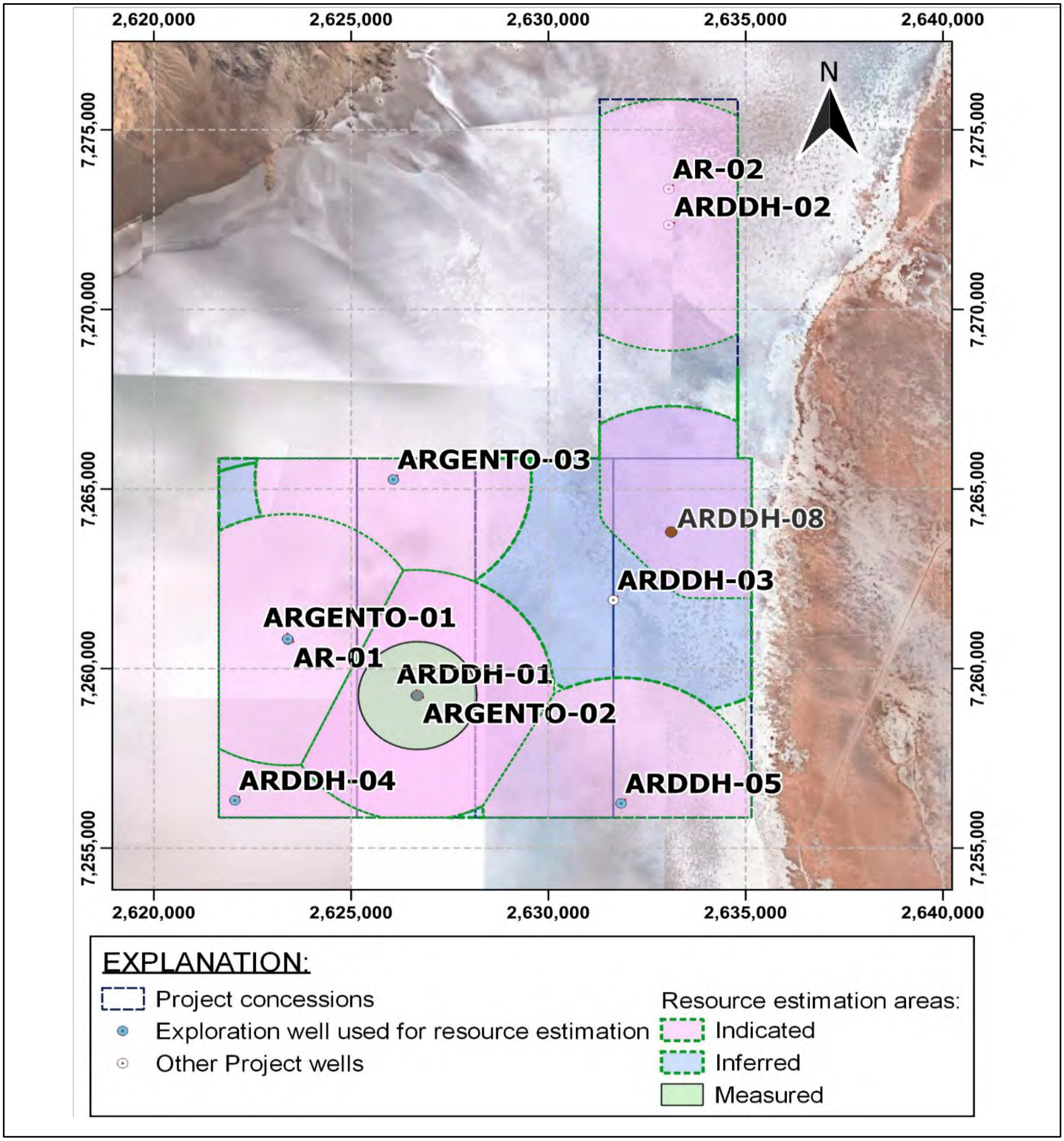
The method employed to estimate the resource corresponds to the polygon method. The overall process consisted of constructing concentric circles around the exploration wells and dividing them into horizontal layers as hydrogeologic units, with each layer assigned an areal extent, lithium concentration, and drainable porosity value. Thus, while the same lithium concentration and drainable porosity were assumed laterally within a given polygon, distinct intervals were defined to account for depth-specific changes of either parameter based on the exploration results. Unless unknown faults occur in the basin, thicknesses are likely to be similar in the immediate area outside of the current exploration wells, supporting the use of polygons for the resource calculation.

Apart from lithologic descriptions, depth-specific data for chemistry and drainable porosity were obtained during drilling. To complement the DDH data, results from pumping test composite brine samples and pumped samples obtained were also used to define the lithium concentration for the various units. Drainable porosity values were assigned to each unit largely based on the LCV specific yield results and downhole BMR surveys; these results were cross-checked with field lithologic descriptions and core photos to verify reasonableness of the assigned values.

14.3 Definition of Resource Areas

The total area used in for the resource calculations is approximately 162 km^2 and is shown on Figure 14-1. Only areas within the concession boundaries were considered.

Figure 14-1: Area Used for the Resource Estimate and Categorization (Shallowest Polygons)



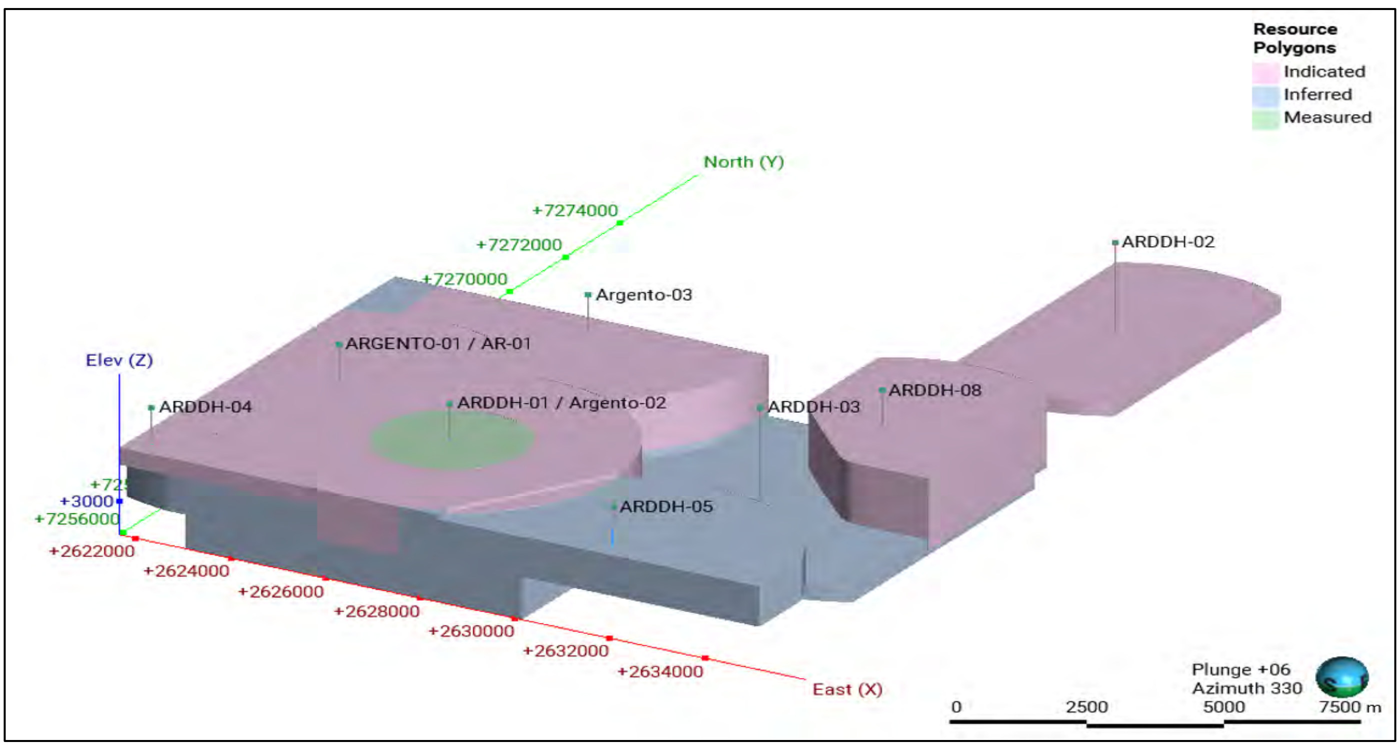
Source: Montgomery, 2024.

The Measured resource polygon around ARDDH-01/Argento-02 has a radius of 1.5 km, which is within the range of the guidelines of Houston et al. (2011) for mature salar systems; the diameter of the Measured polygon is 3 km, translating a radius of 1.5 km. The Measured polygon was defined based on depth-specific brine and drainable porosity sampling of ARDDH-01 as well as composite brine sampling collected during the Argento-02 long-term pumping test (31 days); the Measured polygon was defined from 190 m bls to the bottom of the gravel pack (608 m bls). The defined area encompassing the 1.5 km radius is believed to be representative of the brine extracted during the long-term pumping test.

The Indicated resource polygons have a radius of 3.5 km, which was selected based on guidelines by Houston et al. (2011) for mature salar systems; the range between exploration wells is given as 7 km, translating a radius of 3.5 km. Indicated polygons are present in the shallowest portion of the aquifer based on the existence of brine chemistry and drainable porosity (or pumping test) data. The individual polygon depths were based on the transition to Inferred resources (at depth) or the total depth of the respective exploration well within the polygon.

The Inferred resource polygons have a maximum radius of 5 km, which was selected based on guidelines by Houston et al. (2011) for mature salar systems; the range between exploration wells is given as 10 km, translating a radius of 5 km. Most Inferred polygons are based on the presence of one of the key variables for brine resource estimation (brine chemistry or drainable porosity) and where lithologic continuity can be assumed based on current data. The Inferred polygons are generally found at depth, below the indicated resource polygons (Figure 14-2), and their upper limit ranges from 190 to 510 m bls depending on the area. The individual polygon depths were also based on the total depth of the respective exploration wells (within that polygon).

Figure 14-2: Three-Dimensional Image of the Resource Zones



Source: Montgomery, 2024.

14.4 Drainable Porosity

Drainable porosity values are reported as a fraction of the total rock volume and are unitless. For example, if a rock has a volume of 100 milliliters (mL), and 10 mL of fluid can drain from the rock, the drainable porosity is 10/100, or 0.10. Although often determined by laboratory methods, the drainable porosity is essentially the same as specific yield as defined in classical aquifer mechanics. The purpose of defining drainable porosity is to estimate brine volume which is a necessary parameter for the mineral resource.

Drainable porosity values for the hydrogeologic units encountered in Salar de Arizaro were estimated based on the results of LCV laboratory testing as well as the BMR geophysical survey, and their reasonableness was confirmed based on lithology of the unit. In general, the BMR results are similar to the average values typically associated with the measured lithology, and LCV values vary particularly for the halite unit.

As previously described in this report, drill cuttings were reviewed by M&A for verification purposes and were compared to the values estimated by the BMR geophysics and LCV laboratory results. For some units without a direct or indirect determination of drainable porosity, the QP referenced values used for other projects to ensure that they were not significantly different from those typically used in the Altiplano for salar sediments and evaporite sequences. In addition, drainable porosity values ultimately used by the QP for the Resource estimate generally agreed with published values by Johnson (1967) for similar lithologies.

The average drainable porosity values assigned to each hydrogeologic unit used to estimate the lithium resource are given in Table 14-1.

Table 14-1: Assigned Drainable Porosity Values for Salar de Arizaro Hydrogeologic Units

Hydrogeologic Unit	Assigned Drainable Porosity
Massive and fractured halite[1]	0.04 – 0.05
Halite with sandy interbeds	0.05
Fine sand with some gravel and minor halite	0.12
Fine brown sand	0.09
Deep cemented halite, clay, and sand	0.02

1. A drainable porosity of 0.04, representative of massive halite, was applied for all areas expect the Inferred (deep) portion of ARDDH-05 due to the higher average LCV specific yield (0.05) and presence of fractured halite.

14.5 Lithium Grade

The lithium grade in the lower part of the aquifer, below a depth of 304 m, was selected as 298 mg/L for most units based on the results of the Hydrasleeve sampling program from Argento-01. A higher value of 356 mg/L was selected for the zone from 368 to 408 m. For the upper part of the aquifer, based on brine sampling during drilling, lithium concentrations in the upper 190 m of the aquifer were found to be less than 200 mg/L. The chemistry was not consistent during the sampling, possibly because of mixing of different zones, but effectively, it has been assumed that no lithium brine occurs in the upper 190 m, with the exception of ARDDH-05 which did show shallower grades above 200 mg/L.

In most resource polygons, the zone from 190 to 304 m had a value of 229 mg/L. For ARDDH-01, land surface to 190 m was still assumed to have a lithium concentration below the cut-off of 200 mg/L. A value of 229 mg/L was assigned to units to a depth of 384 m, with 321 mg/L being assigned below 384 m. At Argento-03, lower concentrations were obtained from the step test and constant-rate pumping test (average of 207 mg/L).

The newest DDH wells with brine chemistry results correspond to ARDDH-04, ARDDH-05, and ARDDH-08, where elevated lithium grades (up to 584 mg/L) were found in the deeper samples of ARDDH-05. In the Indicated polygon of ARDDH-05, an average of 259 mg/L and 516 mg/L were applied between 110 to 160 m bls and 160 to 210 m bls, respectively. The deeper Inferred polygon of ARDDH-05 assumed high-grade brine continuity (516 mg/L) between 210 and 424 m bls. Similarly, the Indicated polygon of ARDDH-08 utilized an average grade of 538 mg/L between 190 and 300 m bls, and 343 mg/L between 300 and 570 m bls. Sample result averages were also applied to ARDDH-04, and the values ranged between 258 and 277 mg/L.

14.6 Summary of Measured, Indicated, and Inferred Resources

The results of the resource estimate discussed in this sub-section represent forward-looking information as the results depend on inputs that are subject to known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented, including grade and geological unit interpretations, as well as the assumptions for establishing reasonable prospects for eventual extraction.

Table 14-2 summarizes the current Salar de Arizaro resource estimate for lithium. The resource estimate was calculated by multiplying (the area) by (the unit thickness) by (the drainable porosity) by (the average lithium grade). Subsequently, the resulting value was summed for each hydrogeologic unit for each polygon, for each assigned resource category. Measured and Indicated resources are reported inclusive of mineral reserves.

A lithium cut-off grade of 200 mg/L was utilized based on a lithium carbonate price of US$8,000/t. Due to significant price volatility over the last 5 years, a lithium carbonate price of US$8,000/t was conservatively selected to evaluate an economic cut-off grade. Based on this considered price and extractable brine volume, projected costs were reviewed to determine the lithium concentration that is expected to generate a profit. However, the reader is cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability.

Table 14-2: Summary of the Resource Estimate for the Arizaro Project (Effective April 3, 2024)

Resource Category	Brine Volume (m^3)	Average Lithium Concentration (mg/L)	In-Situ Lithium Mass (kt)	LCE Mass (kt)
Measured	1.88E+08	261	49	261
Indicated	1.39E+09	302	420	2,237
Measured + Indicated	**1.58E+09**	**297**	**469**	**2,498**
Inferred	8.42E+08	362	305	1,624

Notes:
1. Kt = ktonnes
2. The conversion factor used to calculate LCE from lithium is based on the molar weight of the elements added to generate LCE. The equation is as follows: Li x 5.3228 = LCE.
3. The cut-off grade for lithium used to report mineral resources is 200 mg/L based on a conservative lithium carbonate price of US$8,000/t LCE.
4. The comparison of values may not be exact due to rounding.

According to the CIM's Best Practice Guidelines for Reporting of Lithium Brine Resources and Reserves (2012), the essential elements for resource estimation include the determination of drainable porosity and brine concentration through drilling and sampling. M&A considers these two important parameters for defining a Measured and Indicated Resource, consistent with industry practice. In the case of Argento-02/ARDDH-01, depth-specific brine and drainable porosity sampling from ARDDH-01 was complemented by long-term pumping and sampling at Argento-02, supporting the Measured Resource category. Where drainable porosity samples were not obtained, conducted aquifer testing was also considered for the Indicated Resource categorization since it also increases confidence in the estimation. Drainable porosity, flow rates (from aquifer testing), and recoverability were considered to demonstrate Reasonable Prospects for Eventual Economic Extraction. Consistent with the Houston et al. (2011) guidelines, a 1.5 and 3.5 km circle closest to the well was used to estimate a Measured and Indicated resource for a mature salar, respectively.

Based on the results from recent well drilling and hydraulic testing, it is interpreted by the QP that the units encountered in exploration well Argento-01 and ARDDH-01 show continuity within the 3.5 km radius from the well which defines the estimated Indicated resource there. Furthermore, brine sampling and direct drainable porosity results (LCV) exist at ARDDH-04 and ARDDH-05, and brine sampling occurred during the pumping tests at Argento-02 and Argento-03, supporting the Indicated Resource classification.

In the area of the defined resource, the conceptual model of the hydrogeologic system in Salar de Arizaro and observed results are consistent with anticipated stratigraphic and hydrogeologic conditions associated with mature, closed-basin, high-altitude salar systems.

14.7 Potential Upside and Reasonable Prospects for Eventual Economic Extraction

The Measured, Indicated, and Inferred resources estimated will likely change as more field information becomes available. The work in the last year has substantially increased the understanding of the conceptual model of the basin and has allowed the estimation of a lithium resource at the Measured and Indicated level. Because future exploration drilling is being planned, additional resource is likely to be added in the mineral concessions. Recommended activities in this report are designed to improve the conceptual hydrogeologic model but are also designed to increase the resource.

Additional drilling with depth-specific sampling in the Salar de Arizaro could increase the resource estimate. In particular, recommended future exploration includes drilling in deeper portions of the ARDDH-05 area and western area of the property. The ARDDH-05 results to date are positive in terms of the high lithium concentrations and fractured halite encountered. In addition, the western portion hosts deep clastic sediments which underlie the halite unit.

Based on the experience of the QP in other similar lithium-rich brine aquifer systems in the region, the results of the exploration activities to date support the prospect of potential future economic extraction of lithium-rich brine in amounts that could feasibly support a project. Exploration wells in Salar de Arizaro have demonstrated the ability of the aquifer to yield large amounts of lithium-rich brine to land surface. Abundant brine samples from a vast majority of the concession areas have been obtained and analyzed, and demonstrate relatively large lithium concentrations on par with other similar projects in the region.

At present, the QP is not aware of any legal, political, environmental, or other risk that could materially impact the potential development of the mineral resources.

15 MINERAL RESERVE ESTIMATES

The reserve estimate for lithium brine considers the modifying factors of converting Measured and Indicated resources to mineral reserves, including the production wellfield design, future dilution, and recovery of lithium during the processing phase. The Canadian Institute of Mining (CIM) Best Practice for Reporting of Lithium Brine Resources and Reserves (CIM, 2012) were considered when estimating the lithium brine reserve through use of a digital simulation groundwater model with additional aquifer parameters such as hydraulic conductivity and dispersivity.

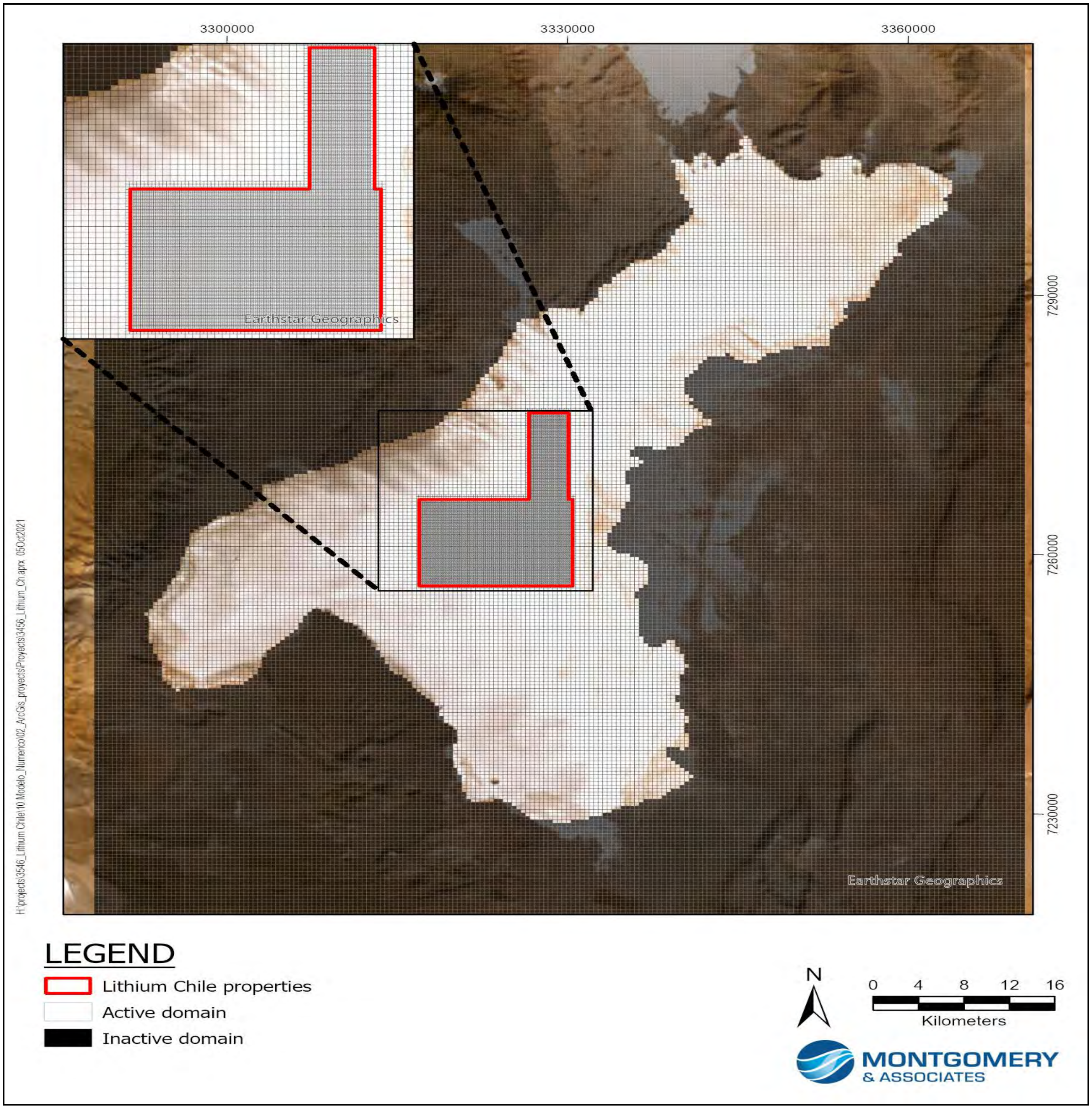
15.1 Numerical Model Construction

A calibrated groundwater flow and solute transport model was created to estimate the reserve because extraction of lithium-rich brine is based on physical pumping from a wellfield. The 3D numerical model was constructed in Groundwater Vistas interface Version 8 (ESI, 2020) and was simulated using the control volume finite difference code MODFLOW-USG Transport (Panday, 2023). MODFLOW-USG was selected because of its numerical robustness, local grid refinement options, and ability to simulate solute transport via advection and dispersion with block-centered transport (BCT). The connected linear network (CLN) package was used to model pumping due to its enhanced ability to simulate dynamic pumping levels and extracted concentrations.

15.1.1 Design

The active model domain encompasses the Salar de Arizaro (Figure 15-1) and includes Lithium Chile's mining concessions Tolar 02, Tolar 05, Tolar 06, Salari 07, and Salari 08. The active model domain covers an area of approximately 2,031 square kilometers (km^2); it was designed to easily incorporate recharge from neighboring sub-basins and also minimize the influence of assigned boundary conditions on simulation results.

Figure 15-1: Numerical Model Domain



Source: Montgomery, 2024.

15.1.2 Grid Specifics

The 3D model domain includes a grid of node-centered, rectangular cells. Using MODFLOW-USG's quadtree feature, cells with small lateral dimensions (100 m) were assigned in areas of interest such as the projected wellfield location, and larger elements (400 m) were defined in zones outside of the areas of interest with little available information. The model includes a total of 578,080 cells, and 180,893 are active.

The numerical model layer geometry was constructed from a Leapfrog geological model; vertically, the domain was divided into eight model layers based on the defined hydrogeologic unit contacts and amount of exploration data. The number of cells in each layer is variable depending on the amount of exploration information at depth, and model layer thicknesses range from 10 – 270 m within the mining concessions. The base of the active model domain was set based on the total depth of the deepest exploration well (Argento-02), which corresponds to 650 m, and inactive cells were assigned along the basin margins to represent the overall geometry of the sedimentary basin.

15.1.3 Boundary Conditions

The conceptual model for the Salar de Arizaro assumes a closed (endorheic) basin with an equivalent average precipitation recharge and evaporative discharge. In a closed basin, evapotranspiration is the only discharge mechanism for groundwater prior to pumping.

In natural (pre-pumping) conditions, the conceptual water balance is summarized as follows:

$$Precipitation\ Recharge + Snowmelt\ Recharge = Evaporation\ Discharge$$

Based on analysis of recharge and evaporation, the recharge estimate for the Salar de Arizaro Basin is believed to range from 290 liters per second (L/s) to 760 L/s, with an average of approximately 524 L/s (Section 7.3); total modeled recharge corresponds to the medium scenario value (524 L/s), which represents average climatic conditions.

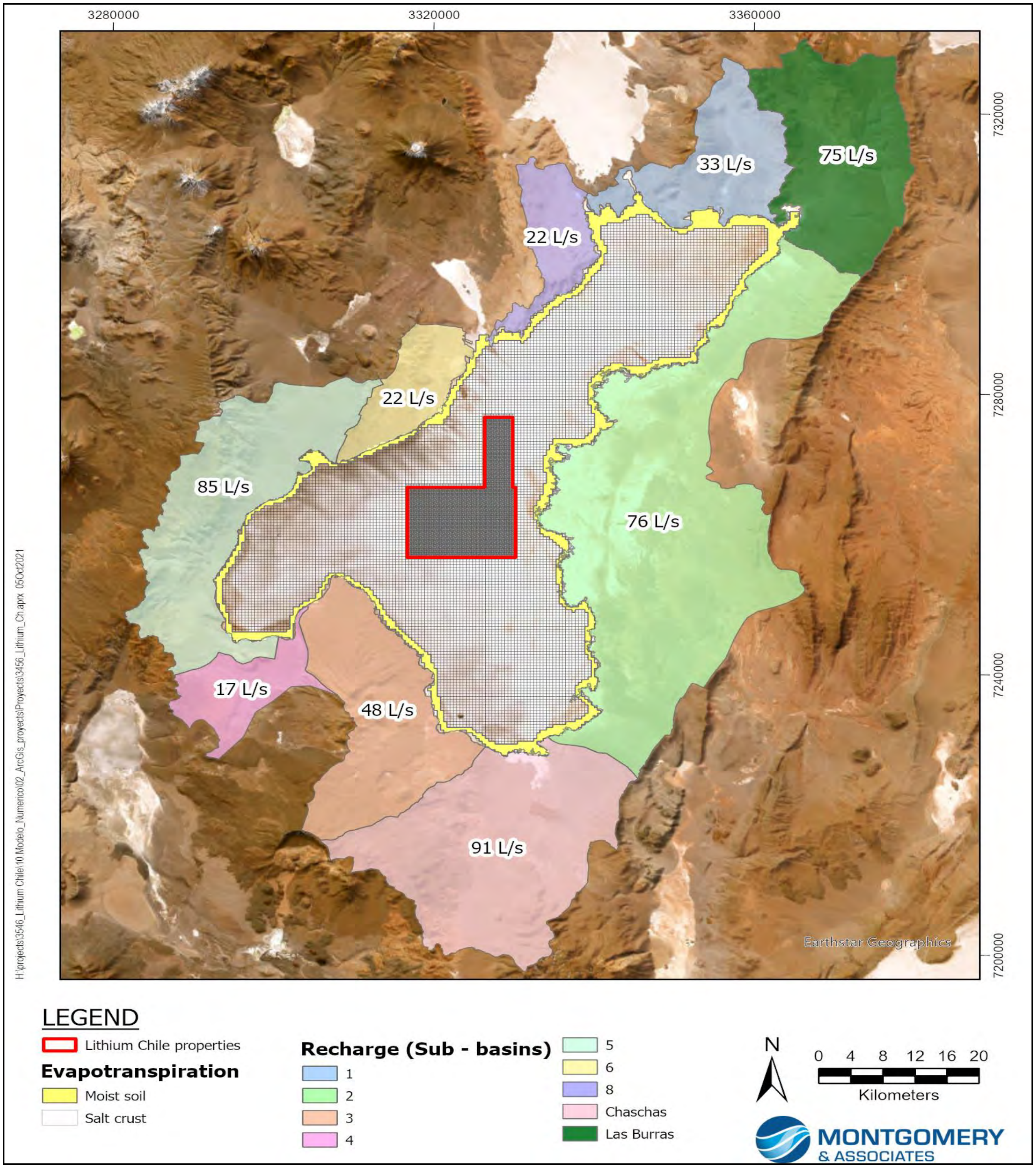
In the numerical model, direct recharge was applied to the active model domain, which corresponds to the salar, using the recharge (RCH) package. Specified flux (WEL) cells were assigned along the shallow layers of the active boundary to simulate underflow from adjacent sub-basins. Table 15-1 and Figure 15-2 present the total direct recharge and underflow from neighboring sub-basins. All simulated inflow via direct recharge and underflow was assumed to have no lithium content.

Table 15-1: Modeled Recharge Values by Zone

Sub-Basin	Recharge (L/s)	Recharge (m^3/d)[1]
Salar (direct recharge)	55	4,752
1	32.9	2,843
2	76.1	6,575
3	48.2	4,164
4	17.1	1,477
5	85	7,344
6	22.3	1,927
8	22.1	1,909
Chaschas	91	7,862
Las Burras	74.6	6,445
Total	**524**	**45,300**

1. m^3/d = cubic meters per day; total recharge rounded.

Figure 15-2: Recharge and Evapotranspiration Zones



Source: Montgomery, 2024.

The evapotranspiration segments (ETS) package was utilized to simulate evaporation from two distinct zones, including salt crust and moist soil along the edges of the salar (Figure 15-2). The ETS package simulates a non-linear change in evaporation from the specified extinction depth to land surface; the evaporation rates varied according to the zone, and extinction depths were set based on the type of soil and water density trends. The maximum evaporation rate of the salt crust and marginal (moist) soil corresponds to 4.4 mm/day and 6.6 mm/day, respectively, while the extinction depth (below which evaporation no longer occurs) was set to 1.5 m and 2 m, respectively. ETS segments were specified in each zone based on the expected evapotranspiration curves and water density trends.

15.1.4 Hydraulic Properties

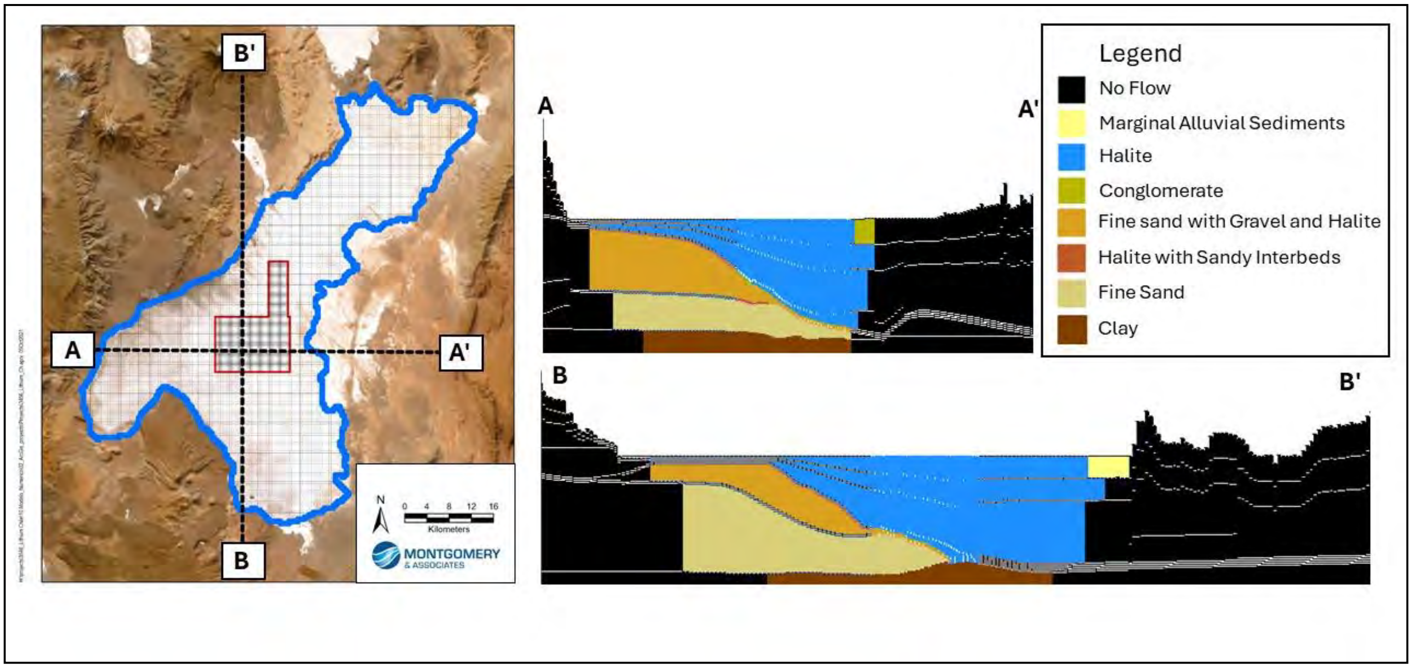
Hydraulic properties of the groundwater flow model correspond to hydraulic conductivity and storativity, the latter of which includes specific yield (Sy) and specific storage (Ss) depending on the aquifer confinement. These parameters were assigned based on lithology, and a majority were adjusted throughout the calibration with consideration of on-site aquifer tests. Table 15-2 contains the calibrated hydraulic parameters and Figure 15-3 presents the distribution of the hydraulic conductivity and storage zones. The spatial distribution of the hydrogeologic units in the numerical model (Figure 15-3) agrees with that of the conceptual model cross sections (Figure 7-3 to Figure 7-6; however, note that the *clastic sediments with evaporite traces* include numerous units of Table 15-2 and Figure 15-3).

Table 15-2: Modeled Hydraulic Parameters

Hydrogeologic Unit	Horizontal Hydraulic Conductivity (m/d)[1]	Vertical Hydraulic Conductivity (m/d)[1]	Specific Yield	Specific Storage (1/m)
Halite[2]	0.01	0.01	0.04	1E-5
Fine sand with Gravel and Halite	1.5	0.15	0.12	1E-4
Fine Sand	0.05	0.005	0.09	1E-4
Halite with Sandy Interbeds	0.1	0.01	0.09	5E-4
Clay	0.001	0.0001	0.02	1E-5 to 1E-4
Conglomerate	2	2	0.05	1E-4
Marginal Alluvial Sediments	20	10	0.12	1E-3

Notes:
1. m/d = meters per day.
2. Representative of massive halite.
3. Calibrated values are presented following the steady-state and transient calibration phases (see Section 15.2); based on the 31-day long-term pumping test at Argento-02, the calculated transmissivity from recovery data is 55 square meters per day (see Section 10.2), while the modeled transmissivity at Argento-02, based on the layers that intersect the screened interval, is approximately 41 square meters per day.

Figure 15-3: Modeled Hydraulic Conductivity and Storage Zones



Source: Montgomery, 2024.

Transport parameters include effective porosity and dispersivity. Based on the current amount of testing data, effective porosity was assumed to be equivalent to specific yield. Dispersivity values were set to 10 m for longitudinal dispersivity, 1 m for transverse dispersivity, and 0.1 m for vertical dispersivity (Hess et al., 2002). Molecular diffusion, a local-scale phenomenon, was not simulated since the model covers the entire Salar de Arizaro.

15.1.5 Water Density Considerations

While water density differences can impact the hydraulic gradient and pumping responses, based on water samples collected during exploration to date, the ability to model density driven flow is limited due to the poor linear fit between TDS and water density. Furthermore, lithium and water density trends are non-linear due to the presence of sulfate- and magnesium-rich brines at distinct depths.

As such, the numerical model does not simulate density driven flow for the following reasons:

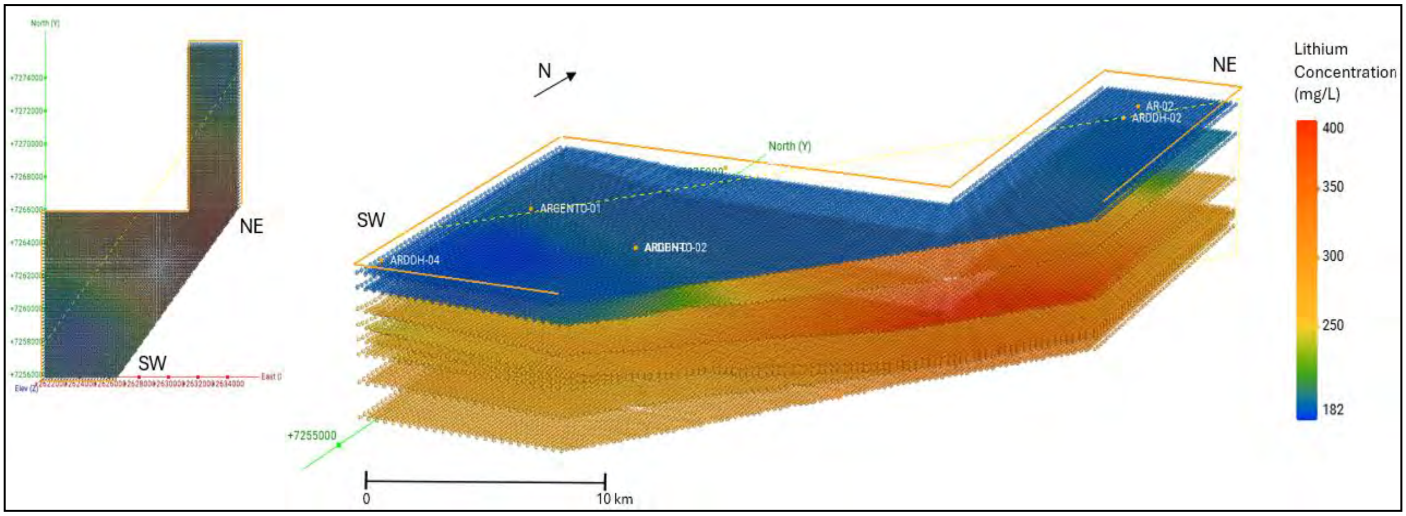
- Insufficient water samples exist with a density less than 1.20 grams per cubic centimeter (g/cm^3), and Lithium Chile's mining concessions, where pumping is projected to occur, are sufficiently far from the Salar margins that can present important water density differences.
- The current fits between TDS and water density, as well as lithium and water density, are not adequate for modeling purposes.

A future update with additional brine chemistry results could allow for the consideration of density driven flow.

15.1.6 Initial Lithium Concentrations

Within each model layer, average lithium concentrations from the resource estimate were interpolated in Surfer using the Kriging method and were subsequently imported into the numerical model for the initial (pre-pumping) distribution. Figure 15-4 shows the initial condition of lithium prior to a transient run with pumping.

Figure 15-4: Initial Condition of Lithium Concentrations



Source: Montgomery, 2024.

Initial lithium concentrations outside of Lithium Chile's mining concessions (Tolar 02, Tolar 05, Tolar 06, Salari 07, and Salari 08) were conservatively set to zero to prevent the potential inflow of mass from outside areas during the reserve simulation. Verification of the incorporated concentrations was done by comparing average (measured) and interpolated concentrations, as well as by visual inspection. Consistent with the resource estimate, shallow concentrations below 190 m bls are below the 200 mg/L cut-off grade (Figure 15-4).

15.2 Numerical Model Calibration

Prior to the simulation of future production, the numerical model was calibrated to verify modeled parameters such as hydraulic conductivity and specific storage.

15.2.1 Steady-State Calibration

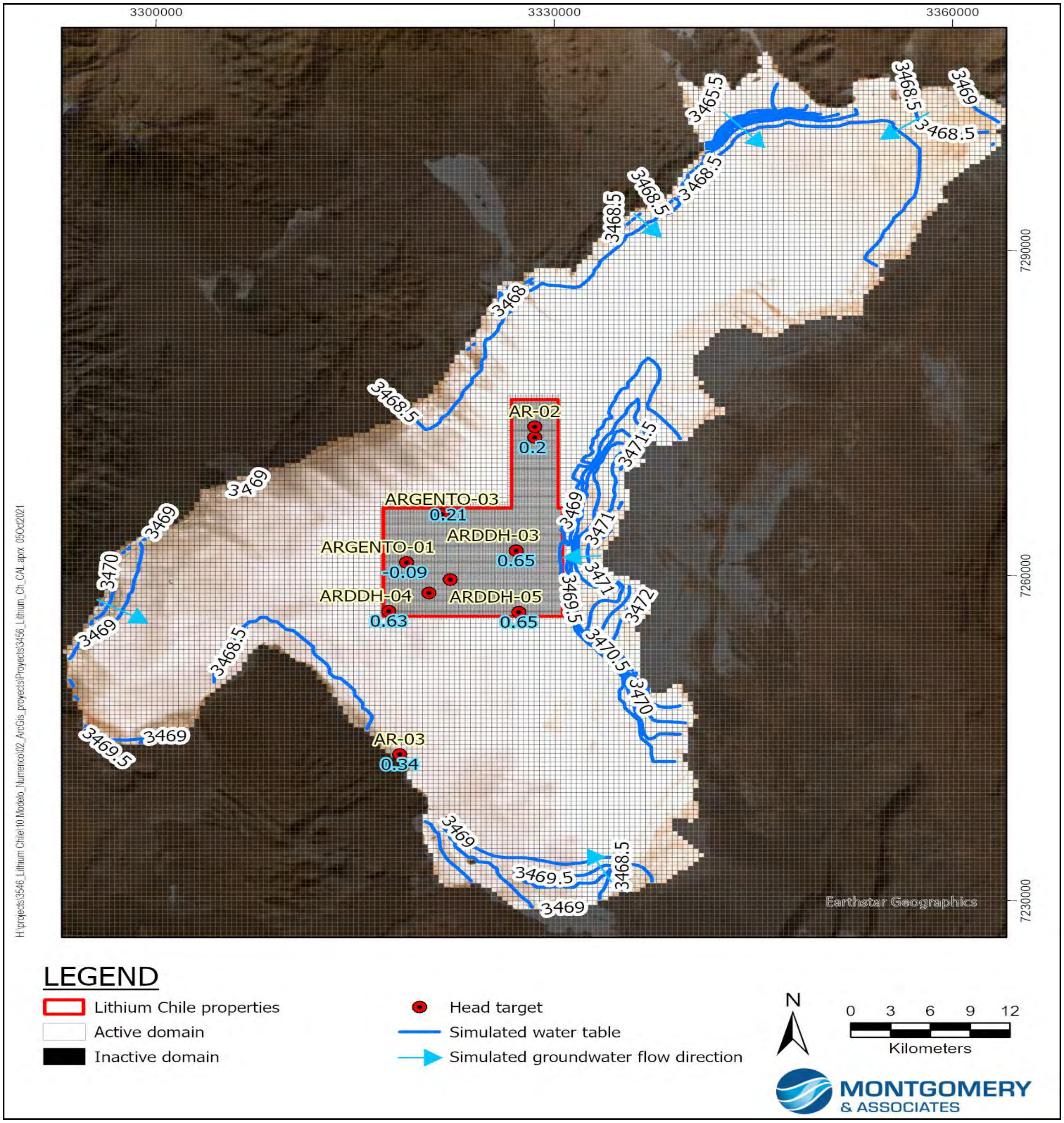
The numerical model was initially calibrated to steady-state or natural conditions, prior to pumping, using available measurement averages from May 2023 to January 2024. The calibrated solution in steady state is considered acceptable with all hydraulic head residuals (observed value minus simulated value) within 1 m, a residual mean of 0.2 m, and absolute residual mean of 0.41 m (Table 15-3).

Table 15-3: Steady-State Model Residuals

Well	X (Posgar 94, Argentina 2)	Y (Posgar 94, Argentina 2)	Layer (midpoint of screened interval)	Observed (m)	Computed (m)	Residual (m)
AR-03	2,622,870	7,243,101	1	3469.06	3468.72	0.34
ARDDH-04	2,622,052	7,256,325	3	3469.20	3468.57	0.63
ARDDH-05	2,631,846	7,256,236	2	3469.20	3468.55	0.65
ARDDH-06	2,625,075	7,258,000	3	3467.58	3468.55	-0.97
ARDDH-01	2,626,683	7,259,245	3	3468.90	3468.54	0.36
ARGENTO-03	2,626,069	7,265,262	1	3468.75	3468.54	0.21
ARDDH-02	2,633,050	7,272,350	2	3468.75	3468.55	0.20
ARDDH-03	2,631,647	7,261,904	3	3469.25	3468.60	0.65
ARGENTO-01	2,623,387	7,260,823	2	3468.45	3468.54	-0.09
AR-02	2,633,050	7,273,351	2	3468.59	3468.55	0.04

Figure 15-5 shows the simulated water table and indicates that groundwater flow occurs from the higher elevation areas of the basin towards the center of the salar, as expected conceptually.

Figure 15-5: Simulated Water Table and Head Residuals



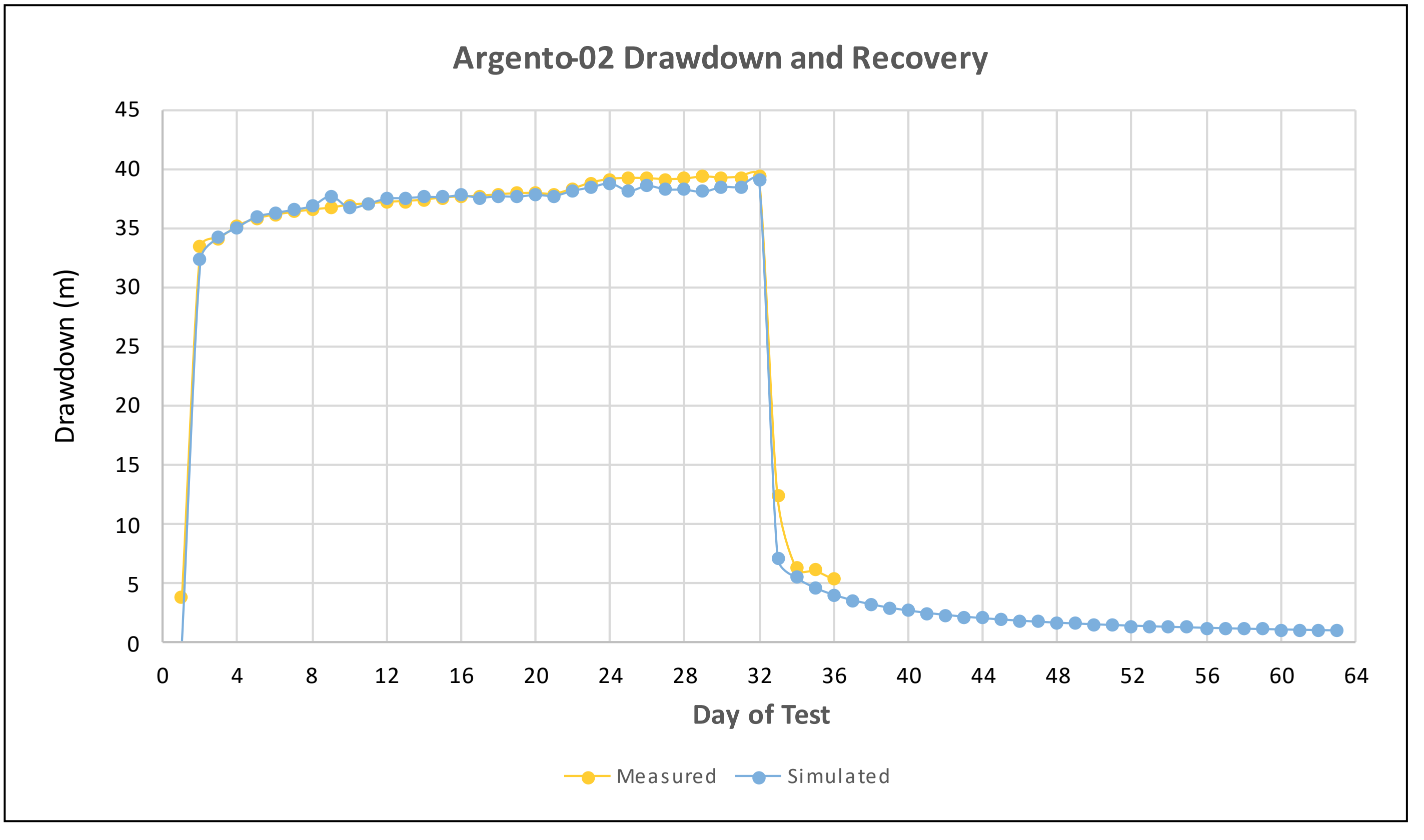
Source: Montgomery, 2024.

15.2.2 Transient Calibration

Following the steady-state calibration, a transient model calibration was undertaken for the long-term pumping test (31 days) and recovery at Argento-02 to confirm the aquifer's response to pumping. Argento-02 is screened in various units including the fine sand with gravel and halite, halite with sandy interbeds, and fine sand, the majority of which constitute the productive units that underlie the massive halite in Lithium Chile's mining concessions. Since observation wells were not monitored during the field test, water level drawdown measured in the pumping well was compared to simulated drawdown in the CLN well, and extracted concentrations were compared with composite concentrations obtained during the pumping test. A well efficiency of 90% was assigned based on the step-test results at Argento-02.

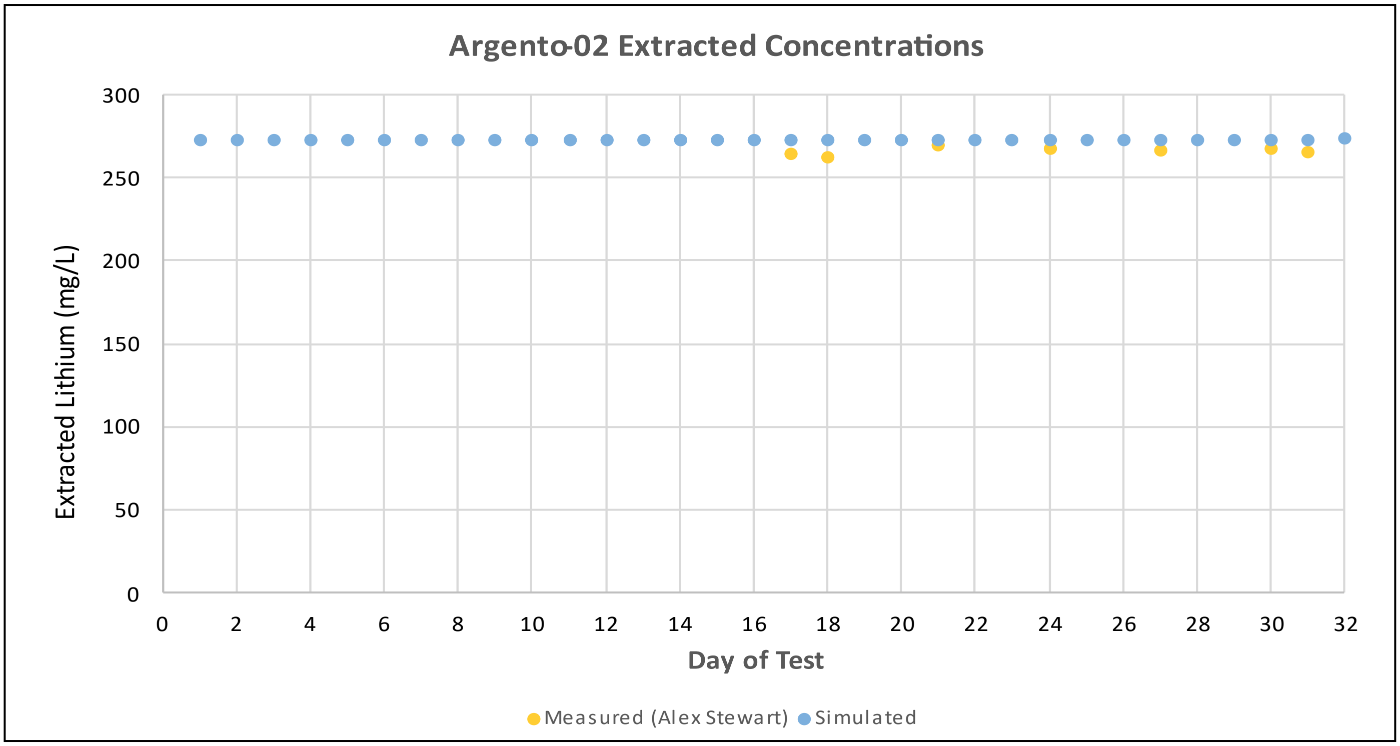
As can be seen on Figure 15-6, the observed and simulated hydrographs during the Argento-02 test within the pumping well closely agree, with a residual mean of approximately 0.2 m during the pumping phase. Furthermore, the modeled transmissivity of layers which intersect the Argento-02 screened interval (~41 m^2/d) is acceptably close to the calculated transmissivity from recovery data (55 m^2/d; Section 10.2). In terms of pumped lithium during the Argento-02 test, extracted concentrations from the pumping well agree with the model (Figure 15-7), further strengthening the calibration.

Figure 15-6: Drawdown and Recovery Hydrographs, Argento-02 Long-Term Pumping Test



Source: Montgomery, 2024.

Figure 15-7: Hydrograph of Extracted Concentration, Argento-02 Long-Term Pumping Test



Source: Montgomery, 2024.

15.3 Predictive Simulation

The results of the projected wellfield discussed in this sub-section represent forward-looking information as the results depend on inputs that are subject to known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented in this sub-section, including the modifying factors and modeling assumptions described in this section.

Following the steady-state and transient calibrations, a predictive simulation was conducted with production pumping based on the projected mine plan (Table 15-4) which considers processing losses after brine extraction.

Table 15-4: Projected 20-Year Mine Plan

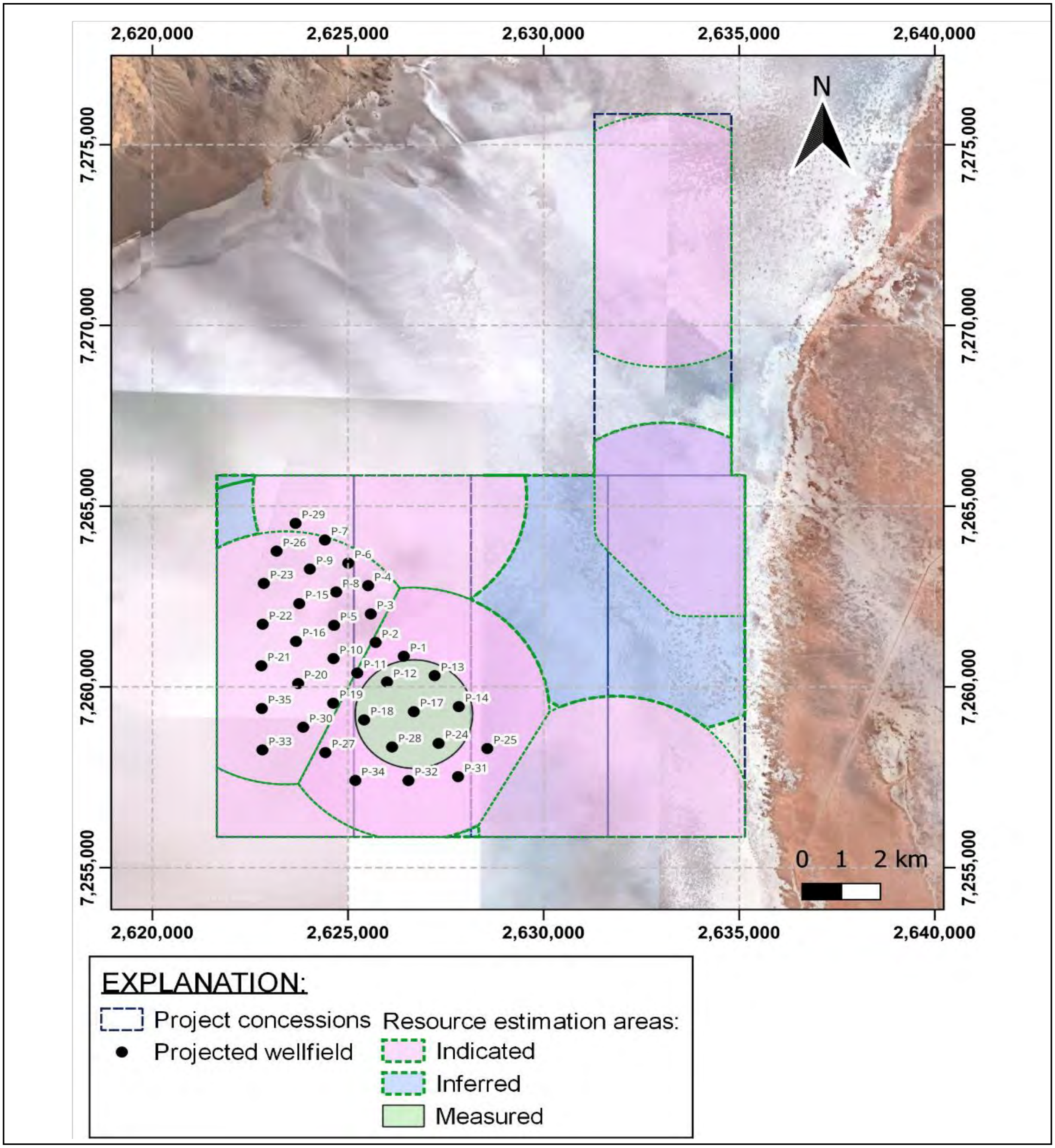
	Year 1 (Seasonal Ramp-up)	Years 2-20	Total during LOM
Expected Yearly Production (tonnes of LCE)	14,178	25,000	489,178

Note: Mass values are representative of processed brine (considering processing losses).

15.3.1 Projected Wellfield

The wellfield and simulated production wells are shown on Figure 15-8; projected production locations are spaced approximately 1 km apart within Measured and Indicated Resource zones. Furthermore, the screens of the production wells (where inflow occurs from pumping) were set within Measured and Indicated Resource zones.

Figure 15-8: Projected Wellfield and Shallowest Resource Polygons

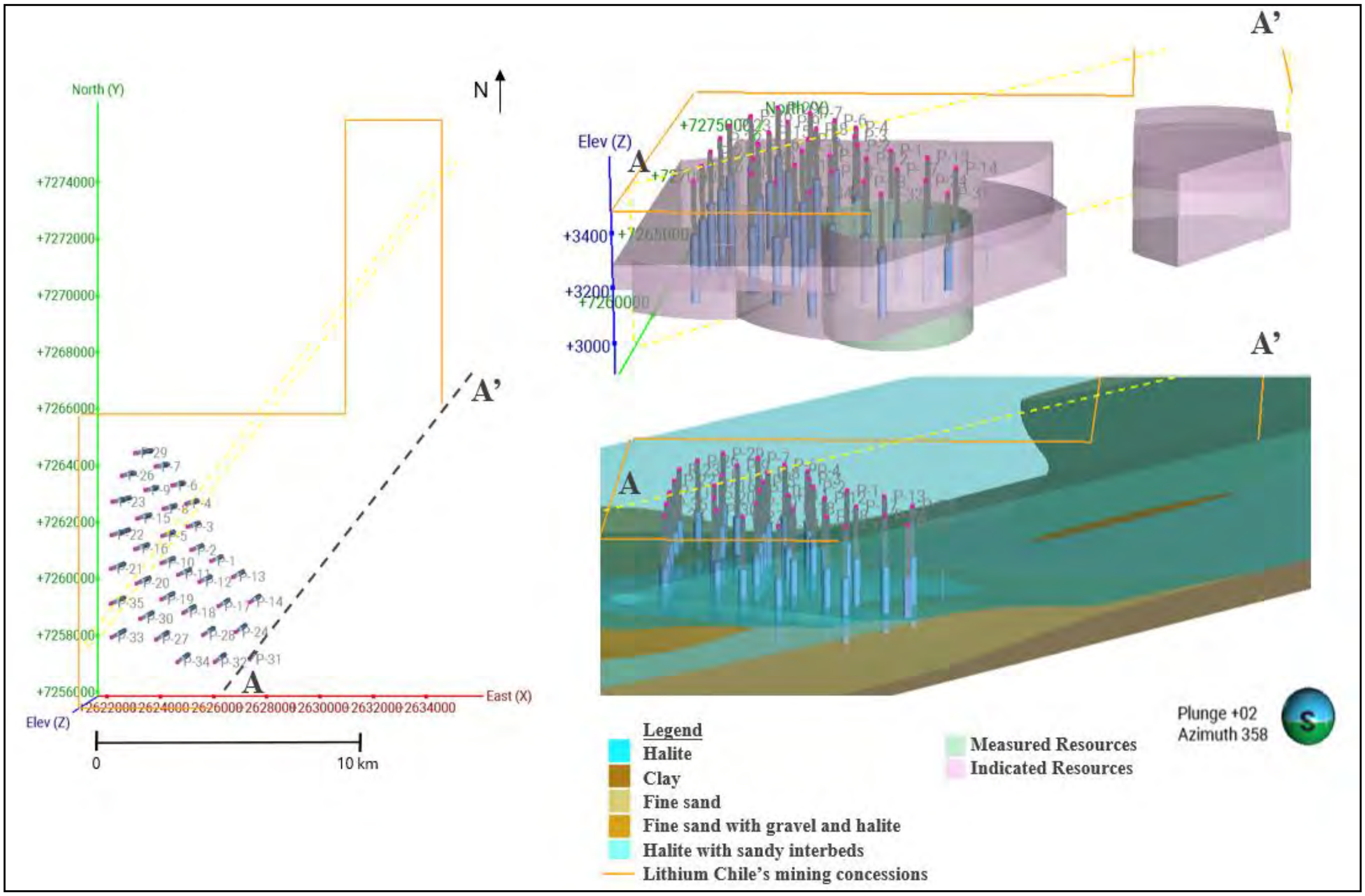


Source: Montgomery, 2024.

To meet the expected production during the LOM (Table 15-4), optimization of the well locations and pumping rates was undertaken for the ramp-up period and subsequent years. As a result, the reported wellfield (Figure 15-8) is concentrated in the southwest area of the mining concessions for the following reasons:

- The southwest area presents a thinner massive halite unit, and thicker (underlying) clastic sediments which are relatively permeable, allowing for higher feasible pumping rates.
- The Measured and Indicated resource zones are the most extensive in the southwest area of the mining concessions due to the large amount of exploration and pumping test information.

Figure 15-9: Cross-section of the Projected Pumping Wells, Measured and Indicated Resource Zones, and Lithologic Units



Source: Montgomery, 2024.

Simulated pumping during the LOM is shown in Table 15-5. The ramp-up period involves increased quarterly pumping during the first year from 10 wells in the first quarter to 32 wells in the fourth quarter. Subsequent pumping with 35 wells occurs from years 2 to 20, and extraction is slightly increased over time in all wells to compensate for increased dilution. A well efficiency of 70% was assumed for all production wells in the predictive period, and no replacement wells were simulated. The average well depth corresponds to approximately 500 m bls. Natural recharge (with no lithium) was assumed to be constant during the LOM.

