

QUARTERLY ACTIVITIES REPORT for the period ending 31 December 2022

Highlights

- U.S. Department of Energy offers conditional commitment for a loan of up to US\$700 million for the Rhyolite Ridge Project (announced Jan 16, 2023)
- Rhyolite Ridge Project advances into final stage of permitting
 - BLM published Notice of Intent
 - Major milestone toward completion of the NEPA process and approval of the Project's Plan of Operations
- U.S. Fish and Wildlife Service establishes formal clarification in line with expectations, through decision to list Tiehm's buckwheat as an endangered species
- Memorandum of Understanding signed with Shell Canada Energy for sulphur supply
- Detailed engineering and procurement activities advancing
- Dedicated Tiehm's buckwheat greenhouse completed and operational

Friday 27 January 2023 – ioneer Ltd (“Ioneer” or “the Company”) (ASX: INR, Nasdaq: IONR), an emerging lithium-boron supplier, is pleased to report on its activities for the quarter ending 31 December 2022 and to provide an update on the development of its 100%-owned Rhyolite Ridge Lithium-Boron Project in Esmeralda County, Nevada (“Rhyolite Ridge Project” or “the Project”)

Ioneer Managing Director, Bernard Rowe said:

“Once again, we enjoyed a quarter marked by some very significant milestones, culminating in the United States Department of Energy (DOE) offering the Company a Conditional Commitment for a loan of up to US\$700m in January. I regard this as the most significant milestone in the history of the Company and a testament to the countless hours of hard work by the Ioneer team over the past six years.

In early December, we announced an MOU with Shell Canada for the supply of sulphur, then in mid-December the U.S. Fish and Wildlife Service, as anticipated, announced the listing of Tiehm's buckwheat, closely followed by the BLM's decision to publish a Notice of Intent (NOI) that advances Rhyolite Ridge into the final stage of permitting.

Both the NOI and DOE conditional loan commitment mark significant and important milestones toward the realisation of the Rhyolite Ridge Lithium-Boron Project and reflect the hard work and dedication of everyone involved, including the Ioneer and Stantec teams working closely with the BLM and cooperating agencies.

We are greatly encouraged by these events as we understand the Rhyolite Ridge Project is the first lithium project to be issued a NOI under the Biden Administration and the loan would be the first-ever by the DOE to provide financing for the processing component of a project where lithium is extracted and refined at site. We see these as significant steps toward ensuring a strong domestic supply of critical and strategic materials necessary for development of a domestic battery supply chain essential to the electrification of transportation in the U.S.

Our Project is uniquely positioned in the U.S., and has been engineered to ensure a stable, long-term, environmentally sustainable source of lithium. Now, with conditional debt and equity commitments of nearly US\$1.2 billion, we are well positioned to commence construction upon receipt of final permitting.”

Project Debt Funding

After commencing pre-application discussions in February 2021 regarding the U.S. Department of Energy (DOE) Loan Programs Office’s (LPO) Advanced Technology Vehicle Manufacturing (ATVM) program, Ioneer submitted a loan application in October 2021. The application was deemed substantially complete in December 2021 which initiated a third-party due diligence process that has been ongoing since March 2022. As a result, the Loan Programs Office has undertaken extensive and detailed market, technical and legal due diligence.

On 13 January 2023, DOE LPO and Ioneer announced finalisation of a term sheet and offer of a Conditional Commitment¹ for a proposed loan of up to US\$700 million from the DOE for financing the construction of the Rhyolite Ridge Project.

Under the term sheet, the proposed loan is for an amount up to US\$700 million² with a term of approximately 10 years. The loan will be at interest rates fixed from the date of each advance for the term of the loan at applicable U.S. Treasury rates.

The proposed loan is to be made under the DOE’s ATVM loan program³ in support of the Biden Administration’s critical minerals strategy.

The term sheet and Conditional Commitment from DOE demonstrate its strong support for the Rhyolite Ridge Project and, if finalised, the

loan would be the first ever by the DOE to provide financing for the processing component of a project where lithium is extracted and refined at site.

