UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2024
or
☐ **TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to
Commission file number: 001-37515

Aqua Metals, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**47-1169572**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification Number)

5370 Kietzke Lane, Suite 201.
Reno, Nevada 89511
(Address of principal executive offices)

(775) 446-4418
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act

Title of each class of stock:	**Trading symbol**	**Name of each exchange on which registered:**
Common Stock	**AQMS**	**The Nasdaq Capital Market**

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the past 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company (as defined in Rule 12b-2 of the Act):

Large accelerated filer ☐	Accelerated filer ☐
Non-accelerated filer ☒	Smaller reporting company ☒
	Emerging Growth Company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b) by the registered public accounting firm that prepared or issued its audit report. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

State the aggregate market value of voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter: $40,948,468.

The number of shares of the registrant's common stock outstanding as of March 18, 2025 was 8,290,601.

DOCUMENTS INCORPORATED BY REFERENCE

None.

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CAUTIONARY NOTICE

This annual report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Those forward-looking statements include our expectations, beliefs, intentions and strategies regarding the future. Such forward-looking statements relate to, among other things,

- our ability to have our Aqua Refining solutions gain market acceptance;
- our ability to acquire addition working capital on reasonable terms, as needed and on a timely basis.
- our intentions, expectations and beliefs regarding anticipated growth, market penetration and trends in our business;
- the timing and success of our plan of commercialization;
- our ability to demonstrate the operation of our AquaRefining process on a commercial scale;
- our ability to successfully apply our AquaRefining technology to the recycling of lithium-ion batteries;
- the effects of market conditions on our stock price and operating results;
- our ability to maintain our competitive technological advantages against competitors in our industry;
- our ability to maintain, protect and enhance our intellectual property;
- the effects of increased competition in our market and our ability to compete effectively;
- costs associated with defending intellectual property infringement and other claims;
- our expectations concerning our relationships with suppliers, partners and other third parties; and
- our ability to comply with evolving legal standards and regulations, particularly concerning requirements for being a public company and environmental regulations;

These and other factors that may affect our financial results are discussed more fully in “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in this report. Market data used throughout this report is based on published third party reports or the good faith estimates of management, which estimates are presumably based upon their review of internal surveys, independent industry publications and other publicly available information. Although we believe that such sources are reliable, we do not guarantee the accuracy or completeness of this information, and we have not independently verified such information. We caution readers not to place undue reliance on any forward-looking statements. We do not undertake, and specifically disclaim any obligation, to update or revise such statements to reflect new circumstances or unanticipated events as they occur, and we urge readers to review and consider disclosures we make in this and other reports that discuss factors germane to our business. See in particular our reports on Forms 10-K, 10-Q, and 8-K subsequently filed from time to time with the Securities and Exchange Commission.

PART I

Item 1. Business

Background

We were formed as a Delaware corporation on June 20, 2014, for the purpose of engaging in the business of recycling metals through an innovative, proprietary and patent-pending process that we developed and named "AquaRefining." In 2015, Aqua Metals developed a breakthrough metal recycling technology that utilizes a clean, closed-loop process that can produce high-purity metal. We believe this innovative approach can deliver raw materials back into the manufacturing supply chain while reducing emissions and toxic byproducts and creating a safer work environment. In particular, the modular AquaRefining systems have already demonstrated the ability to recover critical minerals from both lithium-ion and lead acid batteries and can reduce the cost and environmental impact of battery recycling.

Aqua Metals has a history of battery recycling, having first owned and operated a lead acid battery recycling facility between 2017 and 2019. This breakthrough technology was initially applied in the lead acid battery (LAB) recycling industry, building the first integrated recycling system for breaking LAB and recovering pure metal utilizing our innovative and patented smelterless AquaRefining technologies. In 2019, we operated our demonstration AquaRefinery at commercial quantity production levels and produced over 35,000 'AquaRefined' ingots operating twenty-four hours a day, seven days a week for sustained periods of time.

In February 2021, we announced our entry into the lithium-ion battery (LiB) recycling market through a key provisional patent we filed that applies the same innovative AquaRefining approach. We believe our entry into lithium-ion battery recycling positions Aqua Metals to capitalize on the surging demand for critical minerals driven by the global energy transition, expected to create a $400 billion market by 2030. In August 2021, we announced we had established our Innovation Center in the Tahoe-Reno Industrial Center (TRIC) focused on applying our proven technology to LiB recycling research, development and prototyping.

During the first half of 2022, we announced our ability to recover copper, lithium, nickel, cobalt and manganese from lithium-ion battery 'black mass' at bench scale at the Company's Innovation Center. During 2022, we built our fully-integrated pilot system, located within the Company's Innovation Center, which is designed to enable Aqua Metals to be the first company in North America to recycle battery minerals from black mass, sell them in the U.S. and position the Company as the first sustainable LiB recycler in North America to align with the U.S. government's goal of retaining strategic battery minerals within the domestic supply chain.

During 2022, we conducted environmental comparisons based on Argonne National Lab's modeling of lithium battery supply chains – called EverBatt. The initial results indicate that AquaRefining is a cleaner and more sustainable approach to LiB recycling, producing far less CO2 waste streams than smelting or chemical-driven hydrometallurgical processes currently on the market. In December 2022, we completed equipment installation and began to operate our first-of-a-kind LiB recycling facility, utilizing renewable electricity as the reagent to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces. In January of 2023, Aqua Metals recovered its first metals from recycling lithium batteries using the patent-pending Li AquaRefining process.

In February 2023, we acquired a five-acre parcel of land with an existing building to begin development of our Li AquaRefining recycling campus at TRIC. When fully developed, the facility we envision is designed to process lithium-ion battery material using our proprietary Li AquaRefining technology. Subject to our receipt of the required additional capital, we expect to complete development of phase one, including all equipment installation within 3-4 quarters of securing the additional capital and to complete the commissioning and scaling of this operation at the new campus within 2 quarters of completion of the development. The Company is planning for a phased development of the campus, beginning with the already commenced redevelopment of an existing building on-site into the first commercial-scale Li AquaRefinery.

In the first half of 2024, we made significant progress on the construction of the planned first phase of the commercial Li AquaRefinery. We continue to pursue the required funding for the completion of the phase one development of our five-acre recycling campus through various sources, including debt, project finance, joint venture and strategic investment options. At the end of 2024, we completed the first multi-week continuous 7 day x 24 hour operation campaign at our pilot facility, demonstrating the ability to deliver exceptional recovery rates and produce battery-grade critical minerals.

In February, 2025, the Company announced its expanded vision to more than double the output of lithium carbonate by deferring the plating of nickel and cobalt to metal form until the next phase. We believe this will allow for several potential improvements to the early years of scaling – reduced CAPEX by simplifying the product set to lithium carbonate and MHP (Mixed Hydroxide Precipitates), more volume of product due to the simplification, further de-risk with the simplified product set, more revenue and overall operating margins with a much improved payback on remaining capital to be financed. The Company continues to seek the funding to complete the phase 1 operation.

Effective November 5, 2024, we effected a one-for-20 reverse stock split of our issued and outstanding common shares. All share and share price information set forth in this report has been adjusted retrospectively to reflect this stock split.

Unless otherwise indicated, the terms "Aqua Metals," "Company," "we," "us," and "our" refer to Aqua Metals, Inc. and its wholly owned subsidiaries.

All references in this report to "ton" or "tonne" refer to a metric ton, which is equal to approximately 2,204.6 pounds.

Overview

Aqua Metals is seeking to reinvent metal recycling with its patented and patent-pending AquaRefining™ technologies. Aqua Metals is focused on developing cleaner and safer metals recycling through innovation. We believe Aqua Metals can expand the development of breakthrough technologies for sustainable metal recycling and deliver high-value critical minerals back into the manufacturing supply chain while reducing emissions and toxic byproducts and creating much safer work environments.

Aqua Metals has invested in breakthrough metals recycling methodologies that we believe are environmentally responsible, economically competitive, and will help retain critical strategic metals within the U.S. while enabling domestically produced, sustainably produced, recycled metals to enter the supply chain and lower sole reliance on unsafe and toxic mining operations. Since 2015, Aqua Metals has developed breakthrough metal recycling technologies that utilize a clean, closed-loop process that can produce ultra-high purity metals. AquaRefining is designed to deliver raw materials back into the manufacturing supply chain, and replaces the need for polluting furnaces and hazardous chemicals with electricity-powered electroplating to recover valuable metals and materials from spent batteries with higher purity, lower emissions, and minimal waste.