Table 15-5: Simulated Pumping During the LOM

Well	X (Posgar 94, Argentina 2)	Y (Posgar 94, Argentina 2)	Top Screen Layer	Bottom Screen Layer	Pumping Rates (L/s)*								
					Q1 Y1	Q2 Y1	Q3 Y1	Q4 Y1	Y2-5	Y6-8	Y9-12	Y13-Y16	Y17-Y20
P-1	2,626,425	7,260,846	3	5	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-2	2,625,707	7,261,228	3	5	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-3	2,625,582	7,262,016	3	5	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-4	2,625,516	7,262,799	3	5	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-5	2,624,643	7,261,702	3	6	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-6	2,625,007	7,263,420	3	5	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-7	2,624,409	7,264,062	3	6	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-8	2,624,697	7,262,623	3	6	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-9	2,624,024	7,263,259	3	6	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-10	2,624,628	7,260,782	3	6	12	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-11	2,625,236	7,260,381	3	6	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-12	2,625,998	7,260,135	3	7	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-13	2,627,214	7,260,310	3	7	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-14	2,627,832	7,259,452	3	7	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-15	2,623,754	7,262,302	3	6	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-16	2,623,670	7,261,256	3	6	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-17	2,626,682	7,259,313	3	7	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-18	2,625,411	7,259,085	3	7	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-19	2,624,621	7,259,546	3	6	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-20	2,623,726	7,260,092	3	6	0	16	18	18.75	18.8	18.83	18.85	18.88	18.9
P-21	2,622,785	7,260,582	3	6	0	0	18	18.75	18.8	18.83	18.85	18.88	18.9
P-22	2,622,818	7,261,732	3	6	0	0	18	18.75	18.8	18.83	18.85	18.88	18.9
P-23	2,622,846	7,262,860	3	6	0	0	18	18.75	18.8	18.83	18.85	18.88	18.9
P-24	2,627,317	7,258,435	3	7	0	0	18	18.75	18.8	18.83	18.85	18.88	18.9
P-25	2,628,561	7,258,293	3	6	0	0	18	18.75	18.8	18.83	18.85	18.88	18.9
P-26	2,623,173	7,263,754	3	6	0	0	0	18.75	18.8	18.83	18.85	18.88	18.9
P-27	2,624,421	7,258,181	3	6	0	0	0	18.75	18.8	18.83	18.85	18.88	18.9
P-28	2,626,127	7,258,336	3	7	0	0	0	18.75	18.8	18.83	18.85	18.88	18.9
P-29	2,623,658	7,264,523	3	6	0	0	0	18.75	18.8	18.83	18.85	18.88	18.9
P-30	2,623,853	7,258,883	3	6	0	0	0	18.75	18.8	18.83	18.85	18.88	18.9
P-31	2,627,814	7,257,516	3	6	0	0	0	18.75	18.8	18.83	18.85	18.88	18.9
P-32	2,626,545	7,257,408	3	6	0	0	0	18.75	18.8	18.83	18.85	18.88	18.9
P-33	2,622,811	7,258,254	3	6	0	0	0	0	18.8	18.83	18.85	18.88	18.9
P-34	2,625,188	7,257,411	3	6	0	0	0	0	18.8	18.83	18.85	18.88	18.9
P-35	2,622,795	7,259,400	3	6	0	0	0	0	18.8	18.83	18.85	18.88	18.9
Total Pumping (L/s)*					**120**	**320**	**450**	**600**	**658**	**659**	**660**	**661**	**662**

*Values are rounded

15.3.2 Extracted Brine and Lithium Concentrations

Numerical model results from the predictive simulation were used to calculate the amount of extracted lithium. The extracted lithium mass was multiplied by a conversion factor of 5.323 (based on molecular weight) to compute LCE. The resulting values from each production well were then summed for each production year to determine the predicted annual amount of LCE.

Table 15-6 presents the simulated annual pumping, flux-weighted average extracted concentrations, and lithium mass extracted from the pumping wells.

Table 15-6: Simulated Pumping, and Extracted Concentrations and Lithium Mass

Year of LOM	Total Pumping (L/s)	Cumulative Brine Pumped (m^3)	Average Extracted Lithium Concentration (mg/L)	Extracted Lithium (tonnes) at the Wellhead*
1	600	1.18E+07	274.8	3,237
2	658	3.26E+07	273.2	5,668
3	658	5.33E+07	273.2	5,667
4	658	7.40E+07	273.1	5,666
5	658	9.49E+07	273.0	5,680
6	659	1.16E+08	272.9	5,671
7	659	1.36E+08	272.8	5,669
8	659	1.57E+08	272.7	5,667
9	659	1.78E+08	272.6	5,680
10	660	1.99E+08	272.5	5,671
11	660	2.20E+08	272.4	5,669
12	660	2.40E+08	272.3	5,667
13	660	2.61E+08	272.2	5,681
14	661	2.82E+08	272.2	5,672
15	661	3.03E+08	272.1	5,671
16	661	3.24E+08	272.0	5,669
17	661	3.45E+08	271.9	5,683
18	662	3.66E+08	271.8	5,674
19	662	3.86E+08	271.7	5,673
20	662	4.07E+08	271.7	5,671

*Without applying the process recovery factor.

15.4 Mineral Reserve Estimate

The results of the reserve estimate discussed in this sub-section represent forward-looking information as the results depend on inputs that are subject to known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented in this section, including the modifying factors and modeling assumptions described in this section.

The mineral reserve estimate considers the modifying factors of converting Measured and Indicated Mineral resources to mineral reserves; only a proportion of the in-situ mineral resource can be extracted using the proposed wellfield configuration and pumping schedule. Metallurgical factors are also considered as a modifying factor. Thus, reserves are reported at the point of reference of processed brine (rather than from the production wellheads). To estimate the reserve, extracted lithium mass was multiplied by a global process efficiency factor of 83%. Table 15-7 presents the categorized mineral reserves for the Arizaro Project. Results indicate that approximately 24% of the Measured and Indicated resource mass, prior to processing losses, can be pumped from the production wells during the LOM.

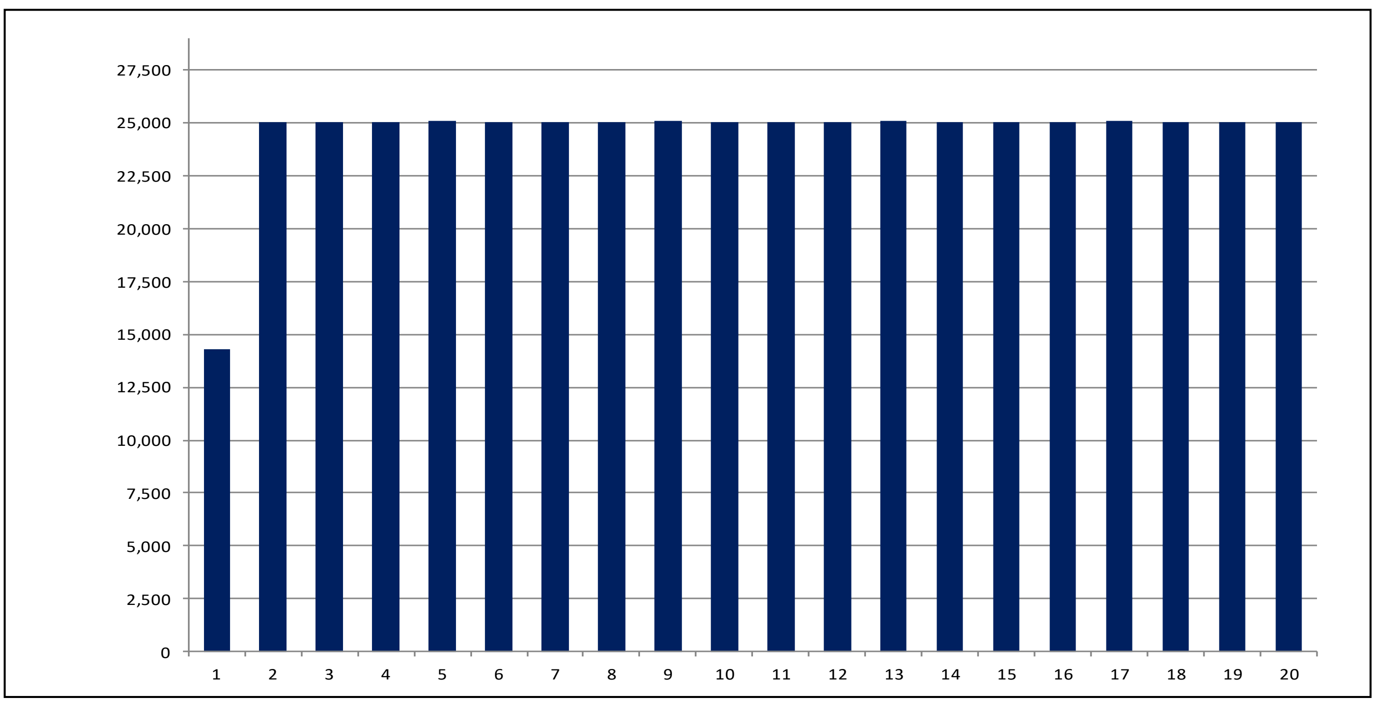
Table 15-7: Summary of the Probable Reserve Estimate for the Arizaro Project, Considering Processing Losses (Effective April 19, 2024)

Reserve Category	Time Period	Brine Volume Pumped (Mm^3)	Average Extracted Lithium Concentration (mg/L)	Extracted Lithium Mass (kt)	Extracted LCE Mass (kt)
Probable Reserves	All (Years 1 – 20)	407	273	92	490

Notes:
1. Mm^3 = million cubic meters; kt = kilotonnes; LCE = lithium carbonate equivalent.
2. Mineral Reserves are reported at a point of reference of processed brine using a global recovery factor of 83%.
3. The cut-off grade for lithium used to report Mineral Reserves is 200 mg/L based on a conservative lithium carbonate price of US$8,000/t LCE.
4. Lithium is expressed as a contained metal.
5. The conversion factor used to calculate LCE from lithium is based on the molar weight of the elements added to generate LCE. The equation is as follows: Li x 5.3228 = LCE.
6. Minor discrepancies may exist when comparing values due to the use of averaging methods and rounding.

Figure 15-10 shows the simulated yearly production of LCE over the LOM. As can be seen, the full-scale yearly production target of 25,000 t of LCE is met from Years 2 to 20.

Figure 15-10: Yearly Production of LCE, Considering Processing Losses



Source: Montgomery, 2024.

15.5 Mineral Reserve Categorization

The mineral reserve was classified by the QP based on industry standards, potential future factors that could affect the estimation, and the confidence of the model predictions. While some production wells are placed in the Measured Resource polygon (Figure 15-8), the QP classified all mineral reserves as Probable reserves for the following reasons:

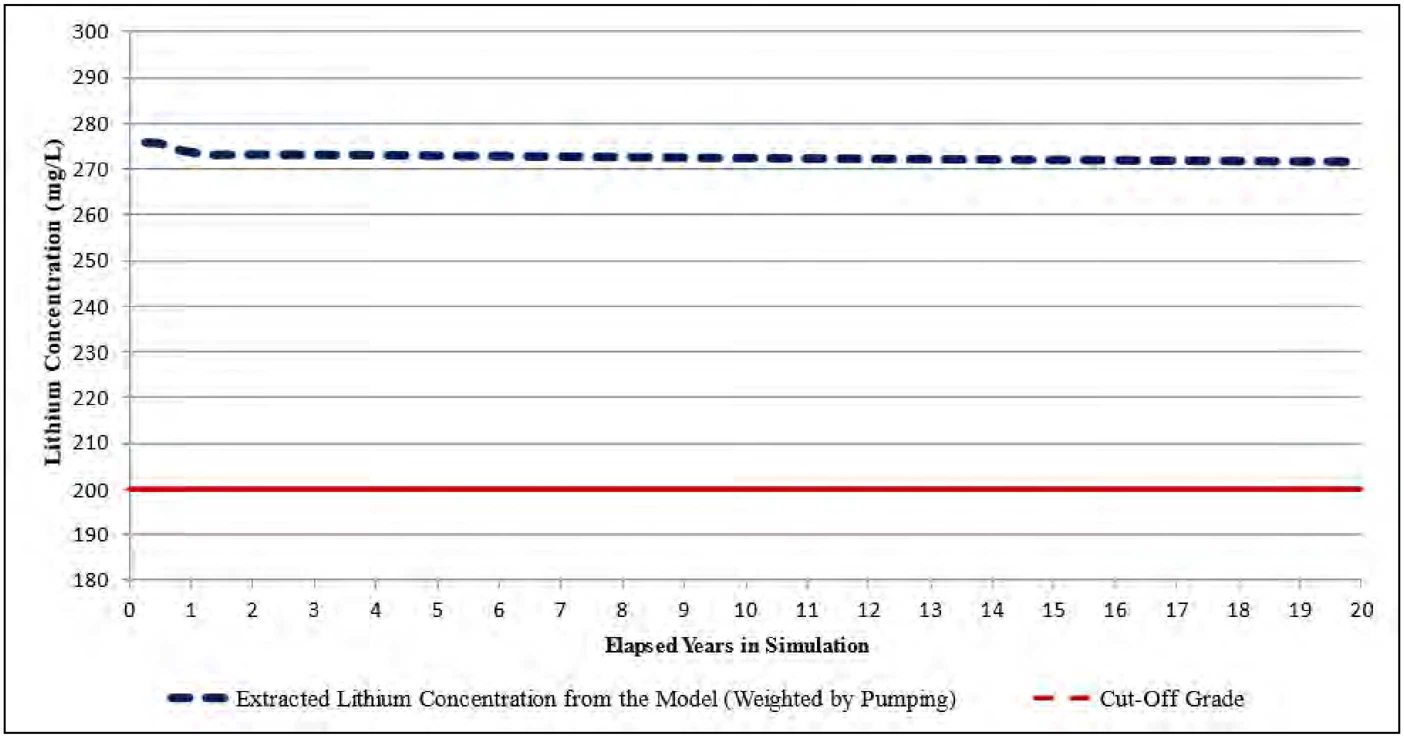
- Only one long-term pumping test has been conducted to date (Argento-02). Additional long-term testing will aid in understanding the feasibility of longer pumping durations in other areas of Lithium Chile's mine concessions and it will also improve the numerical model calibration.
- The numerical model does not currently simulate the future extraction of neighboring lithium operators within the Salar de Arizaro; most of that information has not been publicly disclosed, and thus it has not been analyzed to date. The inclusion of additional pumping may also require an extension of the model domain and consideration of density driven flow (as well as additional water chemistry information).
- The current study level is Pre-feasibility, with preliminary options related to the mine design, mineral processing, and permitting (CRIRSCO, 2019). A future update at the feasibility level will include a more confident mine plan and schedule, as well as optimized mineral processing and management of spent brine.

15.6 Cut-Off Grade

A lithium cut-off grade of 200 mg/L was utilized based on a lithium carbonate price of US$8,000/t. Due to significant price volatility over the last 5 years, a lithium carbonate price of US$8,000/t was conservatively selected to evaluate an economic cut-off grade. Based on this considered price and anticipated brine volume that is extracted, projected costs were reviewed to determine the lithium concentration where pumped brine is expected to generate a profit (following ramp-up Year 1).

Pumped brine is ultimately stored in a collection pond and transferred to the receiving ponds near the DLE plant. Thus, a composite grade is present prior to processing which can be approximated by a flux-weighted average concentration from the production wells. During the 20-year reserve simulation, the average extracted lithium grades weighted by pumping vary from approximately 276 and 271 mg/L due to dilution over the LOM (Figure 15-11). The average lithium grade of Probable Reserves corresponds to 273 mg/L. Based on Figure 15-11, average extracted grades are above the 200 mg/L cut-off grade, demonstrating that production is economically viable.

Figure 15-11: Average Lithium Concentrations Extracted from the Production Wells and Cut-Off Grade



Source: Montgomery, 2024.

15.7 Uncertainty

The reserve estimate could be affected by the following sources of uncertainty:

- Assumptions regarding aquifer parameters where empirical data does not exist.
- Potential variations in brine density after extraction occurs, which is not explicitly simulated using the density driven flow package.
- Future pumping from neighboring properties in the Salar de Arizaro, which has not been analyzed at the current stage.

Despite these sources of uncertainty, a steady-state and transient calibration was conducted with the current data to support a Probable reserve estimate. Future calibration efforts will strengthen the model for subsequent projections.

15.8 Conclusions and Recommendations

Numerical modeling results indicate that it is feasible to meet expected production during the Year 1 ramp-up (14,178 t LCE) and subsequent period from Year 2 to Year 20 (25,000 t/y LCE). The lithium mass that can be extracted from the production wellheads, prior to processing losses, represents about 24% of the total Measured and Indicated resources. Modeling also indicates that the most feasible zone for pumping is the southwestern area of Lithium Chile's mining concessions due to the shallower and thicker clastic sediments, which are relatively permeable. However, it is recommended that replacement wells be considered after 8 to 12 years of operation, depending on the condition and efficiency of the wells over time. Furthermore, it is recommended that reinjection of spent brine be simulated in a future update of the model once more field testing has occurred.

Recalibration of the model would be required with new field information to improve the model and support an updated projection; additional long-term pumping tests are key to better identifying other productive zones in Lithium Chile's mining concessions. The relative accuracy and confidence in the reserve model is dominantly a function of the sampling and analytical methods, conceptual model, and construction and calibration of the numerical model. The input data and analytical results were validated via quality assurance and quality control measures, and through use of multiple methods to determine brine grades, including pumping tests. Thus, the hydrogeological conceptual model was created based on the geological, hydrogeological, and chemical data obtained during the exploration phases. In the opinion of the QP, each phase was conducted in a logical manner, and results are supportable for Probable Reserves.

To the extent known by the QP, there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could affect the mineral reserve estimate which are not discussed in this report.

16 MINING METHODS

16.1 Introduction

The LCE production process in the Salar de Arizaro Project will operate through brine extraction wells.

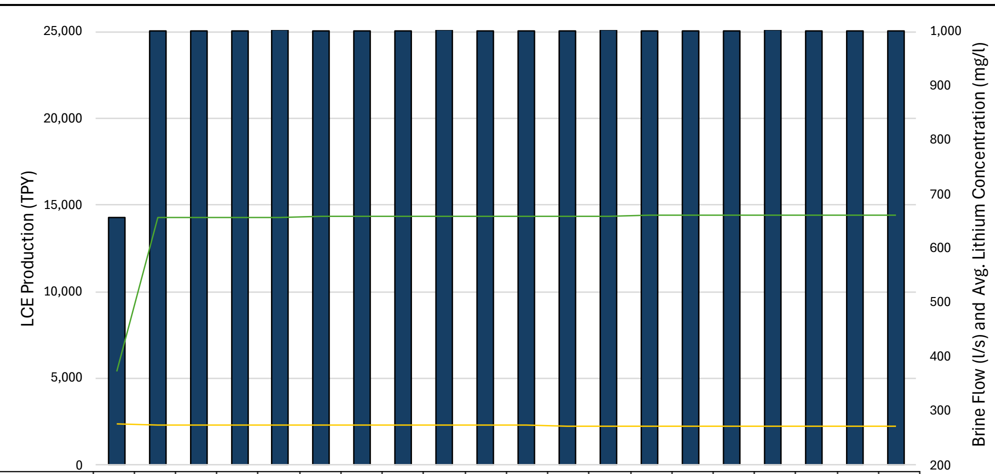
Based on the results available to date from pumping tests carried out in the Arizaro Salar, it has been determined that brine extraction will be carried out through the installation and operation of a conventional brine production wellfield. The brine extracted from each production well will be stored in one collection/transfer pond, from where it will be pumped through a main pipeline directly to the receiving ponds located near the DLE plant.

The considerations adopted for the estimation of the production plan are the following:

- A LOM of 20 years.
- A production ramp-up to 25,000 t/y, which is characterized by 57% of the annual LCE production target in Year 1 (i.e., 14,178 t), followed by 100% from Year 2 to Year 20 (25,000 t/y).
- Based on the mineral processing analysis (Section 13), a global process efficiency factor of 83% is assumed between the production wellheads and generation of LCE product.

Based on the predicted wellfield configuration (Figure 15-8) and reserve modeling described in Section 15, an annual average brine feed rate of approximately 660 L/s is estimated following Year 1, with an average anticipated extracted lithium concentration of 273 mg/L (Figure 16-1).

Figure 16-1: Estimated Production for the Salar de Arizaro Project



Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Total brine flow (l/s)	373	658	658	658	658	659	659	659	659	660	660	660	660	661	661	661	661	662	662	662
Weighted Li concentration (mg/L)	275	273	273	273	273	273	273	273	273	273	272	272	272	272	272	272	272	272	272	272

Total simulated LCE production — Total pumping (l/s) — Average extracted Li concentration (mg/L)

Source: Montgomery, 2024.

Two production periods can be distinguished in Figure 16-1. The first period, during Year 1, considers increased quarterly pumping from 10 wells in the first quarter (P-1 to P-10) to 20 wells in the second quarter (P-1 to P-20), 25 wells in the third quarter (P-1 to P-25), and 32 wells in the fourth quarter (P-1 to P-32) (Figure 15-8). Production wells during the ramp-up period were chosen to optimize extracted grade, and the average anticipated extracted lithium concentration of 275 mg/L during year 1 is slightly higher than that of the following years. Subsequent pumping with 35 wells is projected to occur from Years 2 to 20, and pumping is slightly increased in each well over time (Table 15-5) since the extracted lithium concentration suffers a slight decrease that needs to be compensated with a minor increase in extraction rate to meet the annual target of 25,000 t/y.

16.2 Wellfield Layout and Design

Figure 15-8 and Figure 15-9 presents the projected wellfield configuration which covers Lithium Chile's Tolar 05, Salari 07, and Salar 08 mining concessions. To date, there are results from short-term pumping tests carried out in wells Argento-01, -02 and -03, with the highest constant flow rate of approximately 22 L/s being obtained at Argento-01, with a specific capacity of 0.73 L/s/m. Furthermore, a long-term pumping test of 31 days was undertaken at Argento-02 with a constant rate of 12.5 L/s and maximum rate of 22 L/s during the respective step test. Thus, it is projected that 35 wells, with a flow rate capacity of approximately 19 L/s per well, will need to be drilled by Year 2 to meet the 25,000 t/y target.

Depending on the amount of exploration information at depth and Measured and Indicated resource volumes, the projected well depths vary between approximately 350 and 650 m, with an average depth of approximately 500 m. The top of the well screens is anticipated at 200 m bls in all production wells to inhibit dilution from shallow freshwater and lithium-poor brine at the surface. Projected production wells are generally 1 km apart from each other and screened intervals in the wells will be located adjacent to sand and gravel units underlying the evaporite layers in the southwest area of the mining concessions, where clay units are not dominant.

The production wells will be completed with 12-inch diameter stainless steel casing, and will be equipped with 380-V submersible pumping equipment. Permanent power will be supplied to the production area through electric generators connected to each well. In terms of required field equipment aside from the production wells, pumped brine from the wells will be delivered to the raw brine receiving pond (see Section 18) located in the southern sector of the wellfield via 8-inch High-density Polyethylene (HDPE) pipelines, from where it will be pumped through a main pipeline directly to the receiving ponds near the DLE plant located to the south.

16.3 Hydrogeological Considerations

16.3.1 Freshwater Interaction

Based on the conceptual water balance (Section 7), the estimated recharge rate in the Salar de Arizaro for average climatic conditions corresponds to approximately 524 L/s. Numerous neighboring sub-basins contribute recharge to the Salar de Arizaro, where freshwater is expected to flow from high-elevation areas toward the low elevation salar and evapoconcentrate along the margins over time. The projected wellfield is located in the southwest of Lithium Chile's mining concessions, an average of 10 km from the nearest marginal area of the Salar de Arizaro. Due to its large distance, current numerical modeling results with pumping indicate that a lateral dilution of extracted brine does not occur from the marginal freshwater zones. In addition, the projected extraction wells will be designed to inhibit the inflow of diluted brine from the upper 200 m.

Regardless of numerical model results to date, a network of monitoring wells is recommended to be installed around the margins of the Salar, to track the brackish water to brine interface, with wells located based on information available from geophysical surveys.

16.3.2 Reinjection of Processed Brine

In-situ and numerical modeling studies of infiltration are required to evaluate what volumes of spent brine, following the processing phase, could infiltrate without causing flooding and runoff. It is also recommended to continue evaluating the possibility of reinjection of the processed brine with depleted lithium concentrations, based on additional field tests to determine potential reinjection rates. Further exploratory drilling is required to determine the optimal location for reinjection, minimizing the risk of dilution of the natural resource.

16.4 Cut-off Grade

A lithium cut-off grade of 200 mg/L was utilized based on a lithium carbonate price of US$8,000/t. Due to significant price volatility over the last 5 years, a lithium carbonate price of US$8,000/t was conservatively selected to evaluate an economic cut-off grade. Based on this considered price and anticipated brine volume that is extracted, projected costs were reviewed to determine the lithium concentration that is expected to generate a profit.

For the resource estimate, no resource polygons with a lithium concentration below this 200 mg/L cut-off value were included in the summed lithium mass. Projected production wells in the reserve model were placed only within Measured and Indicated resource zones; well screens were limited to 200 m bls and deeper. Based on the average anticipiated lithium grade of Probable reserves (273 mg/L), average extracted grades are above the applied cut-off grade of 200 mg/L, demonstrating that production is economically viable.

16.4.1 Grade Control and Production Monitoring

Once in the operational period, brine sampling and measurement of brine and water levels at each well should be done monthly. Ongoing monitoring of shallow wells around the margins of the salar also needs to be considered, and a monitoring plan should be prepared following design and construction of the final production wellfield. Additionally, video inspections and well maintenance should be carried out annually. Lastly, the reserve model should be updated and recalibrated on a yearly basis with production data and newly obtained exploration information to improve simulated projections.

17 RECOVERY METHODS

The process defined for the Project (Figure 17-1) is divided in three main areas: brine extraction, chemical plant, and dry product handling.

The first area of brine extraction involves collecting brine from different wells and sending it to a centralized “operations center." This operations center, primarily a pond located centrally to minimize transport piping from each well, then sends the brine to the ponds near the chemical plant and subsequently to the tank that feeds the process.

The second area pertains to the chemical plant operations, which consist of eight stages:

1. Direct Lithium Extraction (DLE)
2. Reverse Osmosis (RO)
3. Chemical Precipitation (Ca & Mg)
4. Ion Exchange (IX) 1 (Ca & Mg; B)
5. Mechanical Evaporation
6. Ion Exchange (IX) 2 (Ca & Mg; B)
7. Carbonation
8. Neutralization

The extracted and collected raw brine is first sent to the DLE stage that uses resin adsorption technology to produce a lithium-enriched brine containing some impurities. In the second stage, the brine is concentrated using high-pressure reverse osmosis (RO) technology, allowing the lithium concentration to reach around 6,000 to 7,000 mg/L (impurities are also concentrated at this stage).

The lithium-enriched brine then sent to the third stage, Chemical Precipitation, to remove calcium (Ca) and magnesium (Mg). In this process, caustic soda (NaOH) and soda ash (Na_2CO_3) are added, producing insoluble residues containing Ca and Mg, which are then separated and discarded. The brine, now with a lower content of impurities, proceeds to the first Ion Exchange stage to remove traces of Ca, Mg and boron (B).

The treated brine is then concentrated by mechanical evaporation reaching a water evaporation flow value that fluctuates between 80 and 100 m^3/h, subsequently the concentrated brine passes through a second stage of Ion Exchange to remove the impurities concentrated in the evaporation/crystallization process.

The lithium-enriched brine, now with a low content of impurities, proceeds to the Carbonation stage, where it reacts with soda ash to produce lithium carbonate. The reaction yields a solid cake of lithium carbonate and a lithium-depleted brine (mother liquor), which are then separated. The lithium carbonate undergoes a drying process, while the mother liquor is directed to a sulfuric acid neutralization process. Here, carbonate is removed through chemical reaction, and the neutralized mother liquor is sent back to the DLE to recover residual lithium.

The third area involves dry product handling, where lithium carbonate undergoes drying, milling or micronization, and finally packaging. For technical grade products, lithium carbonate is dried and directly bagged. However, for BG products, the lithium carbonate undergoes drying, micronization, and then packaging.

The design criteria for the process described in this section is summarized in Table 17-1.

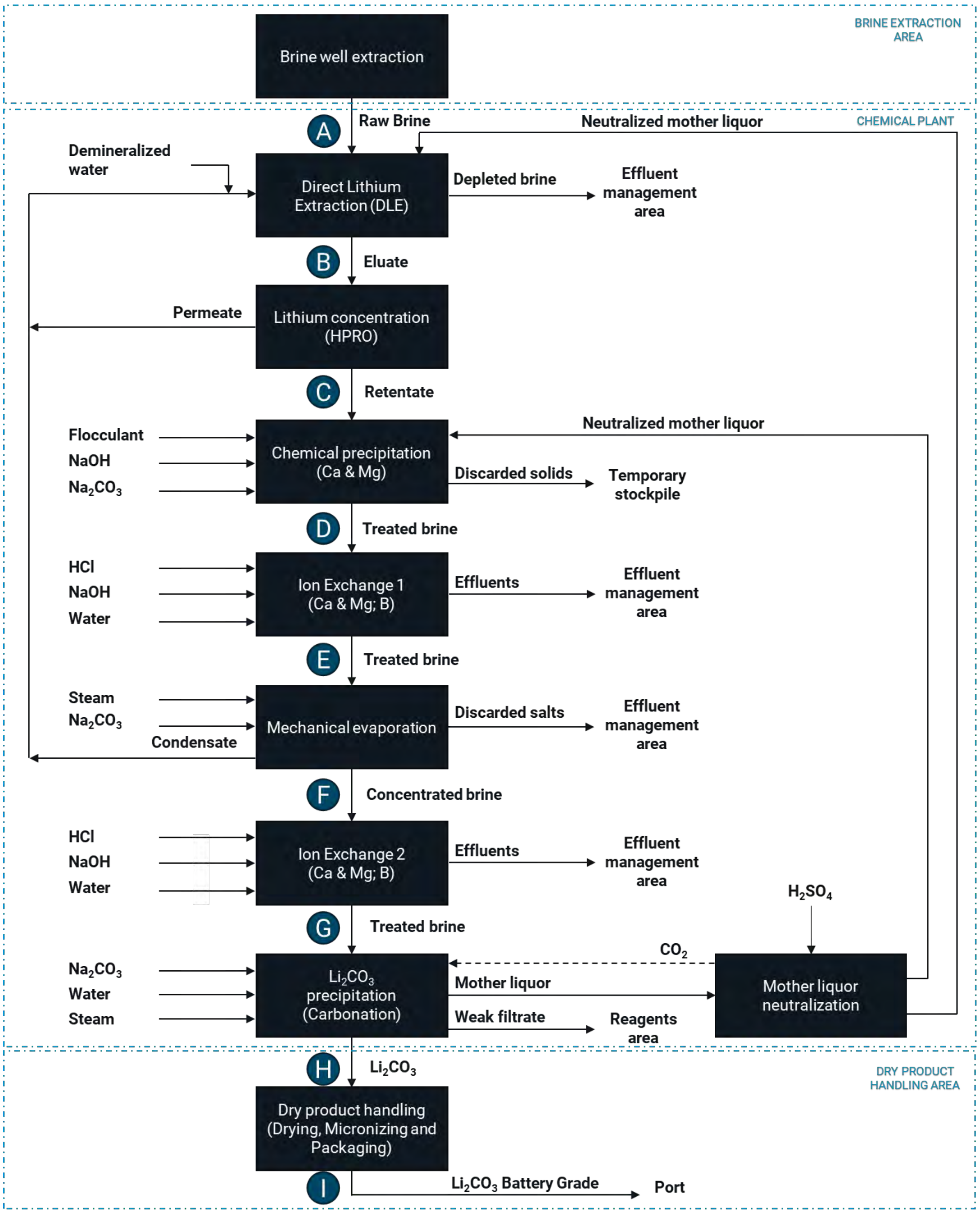
Table 17-1: Summary of Process Design Basis

Parameter	Units	Value
Plant Production		
Product (lithium carbonate) quality	-	Battery grade (BG)
Average production rate (battery grade specification)	t/a	25,000
Operational Hours		
Maintenance plant stop	weeks/a	2
Operating hours	h/a	7,446
Plant availability	%	85.0
General design Parameters		
Design factor (plant, reagents, and services)	-	1.20
Temperature limit for requiring equipment insulation	°C	45
Main Water and Reagents Requirements		
Fresh water consumption	m^3/a	2,769,912
Soda ash consumption	t/a	53,830
Caustic soda consumption	t/a	7,146
Raw Brine		
Annual throughput	m^3/a	19,880,820
Lithium concentration	mg/L	286
Calcium concentration	mg/L	523
Magnesium concentration	mg/L	4,025
Boron concentration	mg/L	50
Product (battery-grade lithium carbonate) Properties		
Purity	%	99.5
Moisture	%	0.10
Particle Size		
D100	µm	40.0
D90	µm	12.5
D50	µm	4.00
D10	µm	1.25

17.1 Process Flowsheet

Figure 17-1 shows the block diagram that illustrates and complements the process description, including its respective unit operations and flow directions.

Figure 17-1: Process Flowsheet



Source: Ausenco, 2024.

The mass balance for the process is designed to produce 25,000 t/y BG) lithium carbonate (Li_2CO_3) from the brine of the Salar de Arizaro, based on an annual operating time of 7,446 hours (h). Table 17-1 highlights the main process streams, denoted by letters in the process flowsheet shown in Figure 17-1.

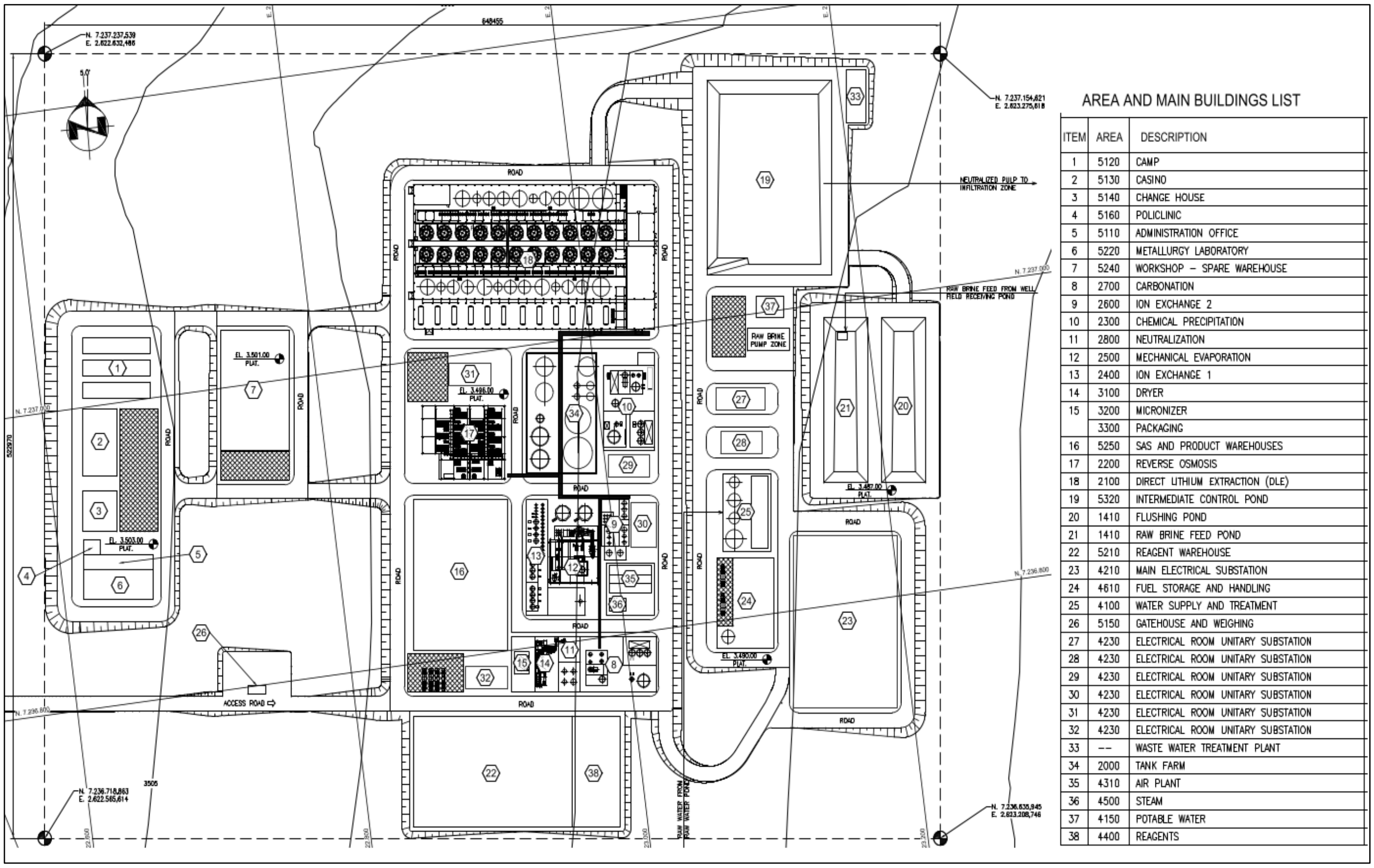
Table 17-1: Main Process Streams

Stream Description	Units	Raw Brine from Wells	Eluate from Direct Lithium Extraction	Brine Concentrate from Reverse Osmosis	Treated Brine from Chemical Precipitation	Treated Brine from Ion Exchange 1	Brine Concentrate from Mechanical Evaporation	Treated Brine from Ion Exchange 2	Li_2CO_3 from Carbonation	Final Product (Li_2CO_3 BG)
ID Letter	-	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Liquid Phase										
Flow Rate	m^3/a	19,880,820	12,219,907	773,031	1,095,989	1,094,562	424,279	424,278	3,708	-
Li^+	mg/L	286	455	6,904	5,254	5,254	13,512	13,512	1.45	-
Mg^{+2}	mg/L	4,025	195	2,583	5.46	0.819	2.11	0.947	0.000318	-
Ca^{+2}	mg/L	523	44.1	663	18.7	0.937	2.41	0.964	0.000266	-
B	mg/L	50.0	12.3	77.8	55.0	0.605	1.55	0.933	0.000627	-
Solid Phase										
Flow Rate	t/a	-	-	-	-	-			25,637	25,635
Li^+	%w/w	-	-	-	-	-			18.7	18.7

17.2 Plant Design

The process plant layout is depicted in Figure 17-2. Following sections present a description of the process that occurs at each stage of the Project.

Figure 17-2: Plant Layout



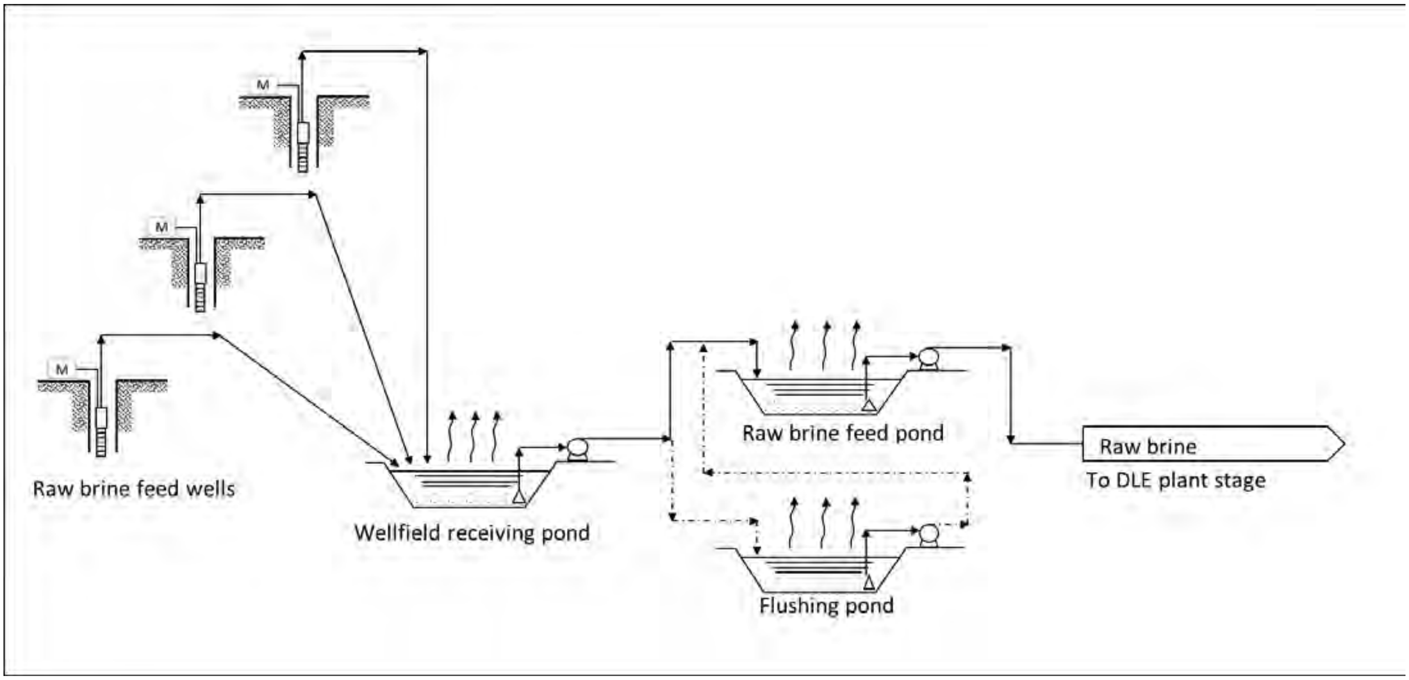
Source: Ausenco, 2024.

17.2.1 Brine Extraction Area

The brine extraction area is shown in Figure 17-3. The raw brine from the wells is collected in the wellfield receiving pond that functions as the central "operations center." Strategically positioned to minimize transport piping, it is located centrally within the wellfield. From here, the brine is pumped to the raw brine feed pond located by the chemical plant. It is then collected and pumped to the direct lithium extraction (DLE) stage within the chemical plant area.

A pigging cleaning system is installed between the wellfield receiving pond and the raw brine feed pond to prevent salt deposition in the pipeline. During cleaning operations, brine and salts deposits are collected in the flushing pond located next to the raw brine feed pond. The brine collected in the flushing pond is eventually pumped to the raw brine feed pond for processing in the chemical plant area. Salts accumulated over time need to be harvested and properly disposed of. For details of ponds infrastructure refer to Section 18.3.

Figure 17-3: Brine Extraction Area



Source: Ausenco, 2024.

17.2.2 Chemical Plant Area

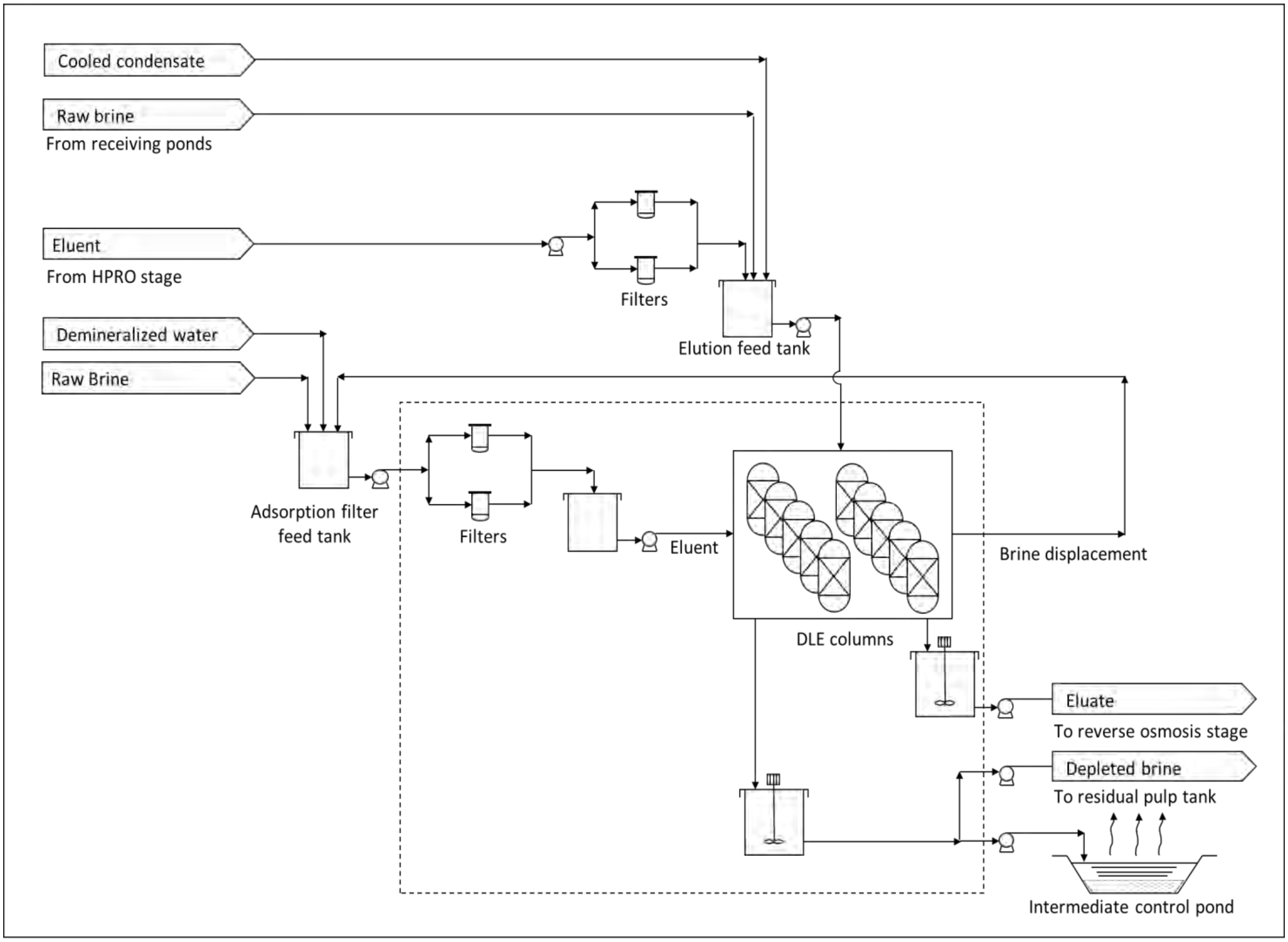
The primary goal of the chemical plant is to produce pure lithium carbonate through a process that includes lithium extraction, concentration, impurity removal, and lithium carbonate precipitation. These operations are carried out across eight stages: Direct Lithium Extraction, Reverse Osmosis, Ion Exchange 1, Chemical Precipitation (Ca & Mg), Mechanical Evaporation, Ion Exchange 2, Carbonation, and Neutralization.

17.2.2.1 Direct Lithium Extraction

The DLE process is shown in Figure 17-4. Before entering the adsorption process, the brine from the raw brine feed pond is combined with recirculated process streams (displaced brine and neutralized mother liquor). The recirculated streams are designed to prevent lithium losses by returning streams containing lithium back to the beginning of the process. The mixed brine is then filtered to prevent solids from interfering with resin function. The filtered brine flows into adsorption columns where specific resins capture lithium, producing depleted brine solution with low lithium concentration. This depleted brine is directed to the effluents management area (detailed in Section 17.3). Following lithium adsorption, some of the original brine remains within the resin interstices.

The resins are then washed using an elution solution (eluent) composed of demineralized water, permeate from the reverse osmosis stage, and condensate from the mechanical evaporation stage. In the initial stage of elution, the remaining brine is displaced, forming a stream of brine and eluent mixture that is recirculated to the adsorption process to recover lithium. The second stage of elution yields a solution rich in lithium cations, termed eluate, which is pumped to the reverse osmosis stage for further processing.

Figure 17-4: Direct Lithium Extraction

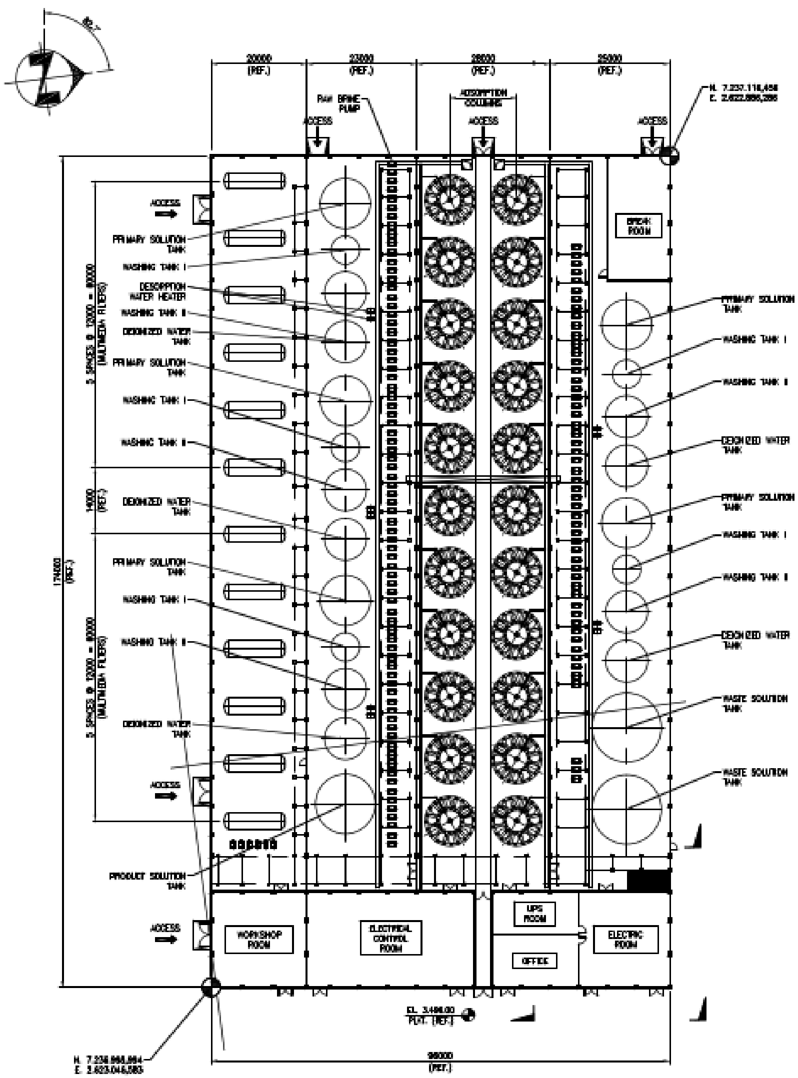


Source: Ausenco, 2024.

The DLE stage is depicted in Figure 17-5 and it is comprised by the following major equipment:

- Twelve brine filtration pre-treatment system.
- Six hundred sixty adsorption columns (8.1 m^3 each), distributed in twenty-two carousels.

Figure 17-5: General Arrangement DLE Plant



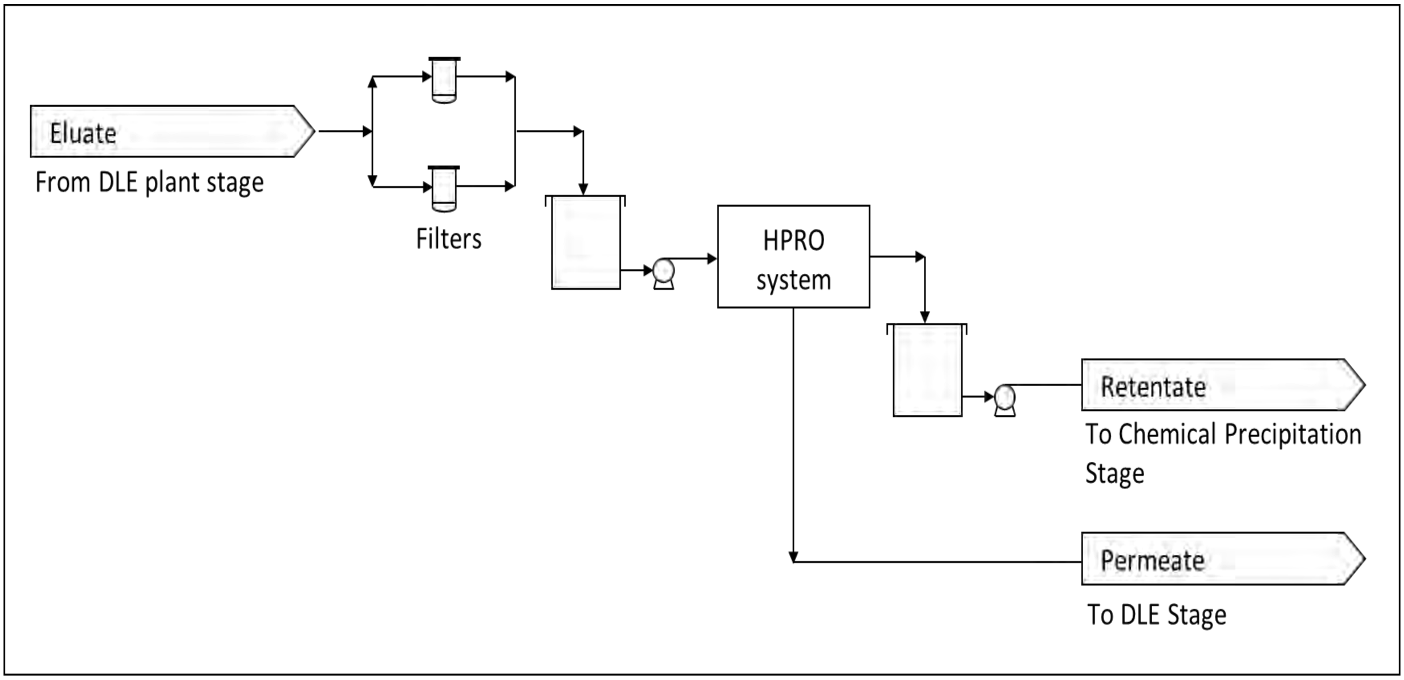
Source: Ausenco, 2024.

17.2.2.2 Reverse Osmosis

Before entering the high-pressure reverse osmosis (HPRO) process, the eluate undergoes filtration to prevent solids from carying over, which could disrupt the operation of the HPRO membranes. This process aims to concentrate the brine from the DLE columns to extract lithium and recover water. Two streams are produced in this stage: a permeate, which is filtered before being recycled back to the elution process as eluent, and a retentate consisting of lithium-enriched brine, which is directed to the chemical precipitation stage. Figure 17-6 illustrates the HPRO process stage.

Before entering the HPRO process, the eluate undergoes filtration to prevent solids from carying over, which could disrupt the operation of the HPRO membranes. This process aims to concentrate the brine from the DLE columns to extract lithium and recover water. Two streams are produced in this stage: a permeate, which is filtered before being recycled back to the elution process as eluent, and a retentate consisting of lithium-enriched brine, which is directed to the chemical precipitation stage (see Section 17.2.2.3).

Figure 17-6: Reverse Osmosis

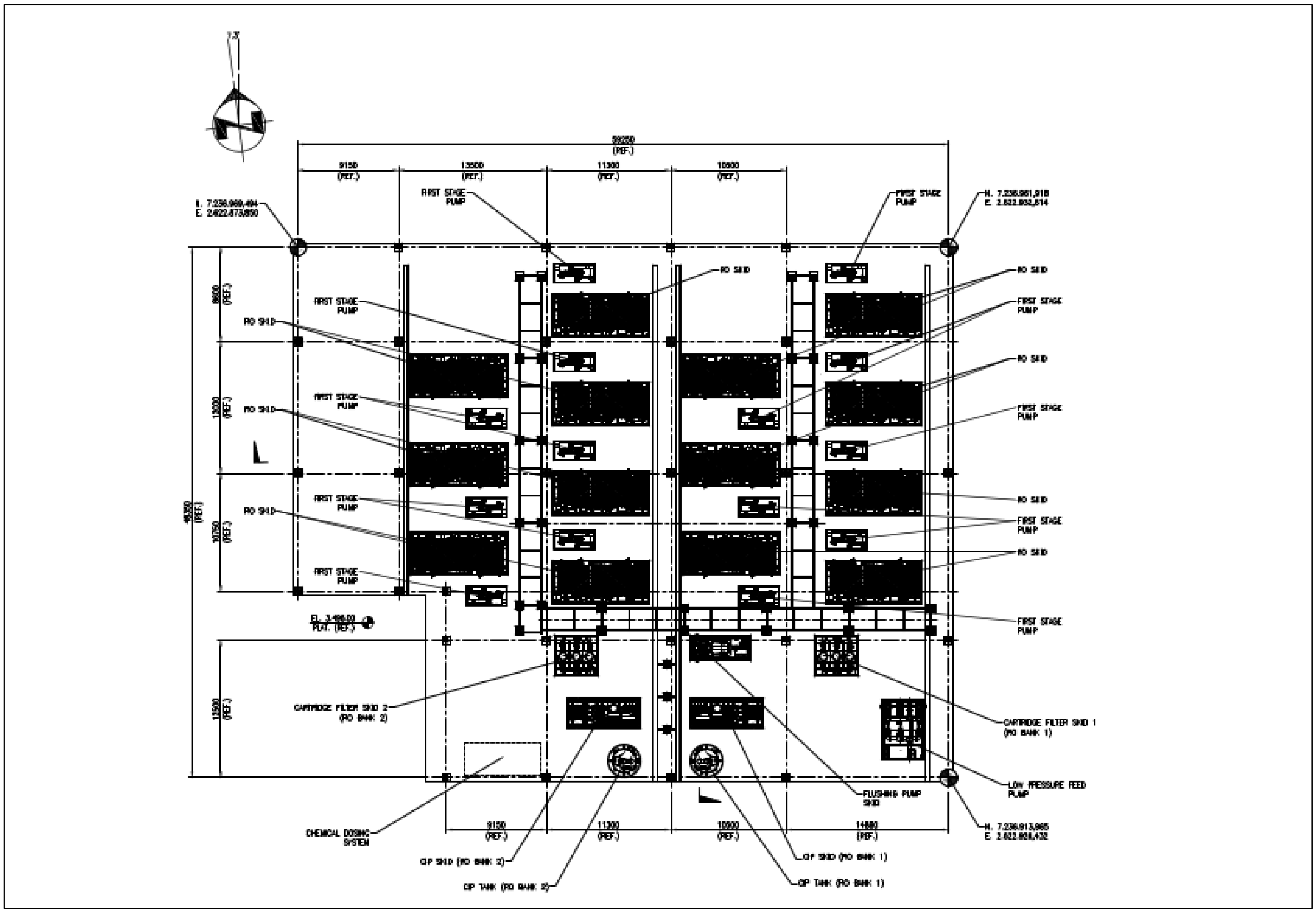


Source: Ausenco, 2024.

The Reverse Osmosis stage is depicted in Figure 17-7 and it is comprised by the following major equipment:

- Five pre-filters.
- Seven trains of HPRO.

Figure 17-7: General Arrangement HPRO



Source: Ausenco, 2024.

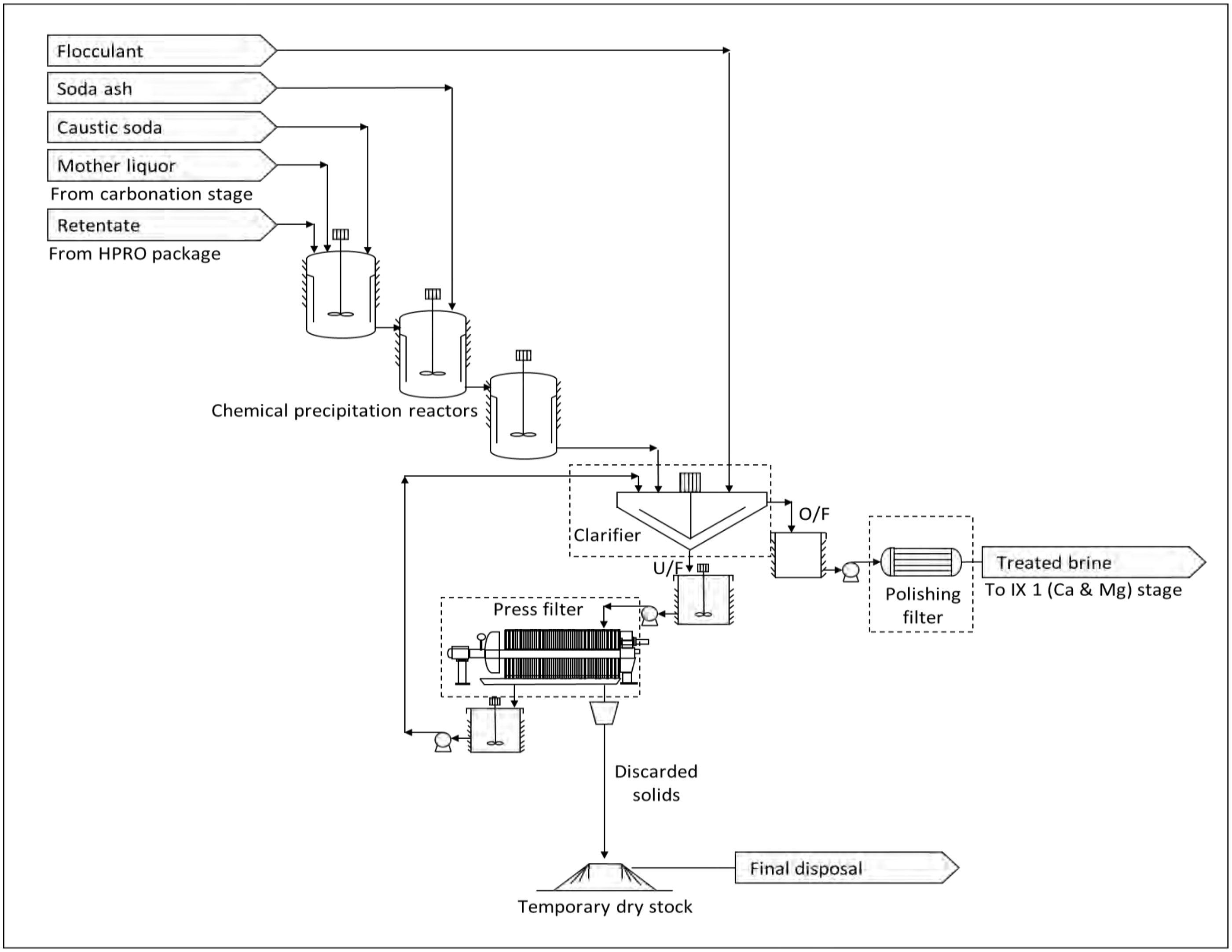
17.2.2.3 Chemical Precipitation (Ca & Mg)

The chemical precipitation stage is shown on Figure 17-8. The concentrated brine from HPRO is combined with mother liquor (recirculated from the carbonation stage) in the first reactor. Here it reacts with a 20% w/w solution of caustic soda (NaOH) to produce magnesium hydroxide ($Mg(OH)_2$). The brine, now with reduced magnesium content, is then transferred to a second reactor where it interacts with a 25% w/w solution of soda ash (Na_2CO_3) to produce calcium carbonate ($CaCO_3$). The reactions are shown below:

$$2NaOH + Mg^{+2} \leftrightarrow Mg(OH)_2 + 2Na^{+}$$
$$Na_2CO_3 + Ca^{+2} \leftrightarrow CaCO_3 + 2Na^{+}$$

The slurry produced in the second reactor is transferred to a third reactor to enhance the precipitation of additional impurities (Ca & Mg). From there, the sludge moves to a clarifier where flocculant is introduced to facilitate solid-liquid separation. The clarifier underflow is filtered in a filter press, with the resulting sludge directed to a temporary stockpile pending final disposal, while the filtrate returns to the clarifier. The clarifier overflow, composed of concentrated and treated brine, is filtered in a polishing filter and then directed to the first Ion Exchange stage to proceed with the process. The sludge produced in the polishing filter, along with insoluble solids from the reactions, is sent to the temporary stockpile together with the filter press sludge.

Figure 17-8: Chemical Precipitation

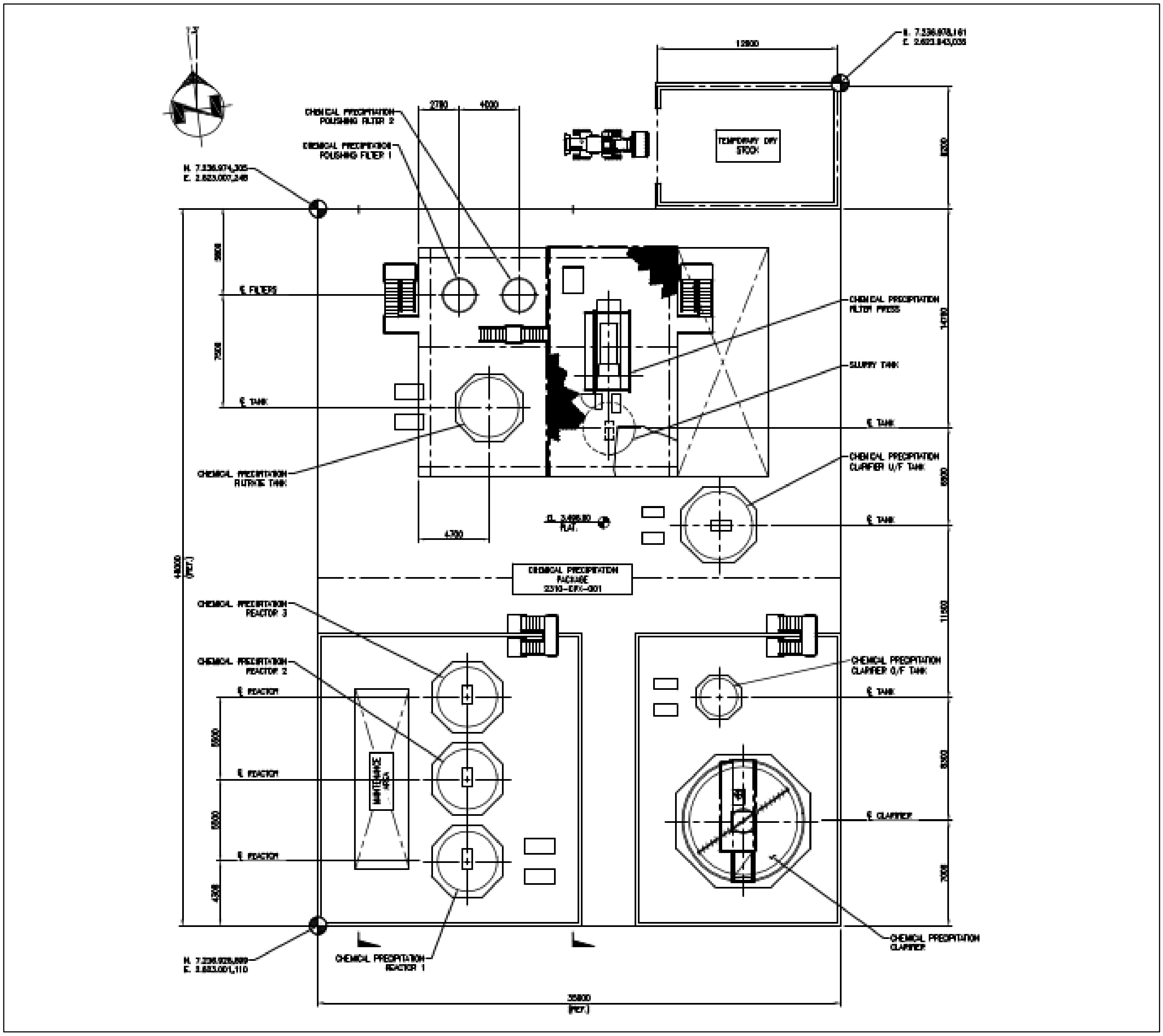


Source: Ausenco, 2024.