The proposed loan amount is necessarily based on preliminary and partially complete information that the DOE required from Ioneer pertaining to:

1. capital expenditure for a conceptual mine plan;
2. macroeconomic cost escalation assumptions; and
3. capital expenses to meet DOE stipulated requirements for participation in the ATVM program.

As a result, the proposed loan amount remains subject to negotiation and documentation of long-form agreements and various conditions and may be subsequently revised to appropriately match updated project economics leading up to financial close and upon satisfaction of several conditions outlined in the market release⁴.

The proceeds from the DOE loan, along with Sibanye Stillwater Limited’s (Sibanye-Stillwater) expected equity contribution to secure a 50% stake in the Rhyolite Ridge Project once all conditions precedent for the joint venture have been fulfilled or waived, are anticipated to fund a substantial part of the preliminary capital expenditure estimate from the revised plan of operations included in the application submitted to the DOE.

¹ A conditional commitment is offered by DOE prior to issuing a loan and indicates that DOE expects to support the Rhyolite Ridge Project, subject to the satisfaction of certain conditions including fulfilling remaining legal, contractual, and financial requirements.

² Excludes estimated capitalised interest costs. Approximately US\$700 million in advances from DOE loan is proposed to be available to fund eligible costs of the Rhyolite Ridge Project.

³ Further information about the ATVM loan program is available at <https://www.energy.gov/lpo/advanced-technology-vehicles-manufacturing-loan-program>.

⁴ See ASX release dated 16 January titled, “US Dept of Energy Loan Offer of US\$700m for Rhyolite Ridge”.

We are delighted with finalising the term sheet and receiving the Conditional Commitment from the DOE, which represent a significant step towards completing the funding for the Rhyolite Ridge Project.

Rhyolite Ridge Project Advances into Final Stage of Permitting

On 20 December 2022, the Company was pleased to announce that the Rhyolite Ridge Project had advanced into the final stage of federal permitting with the decision by the Bureau of Land Management (BLM) to publish a Notice of Intent (NOI) in the Federal Register. This marked a major milestone toward the completion of the permitting process and approval of the Project’s Plan of Operations (Plan).

The Plan is the foundational permitting document for the Project and will become the basis for compliance during operations and closure. Ioneer commenced work on the Plan almost four years ago. The latest revised Plan was submitted to the BLM in July 2022. Under the revised Plan, there are no Project-related direct impacts to any of the subpopulations of Tiehm’s buckwheat.

Publication of the NOI marks the beginning of NEPA process, starting a public comment period on the scope of the environmental review. The Environmental Impact Statement (EIS) contractor Stantec⁵, the BLM, and other cooperating government agencies will use comments received during scoping and resource information gathered by Ioneer to prepare the EIS. The Plan will be updated to reflect the outcomes of the National Environmental Policy Act (NEPA) review before it is finalised.

⁵ Stantec is a top-tier global design and delivery firm with 22,000 employees across 6 continents. Amongst other services, Stantec provides environmental services to the mining industry and has four offices in Nevada. Stantec trades on the TSX and the NYSE under the symbol STN. For more information visit www.stantec.com

State and Federal Permitting

Ioneer requires three key permits to commence construction at Rhyolite Ridge:

1. A state-based Air Quality Permit⁶ - **received** June 24, 2021
2. A state-based Water Pollution Control Permit⁷ - **received** July 19, 2021
3. The Plan of Operations (Plan) that must be approved by the federal BLM – Notice of Intent published December 20, 2022 marking commencement of NEPA process.

Tiehm’s buckwheat Listed as an Endangered Species

Late in the quarter, the Company welcomed the U.S. Fish and Wildlife Service’s (FWS) announcement that it had decided to list Tiehm’s buckwheat as an endangered species under the Endangered Species Act (ESA) and designate critical habitat. The decision provided further clarity for the path forward for the development of the Rhyolite Ridge Project and was fully in line with Ioneer’s expectations.

