geo40™

sustainable mineral recovery

CONFIDENTIAL TO GEO40 SHAREHOLDERS

QUARTERLY UPDATE TO SHAREHOLDERS

Calendar Q4 2024

We have locked away our fourth consecutive strong silica sales quarter and a solid full calendar year performance as we head towards silica plant profitability. As we go to print, our North American lithium piloting assets have arrived in West Virginia where we will process three brines from across the Marcellus oil-and-gas shale. We were successful in recovering battery grade lithium carbonate from Saskatchewan and Alberta brines in Canada, helping to validate our technology there. During the quarter, we completed the first phase of our new silica/lithium field testing programme in Chile and we signed a contract to do similar work in Indonesia, consistent with our broader strategy to expose our mineral recovery technology widely. This initial work was technically successful. During the quarter, the Board signed off the investment case for a NZ$8m lithium demonstration/pre-commercial plant. As a result of the 2024 exercise of Tembo and Vision Blue's call options, this plant is fully funded and is now under construction, with deployment planned for North America around Q3 this year.

Silica sales remain strong, however challenging operating conditions at our Ohaaki site mean we are now production-constrained. We are working to improve plant performance and to deploy an augmentation strategy to increase production. Our lithium field tour results continue to improve, even as we encounter diverse brines, and we are looking forward to a switch from this programme of work, to operating at larger demonstration/pre-commerical scale on a single site. Chosing a great partner for this pivotal work is a current imperative for us.

One of our direct lithium extraction rigs operating indoors in the Canadian winter

OPERATING PERFORMANCE

The fourth quarter saw both good results from newly installed separation media, and accelerated deterioration in the remaining media that dates back to the commissioning of the Northern Plant. Our proprietary media has lasted slightly longer than the originally-forecast life-span, and this new data is helpful as we plan for future replacements. We have accelerated our work to replace media faster, to reduce production losses so we can endeavour to keep up with strong sales demand.

The Ngawha Plant remained offline for much of the quarter. While this was forecast, to permit Contact Energy to undertake some trials for their own purposes, these trials were delayed by silica scaling in the brine pipework that supplies our plant. Contact spent the latter part of the quarter de-scaling this line. As we go to print this work is complete and we believe the long-signalled trials are finally underway. We are experiencing a similar issue at the Northern Plant, where Contact is currently unable to supply the full volume of brine that our plant is designed to process, with a consequent impact upon production. This passage of events has been very frustrating as we seek to maximise Ohaaki silica production to match sales demand.

Contact Energy has signalled that both our plants will be offline during May for the biennial scheduled station outage. We have been working with Contact to minimise the period where our plants must be shut. While the shut is likely to extend for around six weeks, we need only the steam-field to be operable (and not the power station), such that we are working collaboratively with Contact to be off-line for less than a month. Obviously, this will have an impact upon our production and sales for the Q2 quarter.

NORTH AMERICAN DIRECT LITHIUM RECOVERY TECHNOLOGY TOUR

We are getting closer to our core objective of proving that our direct lithium extraction technology can address most of the significant lithium-containing oil and gas basins of North America.

Early in the quarter, we relocated the lithium piloting rigs to Saskatchewan, Canada. Despite some very bleak Canadian winter weather, we ran a successful campaign there. The team were situated inside a building extracting lithium from a moderate-grade brine, with the support of Tembo Capital (a Geo40 investor who is also an asset owner). The team completed this work in the new year before switching to process an Alberta brine for lithium explorer Neolithica. Given a big-freeze event in Canada, we trucked a modest quantity of this brine to our Saskatchewan facility for efficient processing. We were again successful in extracting and making a battery-grade lithium carbonate sample from this brine.

As we go to print, we have just relocated the pre-treatment and direct lithium extraction rigs back to the USA, this time to process a series of brines across the Marcellus Shale. This oil and gas formation spreads across Ohio, Pennsylvania and West Virginia. As our confidence in our DLE technology grows, we can undertake shorter duration campaigns, allowing us to cover the geography more widely. Importantly, this means we can showcase our technology to a wider set of oil and gas companies. Our plan is to process three different brines from this region for three different producers.

Next, we plan to head to the Smackover formation, which spans Arkansas and Texas. This region offers the highest lithium grades in North America and has attracted intense speculation.

Once this is complete, our focus will shift towards deployment on a single site at larger demonstration/pre-commerical scale.

MOVING TO DEMONSTRATION/ PRE-COMMERCIAL SCALE IN LITHIUM AND ADVANCING A LICENSE MODEL IN SILICA

While our North American piloting tour has been very successful in validating that our DLE technology can widely address different oil and gas produced waters, our next long-planned task is to validate that our technology can be deployed at larger scale.

Through the quarter, we did a body of work to determine the appropriate scale and "heft" of such a plant. We need to balance the speed-to-market and lower cost of a modestly-sized plant against the credibility a larger asset offers – and we benchmarked our proposed scale against that of our key DLE competitors. We also see real value in this plant being at least notionally mobile; not trailer-mounted like our piloting rigs, but able to be moved every six to twelve months. This allows us some flexibility around how and where we build and commission this asset, and how it is field deployed.