The Chemical Precipitation stage is depicted in Figure 17-9 and it is comprised by the following major equipment:

- Three agitated reactors.
- One clarifier (8 m).
- Two polishing filters.
- One press filter.

Figure 17-9: General Arrangement Chemical Precipitation



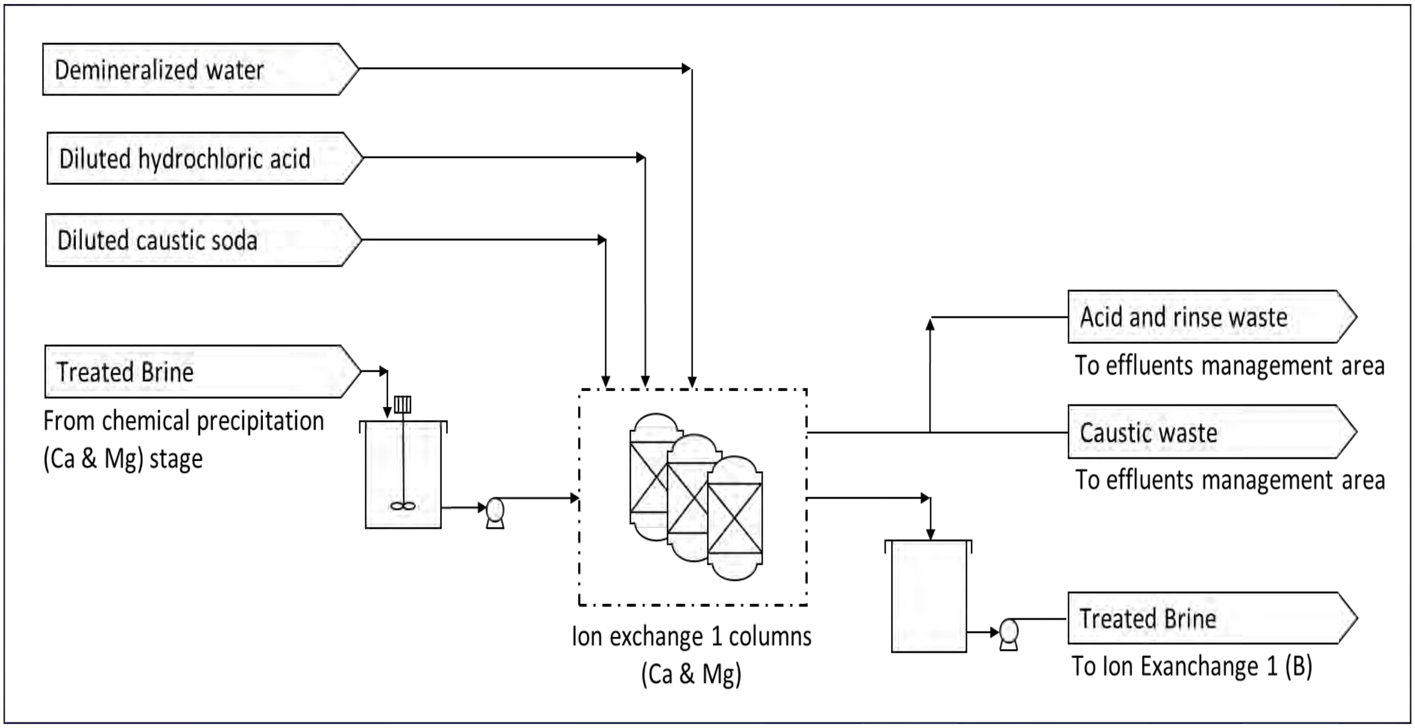
Source: Ausenco, 2024.

17.2.2.4 Ion Exchange 1 (Ca & Mg; B)

The treated and filtered brine from the chemical precipitation stage is pumped into Ion Exchange 1 columns that contain resins designed to capture residual traces of impurities (Figure 17-10 and Figure 17-11). The brine enters the first columns, where it comes into contact with selective resins that capture Ca and Mg. It then moves to columns containing resins that capture boron. The purified brine, free of these contaminants, is then pumped to the mechanical evaporation stage to proceed with the process.

After capturing traces of impurities, the resins need to be eluted with a 3% w/w hydrochloric acid solution (HCl) and a 4% w/w caustic soda solution (NaOH) to restore their Ion Exchange capacity. Finally, the resins are rinsed with demineralized water to eliminate any remaining impurities. Acid waste, caustic waste, and rinse waste generated from elution, regeneration, and rinsing processes, are directed to the effluents management area (see Section 17.3).

Figure 17-10: Ion Exchange 1 (Ca & Mg)

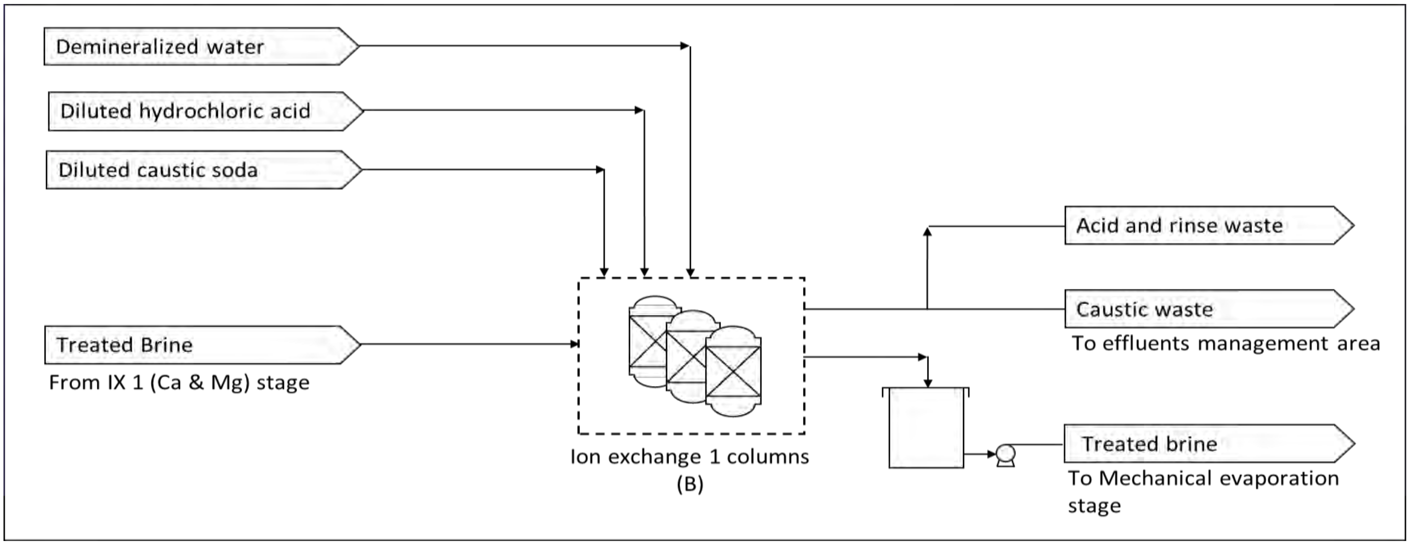


Source: Ausenco, 2024.

The Ion exchange 1 stage is depicted in Figure 17-12 and it is comprised by the following major equipment:

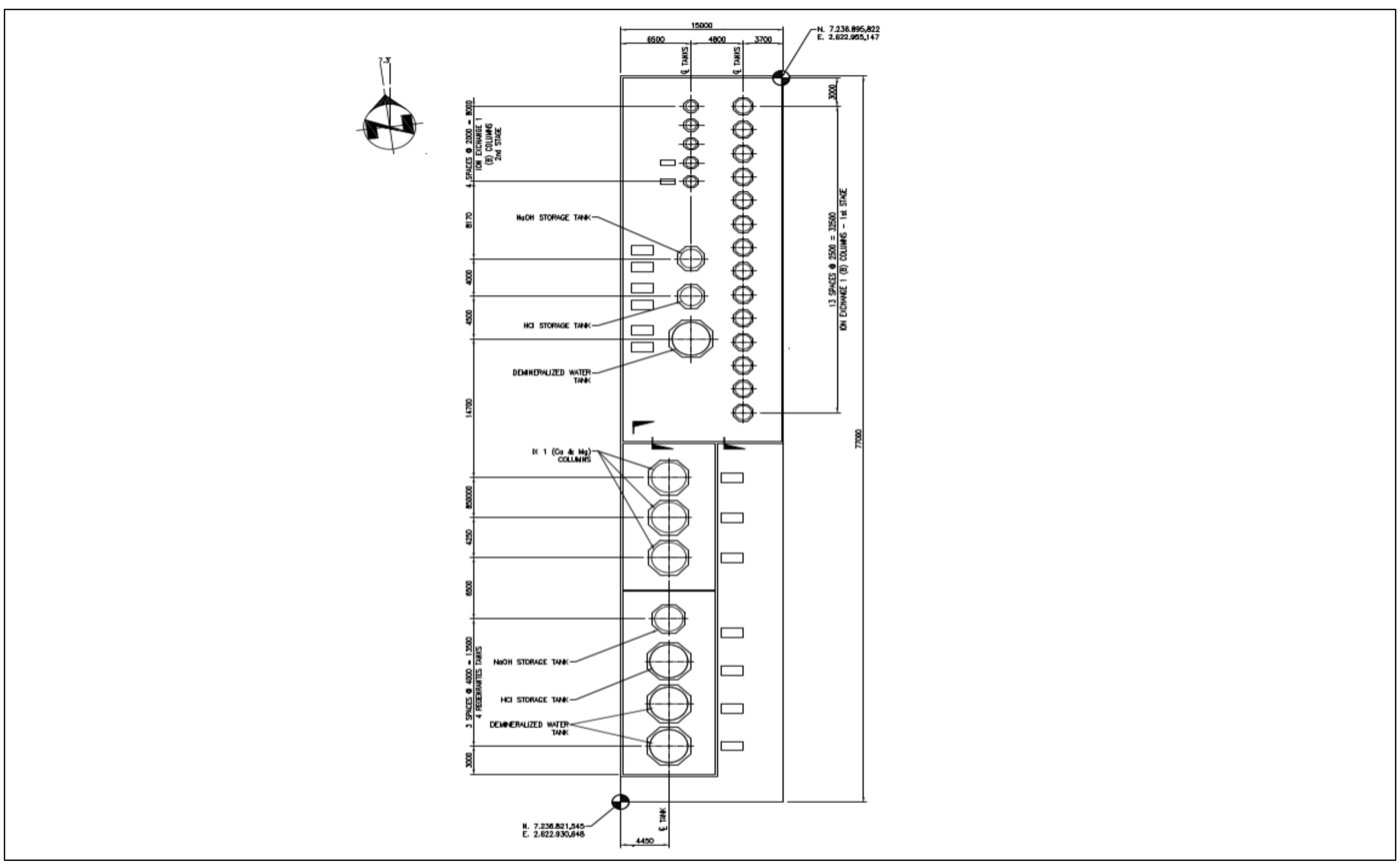
- Three IX 1 Ca & Mg columns.
- Fourteen IX 1 B columns for 1st stage.
- Five IX 1 B columns for 2nd stage.

Figure 17-11: Ion Exchange 1 (B)



Source: Ausenco, 2024.

Figure 17-12: General Arrangement Ion Exchange 1 (Ca & Mg ; B)



Source: Ausenco, 2024.

17.2.2.5 Mechanical Evaporation

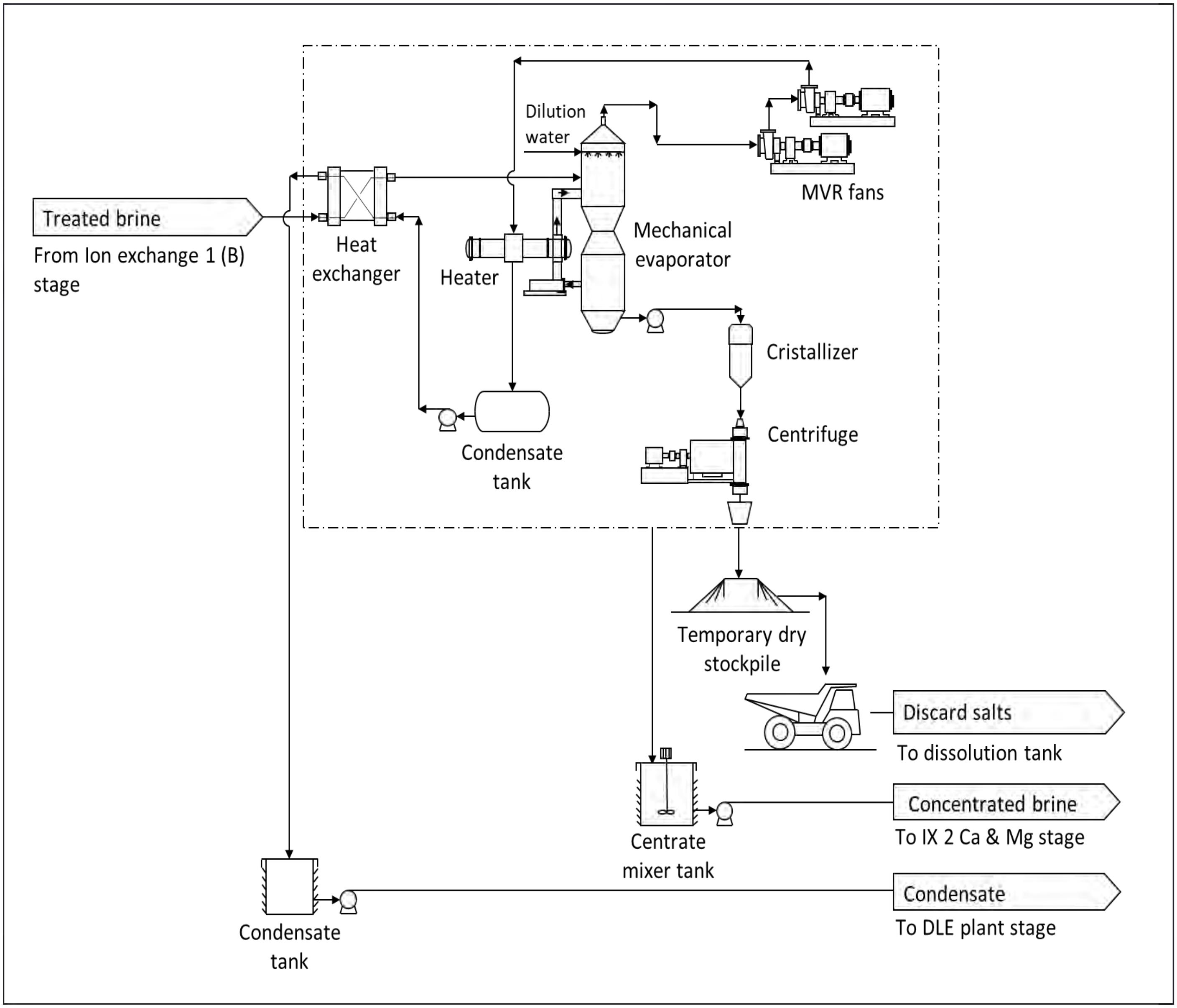
The mechanical evaporation stage is shown on Figure 17-13. The treated brine from Ion Exchange 1 is preheated in a plate heat exchanger and then passes through a deaerator to remove non-condensable gases. The heated and de-aerated brine is then pumped into the brine evaporator sump, where it mixes with a large volume of recirculated brine. This mixture is recirculated to the floodbox at the top of the evaporator heat transfer tubes. As the liquid flows down the tubes, it forms a thin film on the inside walls of each tube, and a portion of the brine evaporates, producing steam.

The liquid brine that reaches the sump then combines with the existing brine in the sump and the new feed brine entering from the deaerator. This mixture is then recirculated back to the top of the tube and shell.

The vapor flows to the vapor compressor, which slightly increases its pressure, and then flows to the shell side of the brine evaporator's heat transfer tubes, where it condenses. The hot condensate is then cooled to heat the incoming treated brine from the Ion Exchange 1 stage, after which it is sent to the DLE stage to be used as part of the eluent.

The product from the evaporator is fed into the crystallizer feed tank and then pumped by the crystallizer feed pump to the crystallizer vapor body. The concentrate is pumped through an external shell and tube heat exchanger attached to the crystallizer vapor body. As the brine slurry passes through the heat exchanger, it is heated by a few degrees (sensible heating). The heated brine slurry flashes in the crystallizer vapor body, removing water in the form of vapor. Crystals continuously form within the brine slurry in the crystallizer vapor body before entering the recirculation pump. The process vapor collected in the crystallizer vapor body passes through an entrainment separator and is condensed in the surface condenser. As the brine slurry becomes supersaturated, salts precipitate from solution. This slurry is sent to the hydrocyclone and centrifuge of the mechanical vapor recompression package, where crystals are continuously removed as discarded salts. These salts are transported by the centrifuge discharge conveyor to a temporary dry stockpile before being sent to the dissolution tank in the effluents management area (see Section 17.3). The concentrated brine is then sent to the Ion Exchange 2 (Ca & Mg) feed filter tank.

Figure 17-13: Mechanical Evaporation

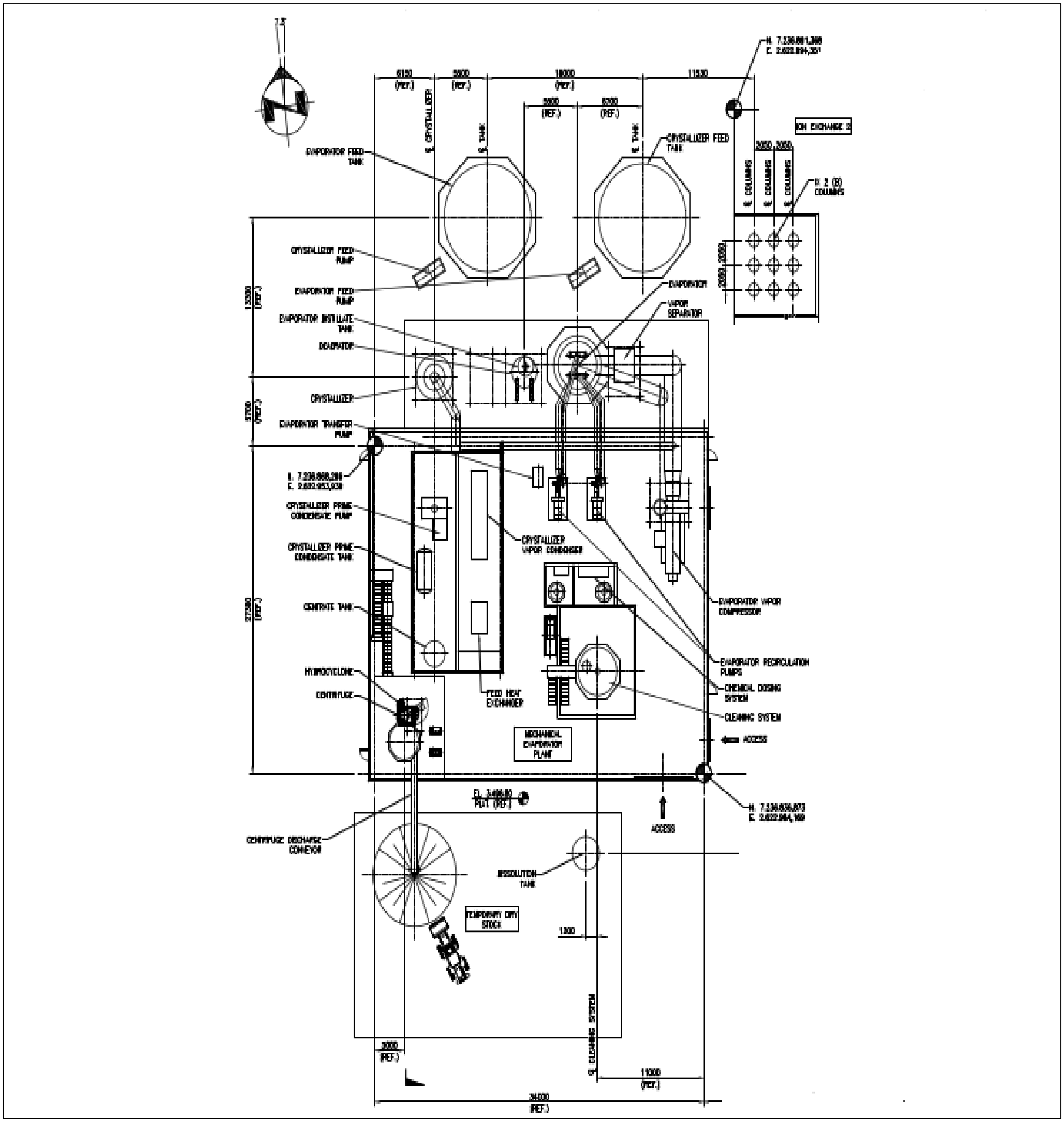


Source: Ausenco, 2024.

The Mechanical Evaporation stage is depicted in Figure 17-14 and it is comprised by the following major equipment:

- One falling film evaporator system.
- One crystallizer.
- One centrifuge.

Figure 17-14: General Arrangement Mechanical Evaporation



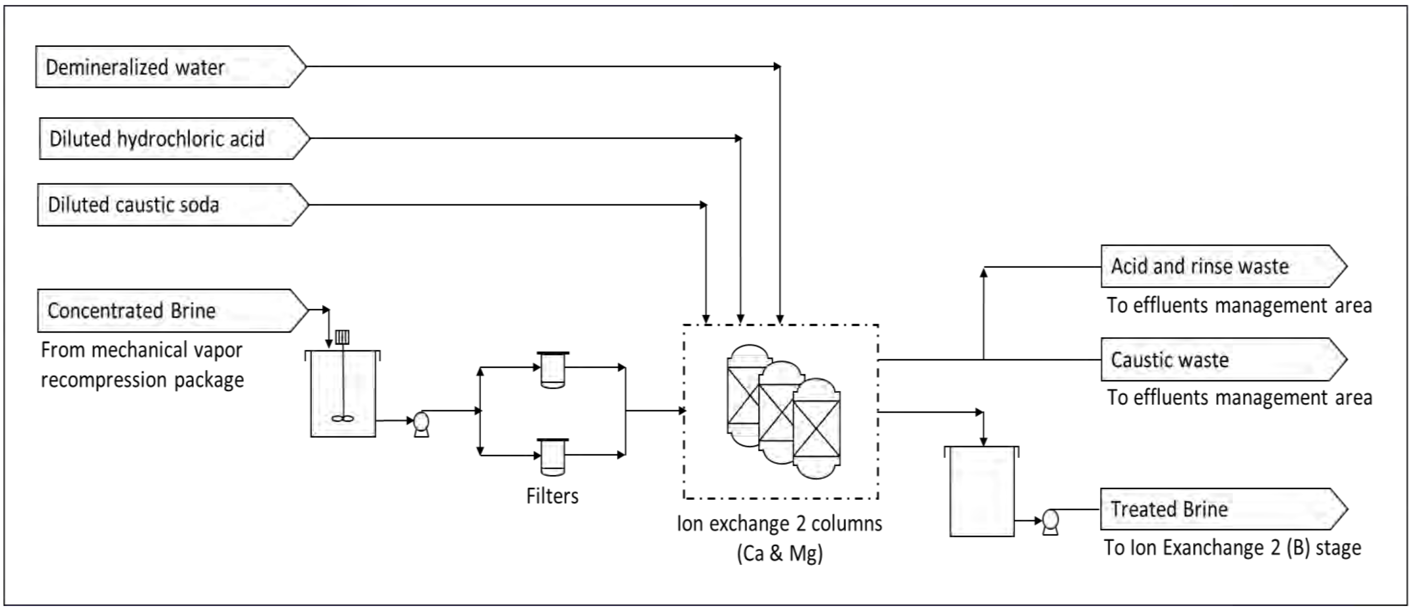
Source: Ausenco, 2024.

17.2.2.6 Ion Exchange 2 (Ca & Mg; B)

Figure 17-15 and Figure 17-16 present the general diagrams for Ion Exchange 2. The treated and filtered brine from the mechanical evaporation stage is pumped to Ion Exchange 2 columns, which contain resins designed to capture the remaining trace impurities. The brine first passes through columns with selective resins that capture Ca and Mg. It then moves to columns that contain resins that capture B. The contaminant-free brine is then pumped to the carbonation stage to continue with the process.

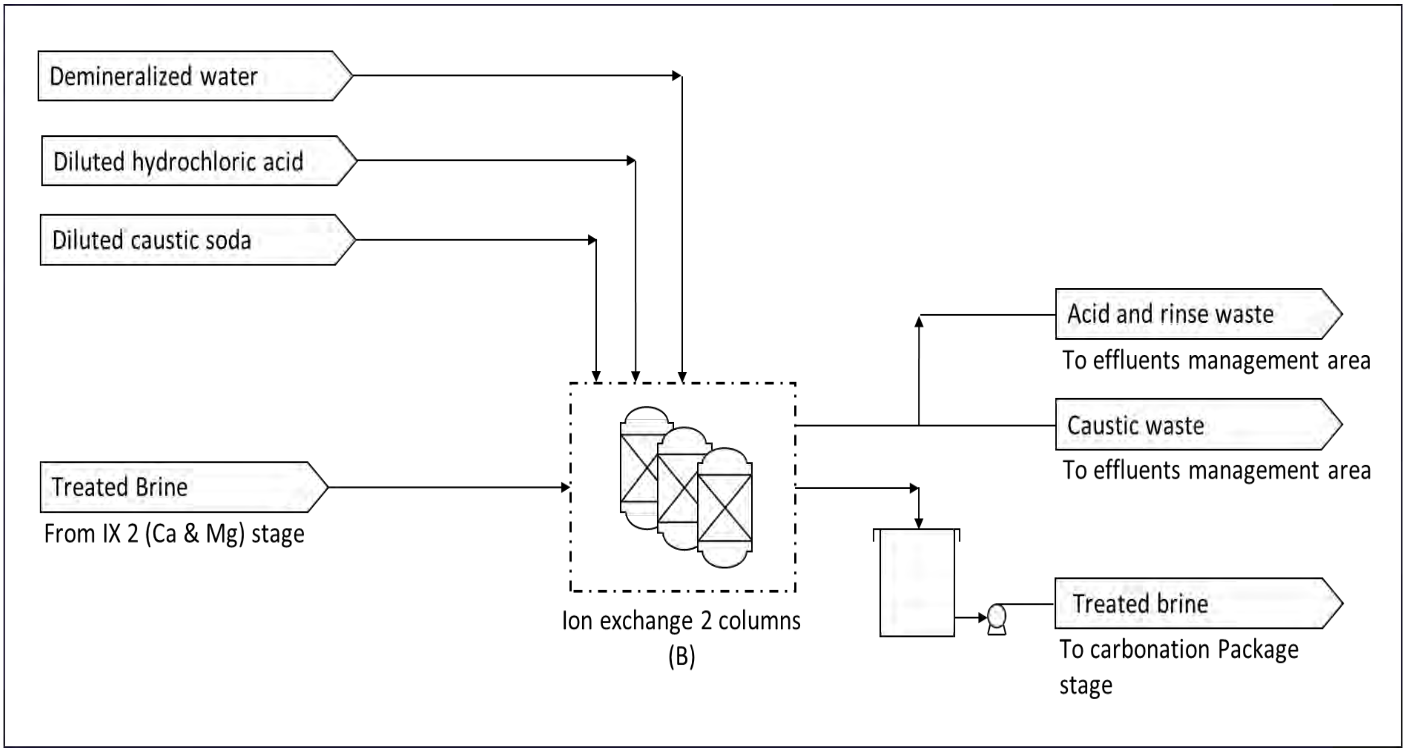
After capturing trace impurities, the resins must be eluted with 3% w/w hydrochloric acid solution (HCl) and a 4% w/w caustic soda solution (NaOH) to restore their ion exchange capacity. Finally, the resins must be rinsed with demineralized water to remove any remaining impurities. The acid waste, caustic waste, and rinse waste produced from the elution, regeneration, and rinsing processes, are pumped to the effluents management area (see Section 17.3).

Figure 17-15: Ion Exchange 2 (Ca & Mg)



Source: Ausenco, 2024.

Figure 17-16: Ion Exchange 2 (B)

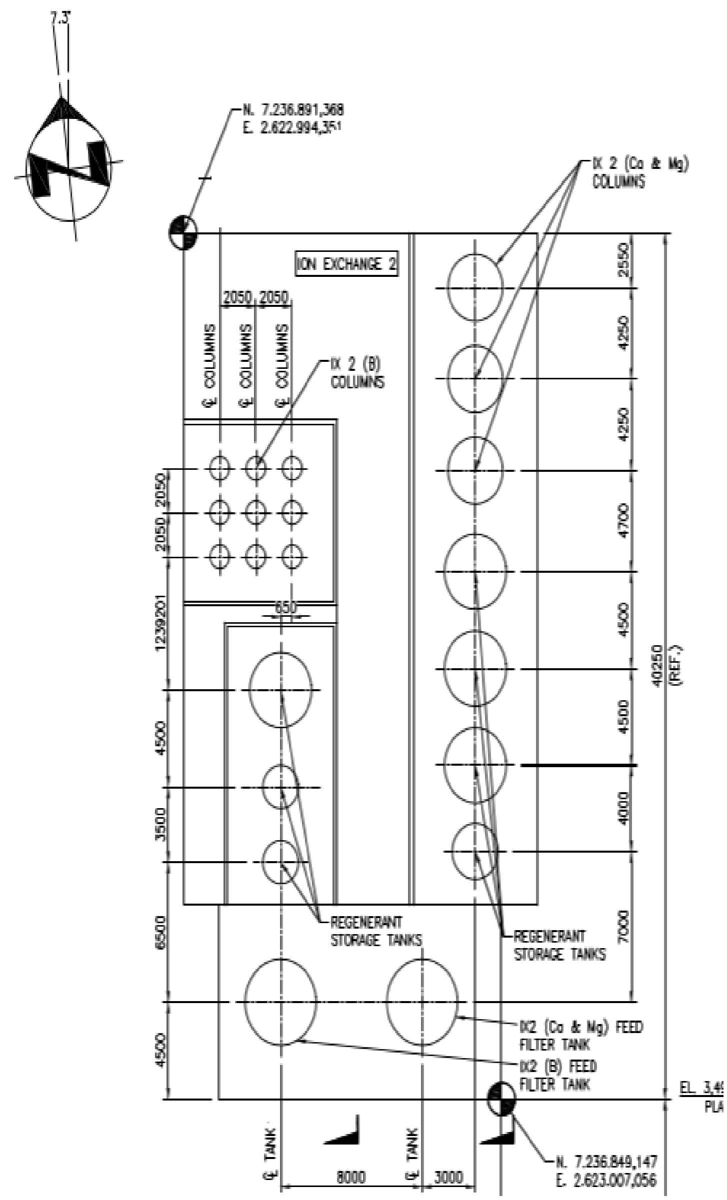


Source: Ausenco, 2024.

The Ion exchange 2 stage is depicted in Figure 17-17 and it is comprised by the following major equipment:

- Three IX 2 Ca & Mg columns.
- Nine IX 2 B columns.

Figure 17-17: General Arrangement Ion Exchange 2 (Ca & Mg ; B)



Source: Ausenco, 2024.

17.2.2.7 Carbonation

The carbonation stage is shown on Figure 17-18. The brine from Ion Exchange 2 (Ca & Mg; B) stage is heated to a temperature of 85.5 °C using steam in heat exchangers before entering the carbonation reactors. In these reactors, the brine is exposed to a filtered solution of soda ash (Na_2CO_3), initiating carbonation reactions. These reactions primarily yield highly insoluble lithium carbonate (Li_2CO_3) as the main product, along with other impurities such as magnesium carbonate ($MgCO_3$) and calcium carbonate ($CaCO_3$). The reactions that take place are shown below.

$$Na_2CO_3 + 2Li^+ \leftrightarrow Li_2CO_3 + 2Na^+$$

$$Na_2CO_3 + Mg^{+2} \leftrightarrow MgCO_3 + 2Na^+$$

$$Na_2CO_3 + Ca^{+2} \leftrightarrow CaCO_3 + 2Na^+$$

The slurry produced in the reactors is stored and pumped to the carbonation package thickener, resulting in two streams: an underflow (U/F) and an overflow (O/F). The O/F is stored and then pumped to the carbonation polishing filters 1 and 2, where a liquid solution (mother liquor) is obtained through initial filtration. This mother liquor is then sent to the mother liquor neutralization package. The sludge containing lithium carbonate captured in the polishing filters is returned to the carbonation thickener's U/F tank to proceed with the filter press process.

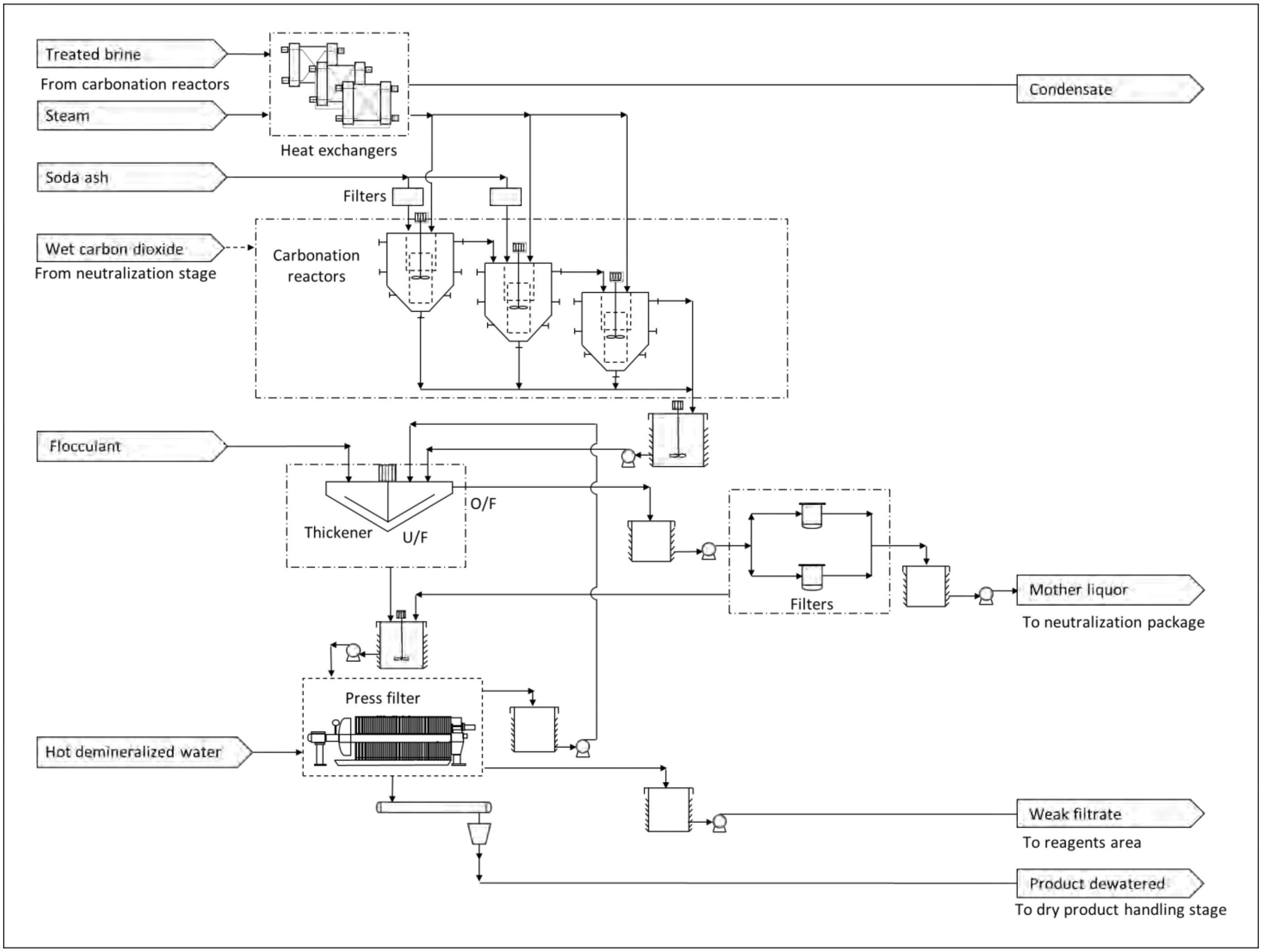
The U/F of the thickener is pumped and stored. Together with the sludge from the polishing filters, it is then pumped to the filter press carbonation package, resulting in two streams. One stream consists of is a weak filtrate, which is split into two streams: one portion is stored and recirculated back to the thickener, while the other is stored and used in the preparation of soda ash.

The other product obtained from the press filter is a solid dewatering cake, which is conveyed via a carbonation conveyor to the Lithium Carbonation Rotary Dryer package.

The Carbonation stage is depicted in Figure 17-19 and it is comprised by the following major equipment:

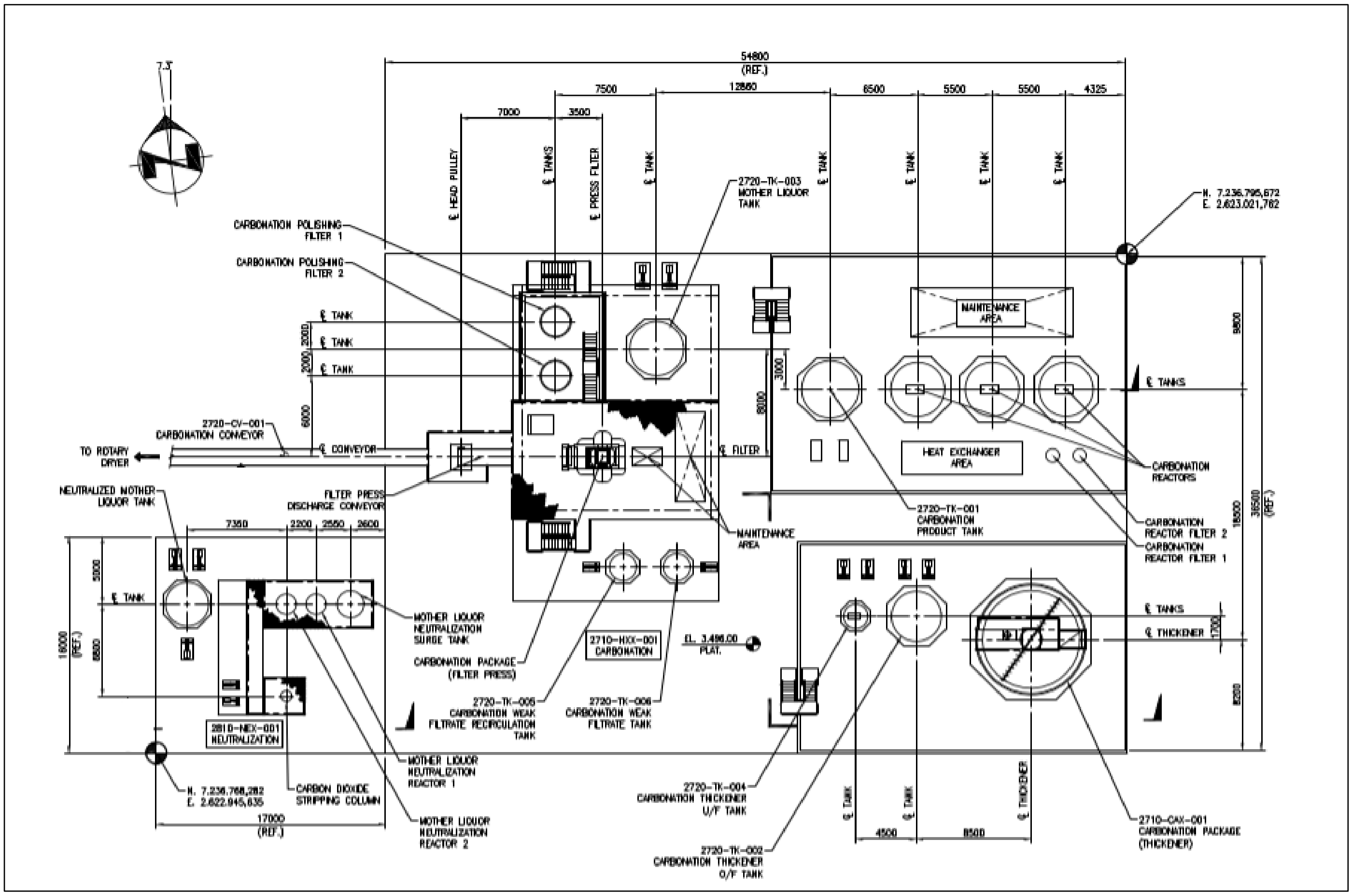
- Three heat exchangers.
- Three agitated reactors.
- One thickener (8 m).
- One press filter.

Figure 17-18: Carbonation



Source: Ausenco, 2024.

Figure 17-19: General Arrangement Carbonation and Neutralization



Source: Ausenco, 2024.

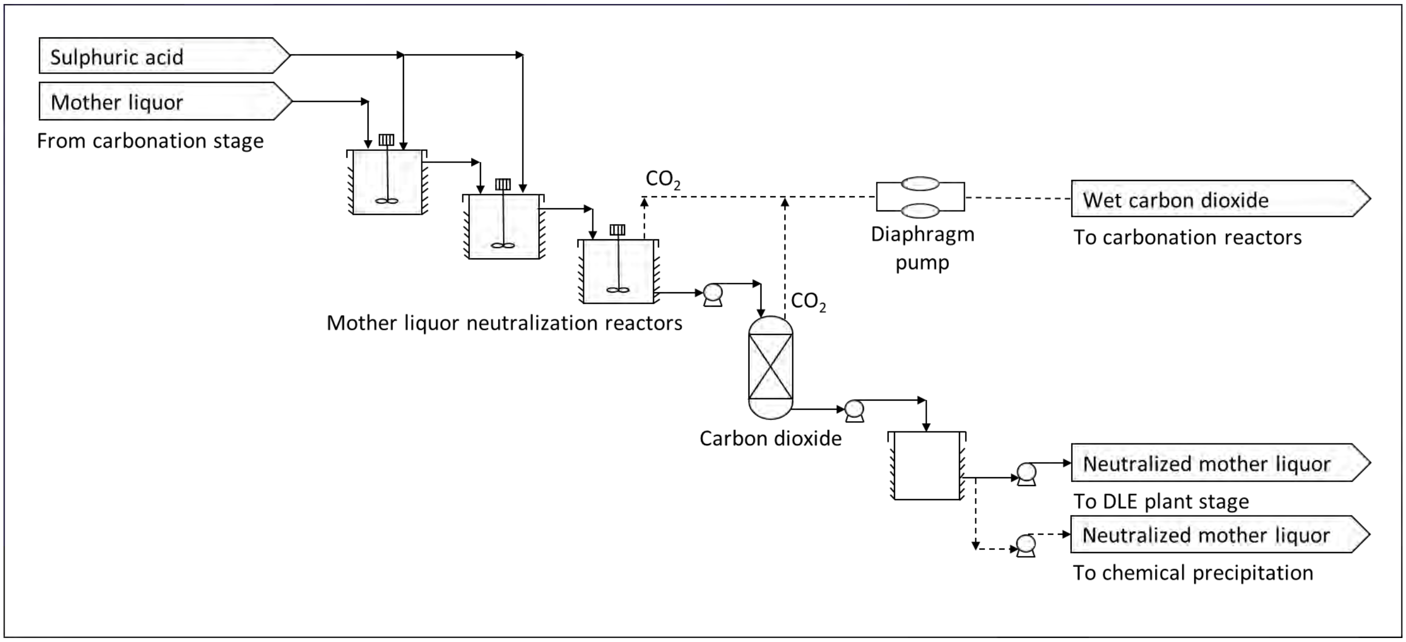
17.2.2.8 Neutralization

Figure 17-20 illustrates the neutralization stage. The mother liquor from carbonation enters a series of stirred tank reactors where sulfuric acid is added to adjust the pH to below 4.5. The resulting mixture then proceeds to a carbon dioxide stripping column where the neutralized mother liquor and the carbon dioxide (CO_2) produced during the reaction are separated. The recovered CO_2 is directed back to the reactor of the carbonation stage, while the neutralized mother liquor is recycled to the beginning of the process to feed the adsorption process in the DLE plant.

$$Li_2CO_3 + H_2SO_4 \leftrightarrow Li_2SO_4 + CO_2 + H_2O$$

$$Na_2CO_3 + H_2SO_4 \leftrightarrow Na_2SO_4 + CO_2 + H_2O$$

Figure 17-20: Neutralization



Source: Ausenco, 2024.

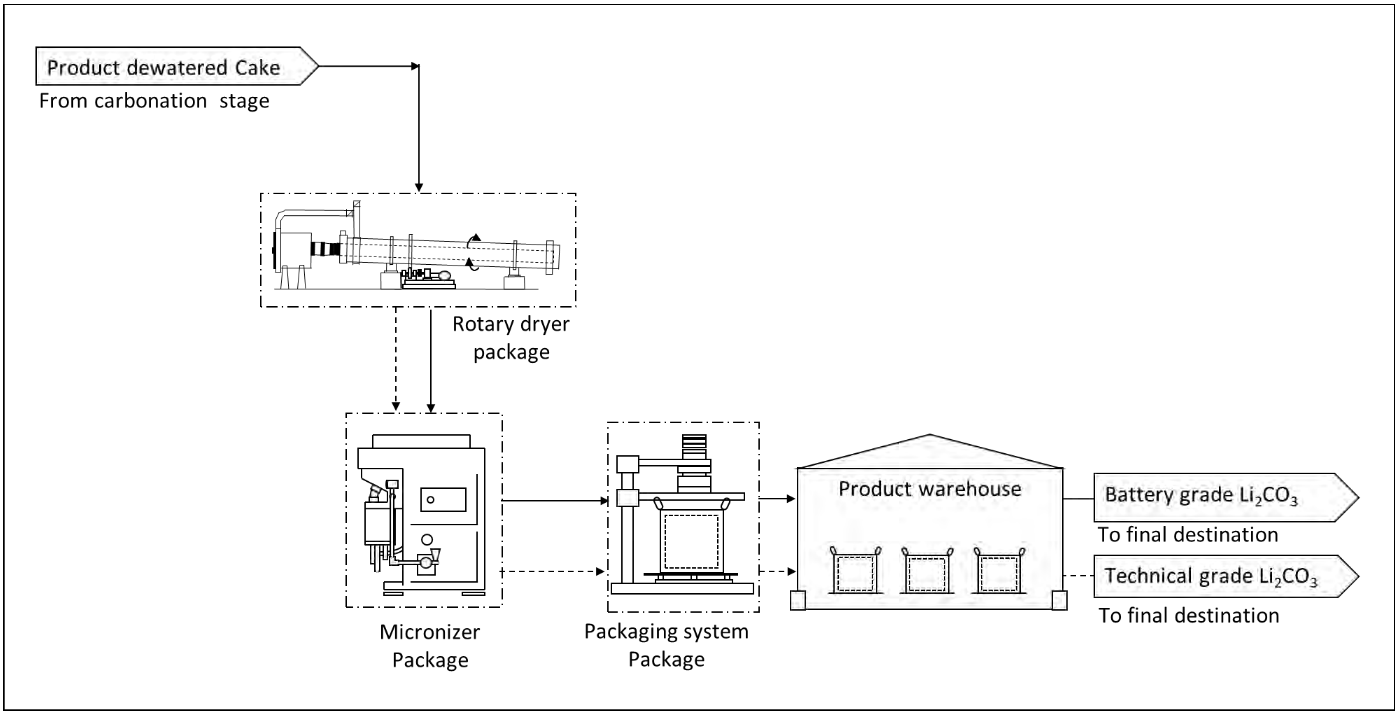
The Neutralization stage is depicted in Figure 17-19 and it is comprised by the following major equipment:

- Three agitated reactors.
- One stripping column.

17.2.3 Dry Product Handling Area

The dry product handling area is shown on Figure 17-21. The lithium carbonate obtained from the chemical plant is first processed in a rotary dryer to reduce the moisture content to 0.1 %. Subsequently, the dried lithium carbonate is sent to a micronizer where it is ground to meet industry battery grade requirements (D50: 4 - 6 µm). Finally, the finely ground lithium carbonate is packaged and stored in the product warehouse until it is ready for delivery to its final destination.

Figure 17-21: Dry Product Handling

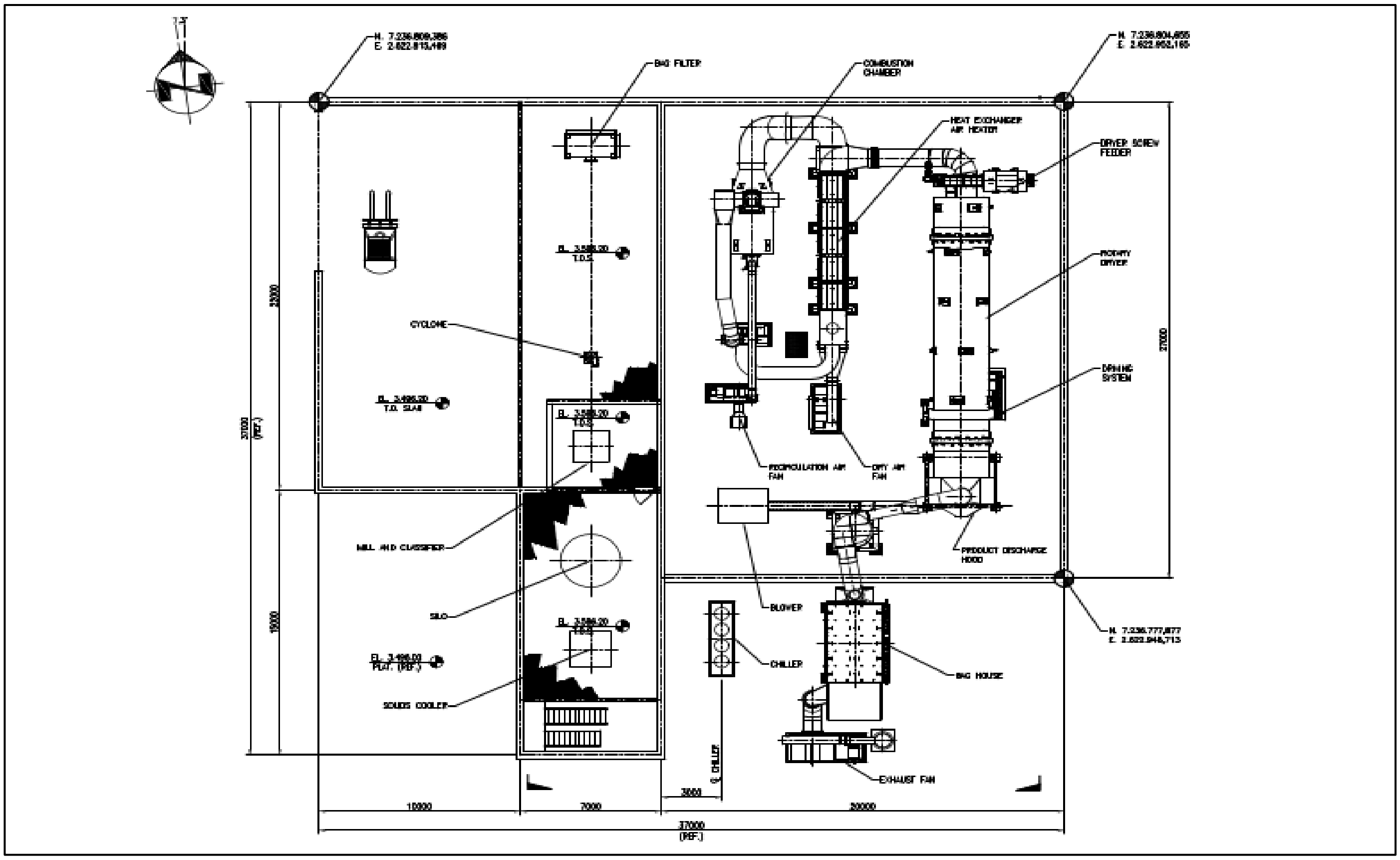


Source: Ausenco, 2024.

The Dry Product Handling area is depicted in Figure 17-22 and it is comprised by the following major equipment:

- One indirect rotary dryer system.
- One micronizer system.
- One packaging system.

Figure 17-22: General Arrangement Dry Product Handling Area



Source: Ausenco, 2024.

17.3 Effluents Management

The purpose of this area is to collect effluents from various stages in a centralized location for proper treatment and disposal. Details regarding the types of effluents and the stages of the process where they are generated are provided in Table 17-2.

Table 17-2: Effluent Description

Effluent Description	Stage Where it is Produced
Depleted brine	DLE plant
Acid and alkaline solutions and washing water	Reverse Osmosis
Discarded salts	Mechanical evaporation
Polishing filter sludge	Ion exchange
Caustic waste	Ion exchange
Acid and rinse waste	Ion exchange
Reject water for residual pulp dissolution	Water treatment plant
Water from truck washing	Truck washing

The production of effluents was detailed in the preceding subsections corresponding to their respective production stages.

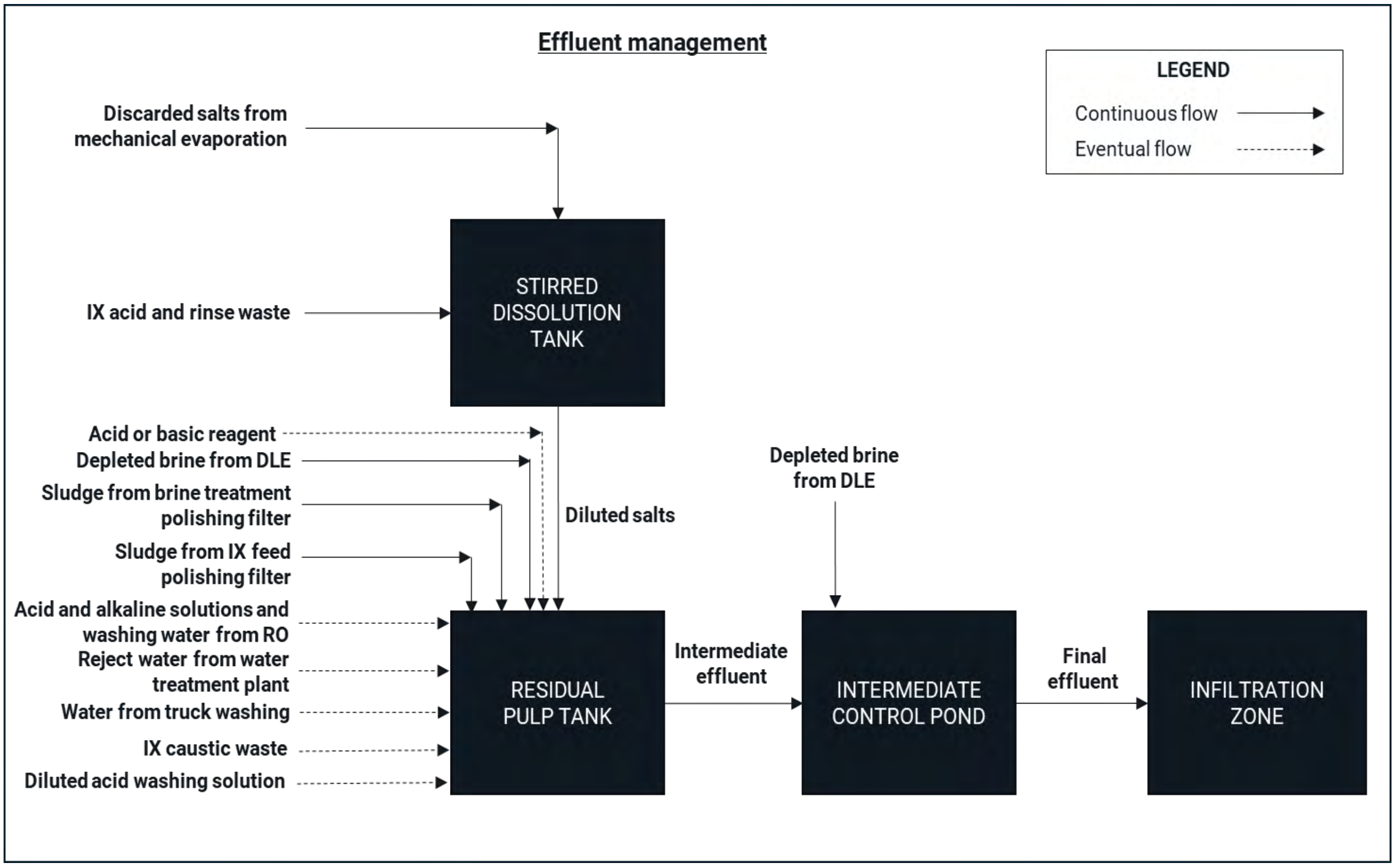
Water used for dissovling residual pulp is from rejected water at the treatment plant, which processes raw water to produce demineralized water using reverse osmosis membranes. The remainder of the rejected water serves for washing floors and trucks:

- Floor washing: Water evaporates into the atmosphere.
- Truck washing: Water, separated from the oils, is recovered and directed to the residual pulp tank. The truck washing station will include spray nozzles, wash monitors, and a decanter pond equipped with an oil/water separator to reclaim water. Water that is not recirculated evaporates into the atmosphere, and the oil collected in the separator is stored in drums for final disposal.

The acid solution, diluted with sulfuric acid, is used for acid washing to prevent scaling of process plant equipment and piping. This diluted solution is reused within a closed cleaning system until it no longer meets the necessary conditions for effective acid washing. At that point, spent acid solution is purged and directed to the residual pulp tank for neutralization in the intermediate control pond.

The effluents management diagram shown in Figure 17-23, includes two tanks and two ponds. Salts produced during mechanical evaporation are diluted with acid and rinse waste from washing Ion Exchange columns in a stirred dissolution tank. These diluted salts are combined with depleted brine from DLE, sludge from the polishing filters, and washing solutions in the residual pulp tank, forming an intermediate effluent that is directed to the intermediate control pond. The remaining portion of depleted DLE brine is mixed with the intermediate effluent in the intermediate control pond, where an acid or base reagent is added to neutralize the final effluent (pH between 6.8 – 7.1). This treated effluent is then sent to the infiltration zone at the Salar beach within a designated boundary.

Figure 17-23: Effluents Management Area Diagram



Source: Ausenco, 2024.

17.4 Product/Materials Handling

Depending on the plant campaign, either technical grade lithium carbonate or BG lithium carbonate is produced. The handling of these products is as follows:

- Technical-grade lithium carbonate from the carbonation stage is collected in a stockpile and then loaded onto trucks for transportation to its destination.
- Battery-grade lithium carbonate from chemical plant area is packaged, stored in the product warehouse, and prepared for transport to its destination.

17.5 Energy, Water, and Process Materials Requirements

17.5.1 Reagents

The reagents required in the lithium carbonate production process are indicated in Table 17-3.

Table 17-3: Reagents

Reagent	Chemical Formula	Annual Consumption (t/a)
Soda ash	Na_2CO_3	53,830
Caustic soda	NaOH	7,176
Sulfuric acid	H_2SO_4	15,438
Hydrochloric acid	HCl	1,259
Flocculant	-	2.21

The use and preparation procedures of these reagents are listed below.

17.5.1.1 Soda Ash

Sodium carbonate, or soda ash, is used in the process to reduce calcium content and produce lithium carbonate, with the latter operation consuming the most sodium carbonate. The sodium carbonate solution is prepared by dissolving soda ash in an agitated tank using weak centrate from centrifugation process and demineralized water. This tank maintains an excess amount of sodium carbonate to ensure a saturated solution at the operating temperature. Once prepared, the solution is pumped to the sodium carbonate storage tank and then sent to the chemical plant area, specifically for the Ca/Mg removal stage and the carbonation stage.

17.5.1.2 Caustic Soda

Sodium hydroxide, or caustic soda, is received at the plant as a bagged solid. The sodium hydroxide solution is prepared by dissolving the solid caustic soda with filtered water in an agitated tank. The solution is then transferred to the sodium hydroxide storage tank for distribution to the Ca/Mg removal stage and the ion exchange stage. For elution of the ion exchange columns, the sodium hydroxide is further diluted with demineralized water in an agitated tank.

17.5.1.3 Sulfuric Acid

Sulfuric acid is transported in a tanker truck and transferred to a storage tank, from which it is pumped to the strong centrate neutralization tanks.

17.5.1.4 Hydrochloric Acid

Hydrochloric acid is transported in a tanker truck and transferred to a storage tank. It is then diluted with demineralized water in an agitated tank before being distributed for the ion exchangers' elution operation. The used solution is sent to the waste acid tank and subsequently pumped to the adsorption feed tank.

17.5.1.5 Flocculant

Flocculant is received in the plant as a solid that is introduced into a silo. The flocculant solution is prepared with filtered water in a mixing tank and then pumped to the clarifier in the Ca/Mg removal stage.

17.5.2 Utilities

17.5.2.1 Water

The total projected raw water requirement for the Project, based on the process plant design, is 372 m^3/h. This flow of raw water, sourced from freshwater wells, accounts for the needs for both treated and demineralized water. Treated water is necessary at various stages in the production of lithium carbonate, primarily in the DLE elution, as well as in the preparation of soda ash solution, dilution of caustic soda and hydrochloric acid, the ion exchange operation. Demineralized water is obtained from a treatment plant utilizing reverse osmosis to achieve the required water quality, preventing contaminants from entering the process.

17.5.2.2 Steam

Steam, produced by boilers, is essential used for heating the brine entering the carbonation stage. The steam undergoes a phase change, resulting in condensate. This condensate is combined with a makeup water to feed the boilers and generate sufficient steam for the process.

17.5.2.3 Air

Air is essential in the process plant for two primary purposes: Supplying air lines to all plant areas, and providing air for instrumentation requiring it during the process.

Atmospheric air is processed through air compressors, air dryers, and air filters, then directed to process air receivers. These receivers distribute the air to the instruments, plant hose station, and process plant plate filters.

17.5.2.4 Power

The power supply for the different areas of the Project will be provided by diesel. For further details on power supply and energy requirements, refer to Section 18.4.

17.5.2.5 Fire System

A portion of the freshwater drawn from the wells is directed into a tank for the fire system. From there, it is pumped and distributed to address fire emergencies within the plant.