The protection and conservation of Tiehm’s buckwheat is a key component of Ioneer’s environmental stewardship and incorporated into all aspects of our planning and permitting activities. In July 2022, the Company submitted to the BLM a revised Plan of Operations that incorporated additional key commitments relating to buckwheat conservation including:

- Avoiding direct impacts to all Tiehm’s buckwheat populations;
- Minimising and mitigating indirect impacts utilising standard operating measures; and
- Minimising disturbance within designated critical habitat.

For more information on Ioneer’s Tiehm’s

⁶ Refer ASX release titled ‘Ioneer Issued Air Quality Permit for Rhyolite Ridge’ announced 24 June 2021

⁷ Refer ASX release titled ‘Issuance of Water Pollution Control Permit’ announced 19 July 2021

buckwheat conservation efforts, please visit: <https://www.ioneer.com/sustainability/environment-tiehms-buckwheat-conservation/>

MOU Signed with Shell Canada Energy for Sulphur Supply

The Company announced the signing of a non-binding Memorandum of Understanding (MOU) with Shell Canada Energy (“Shell”) for sale of sulphur to Ioneer for the Rhyolite Ridge Project in early December 2022. Securing the supply of key reagents for ore processing is an important step along the critical pathway to developing the Rhyolite Ridge Project. Under the MOU, Ioneer will purchase up to 500,000

tonnes of high-quality sulphur annually from Shell, which would fulfil the estimated annual sulphur requirement for the Project.

The signing of the MOU builds upon the Letter of Intent (LOI) signed in December 2019 and, with a binding commitment to negotiate exclusively with one another, it is the intention of both parties to advance the MOU into a Definitive Agreement at the appropriate time.

Ioneer and Shell also intend to collaborate through strategic initiatives focused on accelerating the energy transition.



Photo: From left to right, Shell representatives Peter Zissos, Chanh Wong (standing), Susannah Pierce; Ioneer representatives Matt Weaver, Kori Iverson (standing), Ian Bucknell.

Sales & Marketing

Boric Acid Market and Price

Demand has started to soften due to weaker global demand in key industries such as TFT LCD displays and housing, and spot buyers in

China and Southeast Asia waiting for price reductions. In China, the largest boric acid market globally, seaborne imports could

reduce to approximately 290ktpa in 2022, compared to 310ktpa in 2021. Despite this, the global boric acid price has remained relatively steady for the past three months and remains well above pre-COVID price levels.

Lithium Market and Price

According to Wood Mackenzie, the monthly average prices for all lithium chemicals for November continued to increase. The spot price for battery-grade lithium hydroxide maintained a premium over battery-grade lithium carbonate, encouraging technical grade conversion.

Contract prices rose along with the spot prices, but the quarterly averages are lower than spot prices due to the lagging nature of the price mechanisms.

However, Benchmark Minerals reported that Chinese lithium prices in December fell for the first time since May, as uncertainty grows about demand in the world’s second-largest economy following the easing of COVID-19 restrictions and the looming end of the electric vehicle subsidies.

There was a supply deficit for all lithium chemicals in 2022, with battery-grade lithium chemicals exhibiting a more substantial shortfall. The lithium market will continue to be underpinned by robust battery demand growth in 2023. However, with supply growth outpacing demand growth in later years, Wood Mackenzie expects lithium carbonate prices to decrease from H2 2023 and lithium hydroxide from H2 2024.

ESG Program

ISO 14001 Implementation

Following completion of a GAP analysis and development of an Implementation Road Map, the Company has commenced implementation of an ISO 14001:2015-based Environmental Management System for the Project and work is ongoing.

Towards Sustainable Mining (TSM) Implementation

The Company committed to the TSM program in Dec 2021. TSM is a globally recognised performance system that helps extractive companies evaluate and manage their environmental and social responsibilities. During the quarter, Ioneer continued to implement the program with a focus on protocol development and completeness review.