We believe Aqua Metals' regenerative electro-hydrometallurgical recycling method potentially offers a substantial improvement over traditional pyrometallurgical and hydrometallurgical recycling techniques, which produce much higher emissions, lower recovery rates, and significant landfill waste. We believe the AquaRefining process has the potential to vastly reduce the environmental impact of recycling lithium batteries as compared to other processes while providing a higher yield of high-purity metals essential for the burgeoning US battery manufacturing industry.

We are in the process of demonstrating that Li AquaRefining can create the highest quality and highest yields of recovered minerals from lithium-ion batteries, with lower waste streams and lower costs than alternatives. With the proven ability to recover valuable metals from lithium-ion batteries at our pilot facility in the TRIC, our goal is to demonstrate our ability to process commercial quantities of high-purity lithium hydroxide and/or carbonate, nickel, cobalt, manganese dioxide, and copper in pure forms that can be sold to the general metals and superalloy markets, and can be made into battery precursor compound materials with proven processes that are already used in the battery industry.

The Company is also exploring additional innovative applications of AquaRefining across metals recycling industries at our Innovation Center, including recycling emerging battery chemistries and opportunities to develop additional products for sale to customer specifications.

Our Markets

Aqua Metals' AquaRefining process produces high purity metals and alloys that can be returned into the battery manufacturing supply chain or sold into metals markets for use across various advanced manufacturing industries. This combination of approaches and the broad applicability of the end products we aim to produce enables Aqua Metals to create low-emissions inputs for the battery supply chain or to help decarbonize other sectors that utilize these critical metals and superalloys – creating a more resilient and adaptable business model for the Company as a whole.

Metals Markets

Most of the minerals and metals that can be recovered in the recycling of batteries of various chemistries are also globally traded commodities. Lead, copper, cobalt, nickel, and other metals can be recovered and sold in pure metal form into these markets at the prevailing price or sold directly to a customer at a price set relative to the current market price.

For example, battery metals are globally traded metal commodities. Metals such as lead for LABs and nickel, cobalt, copper and lithium for LIBs are the essential components for the world's rechargeable batteries. These metals are globally traded primarily on the London Metals Exchange (LME) and the Shanghai Metals Exchange (SHME) in China also trades these elements. In their pure forms, the other minerals that Aqua Metals intends to recover from spent batteries can be sold into these global markets. Unlike lead markets where recycled mineral content achieves up to 90% of new LAB batteries in a mature industry, lithium and related metals recycling currently achieves only 1-3% recycled mineral content of new LiB batteries, relying almost entirely on newly mined ore and refining to meet global demand.

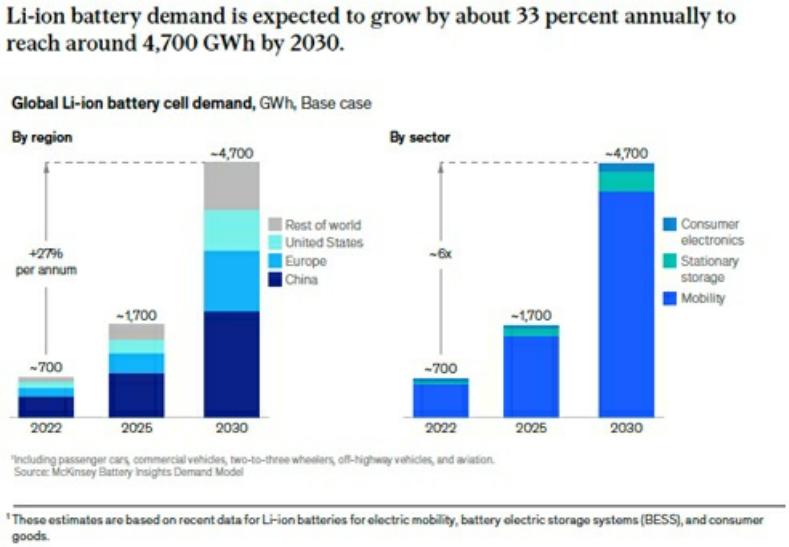
As noted above, although metals are traded as a commodity on the various global exchanges, the major sales are directly between producers/traders and users (whom are typically battery manufacturers). The LME daily price is used as the benchmark in forming the basis of physical trades, forward contracts, and hedge strategies for both primary and secondary metals, in metal form. Based on market and product knowledge with buyers of metals in the U.S. and global metals markets, different grades (termed alloys) of metal are traded at a premium to the base LME price. Metal alloys, which are typically designed specifically for the customer, are also sold at a premium above the base LME, whereas byproducts (generally lower purity, compounds, or scrap) are traded at a discount to the LME as they are based on the underlying metals content and its form.

The Lithium Battery Market

Global demand for Li-ion batteries is expected to soar over the next decade, with the number of GWh required increasing from about 700 GWh in 2022 to around 4.7 TWh by 2030 (Figure 1 below). Batteries for mobility applications, such as electric vehicles (EVs), will account for the vast bulk of demand in 2030—about 4,300 GWh; an unsurprising trend seeing that mobility is growing rapidly. This is largely driven by three major drivers:

- A regulatory shift toward sustainability, which includes new net-zero targets and guidelines, including Europe's "Fit for 55" program, the US Inflation Reduction Act, the 2035 ban of internal combustion engine (ICE) vehicles in the EU and in the State of California in the U.S., and India's Faster Adoption and Manufacture of Hybrid and Electric Vehicles Scheme.
- Greater customer adoption rates and increased consumer demand for greener technologies (up to 90 percent of total passenger car sales will involve EVs in selected countries by 2030).
- Announcements by 13 of the top 15 OEMs to discontinue production of ICE vehicles and achieve new emission-reduction targets.

Figure 1: Growth of the Li-ion Battery Market Battery



Battery energy storage systems (BESS) are expected to have a CAGR of 30 percent, and the GWh required to power these applications in 2030 will be comparable to the GWh needed for all applications today. China could account for 45 percent of total Li-ion demand in 2025 and 40 percent in 2030—most battery-chain segments are already mature in that country. Nevertheless, growth is expected to be highest globally in the EU and the United States, driven by recent regulatory changes, as well as a general trend toward localization of supply chains. In total, at least 120 to 150 new battery factories will need to be built between now and 2030 globally to have sufficient capacity to meet predicted demand. In line with the surging demand for Li-ion batteries across industries, it is projected that revenues along the entire value chain will increase 5-fold, from about $85 billion in 2022 to over $400 billion in 2030 (Figure 2). Active materials and cell manufacturing may have the largest revenue pools. Mining is not the only option for sourcing battery materials since recycling is also an option. Although the recycling segment is expected to be relatively small in 2030, it is projected to grow more than three-fold in the following decade, when more batteries reach their end-of-life and greater quantities of manufacturing scrap material become available for recycling.

Figure 2: Li-ion Revenue Opportunities through 2030

Lithium Batteries

EV batteries are powered by a battery pack made up of individual cells. Each cell has 4 components: the cathode, anode, separator, and electrolyte. Lithium-ion batteries use different raw materials for each of the components. The most common material used for the anode is graphite. The most widely used metal for the cathode is metal oxides that are combinations of lithium, cobalt, nickel, manganese, and aluminum. The electrolyte is generally made using acidic salts and solvents such as sulfuric acid and there are also solid-state silicon-based alternatives under development and early deployments have begun. The separator is usually created using a porous, polyolefin material like polyethylene or polypropylene.

Lithium-ion battery recycling is the method of taking EV batteries and splitting it into its components, ultimately into the original raw materials (lithium, nickel, cobalt, etc.) that can be reused in new batteries. While making lithium-ion batteries for EVs is important to address climate change, the batteries themselves are harmful to the environment if left in landfills or burned. Currently, only a small fraction of lithium-ion batteries are recycled and that must get close to 100% both to avoid environmental issues and to recapture the critical minerals in those spent batteries to feed the massive demand growth curve. Battery recycling helps address this problem, but current pyro-based battery recycling technology (smelting) also creates harmful emissions, potentially creating new climate problems faster than they are being solved. There are alternative hydro-based technologies available and rely on older methodologies that are known to create significant waste streams, potentially with more waste than product recovered, which have their own negative environmental and economic impacts.