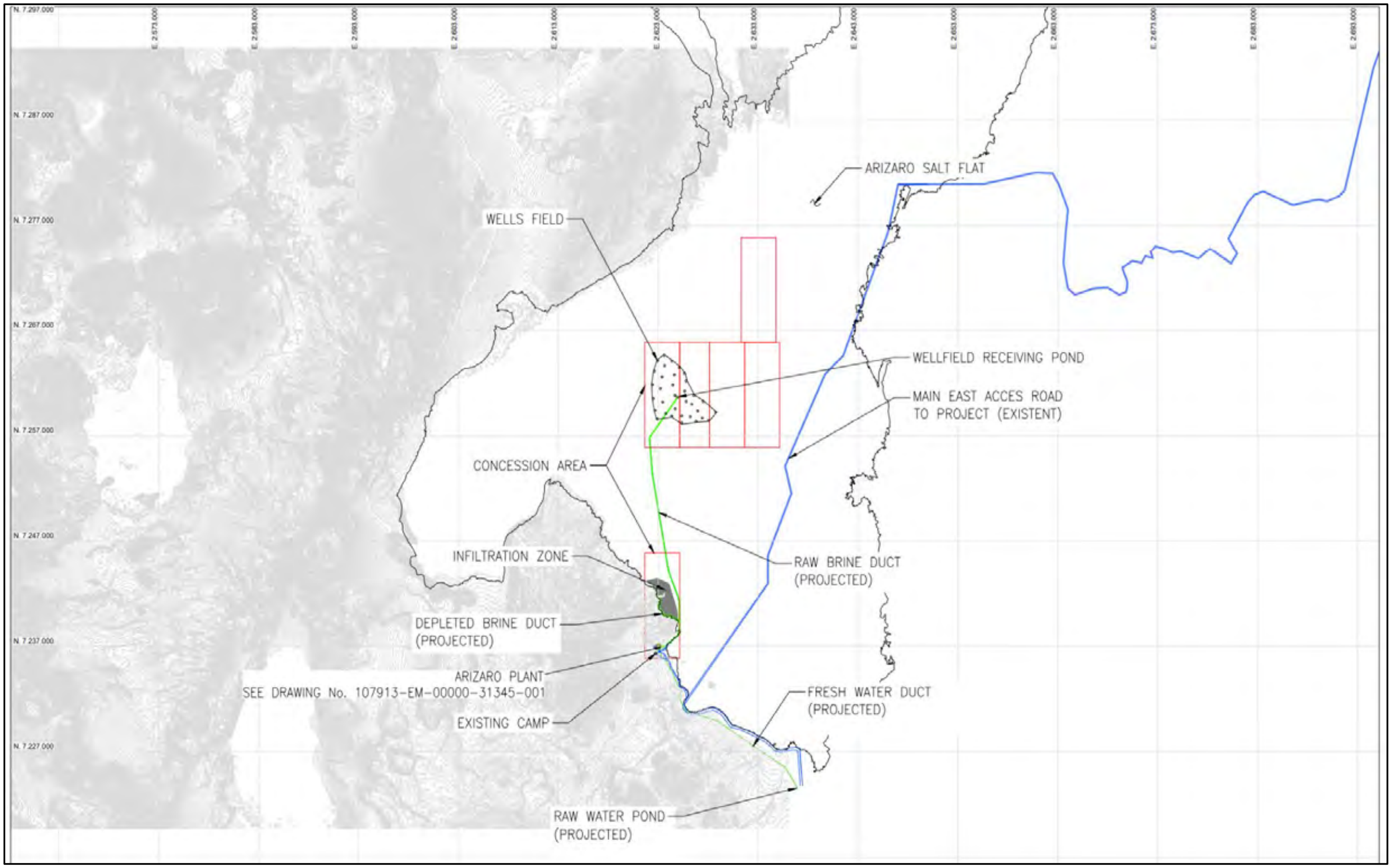
18 PROJECT INFRASTRUCTURE

The infrastructure at the Salar de Arizaro Project primarily includes civil works, site facilities and buildings, water management systems, diesel power generation, and steam generation. Figure 18-1 shows the locations of the plant, ponds, wellfield, main freshwater pipelines, freshwater wells, and access roads within the Project's boundaries and concession areas. It also provides details on the layout and dimensions of the main plant facilities and buildings.

The project infrastructure includes:

- Roads and logistics
- Site facilities/buildings
  - Wellfields
  - DLE plant
  - Reverse osmosis
  - Mechanical evaporation
  - Chemical plant
  - Dry product handling
  - General utilities area (air, steam)
  - Reagents warehouses, metallurgy laboratory, spare warehouse, workshop of maintenance, warehouse for SAS and product
  - Administration office, camp, diner, change house, first-aid policlinic, and gatehouse.
- Ponds
  - Wellfield receiving pond
  - Raw brine pond
  - Flushing pond
  - Depleted brine infiltration zone
  - Raw water pond
- Water management
  - Water supply
  - Contour channel
- Power supply

Figure 18-1: Site Layout

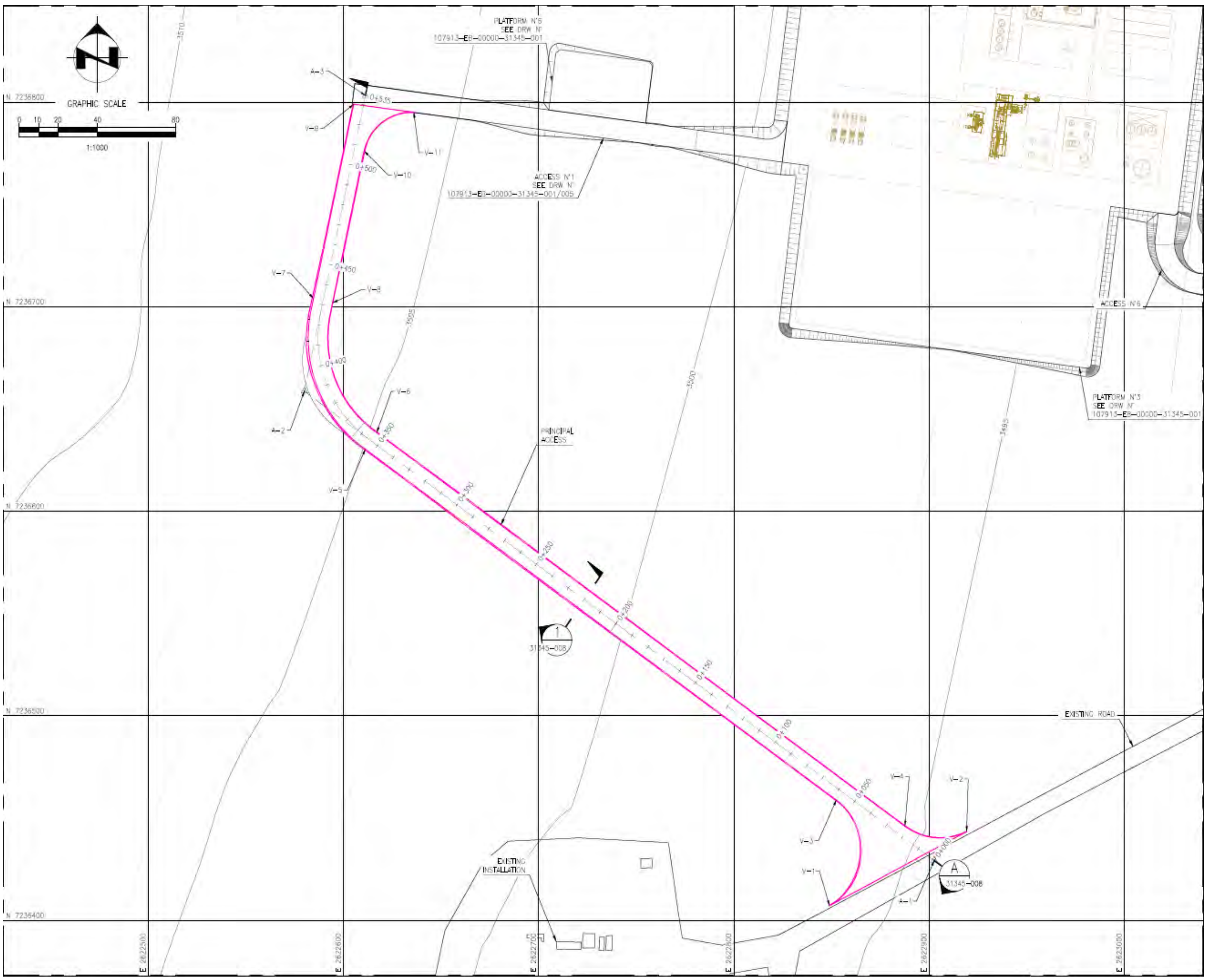


Source: Ausenco, 2024.
Note: Coordinates in meters. Coordinate system POSGAR 94/Argentina FAJA 2.

18.1 Site Access (Road and Logistics)

Figure 18-2 shows the projected access to the plant that must be built, connecting from an existing road that is approximately 500 m away from the its entrance with an elevation difference of 12 m.

Figure 18-2: Site Access Road



Source: Ausenco, 2024.

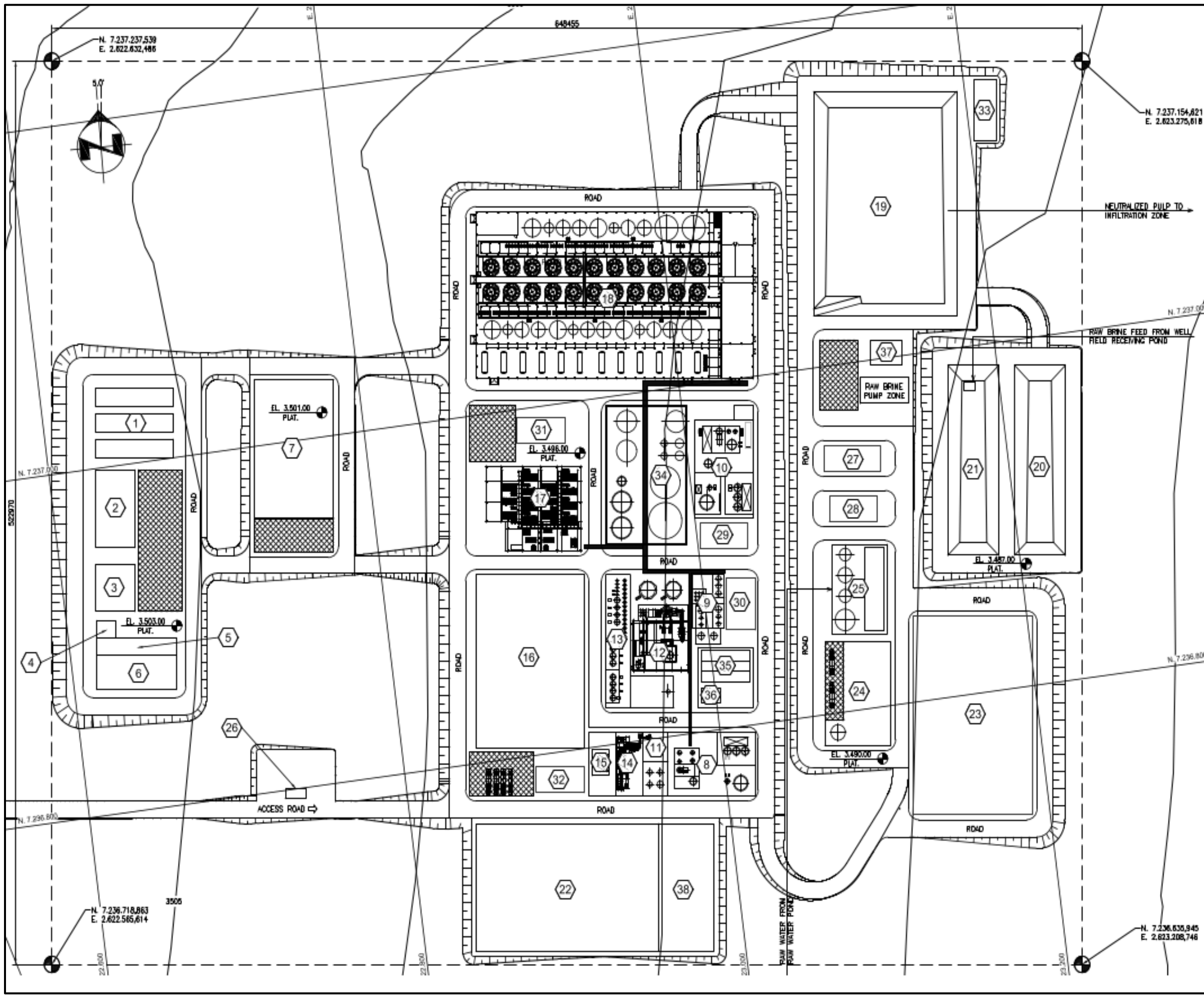
18.2 Built Infrastructure

The facilities and buildings required to support the Project include those listed in Table 18-1 and those detailed in this section. Their specific locations and corresponding areas, as per the Project's WBS, are shown in Figure 18-1 and Figure 18-3.

Table 18-1: Facilities and Buildings

Infrastructure	Area (m^2)	Description
Camp	1,588	3 buildings (2 floors) of 49 m wide, 10.8 m long and 3 m high each.
Diner	1,125	25 m wide, 45 m long and 4 m high. 1 floor-story container-type structure.
Change house	675	25 m wide, 27 m long and 4 m high. 1 floor container-type structure.
Policlinic for first aid	120	10 m wide, 12 m long and 3 m high. A container-type structure.
Administration office	500	50 m wide, 10 m long and 3 m high. 1 floor-story container-type structure.
Metallurgy laboratory	1,000	50 m wide, 20 m long and 5 m high. Industrial metal structure, concrete floor, and metal wall (warehouse type).
Warehouses for SAS and product	6,800	68 m wide, 100 m long and 5.2 m high. Industrial metal structure, concrete floor, and metal wall (warehouse type).
Reagents warehouse (Soda ASH)	8,050	70 m wide, 115 m long and 5.2 m high. Industrial metal structure, concrete floor, and metal wall (warehouse type).
Reagents warehouse (Caustic Soda Storage)	973	35 m wide, 27.8 m long and 5.2 m high. Industrial metal structure, concrete floor, and metal wall (warehouse type).
Gatehouse	77	5.8 m wide, 13.2 m long and 3 m high. 1 floor-story container-type structure.

Figure 18-3: Plant Layout



AREA AND MAIN BUILDINGS LIST

ITEM	AREA	DESCRIPTION
1	5120	CAMP
2	5130	CASINO
3	5140	CHANGE HOUSE
4	5160	POLICLINIC
5	5110	ADMINISTRATION OFFICE
6	5220	METALLURGY LABORATORY
7	5240	WORKSHOP – SPARE WAREHOUSE
8	2700	CARBONATION
9	2600	ION EXCHANGE 2
10	2300	CHEMICAL PRECIPITATION
11	2800	NEUTRALIZATION
12	2500	MECHANICAL EVAPORATION
13	2400	ION EXCHANGE 1
14	3100	DRYER
15	3200	MICRONIZER
	3300	PACKAGING
16	5250	SAS AND PRODUCT WAREHOUSES
17	2200	REVERSE OSMOSIS
18	2100	DIRECT LITHIUM EXTRACTION (DLE)
19	5320	INTERMEDIATE CONTROL POND
20	1410	FLUSHING POND
21	1410	RAW BRINE FEED POND
22	5210	REAGENT WAREHOUSE
23	4210	MAIN ELECTRICAL SUBSTATION
24	4610	FUEL STORAGE AND HANDLING
25	4100	WATER SUPPLY AND TREATMENT
26	5150	GATEHOUSE AND WEIGHING
27	4230	ELECTRICAL ROOM UNITARY SUBSTATION
28	4230	ELECTRICAL ROOM UNITARY SUBSTATION
29	4230	ELECTRICAL ROOM UNITARY SUBSTATION
30	4230	ELECTRICAL ROOM UNITARY SUBSTATION
31	4230	ELECTRICAL ROOM UNITARY SUBSTATION
32	4230	ELECTRICAL ROOM UNITARY SUBSTATION
33	--	WASTE WATER TREATMENT PLANT
34	2000	TANK FARM
35	4310	AIR PLANT
36	4500	STEAM
37	4150	POTABLE WATER
38	4400	REAGENTS

Source: Ausenco, 2024.
Note: Dimensions in millimeters; elevations and coordinates in meters. Coordinate system Posgar, 2007.

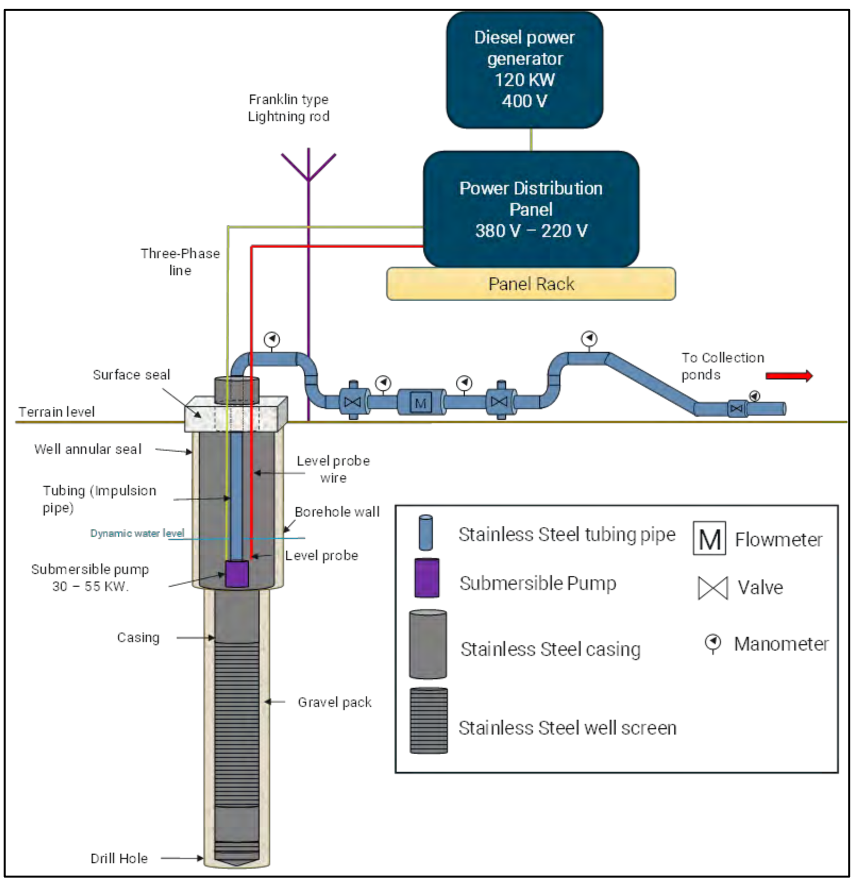
18.2.1 Wellfield

The layout of the wellfield is described in Section 16.2 of this report. Brine will be extracted from each well in the wellfield and collected in the wellfield receiving pond, located nearby. This pond serves as a brine reservoir to ensure a constant supply to the process plant. Further specifications of this pond are provided in Section 18.3 below.

In the Arizaro Salar, LCE production will operate using a conventional brine extraction wellfield. The extracted brine of each well will be conducted by a 6” HDPE pipe to a collection pond located in the wellfield area and then boosted to the DLE plant by a duct.

Approximately 35 wells are required to be in operation from year 2 onwards, replacement wells should be considered after 8 to 12 years of operation. The production wells will be completed with 12-inch diameter casing, with the possibility of using telescopic casing. An average depth of 500 m is estimated with a maximum depth of 650 m. Stainless steel is considered as casing material, and will be equipped with 380 V submersible pumping equipment (30 to 55 kW power). Permanent power will be supplied to the production area through electric generators connected to each well. Figure 18-4 presents an schematic view of the proposed brine wells.

Figure 18-4: Brine well schematic view



Source: Ausenco, 2024.

According to the predicted wellfield configuration and reserve modeling presented in Section 15, an annual average brine feed rate of approximately 660 liters per second (L/s), equivalent to 18,9 L/s per well. It should be noted that each well has a unique productivity and it is not possible to know with certainty the flow rates that a well will produce until it has been installed and pump tested. Consequently, some future wells will produce more and some less than anticipated at this stage of project evaluation.

Brine will be sent from the wellfield receiving pond to the raw brine feed pond located near the plant via a 25 km, 1,000 mm HDPE pipeline designed to transport 3,204 m^3/h.

18.2.2 DLE Plant

The DLE plant is the first stage to extract the lithium from the brine (Details in Section 17.2.2.1) and its comprised of three primary sections, each on a single floor. The adsorption columns are divided into two areas, covering 3,752 m^2 (28 m wide, 134 m long, and 21 m high). Both areas are constructed with industrial metal structure, concrete flooring, and metal walls. The second section is the tank storage facility, which is also divided into two sections and shares space with the raw brine pumps, covering 6,432 m^2 (48 [23 + 25] m wide, 134 m long and 21 m high). The third section houses the multimedia filters, covering 2,680 m^2 (20 m wide, 134 m long and 21 m high).

From the DLE plant, the depleted brine output stream is pumped through a 3.5 km, 1,000 mm HDPE pipeline to the infiltration zone. The specifications and location are detailed in Section 18.3.5.

18.2.3 Reverse Osmosis

The reverse osmosis plant is where the eluate from the DLE stage goes through HPRO process (See section 17.2.2.2) and occupies an area of 2,865 m^2 (59.25 m wide, 48.35 m long and 8.2 m high). It consists of one floor with an industrial metal structure, concrete flooring, and metal walls, arranged in a warehouse-type layout.

18.2.4 Mechanical Evaporation

The mechanical evaporation plant is where the treated brine is separated into concentrated brine and discarded salts (Details in Section 17.2.2.5) has an area of 1,300 m^2 (60 m wide, 22 m long and 25 m high). It consists of two floors, each with an industrial metal structure, concrete flooring, and metal walls.

18.2.5 Chemical Plant

The chemical plant has two main structures: the chemical precipitation (Ca & Mg) where the treated brine goes through the ion exchange columns (See Sections 17.2.2.4 and 17.2.2.6) with an area of 800 m^2 (40 m wide, 20 m long and 30 m high), and the carbonation and neutralization area that produces the dewatered product (See Section 17.2.2.7 and Section 17.2.2.8) with a surface of 900 m^2 (45 m wide, 20 m long and 30 m high). Both structures include an industrial metal framework, concrete flooring, metal walls, and four floors.

18.2.6 Dry Product Handling

The dry product handling area is where the BG lithium is produced (See Section 17.2.3) and covers 1,100 m^2 (22 m wide, 50 m long, and 35 m high). This structure has a single floor with an industrial metal structure, concrete flooring, and metal walls.

18.2.7 General Utilities Area

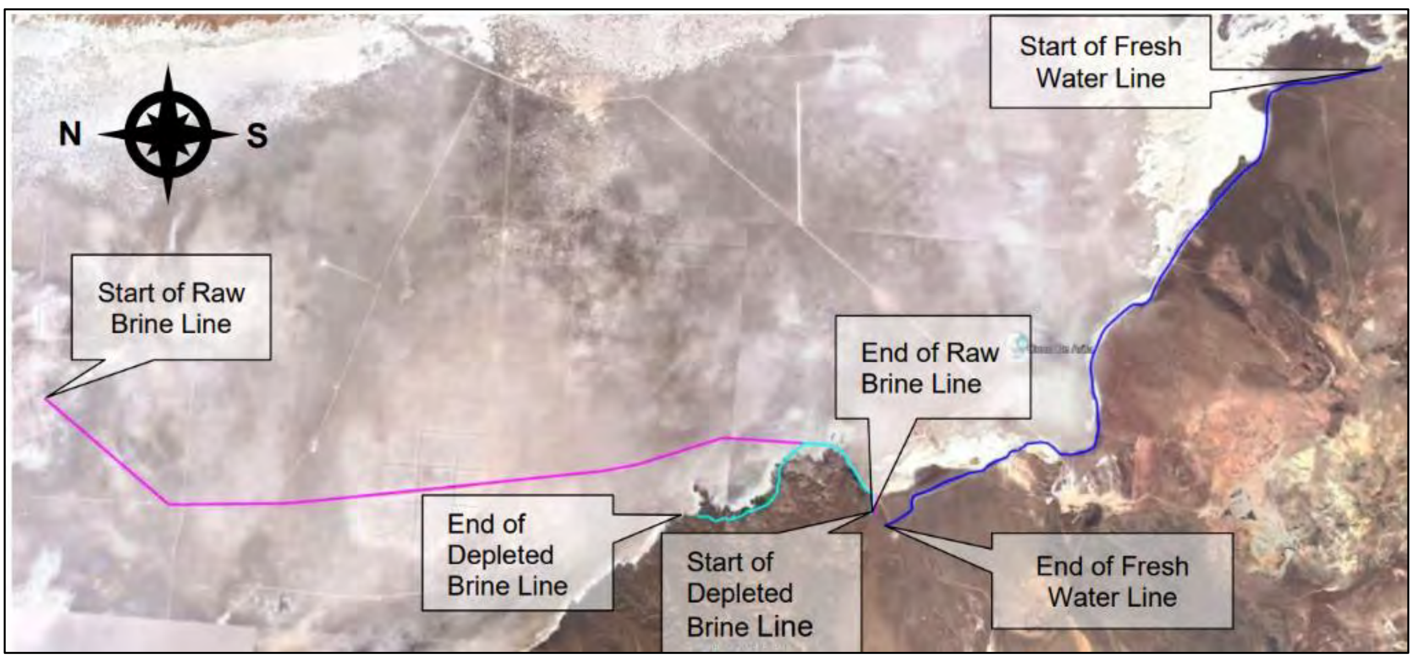
The general utilities area includes air and steam supply to the plant. The air supply structure covers a surface area of 540 m^2 (18 m wide, 30 m long and 5 m high), while the steam supply structure covers 96 m^2 (8 m wide, 12 m long, and 6 m high). Both areas have a single floor, an industrial metal structure, concrete flooring, and metal walls arraned in a warehouse-type layout.

18.2.8 Pipeline Layout

The project contemplates three fluid transport systems for lithium obtaining, main system corresponds to raw brine transport line of 26 km from the wells to the plant, a second line for the depleted brine of 7.52 km obtained, from the process plant to the infiltration zone. And a third line that supplies fresh water to the process of 22.3 km from the water wells located in the southern sector to the plant.

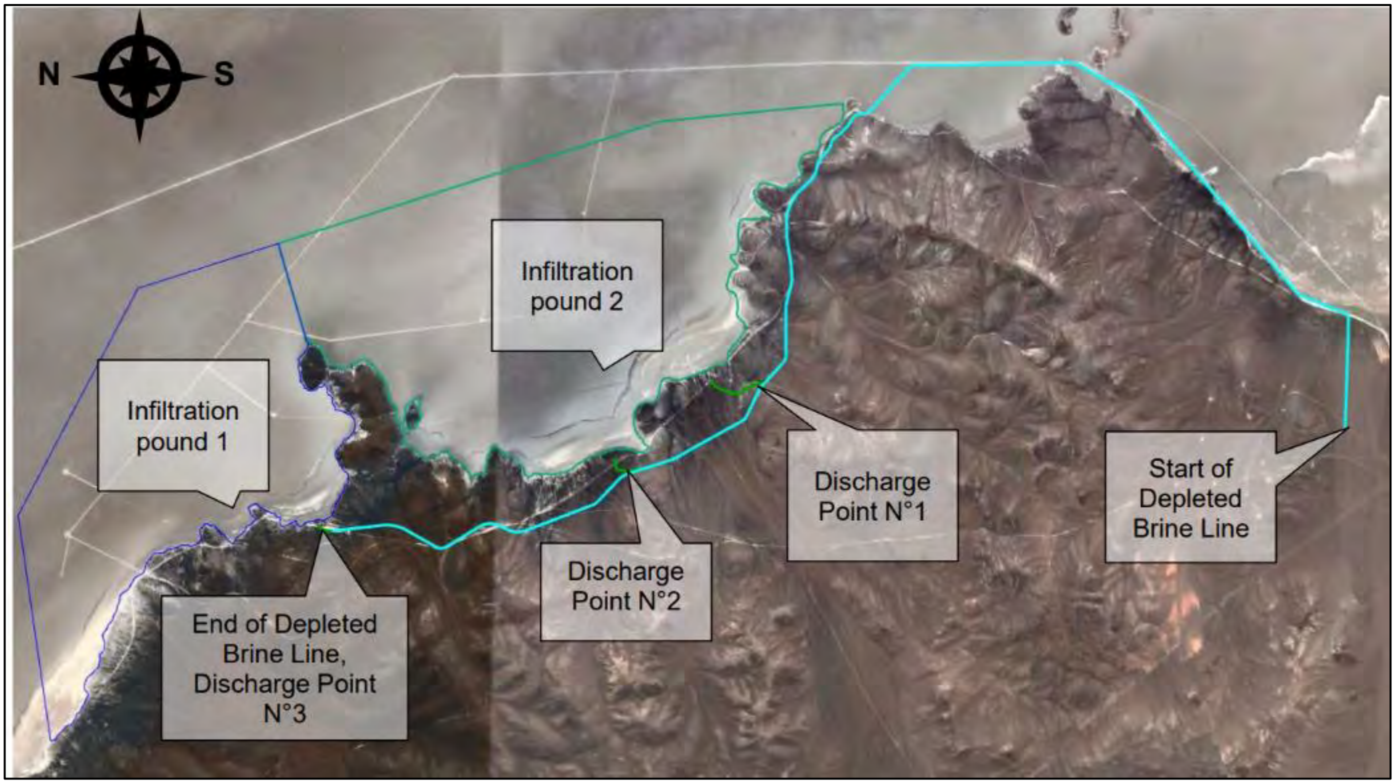
The routing map for the systems are shown in Figure 18-5 and Figure 18-6.

Figure 18-5: Raw Brine and Freshwater Line Routing Map



Source: Ausenco, 2024.

Figure 18-6: Depleted brine routing map



Source: Ausenco, 2024.

18.3 Ponds

The Project includes different types of ponds with varying locations, functions, and dimensions. One pond is designated to receive raw brine collected from different brine extraction wells across the Salar de Arizaro at a common central point (wellfield receiving pond); this brine is then sent to the raw brine feed pond and flushing pond (during maintenance operations). Depleted brine resulting from the process is sent to the intermediate control pond along with the process residual pulp to finally be disposed at the infiltration zone located in the Arizaro Salar beach. Water required for each stage of the process is sourced from the raw water pond, supplied by water wells located south of the plant. A waterproofing system has been considered for each pond made of HDPE geomembrane. Table 18-2 provides the area dimensions for each of these ponds.

Table 18-2: Project Ponds

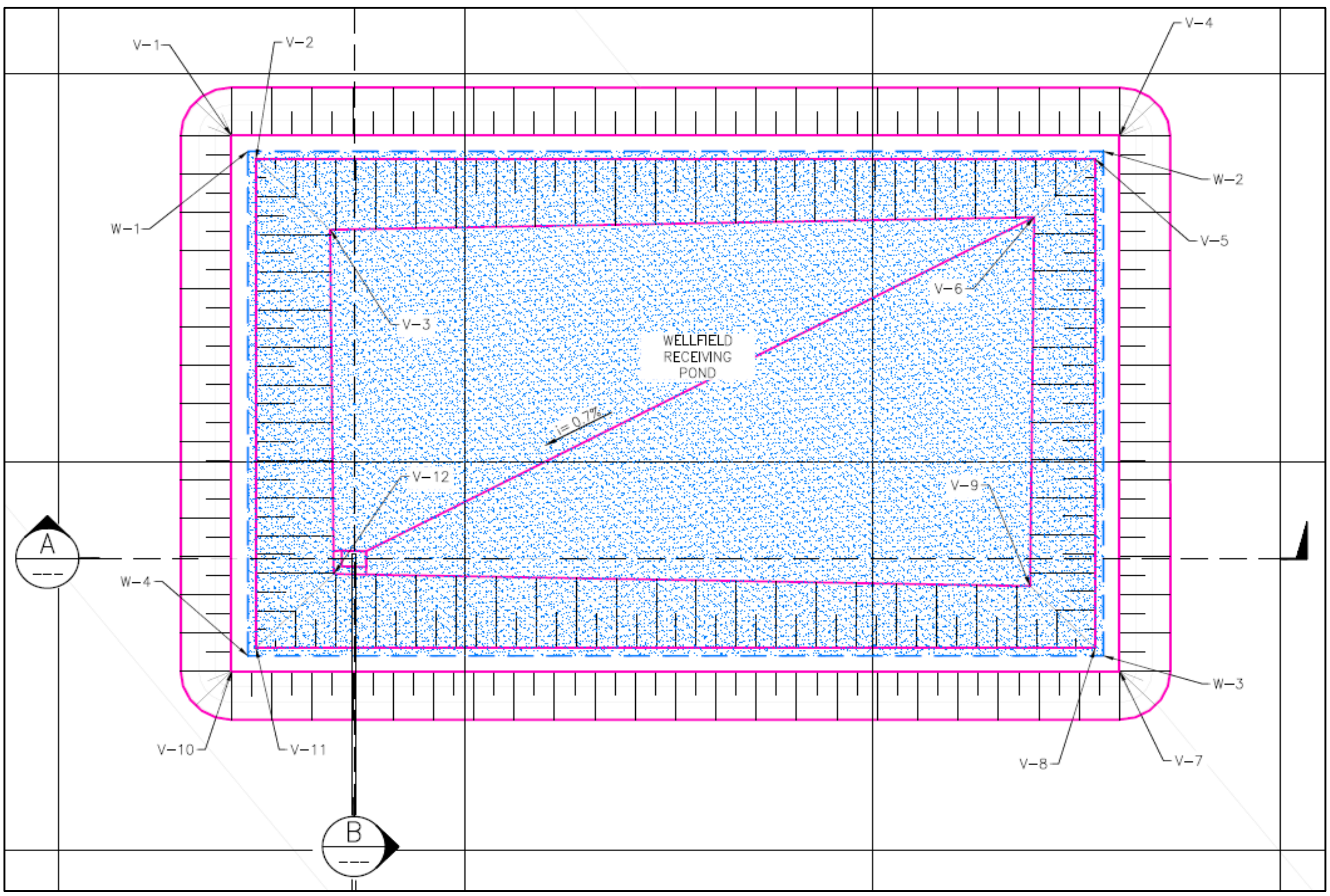
Item	Description	Area (Ha)
1	Wellfield Receiving Pond	1.26 Ha
2	Raw Brine Feed and Flushing Ponds	1.21 Ha
3	Intermediate Control Pond	1.71 Ha
4	Infiltration Zone	500 Ha
5	Raw Water Pond	1.10 Ha

18.3.1 Wellfield Receiving Pond

The wellfield receiving pond will be located in the wellfield area (refer to Figure 18-1). The bottom of this pond will have an elevation of 3,467 m, and a safety berm measuring 3 m wide and 3 m high, as shown in Figure 18-7 and Figure 18-8. The projected area for this pond is 1.26 Ha, and its construction requires lining for both the walls and the floor.

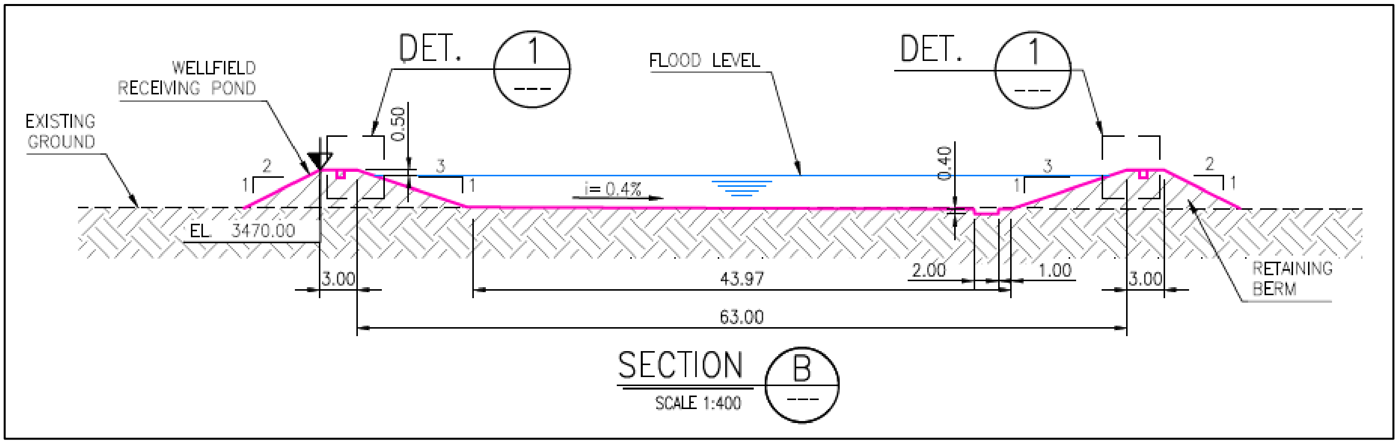
The function of this pond is to collect brine extracted from each of the wells within the Salar, centralizing it at a common point to maintain a brine reservoir that ensures a consistent supply to the process plant.

Figure 18-7: Wellfield Receiving Pond



Source: Ausenco, 2024.

Figure 18-8: Wellfield Receiving Pond Retaining Berm



Source: Ausenco, 2024.

18.3.2 Raw Brine Feed and Flushing Ponds

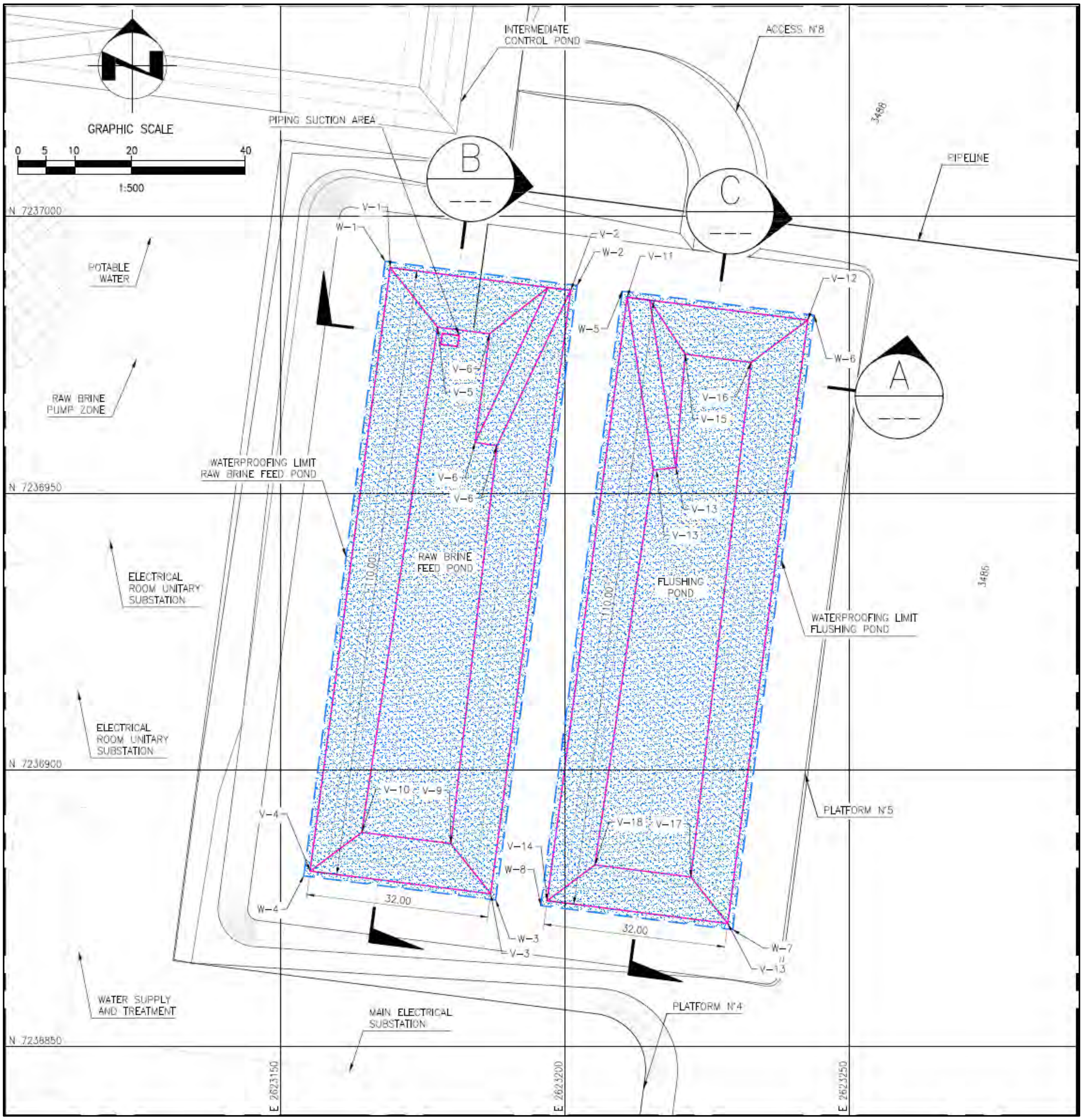
The raw brine feed and flushing ponds are both situated within the processing plant area, each measuring 110 m in length, 32 m in width, and 3 m in height. They are positioned 10 m apart and surrounded by a 4-m wide safety berm, as shown in Figure 18-9 and Figure 18-10.

The raw brine from the wells is collected in the wellfield receiving pond which works as the "operations center," strategically located in a central position within the wellfield that minimizes the length of transport pipes from each well. From there, the brine is pumped to the raw brine feed pond located next to the chemical plant where it is collected and then pumped to the DLE stage, in the chemical plant area.

A pigging cleaning system between the wellfield receiving pond and the raw brine feed pond is provided to avoid salts depositions in the pipeline. During cleaning operations, brine and salts depositions are collected in the flushing pond located side by side the raw brine feed pond. The brine collected in the flushing pond is eventually pumped to the raw brine feed pond to be processed in the chemical plant area and salts accumulated over time require to be harvested and adequately disposed.

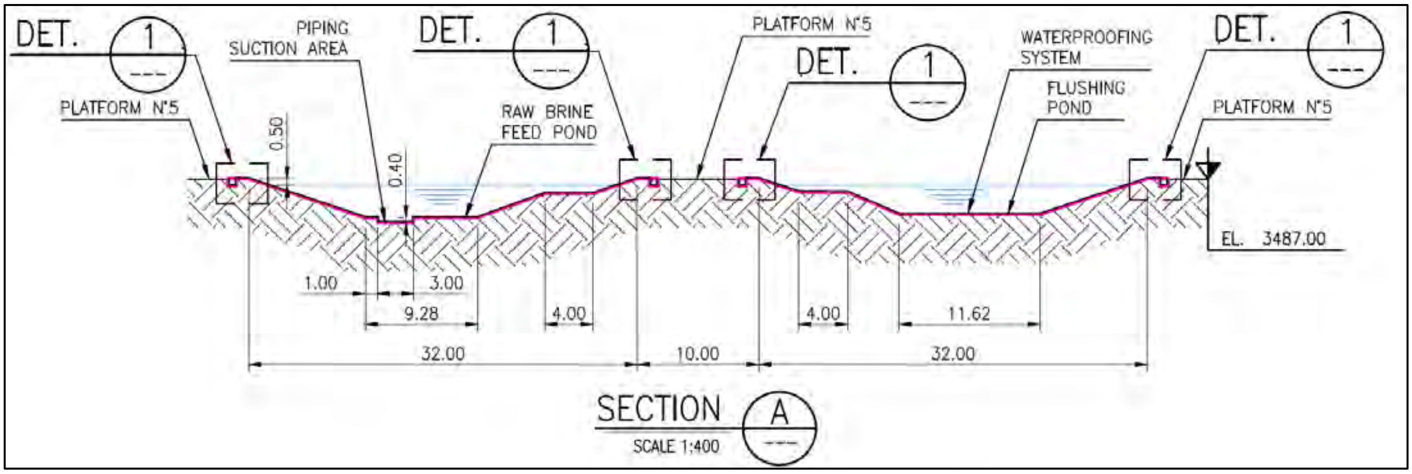
Moreover, the flushing pond acts as a backup or alternative storage during maintenance or cleaning periods of the main raw brine feed pond. It ensures continuous operation of the lithium extraction process by temporarily storing brine until the main pond is ready for use.

Figure 18-9: Raw Brine Feed and Flushing Ponds



Source: Ausenco, 2024.

Figure 18-10: Raw Brine Feed and Flushing Ponds Cross-section A



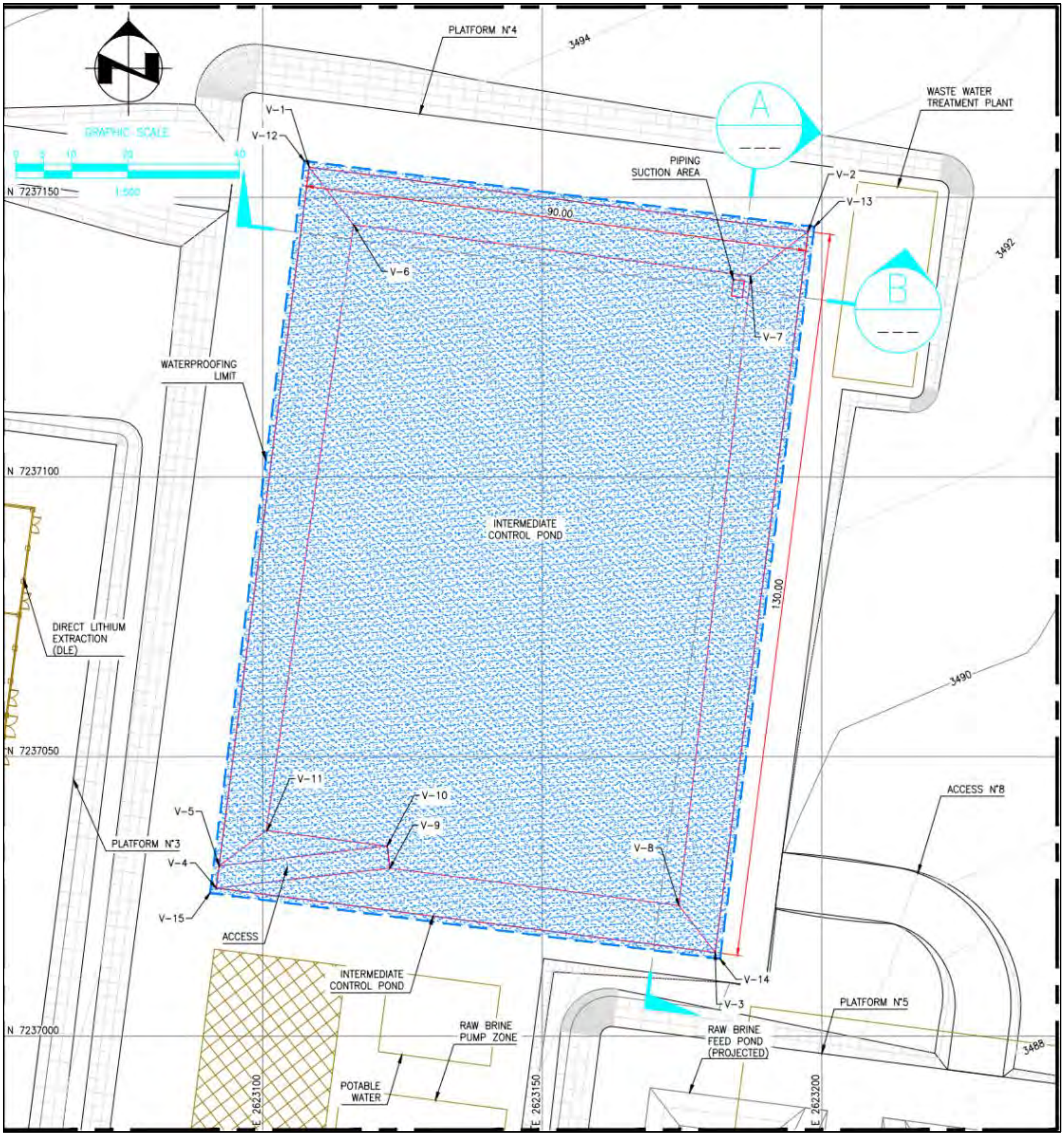
Source: Ausenco, 2024.

18.3.3 Intermediate Control Pond

The intermediate control pond is located near the raw brine feed and flushing ponds in the plant. It measures 30 m in length, 90 m in width, and 3 m in height, with a 1-m wide safety berm (refer to Figure 18-11 and Figure 18-12).

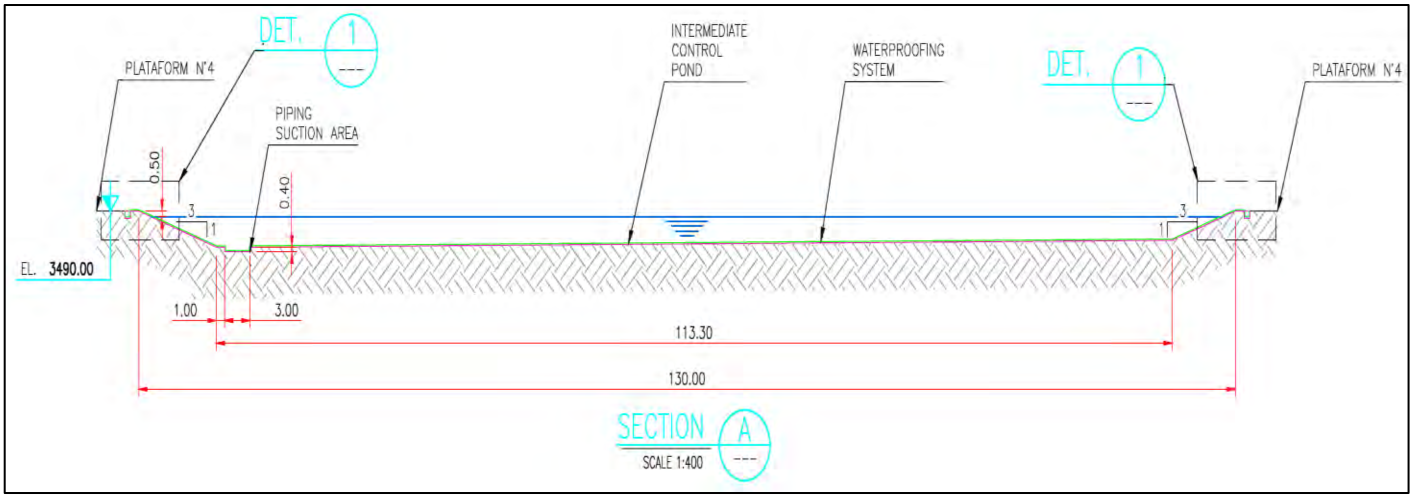
The intermediate control pond receives depleted brine from the DLE and effluent management areas. Its purpose is to monitor the pH levels of the stream to ensure it meets acceptable criteria for reintegration into the salt lake before sending it to the infiltration zone. Depending on the pH level, adjustments are made to either acid or base to achieve the desired range.

Figure 18-11: Intermediate Control Pond



Source: Ausenco, 2024.

Figure 18-12: Intermediate Control Pond Cross-section A



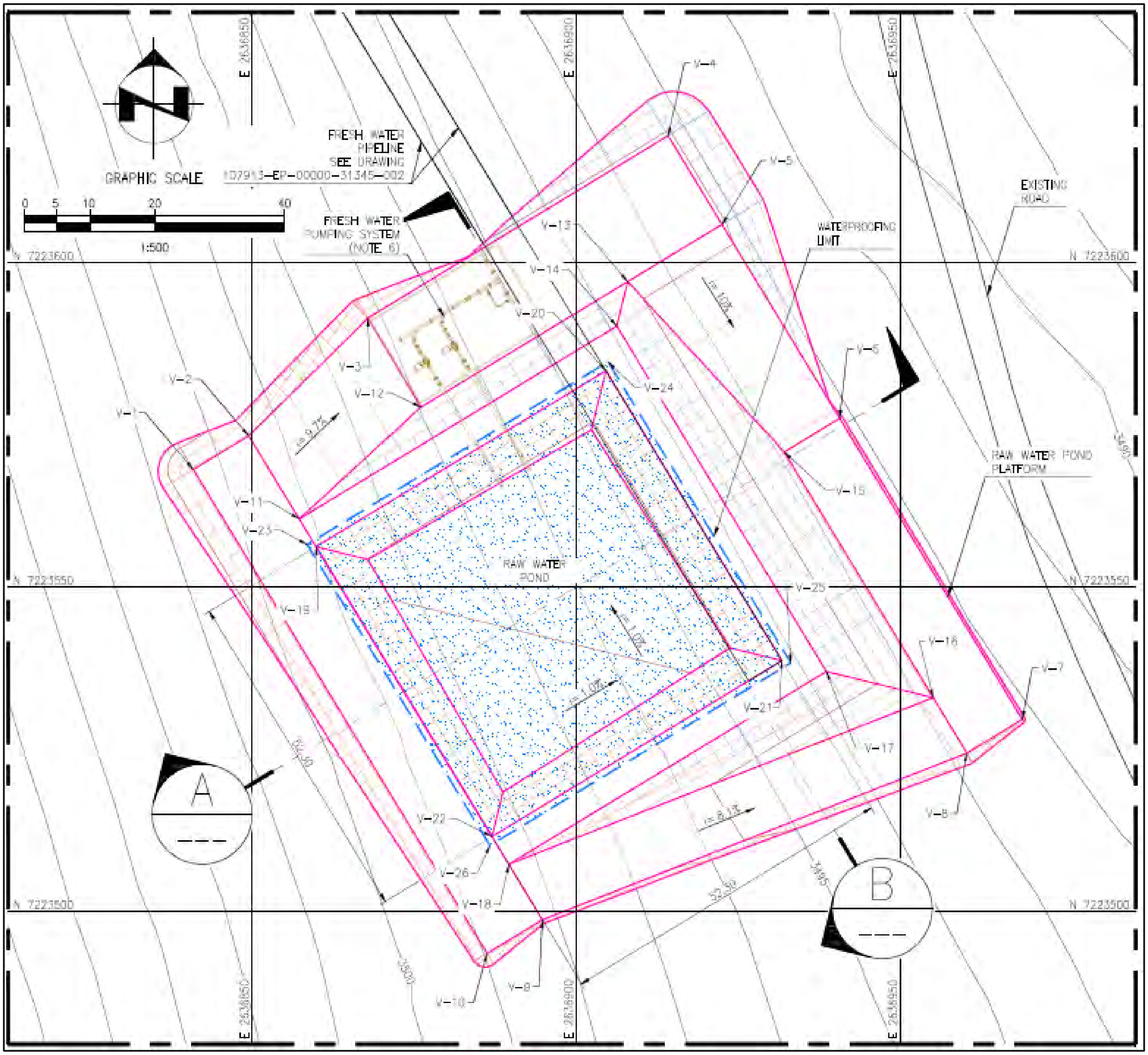
Source: Ausenco, 2024.

18.3.4 Raw Water Pond

The raw water pond, located south of the plant, measures 52.3 m in length and width,and 2.5 m in height, and it is enclosed by a safety berm extending 5 m wide around its perimeter. Additional space is allocated for platforms and mechanical equipment, extending 10 m and 16 m, respectively, resulting in a total projected area of 1.1 Ha (refer to Figure 18-13, Figure 18-14 and Figure 18-15).

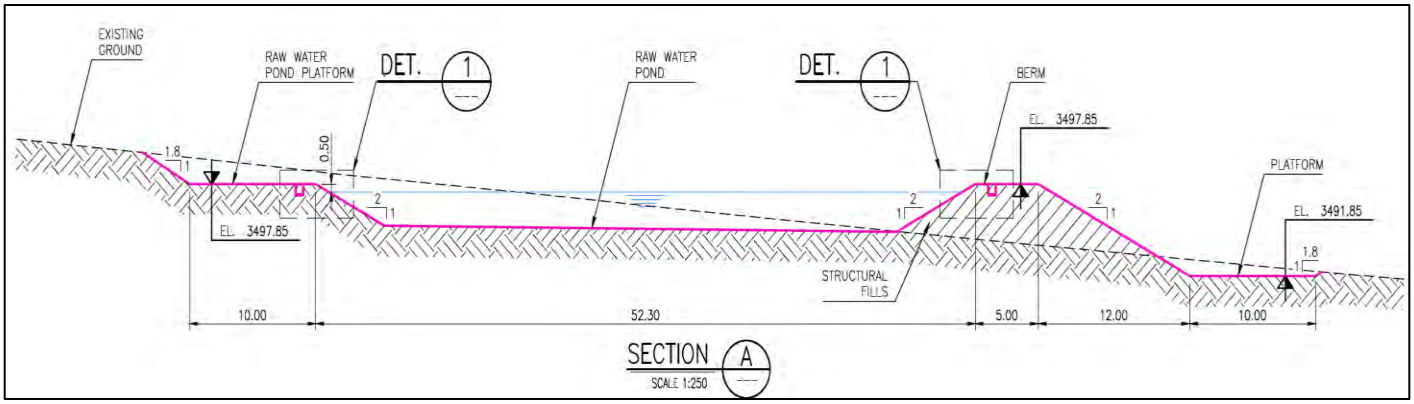
The fresh water extracted from wells is collected in the raw water pond and undergoes filtration and treatment to produce demineralized water. This treated water is then transported to the plant where it is used in various processes, including the production of reagents like caustic soda, sulfuric acid, hydrochloric acid, and flocculants, as well as for cleaning DLE columns. Additionally, water containing mineral concentrates, known as reject water, is utilized for non-potable tasks such as washing trucks and maintaining roads.

Figure 18-13: Raw Water Pond



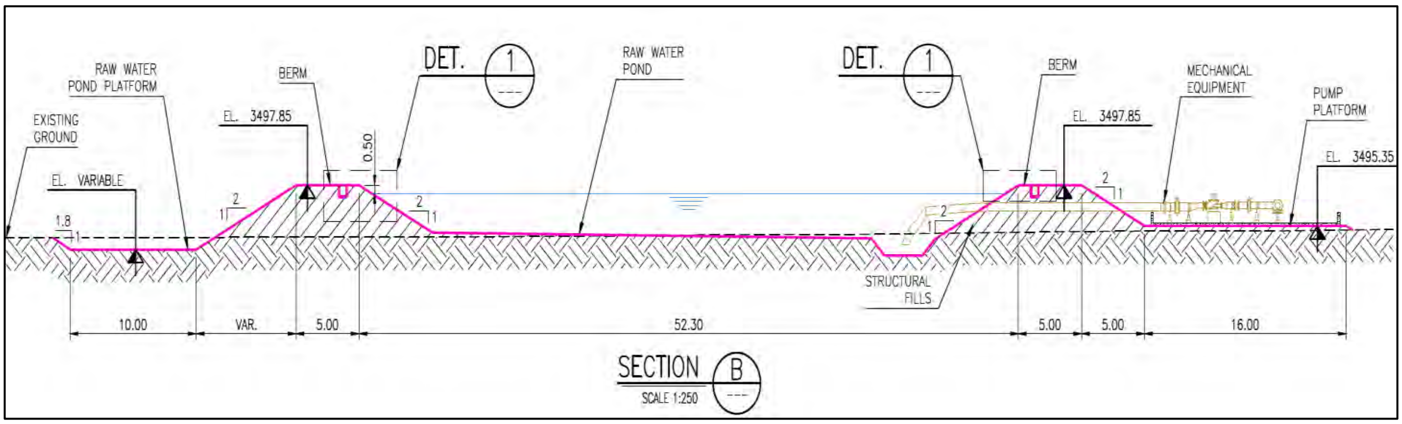
Source: Ausenco, 2024.

Figure 18-14: Raw Water Pond Cross-section A



Source: Ausenco, 2024.

Figure 18-15: Raw Water Pond Cross-section B



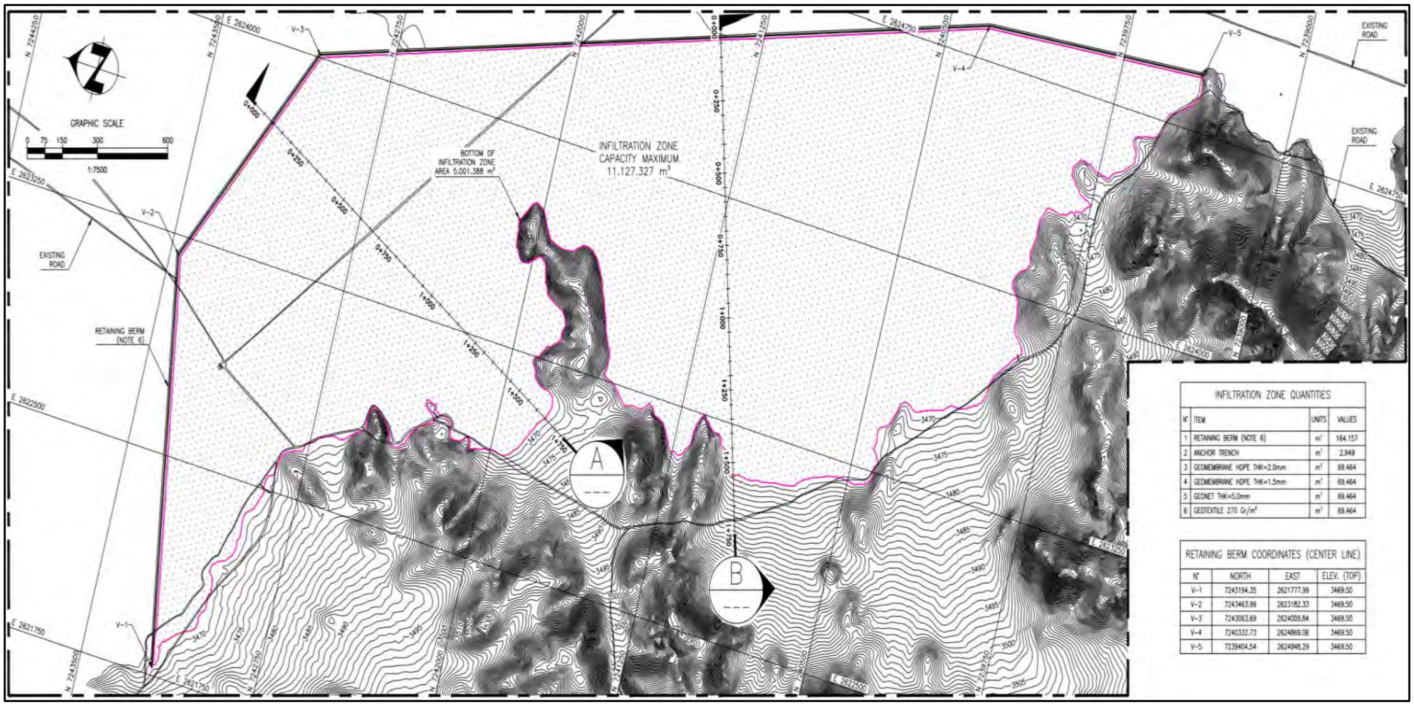
Source: Ausenco, 2024.

18.3.5 Infiltration Zone

The infiltration zone will be located within the confines of the Salar de Arizaro (see Figure 18-1), covering an area of 5,001,388 m^2, with an upper elevation at 3,469.5 m and lower elevation at 3,460 m, as shown in Figure 18-16.

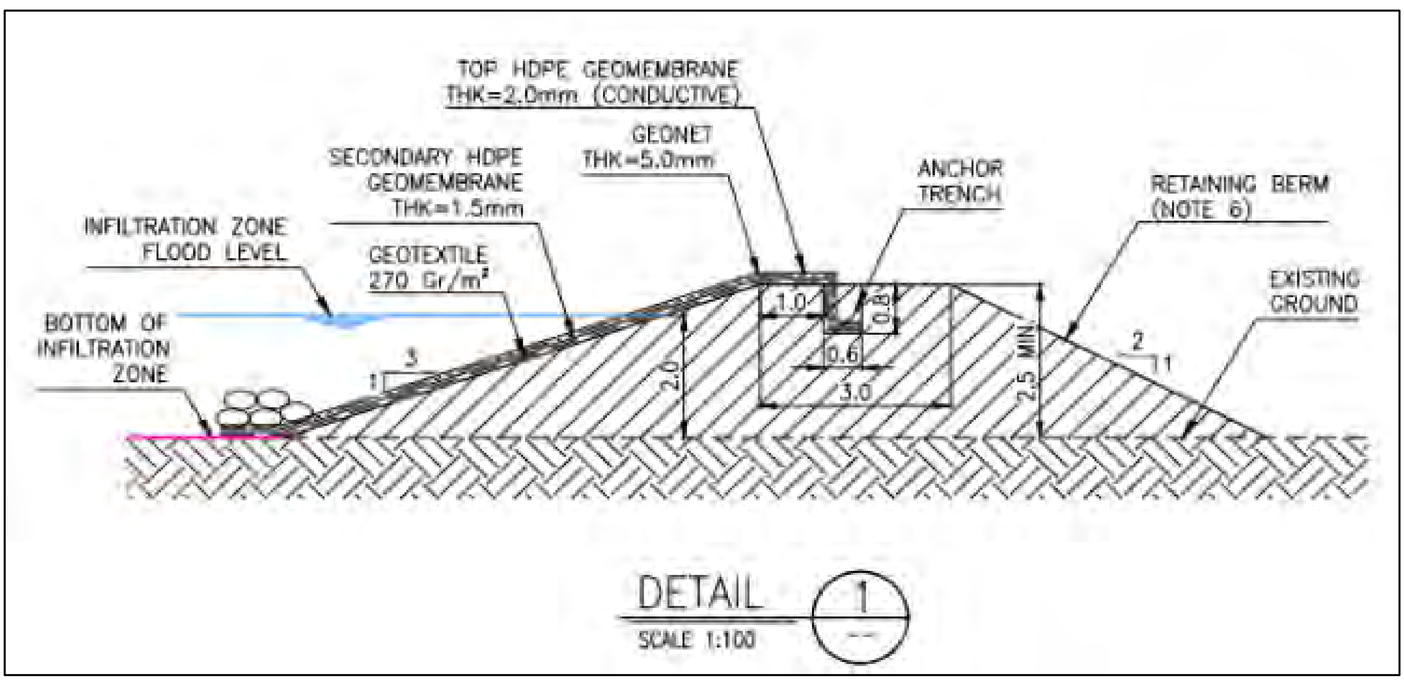
Because the infiltration zone is situated within the Salar, a safety berm from compacted salt material sourced from the Salar de Arizaro and waterproofed wit an HDPE barrier on its inner face has been planned. It will measure 6,143 m in length, 3 m in width, and 2.5 m in height, as indicated in Figure 18-17.The treated pulp will be transported by an HDPE pipeline along the coast with variable diameter, ranging from 900 mm to 315 mm and a total length of 9.4 km.