TSM Protocol	Status Update
Indigenous and Community Relationships	Finalising Rev 2
Crisis Management and Communications Plan	Finalising Rev 3
Safety and Health	Finalising Rev 2
Preventing Child and Forced Labour	CEO Reviewing
Biodiversity and Conservation Management	Finalising Rev 3
Water Stewardship	Finalising Rev 2
Energy Use and GHG Emissions Management	Reviewing Rev 1

Tiehm’s buckwheat Pollinator survey

Efforts were undertaken in the June Quarter to provide scientific information to inform the need and spatial extent of critical habitat to protect potential arthropod pollinators for Tiehm’s buckwheat.

Fieldwork to document vegetation cover and diversity and collect potential arthropod pollinators was completed in June 2022. Several thousand arthropod samples were collected across critical habitat for the buckwheat. Laboratory analysis to identify arthropod specimens to species was near completion in the fourth quarter of 2022.

Preliminary observations indicate that the majority of arthropod specimens were small beetles, wasps, and bees. The final report and

statistical analyses will be completed in the first quarter of 2023 to directly inform considerations in the permitting process for the project.

Tiehm’s buckwheat greenhouse propagation

To further support the conservation and propagation of Tiehm’s buckwheat, a purpose-built, dedicated greenhouse capable of holding 13,000 seedlings and a paired shade house capable of holding 600 adult plants have been constructed and are now operational.

Tiehm’s buckwheat populations propagated under Ioneer research efforts at the University of Nevada Reno are being relocated to the new greenhouse. Seeds have been collected for the first time from flowering plants at the greenhouse.

Engineering and Vendor Packages

Work continued during the quarter to further progress detail and vendor engineering. The key aim of ongoing activities is to support construction mobilisation following the Full Notice to Proceed (FNTP) award that will follow a Final Investment Decision (FID).

Ioneer advanced the procurement of the following packages:

- Floation Cells
- Truck Weigh Scale
- Field Erected & Shop Fabricated Tanks
- Coating & Lining Services
- Lime Bag Unloading

The receipt of vendor engineering allows continued detailed engineering to advance.

Additionally, Ioneer continued reviewing updates and adjustments of the construction plan sequence commissioning requirements to optimise the schedule and confirm the long lead items as more vendor data is now available.

Engineering continues to concentrate on updating detailed engineering deliverables for utilities, pumps, and other items to advance

engineering deliverables to an “Issued for Construction” (IFC) status.

Status of procurement activity:

Package Size	% Complete
Large (>US\$2.5M)	77%
Medium (US\$1M - 2.5M)	75%
Small (<US\$1M)	76%

Procurement activity has focused on long lead items and items required for initial construction. Procurement continues to expedite supplier agreements to sustain the engineering deliverables schedule. An open book contracting strategy has been frequently employed to minimise cost escalation risks.

Geotechnical Program

During the Quarter, Ioneer received approval from the BLM for a drilling program to collect additional geotechnical data to support the NEPA analysis of the Plan of Operations. The drilling focused on the southern limits of the proposed quarry and areas around the Overburden Storage Facilities (OSF). All drill holes and associated drill roads were located outside of the now declared Tiehm’s buckwheat critical habitat.

The program consisted of 9 core holes, with 8 located within the proposed quarry boundary and 1 adjacent to the North OSF, as well as 4 sonic holes located at the North and South OSF options.

Growth Projects

With the NEPA permitting process well underway, the Company commenced work on assessment and evaluation of potential growth opportunities at Rhyolite Ridge.

South Basin Growth Projects

Significant quantities of lithium and, to a lesser extent, boron occur within geological layers (units) that are not included in the Rhyolite Ridge Resource Estimate. The reason for their exclusion is due to variations in mineralogy

and, hence processing options. A metallurgical test program is underway to evaluate the varying styles of mineralisation with the aim of increasing the overall mineral resource and, ultimately, the annual lithium production in light of expected future demand for U.S. sourced lithium.