Black Mass

Lithium-ion batteries are comprised of valuable metals such as lithium, copper, manganese, cobalt, and nickel. Once a battery is retired, the batteries can be collected, fully discharged, then shredded and base metals are separated to prepare them for recycling. This shiny, metallic mixture is what is called ‘black mass’—and it contains all the valuable metals that make up battery anodes and cathodes, the most expensive parts of a battery and the companies that collect and process batteries into black mass are referred to as ‘shredders’. The typical black color is due to the high concentrations of graphite contained in the anodes of batteries, which has a very dark black color. Black mass makes up about 40-50% of the total weight of an EV battery. Materials like the binder, copper, electrolytes, plastics, aluminum, and steel have been physically separated out by shredders before being recycled.

There are two main processes to producing black mass:

1. Pyrometallurgy: some black mass producers will use high temperatures to burn off unwanted materials like plastics and remaining electrolyte. This can create hazardous emissions and waste that must be captured or mitigated, and result in less recovered material.

2. Hydrometallurgy: many producers use solution-based techniques—using water, chemicals and electricity to crush and separate the materials from a battery. This eliminates the need for polluting furnaces and energy intensive processing, creating a lower-carbon black mass.

Aqua Metals specifically partners with producers that use non-pyro processes in order to create black mass to meet their own objectives for creating low-carbon recycled materials. The exact composition of black mass can vary considerably based on a number of factors. To start, there are many different types of lithium-ion batteries and manufacturing scrap forms, which will revert back to a mix of different elements and different ratios, including lithium, nickel, iron, titanium, copper, cobalt, manganese, and others (their use of lithium is the commonality).

Each manufacturer also has their own specific ‘recipe’ for their cathodes, cell type/form factors, as well as module type and pack assembly for different applications (cell phones, laptops, electric vehicles, etc.). Currently, the most popular types of lithium-ion batteries in the world incorporate significant amounts of nickel, cobalt, lithium, and manganese—so black mass produced today will typically have varying concentrations of each.

AquaRefining Process

We developed AquaRefining to be a cleaner and modular alternative to smelting and chemical-based recycling methods. Our process has two key elements, both of which are integral to our issued patents and pending-patent applications. The first is our use of proprietary, non-toxic solvents that dissolves metal compounds. The second is a proprietary electrochemical process and our modular Aqualyzer cells that selectively target each critical element and converts the dissolved metal compounds into high purity metals and/or salts.

The AquaRefining process begins with the processing of crushed used batteries either in the form of paste (for LAB) or, black mass (for LIB). The active materials are first processed to remove sulfur and then dissolved in our solvent. Metals are plated from the solvent using our patented and patent-pending process allowing the solvent to be reused.

We have demonstrated at bench scale and subsequently in our pilot facility that our lithium battery AquaRefining process can generate cobalt, lithium hydroxide or carbonate, copper, nickel, and manganese dioxide from lithium-ion battery black mass. A significant benefit of our AquaRefining process is that it can produce higher yields of higher purity, and thus higher value product than that derived from primary smelters with product from secondary sources.

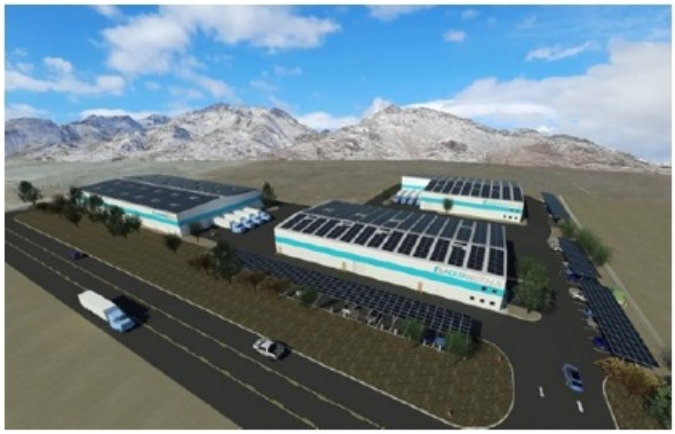
Another significant benefit of our process is that we designed our AquaRefining equipment to be manufactured on a purpose-built production line in standard sized Aqualyzers. This is not possible with the smelting process, as smelters need to be constructed on site. This gives us the ability to provide AquaRefining systems with varying capacities to meet the specific needs of potential customers and suppliers. We have also developed an integrated software and portal called PureMetrics that keeps track of production and key operating metrics.

Recycling is subject to a variety of domestic and international regulations related to hazardous materials, emissions, employee safety and other matters. While our operations will be subject to these regulations, we believe that one of our potential advantages will be our ability to conduct battery recycling operations with less regulatory cost and burden than smelting operators due to the nature of our process. One of our key initiatives is and will continue to be, to educate regulators and the public as to the environmental benefits of AquaRefining. We believe that we have the potential to develop a business model that offers the opportunity to conduct, in an environmentally friendly manner, an important recycling activity that historically has been conducted in an often highly polluting manner.

Project Site

Aqua Metals is in the process of building a new lithium-ion battery recycling facility to be located within Storey County, Nevada (the "Project"). The Project is located at 2955 & 2999 Waltham Way, McCarran, NV 89434 (the "Commercial Facility"). Aqua Metals operates a demonstration scale facility at 160 Denmark Drive, McCarran, NV 89434 (the "Innovation Center") which utilizes the equivalent equipment and technology as is expected to be constructed and operated in the Project.

Figure 3: Aqua Metals Site Rendering



Highlights include:

- Five-acre campus designed to ultimately process 7,000 MT of lithium-ion battery black mass annually
- Tahoe-Reno Industrial Center campus at the heart of Nevada's lithium battery supply chain
- Foreign Trade Zone designation
- Rendering of existing building and additional land available for future expansion

Our Business Model

Aqua Metals is engaged in the business of applying its commercialized clean, water-based recycling technology principles to develop the clean and cost-efficient recycling solutions for both lead and lithium-ion ("Li") batteries. Our recycling process is a patented hydrometallurgical and electrochemical technology that is an innovative, proprietary and patented process we developed and named AquaRefining. AquaRefining is a low-emissions, closed-loop recycling technology that replaces polluting furnaces and hazardous chemicals with electricity-powered electroplating to recover valuable metals and materials from spent batteries with higher purity, lower emissions, and with minimal waste. The "Aqualyzers" cleanly generate ultra-pure metal one atom at a time, closing the sustainability loop for the rapidly growing energy storage economy.

We are applying our sustainable recycling technology principles with the goal of developing the cleanest and most cost-efficient recycling solution for lithium-ion batteries. We believe our process has the potential to produce higher quality products at a lower operating cost without the damaging effects of furnaces and greenhouse emissions. We expect to recover lithium hydroxide or lithium carbonate, copper, nickel, cobalt, and other compounds in a salable form to either be sold directly to lithium battery CAM manufactures or the commodities market. Aqua Metals estimates the total addressable market for lithium-ion battery recycling will grow to exceed lead battery recycling by the end of the decade. Unlike the mature lead recycling market, the deployed lithium-ion battery recycling infrastructure to serve market growth does not exist today.

Our business strategy focuses on developing and operating Li AquaRefining recycling facilities to meet the rising demand for critical metals used in lithium-ion batteries. This demand is driven by innovations in automobile batteries, the expansion of internet data centers, and alternative energy applications such as solar, wind, and grid-scale storage. Additionally, we aim to commercialize our AquaRefining process by licensing our technology to third parties and forming joint ventures and strategic partnerships with battery manufacturers and recyclers.