Figure 18-16: Infiltration Zone



Source: Ausenco, 2024.

Figure 18-17: Infiltration Zone Safety Berm



Source: Ausenco, 2024.

18.4 Power and Electrical

The electrical supply for this Project relies on generators fueled by diesel and IFO.

Three distinct areas require electrical supply, each with its own separate power demand:

- Main electrical substation
- Brine pumping system
- Fresh water pumping system

In Table 18-3 is described the specifics on the supply and demand of electrical power.

Table 18-3: Power Supply and Demand

Infrastructure		Running Demand (kVA)	Peak Demand (kVA)	Prime Power (kVA)	Stand-by Power (kVA)
Main electrical substation	Generation Plant	23,173	25,665	1,875[3]	2,063[3]
Brine pumping system	Brine Pumping System	1,389	1,557	1,875[4]	2,063[4]
	Brine Extraction	61[1]	68[1]	136[1]	150[1]
Fresh water pumping system	Fresh Water Pumping System	306	341	640	706
	Fresh Water Extraction	61[2]	68[2]	136[2]	150[2]

1. Unit value for each well out of a total of 35.
2. Unit value for each well out of a total of 9.
3. Unit value for each generator out of a total of 26.
4. Unit value for each generator out of a total of 2.

18.5 Fuel

Diesel and IFO fuels will be transported by transport trucks from an external location. The annual requirements for electricity generation are 5,603 m³ of diesel and 34,319 m³ of IFO. The design capacity for the diesel storage tank is 72 m³, while the design capacity for the IFO storage tank is 700 m³.

18.6 Water Supply and Management

18.6.1 Water Balance

In June 2023, a "Study of Recharge in Chascha Aquifer System" was conducted, offering an initial conceptual estimate of the area's water balance. This study estimated an extractable volume of 2,760 hm^3 and a recharge flow ranging between 3.9 to 7.1 hm^3 per year (hm^3/y). However, there is no current estimate of the extractable flow that would not affect the system's reserves. The study highlights the need for a broader data range and additional characterization points.

18.6.2 Water Supply

The freshwater demand for the Project (372 m^3/h) will be provided by pumping from groundwater supply wells located in the Chascha Sur sub-basin, approximately 20 km to the southeast of the plant site. According to a preliminary conceptual hydrogeological model and recharge estimate for the sub-basin (Conhidro, 2023), the potential extractable freshwater volume is around 2,760 hm^3, with a groundwater recharge rate ranging between 3.9 hm^3/y and 7.1 hm^3/y (445 m^3/h to 810 m^3/h). The locations of third-party wells in the same area are shown in Figure 18-18.

Groundwater exploration in the basin has utilized surface geophysics, drilling, and well testing techniques. To date, one water well (Chascha Sur 01) has been tested, with a maximum rate of 51 m^3/h (14.2 L/s) over 72 hours. An upcoming groundwater exploration program, pending approval, will involve drilling 12 boreholes: seven in the Chascha Sur sub-basin, three in the Arita sub-basin, one in the Cori sub-basin, and one in the Tolar sub-basin. The locations of the existing well, additional exploration wells, and sub-basins are shown in Figure 18-18.

Based on the well testing conducted so far, a total of seven to nine wells will be required to meet the freshwater demand for the process. The ongoing groundwater exploration program will confirm the number of wells and their likely locations. The freshwater wellfield will deliver water to a central pond, from which it will be pumped to the process plant via a 500mm diameter HDPE pipeline approximately 22.3 km long. The layout of the freshwater supply system, including the tentative locations of the freshwater wellfield, collection pond, and pipeline, is shown in Figure 18-18.

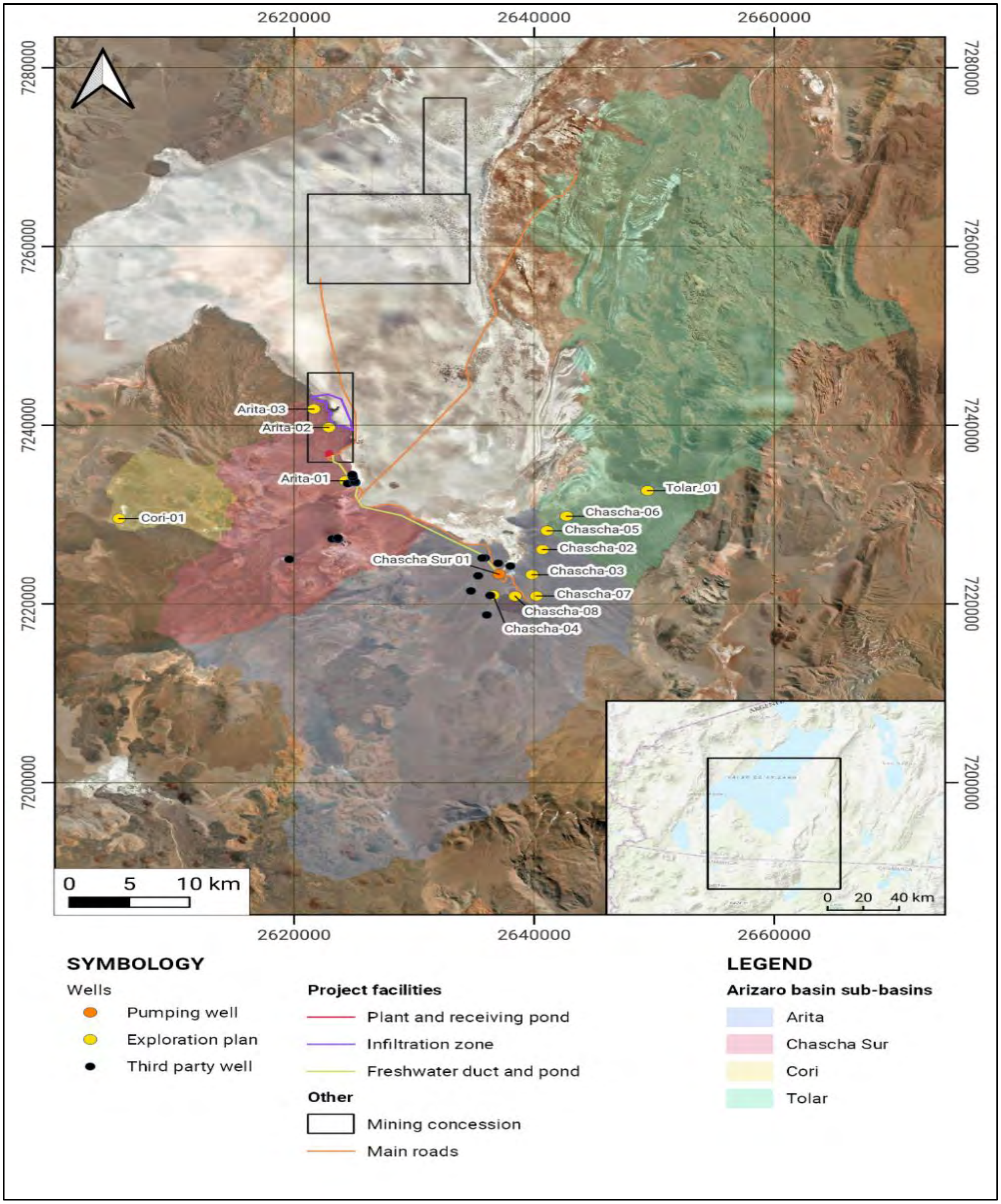
The freshwater will require treatment before distribution. Treated water categories include filtered water (for fire emergencies), demineralized water (for plant processes, maintenance, and washing), and potable water (for camp requirements and safety showers).

Bottled water for human consumption will be brought in from the city of Salta.

The water permitting process, currently underway, consists of the following:

1. Approved water permit for potable water to be used for domestic purposes during the operation of the Arizaro Project (1,460 m^3/y).
2. Pending application for a water permit for industrial use for well Chascha Sur 01 (75 m^3/h).
3. Pending applications for permits to drill 12 exploratory boreholes in the southern Arizaro basin.

Figure 18-18 Water Supply Infrastructure, Freshwater Wells, and Sub-Basins of Interest Within Southern Arizaro Basin



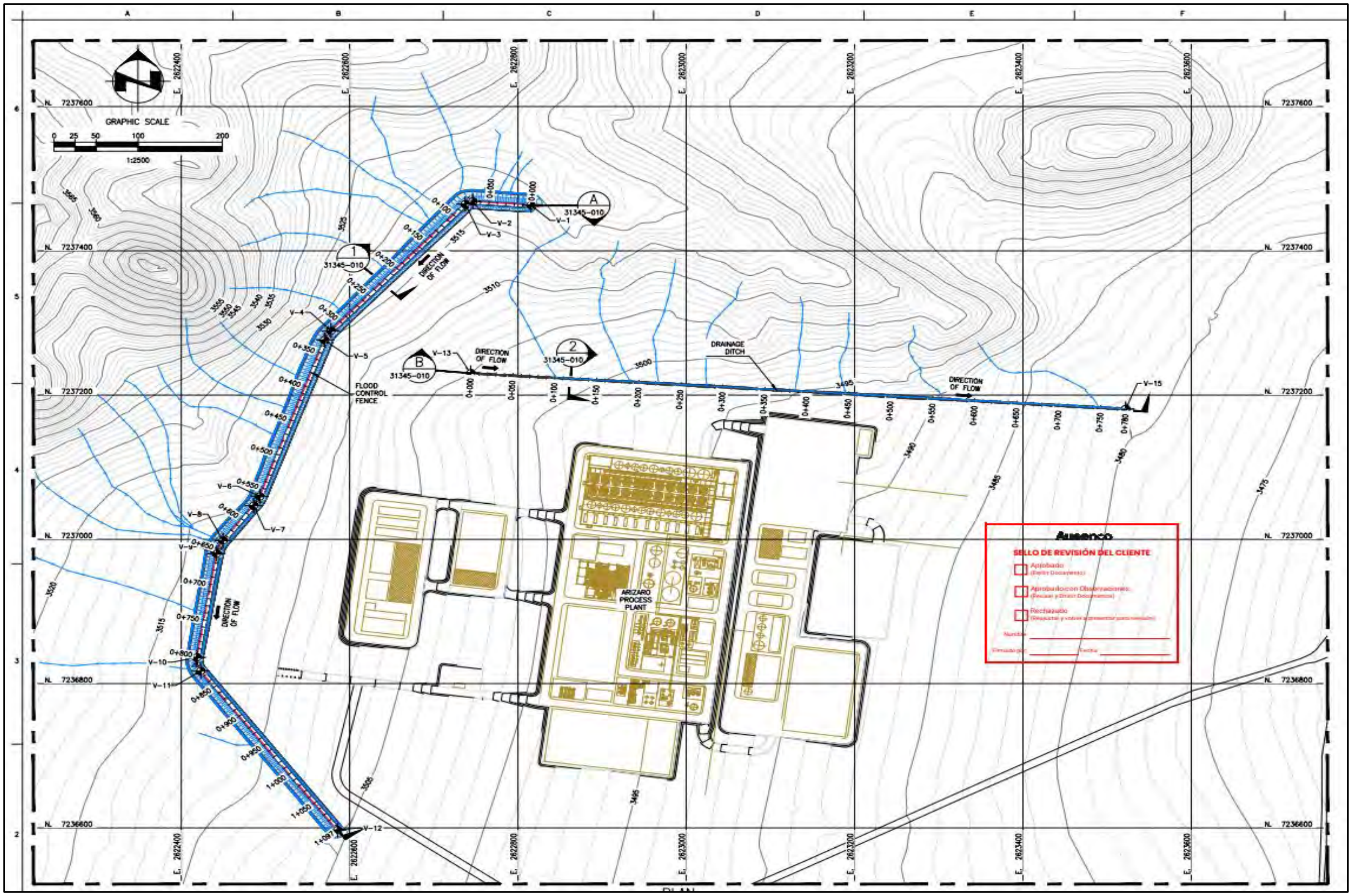
Source: Ausenco, 2024.

18.6.3 Water Management Structure

There are no permanent watercourses at the project area but the climatic characteristics indicate the possibility of surface runoff as a result of flooding conditions from occasional extreme rainfall events, mainly from December to March. Based on that, water management infrastructure is planned for where the process plant is to be located and for crossings along the access roads and the pipelines routes.

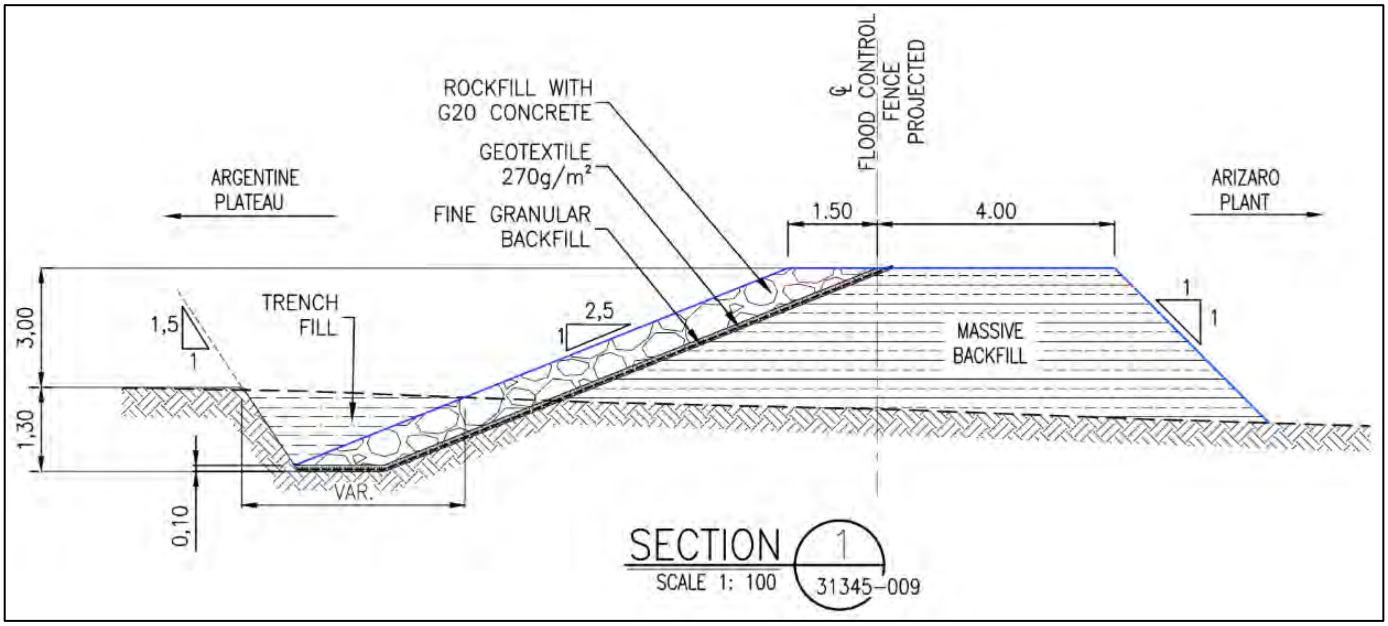
The Project plans to construct a contour channel and safety berm using backfill from the process plant. This construction will measure 1,097 m in length, 4 m in width, and 3 m in depth on the east side of the plant and a drainage dith on the north side of the plant. Location of this water management infrastructure is shown in Figure 18-19 and cross sections for the contour channel and drainage ditch in Figure 18-20 and Figure 18-21 respectively.

Figure 18-19: Contour Channel and Drainage Ditch



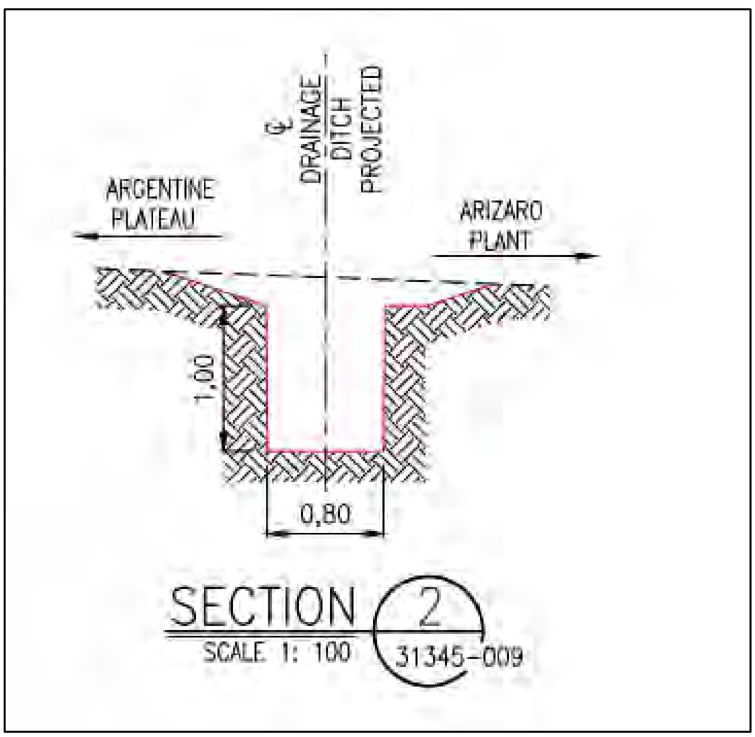
Source: Ausenco, 2024.

Figure 18-20: Contour Channel and Safety Berm Section



Source: Ausenco, 2024.

Figure 18-21: Drainage Ditch Section



Source: Ausenco, 2024.

18.6.4 Hazard Considerations

The primary environmental risks affecting the design, operation, and project production schedule include the following contingencies:

- Seismic activity based on available seismic data
- Fuel and/or oil spills
- Brine spills
- Fires
- Precipitation or snow.

In the event of spills of varying magnitudes, the primary objective is to provide a rapid response to prevent the quick dispersion of these substances. This includes safeguarding human life, protecting affected property or communities, ensuring the area remains suitable for investigation, and promptly restoring normal operational activities in that area.

Fires can be emergencies with dangerous consequences for the Project, potentially resulting in severe equipment damage and endangering human lives. Establishing brigades in every area of operation is a top priority for preventing and managing fires. Fire prevention protocols include training all personnel in fire prevention measures and conducting evacuation drills regularly.

19 MARKET STUDIES AND CONTRACTS

19.1 Overview

Global demand for lithium has experienced significant growth over the past decade, driven by the rapid growth of the rechargeable battery industry, primarily for electric vehicles (EVs). Today, the ongoing trend towards electrifying transportation and the increased use of renewable energy technologies continue to boost lithium demand.

To support the growing demand for lithium, Lithium Chile intents to produce 25,000 t/y of BG Li_2CO_3 from brine extracted from Salar de Arizaro.

19.2 Market Studies

Benchmark Minerals Intelligence, a consulting company, has released a forecast that summarizes the latest supply, demand, cost and pricing assumptions for lithium through 2040. Volatile lithium prices are expected to persist in the market for the foreseeable future due to:

- Swing supply in Jiangxi, China
- Sodium-ion battery cost competitiveness
- Exposure to technical risk and geological risks associated with supply
- Influence of incentives on demand.

The market is expected to achieve balance between 2024 and 2028, followed by a period of deficit starting in 2029.

Although several new projects were announced or constructed in 2024, the material from these projects is unlikely to enter the market soon due to the low prices. This is partly because the marginal Chinese mica (mineral that contains lithium) supply can continue operating in a low-price environment. Despite low prices, most lithium producers remain profitable, with a 187 kt LCE deficit projected for 2030. However, in the short term, developers are struggling to secure financing for current and future projects.

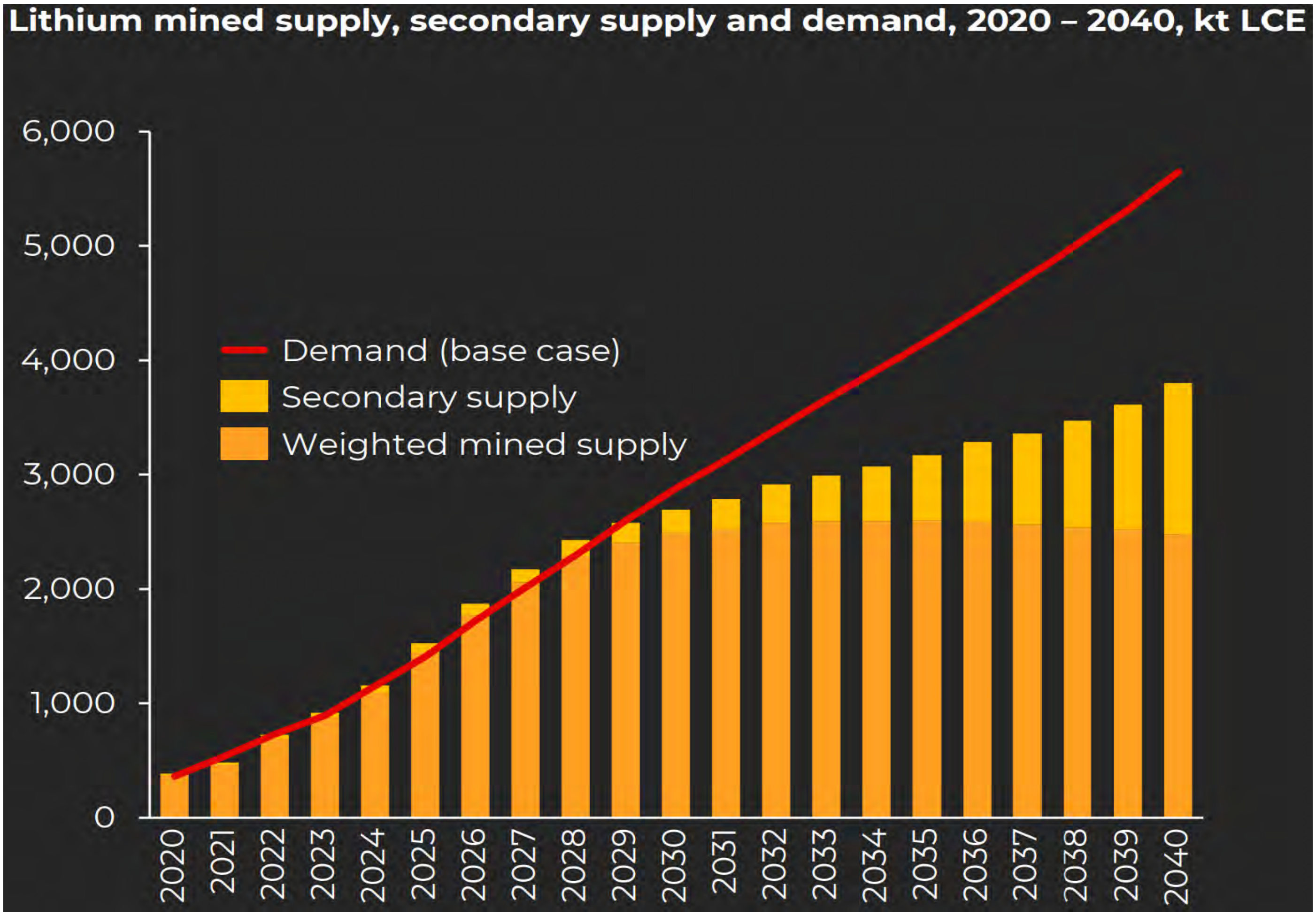
Australia, the world's largest producer of mined lithium feedstock, is expected to add around 100 kt LCE of production annually, representing an increase of approximately 25%. The Greenbushes mine, owned by Albemarle/Tianqi/IGO produced nearly 200 kt LCE in 2023, accounting for over 40% of the country's overall supply. This is followed by Mt Marion, a joint venture between Mineral Resources and Ganfeng Lithium, which is expected to produce 85 kt LCE, making up 19% of the national supply.

19.3 Lithium Supply and Demand

Lithium faced a supply shortage in 2023 despite soft prices in the first half of the year. Prices are expected to drop in the second half of 2024 but stabilize by 2025. Several new projects entering the market in 2024 will likely remain on hold until LCE prices increase. Global plug-in electric vehicle (PEV) penetration rates are projected to grow from about

27% in 2025 to 77% in 2040, supporting the underlying demand for lithium. As a result, lithium is anticipated to experience a deficit starting from 2030. The demand-supply balance is shown in Figure 19-1.

Figure 19-1: LCE Demand-Supply Balance



Source: Benchmark Mineral Intelligence, 2024.

19.3.1 Lithium Demand

The forecast indicates that the market is expected to return to a deficit position by 2030, primarily due to the current decline in LCE prices as we enter 2024. Concurrently, China's New Energy Vehicle (NEV) production continues to slow down while Europe is expected to have a flat growth in Q1.

In 2024, the grid market is projected to grow by 56% year-on-year, which is expected to elevate its market share to 81% of the overall market. This growth surge is fueled by an increase in both the number and scale of announced Energy Storage Systems (ESS) projects. Lithium Iron Phosphate (LFP) cells are set to maintain their position as the primary cathode type for ESS battery cells, with their market share rising from 78% to 88% in 2023 and projected to further increase to 90% this year.

Demand growth rates from portable electronics are expected to recover, with a year-on-year growth rate of 8.6%. This recovery is driven by an anticipated increase in demand for mobiles, laptops, and other consumer electronics following an extended period of subdued demand as pandemic-era purchases near the end of their refresh cycle. The decreasing costs and improved integration of wearables in the larger ecosystem is expected to boost demand, with expectations that demand will reach pandemic-level highs by 2026-27.

19.3.2 Lithium Supply

Supply is projected to surpass the the 1-million-tonne milestone in 2024, marking a 26% increase compared to last year's LCE production. The Chilean government is supporting private companies in exploring some of the country's salt flats. SQM's expansion plan to reach a capacity of 210 kt remains unchanged, although the deadline for negotiations regarding the partnership with CODELCO was extended to the end of May.

Several new projects have begun production or commissioning across various regions:

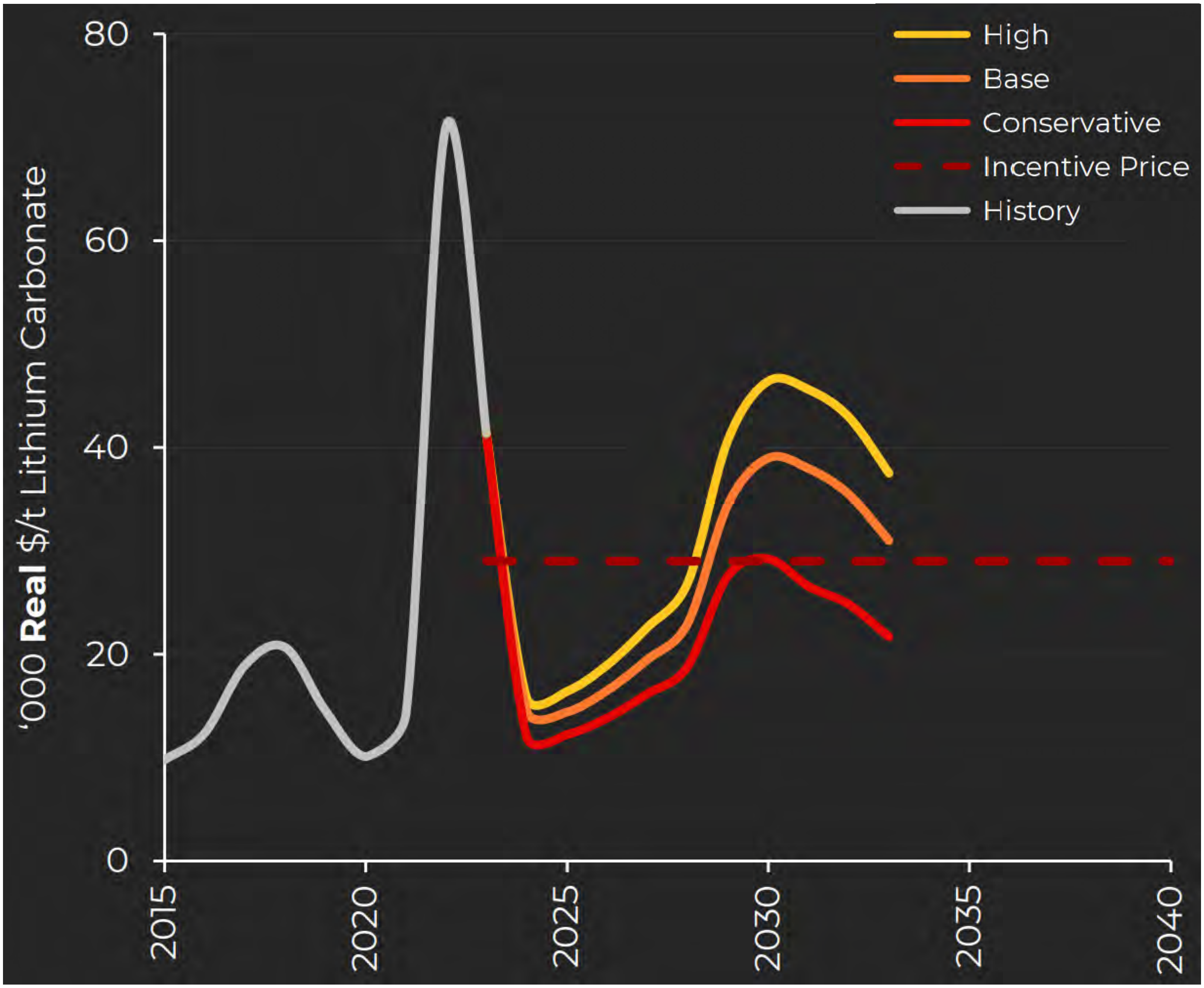
- In Brazil, Sigma Lithium's Grota do Cirilo spodumene mine is expecting permitting to increase its capacity from 240 ktpa to 510 ktpa by the first half of 2024.
- In Zimbabwe, Huayou's Arcadia mine and Sinomine's Bikita expansion have commenced production and are expected to deliver 55 kt.
- In China, mined lithium supply from Chinese mica is expected to increase by over 37% from 2023 to 2024, with Albermarle's Xinyu, Arcadium, and SQM being the main contributors to this production increase.
- In Argentina, three new projects are expected to commence operations this year: Eramet/Tsinshan's DLE Centenario Ratones, Zijin's 3Q, and Argosy's Rincon project. They aim to achieve a combined production of 80 kt in 2024, positioning Argentina as the fourth largest producer.

19.4 Lithium Carbonate Price

The price estimation methodology breaks down the short-term outlook into quarters. Developments are guided by primary price research conducted by Benchmark Minerals analysts to ascertain the current direction of market pricing. Based on analysis of the development of demand over time and understanding the pipeline of new greenfield and brownfield capacity, an assessment can be made regarding the extent of over and under supply in the market and its potential impact on prices. In the long term, there will be an ongoing requirement for new greenfield capacity over the course of the forecast period.

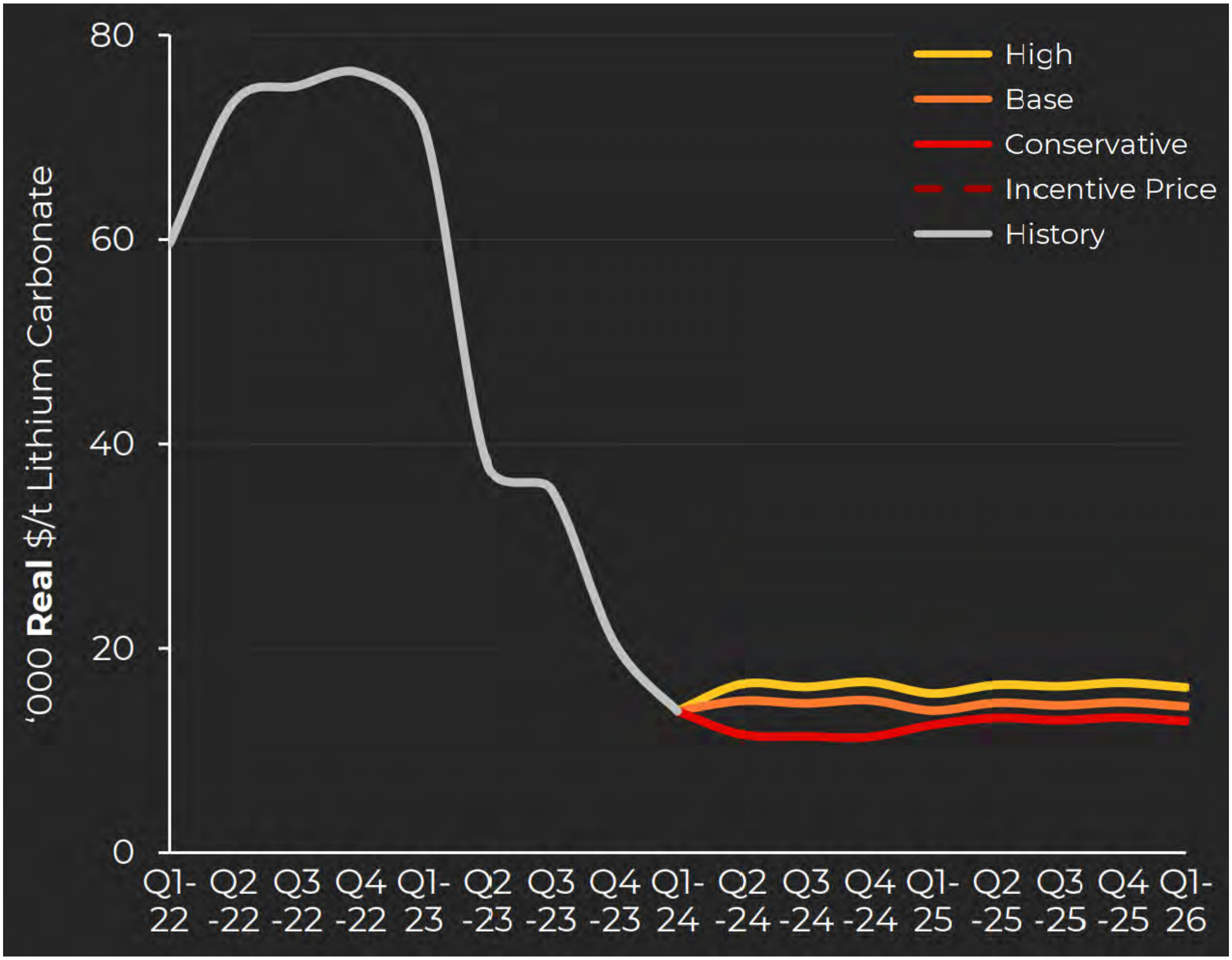
¡Error! No se encuentra el origen de la referencia. and **¡Error! No se encuentra el origen de la referencia.** illustrate the lithium carbonate price. The short-term outlook, reflected in CIF Asia spot price, has been impacted, as expected, by supply ramp-up adequately meeting battery demand, resulting in inventory build-up, and subdued Chinese buying behavior as prices decline. Consequently, prices have dropped from an average of US$20.59/kg in Q4 2023 to US$13.85/kg in Q1 2024.

Figure 19-2: Lithium Carbonate, Annual, High, Base and Conservative Case US$/t, Real 2024 by Forecast Methodology



Source: Benchmark Mineral Intelligence, 2024.

Figure 19-3: Lithium Carbonate, Quarter, High, Base and Conservative Case US$/t, Real 2024 by Forecast Methodology



Source: Benchmark Mineral Intelligence, 2024.

The first quarter of 2024 saw the return of lithium auctions. Pilbara accepted a pre-auction bid of $1,160/t. Sigma and Albermale also held auctions for spodumene concentrate during this quarter.

Prices are expected to remain relatively stable this year, with an average decrease expected from 2024 to 2025 ($14.6/kg and $14.4/kg) due to a projected higher surplus of material.

19.5 Contracts

The company does not have any relevant contracts in place.

19.6 Comments on Market Studies and Contracts

The QP has reviewed these analyses and confirmed that the results support the assumptions in the Technical Report. Commodity prices are subject to volatility, which can lead to deviations from the forecast.

Within the framework of product specification requirements to be sold to the market, battery grade lithium carbonate must meet criteria for moisture, particle size, purity, and low levels of contaminant concentrations. The proposed design addresses the reduction of deleterious elements in battery-grade product. In the first stage, selective lithium adsorption is performed, which significantly reduces contaminating elements (calcium, magnesium and boron). This is followed by a concentration process using high pressure reverse osmosis. Subsequently, the concentrations of the traces is reduced by chemical reagents followed by an ion exchange process to reduce, at trace level, the calcium, magnesium and boron. The increase of these deleterious elements due to mechanical evaporation is again reduced to trace levels by ion exchange. After the contaminant removal stages, a drying and then a micronizing process is carried out to ensure the product's moisture and particle size specifications. Table 19-1 presents the specification requirements battery-grade lithium carbonate.

Table 19-1: Battery-grade Lithium Carbonate Specification Requirements

Parameter	Units	Value
Moisture	%	0.10
Chemical quality		
Lithium carbonate (Li_2CO_3)	%	> 99.5
Ca	ppm	100 - 150
Mg	ppm	70 - 100
B	ppm	< 10
Others	%	0.37 - 0.38
Particle size		
D100	µm	40.0
D50	µm	4.00

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

This section provides an overview of the environmental, social, and permitting context of the Salar de Arizaro Project. It outlines the current environmental baseline conditions, ongoing baseline studies, existing permits, future permitting requirements, and management plans for water, waste disposal and environmental monitoring, along with other relevant environmental matters. Additionally, it addresses socio-economic baseline conditions, the status of community engagement, and mine closure and reclamation planning for the Project.

Environmental information was sourced from environmental baseline studies provided by Lithium Chile through its subsidiary ARLI, as part of the ongoing environmental approvals for both exploration and production phases, and ocassionally complemented with publicly available online data. This information was also summarized in a Preliminary Economic Assessment (PEA) report published in 2023 (Millard et.al.). Since that time, additional environmental impact reports have been developed for the process plant and pipelines areas, including community participation activities further outlined in Sections 20.2 and 20.3.

This Section is structured as follows:

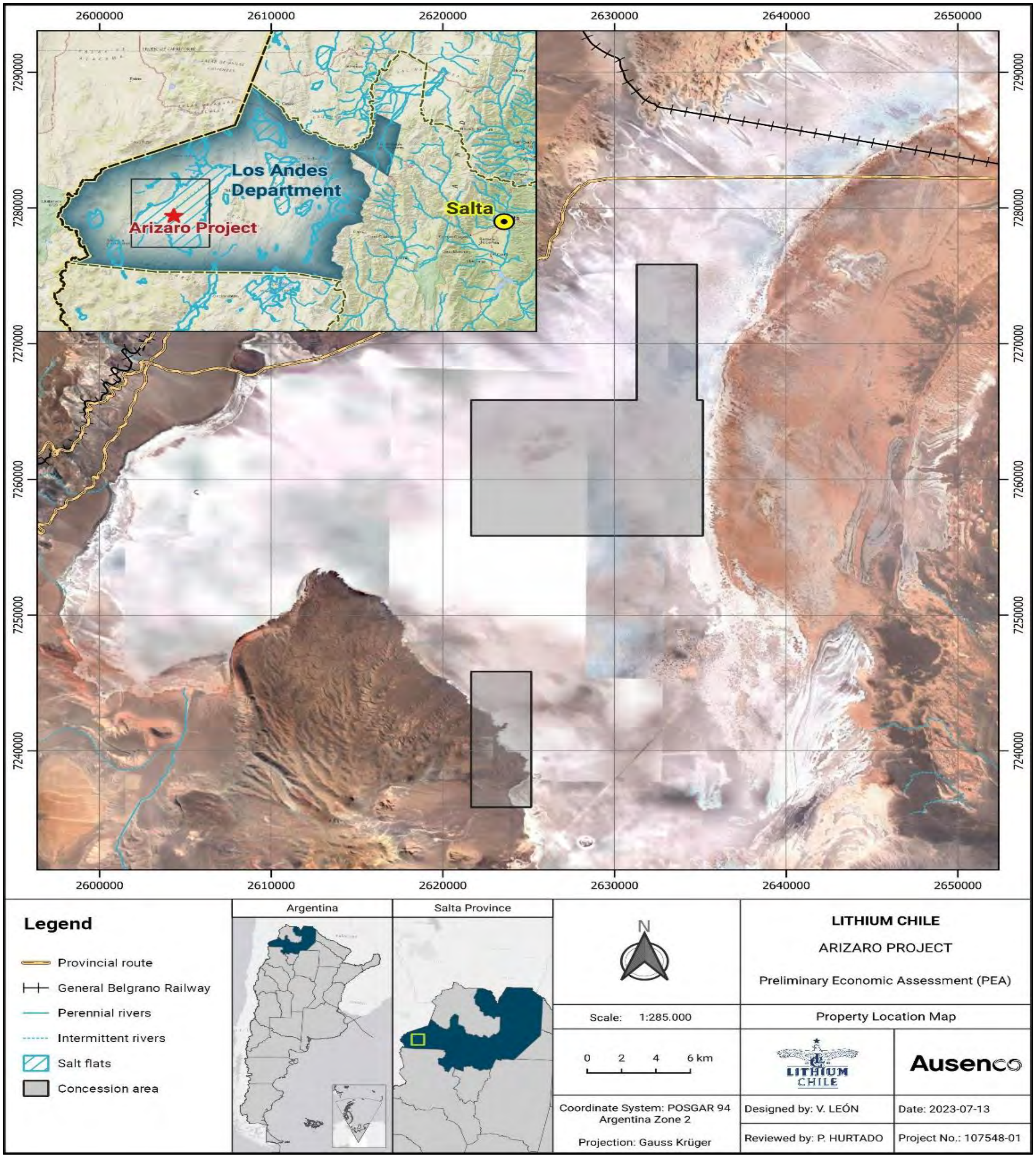
- Environmental considerations: baseline and supporting studies, monitoring, water management and emissions and wastes.
- Permitting Considerations: environmental, mining and other permits.
- Social Considerations: local communities and communication plans.
- Closure and reclamation planning: closure and reclamation plans and costs.

20.1 Environmental Considerations

The Salar de Arizaro Project is located in the Los Andes Department of Salta Province, Argentina (Figure 20-1), at an elevation of approximately 3,475 m asl, at the edge of Arizaro salt flat. This area is located within the Puna ecoregion, which is part of the Andean Mountain Range. The Puna is defined as a highland plateau which can be found in Argentina, Chile and Bolivia, characterized by its salt flats and shallow brackish lagoons, accompanied by low shrub-steppe vegetation. Figure 20-1 shows the Lithium Chile concessions, which extend from the central to the eastern part of the Arizaro salt flat.

The Project is currently executing the exploration phase, with 12 wells exploring the aquifers in the salt flat area to characterize the Salar and search for concentrated lithium areas, but it will soon be advancing to the production phase, for which additional environmental impact studies have been presented. The Argentinian regulation requires that all mining projects and operations submit an EIR every two years including the state of the environmental components, presenting additional information as the project progresses from exploration through to construction and operation phases. The environmental approvals process is further explained and detailed in Section 20.2 but environmental information has been recently updated for the ongoing process of obtining the environmental license for the exploration wells (next EIR to be submitted during 2024) and new EIRs that have been recently presented for the process plant and pipelines which required additional environmental baseline studies.

Figure 20-1: Salar de Arizaro Project Location



Source: Ausenco, 2023.

20.1.1 Baseline and Supporting Studies

Baseline data for the Project have been collected from baseline studies and ocassionally complemented with the review of publicly available information. ARLI presented, in February 2022, an EIR for the exploration and exploitation of the brine wells with environmental information that was bibliographic in nature and consisted of publicly available information to characterize the Project area and its surroundings (Olañeta, M., Jakoniuk, M., 2022). However, ARLI later conducted fieldwork studies to obtain more detailed site-specific information for the subsequent EIRs, to assess environmental impacts and define monitoring activities and mitigation measures to address potential adverse impacts. In December 2023 and February 2024, ARLI submitted for approval additional EIRs for the process plant and for the pipelines and transmission lines easements which included environmental information from fieldwork studies conducted at the Project areas (EC & Asociados, 2023b; Saravia, 2024a; Saravia, 2024b; Saravia, 2024c).

The sections below present the baseline information provided in the aforementioned EIRs, including climate, air quality, noise, surface water and groundwater, flora and vegetation, wildlife, limnology, protected areas, and cultural heritage. For groundwater, the EIRs included information sourced from a recent report completed on groundwater recharge (Conhidro, 2023).

20.1.2 Climate and Meteorology

The baseline study used records from the Salar de Arizaro Project meteorological station from 2010 to 2022, and data provided by the General Belgrano Railroad Compay (FCGB, Ferrocarril General Belgrano), from the Olacapato, Salar de Pocitos, and Unquillal stations from 1950 to 2000, due to the proximity of these stations to the project area. There is no data between 2000 and 2010.

The region's climatic conditions are typical of the Puna ecoregion, featuring a distinctly dry climate with intense solar radiation. Cloud cover is generally zero, with little rainfall. The area experiences intense and frequent winds, along with a high daily thermal amplitude, typical of the local geography. Nighttime temperatures can drop to -10°C, while daytime tempreatures highs can reach up to 30°C. The coldest months of the year are June and July, with temperatures that can plummet to -20°C. On the other hand, December and January record the highest temperatures, measuring up to 30°C.

Most rainfall occurs between November and March, with total annual rainfall averaging 50 mm, consistent with an arid climate, though it can occasionally exceed 100 mm. Relative humidity is typically very low. Statistical data from meteorological stations indicate that almost all precipitation occurs in December, January, February, and March, with January being the wettest month, often recieving 50% of the average annual rainfall. There are exceptionally wet years with records of over 100 mm of average annual precipitation, the highest being 133 mm for the Unquillal meteorological station in 1979. The remainder of the year, from April to September, is marked by a very dry period; however, snowfall events are common from June to August, and hailstorms occur from April to May and September to October. Currently, there are no records available regarding solid precipitation (snow and hail).

Throughout the region, prevailing winds blow from the west, west-northwest, and west-southwest, with winter and early spring (June to October) being the windiest months. The average wind speed is 28 km/h with occasional strong winds gusts above 100 km/h.

20.1.2.1 Air Quality

The air quality baseline information for the project area is provided by air quality monitoring carried out on April 22 and 23, 2023, at two different locations: one at the brine extraction area in the Salar (*Tolar 10*), and the second where the process plant is planned (*Campamento Viejo*, Old Camp).

The purpose for montioring the air quality was to determine the levels of carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_X), lead (Pb), suspended particulate matter (PM10), ozone (O_3), and hydrogen sulfide (H_2S) in the Salar de Arizaro. The results obtained were compared with National Law 24.585 for the Environmental Protection for Mining Activities (Protección Ambiental para la Actividad Minera), which regulates air quality in mining operations. The results did not show any exceedances.

20.1.2.2 Noise

The baseline study included noise readings at five different locations: within the current exploration facilities area (Points R4 and R5), the future facilities area for the process plant, new camp, infiltration pond (Points R2 and R3), and the wells area (Point R1).

The readings took place during daylight hours, between 1.2 m and 1.5 m above ground level and at a minimum distance of 3.5 m from any sound-reflecting structure. The values registered ranged from 42.2 dBA at the brine wells (Point R5) to 64.2 dBA at the process plant (Point R2). Currently, Argentina does not have national or provincial legislation regulating noise generation and limits for permissible noise levels. For this reason, the results obtained were compared with standards for industrial areas from international organizations such as the World Bank (WB) and the US EPA. The analysis shows that the noise is within the limits established by those organizations for industrial or commercial areas.

20.1.2.3 Surface Water and Groundwater

The baseline study indicates that the Salar de Arizaro basin covers an area of approximately 10,630 km^2 (Salar de Arizaro itself covers approximately 2,350 km^2) and contains several sub-basins, including the Chascha sub-basin, located at the southern end of the Salar, which covers an area of approximately 874 km^2. This sub-basin hosts numerous wetland areas.

Salar de Arizaro is an endorheic basin, and the rivers that feed it have a low flow with seasonal runoff fed by melting snow from the surrounding mountains, but mostly from rainfall during the summer. The fluvial layout is adapted to the topography, running in a parallel direction between two different mountain systems. After traveling a short distance on the surface, the water that flows from the mountainous areas returns to the atmosphere by evaporation, given the high temperature prevailing during the day and the low relative humidity of the air; or it quickly enters the subsoil, undergoing rapid infiltration into the plentiful alluvial accumulations that occupy the foothill areas, given their high permeability (Conhidro, 2023). In the summer, water inflow is often torrential, producing flooded conditions along the riverbeds. These floods typically occur suddenly with the onset of rainfall and quickly diminish shortly after it ends.

A water sample was collected from the project's area of influence in the Chascha wetland area during a sampling campaign carried out on April 22 and 23, 2023. ARLI has reported that seven (7) additional samples were collected in September 2023 at Cavi and Antofallita wetlands (points M01, M02, M03, M07, M08, M10, M12). The location of these sampling points and results were not avaiable at the time of this report. Water from the Chascha wetland was tested for ph, DO, TDS and a comprehensive suite of metals and the results were compared with National Law 24.585 Environmental Protection for Mining Activities (Protección Ambiental para la Actividad Minera), which establishes a series of threshold parameters for the protection of aquatic life in surface saline waters in mining operations. Monitoring results are below the Maximum Permissible Limits for most parameters, with the exception of arsenic, boron, and copper. These exceedances are assummed to be of natural origin due to the mineral-rich nature of the soil through which surface water drains and accumulatesFuture sampling plans will include monitoring on Arita, Cavi and Antofallita wetlands.

Section 7.2 of this report presents a discription of the geology and hydrogeology of the Lithium Chile's mine concessions located in the Salar de Arizaro. Section 7.3 provides a conceptual water balance model for this same area. Section 18.6 provides information on the proposed fresh water supply and management for the site. A summary of this information on fresh water supply is provided below.

Regarding groundwater, the 2022 and 2023 EIRs presented preliminary bibliographic information about hydrogeology units in the Salar de Arizaro area, but later ARLI conducted additional hydrogeological studes to characterize the Chascha aquifer system, which is the planned location for the water supply. The first one, in May 2022 (Conhidro, 2022), conducted geoelectric prospecting to try to identify sedimentary facies that allow the storage and circulation of groundwater. The second one, in June 2023 (Conhidro, 2023), conducted additional geoelectrical testing to chacterize the aquifer system and estimate recharge rates. Additional information from other nearby projects (Amaru Mining Services, 2022; Ausenco, 2024) has been also used to characterize the aquifer systems of Chascha, Arita, Cori and Tolar, which are sub-basins located around Salar de Arizaro. Figure 20-2 shows the location of these aquifer systems. Currently, a groundwater exploration plan is in execution, consisting of 12 wells to be drilled in the southern part of the Arizaro basin (Argentum Lithium, 2024) to further identify hydrogeological units and their extension, as well as improving the recharge estimation. This plan comprises 12 wells: three (3) wells in the Arita sub-basin (Arita-01 to Arita-03), seven (7) wells in the Chascha sub-basin (Chascha-02 to Chascha-08), one (1) well in the Cori sub-basin (Cori-01), and one (1) well in the Tolar sub-basin (Tolar_01). The location of this wells is also shown in Figure 20-2. Regarding information from other nearby projects, Lithium Chile provided information (Ausenco, 2024) for wells named Lindero, Emboscadero, Mansfield, Pozo Taca Taca, HANAQ and EGEO (from companies Mansfield, Hanacolla S.A., and EGEO S.A.) shown in Figure 20-2, which are located around Chasch wetland and the location for the process plant.

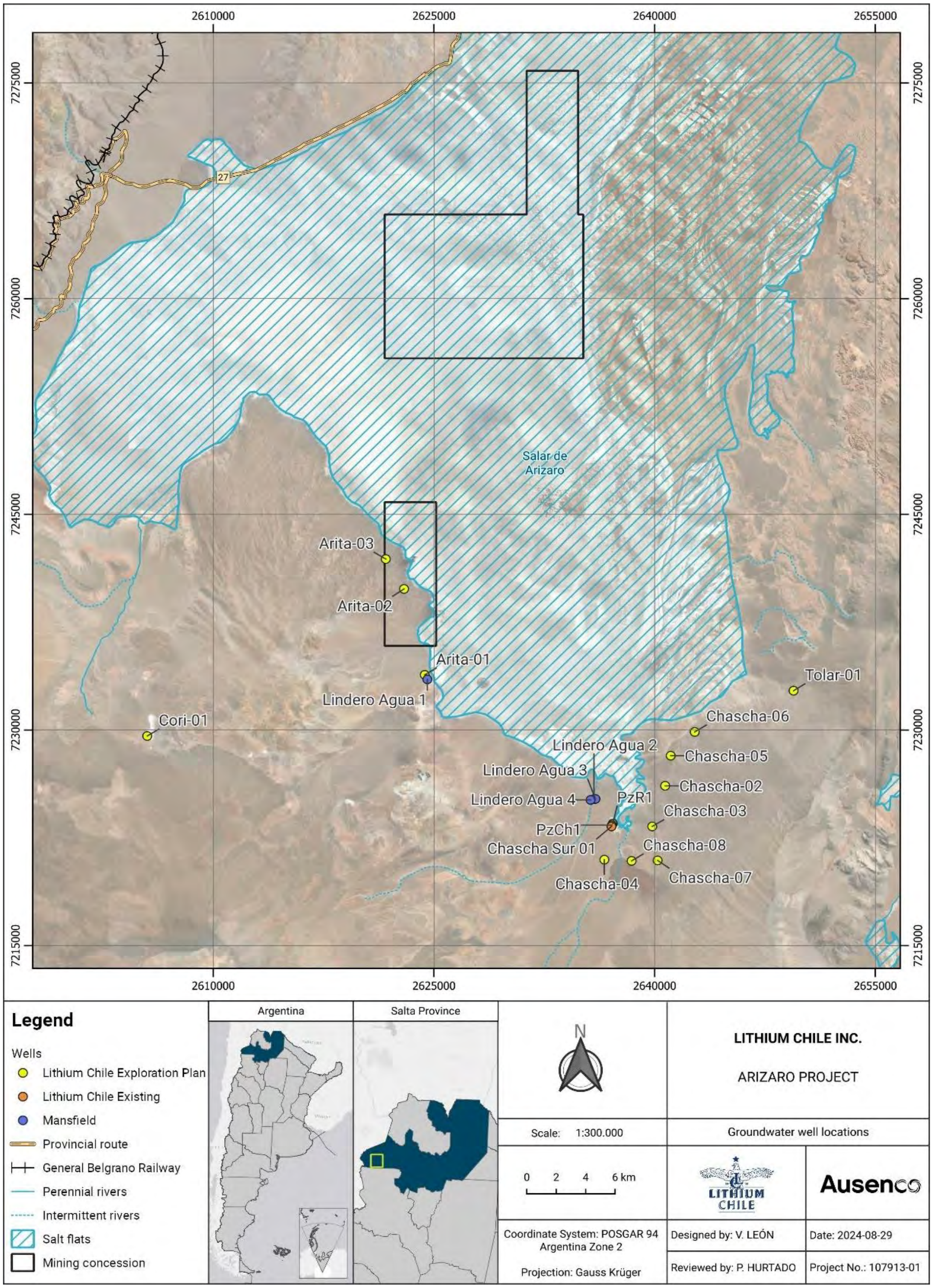
The Chascha aquifer system is located on the southern end of the salt flat and is where the freshwter extraction wells are located. The characterization of this aquifer system is based on the information collected from six groundwter wells, shown in Figure 20-2: one (1) Lithium Chile well (Chascha Sur 01, depth of 122 m) located at the Chascha wetland area, three (3) wells from another nearby mining project located aproximately 2.2 km northwest of Chascha Sur 01 (Lindero Agua 2, 3 and 4) and two (2) piezometers (PzCh1 and PzR1) installed as part of the 2023 hydrogeological study (Conhidro, 2023) as observation wells. Data from these wells indicate that the water table depth is between 4 m (at PzR1) and 10.7 m (at Lindero Agua 4) and the estimated aquifer thicknes is around 100 m, but Chascha Sur 01 is an artesian well, which indicates that it crosses at least one confined zone. PzR1 and PzCh1 piezometer wells located at 150 m from well Chascha Sur 01 are not artesian wells. This suggests that the confined sections are at a greater depth and/or that there may be a partial disconnection between lower confined aquifers and the shallower unconfined aquifers.

Based on pumping tests, feasible water extraction is estimated at rates between 6 m^3/h and 79 m^3/h for Chascha Sur 01 well, considering drawdowns of 3 m and 40 m, respectively. The estimated recharge for this aquifer is between 3.9 hm^3/y (445 m^3/h) and 7,1 hm^3/y (810 m^3/h), depending on the precipitation.

Regarding water chemistry, groundwter data is available from five wells: Chascha Sur 01 and piezometers PzR1 and PzCH1 in October 2022, Lindero Agua 1 and Lindero Agua 2 between April and June 2011. Water from Chascha Sur 01 and Lindero Agua 2 within the Chascha Sur sub-basin show low turbidity and salt concentrations. In contrast, water from Lindero Agua 1 within the Arita sub-basin is turbid and highly saline. Given the location of this well very close to the salar border, the water chemistry is considered consistent with the brackish mixing zone of the Salar.

Salar de Arizaro aquifer system is the least known, but it is estimated that the aquifer thicknes could be of up to 500 m. The chemical characteristic of the brines, especially those related to lithium and potassium anomalies, are unknown but it is estimated that salinity could reach 230,000 µS/cm. The 2023 and 2024 EIRs did not provide any additional information for the underground water system.

Figure 20-2: Groundwater Well Locations



Source: Ausenco, 2024.

20.1.2.4 Flora and Vegetation

As indicated previously, the Project is located in the Puna ecoregion. However, in Los Andes Department, there is also the High Andean ecoregion, which covers the Project surrounding areas. In both ecoregions the vegetation is scarce and develops in separated patches rather than widespread areas, leaving large areas of bare ground. However, these vegetated spaces are of relevance as they serve as a food source for many wildlife species and are therefore the basis of the Puna ecosystem.

The Puna ecoregion covers most of the study area and is present between 3,400 and 4,400 m asl, although in many areas it is limited to elevations below 3,900 m asl altitude, at which there is often a gradual transition and coexistence of floristic elements with the high Andean Ecoregion. Vast unvegetated mountainous sectors with extreme aridity can also be distinguished and vegetation cover is limited, rarely over 20 or 30%. The absence of vegetation in alluvial cones and low slopes is thought to be associated with the action of burrowing rodents that feed mainly on roots. The dominant vegetation is the shrub steppe. In the Project area, the typical vegetation includes *Acantholippia punensis Botta* (“rica rica”), *Adesmia horridiuscula* (“añagua”); *Atriplex microphylla* (“cachiyuyo”), *Baccharis incarum* (“lejía”), and *Artemisia copa* (“copa copa”). The locals use many of these species for their medicinal properties and for use as firewood.

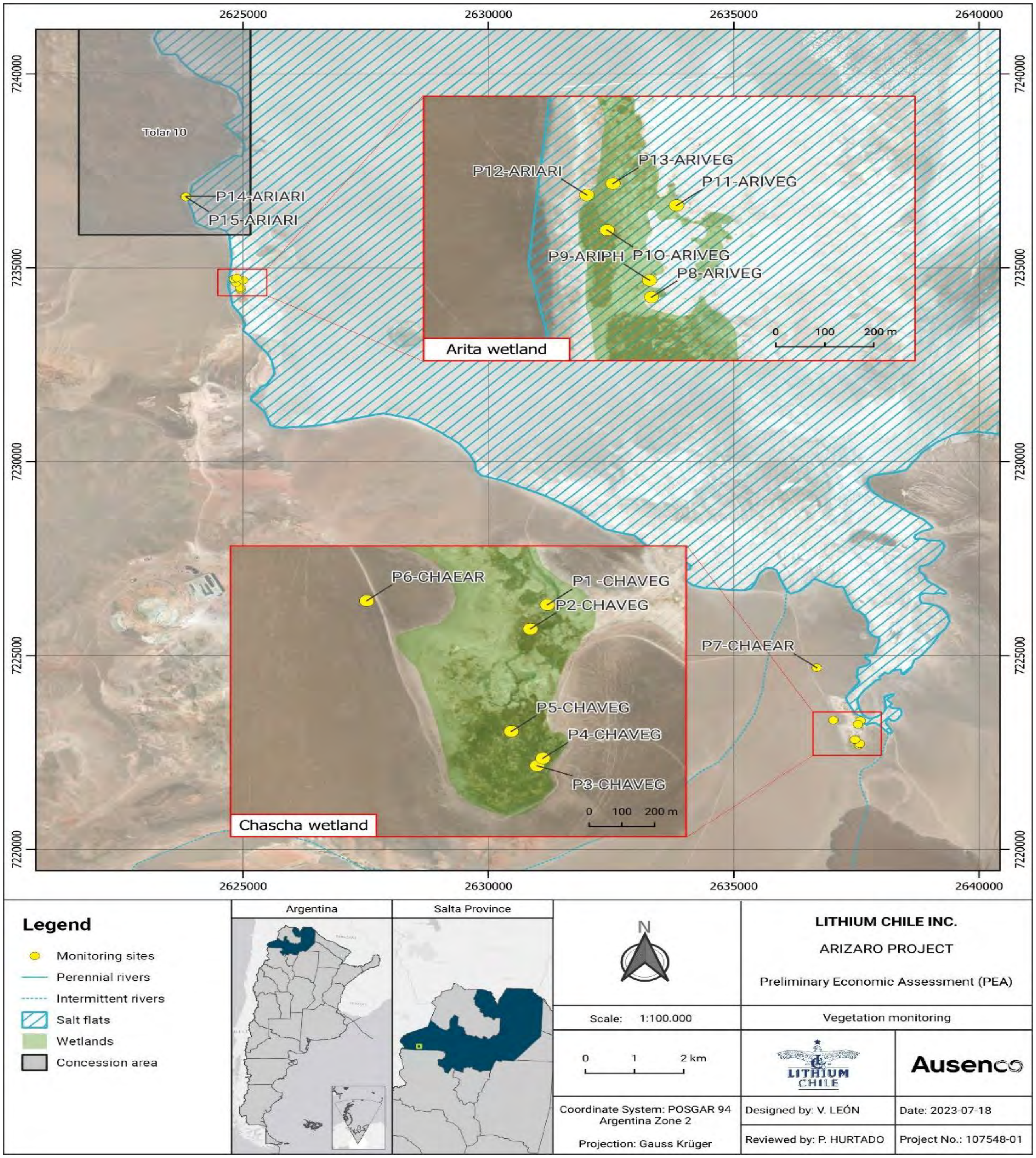
On the other hand, the High Andean ecoregion occupies the highest elevation zones, above 4,400 m asl. In this zone, vegetation cover is usually between 5 or 10%, with green meadows occurring in depressions where water accumulates, resulting in a thin layer of water-saturated soil. The dominant vegetation in these areas consists of herbaceous or grassy steppe like *Festuca orthophylla*, *Festuca chrysophylla*, and *Poa gymnantha*, which are sometimes associated with woody plants such as *Baccharis incarum*, *Senecio punae*, *Adesmia patancana* (“cuernos de cabra”), *Azorella compacta* (“yareta”), and *Parastrephia quadrangularis*. Circular or crescent-shaped thickets, plants in cushions or plates attached to the ground are frequently observed and are related to factors such as the accumulation of sediments or the effect of snow. All these plants are highly adapted to the extreme conditions and are resistant to cold and wind.

Field studies were conducted in February and April 2023 (EC & Asociados, 2023b; Saravia, 2024a; Saravia, 2024b; Saravia, 2024c), with the objective of describing and quantifying flora in the project area and its surroundings, divided between zonal and azonal vegetation. Zonal vegetation is mostly associated with shrub steppe with approximately 90% of the surface being uncovered soil. Most of the vegetation develops in two specific areas that represent azonal sectors of high Andean wetlands. The first one is Vega Arita, located in the southwestern region of the Salar de Arizaro, within the project concession area. The second is the Vega Chascha, located in the southern sector of the Salar, which is not within the project concession area, but was characterized as an area indirectly influenced by the project activities. Survey locations are shown in Figure 20-3.