North Basin Growth Projects

An exploration program commenced at the North Basin, located 5km north of the South Basin (proposed operation). The North Basin was recognised as area with potential to host large quantities of lithium and boron mineralisation and was first drilled by US Borax (Rio Tinto) in the 1980’s and 1990’s. During the Quarter, Ioneer completed a detailed gravity survey covering the entire basin to further define basin architecture.

The gravity survey results were successful in supporting the historic Rio Tinto drilling and delineated a 7km by 3km sedimentary basin with thick (>100m), shallow accumulations of lithium-boron mineralisation within the central part of the basin. Preliminary leach and mineralogical test work commenced on drill core samples from holes drilled by Ioneer in 2017.

A preliminary geological model for the North Basin, based on the current Ioneer drilling and historical data, is being constructed.

Upcoming Work Program

The work program over the coming months includes:

- Advancing federal permitting through participation in the NEPA process
- Updating the Resource estimate for the South Basin to include low-boron and high-boron lithium streams
- Ongoing exploration at the North Basin
- Evaluation of growth opportunities
- Continuing the engineering effort to further decrease execution risk. This

will include:

- Releasing further engineering and vendor packages/contracts for bid/award
- Ongoing implementation of ESG programs including Toward Sustainable Mining
- Ongoing conservation efforts for Tiehm’s buckwheat

Estimated Project timeline

Our current best estimate for timing of key milestones is as follows:

Milestone	Targeted timing ⁸
Conclude Stage 3 of DOE Loan Application Process (DD and Term Sheet Negotiation) ⁹	Completed
Anticipated ROD	1Q 2024
Construction Period	24 Months
First Production	2026

Corporate Activities

The Annual General Meeting was held on Friday, 4 November 2022. This year shareholders were able to attend either in person or virtually. All resolutions were carried without amendment.

ASX Additional Information

The Company provides the following information pursuant to ASX Listing Rule requirements.

1. **ASX LR 5.3.1:** Exploration and Evaluation Expenditure during the quarter was US\$9.5 million. Details of the exploration activity are set out in this report. A breakdown of the expenditure is shown below:

⁸ Note: all dates are estimates only and are subject to change.

⁹ See DOE-LPO Program Handout Critical Materials June 2021

Expenditure	US\$'000
Exploration	17
Engineering	4,557
Environmental	2,529
Sales & Marketing	138
Other	2,269
Total	9,510

2. **ASX LR 5.3.2:** The Company confirms there were no production or development activities during the quarter.
3. **ASX LR 5.3.5:** Related party payments for the quarter totalled US\$265,000, comprising salaries and fees for the Company's executive and non-executive

directors. No other payments were made to any related parties of the entity or their associates.

Capital Structure

Total cash and cash equivalents as at December 31, 2022, was US\$69.4 million of which 60% was held in USD with the balance held in AUD. Ioneer has adopted USD as its reporting currency from July 1, 2022.

At the end of the quarter, Ioneer had on issue:

- 2.1 billion ordinary shares
- 4.4 million options, and
- 31.9 million performance rights.

This ASX release has been authorised by Ioneer Managing Director Bernard Rowe.

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About Ioneer

Ioneer Ltd is the 100% owner of the Rhyolite Ridge Lithium-Boron Project located in Nevada, U.S. the only known lithium-boron deposit in North America and one of only two known such deposits in the world. The Definitive Feasibility Study completed in 2020 confirmed Rhyolite Ridge as a world-class lithium and boron project that is expected to become a globally significant, long-life, low-cost source of lithium and boron vital to a sustainable future. In September 2021, Ioneer entered a subscription agreement with Sibanye-Stillwater Ltd to advance the Rhyolite Ridge project on a 50/50 basis, which remains to close. The Company has signed lithium offtake agreements Ford Motor Company, PPES (joint venture between Toyota Motor Corporation and Panasonic Corporation) and EcoPro Innovation. Ioneer will be the operator of the Project, which is expected to come onstream in 2026.