We are in the process of demonstrating that Li AquaRefining, which is fundamentally non-polluting, can create the highest quality and highest yields of recovered minerals from lithium-ion batteries with lower waste streams and lower costs than existing alternatives. Throughout 2023 and 2024, we have demonstrated at our pilot facility our ability to recover key valuable minerals in lithium-ion batteries, such as lithium hydroxide or lithium carbonate, copper, nickel, cobalt, and other compounds. Our goal is to process commercial quantities of nickel, cobalt, and copper in a pure metal form that can be sold to the general metals and superalloy markets and can be made into battery precursor compound materials with known processes already used in the mining industry. We have operated the first Li AquaRefining pilot plant in 2023 and in 2024. The location for the pilot demonstration facility is currently the Innovation Center with expansion to happen at our new 5-acre recycling campus to commercial quantities. Once fully completed, and based on our new expanded vision to more than double the output of lithium carbonate by deferring the plating of nickel and cobalt to metal form until the next phase, our first commercial facility is designed to process ~7,000 tonnes / year or more of battery materials, which would be enough material to build ~70,000 average EVs or ~300,000 average home energy storage systems. We are proceeding with a phased development approach, and commenced phase one of our campus.

Our focus for the lithium market includes operating our first-of-a-kind lithium battery recycling facility, utilizing electricity to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces. We are also exploring partnership and/or joint venture agreements, particularly as our Li AquaRefining matures. We believe that Aqua Metals is in a position to become one of the few critical minerals recovery players for which our environmental and economic value proposition should generate both great commercial wins and potentially government grants to accelerate our expansion and progress.

The market for lithium-ion batteries is global in scale but local in nature and execution, with large differences in local regulation, custom and practice, and access to transportation and electricity costs. In some regions, it is highly regulated, and in others it is not. Consequently, we are evolving our business model to commercialize our technology optimally across multiple locations.

Competition

Our development of recycling technology for lithium-ion batteries is a unique approach to extracting the high-value metals compared to the array of other potential solutions under development. Currently, smelting is the only commercially proven process for recycling lithium-ion batteries. The smelting process utilizes multiple high emissions steps with low yields to produce materials that typically require further refining before being utilized to manufacture new batteries. Over the next decade and beyond, when the volume of used batteries becomes significant, smelting will likely not be a viable solution due to the negative environmental impact and likelihood of regulatory restrictions on emissions. The other technologies currently under development utilize a predominately hydrometallurgical approach that consumes significant amounts of chemicals to extract the metals resulting in high cost and excessive waste streams. Our approach is a hybrid of hydrometallurgical and electrometallurgical processes like the process we have commercialized for lead, we call it "Li AquaRefining." We believe that Li AquaRefining, as demonstrated through our lab-scale, bench-scale, and now pilot-scale operations, requires fewer chemicals, generates less waste, and produces higher-purity products at a lower cost compared to both smelting and standard hydrometallurgy.

The lithium-ion battery recycling market is significantly different from that of the lead recycling market in that it is a nascent industry. With no predominant technology to displace, our goal is to enable new and existing recyclers across the globe with Li AquaRefining as a best-in-class solution for meeting the supply chain demands of the lithium-ion battery industry as well as meeting the environmental needs of the planet and the corporations seeking to achieve net zero emissions.

The competitive advantages of the Aqua Metals project include:

- Replaces furnaces and heavy chemical use with 100% electricity-powered and closed-loop recycling, creating fundamentally non polluting, cost-efficient solution that generates minimal waste
- AquaRefining recovers all valuable materials, including Lithium Hydroxide, Lithium Carbonate, and Manganese Dioxide, which are not recovered by competing methods
- Recovers the high-value metals lost in smelting (like lithium and manganese), and produces high purity products
- Only Li-ion recycling method with pathway to net-zero operations
- Strong IP protection: 45 global patents; 42 patents pending for recycling various battery chemistries, including lithium ion and lead acid
- Only electro-hydrometallurgy recycler in North America
- Safer work environment, less hazardous materials, eliminates constant trainloads of chemicals
- Massive and growing global addressable market
- Greenfield opportunity for partnerships and strategic alliances

Intellectual Property Rights

We regard the protection of our technologies and intellectual property rights as an important element of our business operations and crucial to our success. We endeavor to generate and protect our intellectual property assets through a series of patents, trademarks, internal and external policy and procedures and contractual provisions.

Patent Portfolio

Currently, we have secured 3 US patents, 38 international patents, and 4 allowances (international) for recycling various battery chemistries, including lithium ion and lead acid batteries. In addition to the US patents, we have international patents/allowances in the African Regional Intellectual Property Organization, African Intellectual Property Organization, Australia, Brazil, Canada, Chile, China, the Eurasian Patent Organization, European Union, Honduras, India, Indonesia, Japan, Malaysia, Mexico, Peru, South Korea, South Africa, Ukraine, and Vietnam. We also have 42 US and foreign patent applications pending with patent applications pending in 20 additional non-US jurisdictions, across five distinct patent applications relating to certain elements of the technology underlying our AquaRefining process and related apparatus and chemical formulations. The claims of the granted patents substantially address the same subject matter and are drawn to various aspects of processing lead or lithium materials using an aqua refining process. Differences in the claim number and scope are due to local rules and practice as well as the target metal.

We intend to continue to prepare and file domestic and foreign patent applications covering expanding aspects and applications of our technology, as circumstances warrant.

There can be no assurance that any patents will issue from any of our current or any future applications. Also, any patents that may issue may not survive a legal challenge to their scope, validity, or enforceability, or provide significant protection for us. Competitors may work around our patents, so they are not infringing. Our patent portfolio and our existing policy and procedures safeguarding our trade secrets nonetheless may face challenges so that our competitors can copy our AquaRefining process.

Trademark Portfolio

We have filed for trademark registration in the US and foreign countries for the following trademarks:

- AQUA METALS (14 foreign countries)
- AQUAREFINING (10 foreign countries)
- AQMS (US only)
- AQUAREFINERY (9 foreign countries)

Trade Secrets and Contract Protection

We have developed our internal policy and procedures in safeguarding our trade secrets and proprietary information. Our procedures generally require our employees, consultants, and advisors to enter into confidentiality agreements. These agreements provide that all confidential information developed or made known to the individual during the course of the individual's relationship with us is to be kept confidential and not disclosed to third parties except under specific circumstances. In the case of our employees, the agreements provide that all of the technology that is conceived by the individual during the course of employment is our exclusive property. The development of our technology and many of our processes are dependent upon the knowledge, experience, and skills of key scientific and technical personnel.

Government Regulation

Our operations and the operations of our licensees in the United States will be subject to the federal, state, and local environmental, health and safety laws applicable to the reclamation of LABs and lithium based batteries. While the reclamation process itself is generally not subject to federal permitting requirements, depending on how any particular operation is structured, our facilities and the facilities of our licensees may have to obtain environmental permits or approvals from federal, state or local regulators to operate, including permits or regulatory approvals related to air emissions, water discharges, waste management, and the storage of batteries on-site should that become necessary. We may face opposition from local residents or public interest groups to the installation and operation of our or our licensee's facilities. Failure to secure (or significant delays in securing) the necessary approvals could prevent us from pursuing some of our planned operations and adversely affect our business, financial results, and growth prospects.

In addition to permitting requirements, our operations and the operations of our licensees are subject to environmental health, safety and transportation laws and regulations that govern the management of and exposure to hazardous materials such as the lead, acids, and other metals involved in reclamation. These include hazard communication and other occupational safety requirements for employees, which may mandate industrial hygiene monitoring of employees for potential exposure to lead. Failure to comply with these requirements could subject our business to significant penalties (civil or criminal) and other sanctions that could adversely affect our business. Changes to these regulatory requirements in the future could also increase our costs, require changes in or cessation of certain activities, and adversely affect the business.

The nature of our operations and the operations of our licensees involves risks, including the potential for exposure to hazardous materials such as lead, that could result in personal injury and property damage claims from third parties, including employees and neighbors, which claims could result in significant costs or other environmental liability. Our operations and the operations of our licensees also pose a risk of releases of hazardous substances, such as lead, acids, and other metals related to lithium batteries into the environment, which can result in liabilities for the removal or remediation of such hazardous substances from the properties at which they have been released, liabilities which can be imposed regardless of fault, and our business could be held liable for the entire cost of cleanup even if we were only partially responsible. Like any manufacturer, we and our licensees are also subject to the possibility that we may receive notices of potential liability in connection with materials that were sent to third-party recycling, treatment, and/or disposal facilities under the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), and comparable state statutes, which impose liability for investigation and remediation of contamination without regard to fault or the legality of the conduct that contributed to the contamination, and for damages to natural resources. Liability under CERCLA is retroactive, and, under certain circumstances, liability for the entire cost of a cleanup can be imposed on any responsible party.