A total of 17 plant species, distributed within 12 families, were recorded on the project properties. Among the 12 families recorded, Poaceae was the best represented, with five species, followed by Juncacacea, represented by two species. The rest of the families were only represented by one species. Consistent with the importance of azonal vegetation, of the 17 species, only four correspond to zonal vegetation, while the rest correspond to azonal vegetation.

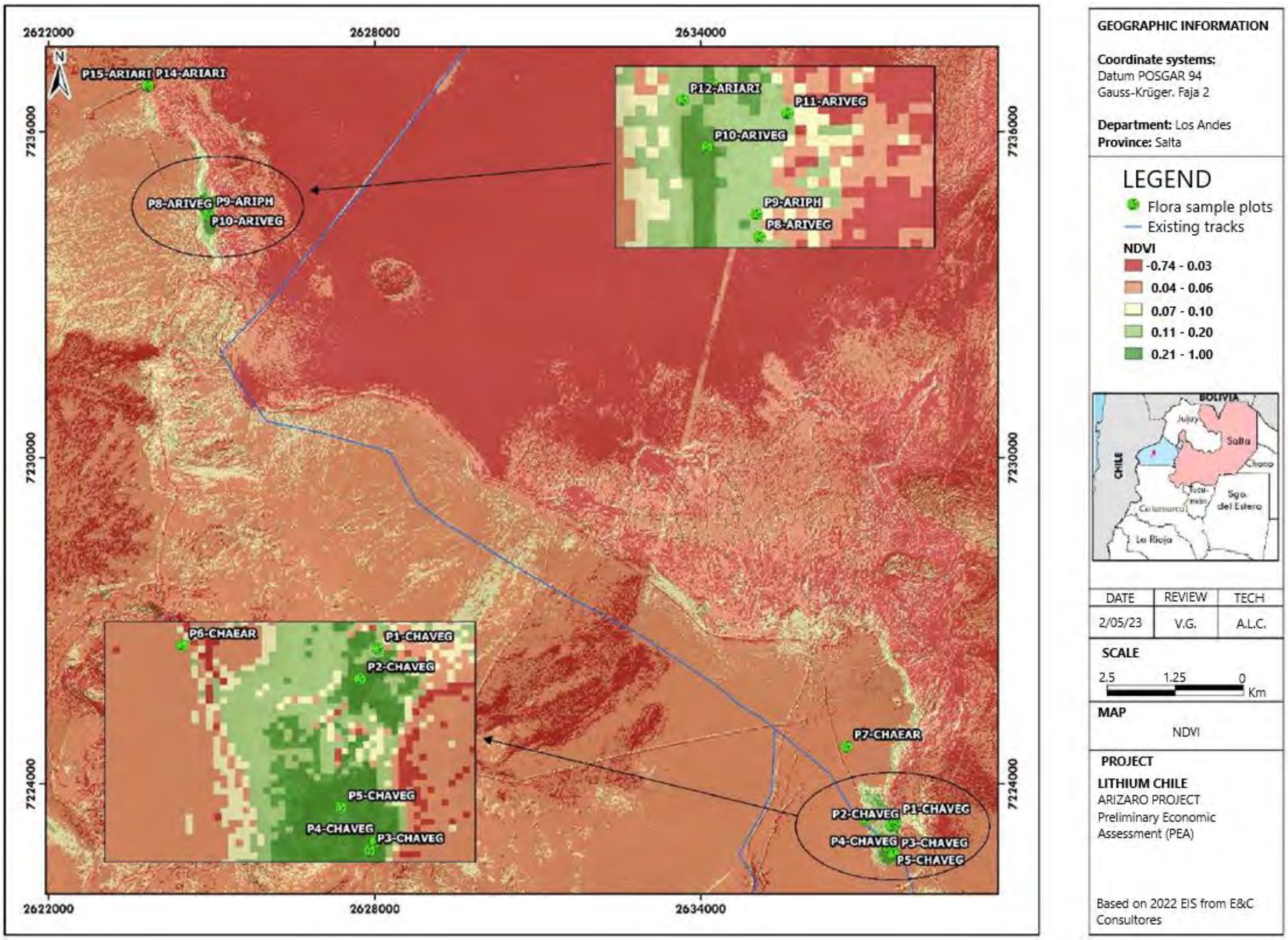
The Normalized Difference Vegetation Index (NDVI) map is shown in Figure 20-4. All observations were made within the study area except for one record of the Cactaceae family, *Mahueniopsis glomerata*, which was visually identified outside of the area. This species is the only one recorded having a conservation status according to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Figure 20-3: Sample Plots for Flora and Vegetation



Source: Ausenco, 2023, based on data provided by Argentum Lithium, 2023.

Figure 20-4: NDVI Map with The Location of Vegetation Plots in The Project Area



Source: Argentum Lithium, 2023.

20.1.2.5 Wildlife

The Puna and High Andean ecoregions are characterized by a low diversity of wildlife species; however, the ones found in this region are adapted to extreme climatic conditions, such as dry and cold climate, large temperature variations between day and night, frosts, high solar radiation, low rainfall and high evaporation. The Puna region has a high biological value given that the number of endemic species and the low productivity of the environment is a limiting factor for some groups, such as mammals, making them more vulnerable.

Field surveys were conducted in November 2022 for the exploration wells EIR (EC & Asociados, 2023a)and later in January 2023 for the process plant EIR (EC & Asociados, 2023b). These visits covered 32 survey points within the Project area and sorrounding wetlands (Arita, Chascha, Cavi and Antofallita), paying particular attention to the plain areas and their immediate surroundings and the associated slopes, where fauna is concentrated. Monitoring locations for wildlife are shown in Figure 20-5. Species were registered by means of direct observation and indirect evidence (such as footprints and feces) but no complementary sampling activities such as trapping (Shermann live-capture traps for micromammals) or digital camera traps for macro-vertebrates were carried out.

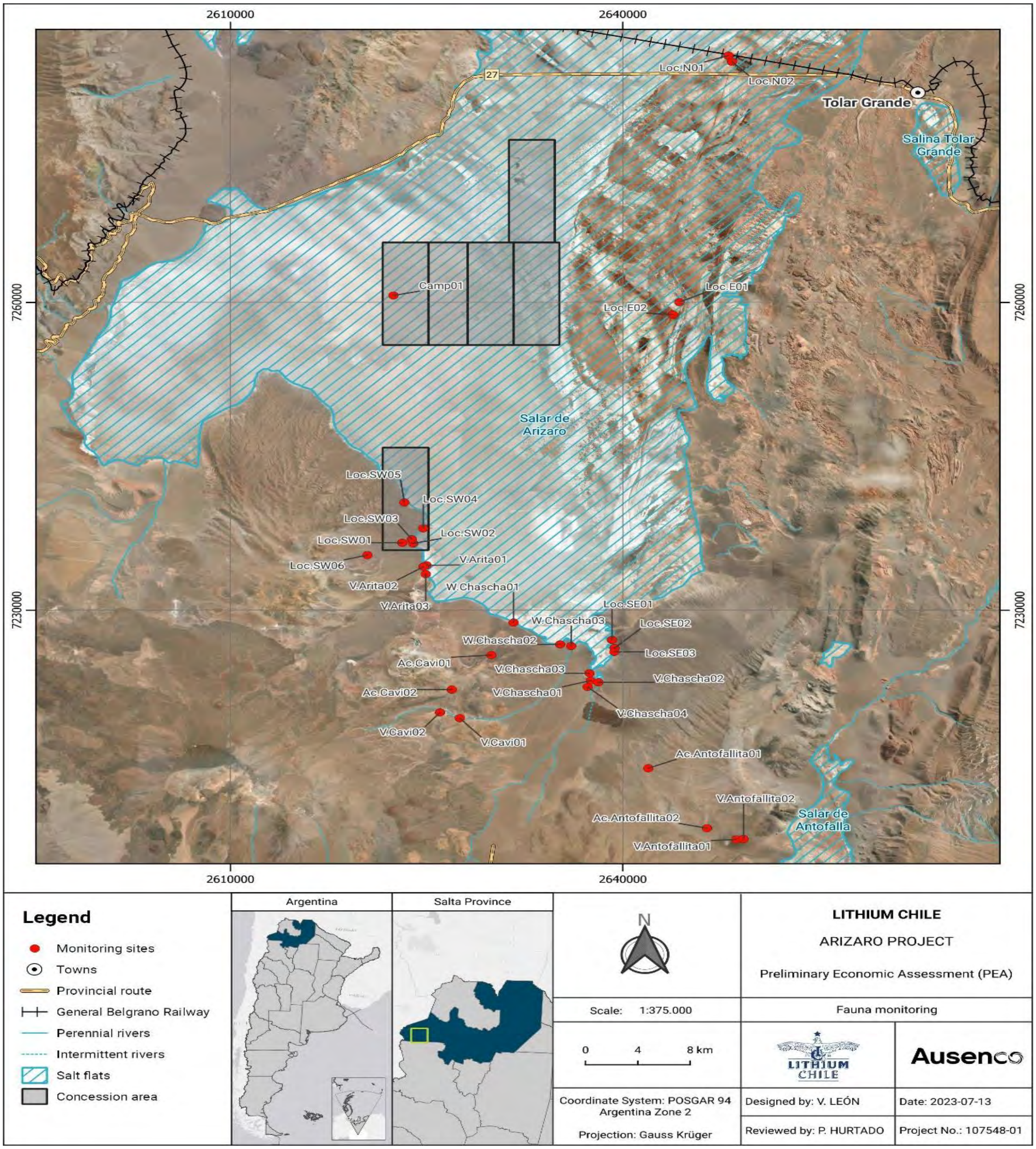
In general, animals observed in November 2022 and January 2023 in the project area were vicuñas, guanacos, Andean mice, foxes, falcons, flamingos, goldfinches and ducks. In total, 13 species of mammals (8 of them native), 41 species of birds, two species of reptiles, one specie of amphibians and 10 species of invertebrates were registered. Of these, endangered species included in a conservation category are shown in Table 20-1. To these, an additional species has been added based (*Vultur gryphus*) based on the results of previous field survey conducted in 2020.

Table 20-1: Wildlife Endangered Species in The Project Area

Class	Species	Conservation Category	Common Name	
			Spanish	English
Mammal	*Oreailurus jacobita*	Endangered	Gato andino	Andean mountain cat
Mammal	*Lynchailurus pajero*	Vulnerable	Gato del Pajonal	Pampas cat
Mammal	*Puma concolor*	Potentially vulnerable	Puma	Cougar
Mammal	*Chinchilla chinchilla*	Endangered	Chinchilla	Short-tailed chinchilla
Mammal	*Lagidium viscacia*	Vulnerable	Vizcacha de la sierra	Southern viscacha
Mammal	*Lycalopex culpaeus*	Potentially vulnerable	Zorro culpeo	Culpeo fox
Mammal	*Vicugna vicugna*	Conservation Dependent	Vicuña	Vicuñas
Birds	*Pterocnemia tarapacensis*	Threatened	Ñandú de la puna	Ñandu of the Puna
Birds	*Phoenicoparrus andinus*	Endangered	Flamenco andino	Andean flamingo
Birds	*Chloephaga melanoptera*	Vulnerable	Cauquén	Andean goose
Birds	*Phrygilus dorsalis*	Vulnerable	Comesebo puneño	Red-backed sierra finch
Birds	*Vultur gryphus*	Vulnerable	Cóndor andino	Andean condor
Reptile	*Liolaemus cazianae*	Vulnerable	Lagartija Tolareña	Toraleña Lizard
Reptile	*Liolaemus halonastes*	Vulnerable	Lagartija del Arizaro	Arizaro Lizard

Source: Argentum Lithium, 2023.

Figure 20-5: Monitoring Locations for Wildlife



Source: Ausenco, 2024, based on data provided by Argentum Lithium, 2023.

20.1.2.6 Limnology

The auquatic biota of the Puna and High Andean ecoregions is typically adapted to extremely arid conditions and is highly endemic, so in these environments one usually finds unique flora and fauna. These species are adapted to the temperature fluctuations and many of them are found in a state of latency in the form of cysts (crustaceans, for example), therefore, considerable differences in richness and abundance throughout the year can be found.

Fieldwork for the limnology baseline study involved monitoring and collecting samples from three aquatic environments in the Chascha wetland (south end of Arizaro saltflat) and was carried out on December 03, 2022, and February 24, 2023. The first site is shallow, medium-velocity, low-salinity, low-water stream with sandy sediment, the second site is a lentic aquatic environment of shallow depth with sandy-muddy sediment and clear waters The third location is a low-flow, medium-velocity, shallow stream with clear water and sandy sediment. All three sites exhibited abundant riparian grassland vegetation.

The following physicochemical parameters were measured: dissolved oxygen (ppm), pH, conductivity (µS/cm), water and ambient temperature (°C), and depth (cm). In addition, hydrological parameters were measured, such as estimated water velocity and channel width, which influence the structure and diversity of the biota of the site. Monitoring included collecting samples of macroinvertebrates, zooplankton, phytoplankton, and phytobenthos.

Water quality results in the Chascha Sur wetland exhibited changes between the 2022 and 2023 parameters due to the change of season between surveys. The December 2022 limnological monitoring was carried out towards the end of the spring season, a season characterized by drought and increased temperatures, hence, the environment was under conditions of reduced water flow and velocity. This condition accentuates the parameters assessed in saline and high conductivity environments; only highly tolerant species can colonize these habitats. On the other hand, the February 2023 monitoring was carried out during the summer season; the environment was under conditions of increased precipitation and sediment in the channels, changing the characteristics of the water in the valley.

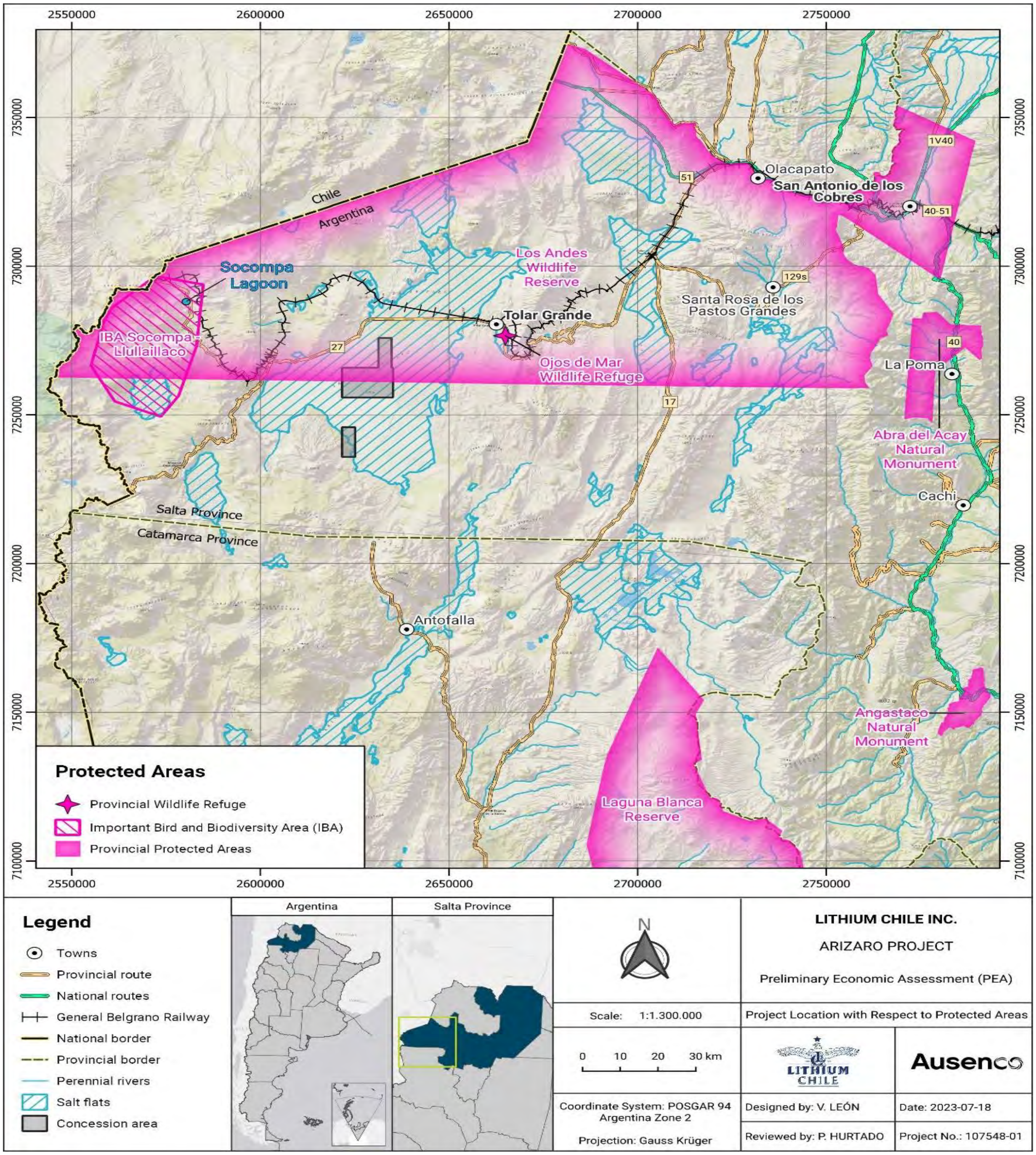
Macroinvertebrate samples recorded a total of 14 species in the December 2022 survey. The most abundant taxon was the *Ostracoda*, recognized crustacean inhabitants of the benthos, followed in abundance by the *Hyalellidae* and the *Chironomidae*. During the February 2023 survey, 16 species were recorded, maintaining the same abundance as the December survey. No zooplankton taxa were recorded.

The phytoplankton community is poorly developed in high-altitude lotic environments (rivers, streams). The February 2023 survey identified fewer *phytoplankton* species as compared to the December 2022 survey. The most representative species are *Cyanophytas Merismopedia* sp., *Chlamydomonas* sp*., Ulnaria* aff., and C*hrooccocus minutus*. Concerning *phytobenthos*, more than 50% of the species identified were *diatoms*, species that are successful in colonizing in the sediments of the benthic zone, which directly receive the light that passes through the shallow depth of the water column.

20.1.2.7 Protected Areas

Since 2000, Los Andes Department has a Provincial System of Protected Areas to support the preservation of flora and fauna and other environmental elements. The closest areas to the Salar de Arizaro Project are Los Andes Natural Wildlife Reserve, which overlaps with the northern portion of the concession area, “Ojos de Mar de Tolar Grande” Provincial Wildlife Refuge, the Socompa Lagoon Provincial Wildlife Refuge and the Socompa-Llullallaico Important Bird and Biodiversity Area (IBA). The location of these protected areas is shown in Figure 20-6. Additionally, vicuñas have been declared as a protected species in Los Andes and other departments where hunting and possession of vicuñas is prohibited, as well as the commercialization and industrialization of their products and by-products.

Figure 20-6: Protected Areas Closest to Arizaro Project



Source: Ausenco, 2024.

Los Andes Natural Wildlife Reserve, created by Provincial Decree No. 308 of 1980 of Salta Province, is located west of the provincial territory and occupies the entire northern section of the Los Andes Department. It has an area of 1,440,000 Ha and its objectives are to preserve local wild fauna (especially vicuña), conserve flora and soil resources, and to study and apply development techniques and rational use of these natural resources so as to maintain the proper functioning of key ecosystems. This is particularly in relation to salt flats and high Andean wetlands, as well as preserving the cultural and historical heritage and the development of important economic activities for the province of Salta, such as sustainable tourism, responsible mining, and local livestock and agriculture which are used as sources of income for the local communities.

Ojos de Mar de Tolar Grande Provincial Wildlife Refuge is located near Tolar Grande, 44 km from the project area, and corresponds to salted lagoons with small water mirrors. Laguna Socompa Provincial Wildlife Refuge is located 52 km from the project area and comprises a small lake at the foot of the Socompa volcano, covering an area of about 200 Ha (a view of Socompa Lagoon in Figure 20-8). Both areas have important lagoons, which host rare high-elevation (4,000 m asl) stromatolites and have similar specific objectives. The primary purpose is the conservation of stromatolites, mainly because of rarity and scientific value. Among the conservation objectives for fauna species, James's flamingo (*Phoenicoparrus Jamesi*) and the Andean flamingo (*P. andinus*) are highlighted. In addition, the Socompa Lagoon is identified as a high Andean wetland, and is considered a highly fragile environment. This lagoon has a high conservation value due to its significant biodiversity and its important environmental processes, such as concentrating water in desert environments.

Figure 20-7: Lagoons in Ojos de Mar de Tolar Grande Provincial Wildlife Refuge

Source: Argentum Lithium, 2022.

Figure 20-8: Socompa Lagoon

Source: Argentum Lithium, 2023.

20.1.2.8 Landscape

Landscape is analyzed through the concept of visual quality, to avoid the inherent subjectivity that exists in the perception and assessment of landscape by an observer. Visual quality considers components such as relief, hydrography, vegetation, land use and artificial elements. In the case of the Argentinian Puna, it is characterized by being a very arid plateau crossed by numerous mountain ranges and volcanoes aligned in a north-south direction, of variable heights that enclose and define extensive depressions, many of them occupied by salt flats.

The landscape of the Salar de Arizaro and its surroundings is typical of the Puna region, with a dry climate, little or no vegetation or bare, and multi-colored hills. It also exhibits gentle mountain ranges due to weathering phenomena, with the newest volcanic strata standing out as rugged reliefs, with well-defined profiles that contrast with wide, flat valleys that contain the salt flats. The snow-capped peaks that exceed 6,000 m asl appear as elevated and distant figures on the horizon. Absent is the green color of the vegetation; only relics or isolated patches, distant from each other, appear in the wetland areas. The current landscape presents a high scenic diversity, very unique and little human intervention.

The Project is located in the center-south of the Salar de Arizaro, where two zones are distinguishable: the mountainous zone and the plain zone. The mountainous zone is made up of high peaks, volcanoes, mountain ranges, hills and ravine areas. The Arita cone, located at the southern end of the Salar de Arizaro, stands out because it is an isolated elevation in the middle of the salt flat, surrounded by the white and flat surface of the salt deposit. On the other hand, the plain zone is characterized by depressions such as salt flats, alluvial fans, wetlands and streams. In this zone, the high Andean wetlands stand out, such Arita and Chascha, which are fragile, scarce ecosystems, with a relevant endemism and scenic beauty.

The visual quality of the landscape at the Arizaro Project area varies from High to Regular - Low, with a predominance of the Medium to Regular - Low range.

The mountainous areas and ravines associated with the presence of azonal vegetation (wetlands), drainage networks and slopes are elements that provide a higher visual quality to the landscape. Lower visual quality corresponds to the plain sectors associated with salt flats and alluvial fans, zonal vegetation, the edges of salt flats and shrub steppe, without the presence of singular elements of the landscape. The mining properties of the Arizaro Project are concentrated mostly within the regular or lower visual quality, corresponding to the salt flat and alluvial fan sectors, with little evident contrasts of landscape features.

20.1.2.9 Cultural Heritage

Tolar Grande has two anthropological heritage sites: C-14 Branch Railway Project (Proyecto Ferroviario Ramal C-14) and Cave Houses ("Casas Cuevas"). The C-14 Branch Railway is one of the most important railway engineering works carried out in the 20th century in Argentina, which is currently closed but in a good state of conservation and holds substantial historical significance due to its political, social, and economic impact on the Puna Region. Currently, portions of the railway section are now part of the Argentine Industrial Heritage (Patrimonio Industrial Argentino) program, which aims to identify, protect, and disseminate cultural heritage. In recent years, the National Commission of Monuments, Places, and Historical Assets (Comisión Nacional de Monumentos, Lugares y Bienes Históricos), dependent on the National Government, has launched a project to declare the C-14 Branch Railway a National Historical Monument.

The C-14 Branch Railway Project features seven train stations near the project area. The most important and well-preserved is the Tolar Grande station, which includes a train station, a stone and mudbrick house, and a workshop for train repair and maintainance that is still in operation. The remaining stations are: Taca Taca, Vega de Arizaro, Caipe, Chuculaqui, Quebrada del Agua, and Socompa, which are abandoned, and their associated towns are now uninhabited. These stations also hold significant historical value.

The Cave Houses ("Casas Cuevas") were originally part of a working-class neighborhood established during the region's railroad and mining development (Figure 20-9). These "houses" are structures that take advantage of the site's ecological and protective features, as their design makes them resistant to strong storms, preventing them from being blown away or overturned. Their earth-covered roofs blend in seamlessly with the natural surroundings, protecting the landscape. Currently, the cave houses are preserved by the Tolar Grande municipality as part of the town's architectural heritage and constitute an important tourist attraction. At night, they are illuminated at the base of Cerro de la Cruz, where the community gathers for Holy Week celebrations.

Figure 20-9: Cave Houses in Tolar Grande

Source: Areal, R., 2019. Areal, R. (2019). ¿Puede un pueblo desaparecer del mapa? LATE online magazine. https://www.revistalate.net/2019/02/22/tolar-grande-mas-aca-de-la-frontera/.

As for archaeological sites, four rock structures and one abandoned herding station (called "*puesto*" in Spanish) were registered during fieldwork close to the project areas (EC & Asociados, 2023a; EC & Asociados, 2023b). Figure 20-10 shows the archaeological sites found close to the Project area and Figure 20-11 show the location of these findings, one of which is located inside the southern portion of the project property.

The rock structures are of two types: two simple structures (Parz1 and Parz2) and two more complex rock structures (Marz1 and Marz2) located at the process plant surrounding area, except for Parz2 which is located at Chascha Sur, closer to the extraction wells. The simple structures (Parz1 and Parz2; Figure 20-10 (a) and (b)) could be related to hunter-gatherer groups to demarcate the space and provide a safe location to observe and hunt. These structures are mainly associated with the edges of the wetlands, high riverbed terraces, and ravines. The more complex rock structures (Marz1 and Marz2; Figure 20-10 (c) and (d)) may have marked strategic points in the area. These "marks" could have guided the movements of the groups that traveled through the region.

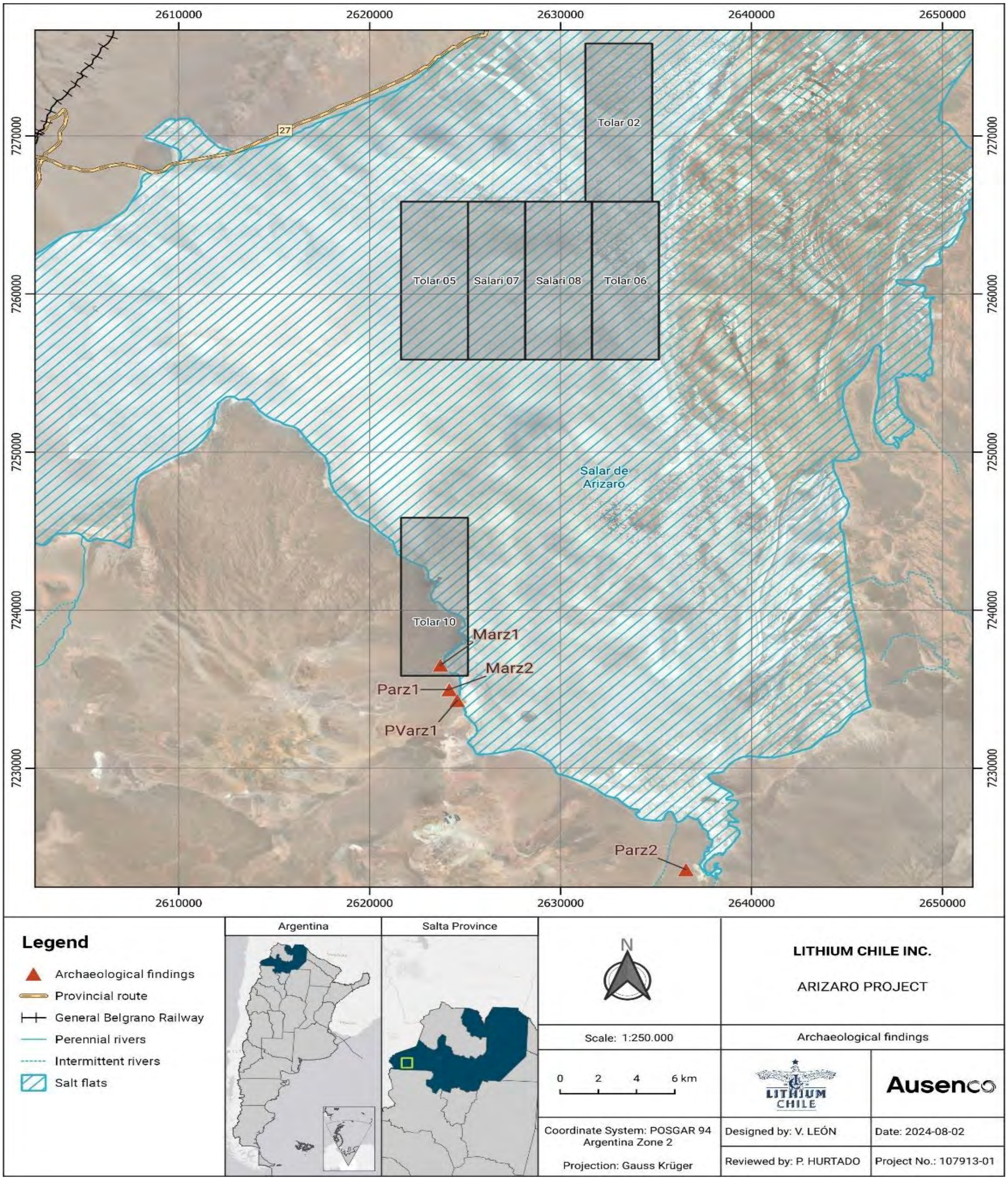
The abandoned herding station (PVarz1) is a residential structure made up of two adjoining rooms, built with stacked rocks and mortar and galvanized sheets held together with large stone blocks were used for the roof Figure 20-10 (e)). Attached to the house is a rectangular structure resembling a corral, made up of simple stone walls also with mortar between the rocks Figure 20-10 (f)).

Figure 20-10: Archaeological Sites

(a) Parz1
(b) Parz2
(c) Marz1
(d) Marz2
(e) PVarz1 (house)
(f) PVarz1 (corral)

Source: Argentum Lithium, 2023.

Figure 20-11: Location of Archaeological Sites



Source: Ausenco, 2024.

20.1.3 Environmental Monitoring

Potential environmental risks and impacts from the exploration and operation phases of the Salar de Arizaro Project were assessed in each EIR, resulting in the development of environmental mitigation and/or management measures to manage against potential environmental effects and establish monitoring activities to assess effectiveness of controls. The most relevant impact of the Project is the potential effect on the vegetation and wildlife habitats that could be caused by the modification of surface runoff and a lowering of the groundwater table levels, in particular at wetland areas. Table 20-2 lists these and other impacts assessed at this stage, the associated mitigation measure and monitoring activities commited by Lithium Chile through its subsiadiary ARLI as part of the permitting processes. At the time of this report, monitoring data related to potential Project impacts for the exploration phase of the Project were not available for review.

Table 20-2: Project Mitigation Measures and Monitoring Activities

Project Impact	Management Measures	Monitoring Activities
Air quality impacts due to combustion gases and particulate matter emissions	• Minimizing areas of intervention and earthworks. • Watering of roads and work areas to reduce dust emissions. • Scheduled preventive maintenance for all vehicles and machinery.	• Annual monitoring for air quality during the construction phase for CO, SO_2, NO_2, Pb, PM10, O_3 and H_2S at the same 2 baseline locations: Tolar 10 and Campamento Viejo. • No monitoring was committed during operation phase.
Noise generation during construction activities	• Scheduled preventive maintenance for all vehicles and machinery.	• Monthly monitoring of noise emissions at the same 5 baseline locations: R1, R2, R3, R4 and R5. • No monitoring was committed during operation phase.
Reduction of the water resource, modification of surface runoff and changes to water quality	• Preventing impacts on the quality of surface and groundwater. • Efficient and responsible water consumption. • Prioritize the use of brine for the watering of roads and work areas (if possible). • Use of non-approved water sources will be prohibited. • Reuse of process water within the process. • Contour channels to divert runoff at the camp and process plant areas.	• Quarterly water quality monitoring during construction phase, for DO, pH, TDS, metals and metalloids, Cr+6, As, CN, and F, at the same eight (8) baseline locations: Chascha Sur, M01, M02, MO3, M07, M08, M10 and M12. • Biannual water quality monitoring for limnology during construction phase at the same three (3) baseline locations at Chascha wetland. • Additional quarterly monitoring of the effluent coming from the wastewater treatment plant.
Modification of the physical and chemical properties of the soil	• Prevent the construction of project components from modifying surface runoff or triggering erosive processes.	• Testing for TPH in soil at the beginning and the end of the construction phase at locations where fuel is stored and/or used (workshops, camp, etc.)
Loss of vegetation due to the installation of project facilities Changes to vegetation caused by groundwater depression	• Minimizing areas of intervention and avoid unnecessary habitat modification. • Project areas and restricted areas will be properly marked. • Efficient and responsible water consumption.	• Biannual monitoring of the wetlands of interest (Chascha, Antofallita, Cavi) during construction phase at the same baseline locations (P1 to P15) and comparison against the baseline data.

Project Impact	Management Measures	Monitoring Activities
Intervention of habitats for wildlife Changes to wildlife habitats caused by groundwater table depression	• Vehicular traffic and activity must be restricted to authorized and identified project areas. Travel outside established routes is prohibited. • Reduced vehicular speeds will be maintained. • Staff will be trained in the species present in the area and their conservation. • Hunting and capturing wild animals will be prohibited. • Waste will be stored in a safe and closed place to prevent animals from accessing it.	• Biannual monitoring of the wetlands of interest (Chascha, Antofallita, Cavi) during construction phase at 15 of the baseline locations (N01, N02, E01, E02, Camp01, SW01 to SW06, V.Arita01 to V.Arita03 and W.Chascha01) and comparison against the baseline data.
Changes in groundwater levels and quality at freshwater and brine extraction locations	• Efficient and responsible water consumption. • Reuse of process water within the process. • Use of non-approved water sources will be prohibited.	• Monitoring of groundwater levels twice a day at freshwater extraction locations during the operation phase. • Daily monitoring of flow, pressure and frequency at brine extraction locations.
Intervention of archaeological sites due to construction of project facilities	• Minimizing areas of intervention. Project areas and restricted areas will be properly marked. • Circulation and activity must be restricted to authorized and identified project areas.	• Annual assessment of the condition of archeological sites Parz1, Parz2, Marz 1, Marz2 and PVarz1.

The above mitigation measures will be complemented with environmental awareness training for project staff on the locations of approved project areas, access restrictions, minimizing water use, wildlife species identification/protection and avoidance of archeological elements. Complementary management measures are shown in Table 20-3, for which certificates and other records will be required for verification of compliance. Other management measures related to emissions and wastes can be found in Section 20.1.4.

Table 20-3: Project management measures

Project Aspect	Measure
Vehicle and machinery	Vehicles and drilling equipment should be in good mechanical condition to avoid contamination from fuel or oil spills. Keep a maintenance record of the company's vehicles and implement a preventative maintenance plan.
Fuel and/or oil handling	Fuel and lubricant storage facilities will have the capacity to contain possible spills and protect the area's resources.
	Liquid fuels shall be stored in adequate containers and placed in the loading and unloading sector to avoid leaks or spills.
	Surface piping and hose connections used for loading, unloading, and filling fuel tanks are highly visible to immediately identify hydrocarbon leaks or seepage.
	Plastic sheets or collecting trays (spill trays) shall be placed under stationary equipment to avoid contamination that could cause small leaks and/or spills.
	Oil containment drums shall be identified with their contents.

Project Aspect	Measure
	During fuel discharge, the operator must ensure no leaks at the connections or overflows
	In the event of leaks and/or spills, operations personnel will immediately remove the impacted material and restore previous conditions. Any part of infrastructure and soil that have been contaminated with fuel and oil residues from leaks and/or spills shall be removed and temporarily placed in containers or secured/lined location until final disposal at an authorized waste disposal or recycling facility.
Chemical and sludge handling	All chemical products during storage, handling, use or transport shall be correctly identified and labeled.
	Chemical products shall be placed in the open air in their original packaging. The top and base of the product shall be waterproofed.
	Each product received will be provided with a Material Safety and Toxicology Data Sheet (MSDS).
	In the event of solid chemical spills, the affected soil must be remediated immediately after the environmental incident is detected. The waste will be temporarily placed in containers and stored at a secure location until final disposal at an authorized waste disposal or recycling facility.

20.1.4 Water Management

Water is an essential resource for the Project, which is used for the exploration and operation processes and human consumption. The Argentinian regulations require the company to obtain water use permits for industrial purposes, which is a different process than acquiring water rights. More information about this permit is available in Section 20.2.3.

20.1.4.1 Process Water

For the exploration phase, the water supply is provided from the salt flat aquifer and, together with appropriate drill additives, is used to drill the brine exploration wells. According to the 2022 EIR, the project estimates that 6 m^3/d of salt water is required for the exploration wells.

For the operation phase, the mineral resource is the raw brine extracted from the Arizaro saltflat, which goes through the first process of DLE to extract lithium. Raw brine will be sourced from 35 wells, with a flow rate capacity of approximately 19 L/s per well, located in the central area of the saltflat (further details on the extraction method is provided in section 16.2 of this report). The residue from this process (depleted brine) will be directed into the effluents management area and mixed with other process effluents to be later passively infiltrated into the depleted brine infiltration zone, which is to be located approximately 4 km north of the process plant, at the edge of the saltflat, covering an area of approximtely 500 ha. Further details about effluents are provided in section 20.1.5 of this report. The quality of this saltwater and its effects on the salt flat ecosystem have not yet been assessed.

20.1.4.2 Freshwater Supply

The company will provide water for sanitary purposes through the use of public potable water stations in Tolar Grande (Caipe Station), from which it will be transported using portable water containers, but bottled water will be used for drinking water. The Project will use this system for the exploration and construction stages. It is estimated that 5 m^3/d will be used for human consumption in the exploration phase and 176 m^3/d during the construction phase.

During the operation phase, the project will use freshwater that will be extracted from wells in the Chascha aquifer, approximately 20 km to the southeast of the plant site. Freshwater will be used to produce treated and demineralized water (utilizing reverse osmosis) mainly for the DLE and other plant processes but also for maintenance, washing, fire emergencies and to produce potable water for camp requirements and safety showers. Bottled water for human consumption will be brought in from the city of Salta. The process will also recirculate water to decrease the use of freshwater. According to the recent engineering calculations, the freshwater demand for the process plant is 372 m^3/h and the 2023 EIR estimates that a total of 11.640 m^3/d will be required for the operation phase considering all uses.

According to the preliminary conceptual hydrogeological model and recharge estimate for the sub-basin (Conhidro, 2023), the potential extractable freshwater volume is around 2,760 hm^3, with a groundwater recharge rate ranging between 3.9 hm^3/y and 7.1 hm^3/y (445 m^3/h to 810 m^3/h), which should cover the Project's water needs. To date, only one water well (Chascha Sur 01) has been tested for production rates. Based on the well testing conducted so far, a total of seven to nine wells will be required to meet the freshwater demand for the process. An upcoming groundwater exploration program will involve drilling 12 borehole in the Chascha Sur and surrounding sub-basins. The ongoing groundwater exploration program will confirm the number of wells and their likely locations.

20.1.4.3 Surface Water, Runoff and Contact Water Management

There are no permanent watercourses at the project area but the climatic characteristics indicate the possibility of surface runoff as a result of flooding conditions from occasional extreme rainfall events, mainly from December to March. Based on that, water management infrastructure is planned for the process plant area and for crossings along the access roads and the pipelines routes.

The Project plans to construct a contour channel and safety berm along east border and a drainage ditch on the north side of the process plant to prevent any runoff from entering the Project area and becoming contact water. The contour channel locations around the process plant is shown in Figure 18-19.

20.1.5 Emissions and Wastes

Solid wastes will be classified in accordance with their nature as domestic, industrial or hazardous, separating any recyclable wastes. During the exploration phase, domestic waste will be collected, properly bagged/packaged, and transported to an appropriate faciltiy (in Salta) to be disposed off as urban solid waste, but for the production phase, the project will set up its own landfill for domestic waste. Recyclable, industrial and hazardous wastes will be segregated, kept in appropriate containers and temporarily stored in their corresponding secured area to be later transported and disposed off-site by authorized external companies for their final disposal at San Antonio de los Cobres or Salta. Regarding industrial wastes, solids generated during fiktration and chemical precipitation stages will be temporarily stored in an intermediate pond (covered by an HDPE impermeable barrier) and later, once dried, sent to a secure landfill located within the Project area.

Liquid effluents are generated by the sanitary system and the exploration wells, during the exploration phase, and the process plant, during the production phase. Domestic sewage from sanitary and camp facilities will be treated by means of wastewater treatment plant in the project area with a sufficient capacity for the existing personnel (which will vary depending on the project stage). This will be complemented by the use of portable chemical bathrooms when necessary. Treated water from the wastewater treatment plant may be reused for road watering, provided it complies with the specific regulations (Resolution 011/01 for Water Quality Standards for Protection of the Aquatic Life and

Recreational Uses). The sludge from the wastewater treatment plant will be periodically removed and transported by Aguas del Norte (water company) for their final disposal.

Regarding process effluents, during the exploration phase, effluents from the exploration wells will be disposed off-site, as required by the environmental approval of the exploration wells EIR. During the production phase, the process plant will produce the effluents listed in Table 20-4, which will be directed to the effluents management area, which includes two tanks and one pond, as shown in the diagram in Figure 17-23. Different effluents will be diluted and combined into the residual pulp tank, forming an intermediate effluent that will be directed to the intermediate control pond. Part of the depleted DLE brine will be mixed with the intermediate effluent in the intermediate control pond, where an acid or base reagent is added to neutralize the final effluent (pH between 6.8 – 7.1). This treated effluent will be sent to the depleted brine infiltration zone. Further details on the generation of process effluents are provided in section 17.3 of this report.

Table 20-4: Process Plant Effluent Description

Effluent Description	Stage Where it is Produced
Depleted brine	DLE plant
Acid and alkaline solutions and washing water	Reverse Osmosis
Discarded salts	Mechanical evaporation
Polishing filter sludge	Ion exchange
Caustic waste	Ion exchange
Acid and rinse waste	Ion exchange
Reject water for residual pulp dissolution	Water treatment plant
Water from truck washing	Truck washing

Source: Ausenco, 2024

EIRs for the exploration and production phases indicate that the Project will produce low amounts of gaseous emissions, particulate matter, noise, and heat emissions. During the exploration phase and the process plant construction, gas emissions will originate mainly from the combustion of machinery, vehicles and other equipment and particulate matter will orginate from earthworks and vehicle t on unpaved roads. During operation, most emissions will originate from the diesel-based power generation system. Atmospheric, noise and heat emissions are expected to quickly dissipate in the environment, therefore no control specific mitigation measures have been planned, apart from general management measures to minimize dust and noise production such as reduced speed limits on unpaved roads (20 km/h) and preventive maintenance of equipment and vehicles. As indicated in the 2023 EIR, ARLI is also analyzing alternatives for power generation for operation, such as liquefied natural gas, solar/thermal hybrid among others, to further reduce atmospheric emissions.

20.2 Permitting Considerations

As a federation, Argentina has a two-tiered regulatory system: a National Law at the federal level, and a Provincial Law at the regional level, which in this case applies to Salta Province. For mining operations, National Law 24,585 mandates obtaining an environmental permit as well as other specific permits, including those for water use, waste generation registration, chemical precursors registration, and municipal approval for infrastructure. All provinces in Argentina may impose additional requirements beyond national laws regarding the information needed to obtain these permits. Currently, Salta Province does not have additional specific requirements.

The Project is currently executing the exploration phase, with 12 wells exploring the aquifers in the Project area to characterize the Salar and search for concentrated lithium areas, for which Lithium Chile has an environmental permit (Resolution No. 026/2020). The Project is evolving into the production phase, for which additional environmental impact studies have been presented.

20.2.1 Environmental Permits

The Argentinian regulation (National Law 24,585) requires that all mining operations submit an EIR to obtain an environmental permit before commencing operations. The EIR is the instrument that regulates all exploration, construction, and exploitation activities of a project (Article 6 of National Law No. 24,585) and must be updated every two years (Article 11 of National Law No. 24,585), including results of any environmental protection measures executed. The approval of the EIR is given through a Declaration of Environmental Impact (in Spanish, *Declaración de Impacto Ambiental*) issued by the government (in this case, the Mining and Energy Secretariat), which generates a series of commitments and obligations, including, but not limited to, schedules, investment commitments, social obligations, environmental monitoring and audits, and safety conditions. Failure to comply with these commitments and obligations may result in penalties, fines, project suspensions and, following an administrative procedure, cancellation of the environmental permit.

An EIR must include a project description, the environmental components and social aspects, and presents additional information as the project progresses from exploration through to construction and operation (production) phases. The scope of the EIR will depend on the phase of the Project. The regulation has three types of scopes: Prospecting, Exploration, and Operation (production, but named as exploitation in the law). For the prospecting stage, the requirements are simple and involve general information about the environment, a project description, and a simple impact assessment. In the case of the exploration phase, the regulation requires more information about the environment; however, it is still acceptable to have only bibliographic input. It also requires measures to protect the environment, which must be based on the results of the impact analysis. Finally, the operation phase requires information based on fieldwork, so the impact analysis and the measures to protect the environment are much more detailed in relation to the Project's potential effects. Additionally, the law allows for the presentation of separate EIRs for different project components (for example, an EIR for the process plant and another for the project pipelines).

In July of 2019, Lithium Chile presented the first EIR for the Project titled "Exploration and Exploitation Stage of Lithium-Rich Brine Wells" ("*Etapa de Exploración y Explotación de Pozos de Salmueras Ricas en Litio*"), covering only the exploration phase of project and the exploitation of the brine wells. It included preliminary information based almost entirely on a desktop review. On January 2020, Salta Province issued Resolution No. 026/2020 (January 17, 2020) with the Declaration of Environmental Impact approving the EIR presented in July 2019. The main conditions arising from Resolution No. 026/2020 are:

- Before beginning the pumping of brine to the receiving pond, the phreatic level at different wells needs to be monitored. This monitoring will continue monthly and during the operation phase. Additional hydrogeology studies are required to guarantee the salar stability and recharge rates.

- Project areas should be away from any zones of possible biological, archaeological or paleontological interest. The Project must not occupy areas of wetlands or water courses.
- Apply reduced vehicular speeds to minimize the generation of particulate matter.
- A social perception study should be conducted periodically among residents to gather opinions from the community towards mining activities.
- Lithium Chile must comply with Resolution No. 235/2018 and participate in the Tolar Grande Social Roundtable (Mesa Social de Tolar Grande) (further details in Section 20.3.2).
- Lithium Chile must comply with Resolution No. 04/2018 and carry out, at least once a year, a Participatory Environmental Monitoring. This is a mechanism through which citizens exercise their right to participate and intervene in the environmental surveillance of their territories.

In February 2022, the first update of the 2019 EIR was submitted to the the Mining and Energy Secretariat for the Project's pre-feasibility stage, based also on a desktop review, including environmental, social and community aspects, providing general information on the Project area. The approval of this EIR is still in process, and the company has submitted five addenda to answer the authority´s questions and include some project updates. The authority delivered the most recent set of questions on January 2024, for which answers were submitted in March 2024, and ARLI is expecting the approval of this EIR in the upcoming months. As required by law, ARLI will continue submitting a new EIR every two years to update the project and baseline studies and analyses. Although the next update was scheduled for February 2024, it was postponed for July 2024 to allow for the approval of the February 2022 update. Lithium Chile carried out fieldwork studies in 2023 that will be included in the forthcoming update.

In addition to the aforementioned EIR, Lithium Chile has already submitted two additional EIRs addressing specfic project components:

- An EIR for the process plant was submitted in December 2023 (EC & Asociados. (2023b). Observations and questions from the Mining and Energy Secretariat were received in July 2024, which are expected to be answered and submitted for approval at the end of August 2024.
- An EIR for the Project's easements for the freshwater pipeline (from Vega Chascha to the process plant), raw brine pipeline (from the extraction wells to the process plant), and transmission lines (from Vega Chascha and the extraction wells to the process plant) was submitted in February 2024 (Saravia, 2024a; Saravia, 2024b; Saravia, 2024c).

This EIRs include the information from fieldwork studies carried out in 2023 by Lithium Chile.

20.2.2 Mining Permits

As detailed in the previous section, the environmental permit is a requirement of Federal Law No. 24,585, which is part of the Argentinian Mining Code. Thus, the main permit for a mining operation is the Environmental Impact Study, with other specific permits for mining activities originating from the Provincial Law in the case of Salta.

20.2.3 Additional Permits and Authorizations

The additional permits required for the project area are water permits, waste generation registration, chemical precursors registration, and municipal approvals for the infrastucture. Table 20-5 shows the current status of these permits. The Project expects to obtain the pending ones in the short term, although no specific dates have been indicated by the authority.

Table 20-5: Permits Status for Arizaro Project

No.	Permit	File No.	Date of Approval	Status	Permit Issued to	Remarks
1	Water permit for industrial water	0090034-85154/ 2022-0 (Note Nº096)	April 21, 2022	Approved	SMG S.R.L. (now modified to ARLI S.A.)	This permit approved the drilling of well Chascha Sur 01.
		0090034-254783/ 2022-0	-	In process	Argentum Lithium	This permit is for water extraction at well Chascha Sur 01 for 75 m^3/h. Permit requires the previous approval of the latest EIR.
		34-72410/24-0	-	In process	ARLI S.A.	Extraction of 30 m^3/day for 130 days from well Chascha Sur 01.
2	Water permit for potable water	EXPDTE 0090034-125395/ 2022-0 Granted by Resolution 132/23	July 6, 2023	Approved	Argentum Lithium	Permit is for sanitary uses. Extraction point at Estación Caipe with 4 m^3/d. Permit is valid for one year, after that, renewal applies (currently being renewed).
3	Registration in the Registry of Hazardous Waste Generators	EXPDTE 0090227-202796 Granted by Resolution No. 000858	November 23, 2023	Approved	ARLI S.A.	The permit lasts one year, the renewal will be processed at the end of this year.
4	Registration in the National Register of Chemical Precursors (RNPQ)	-	-	-	-	At this stage, the company does not require this permit. It will be processed in the next phase.
5	Municipal Qualification	-	-	In process	-	Applicable to project camp. Additional information provided to the authority on April 2024.

No.	Permit	File No.	Date of Approval	Status	Permit Issued to	Remarks
6	Drilling permits for exploration wells	0090034-160547 and 0090034-160549	August 23, 2023	Approved	ARLI S.A.	This permit approved the drilling of water exploratory wells SRH 1678 and SRH 1679.
		7 files 0090034-46927/2024-0; 46912/2024-0; 46895/2024-0; 46938/2024-0; 46945/2024-0; 46936/2024-0; 46948/2024-0	March 13, 2024	In process	ARLI S.A.	Request to drill exploratory wells at Chascha wetland, named Chascha Sur 02, 03, 04, 05, 06, 07 and 08.
		3 files 0090034-55637/2024-0; 55625/2024-0; 55613/2024-0	March 26, 2024	In process	ARLI S.A.	Request to drill exploratory wells at Arita wetland, named Arita 01, 02 and 03 (Arita 02 and 03 are already approved).
		0090034-55618/2024-0	March 26, 2024	In process	ARLI S.A.	Request to drill exploratory wells at Cori wetland, named Cori 01.
		0090034-55603/2024-0	March 26, 2024	In process	ARLI S.A.	Request to drill exploratory wells at Tolar wetland, named Tolar 01.

20.3 Social Considerations

The province of Salta requires any EIR to include social aspects, which can vary depending on the project stage. As part of the exploration phase and production phase studies, the 2022 EIS provided a general location map and characteristics of the surrounding communities. This work demonstrated the presence of indigenous and non-indigenous communities in the surrounding area, and presented a Community Relations Plan (CRP) and activities.

20.3.1 Local Communities Description

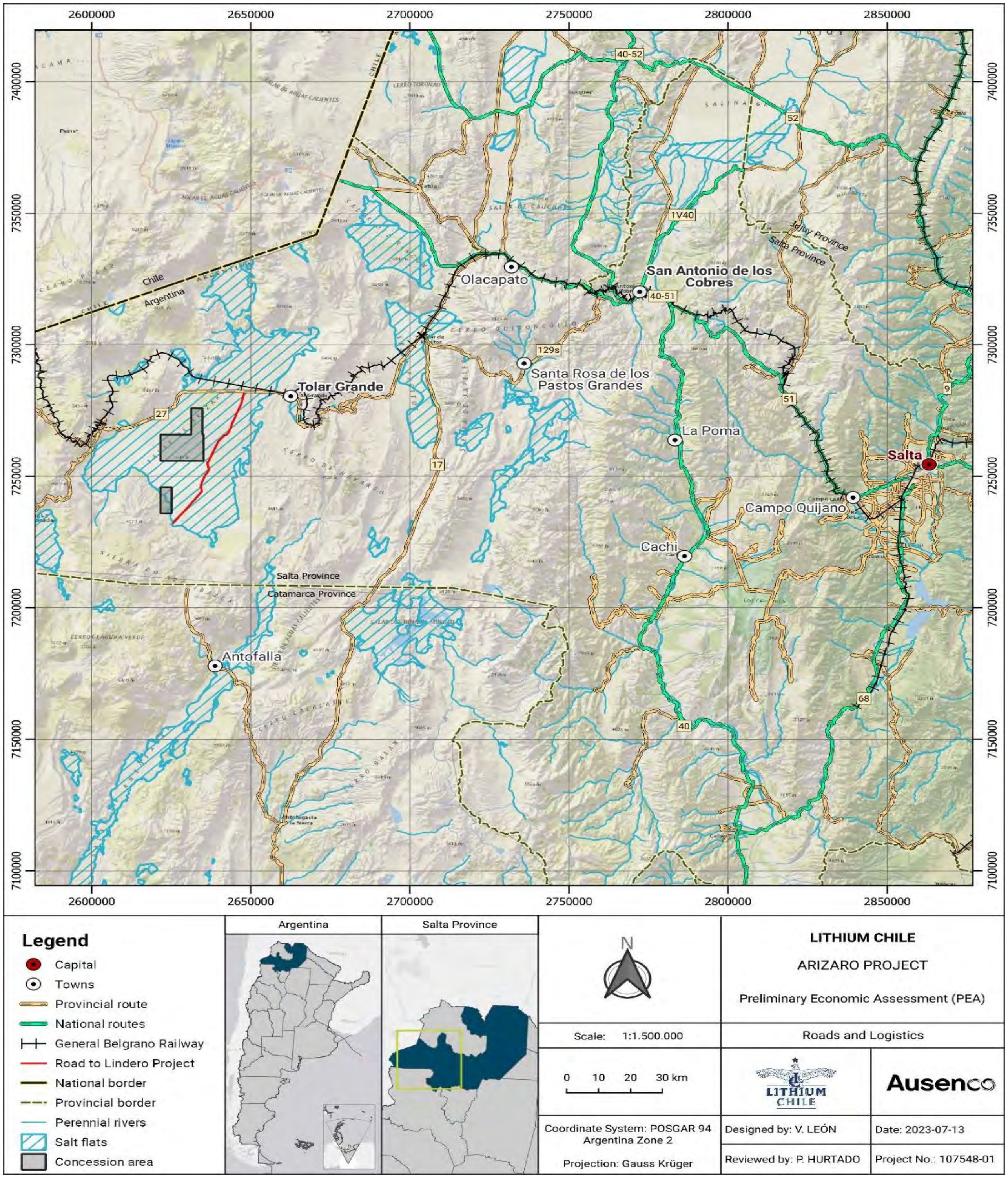
The closest town to the Project is Tolar Grande (40 km) and the closest city is San Antonio de Los Cobres, where the authorities and primary services are located. Figure 20-12 shows the location of these and other populated areas in relation to the Project location. San Antonio de los Cobres is the municipal capital and is the only population center in the municipality. There are also scattered family settlements called puestos, of which Antofallita and Cavi are the closest to the Salar de Arizaro project.

The main route that connects San Antonio de Los Cobres with Salta (the capital city) is route RN 51, which is also the international connection to Chile. RN 51 connects with RN 27, the route to Tolar Grande. RN 51 can be used year-round except when climate conditions make it difficult, for example, with snowstorms or heavy precipitation. The condition of Route RN 27 is poorer than RN 51, therefore during the year there are more traffic stoppages on RN27. Access to Cavi and Antofallita is via unpaved roads that are passable, however, they are only suitable for pickup trucks.

According to 2010 census data (2022 census data has not been released to the public yet), Tolar Grande has a total population of 236, organized into 54 families, although local authorities set the population between 250 and 300 people. San Antonio de Los Cobres has a population of 4,763. The population of Tolar Grande has a dynamic character, strongly marked by work, study and seasonal factors. In this sense, people in Tolar Grande adapt to periods of migration according to productive and subsistence activities, for example, those linked to job opportunities in mining or industrial projects. Despite this highly dynamic character, the population still feels strongly connected to the territory and frequently return to town and to the *puestos* to participate in local activities.

The 2023 EIR identifies seven indigenous communities in Los Andes Department. However, the National Institute of Indigenous Affairs (Instituto Nacional de Asuntos Indígenas) identifies ten Indigenous communities in the same area. Table 20-6 below lists the ten communities and, in blue, highlights the seven communities identified in the 2023 EIR. Figure 20-13 shows the location of Indigenous communities throughout Argentina, circling the Project area and surroundings. Comunidad Aborigen Kolla de Tolar Grande is the closest Indigenous community, which resides in Tolar Grande town. All the people living in Tolar Grande recognize themselves as being of kolla ethnicity or part of an indigenous community.

Figure 20-12: Communities Close to the Salar de Arizaro Project



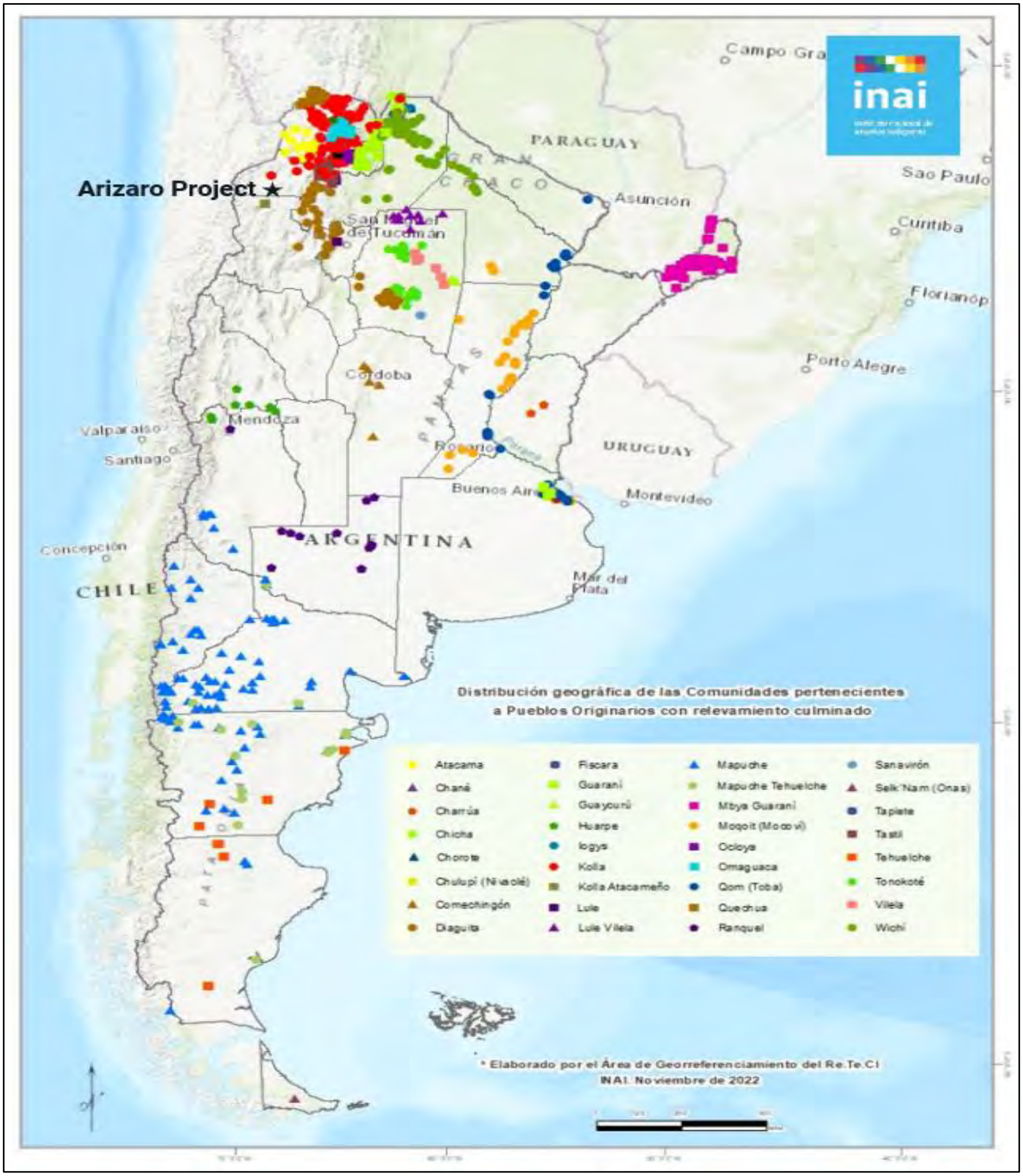
Source: Ausenco, 2023.

Table 20-6: Indigenous Communities in the Los Andes Department (EIR, 2023)

Name	Ethnicity	Department	Municipality	Legal Inscription
Comunidad Kolla del Desierto	Kolla	Los Andes	San Antonio de los Cobres	RES INAI 066/06/12/02
Comunidad Indígena Collas Unidos	Kolla	Los Andes	San Antonio de los Cobres	RES 336/30/12/02
Comunidad Kolla del Salar de Pocitos	Kolla	Los Andes	San Antonio de los Cobres	RES 278/11/09/09
Comunidad Kolla Quewar de Olacapato	Kolla	Los Andes	San Antonio de los Cobres	RES 281/11/09/09
Comunidad Aborigen Kolla de Tolar Grande	Kolla	Los Andes	Tolar Grande	RES 164/22/07/02
Comunidad Aborigen de Hurcuro	Kolla	Los Andes	San Antonio de los Cobres	RES 166/08/07/09
Comunidad Andina de Santa Rosa de los Pastos Grandes	Kolla	Los Andes	San Antonio de los Cobres	RES 573/13/07/10
Asociación Kolla Centro Comunitario Casa de los Niños de Llullaillaco	Kolla	Los Andes	San Antonio de los Cobres	RES 091/16/04/02
Comunidad Aborigen de Matancillas	Atacama	Los Andes	San Antonio de los Cobres	-
Comunidad Kolla De Peña Alta	Kolla	Los Andes	San Antonio de los Cobres	RES 010 D (Registry of Indigenous Communities of the Province of Salta)

Source: Argentum Lithium, 2023. National Institute of Indigenous Affairs, 2003.

Figure 20-13: Indigenous Communities Map, Argentina



Source: National Institute of Indigenous Affairs, 2003.

Concerning socio-economic dynamics, Tolar Grande's main activities are mining, tourism, and subsistence livestock farming. Mining activities generate a high expectation of employment and promotion of the local economy; however, the community is also concerned about environmental problems, such as noise, vibration, suspended dust, and combustion gases from equipment and vehicles. Due to several mining operations in the area, initiatives have been created to connect the Mining Secretariat, mining companies, and the Puna area municipalities to promote local work. San Antonio de Los Cobres also has tourism-related activities and handcrafted products. People from Tolar Grande and other small towns come to San Antonio de Los Cobres to buy consumer goods, to then resell them in their town.

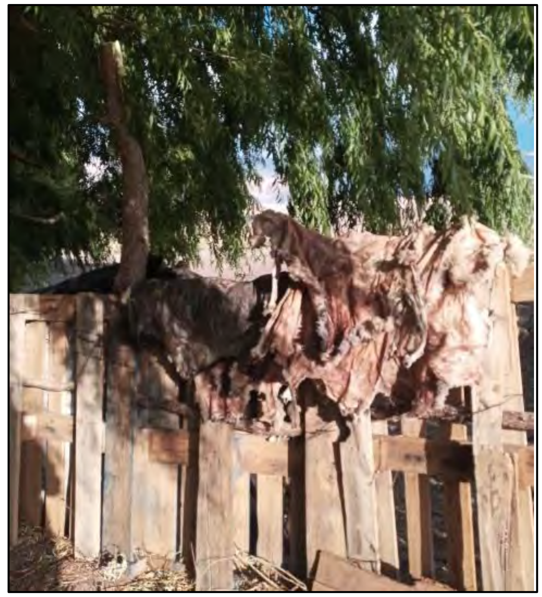
Regarding the rural part of the community, the main economic activity is arable and livestock farming. People perform transhumance, which is a type of nomadism, a seasonal movement of livestock to areas with better summer and winter pastures. Herders have a permanent home and one or a few other temporary homes, which they call *puestos* (herding stations). Closest to Salar de Arizaro Project are the puestos Cavi and Antofallita, with a total of five people living at these locations. Figure 20-14 shows images of the economic activities at these locations.