Recent Announcements

The table below lists announcements made by the Company during the quarter.

Date Released	Title
24/10/2022	September 2022 Quarterly Activities Report
24/10/2022	September 2022 Quarterly Cash Flow Report
31/10/2022	2022 U.S. Annual Report (Form 20-F)
31/10/2022	Updated September Quarterly Cashflow & Activities Report
31/10/2022	Change of Registry Address
02/11/2022	Investor Presentation IMARC Conference
04/11/2022	2022 AGM – Chairman’s Address
04/11/2022	2022 AGM - Presentation
04/11/2022	2022 AGM – Results of Meeting
08/11/2022	Application for quotation of Securities - INR
08/11/2022	Proposed Issue of Securities - INR
08/11/2022	Notification regarding unquoted securities - INR
09/11/2022	Appendix 3Y – James D. Calaway
09/11/2022	Appendix 3Y – Alan Davies
09/11/2022	Appendix 3Y – Stephen Gardiner
09/11/2022	Appendix 3Y – Rose McKinney-James
09/11/2022	Appendix 3Y – Margaret R. Walker
09/11/2022	Appendix 3Y – Bernard Rowe
08/12/2022	Ioneer signs MOU with Shell Canada for Sulphur Supply
15/12/2022	Ioneer Welcomes Listing of Tiehm’s buckwheat
20/12/2022	Rhyolite Ridge Project Advances into Final Stage of Permitting
30/12/2022	Notification regarding unquoted securities – INR
30/12/2022	Notification regarding unquoted securities – INR
16/01/2023	US Dept of Energy Loan Offer of US\$700m for Rhyolite Ridge ¹⁰

¹⁰ Material announcement made after the end of the December 2022 quarter

Appendix 1 - Schedule of Tenements

ASX listing rule 5.3.3

Country	Project	Tenement ID	Tenement Name	Area (km ²)	Interest at beginning of quarter	Interest at end of quarter	Note
USA	Rhyolite Ridge	NMC1118666	NLB claims (160)	13	100%	100%	No change
USA	Rhyolite Ridge	NMC1117360	SLB claims (199)	16.5	100%	100%	No change
USA	Rhyolite Ridge	NMC1171536	SLM claims (122)	9.7	100%	100%	No change
USA	Rhyolite Ridge	NMC 1179516	RR claims (65)	5.4	100%	100%	No change
USA	Rhyolite Ridge	NMC 1129523	BH claims (81)	7	0%, option to purchase 100%	0%, option to purchase 100%	No change
USA	Rhyolite Ridge	NV105272779	RMS claims (23)	0.5	100%	100%	No change
USA	Rhyolite Ridge	NMC1147932	SLP Claims (120)	9.7	100%	100%	No change
USA	Rhyolite Ridge	NV105272053	PR Claims	0.9	100%	100%	No change
USA	SM	NMC1166813	SM claims (96)	7.7	100%	100%	No change
USA	GD	NMC1166909	GD claims (13)	1.1	100%	100%	No change
USA	CLD	NMC1167799	CLD claims (65)	5.2	100%	100%	No change

On 16 September 2021, the Company announced a strategic investment by Sibanye-Stillwater¹¹ in the Rhyolite Ridge Project. Under the terms of the agreement, Sibanye-Stillwater will contribute US\$490 million for a 50% interest in the Joint Venture, with Ioneer to maintain a 50% interest and retain operatorship. Ioneer has also agreed to provide Sibanye-Stillwater with an option to participate in 50% of the North Basin, upon the election of Sibanye-Stillwater to contribute up to an additional US\$50 million, subject to certain terms and conditions. Establishment of the Joint Venture and Sibanye-Stillwater's funding commitment is subject to certain terms and conditions precedent, including receipt of final permits, commitments for remaining debt financing, and other customary approvals.

¹¹ Refer ASX release titles 'Sibanye-Stillwater to invest US\$490M in Rhyolite Ridge' announced on 16 September 2021