As our business expands outside of the United States, our licensed operations will be subject to the environmental, health and safety laws of the countries where we do business, including permitting and compliance requirements that address the similar risks as do the laws in the United States, as well as international legal requirements such as those applicable to the transportation of hazardous materials. Depending on the country or region, these laws could be as stringent as those in the US, or they could be less stringent or not as strictly enforced. In some countries in which we are interested in expanding our business, such as South America, Taiwan and China, the relevant environmental regulatory and enforcement frameworks are in flux and subject to change. Therefore, while compliance with these requirements will cause our business to incur costs, and failure to comply with these requirements could adversely affect our business, it is difficult to evaluate such potential costs or adverse impacts until such time as we decide to initiate operations in particular countries outside the United States.

Employees

As of the date of this report, we employ 11 people on a full-time basis. None of our employees are represented by a labor union.

Financial and Segment Information

We operate our business as a single segment, as defined by generally accepted accounting principles. Our financial information is included in the consolidated financial statements and the related notes.

Available Information

Our website is located at www.aquametals.com and our investor relations website is located at https://ir.aquametals.com/. Copies of our Annual Report on Form 10-K, Quarterly Report on Form 10-Q, Current Reports on Form 8-K, and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, are available, free of charge, on our investor relations website as soon as reasonably practicable after we file such material electronically with or furnish it to the Securities and Exchange Commission, or the SEC. The SEC also maintains a website that contains our SEC filings. The address of the site is *www.sec.gov*. The contents of our website are not intended to be incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. Before purchasing our common stock, you should read and consider carefully the following risk factors as well as all other information contained in this report, including our consolidated financial statements and the related notes. Each of these risk factors, either alone or taken together, could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our common stock. There may be additional risks that we do not presently know of or that we currently believe are immaterial, which could also impair our business and financial position. If any of the events described below were to occur, our financial condition, our ability to access capital resources, our results of operations and/or our future growth prospects could be materially and adversely affected and the market price of our common stock could decline. As a result, you could lose some or all of any investment you may make in our common stock.

Risks Relating to Our Business and Operations

We have a limited operating history and limited revenue producing operations and are currently focusing on developing our lithium battery recycling. Therefore, it is difficult for potential investors to evaluate our business. We formed our corporation in June 2014. From inception through December 31, 2024, we generated a total of $11.7 million of revenue, all of which was derived primarily from the sale of lead compounds and plastics and, to a lesser extent, the sale of lead bullion and AquaRefined lead, and all but approximately $310,000 of which was derived prior to January 1, 2020 at our former LAB recycling facility. In the last three years, the business has been focused on completing the research and development of the application of our AquaRefining technology to the recycling of lithium-ion batteries and operating a lithium-ion recycling pilot plant. Based upon our success to date in recovering high value metals from lithium-ion batteries using our AquaRefining technology, we have commenced the development of a five-acre recycling campus designed to process up to 7,000 tonnes of lithium-ion battery material annually from our first phase. While we intend to continue to pursue our licensing business model, the development of our lithium-ion battery recycling facility represents a significant focus in our business strategy and course of operations. As of the date of this report, we estimate that we will begin to realize revenues from lithium-ion battery recycling with in three to four quarters after receiving funding, however we are unable to estimate when we expect to commence any meaningful commercial or revenue producing operations from either our licensing model or our lithium-ion battery recycling facility. Our limited operating history makes it difficult for potential investors to evaluate our technology or prospective operations and we are, for all practical purposes, an early-stage company subject to all the risks inherent in the initial organization, financing, expenditures, complications, and delays in a new business, including, without limitation:

- our ability to successfully apply, and realize the expected benefits of applying, our AquaRefining technology to the plating of high value metals found in lithium-ion batteries, including cobalt, and nickel;
- the timing and success of our plan of commercialization and the fact that we have not entered into a commercial license for our AquaRefining technology and only have recently commenced the build out of our lithium-ion recycling facility;
- our ability to successfully develop our proposed lithium-ion recycling facility;
- our ability to demonstrate that our AquaRefining technology can recycle either LABs or lithium-ion batteries on a commercial scale; and
- our ability to license our AquaRefining process and sell our AquaRefining equipment to recyclers of LABs and lithium-ion batteries.

Investors should evaluate an investment in us in light of the uncertainties encountered by developing companies in a competitive environment. There can be no assurance that our efforts will be successful or that we will ultimately be able to attain profitability.

We will need additional financing to execute our business plan and fund operations, which additional financing may not be available on reasonable terms or at all. As of December 31, 2024, we had total cash of $4.0 million and working capital of $(3.9) million. As of the date of this report, we believe that we will require additional capital in order to fund our current level of ongoing costs and our proposed business plan over the next 12 months as we move forward with our business strategy. We intend to acquire the necessary capital though debt financing or through the sale of equity. Funding that includes the sale of our equity may be dilutive. If such funding is not available on satisfactory terms, we may be unable to further pursue our business plan and we may be unable to continue operations, in which case you may lose your entire investment.

The report of our independent registered public accounting firm for the year ended December 31, 2024 states that there is substantial doubt about our ability to continue as a going concern within one year after the date that the financial statements are issued.

As of the date of this report, we have in excess of $4.0 million of secured indebtedness, the majority of which is held by related parties and all of which becomes due within the next nine months. In February 2023, we entered into a $3 million secured debt facility with Summit Investment Services, LLC, an entity controlled by Eric Gangloff, who subsequently became a member of our board of directors, and in December 2024 we conducted the private placement of $1.5 million of secured promissory notes with eight accredited investors, including certain of our executive officers and directors who purchased an aggregate of $1,200,000 of the private placement notes. The indebtedness under the Summit debt facility and the private placement notes are secured by all of our assets, with a few exceptions. All principal and interest under the Summit debt facility is due and payable on April 27, 2025 and all principal and interest under the private placement notes are due and payable on December 31, 2025. If we are unable to repay or refinance the secured debt in a timely manner, the debt holders can exercise their rights under their security agreements collateralizing their debt and foreclose on our assets. The fact that a majority of the debt is held by our officers and directors raises issues concerning potential conflicts of interest. There can be no assurance that we will be able to repay or refinance the secured debt in a timely manner.

We recently commenced the development of a lithium-ion recycling facility, however we are in the early stages of developing the facility and there can be no assurance that we will be able to successfully develop the facility or, if we do, realize the expected benefits of the facility. In January 2023, we announced our plans to conduct the phased development of a five-acre recycling campus in the Tahoe-Reno Industrial Center, or TRIC, in McCarran, Nevada. The first phase of the facility is designed, when fully developed, to process up to 7,000 tonnes of lithium-ion battery material each year using our proprietary AquaRefining technology. On February 1, 2023, we closed on the acquisition financing and purchased the five-acre site, plus the existing 21,000 square foot building, and as noted elsewhere, in third quarter of 2023 we raised a net of $22.9 million from the sale of our common stock. In the second quarter of 2024 we raised a net of $7.3 million from the sale of our common stock. In the first half of 2024 we began the Phase One build-out of the facility. However, we will need additional financing to complete the build-out of Phase One, which we intend to pursue through conventional non-dilutive loans, potential government backed debt offerings, government grants or through the sale of our common stock via our current at-the-market offering. The Company is planning for a phased development of the campus, beginning with the already commenced redevelopment of an existing building on-site into the first commercial-scale Li AquaRefinery. Subject to our receipt of development financing on a timely basis, we expect to complete development of Phase One, including all equipment installation, within three quarters of receiving funding and to commence operations shortly thereafter. However, there can be no assurance we will be able to do so.

Our business is dependent upon our successful implementation of innovative technologies and processes and there can be no assurance that we will be able to implement such technologies and processes in a manner that supports the successful commercial roll-out of our business model. While much of the technology and processes involved in battery recycling operations are widely used and proven, our AquaRefining process is largely innovative and, to date, has been demonstrated on a modest scale of operations. While we have shown that our proprietary technology can produce AquaRefined metals from batteries on a small scale, we have not processed recycled batteries on a commercial scale. We recently commenced the development of a five-acre recycling campus designed to process lithium-ion batteries, however there can be no assurance that we will be able to complete the development of the recycling facility or, if we are able to do so, that we will be able to successfully process lithium-ion batteries on a commercial scale.