The social perception studies conducted as part of the 2022 and 2023 EIRs (through interviews) indicate that the community's attitude towards mining activity is generally positive, since the expectation of generating employment is strong and offsets the fear of environmental problems such as noise, vibrations, suspended dust, and combustion gases from equipment and vehicles. Mining is still considered valuable in Tolar Grande, but opinions among people from the puestos are varied; while they aknowledge the positive impact on their daily lives from the support provided by mining companies, they also perceive that benefits are concentrated in the town, leaving them with fewer advantages.

The Company reports that the primary demand from the community is for employment opportunities , both in Tolar Grande and the puestos. Tolar Grande also seeks economic support for community projects and maintains community involvement throughout all project stages. The puestos request assistance during natural disasters and economic support for their productive activities' projects. While there are occasional concerns about the project from some individuals in Tolar Grande, these are addressed through ongoing consultation with the communities to ensure that the Company continues to provide acceptabe environmental protection during exploration and future operations thus ensuring that local communities have opporntunies to participate in the project and receive aid and benefits based on their needs.

Figure 20-14: Images from Antofallita and Cavi *Puestos*

A) Fruit trees in Antofallita.



B) Drying of goat hides in Cavi.

Source: Argentum Lithium, 2023.

20.3.2 Communications plan

The Salta Mining Secretariat (Secretaría de Minería de Salta) carried out meetings with different mining companies and authorities to coordinate efforts for the community, naming this instance as Tolar Grande Social Roundtable (*Mesa Social de Tolar Grande*). Lithium Chile, as part of the conditions set by the environmental permit Resolution No. 026/2020, has participated in all the meetings. As part of these activities, the Company completed the following actions:

- The company helped to install a waste yard in an area of the Municipality of Tolar Grande.
- The company provided an economic contribution to construct the Tolar Grande Mining Interpretation Center in 2018. The objective of this center is to promote the mining industry through mining and geological exhibits and other activities.
- Participation in project "For a Sustainable Tolar Grande", consisting of the installation of solar cookers, solar water heaters and photovoltaic LED lights in Tolar Grande, Cavi and Antofallita areas.
- Meetings were held with the Mayor of Tolar Grande and other government and indigenous communities' authorities to inform them about the geophysics program to be implemented. The lead from the Kolla Community visited the site with people from Lithium Chile.
- Invitation to members of the Kolla community and other citizens of Tolar Grande to participate in activities for the selection of alternative locations for the production plant, in the environmental and social baseline studies and in the monitoring of environmental variables such as air quality, water, soil, flora, fauna and archaeology in the Project's area of influence.

In addition, on February 2024, Lithium Chile conducted the first Participatory Environmental Monitoring with the Kolla community and the participation of the Tolar Grande Municipality and the Salta Mining Secretariat, in compliance with the conditions set by Resolution No. 026/2020.

Regarding the Communications Plan, the 2022 EIR provided some preliminary guidelines that will direct the final plan. The purpose of this plan is to keep open and honest relationships with the community and other stakeholders. The relationship with the community will be considered a priority for Lithium Chile and will be considered in all the company's corporate policies.

Lithium Chile has a Corporate Social Responsibility (CSR) Plan that aims to establish a relationship between Tolar Grande, Antofallita, Cavi, and the company. The objectives include developing economic and social opportunities, maintaining fluent community participation in the decision-making process, and achieving sustainable agreements, among others. The CSR Plan has 25 activities that fall into seven key areas: health, education, infrastructure, environment, economic development, culture, and transparency. Health is the area with the largest number of planned activities, followed by culture.

Table 20-7: CSR Plan Activities and Objectives

Area	Objective	Activity
Health	Provide the community with opportunities to learn more about health recommendations for their daily life.	CPR Workshop
		Addiction Awareness and Prevention Workshop
		Adolescent unintended pregnancy awareness campaign
		Awareness and good practices workshop on Bromatology
		Campaign for the management of the Individual Disability Certificate
		Skin and eye care campaign
Education	Provide students with better materials and incentivize them to finish school.	Develop an extension of the elementary school's public library and create a public library in the high school.
		Implementation of the FinEs Program (to help students finish school)
		Award five Manuela Martínez de Tineo School graduates.
Infrastructure	Collaborate with the municipality and other authorities in important activities for the community	Collaborate in the road maintenance from Chascha Sur to Antofallita and Cavi
		Help gas recharge delivery for families in Tolar Grande
		Overhaul of water cistern supplying the town
Environment	Collaborate with the municipality and other authorities with the domestic waste and provide the community with information about recycling.	Collaboration in the construction and placement of waste containers on Route 51
		Participation in the Tolar Grande Environmental Minga event for waste management
		Waste separation and circular economy workshop
Economic development	Help local entrepreneurs in their businesses and financially assist a member of the community	Truck rental to local entrepreneur
		Monthly financial assistance and wheelchair for a member of the community
		Collaborating with electronic payment terminals for entrepreneurial families
Culture	Value the communities' traditions and promote mountain sports.	Participate in Ceremony of the Pachamama, August 01
		Sponsor the Sacred Mountain Macon Climbing activity

Area	Objective	Activity
		Participate in the Patronal Feast "Virgin of the Valley", December 08, 2023.
		Participate in the celebration of Children's Day
Transparency	Keep the community informed and actively engage in participatory activities.	Guided tours of Tolar residents to show them the project's progress
		Meetings with to Tolar Grande, Antofallita, and Cavi communities to present the project's progress.
		Participate in Tolar Grande Social Roundtable organized by Salta Mining Secretariat

20.4 Closure and Reclamation Planning

At present, neither Argentina nor Salta Province has a law that requires an exclusive permit for mine closure and reclamation. However, the EIR process requires that a section about closure and reclamation be included when a project enters its operation phase. Consequently, the 2023 EIR for the production phase of the Project includes a conceptual Mine Closure Plan for the facilities, which will be further developed into a more detailed closure plan as the project advances. This section reiterates the conceptual closure plan outlined in the 2023 EIR.

Additionally, the Ministry of Production and Labor (Ministerio de Producción y Trabajo) released The Good Practice Resource Guide for Mine Closure (*Guía de Recursos de Buenas Prácticas para el Cierre de Minas*) in August 2019, providing definitions and guidance on how to define and value a closure plan. However, this guide does not provide a specific methodology or standard for this purpose. The guide identifies seven aspects that should be addressed in the closure plan: physical stability, chemical stability, management of tailings, water management, biodiversity management, rehabilitation and restoration, and social management of closure. Moreover, the guide indicates that the Project should design the closure measures and activities using a risk assessment approach.

20.4.1 Closure and Reclamation Plans

The objective of the Mine Closure Plan is to establish measures to rehabilitate the area used by the Project so that it achieves environmental characteristics compatible with a healthy environment. The plan also defines the expected post-closure conditions and sets out the monitoring program, contingency measures, costs and execution schedules. Since mining operations are dynamic, the Mine Closure Plan will be reviewed every two years and adapted to any changes made and/or planned in the operation.

The Mine Closure Plan will be implemented progressively throughout the operation and includes the following activities:

- Process plant buildings and other auxiliary facilities (camp, water treatment plant, sewage treatment plant, tanks, freshwater supply infrastructure, etc.) will be dismantled and removed. All poles, power transmission lines, generators and transformers will be removed. Perimeter fences will be dismantled and removed.
- The soil and concrete conditions will be evaluated. Concrete and debris that are exposed on the surface and do not require special handling will be demolished and used as fill in areas that will require levelling.

- The tanks will be emptied and removed from the site. The soil and concrete pad conditions will be assessed to determine if there are any areas or components with traces of hydrocarbons that require special handling.
- Closing the pools and infiltration area involves removing access roads, levelling, and contouring the area. The closure process will focus on achieving stability of the slopes created during pool construction. This will allow physical rehabilitation of the site, reduce the depth of the pools, and restoration of the terrain and landscape.
- Industrial and hazardous waste will be periodically removed from the mine and transported to authorized sites for final disposal and/or treatment. The landfill will be levelled and covered with a 0.5 m thick layer of soil to recover the original landscape. Vents will be installed at the landfill to prevent gases from building up within the deposit that could cause safety problems in the future.
- The production wells (water and brine) will be abandoned in accordance with current regulations. The wells monitoring will continue until the company confirms their stability.
- All project roads, including old access roads, will be closed. A minimum number of internal access roads will be maintained for post-closure monitoring purposes.
- The company plans to provide ongoing training for workers so that, upon closure of operations, they can reintegrate into the local workforce. By the end of the project, it is expected that employees will have gained skills in various trades, generating a positive impact on the local market by introducing a trained and skilled workforce.
- The environmental monitoring program implemented during the operation phase will continue during the execution of closure activities. Monitoring will be updated as the project approaches the closure phase, adding and/or removing elements based on trends in environmental conditions.
- The post-closure monitoring aims to confirm the physical and chemical stability of the areas affected by the project and to control the levels, quantity and quality of water, vegetation, limnology and fauna in the project's area of influence. Post-closure monitoring programs will be carried out for 5 years after the final closure has been completed.

20.4.2 Closure Cost Estimates

The closure costs estimation is presented in Section 21. These costs will be further refined during the feasibility stage of the Project, as a detailed closure cost estimate must comply with applicable regulatory requirements and be supported by feasibility-level design.

20.5 Comments on Environmental Studies, Permitting and Social or Community Impact

Based on the above discussion, the following comments are provided:

- Fieldwork was carried out for the environmental and social baseline, during December 2022, January, February, and April 2023. The baseline study shows an ecosystem with flora and fauna typical of this type of climate and the presence of 13 endangered species at the project site. The sensitive areas that could be affected by the project are located at the southern end of the salt flat, Vega Chascha and Vega Arita, the first located close to the industrial water extraction wells and the second one located immediately south of the property, at the future plant location. Despite being located within the Los Andes Wildlife Reserve, the baseline information provided so far indicates that the property where the brine extraction wells, and the production plant will be located do not present flora and fauna species. At this stage it is not considered that the overlapping of the concession with the protected area will represent additional impediments, since Arli has an already approved EIR for the exploration and exploitation of the brine wells (the area that overlaps with the protected area) and is currently on the first round of biannual updates. Any requests from the authority regarding additional baseline information, monitoring and/or management measures should be resolved through the ongoing EIR approval processes that ARLI is currently carrying out.

- Indigenous and non-indigenous communities exist near the project location. A social perception study, made through interviews, shows no opposition to the Project, although there are mixed perceptions between people at Tolar Grande and the puestos. However, the study also indicates that worries about environmental problems exist in the Tolar Grande community. Lithium Chile has implemented a CSR Plan for the community of Tolar Grande and the puestos people with the objective of developing economic and social opportunities and has maintained a fluent communication with the community, inviting them to participate in the decision-making process for project locations and the monitoring of environmental components.

- The Salar de Arizaro Project is in its exploration phase, which Salta Province has authorized through the approval of the 2019 EIR (Resolution No. 026/2020). The first update of this EIR was submitted for approval in February 2022 and is still under review by the authority. At the same time, Lithium Chile presented the EIR for the production plant in December 2023, and for the freshwater pipeline, raw brine pipeline and transmission lines in February 2024, all of which are still under review by the authority. The Project is still processing other permits, such as water permits, chemical precursors registration, municipal qualification for the camp facilities and several other permits for drilling exploratory wells at Chascha, Arita, Cori and Tolar areas. At this stage, the Project does not appear to have any significant impediments to obtain these operating permits or the subsequent environmental ones.

- The impact assessment in the 2022 EIR indicated minimal effects on the environment due to the small size of the operation and the current state of project development (exploration) at the time of evaluation, but the December 2023 EIR for the process plant and the production phase indicates that the surface and underground water resources are the components that would be most affected by the Project which, in turn, could affect the wetland ecosystems that depend on those water resources. Mitigation and monitoring measures have been committed at this stage to address this impacts and Lithium Chile is seeking permits to drill additional exploratory wells at different wetland areas to further understand and characterize the groundwater system.

- The 2023 EIR for the production phase describes a conceptual Mine Closure Plan for the facilities, including closure and post-closure measures, which will later evolve into a more detailed closure plan as the project progresses. Measures in this conceptual plan include dismantling and removal of all project infrastructure, closing pools and infiltration area, final disposal off-site of all industrial and hazardous waste and covering the landfill, among other, some of which will be implemented progressively throughout the operation. Post-closure monitoring will be carried out for 5 years after the final closure has been completed.

Comments regarding environmental and social aspects of the Project are included in Section 25 with recommendations provided in Section 26.

21 CAPITAL AND OPERATING COSTS

21.1 Capital Cost

21.1.1 Overview

The capital and operating cost estimates presented in this PFS provide substantiated costs that can be used to assess the economics of the Salar de Arizaro Project. The estimates are based on an brine wells extraction operation; the construction of a process plant and infrastructure; as well as Owner's costs and provisions.

The capital cost estimate conforms to Class 4 guidelines for a PFS-level estimate with a ±25% accuracy according to the Association for the Advancement of Cost Engineering International (AACE International). The capital cost estimate was developed in Q3 2024 US dollars based on budgetary quotations for equipment, as well as Ausenco's in-house database of projects and studies including experience from similar operations. The capital is categorized into direct costs, project indirect costs, and contingency.

Table 21-1 presents the capital cost summary.

Table 21-1: Capital Cost Estimate Summary

Description	Initial Capital Cost (US$M)	Sustaining Capital Cost (US$M)	Total Capital Cost (US$M)
Brine Extraction Capital	74	68	142
Process Capital	335	-	335
General Utilities	163	5	168
Infrastructure	79	3	82
Total Direct Costs	**650**	**77**	**727**
Project Delivery	147	133	280
Owner's Cost	39	-	39
Total Indirects	**836**	**210**	**1,046**
Contingency	219	36	255
Total Project Cost	**1,055**	**246**	**1,301**

Numbers may not add up due to rounding.

21.1.2 Basis of Estimate

The Capital cost estimate, expressed in Q3 2024 United States dollars (US$), was developed using Ausenco's in-house database of projects and studies, as well as insights from similar operations. Due to the methodology and the conceptual level of engineering definition, the estimate has an accuracy range of -15% to -30% on the lower side and +20% to +50% on the higher side, in accordance with the AACE International standards for a Class 4 capital cost estimate. Exchange Rates used for the estimate are presented in Table 21-2.

Table 21-2: Exchange Rate

Currency	FX
ARG/USD	924.26
ARG/EUR	1,017.70

21.1.3 Direct Cost

21.1.3.1 Quantities of the Estimate

The quantities of the physical works to be executed in the project were estimated by Ausenco Engineering. The quantity estimate methodology follows an equipment factored methodology for which the main equipment was identified, and the cost of the bulk commodities associated with that equipment were estimated by factorization.

For some quantities of earthworks, concrete, structures, and piping, were estimated by engineering. For other cases in which engineering is not developed, the quantities are factored.

All quantities provided by engineering are net quantities and do not incorporate any material take-off (MTO) allowances, or growth factors which were addressed separately. The source of quantities for the capital cost estimate is summarized in the Table 21-3.

Table 21-3: Definition of Quantities

Discipline	Equipment List	MTO	Factored
Massive Earthworks		X	
Local Earthwork		X	
Concrete		X	
Structural Steel		X	
Mechanical Equipment	X		X
Electrical Equipment	X		X
Bulk electrical materials		X	X
Minor bulk electrical			X
Pipe Major Diameter		X	
Small Diameter Pipe			X
Instrumentation Major equipment			X
Instrumentation Minor equipment			X
Instrumentation materials			X

21.1.3.2 Price source of the estimate

Quotations represents 92% of equipment supply total cost. For mechanical equipment, quotations represent 95% of mechanical supplies total cost and for electrical equipment, quotations represent 82% of electrical supplies total cost. Below is a description of the pricing source by commodity:

- Earthworks and Site Development
  - Quantities in the MTO's document corresponded to geometric quantities and did not consider swelling effects or material loss during excavation.
  - Excavation items included common soil, rippable soil, and rock. Fill items included common fill, structural fill, and trench fill.
  - Unit prices were sourced from Ausenco's database.
- Concrete
  - Construction performance rates were based on different types of structural concretes (e.g., foundations, walls, slabs).
  - The structural concrete included rebars, formwork, inserts, and concrete itself, with an "all-inclusive" unit price.
  - Unit prices sourced from Ausenco's database.
- Structural Steelwork
  - Structural steel was classified into heavy, medium, and light steel.
  - Steel supply prices were sourced from the Ausenco's database (updated values).
- Architectural
  - Cost for architectural elements (administration buildings, offices, laboratories, etc.) was valorized by USD/m^2 rate.
- Mechanical Equipment
  - Supply prices for main mechanical equipment were obtained from budgetary or reference quotes.
  - Offers were reviewed to meet technical requirements.
  - Direct cost of process equipment supply was included as Ex works incoterms.
  - Freight costs were not added to direct equipment costs but included in indirect costs.
- Platework – Mechanical Bulks
  - Platework supply prices were from the Ausenco's database (updated values).
  - Minor elements were factored with respect to mechanical equipment.

- Piping and fitting
  - Main pipelines were developed by Ausenco engineering and valued with unit sourced from the database.
  - Unspecified pipes and fittings were factored in
- Electrical
  - Main electrical equipment prices were based on budget quotes
  - Minor and low voltage equipment prices were obtained from the internal Ausenco database.
  - Electrical materials and raceways were factored in
- Instrumentation
  - Instrumentation costs were factored in

21.1.3.3 Installation Cost

21.1.3.3.1 Installation Unit Hours

- Construction hours represent the estimated unit base productivity per unit of work for executing the project.
- Base productivities used by Ausenco for Capex development are based on:
- Performance of construction contractors in the mining industry.
- Productivities from budgetary quotes for construction projects at mining plant sites.
- Experience of Ausenco in similar projects in the region.
- Base hours are neutral with respect to climatic conditions, geographical location, and internal transport times.
- Base hours assume:
  - Work performed by experienced construction contractors.
  - Availability of qualified labor and construction technology.
  - Timely information on engineering and construction materials.
  - Exclusion of hours for internal travel on-site.

21.1.3.3.2 Productivity Factor:

- The productivity factor corrects base productivity to reflect project conditions.
- Factors considered for PF calculation include:
  - Altitude.
  - Climate conditions.

- Field conditions (brownfield).
- Workplace congestion.
- Transport to workplace.
- Distance between construction site and facilities (exchange house, dining rooms, camp).
- Special regulations and procedures.
- Rotation schedule.
- Time for safe talk.

- For this Class 4 estimate, the productivity factor is determined by expert judgment and benchmarking, corresponding to 1.35.

21.1.3.4 Labor Rate ("all-in")

21.1.3.4.1 Labor:

- The "all-in" labor rate considers direct and indirect labor costs.
- Labor cost is expressed in USD per direct hour.
- Assumptions:
  - Construction work week: 11-hour workday plus 1-hour lunch.
  - Rotation: 14 days on / 14 days off.
  - Labor rate includes total salary (base salary, remote location uplift, bonuses, benefits, vacations, holidays, and overtime).
  - Recruitment costs, transport, catering, PPE, and minor tools are included.
  - Labor rates cover direct labor costs up to the foreman level.
  - Crew composition based on Ausenco in-house data and recent projects.

21.1.3.4.2 Construction Equipment:

- Cost of construction equipment expressed as a rate (cost per hour worked).
- Includes mobilization, rental, maintenance, fuels, lubricants, operator costs, and demobilization.

21.1.3.4.3 Contractor Distributable:

- Indirect costs influenced by construction program duration, contract strategy, and supervision requirements.
- Covers items such as salaries, temporary facilities, transportation, certifications, support equipment, and more.

- Historical information used for factoring.

21.1.3.5 Brine Extraction Capital Cost

The capital cost for brine extraction includes the construction of wells and HDPE pipelines from the wellfields to the DLE Plant. These costs are summarized in Table 21-4.

Table 21-4: Brine Extraction Capital Cost

WBS	WBS Description	Initial Capital Cost (US$M)	Sustaining Capital Cost (US$M)	Total Capital Cost (US$M)
1100	Wells	16	68	84
1300	Wellfield receiving facilities	55	-	55
1400	Chemical plant receiving facilities	2	-	2
	Subtotal	**74**	**68**	**142**

Note: Numbers may not add up due to rounding.

21.1.3.6 Processing Capital Cost

The processing capital cost includes the chemical plant and dry product handling, including equimpent, consumables, and earthworks. These costs are summarized in Table 21-5.

Table 21-5: Processing Capital Cost

WBS	WBS Description	Initial Capital Cost (US$M)	Sustaining Capital Cost (US$M)	Total Capital Cost (US$M)
2000	Chemical Plant	7	-	7
2100	Direct Lithium Extraction (DLE)	189	-	189
2200	Reverse Osmosis	56	-	56
2300	Chemical precipitation (Ca & Mg)	7	-	7
2400	Ion Exchange 1 (Ca & Mg; B)	9	-	9
2500	Mechanical evaporation	28	-	28
2600	Ion Exchange 2 (Ca & Mg; B)	7	-	7
2700	Carbonation	8	-	8
2800	Neutralization	6	-	6
3100	Drying	8	-	8
3200	Micronizing	9	-	9
3300	Packaging	1	-	1
	Subtotal	**335**		**335**

Note: Numbers may not add up due to rounding.

21.1.3.7 General Utilities Capital Cost

The general utilites capital cost is summarized in Table 21-6.

Table 21-6: General Utilities Capital Cost

WBS	WBS Description	Initial Capital Cost (US$M)	Sustaining Capital Cost (US$M)	Total Capital Cost (US$M)
4100	Water supply and treatment	34	5	40
4200	Power supply	115	-	115
4300	Air	3	-	3
4400	Reagents	4	-	4
4500	Steam	1	-	1
4600	Fuel storage and handling	2	-	2
4800	Drainage and water collection system	4	-	4
4900	Sewage	0.3	-	0.3
	Subtotal	**163**	**5**	**168**

Note: Numbers may not add up due to rounding.

21.1.3.8 Infrastructure Capital Cost

General costs, which include on-site infrastructure and equipment (pumps, foundations, piping, fittings, etc.), are detailed in Table 21-7.

Table 21-7: Infrastructure Capital Cost

WBS	WBS Description	Initial Capital Cost (US$M)	Sustaining Capital Cost (US$M)	Total Capital Cost (US$M)
5100	Non-operational buildings	20	-	20
5200	Operational buildings	33	-	33
5300	Effluents management	21	3	24
5500	Roads	5	-	5
	Subtotal	**79**	**3**	**82**

Note: Numbers may not add up due to rounding.

21.1.4 Indirect Capital Cost

Indirect costs correspond to activities that are required for the execution and completion of the project, which are considered non-permanent and cannot be accurately allocated at a direct cost. The indirect costs of the project depend heavily on the project execution plan and the master schedule.

The indirect costs were estimated primarily by factorization and include the accounts indicated in the following points.

- Engineering and Project Management:
  - Includes detail engineering hours.
  - Procurement management (domestic and foreign).
  - Contract bidding management.
  - Estimated at 92,000 man-hours with an average rate of US$90/man-hour.

- Construction Management Services:
  - Covers project management, administration, and supervision.
  - Includes positions like project manager, HSE, QA/QC, construction manager, etc.
  - Estimated at approximately 6.0% of the direct cost.
  - Includes site expenses for construction management personnel.
- Third-Party Services:
  - Includes services like security, surveying, testing (soil, concrete, x-rays), factory inspection, first aid, warehousing, etc.
  - Estimated at approximately 3.0% of the direct cost.
- Temporary Construction Facilities and Utilities:
  - Covers facilities used by construction management, support personnel, and the Owner Team.
  - Includes temporary offices, warehouses, roads, utilities, weather protection, and minor constructions.
  - Estimated at approximately 1.0% of the direct cost.
- Camp:
  - Estimated based on peak manpower from the project schedule (1,728 beds).
  - Deducted 250 beds associated with the project operation camp.
  - Valued at a reference ratio of US$20,000/bed.
- Catering and Lodging:
  - Covers catering and lodging costs for indirect personnel (excluding the owner).
  - Estimated based on project's indirect man-hours at an pre-feasibilty study level.
  - Valued with a reference rate of US$35/manhours/day.
- Freight and Logistic:
  - Includes freight costs for transporting equipment or materials to project warehouses.
  - Quoted values considered; benchmarking factors used for unquoted elements (12.0% for international supplies, 6.0% for national supplies).
- Spare Parts:
  - Includes spare parts for start-up and one year of operation, along with operation manuals.
  - Quoted values used; reference value of 5.0% of equipment cost for unquoted items.

- Vendor Representatives:
  - Covers vendor personnel for supervision during installation, commissioning, and testing of electromechanical equipment.
  - Training services for operation and maintenance personnel included.
  - Quoted values used; reference value of 4.0% of equipment cost for unquoted items.
- Commissioning and Start-up:
  - Includes costs for direct crews, construction equipment, and materials required for commissioning and start-up.
  - Estimated using a benchmarking factor of approximately 1.0% of the direct cost.
- First Fills:
  - Includes initial fillings, lubricants, and resin for DLE states and ion exchange during project start-up.
  - Quoted values considered.
- The owner's costs encompass various elements, including the management team, catering and lodging, corporate overheads, legal fees, insurances, bonds, financial costs, taxes, duties and licenses, community-related expenses, land rights and commissioning, as well as pre-production costs.

Indirect costs, necessary to support and facilitate construction activities during the Project delivery period, are summarized in Table 21-8.

Table 21-8: Indirect Capital Cost

Indirect Cost Description	Indirect Capital Cost (US$M)	Indirect Sustaining Capital Cost (US$M)
Engineering and Project Managements (EP)	8	-
Construction Management Services (CM)	39	-
Third-party Services	20	-
Temporary Construction Facilities and Utilities	7	-
Camp	30	-
Catering and Lodging (Project Indirects)	3	-
Freight and Logistic	17	-
Spare Parts	6	-
Vendor Representatives	8	-
Commissioning and Start Up	7	-
First Fills	4	118
Project Indirect	-	15
Subtotal	**147**	**133**

Numbers may not add up due to rounding.

21.1.5 Contingency

Contingency accounts for the difference in costs between the estimated and actual costs of materials and equipment. The level of contingency varies depending on the nature of the contract and the client's requirements. Due to uncertainties at the time the capital cost estimate was developed (in terms of the level of engineering definition, basis of the estimate, schedule development, etc.), it is essential that the estimate include a provision to cover the risk from these uncertainties.

The contingency cost is from total installed costs based on the level of uncertainty for each area, using a deterministic approach. A contingency rate of 20% to 30% has been used based on a Class 4 AACE estimate and the level of definition of the project scope. Ausenco calculated a contingency of US$219 M for the initial capital expenditure for following the percentage allotments by item according to Table 21-9.

Table 21-9: Contingency

Item	Base (US$M)	Contingency %	Contingency (US$M)
Supplies	**291**		**77**
Quotes	207	25.0%	52
Database	84	30.0%	25
Construction	**359**		**90**
MTO / List	278	25.0%	69
Power Supply Subcontract (Quoted)	69	25.0%	17
Factorization / References / Provisions	12	30.0%	4
Project Indirects	**147**		**40**
Engineering and Project Managements (EP)	8	25.0%	2
Construction Management Services (CM)	39	30.0%	12
Third party Services	20	30.0%	6
Temporary Construction Facilities and Utilities	7	30.0%	2
Camp	30	25.0%	7
Catering and Lodging (Project Indirects)	3	25.0%	1
Freight and Logistic	17	25.0%	4
Spare Parts	6	25.0%	2
Vendor Representatives	8	25.0%	2
Commissioning and Start Up	7	30.0%	2
First Fills	4	10.0%	0
Owner's Cost	**39**		**12**
Owner's Cost	39	30.0%	12
Base Estimated Value	**836**		**219**
Cost Contingency		**26.2%**	

Numbers may not add up due to rounding.

21.1.6 Sustaining Capital Cost

Sustaining capital include the construction for new brine and freshwater wells, also effluents management during LOM defined of 20 years:

- Brine wells consider: Year 1: 25 wells; Year 10: 6 wells; Year 11: 6 wells and Year 12: 6 wells.
- Freshwater wells consider: Year 1: 5 wells.

The following table indicates the sustaining capital and its year of investment.

Table 21-10: Sustaining Capital Cost

Area Name	Year 1 (US$M)	Year 10 (US$M)	Year 11 (US$M)	Year 12 (US$M)	Total Sustaining (US$M)
Brine Well	40	10	10	10	68
Freshwater Well	5	-	-	-	5
Effluents Management	3	-	-	-	3
Total Direct	**49**	**10**	**10**	**10**	**77**
Project Indirect	10	2	2	2	15
First Fill	118	-	-	-	118
Contingency	27	3	3	3	36
Total Capex Sustaining	**203**	**14**	**14**	**14**	**246**

Numbers may not add up due to rounding.

21.1.7 Closure Costs

Closure costs are estimated as the 5% of total Capital Expenditures, totaling US$65 M. Closure costs are applied at the end of the LOM.

21.1.8 Exclusions

The capital cost estimate excludes the following costs and scope:

- Value-added tax (IVA)
- Other unspecified taxes
- Additional participation requirements due to external financing conditions
- Study costs not specified in the estimate
- Professional/consulting services not detailed in the estimate
- Special incentives (accelerated schedule, environmental, security)
- Costs related to program acceleration/deceleration
- Currency fluctuations involving the Argentine peso and other currencies
- Facility closure and rehabilitation
- Recovery and reforestation

- Removal/disposal of hazardous materials found during construction, and/or closure
- Community relations and social costs
- Land acquisition and permits
- Construction and maintenance of roads outside project boundaries
- Licenses, patents, royalties
- Force majeure events
- Extraordinary health and safety requirements at work
- Any cost not explicitly outlined in the final Project CAPEX document
- Escalation costs.

21.2 Operating Costs

21.2.1 Overview

The breakdown of operating costs is shown in Table 21-11. The primary direct cost is reagents, accounting for 52%, followed by energy at 22%. Together, these costs total US$98.8 M/a, representing 74% of the total direct operating costs.

In estimating operating costs at the Pre-Feasibility Study level, Ausenco and the Client provided quotes for reagents, resin, membrane, diesel and personnel transportation, accounting for 83% of thetotal direct operating costs.

Table 21-11: Operating Cost Estimate Summary

Description	US$ M/y	US$/t Li_2CO_3
Direct Costs		
Reagents	69.8	2,794
Resin Make up & Membrane Replacement	6.75	270
Energy	29.0	1,159
Manpower	8.07	323
Catering and Camp Services	6.22	249
Maintenance	4.87	195
Site Vehicle Costs	0.287	11
Bus-In/Bus-Out Transportation	2.74	110
Consumables	0.625	25
Li_2CO_3 Transport to Antofagasta Port	5.20	208
Direct Cost Subtotal	**133.60**	**5,344**
Indirect Costs		
General and Administration	2.84	114
Indirect Costs Subtotal	**2.84**	**114**
Total Operating Costs	**136.4**	**5,457**

Numbers may not add up due to rounding.

Changes in vendor-quoted prices significantly impact the reagents category.

21.2.2 Basis of Estimate

The Operating Cost of the Project was estimated at Pre-Feasibility Study level which corresponds to a Class 4 with an expected accuracy range of -15% to -30% on the lower range, and +20% to +50% on the higher range, in accordance with the AACE. The typical estimation methodology for a Class 4 considers factoring from similar operating plants and/or parametric models.

Cost estimates are based on the following assumptions:

- Cost estimates are based on Q2 2024 pricing without allowances for inflation.
- Costs are expressed in United States Dollars (US$), with no allowance for escalation.
- Estimate accuracy is reflective of the stage of project development and classified as an AACE International Class 4 Pre-Feasibility Study level.
- Units of measurement are metric (unless otherwise indicated).
- Operating costs are based on an estimated mine of 20 years.
- Production of battery-grade (BG) Lithium Carbonate (Li_2CO_3) at 25,000 t/y LCE.
- The Majority of labor needs will be sourced from the surrounding communities.
- Equipment and materials will be purchased as new.
- Prices based on vendors budgetary quotation, Ausenco database and by Lithium Chile.
- Lithium feed grade for the processing plant at 286 mg/L Li.

21.2.3 Operating Costs Breakdown

In this section provides a detailed breakdown of direct and indirect operating costs for all items considered in the PFS.

21.2.3.1 Direct Operating Cost Breakdown

21.2.3.1.1 Reagents

The consumption of reagents was determined by Ausenco, for a production of 25,000 t/y of BG lithium carbonate from Arizaro Salar brine, based on metallurgical test work, process design criteria and Ausenco database.

The prices of main reagents were obtained by Ausenco by means of quotation from various suppliers and benchmark. Table 21-12 shows the prices of main reagents and the source of information. The price for secondary reagents were obtained from Ausenco database.

Table 21-12: Reagents Consumption and Cost

Description	Formula	Consumption t/y	US$ M/a	US$/t Li_2CO_3
Soda Ash	Na_2CO_3	53,830	47.4	1,897
Caustic Soda	NaOH	7,176	7.30	292
Sulphuric Acid	H_2SO_4	15,438	12.4	494
Hydrochloric Acid	HCl	1,259	0.819	32.7
Flocculant	-	2.21	0.00886	0.354
Others	-		1.95	77.8
Total			**69.8**	**2,794**

Numbers may not add up due to rounding.

21.2.3.1.2 Resin Make Up & Membrane Replacement

The total replacement cost for resin and membrane consumption totals US$6.75 M/a for the Salar de Arizaro Project PFS, with a unit cost of US$270/t Li_2CO_3. Additional details are provided in Table 21-13.

Table 21-13: Resin Make Up & Membrane Replacement Costs

Description	US$ M/a	US$/t Li_2CO_3
Resin Make up		
Adsorption	5.45	218
IX 1 and 2 Ca/Mg	0.0465	1.86
IX 1 and 2 B	0.117	4.70
Resin Make up Subtotal	**5.61**	**224**
Membrane Replacement		
HPRO	0.999	40.0
Demin Water Treatment Plant	0.146	5.82
Membrane Replacement Subtotal	**1.145**	**45.8**
Total	**6.75**	**270**

Numbers may not add up due to rounding.

21.2.3.1.3 Energy

Table 21-14 shows the annual fuels consumption and the operating costs for electrical energy. Electricity is generated through IFO and diesel power generators.

The IFO price is US$0.65/L, and diesel price is US$1.21/L, sourced from vendor quotations by Lithium Chile. The annual energy consumption cost totals US$29 M, with Li_2CO_3 priced at US$1,159/t. The cost of electrical energy is US$166/MWh.

Table 21-14: Fuels Consumption and Energy Costs

Description	Consumption m^3/y	US$ M/a	US$/t Li_2CO_3
IFO for electrical energy generation	34,319	22.2	889
Diesel for electrical energy generation	5,603	6.76	271
Total		**29.0**	**1,159**

Numbers may not add up due to rounding.

21.2.3.1.4 Manpower

The Opex calculation involves utilizing the projected amount of labour needed for a yearly production of 25,000 t Li_2CO_3 BG. The required salaries and personnel correspond to the industry standards in Argentina. A breakdown of the labour cost is shown in Table 21-15.

Table 21-15: Manpower Costs

Description	No. of Employees	US$ M/a	US$/t Li_2CO_3
Operation	220	6.16	246
Sustainability	24	1.08	43
People Development	6	0.24	10
Resources And Geology	8	0.58	23
Total	**258**	**8.07**	**322**

Numbers may not add up due to rounding.

21.2.3.1.5 Catering and Camp Services

All costs related to lodging and food for Project manpower, defined at Section 0, are shown in Table 21-16. These costs include catering and camps services.

Table 21-16: Catering and Camp Services Costs

Description	US$ M/a	US$/t Li_2CO_3
Catering	3.31	133
Cleaning and accommodation	2.09	83.7
Clothes, security, nursing, etc.	0.811	32.4
Total	**6.22**	**249**

Numbers may not add up due to rounding.

21.2.3.1.6 Maintenance

The annual maintenance costs were calculated using the total installed mechanical cost obtained from Basis of Estimate and Capital Cost Estimate, applying a factor derived from similar projects in the region found in the Ausenco database. The costs are summarised in Table 21-17.

The estimated annual maintenance costs total US$5.27 M/a, which accounts for 2.7% of the total installed mechanical costs. For the production of 25,000 t/y Li_2CO_3 BG, this equates to maintenance costs of US$211/t Li_2CO_3.

Table 21-17: Maintenance Costs

Area	Total Installed Mechanical Projected Capex (US$M)	Factor (%)	US$ M/a	US$/t Li_2CO_3
Wellfield receiving facilities	1.82	1.0	0.0182	0.727
Chemical plant receiving facilities	0.255	1.0	0.00255	0.102
Chemical Plant	0.0400	3.0	0.00120	0.0480
Direct Lithium Extraction (DLE)	90.3	2.5	2.26	90.3
Reverse Osmosis	42.3	2.5	1.06	42.3
Chemical precipitation (Ca & Mg)	4.17	2.0	0.0835	3.34
Ion Exchange 1 (Ca & Mg; B)	6.66	2.5	0.167	6.66
Mechanical evaporation	18.2	2.0	0.364	14.6
Ion Exchange 2 (Ca & Mg; B)	5.69	2.5	0.142	5.69
Carbonation	5.71	2.5	0.143	5.71
Neutralization	5.47	3.0	0.164	6.57
Drying	3.85	3.0	0.116	4.62
Micronizing	2.91	3.0	0.0874	3.49
Packaging	0.589	2.0	0.0118	0.471
Water supply and treatment	6.96	2.0	0.139	5.57
Air	1.59	2.0	0.0318	1.27
Reagents	2.35	2.0	0.0471	1.88
Steam	0.504	2.0	0.0101	0.403
Fuel storage and handling	0.439	2.0	0.00879	0.351
Sewage	0.0900	2.0	0.00180	0.0720
Operational buildings	0.600	2.0	0.0120	0.480
Effluents management	0.422	2.0	0.00845	0.338
Total	**201**	**2.4**	**4.87**	**195**

Numbers may not add up due to rounding.

21.2.3.1.7 Site Vehicle Cost

The cost for site vehicles include diesel and maintenance expenses, has been estimated at US$0.29 M/a, based on data from the Ausenco's database.

21.2.3.1.8 Bus-in/Bus-out Transportation

Transportation of personnel from Salta to Arizaro Salar has been estimated at US$2.74 M/a.

21.2.3.1.9 Consumables Cost

The cost of consumables such as bags, pallets, and lubricants totals US$0.63 M/a, benchmarked for a plant producing 25,000 t/y of LCE, equating to a unit cost of US$25/t Li_2CO_3.

21.2.3.1.10Product Transport to Antofagasta Port

Regarding transportation costs of Li_2CO_3 product, the current cost to transport to the port of Antofagasta is US$208/t. With a production target of 25,000 t/y of BG lithium carbonate, this results in an annual transportation cost of US$5.2 M/a.

21.2.4 Indirect Operating Costs

21.2.5 General and Administration (G&A)

Table 21-18 presents the general and administration costs, calculated based on the projected personnel required to support annual production of 25,000 t Li_2CO_3 BG. This includes management compensation, environmental expenses, communication costs, and other related expenses.

Table 21-18: General and Administration Cost

Description	US$ M/a	US$/t Li_2CO_3
General & Administration	2.84	114

21.2.6 Exclusions of Operating Cost Estimate

The Operating Cost Estimate excludes:

- Contingency
- Government excise and private royalties
- Value-added tax (VAT) and import duties
- Depreciation and amortization of fixed assets, development, and pre-production costs
- Fluctuations in inventory valuations
- Movements in working capital
- Escalation and accuracy provisions.

22 ECONOMIC ANALYSIS

22.1 Forward-Looking Information Cautionary Statements

The results of the economic analyses discussed in this section represent forward-looking information as defined under Canadian securities law. The results depend on inputs that are subject to known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented here.

Forward-looking information includes:

- Mineral Resource and Reserve estimates
- Assumptions about lithium carbonate prices and exchange rates
- The proposed mine production plan
- Projected mining and processing recovery rates
- Sustaining costs and proposed operating costs
- Assumptions regarding closure costs
- Assumptions regarding environmental, permitting, and social risks.

Additional risks related to forward-looking information include:

- Changes in production costs from what is assumed
- Unrecognized environmental risks
- Unforeseen reclamation expenses
- Unexpected variations in the quantity, grade or recovery rates of mineralized material
- Geotechnical or hydrogeological conditions during mining may differ from initial assumptions
- Mining methods not performing as expected
- Plant, equipment, or processes not operating as anticipated
- Changes to assumptions about the availability and cost of electrical power in operating cost estimates and financial analysis
- Ability to maintain the social license to operate
- Accidents, labor disputes, and other mining industry related risks
- Changes in interest rates

- Changes in tax rates.

The calendar years referenced in the financial analysis are intended for conceptual purposes only. Permits must still be obtained for operational activities, and approval for development must be granted by the Lithium Chile's Board.

22.2 Methodologies Used

An engineering economic model was developed for the Project to estimate annual pre-tax and post-tax cash flows and sensitivities based on an 8% discount rate. The project was evaluated considering three price scenarios presented in Section 1.2.1. It is important to note that tax estimates involve many complex variables that can only be accurately calculated during actual operations; therefore, the post-tax results are considered approximations. A sensitivity analysis was performed to assess the impact of variations in lithium carbonate prices, operating costs, and capital costs. The economic analysis was performed using constant dollars, with no adjustments for inflation..

22.3 Financial Model Parameters

The economic analysis was performed using the following assumptions:

- Project execution starts on January 01, 2026.
- Production Ramp-up starts in 2028, with full process plant production achieved by Q4, 2028.
- The mine has a lifespan of 20 years.
- Cost estimates are in constant Q2 2024 US dollars (US$).
- No price inflation or escalation factors were considered.
- Results are based on 100% ownership.
- Capital costs are funded entirely with equity, with no financing costs assumed.
- All cash flows are discounted to the beginning of the project's execution January 01, 2026.
- All lithium carbonate products are assumed to be sold in the same year they are produced.
- Project revenue is derived from the sale of battery-grade lithium carbonate FOB Antofagasta.
- There are currently no binding contractual arrangements in place.

22.3.1 Lithium Carbonate Pricing

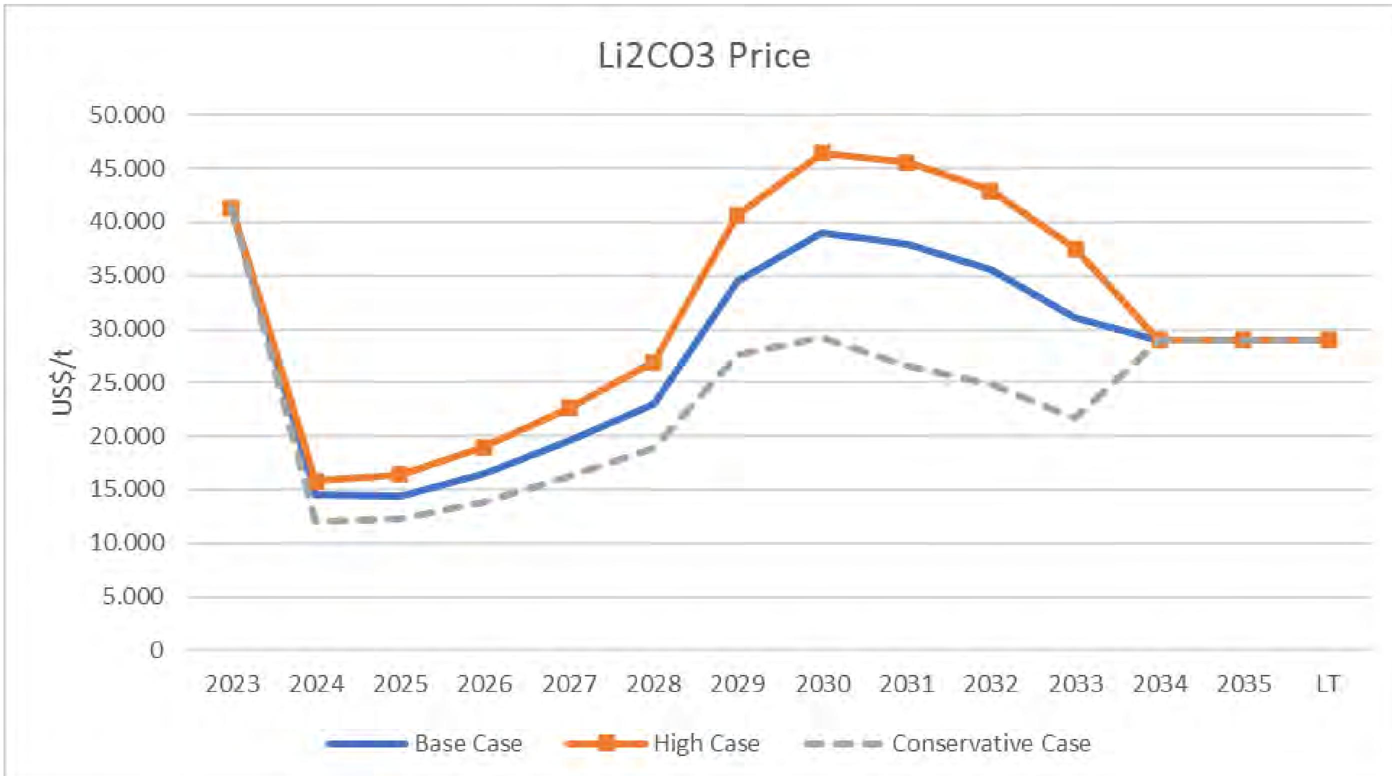
Battery-grade lithium carbonate prices were based on market prices obtained from Lithium-Price-Forecast-Q1-2024-Benchmark-Mineral-Intelligence. The forecasts used are intended to represent expected prices for battery-grade lithium carbonate throughout the life of the Project, considering three scenarios:

- Base case

- High case
- Conservative case

The pricing used in the economic analysis is shown in Figure 22-1.

Figure 22-1: Lithium Carbonate Pricing –Three Scenarios



Source: Benchmark Mineral Intelligence, 2024.

22.3.2 Working Capital

A high-level estimate of working capital has been incorporated in the cash flow, based on accounts receivable (30 days), inventory (30 days), and accounts payable (60 days).

22.3.3 Closure Costs

Closure costs are estimated as the 5% of total Capital Expenditures, totaling US$65 M. Closure costs are applied at the end of the LOM.

22.3.4 Royalties

A royalty rate of 1% on the Net Smelter Return (NSR) (revenue less transport costs) has been considered for payments to the mining property.

Aditionally, a 3% royalty on revenue, less transport costs, operating costs, and general and administrative (G&A) costs, has been considered for payments to the Province of Salta.

Total royalty payments are estimated to be US$ 516 M over the LOM.

22.3.5 Taxes

The Project has been evaluated on a post-tax basis to estimate its potential economic value. The tax model was compiled by Lithium Chile with support from a third-party retained by Lithium Chile. Given that the project is subject to Argentinian Large Investment Incentive Regime (RIGI), the following assumptions were applied:

- An Argentinian corporate income tax rate of 25%. The total undiscounted tax payments are estimated to be US$2,608 M over the LOM.
- Accelerated Depreciation: Accelerated depreciation of movable assets over 2 years, and depreciation of mines, quarries, and infrastructure with a useful life reduced to 60% of the estimated lifespan.
- Export duty exemption for consumption, applicable after three years of RIGI adherence.

22.4 Economic Analysis

The economic analysis was performed assuming an 8% discount rate. Cash flows were discounted to the beginning of construction on January 01, 2026, assuming that the execution decision and major financing will occur at that time.

On a pre-tax basis, the net present value (NPV) discounted at 8% (NPV 8%) is US$ 3,853 M, with an internal rate of return (IRR) of 42.1%, and a payback period of 2.5 years. On a post-tax basis, the NPV 8% is US$ 2,829 M, the IRR is 36.3%, and the payback period is 2.7 years. A summary of the project economics is included in Table 22-1 and illustrated in Figure 22-2.

Table 22-2 provides the annual cash flow forecast for the base case scenario.

Table 22-1: Economic Analysis Summary

General	Base Case	High Case	Conservative Case
Li_2CO_3 Price (US$/t)	$30,513	$32,424	$27,940
Operational Years (years)	20.0	20.0	20.0
Production - LOM			
Process Efficiency (%)	83.0%	83.0%	83.0%
LOM Li_2CO_3 BG (t/y)	24,459	24,459	24,459
Full Production Li_2CO_3 BG (t/y)	25,000	25,000	25,000
Total Payable Li_2CO_3 BG (t)	489,178	489,178	489,178
Operating Costs			
Processing Cost (US$/t Li_2CO_3)	$5,267	$5,267	$5,267
Transport Cost (US$/t Li_2CO_3)	$208	$208	$208
Total Operating Cost (Processing Cost + Transport Cost) (US$/t Li_2CO_3)	$5,475	$5,475	$5,475
Cash Costs (US$/t Li_2CO_3)*	$6,529	$6,606	$6,427
AISC (US$/t Li_2CO_3)**	$7,165	$7,242	$7,063
Capital Costs			
Initial Capital (US$ M)	$1,055	$1,055	$1,055
Sustaining Capital (US$ M)	$246	$246	$246
Closure Capital (US$ M)	$65	$65	$65
Financials – Pre-Tax			
Pre-Tax NPV (8%) (US$ M)	$3,853	$4,426	$3,090
Pre-Tax IRR (%)	42.1%	49.2%	33.0%
Pre-Tax Payback (years)	2.5	2.2	3.1
Financials – Post-Tax			
Post-Tax NPV (8%) (US$ M)	$2,829	$3,258	$2,256
Post-Tax IRR (%)	36.3%	42.1%	28.9%
Post-Tax Payback (years)	2.7	2.4	3.3

* Cash costs consist of mining costs, processing costs, G&A, transport cost and royalties.
** AISC includes cash costs plus sustaining capital and closure cost.

Figure 22-2: Post-Tax-Free Cash Flow– Base Case Scenario

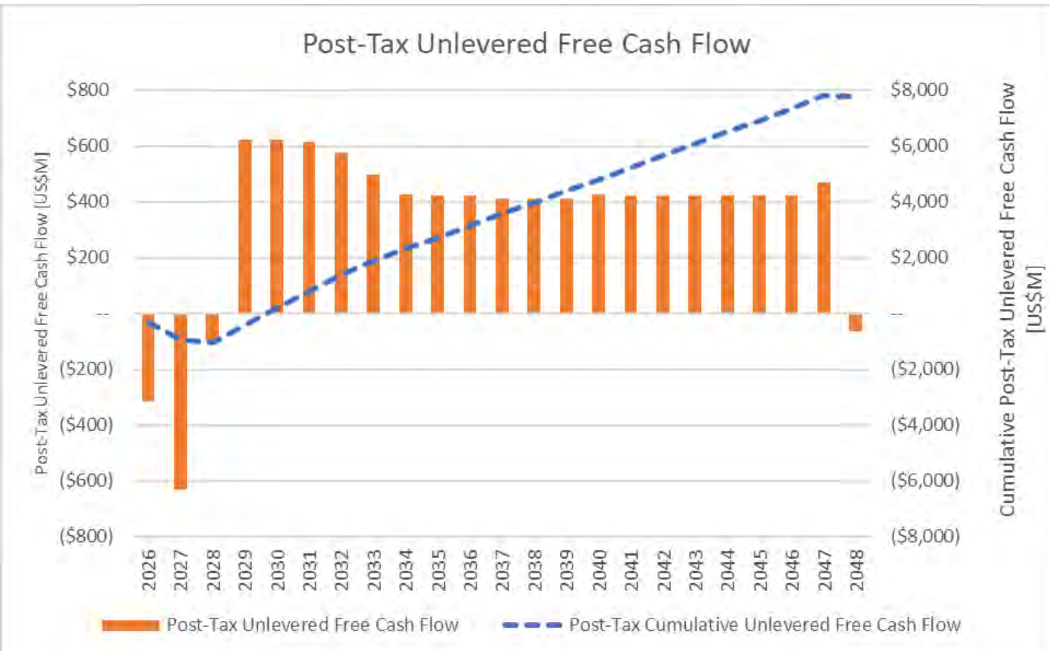
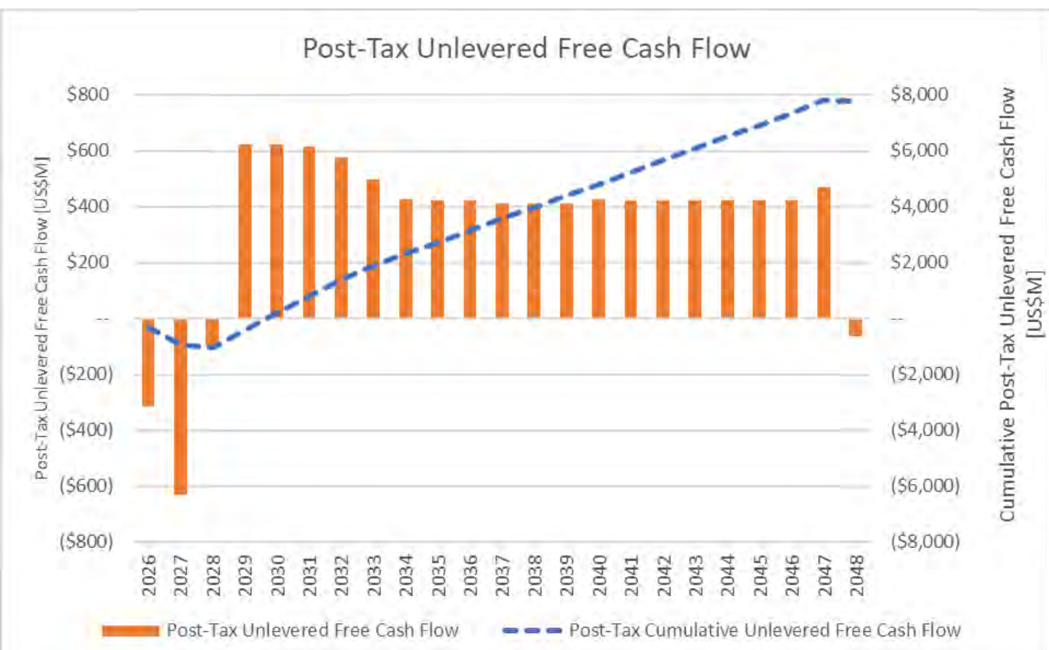


Figure 22-2: Post-Tax-Free Cash Flow– Base Case Scenario



Source: Ausenco,2024.

Table 22-2 provides the annual cash flow forecast for the base case scenario.

Table 22-2: Cashflow Statement on an Annual Basis

General	Unit	-2	-1	1	2	3	4	5	6	7	8	9	10
		2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Production - BG Li_2CO_3	t	--	--	14,178	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
BG Li_2CO_3 Price	US$/t Li_2CO_3	$16,500	$19,500	$23,000	$34,500	$39,000	$38,000	$35,500	$31,000	$29,000	$29,000	$29,000	$29,000
Total Revenue	US$M	--	--	$326	$863	$975	$950	$888	$775	$725	$725	$725	$725
Operating Costs	US$M	--	--	($83)	($131)	($131)	($131)	($131)	($131)	($131)	($131)	($131)	($131)
Transportation	US$M	--	--	($3)	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($5)
Export Duty	US$M	--	--	--	--	--	--	--	--	--	--	--	--
Royalty	US$M	--	--	($10)	($30)	($35)	($34)	($31)	($27)	($25)	($25)	($25)	($25)
EBITDA	US$M	--	--	$230	$696	$804	$780	$720	$612	$564	$564	$564	$564
Initial Capex	US$M	($316)	($633)	($105)	--	--	--	--	--	--	--	--	--
Sustaining Capex	US$M	--	--	($203)	--	--	--	--	--	--	--	--	($14)
Closure Capex	US$M	--	--	--	--	--	--	--	--	--	--	--	--
Change in Working Capital	US$M	--	--	($20)	($40)	($9)	$2	$5	$9	$4	--	--	--
Pre-Tax Unlevered Free Cash Flow	US$M	($316)	($633)	($98)	$656	$794	$782	$725	$621	$568	$564	$564	$549
Unlevered Cash Taxes	US$ M	--	--	--	($32)	($172)	($166)	($151)	($124)	($141)	($141)	($141)	($140)
Post-Tax Unlevered Free Cash Flow	US$ M	($316)	($633)	($98)	$624	$622	$616	$574	$497	$427	$423	$423	$409

Table 22-2: Cashflow Statement on an Annual Basis (Cont.)

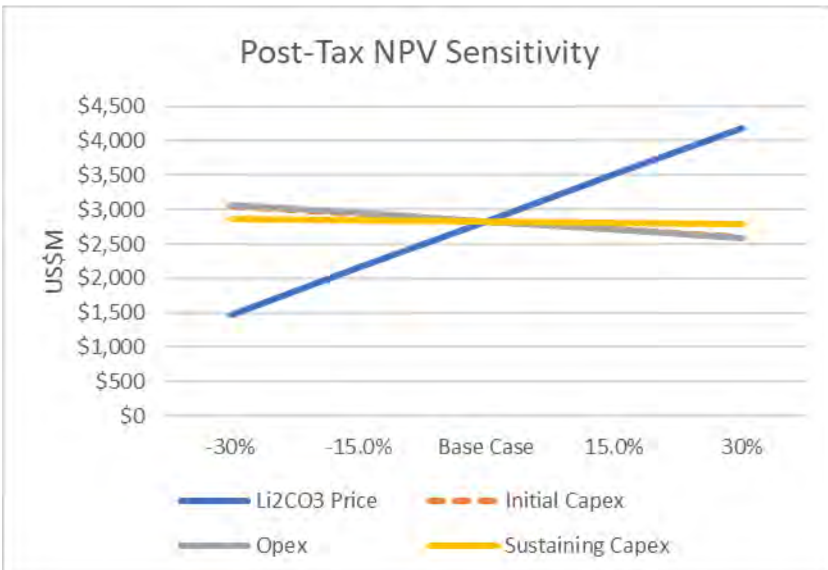
General	Unit	11	12	13	14	15	16	17	18	19	20	21
		2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Production – Li_2CO_3 BG	t	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	--
Li_2CO_3 BG Price	US$/t Li_2CO_3	$29,000	$29,000	$29,000	$29,000	$29,000	$29,000	$29,000	$29,000	$29,000	$29,000	$29,000
Total Revenue	US$M	$725	$725	$725	$725	$725	$725	$725	$725	$725	$725	--
Operating Costs	US$M	($131)	($131)	($131)	($131)	($131)	($131)	($131)	($131)	($131)	($131)	--
Transportation	US$M	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($5)	($5)	--
Export Duty	US$M	--	--	--	--	--	--	--	--	--	--	--
Royalty	US$M	($25)	($25)	($25)	($25)	($25)	($25)	($25)	($25)	($25)	($25)	--
EBITDA	US$M	$564	$564	$564	$564	$564	$564	$564	$564	$564	$564	--
Initial Capex	US$M	--	--	--	--	--	--	--	--	--	--	--
Sustaining Capex	US$M	($14)	($14)	--	--	--	--	--	--	--	--	--
Closure Capex	US$M	--	--	--	--	--	--	--	--	--	--	($65)
Change in Working Capital	US$M	--	--	--	--	--	--	--	--	--	$48	--
Pre-Tax Unlevered Free Cash Flow	US$M	$549	$549	$564	$564	$564	$564	$564	$564	$564	$612	($65)
Unlevered Cash Taxes	US$M	($139)	($138)	($139)	($140)	($140)	($140)	($141)	($141)	($141)	($141)	--
Post-Tax Unlevered Free Cash Flow	US$M	$411	$411	$425	$424	$424	$423	$423	$423	$423	$471	($65)

22.5 Sensitivity Analysis

A sensitivity analysis was conducted on pre-tax and post-tax NPV and IRR of the Project, examining the following variables: battery-grade lithium carbonate price, sustaining capital costs, initial capital costs, and operating costs. The analysis revealed that the Project is most sensitive to fluctuations in lithium carbonate prices, with lesser sensitivity to changes in initial capital costs, operating costs, and sustaining capital costs, as shown in Figure 22-3 to Figure 22-5.

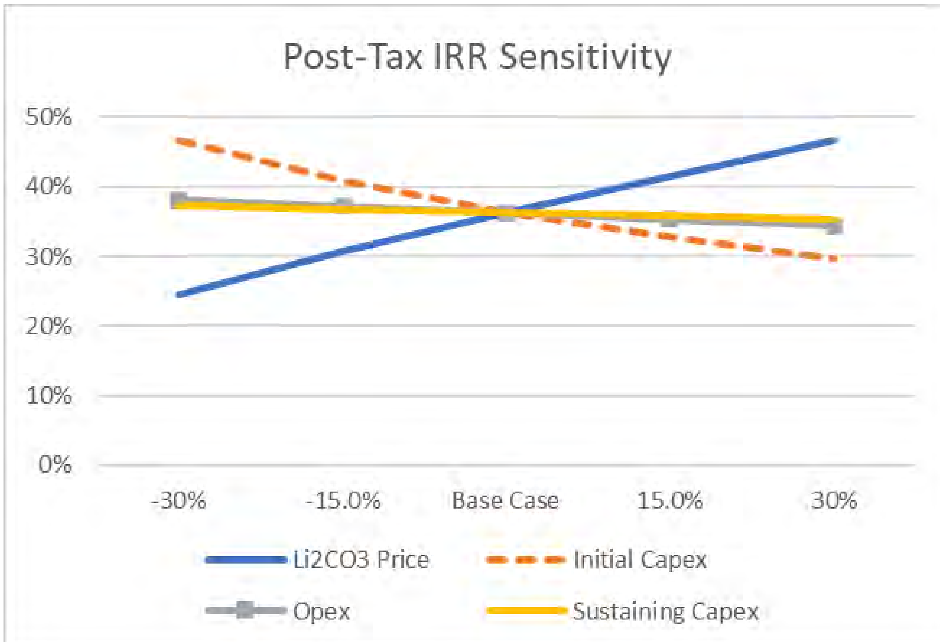
Table 22-3 presents the findings of the pre-tax sensitivity analysis, and Table 22-4 shows the post-tax results.

Figure 22-3: Sensitivity Analysis Post-Tax NPV



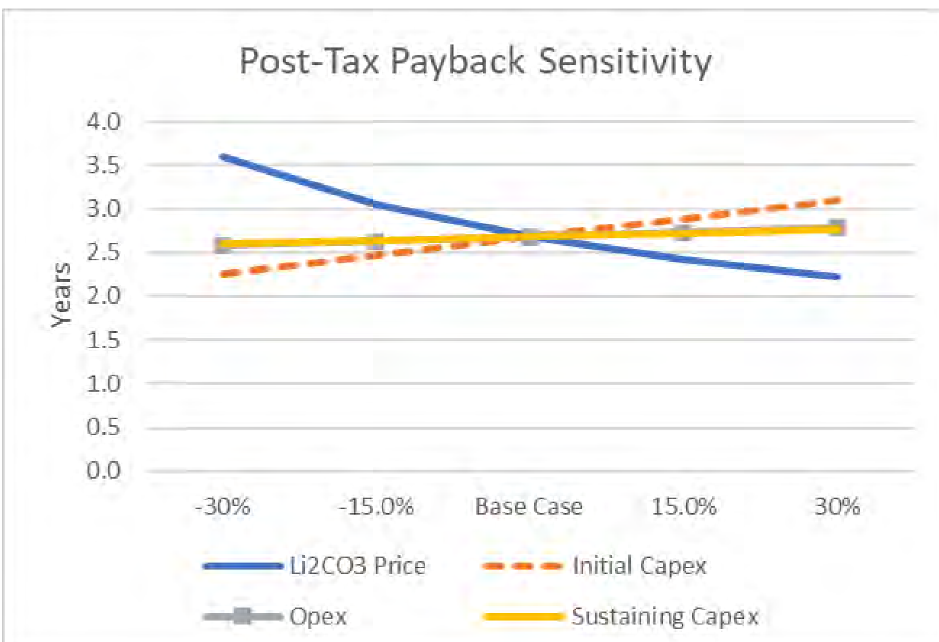
Source: Ausenco, 2024.

Figure 22-4: Sensitivity Analysis Post-Tax IRR



Source: Ausenco, 2024.

Figure 22-5: Sensitivity Analysis Post-Tax Payback



Source: Ausenco, 2024.