As the quarter came to a close, the Board signed-off the investment case for a 300tpa lithium carbonate equivalent (LCE) demonstration/pre-commercial lithium plant. The Tembo and Vision Blue option funds are sufficient for the circa NZ$8m build cost. As we go to print, design is complete and construction of this asset is underway. This plant can fulfill two very important tasks; validate that our DLE technology works at scale, and establish that a particular lithium brine resource can produce a battery-grade lithium product. Our task now is to determine where best to deploy this plant. Several parties have expressed interest in hosting us on their brine resource; picking the best possible partner in the months ahead will be critical to our future.

We are making strong progress in moving our silica offer towards a licensing model. During the quarter, we completed our signalled initial field-work in Chile on the geothermal plant of a major global electricity generator that contains both silica and lithium. Our work was successful and we plan to move together towards contracting micro-piloting of lithium recovery in mid-2025. We have also signed a contract to undertake silica micro-piloting on a large geothermal power generation site in Indonesia. Interestingly, this geothermal fluid also contains lithium.

SALES AND MARKET DEVELOPMENT

We produced our fourth straight strong sales quarter in Q4 with gross sales of cNZ$1.0m, bringing our total sales for the calendar year to cNZ$4.4m.

The quarter result was slightly down on our expectations as a function of not being able to produce sufficient silica to meet all customer demand. Three things played a role here; the low silica concentration of the geothermal fluid, the small Ngawha Plant being offline for much of the quarter, and poor aged-membrane performance reducing recovery. The calendar result is nevertheless strong within this broader challenging operating environment.

We do expect operating conditions to remain challenging through Q1 and Q2 2025. While we anticipate solving membrane performance issues during Q1, Contact Energy's signalled Q2 plant shut will eliminate silica production for a month at best. As you will expect, we are working hard to find solutions to increase production to match our strengthening sales book.

With a series of strong sales quarters now behind us and in the context of a series of maturing relationships with key customers, we now plan to move ahead with our strategy to augment silica production through purchase and refining of an intermediate silica product. This is attractive in that we can selectively increase our production to meet customer expectations, and we can earn a margin on the purchased intermediate product with mimimal capex required to do so. We'll report on our progress here as we commence this process in Q1 2025.

Development work in sectors key to the wide deployment of our silica recovery technology continues. We shipped product to the rubber sector and we have committed to further technical development work here. As we go to print, we have agreed a testing protocol with a major paper-industry player, who sees potential for the use of silica as a drainage and retention agent - on the back of our earlier successful R+D work.

FINANCIAL, SECRETARIAL AND THE FUTURE

Navigating a challenging period in silica production

While we continue to enjoy sustained strong silica sales demand we continue to be frustrated by a number of challenges in our operating environment. These factors notwithstanding, we continue to bank strong production/sales quarters and remain resolutely focussed on doing so.

Completing our North American Lithium Field Piloting Tour and advancing silica licensing

After some 5,000 miles on the road in North America, we believe we can now validate that our technology works widely across our target oil-and-gas produced waters. We plan to complete the tour by the end of Q2 2025 in order to shift our focus to deployment at greater scale.

We successfully completed our first silica/lithium fieldwork exercise in Chile just prior to Christmas, and we have signed a contract to do similar work on silica in Indonesia. This is the core of our strategy to showcase our mineral recovery work widely, ahead of potential technology licensing.

Moving to Demonstration/Pre-Commercial Scale in Lithium in North America

We remain committed to catching up to the more advanced of our DLE competitors by deploying a demonstration/ pre-commercial plant in 2025. With our cNZ$8m 300tpa LCE asset now in build, our focus is shifting to finding the best possible partner to work with. It is this emergence at scale that is capturing the attention of large oil-and-gas companies committed to lithium, increasing our relevance and the likelihood that we can deploy with the best.

Capital and Equity Value Management and Strategy

Our broader strategy - to combine our emerging DLE technology with the interest of oil and gas majors in extracting lithium from produced waters - to create a liquidity event for the Company's shareholders continues to take shape. We know that proving our DLE technology widely, and at decent scale, validates the role that Geo40 can play in this sector.

The Tembo and Vision Blue options exercised in late 2024 have provided the capital to build this pivotal demonstration/pre-commercial lithium plant, much as we envisioned when we did these deals back in 2023. We will need to secure additional funding to operate this plant offshore. We are confident that the energy in the lithium sector will provide us with a range of ways to fund this work. In parallel, we are working towards the profitability of our silica assets, reducing our need for working capital.

The new year marks a real turning point for the Company – that of moving from a focus on piloting in lithium towards deployment at demonstration/pre-commercial scale. In doing so, we'll join just a handful of firms at the same stage in this exciting sector. Our path in silica is in many ways very similar, where our New Zealand experience at scale allows us to showcase our technology credibly at micro-scale.

While our work offshore is in very challenging and inhospitable environments, executing well is a very clear imperative for us. We've built a team that can do just this. I am particularly proud of our progress in the last twelve months, whether we're selling silica at premium prices or extracting lithium in a Louisiana swamp safely.

Keeping our heads down and getting the basics right are the keys to our emergence. Our efforts are certainly being noticed as we enter into a new environment of real opportunity in both silica and lithium.

As always, I thank you sincerely for your support and belief in us and I will keep you well informed as we advance.

Ngā mihi mahana.

John Worth,
Managing Director and CEO
johnw@geo40.com
+64 21 800 310