Our business model is new and has not been proven by us or anyone else We are engaged in the business of producing recycled metals from LABs and high value metals from lithium-ion batteries through an innovative, and proven on a modest scale, technology. While the production of recycled batteries is an established business, to date virtually all recycled metals have been produced by way of traditional smelting processes. To our knowledge, no one has successfully produced recycled batteries in commercial quantities other than by way of smelting. In addition, neither we nor anyone else has ever successfully built a production line that commercially recycles batteries without smelting. Further, there can be no assurance that either we will be able to produce AquaRefined metals from batteries in commercial quantities at a cost of production that will provide us with an adequate profit margin. The uniqueness of our AquaRefining process presents potential risks associated with the development of a business model that is untried and unproven.

We have performed the research and development of the application of our AquaRefining technology to the recycling and recovery of lithium-ion batteries, however there can be no assurance that our efforts will be successful. In September 2021, we announced the establishment of our Innovation Center, in McCarran, Nevada, focused on applying our AquaRefining technology to lithium-ion battery recycling research and development and prototype system activities. In 2021, we filed a provisional patent for recovering high-value metals from recycled lithium-ion batteries to complement the patents for AquaRefining. At the end of 2022 and throughout 2023 and 2024, we successfully recovered all valuable materials from spent lithium batteries at production scale using our AquaRefining technology: lithium hydroxide, copper, nickel, cobalt, and manganese dioxide. We also operated our pilot plant throughout 2024. We are continuing our efforts to improve our Li AquaRefining process; however, there can be no assurance that our efforts will be successful or that we will be able to conduct the recycling and recovery of the high value metals from lithium-ion batteries on a commercial scale.

Our business strategy includes licensing arrangements and entering into joint ventures and strategic alliances, however as of the date of this report we have no such agreements in place and there can be no assurance we will be able to do so. Failure to successfully integrate such licensing arrangements, joint ventures, or strategic alliances into our operations could adversely affect our business. We propose, as one of our business strategies, to commercially exploit our AquaRefining process by licensing our technology to third parties and entering into joint ventures and strategic relationships with parties involved in the manufacture and recycling of batteries. We are also currently seeking to negotiate agreements with others. However, there can be no assurance we will be able to conclude a licensing agreement with any partners, or that we will be able to do so on terms that benefit us. Our ability to enter into licensing, joint ventures and strategic relationships with third parties will depend on our ability to demonstrate the technological and commercial advantages of our AquaRefining process, of which there can be no assurance. Also, even if we are able to enter into licensing, joint venture or strategic alliance agreements, there can be no assurance that we will be able to obtain the expected benefits of any such arrangements. In addition, licensing programs, joint ventures and strategic alliances may involve significant other risks and uncertainties, insufficient revenue generation to offset liabilities assumed and expenses associated with the transaction, potential additional challenges in protecting our intellectual property, and unidentified issues not discovered in our due diligence process, such as product quality, technology issues and legal contingencies. In addition, we may be unable to effectively integrate any such programs and ventures into our operations. Our operating results could be adversely affected by any problems arising during or from any licenses, joint ventures or strategic alliances.

Even if our licensees are successful in recycling batteries using our processes, there can be no assurance that the AquaRefined recycled metals will meet the certification and purity requirements of the potential customers. A key component of our business plan is the production of recycled metals through our AquaRefining process. Our customers will require that our AquaRefined metals meet certain minimum purity standards and, in all likelihood, require independent assays to confirm the metal's purity. As of the date of this report, we have produced limited quantities of AquaRefined metals. We have not produced AquaRefined metals in significant commercial quantities and there can be no assurance that we will be able to do so or, that such metals will meet the required purity standards of our customers. Further, while we have recently commenced the application of our AquaRefining process towards the recovery of high value metals found in lithium-ion batteries, such as cobalt, nickel, lithium hydroxide, lithium carbonate, copper, and manganese dioxide, we have only recently begun the development of recycling of lithium-ion batteries, and there can be no assurance that our efforts will be successful or that we will be able to conduct the recycling and recovery of the high value metals from lithium-ion batteries on a commercial scale.

While we have been successful in producing AquaRefined metals in small volumes, there can be no assurance that either we or our licensees will be able to replicate the process, along with all of the expected economic advantages, on a large commercial scale either for us or our prospective licensees. While we believe that our development, testing and limited production to date of AquaRefined metals has validated the concept of our AquaRefining process, the limited nature of our operations to date are not sufficient to confirm the economic returns on our production of recycled metals. Further, we have only recently commenced commercial operations in the area of recycling of lithium-ion batteries. There can be no assurance that either us or our licensees will be able to produce AquaRefined metals from batteries in commercial quantities at a cost of production that will provide us and our proposed licensees with an adequate profit margin.

Our intellectual property rights may not be adequate to protect our business. As of the date of this report, we have 3 issued US patents, 38 international patents, and 4 international allowances related to our AquaRefining process.

We also have further patent applications pending in the United States and numerous corresponding patent applications pending in 20 additional jurisdictions relating to certain elements of the technology underlying our AquaRefining process and related apparatus and chemical formulations. However, no assurances can be given that any patent issued, or any patents issued on our current and any future patent applications, will be sufficiently broad to adequately protect our technology. In addition, we cannot assure you that any patents issued now or in the future will not be challenged, invalidated, or circumvented.

Even patents issued to us may not stop a competitor from illegally using our patented processes and materials. In such event, we would incur substantial costs and expenses, including lost time of management in addressing and litigating, if necessary, such matters. Additionally, we rely upon a combination of trade secret laws and nondisclosure agreements with third parties and employees having access to confidential information or receiving unpatented proprietary know-how, trade secrets and technology and employees sign severance agreements upon termination due to a reduction in force to protect our proprietary rights and technology. These laws and agreements provide only limited protection. We can give no assurance that these measures will adequately protect us from misappropriation of proprietary information.

Our processes may infringe on the intellectual property rights of others, which could lead to costly disputes or disruptions. The applied science industry is characterized by frequent allegations of intellectual property infringement. Though we do not expect to be subject to any of these allegations, any allegation of infringement could be time consuming and expensive to defend or resolve, result in substantial diversion of management resources, cause suspension of operations or force us to enter into royalty, license, or other agreements rather than dispute the merits of such allegation. If patent holders or other holders of intellectual property initiate legal proceedings, we may be forced into protracted and costly litigation. We may not be successful in defending such litigation and may not be able to procure any required royalty or license agreements on acceptable terms or at all.

Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs. Our internal computer systems and those of our current and any future customers, vendors, licensees, collaborators and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a disruption of our research and development and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our recycling technologies could be delayed.

We could be subject to risks caused by misappropriation, misuse, leakage, falsification or intentional or accidental release or loss of information maintained in the information systems and networks of our company and our customers, vendors, licensees, collaborators and other contractors or consultants, including personal information of our employees and others, and company and third-party confidential data. In addition, outside parties may attempt to penetrate our systems or those of our customers, vendors, licensees, collaborators and other contractors or consultants or fraudulently induce our personnel or the personnel of third parties to disclose sensitive information in order to gain access to our data and/or systems. We may experience threats to our data and systems, including malicious codes and viruses, phishing and other cyberattack. The number and complexity of these threats continue to increase over time. If a material breach of, or accidental or intentional loss of data from, our information technology systems or those of our customers, vendors, licensees, collaborators and other contractors or consultants occurs, the market perception of the effectiveness of our security measures could be harmed and our reputation and credibility could be damaged. We could be required to expend significant amounts of money and other resources to repair or replace information systems or networks. In addition, we could be subject to regulatory actions and/or claims made by individuals and groups in private litigation involving privacy issues related to data collection and use practices and other data privacy laws and regulations, including claims for misuse or inappropriate disclosure of data, as well as unfair or deceptive practices.

Although we develop and maintain systems and controls designed to prevent these events from occurring, and we have a process to identify and mitigate threats, the development and maintenance of these systems, controls and processes is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures become increasingly sophisticated. Moreover, despite our efforts, the possibility of these events occurring cannot be eliminated entirely. As we outsource more of our information systems to vendors, engage in more electronic transactions with third parties, and rely more on cloud-based information systems, the related security risks will increase and we will need to expend additional resources to protect our technology and information systems. In addition, there can be no assurance that our internal information technology systems or those of our customers, vendors, licensees, collaborators and other contractors or consultants will be sufficient to protect us against breakdowns, service disruption, data deterioration or loss in the event of a system malfunction, or prevent data from being stolen or corrupted in the event of a cyberattack, security breach, industrial espionage attacks or insider threat attacks which could result in financial, legal, business or reputational harm.