Table 22-3: Pre-Tax Sensitivity

Pre-Tax NPV Sensitivity to Discount Rate					
	Li_2CO_3 (US$/t)				
Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	$3,984	$5,492	$7,000	$8,508	10016.15301
5.0%	$3,040	$4,255	$5,471	$6,686	$7,902
8.0%	$2,045	$2,949	$3,853	$4,758	$5,662
10.0%	$1,573	$2,328	$3,083	$3,838	$4,593
12.0%	$1,208	$1,846	$2,484	$3,121	$3,759

Pre-Tax IRR Sensitivity to Discount Rate					
	Li_2CO_3 (US$/t)				
Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	28.2%	35.5%	42.1%	48.4%	54.4%
5.0%	28.2%	35.5%	42.1%	48.4%	54.4%
8.0%	28.2%	35.5%	42.1%	48.4%	54.4%
10.0%	28.2%	35.5%	42.1%	48.4%	54.4%
12.0%	28.2%	35.5%	42.1%	48.4%	54.4%

Pre-Tax Payback Sensitivity to Discount Rate					
	Li_2CO_3 (US$/t)				
Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	3.4	2.8	2.5	2.2	2.1
5.0%	3.4	2.8	2.5	2.2	2.1
8.0%	3.4	2.8	2.5	2.2	2.1
10.0%	3.4	2.8	2.5	2.2	2.1
12.0%	3.4	2.8	2.5	2.2	2.1

Pre-Tax NPV Sensitivity to Opex					
	Li_2CO_3 (US$/t)				
Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$2,257	$3,161	$4,065	$4,970	$5,874
(10.0%)	$2,151	$3,055	$3,959	$4,864	$5,768
--	$2,045	$2,949	$3,853	$4,758	$5,662
10.0%	$1,939	$2,843	$3,747	$4,652	$5,556
20.0%	$1,833	$2,737	$3,641	$4,546	$5,450

Pre-Tax IRR Sensitivity to Opex					
	Li_2CO_3 (US$/t)				
Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	29.9%	37.0%	43.6%	49.8%	55.7%
(10.0%)	29.1%	36.2%	42.9%	49.1%	55.0%
--	28.2%	35.5%	42.1%	48.4%	54.4%
10.0%	27.4%	34.7%	41.4%	47.7%	53.7%
20.0%	26.5%	33.9%	40.7%	47.0%	53.0%

Pre-Tax Payback Sensitivity to Opex					
	Li_2CO_3 (US$/t)				
Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	3.2	2.8	2.4	2.2	2.0
(10.0%)	3.3	2.8	2.5	2.2	2.0
--	3.4	2.8	2.5	2.2	2.1
10.0%	3.5	2.9	2.5	2.3	2.1
20.0%	3.5	2.9	2.6	2.3	2.1

Pre-Tax NPV Sensitivity to Capex					
	Li_2CO_3 (US$/t)				
Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$2,230	$3,135	$4,039	$4,943	$5,848
(10.0%)	$2,138	$3,042	$3,946	$4,850	$5,755
--	$2,045	$2,949	$3,853	$4,758	$5,662
10.0%	$1,952	$2,856	$3,760	$4,665	$5,569
20.0%	$1,859	$2,763	$3,668	$4,572	$5,476

Pre-Tax IRR Sensitivity to Capex					
	Li_2CO_3 (US$/t)				
Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	33.7%	42.0%	49.6%	56.8%	63.6%
(10.0%)	30.7%	38.4%	45.6%	52.3%	58.6%
--	28.2%	35.5%	42.1%	48.4%	54.4%
10.0%	26.1%	32.9%	39.2%	45.1%	50.7%
20.0%	24.2%	30.7%	36.6%	42.2%	47.6%

Pre-Tax Payback Sensitivity to Capex					
	Li_2CO_3 (US$/t)				
Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	3.0	2.5	2.2	2.0	1.8
(10.0%)	3.2	2.7	2.4	2.1	2.0
--	3.4	2.8	2.5	2.2	2.1
10.0%	3.6	3.0	2.6	2.4	2.2
20.0%	3.8	3.2	2.8	2.5	2.3

Pre-Tax NPV Sensitivity to Sustaining Capex					
	Li_2CO_3 (US$/t)				
Sustaining Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$2,080	$2,985	$3,889	$4,793	$5,698
(10.0%)	$2,063	$2,967	$3,871	$4,775	$5,680
--	$2,045	$2,949	$3,853	$4,758	$5,662
10.0%	$2,027	$2,931	$3,835	$4,740	$5,644
20.0%	$2,009	$2,913	$3,817	$4,722	$5,626

Pre-Tax IRR Sensitivity to Sustaining Capex					
	Li_2CO_3 (US$/t)				
Sustaining Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	28.9%	36.2%	42.9%	49.3%	55.2%
(10.0%)	28.6%	35.8%	42.5%	48.8%	54.8%
--	28.2%	35.5%	42.1%	48.4%	54.4%
10.0%	27.9%	35.1%	41.8%	48.0%	53.9%
20.0%	27.6%	34.7%	41.4%	47.6%	53.5%

Pre-Tax Payback Sensitivity to Sustaining Capex					
	Li_2CO_3 (US$/t)				
Sustaining Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	3.3	2.8	2.4	2.2	2.0
(10.0%)	3.3	2.8	2.5	2.2	2.0
--	3.4	2.8	2.5	2.2	2.1
10.0%	3.4	2.9	2.5	2.3	2.1
20.0%	3.5	2.9	2.5	2.3	2.1

Table 22-4: Post-Tax Sensitivity

Post-Tax NPV Sensitivity to Discount Rate — Li_2CO_3 (US$/t)

Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	$2,951	$4,083	$5,214	$6,344	$7,475
5.0%	$2,231	$3,144	$4,055	$4,966	$5,877
8.0%	$1,471	$2,151	$2,829	$3,506	$4,184
10.0%	$1,109	$1,678	$2,244	$2,809	$3,375
12.0%	$829	$1,310	$1,788	$2,266	$2,743

Post-Tax NPV Sensitivity to Opex — Li_2CO_3 (US$/t)

Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$1,630	$2,310	$2,988	$3,665	$4,343
(10.0%)	$1,551	$2,230	$2,908	$3,586	$4,263
--	$1,471	$2,151	$2,829	$3,506	$4,184
10.0%	$1,391	$2,071	$2,749	$3,427	$4,104
20.0%	$1,311	$1,991	$2,670	$3,347	$4,025

Post-Tax NPV Sensitivity to Capex — Li_2CO_3 (US$/t)

Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$1,622	$2,301	$2,978	$3,656	$4,333
(10.0%)	$1,546	$2,226	$2,903	$3,581	$4,258
--	$1,471	$2,151	$2,829	$3,506	$4,184
10.0%	$1,395	$2,075	$2,754	$3,432	$4,109
20.0%	$1,320	$1,999	$2,679	$3,357	$4,034

Post-Tax NPV Sensitivity to Sustaining Capex — Li_2CO_3 (US$/t)

Sustaining Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	$1,499	$2,179	$2,857	$3,534	$4,212
(10.0%)	$1,485	$2,165	$2,843	$3,520	$4,198
--	$1,471	$2,151	$2,829	$3,506	$4,184
10.0%	$1,457	$2,136	$2,815	$3,492	$4,170
20.0%	$1,442	$2,122	$2,801	$3,478	$4,156

Post-Tax IRR Sensitivity to Discount Rate — Li_2CO_3 (US$/t)

Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	24.5%	30.7%	36.3%	41.6%	46.6%
5.0%	24.5%	30.7%	36.3%	41.6%	46.6%
8.0%	24.5%	30.7%	36.3%	41.6%	46.6%
10.0%	24.5%	30.7%	36.3%	41.6%	46.6%
12.0%	24.5%	30.7%	36.3%	41.6%	46.6%

Post-Tax IRR Sensitivity to Opex — Li_2CO_3 (US$/t)

Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	25.9%	32.0%	37.5%	42.8%	47.7%
(10.0%)	25.2%	31.3%	36.9%	42.2%	47.1%
--	24.5%	30.7%	36.3%	41.6%	46.6%
10.0%	23.7%	30.0%	35.7%	41.0%	46.0%
20.0%	23.0%	29.3%	35.0%	40.4%	45.4%

Post-Tax IRR Sensitivity to Capex — Li_2CO_3 (US$/t)

Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	29.2%	36.2%	42.6%	48.6%	54.4%
(10.0%)	26.6%	33.2%	39.2%	44.8%	50.1%
--	24.5%	30.7%	36.3%	41.6%	46.6%
10.0%	22.6%	28.5%	33.8%	38.8%	43.5%
20.0%	21.0%	26.6%	31.7%	36.4%	40.9%

Post-Tax IRR Sensitivity to Sustaining Capex — Li_2CO_3 (US$/t)

Sustaining Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	25.1%	31.3%	37.0%	42.3%	47.3%
(10.0%)	24.8%	31.0%	36.6%	41.9%	46.9%
--	24.5%	30.7%	36.3%	41.6%	46.6%
10.0%	24.2%	30.3%	36.0%	41.2%	46.2%
20.0%	23.9%	30.0%	35.6%	40.9%	45.8%

Post-Tax Payback Sensitivity to Discount Rate — Li_2CO_3 (US$/t)

Discount Rate	(30.0%)	(15.0%)	--	15.0%	30.0%
3.0%	3.6	3.0	2.7	2.4	2.2
5.0%	3.6	3.0	2.7	2.4	2.2
8.0%	3.6	3.0	2.7	2.4	2.2
10.0%	3.6	3.0	2.7	2.4	2.2
12.0%	3.6	3.0	2.7	2.4	2.2

Post-Tax Payback Sensitivity to Opex — Li_2CO_3 (US$/t)

Opex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	3.5	3.0	2.6	2.4	2.2
(10.0%)	3.5	3.0	2.6	2.4	2.2
--	3.6	3.0	2.7	2.4	2.2
10.0%	3.7	3.1	2.7	2.4	2.2
20.0%	3.8	3.1	2.8	2.5	2.3

Post-Tax Payback Sensitivity to Capex — Li_2CO_3 (US$/t)

Initial Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	3.2	2.7	2.4	2.2	2.0
(10.0%)	3.4	2.9	2.5	2.3	2.1
--	3.6	3.0	2.7	2.4	2.2
10.0%	3.8	3.2	2.8	2.5	2.3
20.0%	4.0	3.4	3.0	2.7	2.4

Post-Tax Payback Sensitivity to Sustaining Capex — Li_2CO_3 (US$/t)

Sustaining Capex	(30.0%)	(15.0%)	--	15.0%	30.0%
(20.0%)	3.5	3.0	2.6	2.4	2.2
(10.0%)	3.6	3.0	2.7	2.4	2.2
--	3.6	3.0	2.7	2.4	2.2
10.0%	3.6	3.1	2.7	2.4	2.2
20.0%	3.7	3.1	2.7	2.5	2.3

23 ADJACENT PROPERTIES

Several nearby projects have reported sub-surface brines with high lithium concentrations, as shown in Figure 23-1 and as described below. Despite their proximity, they do not provide site-specific information that is directly relevant to the ongoing exploration of Lithium Chile.

The current resources and information on the adjacent properties are available on the corporate websites and SEDAR filings of the holding companies. The information presented may not necessarily be indicative of the geology or mineralization of the Salar de Arizaro Project, which is the focus of this technical report. This section is intended to describe the type and extent of mineralization present in the region and may or may not be relevant as an exploration target for the Salar de Arizaro Project.

Investors are cautioned that this information is derived from publicly available sources, it has not been independently verified, and its compliance with NI 43-101 standards cannot be confirmed. Additionally, the proximity to a discovery, mine, or mineral resource is not indicative of mineralization at the Company's Project, and if mineralization does occur, there is no guarantee that it will be of adequate quantity or grade to support an economically viable extraction scenario.

23.1 Salar de Arizaro Project – Lithium X Energy Corporation

The Project is situated 75 km from Pocitos, where an industrial park and natural gas pipeline are located, 490 km northwest of Salta Province, and 26.7 km southwest of Lithium Chile project on the Salar de Arizaro.

The Salar de Arizaro Project is owned by Lithium X, a company headquartered in Vancouver, Canada. Lithium X currently has mineral rights over 33,846 Ha at Salar de Arizaro which are held by 11 mining concessions, covering part of the western and eastern portions of the Salar. All concessions are in good standing with all statutory annual payments (mining canon) and reporting obligation up to date.

The Project has shown significant potential due to its location, and the company is currently conducting extensive exploration programs to further delineate the resources.

As of the latest update, Salar de Arizaro Project is an exploration stage property (Lithium X Energy Corp., 2023).

23.2 Arizaro East Project – Noram Lithium Corporation

The Arizaro East Property is located in the northeastern sector of the Salar de Arizaro, 8.6 km east of Lithium Chile project and approximately 22 km to the southwest of the Tolar Grande Village, Los Andes Department in the Province of Salta, Argentina.

Noram Lithium Corp., a company based in Vancouver, Canada has owned the project since July 27th, 2017, when it acquired full ownership of the Arizaro East Property. This property spans 2,709 Ha, which hosts disseminated lithium and includes lithium brine-clay prospects with disseminated lithium.

In January 2018, an initial surface sampling campaign identified anomalies occurring within the property. To better understand the potential for lithium-bearing sub-surface layers, the company was encouraged to conduct a geoelectrical survey in the area. Furthermore, by extending the survey to the broader Salar de Arizaro area, it was possible to establish whether the sub-basin, a significant portion of which is covered by the property, is hydrologically connected or isolated from the main basin. This survey could also provide relevant data on the depth, thickness and resistivities of sub-surface strata, which, inferably, could indicate brine saturation of the sediments.

To date, Arizaro East Property is an exploration stage property (Noram Lithium Corp., 2017).

23.3 Arizaro Project – Lítica Resources, a Pluspetrol Company

The Salar de Arizaro Project is located in the southern sector of the Salar de Arizaro, 18.2 km southwest of the Lithium Chile project.

The Arizaro Project was initiated by LSC Lithium Corporation, a North American company, in 2017. However, in January 2019, Litica Resources (a subsidiary of Pluspetrol Company) acquired 100% ownership. This transition occurred because LSC Lithium Corp. recognized that since February 2018, capital markets had been challenging for junior lithium explorers in Argentina.

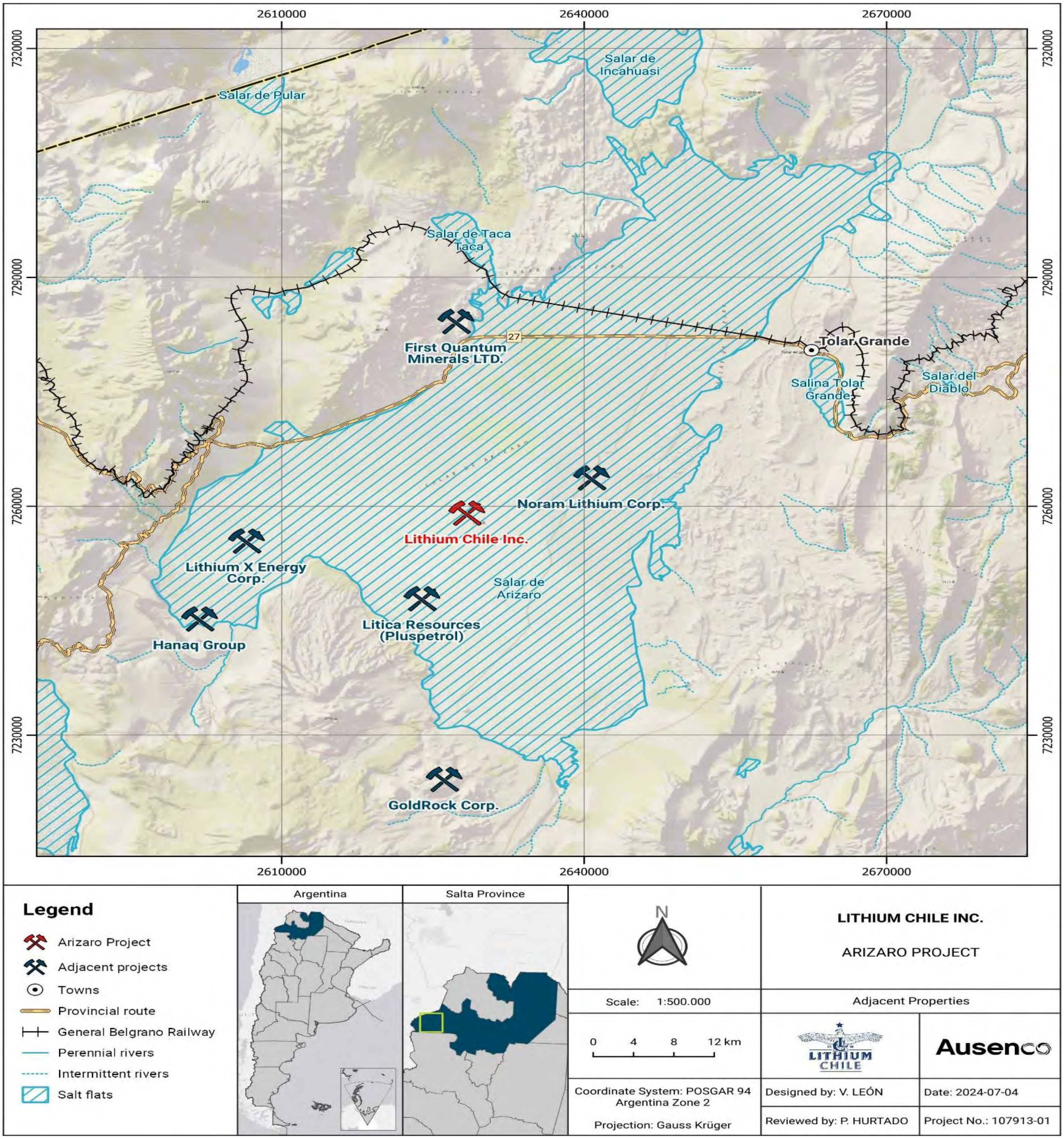
Litica Resources' exploration and brine sampling activities will cover 22,376 Ha in the center of the Salar de Arizaro, in Salta, Argentina. The initial resource estimate for the Salar de Arizaro Project is expected to be completed by the end of the three-stage exploration work program (Panorama minero, 2018).

23.4 Doncella Lithium Project – Hanacolla

The Doncella project focuses on lithium extraction from brine and covers 21,850 Ha. It is located within the salt flat of Arizaro, in the province of Salta, in the northwest of Argentina.

Since May 2018, exploration efforts by Hanario S.A., which use direct and indirect exploration techniques, have identified areas of interest. These areas were successfully drilled during the first quarter of 2019, revealing significant volumes of brine. Additional exploratory drilling is planned, and extraction technologies suited to the project's characteristics are currently being evaluated (Hanaq Group, 2024).

Figure 23-1: Properties Near the Salar de Arizaro Project



Source: Ausenco, 2024.

24 OTHER RELEVANT DATA AND INFORMATION

This section is not relevant to this report.

25 INTERPRETATION AND CONCLUSIONS

25.1 Introduction

The QPs note the following interpretations and conclusions in their respective areas of expertise, based on the review of data available for this Report.

25.2 Exploration and Drilling

Drilling and testing programs from 2021 to 2024 were undertaken to determine the presence of lithium-rich brine within the mining concessions, obtain aquifer parameters, and help support the conceptual model development. In total, six diamond drill holes and three rotary wells within Lithium Chile's concessions were drilled, sampled, and tested during that period to support the lithium brine resource and reserve estimates. Core samples from the diamond drill holes were described and collected for drainable porosity analysis, and depth-specific brine samples were obtained for analysis. Short-term pumping tests were all conducted at all three rotary wells, and a long-term pumping test (31 days) was undertaken at Argento-02. Composite brine samples were collected during the pumping tests for analysis. Freshwater exploration to date has included the drilling and testing of Chaschas Sur 01 in the southern portion of the basin.

25.3 Mineral Processing and Metallurgical Testwork

25.3.1 Direct Lithium Extraction Testwork

The data obtained from the DLE tests performed show this technology enables the selective extraction of Lithium (Li^+) from the Arizaro brine.

Due to the low concentration of boron present in the feed brine and its low selectivity for the DLE resin, this element can be subsequently treated by ion exchange, thereby reducing its concentration in the brine stream containing the element of interest (Lithium).

The tests conducted with the Lashen resin, both in a single-column and in continuous columns, indicate the following:

- There is an effect of temperature on the elution of lithium from the resin; however, this parameter is not as relevant in the lithium capture during the adsorption stage.
- The water consumption required for lithium desorption from the resin is 57 m^3/t Li_2CO_3.
- The selectivity of the adsorption resin for lithium ion is much higher compared to sodium.
- The concentration of lithium in the resin is 2.35 kg /m^3 Li resin.
- The configuration that performs best in the continuous stage is the one that uses a mixture of solution and water during the elution stage.
- The performance of the continuous tests is 88.8%.

Regarding the Summit Nanotech resin, it is still in the development stage. Test results show that it has a performance of 93.6%. The maximum capture of the resin is 4.3 mg/g Li of resin, and the working capture ranges from 2.0 to 2.6 mg/g Li of resin. Additionally, the resin is highly selective for Li^+ ions, showing a 99% reduction in impurities.

25.3.2 Laboratory Testwork

Laboratory tests determine that, in the evaporation stage, the equilibrium concentration of chloride is 246,000 mg/L and does not vary significantly with temperature.

The dosage of sodium hydroxide (NaOH) to the brine is effective, achieving an average magnesium concentration of 12 mg/L.

Regarding the neutralization test with sulfuric acid (H_2SO_4), the carbonate is reduced to an average equilibrium of 57 mg/L.

Based on DLE testwork, laboratory testwork and the mass balance results, the overall recovery from the salt flat to the production of battery grade lithium carbonate is expected to be 83%.

25.4 Mineral Resource Estimate

The results of lithium concentrations from aquifer sampling via pumping tests and depth-specific sampling support the concept that brine enriched in lithium occur in the Lithium Chile concession area and it is anticipated to be favorable for production.

In the opinion of the QP, the elevated concentrations of lithium observed in the Project area, favorable thickness and transmissivity of the sandy aquifer below the massive halite justify continued development of the project.

Based on the experience of the QP in other similar lithium-rich brine aquifer systems in the region, the results of the exploration activities to date support the prospect of potential future economic extraction of lithium-rich brine in amounts that could feasibly support a project. Exploration wells in Salar de Arizaro have demonstrated the ability of the aquifer to yield large amounts of lithium-rich brine to land surface. Abundant brine samples from a vast majority of the concession areas have been obtain and analyzed, and they demonstrate relatively large lithium concentrations which are on par with other similar projects in the region.

At present, the QP is not aware of any legal, political, environmental, or other risk that could materially impact the potential development of the mineral resources.

25.5 Mineral Reserve Estimate and Mining Methods

Reserve modeling indicates that it is feasible to meet expected production during the Year 1 ramp-up (14,178 t of LCE) and subsequent Years 2 through 20 (25,000 tonnes of LCE per year). Modeling also indicates that the most feasible zone for pumping corresponds to the southwestern area of Lithium Chile's mining concessions due to the shallower and thicker clastic sediments there, which are relatively permeable.

The production process in the Arizaro Salar will operate through a conventional brine production wellfield. An operating lifespan of 20 years has been estimated for an LCE production of 25,000 t/y from Year 2 to the end of the LOM. The average annual brine feed rate is estimated at approximately 660 L/s, and the average lithium concentration of the extracted brine is estimated at 273 mg/L. The lithium mass that can be extracted from the production wellheads, prior to processing losses, represents about 24% of the total Measured and Indicated resources.

Pumping rates of individual future brine production wells is estimated at a maximum of approximately 19 L/s for the projected wells within the Measured and Indicated resource zones. Therefore, approximately 35 wells are required to be drilled starting Year 2. An average depth of 500 m is estimated for production wells with a top screen depth of 200 m to limit dilution of extracted brine from the upper zone.

At present, the QP is not aware of any legal, political, environmental, or other risk that could materially impact the potential development of the mineral reserves.

25.6 Recovery Methods

Current market information indicates that, due to both environmental and economic considerations, DLE technology is increasingly recognized as a viable method for extracting lithium from raw brines. This growing viability supports its inclusion in the proposed design.

Additionally, the process design has been improved by removing the purification stage, as boron concentration can be controlled through ion exchange (IX) stages.

Based on analysis of available information, vendor quotations, and benchmark data, the proposed flowsheet integrates DLE technology with other brine concentration methods and subsequent chemical treatment. This approach demonstrates the feasibility of producing battery-grade lithium carbonate with an overall process yield of 83%.

According to vendor information, the ramp-up period can be shortened to 1 year, enabling the achievement of nominal production levels of battery-grade lithium carbonate by the end of the first year.

25.7 Infrastructure

The infrastructure to support the Project throughout its LOM will include process buildings, personnel facilities, ponds, power supply, and water supply.

In the process area, the infrastructure will feature a DLE plant, reverse osmosis unit, mechanical evaporation system, chemical plant, dry product handling, air and steam systems, workshop, spare parts warehouse, metallurgy warehouse, SAS and product warehouse, and a gatehouse.

Personnel facilities in the process plant area will include administrative offices, a dining room, a change house, a polyclinic, and a camp.

The Project includes various types of ponds, each differing in location, function and dimensions. The Wellfield Receiving Pond will collect raw brine from multiple brine extraction wells in the Salar de Arizaro at a central point. Two additional receiving ponds, situated near the plant, will receive brine from the Wellfield Receiving Pond. The Depleted Brine

Infiltration Zone, positioned to the north of the Project and covering 5,001,388 m^2, will facilitate the evaporation and infiltration of depleted brine. Finally, a Raw Water Pond will be used to supply water required throughout the process. Each pond will feature a waterproofing system.

The main power source for the Project will be a IFO electric power plant with a capacity of approximately 31.5 MVA.

The freshwater supply demand of 372 m^3/h will be met by a wellfield consisting of 7 to 9 pumping wells, situated in the Chascha Sur sub-basin approximately 20 km southeast of the plant site. The estimated number of wells is based on the results from one test well that has been constructed so far, and this estimate will be revised following the completion of a groundwater exploration and testing program currently pending approval. The proposed locations of the wellfield and pipeline route are shown in Figure 18-18.

Additional infrastructure includes freshwater supply system, a drinking water system, a wastewater treatment system, access roads, and internal roads.

25.8 Environmental, Permitting and Social Considerations

The Project, located in the Salta Province, has received approval from the provincial environmental authority for an EIS related to well construction and operation, while a second EIS for the construction and operation of a process plant is still pending approval. Regarding additional permits, the company has already secured water permits for industrial and potable water use, as well as registration in the Registry of Hazard Waste Generators. Additional permits for water use, municipal approval for the camp, and drilling permits for exploratory wells are under review, and the company expects to obtain approval in the near future, likely by 2024.

The baseline data review provides key information about the ecosystem of the project area and its surroundings. The reports show that the Arita and Chascha wetlands are fragile ecosystems that support wildlife in conservation statuses. Furthermore, part of the Project is situated within the Los Andes Wildlife Reserve, which aims to protect the vicuña, an animal present in the project area. It is noted that the baseline data covers only one season and and lacks information on the abundance of wildlife, flora, and vegetation. Therefore, it is not currently possible to define the risk to wildlife and flora from the future operation. Accordingly, the project may need to implement compensation measures to address for potential habitat loss.

Potential impact to the quality and quantity of freshwater (both groundwater and seasonal surface water) is a risk to the project that should be included in future hydrological and hydrogeological baseline studies and modeling efforts for the Project. This risk has not yet been adequately assessed for future operations.

Local communities and indigenous communities are located near the Project area. The Company has been working with the communities this year as part of the CSR Plan and the Tolar Grande Social Roundtable, both of which aim to engage with the communities and maintain ongoing fluent and meaningful communication, participating in activities with the community and providing assisstance based upon need.

The completion of additional environmental and socio-economic baseline studies and modeling/analyses will support the further refinement of project designs to the feasibility level by means of a better understanding of environmental and community constraints. Recommendations for designing and implementing environmental baseline studies are provided in Section 26.7. Environmental management plans can be developed based on the understanding of key project risks and interaction of the Project with environmental components.

25.9 Markets and Contracts

Although lithium prices have been decreasing, they remain highly sensitive to market fluctuations, with supply and demand being the primary drivers. As demmand is met and expected to rise steadily, lithium prices are anticipated to stabilizeand eventually increase as supply tightens, leading to a potential short-term price surge.

25.10 Capital Cost Estimate

The capital cost estimate, presented in Q2 2024 dollars, was derived from budgetary quotations for equipment, Ausenco's in-house project and study database, and experience from similar operations. The total project capital cost amounts to $1,300.8 M, comprising an initial capital cost of $1,055 M and a sustaining capital cost of $246 M.

25.11 Operating Cost Estimate

The operating cost estimate, expressed in Q2 2024 dollars, was developed using budgetary quotations, Ausenco's in-house project and study database, and experience from similar operations. Direct operating costs are estimated at $133.6 M/a, while indirect operating costs amount to $2.8 M/a. The most significant direct cost is attributed to reagents, accounting for 52% of the total, followed by energy at 22%. Combined, these two costs total $98.8 million per annum, representing 72.4% of the direct operating costs.

25.12 Economic Analysis

Based on $1,055 M of initial capital costs, sustaining capital costs of $246M, closure costs of $65M, total LOM Operating cost of $2,577 M, the pre-tax NPV discounted at 8% is US$3.85 B, the IRR is 42.1%, and payback period is 2.5 years. On a post-tax basis, the NPV discounted at 8% is US$2.83B, the IRR is 36.3%, and payback period is 2.7 years.

The NPV(8%) is most sensitive to changes in the LCE price and then to Capex, Opex and Sustaining capital.

The economic analysis is considered current and suitable to be included in this Report.

25.13 Risks and Opportunities

25.13.1 Risks

25.13.1.1 Mineral Resource Estimate

Risks and uncertainties to the Project are currently related to the unknown nature of the hydraulic characteristics for the rest of the concession area. However, based on the experience of the QP and because Salar de Arizaro is a mature salar system, it is likely that hydrogeologic conditions and chemistry of the brine in the other concession areas is likely to be similar to that observed at the current exploration wells.

25.13.1.2 Mineral Processing and Metallurgical Testing

Samples may not fully represent the entire brine composition from Salar de Arizaro, which poses a risk of variability in the brine fed to the plant. This variability could impact the concentration of lithium and affect the efficiency of the extraction process.

Samples used for evaporation, impurity removal, and neutralization tests may not accurately reflect the process conditions as they are prepared based on mass balance calculations, which are influenced by the parameters used. Since these parameters can vary in a continuous operation due to inherent uncertainties in the direct extraction plant, the results obtained at this stage could be affected.

The test results reveal that although yields are high in single-column tests, they decrease during short-term continuous testing. This raises a potential concern that performance could be even lower in long-term testing than what was observed in the shorter tests.

Testing has not been conducted on a pilot plant for all the unit operations involved in the design, which presents a risk as it could alter the results indicated in the mass balance.

Long-term continuous testing with vendors has not been conducted, which poses a risk as it could affect the parameters used to develop the mass balance and determine the overall process performance.

25.13.1.3 Mineral Reserve Estimate and Mining Methods

Risk and uncertainties related to the reserve modeling include the following:

- Assumptions regarding aquifer parameters where empirical data does not exist.
- Potential variations in brine density after extraction occurs, which is not explicitly simulated using the density driven flow package.
- Future pumping from neighboring properties in the Salar de Arizaro, which has not been analyzed at the current stage.

As brine is extracted from the production wells, it is likely that a mixing of brines will occur, and their chemical interaction could lead to the precipitation of salts in the wells. This could cause the clogging of their slots, affecting the extraction capacity, and it is also possible that corrosion may occur on their walls, potentially resulting in the loss of wells in the long term, considering the projected extensive operational period (20 years).

Finally, the surface infiltration or reinjection of spent brine has not been tested sufficiently to implement it in the reserve model with the projected production rates. Related risks include limited infiltration and increased surface water ponding in the case of surface reinjection, as well as potential dilution of the pumped brine due to reinjection at depth (depending on the location).

25.13.1.4 Recovery Methods

The plant's feed consists of a blend of brine extracted from various wells across different areas fo the Arizaro Salar. Due to variability in the composition of the brine, the mixture can produce unexpected crystallizations that may affect the final concentration of the brine entering the plant. This variability poses a risk of not complying with the proposed mining plan.

25.13.1.5 Infrastructure

At the Pre-Feasibility Study (PFS) stage, a study on the interaction between depleted brine and evaporites was intended to be completed but was not feasible. Consequently, Ausenco used benchmark infiltration rates to estimate the required infiltration area for the project. This approach introduces a risk of discrepancies between the estimated and actual infiltration rates. Therefore, this aspect must be reviewed, verified, and confirmed in the next phase of work, as outlined in Section 26, to ensure there is no impact on the footprint of the infiltration zone.

Additionally, there is a risk of increased traffic in the areas surrounding the project due to the construction and start-up operations of other projects. Similarly, the estimates for groundwater resources and available freshwater supply are based on preliminary basin water balance calculations and data from a single test pumping well. These estimates will be updated once the water exploration program, currently pending approval, is completed. These assumptions are subject to confirmation in subsequent project phases, as outlined in Section 26.

25.13.1.6 Environmental, Permitting and Social Considerations

The key environmental and socio-economic risks to the Project are identified below. These risks can be mitigated and addressed by means of implementing the recommendations provided in Section 26:

- The company completed a baseline study between December 2022 and March 2023, which provides limited information about wildlife and flora within the project area, particularly related to the wetlands and azonal ecosystems. The available information shows that the Project is located in a fragile ecosystem with some wildlife species in a sensitive conservation state. Consequently, there is a strong potential that the Project will need to implement measures to avoid, mitigate, and compensate for potential impacts on ecosystems from the operation. Furthermore, since part of the Project is situated within the Los Andes Wildlife Reserve, protecting the vicuñas may further complicate these measures.
- There is a lack of hydrological and hydrogeological baseline studies and modeling efforts for the Project that could help determine quantitative and qualitative impacts to freshwater (groundwater and seasonal surface water) arising from current and future operations. Impacts could include changes to local freshwater aquifers that could affect human health and cause ecological impacts to plants and wildlife.
- The other risk is associated with the interactions of the Project with the local Indigenous and non-Indigenous communities in the area. The available data indicates non-Indigenous and Indigenous communities are largely habituated to mining operations in the area and without apparent opposition to the Arizaro Project. The data indicates that the company has been working on a CSR Plan and activities with the Tolar Grande and nearby rural communities; however, there is no information about proposed CSR activities for subsequent years. The specific risk is losing the social license, which can occur at any stage of the Project, resulting in difficulties in obtaining permits and maintaining site activities.

25.13.1.7 Capital and Operating Cost Estimates

The logistics and transportation of reagents from supply sites to the plant may be influence by various factors that could affect reagents prices, potentially leading to increases that impact the estimated operating costs and represent a risk for the Project.

There is also a risk related to the supply of IFO, as the available fuel at the date of this report is insufficient to meet the requirements of the proposed process. This situation directly impacts the Opex.

25.13.2 Opportunities

25.13.2.1 Mineral Resource Estimate

The estimated resource is expected to increase as more information becomes available. Additional drilling with depth-specific sampling in the Salar de Arizaro could increase the resource estimate appreciably. In particular, a potential upside includes drilling in deeper portions of the southern and western area of the property. The ARDDH-05 and ARDDH-08 brine chemistry results to date are positive in terms of the high lithium concentrations encountered. Furthermore, the western portion hosts deep clastic sediments which underlie the halite unit and are expected to have a relatively high drainable porosity and permeability.

25.13.2.2 Mineral Processing and Metallurgical Testing

Based on metallurgical testing results, there is the opportunity to make adjustments to the mass and energy balances to increase global process efficiency above 83%. These adjustments consider reduction of water required for extracting lithium from the resin and increasing desorption temperature at the DLE stage. Additionally, continuous long-term testing with the vendors is required to increase efficiency.

25.13.2.3 Mineral Reserve Estimate and Mining Methods

The estimated reserve will be strengthened with new field information to improve the model and support an updated projection; additional long-term pumping tests are key to better identifying other productive zones in Lithium Chile's mining concessions. Furthermore, with more water chemistry data, the ability to simulate density driven flow will strengthen the model, and a potential extension of the active model domain could be considered to include freshwater zones.

Additionally, a network of monitoring wells installed along the margins of the salar would allow for a better understanding of the possible hydraulic interaction between freshwater and brine zones after production starts. Regarding the reincorporation of spent brine in the basin, additional field studies are required to evaluate what volumes of brine can be infiltrated (at the surface) without causing surface flooding and runoff. It is also recommended to consider pressurized brine reinjection, which involves evaluating reinjection rates and a location that minimizes the risk of dilution of the extractable brine.

25.13.2.4 Recovery Methods

There is an opportunity to use cogenerated steam, produced in the electrical generation system, as a heating medium for the solutions in both the DLE plant and the evaporator. To confirm this opportunity, a trade-off analysis for power supply and cogeneration use should be conducted during the feasibility study stage.

25.13.2.5 Infrastructure

There is an opportunity to procure electricity from a third party, as an electricity generation project is currently being developed in the vicinity of the Arizaro Project.

25.13.2.6 Environmental, Permitting, Social and Community Considerations

The key identified opportunities are as follows:

- Continue working on environmental and socio-economic baselines and complement data from other seasons (for biotic environments) so that any construction and operational constraints can be identified early.
- Cost savings can be realized if the environmental team collaborates closely with the exploration and hydrogeological drilling teams to identify opportunities for integrating hydrogeological and hydrological monitoring and testing into a single unified program that supports environmental studies.
- Work closely with the feasibility design team to ensure that required environmental measures are identified early, adopted, and integrated into the Project, enabling the avoidance or mitigation of potential impacts.

25.13.2.7 Capital and Operating Cost Estimates

In the lithium carbonate production process, pumps and compressors with motors generate heat that can be recovered and used in other areas, such as heating process streams. Implementing heat recovery combined cycles presents an opportunity for the Project, offering benefits like reduced energy consumption, increased profitability, and enhanced sustainability.

Additionally, there is an opportunity to evaluate the transport logistics of lithium carbonate from the plant to the port, to identify the most cost-effective solution. Options under consideration include using trucks or trains.

26 RECOMMENDATIONS

26.1 Introduction

The financial analysis of this PFS demonstrates positive economics. It is recommended to continue developing the project through additional studies, including a feasibility study. Items required to be completed in advance of, and as inputs to, a feasibility study are indicated as such in the respective sections below.

Table 26-1 summarises the proposed budget to advance the project through the PFS stage, considering the recommendations discussed in this Section and a PFS budget of $4.0 M.

Table 26-1: Budget for Recommendations

Program Companet	Estimated Total Cost (US$ M)
Exploration and Drilling	2.5
Mineral Resource Estimate	0.08
Metallurgical Testwork Program	0.2
Project Infrastructure	0.5
Environmental, Permitting and Social Considerations	0.8
Feasibility Study	3.5
Total	**8.1**

26.2 Exploration and Drilling

To support the upcoming feasibility study, additional diamond drill holes with depth-specific sampling for brine chemistry and drainable porosity are needed to potentially increase the resource. Morever, further pumping tests with brine sampling are required to demonstrate the feasibility of extracting lithium-rich brine. To accompany these new exploration activities, continued QA/QC measures are recommended for brine chemistry, including the use of duplicates, blanks, and secondary laboratories, as well as for drainable porosity, utilizing two independent methodologies. These steps will help increase confidence in the obtained field data.

For drilling, additional deep drilling is recommended in the western and southern areas of the mine concessions, based on the favorable lithologic characteristics and brine chemistry results from Argento-01, Argento-02, and ARDDH-05. The first priority is to drill a 400-m deep pumping well near ARDDH-05 and conduct a short-term (3-day) test with brine sampling to confirm the high-grade lithium values. The second priority is to drill two additional 400-m deep pumping wells in the southern areaof the properties, with short-term (3-day) pumping tests: one well near ARDDH-04, and another well between ARDDH-01 and ARDDH-05.

26.3 Mineral Resource Estimate

For future updates incorporating additional exploration data, it is recommended to use Leapfrog for the resource estimate instead of the polygon method. Generating a resource block model with Leapfrog Edge would enhance the estimate, by allowing the interpolation of brine chemistry and the direct use of geological volumes for drainable porosity. The estimated cost for implementing Leapfrog resource modeling is approximately US$80,000.

26.4 Mineral Reserve Estimate

The following is recommended for a future update of the reserve estimate:

- Recalibration of the model with new field information to improve the model and support an updated projection; additional long-term pumping tests are key to better identifying other productive zones in Lithium Chile's mining concessions. Once production starts, the reserve model should be updated and recalibrated on a yearly basis with production data as well as newly obtained exploration information to improve simulated projections.
- Simulation of reinjection of spent brine once more field testing has occurred via surface infiltration or through pressurized reinjection.
- Simulation of variable density flow once more water chemistry samples have been obtained and analyzed with lower water densities. With this update, a potential extension of the active model domain could be considered to include freshwater zones as well as freshwater pumping when the locations of the future freshwater wells are known.
- Simulation of neighboring pumping once more information is publicly available as to the projected production plans of neighboring operators.

An estimated cost for the initial groundwater model update is about U.S. $150,000. In terms of the projected wells, it is recommended that replacement wells be considered after 8 to 12 years of operation, however this will ultimately depend on the state of the wells and their efficiencies over time.

26.5 Metallurgical Testwork and Recovery Methods

Based on the metallurgical test results, the following actions are recommended:

- Adjust the mass and energy balance.
- Heat the elution water to at least 25°C using other available streams or energy sources.
- Perform vendor continuous long-term tests within the operating ranges.

26.5.1 Recommended Long-term Testing

Continuous long-term testing is recommended with the vendors for the following packages:

- Direct Lithium Extraction (DLE)

- High-pressure Reverse Osmosis (HPRO)
- Ion exchange
- Mechanical evaporation

26.6 Project Infrastructure

- To ensure the integrity of the project's infrastructure, it is recommended to conduct a geotechnical study of the various sites, which should include at a minimum:
  - Geotechnical characterization of the test pits (including visual inspection, granulometry, CBR, modified proctor, Atterberg limits, USCS classification, moisture content, in-situ density, among others).
  - Summary of results and interpretation for engineering purposes, including strength and deformability parameters, and bearing capacities.
  - Seismic soil classification.
  - Geological and geotechnical characterization of foundation soils, soil types, and stratigraphy of different sections.
  - Appropriate excavation methods and approximate percentages of common excavable material, rippable rock, and rock that requires non-mechanical removal methods.
  - General construction recommendations for mass and local earthworks.
  - Recommendations for slope cuts, both for massive excavations and trenches (temporary and permanent).
  - Methodology employed, interpretation, and results of geophysical tests and electrical resistivity.
  - Explore of the possibility of using rail for transportation of reagents and the final product.
- It is recommended to carry out a review of the logistics of a supply chain for the IFO.
- Hydrological and Hydrogeological Water Balance: The water balance for the Arizaro basin must be updated. This updated balance should account for groundwater recharge contributions from precipitations and snowmelt. Furthermore, it should assess the impact of proposed freshwater extraction for supply purposes and evaluate the sustainable yield.
- It is recommended to study spent-brine/evaporite interaction to reduce uncertainty in relation to infiltration zone balance. In specific it is necessary to determine potential dissolution or precipitation resulting from the interaction between depleted brine and the evaporites. This can be evaluated by modeling with specific software (PHREEQC, Geochemist's Workbench) and by laboratory testing.

26.7 Environmental, Permitting and Social Considerations

The following recommendations are made with regard to the design and implementation of environmental and socio-economic baseline studies. Qualified professionals should be retained to design and oversee the implementation of each of these studies. A review of available data should be undertaken as part of the design and scoping of these studies, prior to field implementation:

- Environmental baseline field studies and analyses should be completed in the following subject areas:
  - Hydrological and Hydrogeological Water Balance: Completing a quantitative field surface and groundwater monitoring and testing program for the Project area that will support a conceptual and three-dimensional hydrogeological model and quantitative water balance model. The model should build on currently available data and provide emphasis on seasonal recharge of the freshwater aquifers within and near the Project area and the potential drawdown from ongoing freshwater extraction as planned for the operation and the determination of sustainable yields that will be protective of sensitive ecosystems and human use and health. There is potential to work closely and collaborate with the hydrogeological production teams on the above initiatives, especially in regard to developing a conceptual and numerical three-dimensional groundwater model.
  - Water Quality Studies and Predictions: The groundwater and seasonal surface water (if present) of the study area should be sampled seasonally and analyzed for water quality to use for modeling and to establish a baseline that can be used as an early warning to predict the potential for freshwater – saltwater mixing.
  - Air Quality: The adequacy of existing baseline data for air quality should be reviewed for near field and further afield operations, and additional data collected as required.
  - Near-surface Soil Characterizations: The adequacy of near surface soil textures and chemistry data should be reviewed, and additional sampling/analyses conducted as required.
  - Flora, Fauna, and sensitive ecosystems: Additional surveys of flora and fauna throughout the Project area should be conducted on a seasonal and multyear basis with an emphasis on the sensitive areas of Arita and Chascha wetlands and the monitoring of the already identified endangered species. Studies should cover different seasons to determine species abundance and their relation to other variables such as surface and groundwater fluctuations. A mitigation plan should be developed to reduce the potential for adverse effects to due to project interactions.
- Additional socio-economic and cultural baseline studies should also be considered:
  - A gap analysis should be completed on current understanding of socio-economic conditions related to Indigenous and non-Indigenous communities near the site. The purpose of the gap assessment would be to identify current socio-economic information gaps related to nearby populations and community land use activities around the site and any potential future conflicts. Land use activities could include local harvesting of plants, wildlife, cattle grazing, and human/agricultural water use.
  - Studies to understand how best to provide benefits to the community and consideration of establishing Impact Benefit or Cooperation agreements with nearby communities.
  - A conflict resolution procedure should be established that allows individuals in communities to lay complaints against the company and requires a prompt and meaningful response from the Company and action as warranted.

- Ongoing engagement with the local communities should continue with regular community meetings as determined by local community needs and requests.
- The current CSR plan should be regularly reviewed and updated based on the results of studies and feedback from the community. A system of recording community comments along with company response and feedback should be implemented.
- The existing archaeological database for the proect should be reviewed with an emphasis on adequacy. Additional archaeological studies should be considered if the review indcates additional fied study is required. A mitigation plan should be developed to avoid any impact on these cultural artifacts and resources.

Environmental Constraints Mapping; to assist in the development of the project at the feasibility study design phase, environmental constraints mapping should be initiated and periodically updated, based on the results of historical and future baseline environmental and land use studies. This mapping should be utilized to limit risks to valued environmental and social components at the design stages of the project.

26.8 Feasibility Study

It is recommended to develop a Feasibility Study that will continue with the proposed design and progress engineering to produce a Capital Cost and Operating Cost Estimate with -20% to +10% accuracy according to the AACE Class 3 Standard.

The Feasibility Study will be divided into three stages. The first phase will develop the proposed geotechnical test work, brine infiltration test works, and trade-offs outlined as recommendations in the present report. Additionally, the ongoing metallurgical tests will be reviewed, and results will be cross-checked against the current design to identify any potential gaps.

Once the trade-off studies are completed, the engineering development will start and generate the documentation to support the market quotes for process, mechanical , electrical packages, contracts and the final cost estimation.

Finally, the last stage includes an NI 43-101 Technical Report with the results of the feasibility study. Schedule considers the following stage duration:

Table 26-2 Feasibility Study Schedule

Stage	Duration
Testworks	90 days
Trade-Off Studies	42 days
FS Engineering	161 days
Cost Estimation	45 days
NI 43-101 Technical Report	30 days

27 REFERENCES

Adionics. (2023): Adionics DLE – Desktop study. Presentation prepared by Adionics Society for Argentum Lithium, January 26, 2023.

Alonzo, R.N., Gutíerrez, R. y Viramonte, J. (1984): Puna Austral bases para el subprovincialismo geológico de la Puna Argentina. Actas IX Congreso Geológico Argentino, Actas1: 43-63, Bariloche.

Amaru Mining Services. (2022): Ensayo de bombeo, Pozo Chascha Sur 01. Technical report prepared for Lithium Chile, November, 2022. 18 pp.

Aminco. (2017a): Informe Técnico. Campaña de exploración de litio. Tolar Grande – Departamento Los Andes. Provincia de Salta. 57 pp.

Aminco. (2017b): Informe Técnico. Campaña de perforación, Salar de Arizaro, Tolar Grande Salta, Argentina. Internal report prepared for Argentina Lithium & Energy Corp. 11pp.

Aquaterra. (2013): Diagnóstico de Disponibilidad Hídrica en Cuencas Alto-Andinas de la Región de Atacama, SIT No 329: informe preparado para la Dirección General de Aguas, Diciembre 2013.

Aramayo, C. (1986): *Geología y petrología del borde NE del salar del Hombre Muerto (provincia de Catamarca)*. Tesis Profesional Facultad de Ciencias Naturales, Universidad Nacional de Salta (inédita), 122 p., Salta.

Areal, R. (2019): ¿Puede un pueblo desaparecer del mapa? LATE online magazine. https://www.revistalate.net/2019/02/22/tolar-grande-mas-aca-de-la-frontera/

Argentum Lithium. (2022): *Environmental Impact Study: "Estudio de Impacto Ambiental y Social, Etapa Prefactibilidad*," February 2022.

Argentum Lithium. (2023): *Baseline Study: "Línea de Base Ambiental y Social. Proyecto Arizaro. Salar de Arizaro. Dpto. Los Andes*," June 2023.

ARLI (2024). *Plan de Exploración de Agua Proyecto Arizaro*. Internal document. 5 pp.

Ausenco. (2024): *Water supply Memo* (107913-EW-00000-18172-002). Internal document prepared by Ausenco for Lithium Chile. 29 pp.

Benchmark Mineral Intelligence. (2023a): *Lithium-Forecast-Q2-2023-Benchmark-Mineral-Intelligence*. Spreadsheet prepared for Lithium Chile. July 04, 2023.

Benchmark Mineral Intelligence. (2023b): *Lithium-Forecast-Report-Q2-2023-Benchmark-Mineral-Intelligence*. Report prepared for Lithium Chile. July 04, 2023. 84 pp.

Benchmark Mineral Intelligence. (2023c): *Lithium-Price-Forecast-Q2-2023-Benchmark-Mineral-Intelligence*. Spreadsheet prepared for Lithium Chile. July 04, 2023.

Benchmark Mineral Intelligence. (2023d): *Lithium-Total-Cost-Model-Q2-2023-Benchmark-Mineral-Intelligence*. Spreadsheet prepared for Lithium Chile. July 04, 2023.

Bianchi, A.R., Yáñez, C.E., Acuña, L.R. (2005): *Base de datos mensuales de precipitaciones del noroeste Argentino.* report prepared by Instituto Nacional de Tecnología Agropecuaria, Centro Regional Salta-Jujuy, Argentina.

Cabrera, A. L., and A. Willink. (1980): *Biogeografía de América Latina.* O.E.A. Serie de Biología, Monografía 13. Washington, D.C.: General Secretariat of the Organization of American States.

Cabrera, A. L. (1994): *Regiones fitogeográficas Argentinas*. Fascículo 1. Enciclopedia Argentina de Agricultura y Jardinería. Tomo II. Primera Reimpresión. Editorial ACME S.A.C.I. Buenos Aires. 85 pp.

Canadian Institute of Mining, Metallurgy and Petroleum (CIM). (2003): *Estimation of Mineral Resources and Mineral Reserves, Best Practice Guidelines: Canadian Institute of Mining, Metallurgy and Petroleum*, November 23, 2003.

Canadian Institute of Mining, Metallurgy and Petroleum (CIM). (2010): *Definition Standards on Mineral Resources and Mineral Reserves, Resources and Reserves Definitions: Canadian Institute of Mining, Metallurgy and Petroleum*, November 27, 2010.

Canadian Institute of Mining, Metallurgy and Petroleum (CIM). (2012): *Best Practice Guidelines for Resource and Reserve Estimation for Lithium Brines*. November 01, 2012.

Castelli. M.L. Reston & Associates Abogados. (2023): *Legal Opinion for Lithium Chile*. Internal document prepared for Lithium Chile

CIDMEJu. (2024): *Final report of laboratory test.* Report prepared by "Centro de Investigación y Desarrollo en Materiales Avanzados y Almacenamiento de Energía de Jujuy" (CIDMEJu) for Argentum Lithium (ArLi S.A.), March 27, 2024.

Conhidro S.R.L. (2017): *Estudio Geofísico e Hidrogeológico Propiedades Mineras en el Salar de Arizaro*. Departamento de los Andes, Provincia de Salta. Internal report for Argentina Litio y Energía S.A. 109 pp.

Conhidro S.R.L. (2019): *Estudio Hidrogeológico Cuenca Río de Los Patos - Salar del Hombre Muerto*. Report prepared for Consejo Federal de Inversiones, December 2019.

Conhidro S.R.L. (2023): *Estudio de la Recarga en Salar de Arizaro*. Internal document prepared for Lithium Chile.

Cooper, H.H. and Jacob, C.E. (1946): *A generalized graphical method for evaluating formation constants and summarizing well field history.* American Geophysical Union Transactions, vol. 27, pp. 526-534.

De Silva, S.L. (1989): *Altiplano-Puna volcanic complex of the Central Andes*: Geology, v. 17, pp. 1102-1106.

DGA et al. (2009): DGA-DIHA PUC, 2009, Levantamiento hidrogeológico para el desarrollo de nuevas fuentes de agua en áreas prioritarias de la zona norte de Chile.

EC & Asociados. (2023a): *Línea de Base Ambiental y Social, Proyecto Arizaro, Salar de Arizaro, Departamento Los Andes*. Internal document prepared for Lithium Chile. June 2023.

EC & Asociados. (2023b): Informe de Impacto Ambiental, Proyecto Arizaro, Salar de Arizaro, Etapa de Explotación, Salar de Arizaro, Departamento de Los Andes. Environmental Impact Report for the production phase submitted to the environmental authority. December 2023.First Quantum Minerals Ltd. (2023): *Nuestras operaciones-Taca Taca* (https://www.first-quantum.com/spanish/nuestras-operaciones/default.aspx. Visited on August 18, 2023.

Fortuna Silver Mines Inc. (2022): *Lindero Mine and Arizaro Project, Salta Province, Argentina*. Technical Report Effective Date: December 31, 2022 .

Fortuna Silver Mines Inc. (2023): *Lindero Mine, Argentina* (https://fortunasilver.com/mines/lindero-mine-argentina/). Visited on August 18, 2023.

Garreaud, R.D. (2009): *The Andes climate and weather: in Advances in Geosciences*. Vol. 9, pp. 3-11, August 2009.

GEC. (2018): *CSAMT Exploration Survey, Salar de Arizaro 2018, Salta province, Argentina*. Internal report for Argentina Lithium & Energy. 73 pp.

Geoservicios. (2022): Informe Geofísico: Exploración del Subsuelo Profundo Mediante Sísmica Pasiva. Diciembre 2022

Hersbach, Bell, B., Berrisford, P., Biavati, G., Horányi, A., Muñoz Sabater, J., Nicolas, J., Peubey, C., Radu, R., Rozum, I., Schepers, D., Simmons, A., Soci, C., Dee, D., Thépaut, J-N. (2020): ERA5 hourly data on single levels from 1940 to present. Copernicus Climate Change Service Climate Data Store, DOI: 10.24381/cds.adbb2d47

Hermosilla, E. (2023): *Electrical Load List*. Ausenco, July 2023.

Hermosilla, E. (2023): *Electrical Equipment List*. Ausenco, July 2023.

Houston, J., and Jaacks, J. (2010): T*echnical Report on the Sal de Vida Lithium Project, Salar del Hombre Muerto, Catamarca, Argentina*. NI 43-101 Technical report prepared on behalf of Lithium One, Inc.

Hogan, J.F., Phillips, F.M., and Scanlon, B.R. (2004) : Groundwater Recharge in a Desert Environment: American Geophysical Union, 2000 Florida Avenue, N.W.

Houston, J., Butcher, A., Ehren, P., Evans, K., and Godfrey, L., (2011): *The evaluation of brine prospects and the requirement for modifications to filing standards*. Economic Geology, 106 (7).

HydroSOLVE, Inc. (2008): *AQTESOLV for Windows 95/98/NT/2000/XP/Vista: HydroSOLVE, Inc.* Reston, Virginia, version 4.50.004 – Professional.

Johnson, A.I. (1967): Specific Yield - Compilation of Specific Yields for Various Materials. United States Geological Survey Water-Supply Paper 1662-D

Lanshen. (2024a): *Executive Report Stationary Lanshentec DLE Adsorbent Testing with ARLISA Arizaro Brine*. Report prepared by Lanshen SA for Argentum Lithium (ArLi S.A.), May 2, 2024.

Lanshen. (2024b): *Executive Report Lanshentec DLE Adsorbent Li –21 Continuous Cycle Tests with ARLISA Arizaro Brine.* Report prepared by Lanshen SA for Argentum Lithium (ArLi S.A.), May 22, 2024.

Lithium Chile. (2022): *Procedimiento de Gestión de Residuos y Efluentes en Campamento Arizaro*. Internal document.

Lithium Chile. (2023): *Plan de Relacionamiento Comunitario de la Empresa*. Internal document.

Lithium X Energy Corp. (2023): *Salar de Arizaro Project Overview*. (https://lithium-x.com/arizaro/). Visited on August 18, 2023.

Lopez Arias, Castelli Reston & Asociados Abogados. (2023): *ARLI S.A. - Legal Opinion for Lithium Chile - MLC - DNR - 8Jun23 Ausenco*. June, 2023. 8 pp.

Millard, J., Pinto, P., Rosko, M, Brooker, M. (2023). Salar de Arizaro Project NI 43-101 Technical Report and Preliminary Economic Assessment, Argentina. Prepared for Lithium Chile Inc. Effective date is August 04, 2023..

Mineria Positiva. (2022): *Technology Assessment for Direct Lithium Extraction*. Technical report prepared by Mineria Positiva for Argentum Lithium, October 2022.

Minetti, J.L. (2005): *El clima del Noroeste Argentino.* Editorial Magma, 449 p.

Ministerio de Economia. (2022): *Portfolio of Advanced Project Lithium*.

Ministry of Production and Labour. (2019): *Guía de Recursos de Buenas Prácticas para el Cierre de Minas*. <https://www.argentina.gob.ar/sites/default/files/1cierre_de_minas_1._guia_de_recursos_buenas_practicas_cierre_de_minas_2019_spm.pdf>

Montgomery & Associates. (2022): *Results of Year 2021 Exploration Activities and Preliminary Lithium Resource Estimate, Salar de Arizaro Project, Salta Province, Argentina*. Interim NI 43-101 report dated February 8, 2022.

Montgomery & Associates, and Geochemical Applications International. (2012): *Measured, indicated and inferred lithium and potassium resource estimate for lithium and potassium resource, Sal de Vida Project*. NI 43-101 Technical Report prepared on behalf of Lithium One, Inc. 332 p.

National Institute of Indigenous Affairs. (2023): *Mapa de pueblos originarios*. https://www.argentina.gob.ar/derechoshumanos/inai/mapa.

Nicoll, J., Logan, T.A., Laurencelle, J., Hogenson, K., Gens, R., Buechler, B., Barton, B., Shreve, W., Stern, T., Drew, L. and Guritz, R. (2014): *Radiometrically Terrain Corrected ALOS*.

Noram Venture Inc. (2017): *Noram to acquire Arizaro East Project in the Lithium triangle*. Vancouver, British Columbia – July 21st, 2017 – Noram Ventures Inc.

NORLAB. (2019a): *Muestreo del Pozo AR-01*. Independent report prepared for Lithium Chile. May 3, 2019

NORLAB. (2019b): *Muestreo del Pozo AR-01*. Independent report prepared for Lithium Chile. May 23-24, 2019.

Olañeta, M., Jakoniuk, M. (2016): *Estudio de Impacto Ambiental y Social "Perforación de 12 Pozos Profundos."*

Olañeta, M., Jakoniuk, M. (2022): *Estudio de Impacto Ambiental y Social, etapa Prefactibilidad*. Prepared for the Secretary of Mining, Salta Province. February, 2022.

Ontario Securities Commission (OSC). (2011): *Standards of Disclosure for Mineral Projects*. Mineral Brine Projects and National Instrument, 43-101. July 22, 2011.

Panorama Minero. (2018): *LSC Lithium – Joint Venture Partnership With Litica Resources, a Pluspetrol Company, Salar de Arizaro* (https://panorama-minero.com/ingles/lsc-lithium-joint-venture-partnership-with-litica-resources-a-pluspetrol-company/)

Perez, C. (2023): *Arizaro PEA Building List.* Internal document prepared by Ausenco. July 2023.

Perez, C. (2023): *Arizaro PEA Bulk Earthworks MTO.* Internal document prepared by Ausenco. July 2023.

Rosko, M., Montgomery & Associates. (2022): *Results of Year 2021 and 2022 Exploration Activities and Preliminary Lithium Resource Estimate, Salar de Arizaro Project, Salta Province, Argentina*. Interim NI 43-101 report dated December 15, 2022.

Rosko, M. (2023). *Results of Years 2021, 2022 and 2023 Exploration Activities and Preliminary Lithium Resource Estimate Salar de Arizaro Project Salta Province, Argentina*. Prepared for Lithium Chile Inc. Effective date is June 27, 2023.

Rosko, M. (2022). *Results of Years 2021 Exploration Activities and Preliminary Lithium Resource Estimate Salar de Arizaro Project Salta Province, Argentina*. Prepared for Lithium Chile Inc. Effective date is February 08, 2022.

Segemar. (2001): *Hoja Geologica 2569-II Socompa, Provincias de Salta, Scale 1:250,000*. Bulletin 260.

Segemar. (2007): *Hoja Geologica 2569-IV Antofalla, Provincias de Catamarca y Salta, Scale 1:250,000*. Bulletin 343.

Servicios Mineros Gali (SMG). (2019): *Informe de Impacto Ambiental "Etapa de Exploración Y Explotación de Pozos de Salmueras Ricas en Litio" Proyecto Arizaro Tolar 02 (Expte. 20.345), Tolar 06 (Expte. 20.349), Salari 08 (Expte. 19.637), Salari 07 (Expte. 19.636), Tolar 05 (Expte. 20.348), Tolar 10 (Expte. 20.353) Y Chascha Sur (Expte. 21.375).* Salar de Arizaro Departamento Los Andes, Provincia De Salta. Unpublished.

SMG SRL. (2014): *Estudio De Impacto Ambiental Etapa Exploración Mina Salari 08 - Expte:19.637 Salar de Arizaro Dpto. Los Andes – Salta*. Unpublished.

SMG SRL. (2016): *Estudio de Impacto Ambiental y Social "Perforación de Pozos Profundos" Minas: Tolar 02 - Expte: 20.345, Tolar 05 – Expte: 20.348, Tolar 06 - Expte: 20.349, Tolar 10 – Expte: 20.353, Salari 07 - Expte: 19.636 y Salari 08 - Expte: 19.637")*. Salar de Arizaro, Departamento Los Andes, Provincia De Salta. Unpublished.

SRK Consulting, Schlumberger Water Services, ANSTO, and Prudentia Process Consulting. (2016): *NI 43-101 Technical Report Salar del Rincón Project Salta, Argentina*. Prepared for ADY Resources Ltd., June 03, 2016. 380 p.

Summit Nanotech. (2022): *Technology Verification for Extracting Lithium from Lithium Chile's Arizaro Brine.* Report prepared by Summit Nanotech Corporation for Lithium Chile, November 04, 2022.

Summit Nanotech. (2024): *Preliminary Pilot Test Report.* Report prepared by Summit Nanotech Corporation for Lithium Chile - ARLi, February 28, 2024.

Sunresin. (2022): *Informe de Pruebas - Prueba de Extracción de Litio de la Salmuera de Chengxin Lithium*. Report prepared by Sunresin New Materials Co. Ltda. for Lithium Chile, November 2022.

Sunresin. (2023): *Testing Summary of DLE test for Lithium Chile brine*. Report prepared by Sunresin New Materials Co. Ltda. for Lithium Chile, May 31, 2023.

Theis, C.V. (1935): *The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Groundwater Storage: American Geophysical Union Transactions*. Vol. 16, pp. 519-524.

Turner, J.C. (1972): *Puna. En Leanza, A.F. (ed.*) Academia Nacional de Ciencias, Primer Simposio de Geología Regional Argentina: 91-116, Córdoba.

Urra. M. (2023): *Arizaro PEA Earthworks Platforms and Ponds – General Plan and Details.* July.

Urra. M. (2023): *Arizaro PEA General Infiltration Pond – General Plan*. July.

Vuille M. (1996): Zur raumzeitlichen Dynamik von Schneefall und Ausaperung im Bereich des sudlichen Altiplano, Sudamerika: in Geographica Bernensia vol. 45: 1–118.

Zelandez Services Argentina. (2021): *Smart Report: Well ARI-001-Arizaro, Brinefield Services*. Interpreted by Fernando J. Lourenco Cidades.