Risks Relating to Geopolitical, Macroeconomic and Industry Factors

Unfavorable geopolitical and macroeconomic developments could adversely affect our business, financial condition or results of operations. Our business could be adversely affected by conditions in the U.S. and global economies. Global economic uncertainty, inflation, changes in interest rates, supply chain disruptions, and fluctuations in foreign exchange rates can adversely affect our operations, profitability, and demand for our products and services.

Additionally, geopolitical tensions, trade restrictions, tariffs, and regulatory changes in key markets where we operate could impact our ability to source materials, manufacture products, or expand into new markets. Armed conflicts, economic sanctions, and political instability in various regions may disrupt our supply chains, increase costs, and limit growth opportunities. Furthermore, shifts in industry trends, technological advancements, and competitive pressures could require us to adapt our business model or invest significant resources to remain competitive. If we are unable to effectively manage these external risks, our financial performance and strategic objectives could be materially affected.

Any of the foregoing could harm our business. Any resulting financial impact cannot be reasonably estimated at this time but may materially affect our business and financial condition. The extent to which the foregoing impacts our results will depend on future developments, which are highly uncertain and cannot be predicted.

Our business may be negatively affected by labor issues and higher labor costs Our ability to maintain our workforce depends on our ability to attract and retain new and existing employees. As of the date of this report, none of our employees are covered by collective bargaining agreements and we consider our labor relations to be acceptable. However, we could experience workforce dissatisfaction which could trigger bargaining issues, employment discrimination liability issues as well as wage and benefit consequences, especially during critical operation periods. We could also experience a work stoppage or other disputes which could disrupt our operations and could harm our operating results. In addition, legislation or changes in regulations could result in labor shortages and higher labor costs. There can be no assurance that we may not experience labor issues that negatively impact our operations or results of operations.

Global economic conditions could negatively affect our prospects for growth and operating results Our prospects for growth and operating results will be directly affected by the general global economic conditions of the industries in which our suppliers, partners and customer groups operate. We believe that the market price of battery metal is relatively volatile and reacts to general global economic conditions. Our business will be highly dependent on the economic and market conditions in each of the geographic areas in which we operate. These conditions affect our business by reducing the demand for recyclable batteries and decreasing the price of battery metals in times of economic downturn and increasing the price of used batteries in times of increasing demand of recyclable batteries. There can be no assurance that global economic conditions will not negatively impact our liquidity, growth prospects and results of operations.

We are subject to the risks of conducting business outside the United States A part of our strategy involves our pursuit of growth opportunities in certain international market locations. We intend to pursue licensing or joint venture arrangements with local partners who will be primarily responsible for the day-to-day operations. Any expansion outside of the U.S. will require significant management attention and financial resources to successfully develop and operate any such facilities, including the sales, supply and support channels, and we cannot assure you that we will be successful or that our expenditures in this effort will not exceed the amount of any resulting revenues. Our international operations expose us to risks and challenges that we would otherwise not face if we conducted our business only in the United States, such as:

- increased cost of enforcing our intellectual property rights;
- diminished ability to protect our intellectual property rights;
- heightened price sensitivities from customers in emerging markets;
- our ability to establish or contract for local manufacturing, support and service functions;
- localization of our battery metals and components, including translation into foreign languages and the associated expenses;
- compliance with multiple, conflicting and changing governmental laws and regulations;
- compliance with the Federal Corrupt Practices Act and other anti-corruption laws;
- foreign currency fluctuations;
- laws favoring local competitors;
- weaker legal protections of contract terms, enforcement on collection of receivables and intellectual property rights and mechanisms for enforcing those rights;
- market disruptions created by public health crises in regions outside the United States;
- difficulties in staffing and managing foreign operations, including challenges presented by relationships with workers' councils and labor unions;
- issues related to differences in cultures and practices; and
- changing regional economic, political and regulatory conditions.

Risks Relating to Government Law and Environmental Regulations

U.S. government regulation and environmental, health and safety concerns may adversely affect our business Our operations and the operations of our licensees in the United States will be subject to the federal, state and local environmental, health and safety laws applicable to the reclamation of batteries including the Occupational Safety and Health Act ("OSHA") of 1970 and comparable state statutes. Our facilities and the facilities of our licensees will have to obtain environmental permits or approvals to expand, including those associated with air emissions, water discharges, and waste management and storage. We and our licensees may face opposition from local residents or public interest groups to the installation and operation of our respective facilities. In addition to permitting requirements, our operations and the operations of our licensees are subject to environmental health, safety and transportation laws and regulations that govern the management of and exposure to hazardous materials such as the acids involved in battery reclamation. These include hazard communication and other occupational safety requirements for employees, which may mandate industrial hygiene monitoring of employees for potential exposure.

We and our licensees are also subject to inspection from time to time by various federal, state and local environmental, health and safety regulatory agencies and, as a result of these inspections, we and our licensees may be cited for certain items of non-compliance. Failure to comply with the requirements of federal, state and local environmental, health and safety laws could subject our business and the businesses of our licensees to significant penalties (civil or criminal) and other sanctions that could adversely affect our business. In addition, in the event we are unable to operate and expand our AquaRefining process and operations as safe and environmentally responsible, we and our licensees may face opposition from local governments, residents or public interest groups to the installation and operation of our facilities.

The development of new AquaRefining technology by us or our partners or licensees, and the dissemination of our AquaRefining process will depend on our ability to acquire necessary permits and approvals, of which there can be no assurance. As noted above, our AquaRefining processes will have to obtain environmental permits or approvals to operate, including those associated with air emissions, water discharges, and waste management and storage. In addition, we expect that any use of AquaRefining operations at our partner's facilities will require additional permitting and approvals. Failure to secure (or significant delays in securing) the necessary permits and approvals could prevent us and our partners and licensees from pursuing additional AquaRefining expansion, and otherwise adversely affect our business, financial results and growth prospects. Further, the loss of any necessary permit or approval could result in the closure of an AquaRefining facility and the loss of our investment associated with such facility.

Our business involves the handling of hazardous materials and we may become subject to significant fines and other liabilities in the event we mishandle those materials. The nature of our operations involves risks, including the potential for exposure to hazardous materials such as lead, lithium hydroxide, and lithium carbonate that could result in personal injury and property damage claims from third parties, including employees and neighbors, which claims could result in significant costs or other environmental liability. Our operations also pose a risk of releases of hazardous substances, such as lead, lithium hydroxide, lithium carbonate or acids, into the environment, which can result in liabilities for the removal or remediation of such hazardous substances from the properties at which they have been released, liabilities which can be imposed regardless of fault, and our business could be held liable for the entire cost of cleanup even if we were only partially responsible. We are also subject to the possibility that we may receive notices of potential liability in connection with materials that were sent to third-party recycling, treatment, and/or disposal facilities under the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, or CERCLA, and comparable state statutes, which impose liability for investigation and remediation of contamination without regard to fault or the legality of the conduct that contributed to the contamination, and for damages to natural resources. Liability under CERCLA is retroactive, and, under certain circumstances, liability for the entire cost of a cleanup can be imposed on any responsible party. Any such liability could result in judgments or settlements that restrict our operations in a manner that materially adversely effects our operations and could result in fines, penalties or awards that could materially impair our financial condition and even threaten our continued operation as a going concern.

We will be subject to foreign government regulation and environmental, health and safety concerns that may adversely affect our business As our business expands outside of the United States, our operations will be subject to the environmental, health and safety laws of the countries where we do business, including permitting and compliance requirements that address the similar risks as do the laws in the United States, as well as international legal requirements such as those applicable to the transportation of hazardous materials. Depending on the country or region, these laws could be as stringent as those in the U.S., or they could be less stringent or not as strictly enforced. In some countries in which we are interested in expanding our business, such as Mexico and China, the relevant environmental regulatory and enforcement frameworks are in flux and subject to change. Compliance with these requirements will cause our business to incur costs, and failure to comply with these requirements could adversely affect our business.

In the event we are unable to present and operate our AquaRefining process and operations as safe and environmentally responsible, we may face opposition from local governments, residents or public interest groups to the installation and operation of our facilities.

Risks Related to Owning Our Common Stock

The market price of our shares may be subject to fluctuation and volatility. You could lose all or part of your investment. The market price of our common stock is subject to wide fluctuations in response to various factors, some of which are beyond our control. Since January 1, 2024, the reported high and low sales prices of our common stock have ranged from $15.18 to $1.44 through March 18, 2025. The market price of our shares on the NASDAQ Capital Market may fluctuate as a result of a number of factors, some of which are beyond our control, including, but not limited to:

- actual or anticipated variations in our and our competitors' results of operations and financial condition;
- changes in earnings estimates or recommendations by securities analysts, if our shares are covered by analysts;
- development of technological innovations or new competitive products by others;
- regulatory developments and the decisions of regulatory authorities as to the approval or rejection of new or modified products;
- our sale or proposed sale, or the sale by our significant stockholders, of our shares or other securities in the future;
- changes in key personnel;
- success or failure of our research and development projects or those of our competitors;
- the trading volume of our shares; and
- general economic and market conditions and other factors, including factors unrelated to our operating performance.

These factors and any corresponding price fluctuations may materially and adversely affect the market price of our shares and result in substantial losses being incurred by our investors. In the past, following periods of market volatility, public company stockholders have often instituted securities class action litigation. If we were involved in securities litigation, it could impose a substantial cost upon us and divert the resources and attention of our management from our business.

If securities or industry analysts do not continue to publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline. The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If industry analysts cease coverage of us, the trading price for our common stock would be negatively affected. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline. In addition, independent industry analysts may provide reviews of our AquaRefining technology, as well as competitive technologies, and perception of our offerings in the marketplace may be significantly influenced by these reviews. We have no control over what these industry analysts report, and because industry analysts may influence current and potential customers, our brand could be harmed if they do not provide a positive review of our products and platform capabilities or view us as a market leader.

We may be at an increased risk of securities class action litigation Historically, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because early-stage companies have experienced significant stock price volatility in recent years. If we were to be sued, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business. In 2017, a securities class action lawsuit and shareholder derivative lawsuit were filed against us. In 2021, we were able to settle both actions through our issuance of $500,000 of our common shares and our adoption of limited corporate governance reforms, however we incurred significant legal costs in defending both actions and our management was required to devote significant time in managing the defense of the actions.

We maintain director and officer insurance that we regard as reasonably adequate to protect us from potential claims; however, we are responsible for meeting certain deductibles under the policies and, in any event, we cannot assure you that the insurance coverage will adequately protect us from claims made. Further, the costs of insurance may increase and the availability of coverage may decrease. As a result, we may not be able to maintain our current levels of insurance at a reasonable cost, or at all, which might make it more difficult to attract qualified candidates to serve as executive officers or directors.

Future sales of substantial amounts of our common stock, or the possibility that such sales could occur, could adversely affect the market price of our common stock. We cannot predict the effect, if any, that future issuances or sales of our securities or the availability of our securities for future issuance or sale, will have on the market price of our common stock. Issuances or sales of substantial amounts of our securities, or the perception that such issuances or sales might occur, could negatively impact the market price of our common stock and the terms upon which we may obtain additional equity financing in the future.

We have not paid dividends in the past and have no plans to pay dividends. We plan to reinvest all of our earnings, to the extent we have earnings, in order to pursue our business plan and cover operating costs and to otherwise become and remain competitive. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend. Therefore, you should not expect to receive cash dividends on our common stock.

Our charter documents and Delaware law may inhibit a takeover that stockholders consider favorable Provisions of our certificate of incorporation and bylaws and applicable provisions of Delaware law may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. The provisions in our certificate of incorporation and bylaws:

- limit who may call stockholder meetings;
- do not provide for cumulative voting rights;
- establish an advance notice procedure for stockholders' proposals to be brought before an annual meeting, including proposed nominations of persons for election to our board of directors, and
- provide that all vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum.

In addition, Section 203 of the Delaware General Corporation Law may limit our ability to engage in any business combination with a person who beneficially owns 15% or more of our outstanding voting stock unless certain conditions are satisfied. This restriction lasts for a period of three years following the share acquisition. These provisions may have the effect of entrenching our management team and may deprive you of the opportunity to sell your shares to potential acquirers at a premium over prevailing prices. This potential inability to obtain a control premium could reduce the price of our common stock.

Our bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with the Company. Our bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim against us or any our directors, officers or other employees arising pursuant to any provision of the Delaware General Corporation Law or our certificate of incorporation or bylaws, or (iv) any action asserting a claim against us or any our directors, officers or other employees governed by the internal affairs doctrine. This forum selection provision in our bylaws may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or any of our directors, officers or other employees.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

At Aqua Metals, Inc., we are committed to protecting our information systems, data, and sensitive information from unauthorized access, breaches, and cyber-attacks. In this section, we provide an overview of our cybersecurity practices and the measures we have implemented to mitigate cybersecurity risks. We have established comprehensive cybersecurity policies and procedures that outline the standards and guidelines for safeguarding our digital assets. These policies cover areas such as access controls, data encryption, network security, incident response, and employee awareness training. We regularly conduct thorough assessments to identify and evaluate potential cybersecurity risks. These assessments help us understand our vulnerabilities and prioritize our efforts to mitigate those risks. We have implemented risk management strategies that include proactive monitoring, and vulnerability scanning. Due to evolving cybersecurity threats, it has and will continue to be difficult to prevent, detect, mitigate, and remediate cybersecurity incidents. While we have not experienced any material cybersecurity threats or incidents as of the date of this Report, our cybersecurity program might not be able to prevent or mitigate future successful attacks, threats or incidents.

To prevent cyber threats, we have implemented a multi-layered approach to security. This includes firewalls, intrusion detection and prevention systems, and regular software patching. We also enforce strong password policies and implement two-factor authentication for sensitive systems. In the event of a cybersecurity incident, we have a well-defined incident response plan in place. This plan includes procedures for containment, investigation, and recovery. We also maintain backups of critical data to ensure business continuity in case of a breach or system failure.

We believe that cybersecurity is a shared responsibility. We provide regular training and awareness programs to educate our employees about best practices, potential threats, and their role in maintaining a secure environment. This includes phishing awareness, social engineering training, and ongoing communication about emerging threats.

Governance

Cybersecurity holds a critical position within our risk management framework, drawing significant attention from both our Board and management. Oversight of cybersecurity risks is vested in our Audit Committee, which regularly receives updates from senior management. These updates, provided as needed, feature insights from our leaders in information security. Topics covered include the identification of existing and emerging cybersecurity threats, progress reports on risk mitigation efforts, disclosure of cybersecurity incidents, and updates on key information security initiatives. Furthermore, our Board members engage in informal discussions with management regarding cybersecurity news and assess any revisions made to our cybersecurity risk management strategies.

Item 2. Properties

Our executive offices are presently located in 4,183 square feet of class A office space in Reno, Nevada. We lease this facility at a lease rate of approximately $13,000 per month. On March 14, 2024, we extended the operating lease for our headquarters at 5370 Kietzke Lane, Reno, NV. The lease term expires April 1, 2026.

We have developed and lease an Innovation Center focused on applying Aqua Metals technology to lithium-ion battery recycling. We lease this facility at a lease rate of approximately $12,000 per month. On June 9, 2024, we extended the operating lease for our Innovation Center located at 160 Denmark Dr, McCarran, NV. The lease term expires on December 31, 2027.

In February 2023, we purchased a property located in TRIC. The property includes both the land and an existing building. The land totals approximately five acres and the building is approximately 21,000 square feet. The Company is currently redeveloping the existing facility and installing our first commercial-scale Li AquaRefining system, which will process an estimated 7,000 tonnes of materials annually. The Company is also exploring plans to develop the remaining land on the property to expand capacity and operations.

Item 3. Legal Proceedings

For a description of our material pending legal proceedings, please see Note 14, Commitments and Contingencies, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on the NASDAQ Capital Market under the symbol "AQMS."

Holders of Record

As of March 18, 2025, there were nine holders of record of our common stock.

Dividend Policy

We have never declared or paid cash dividends on our common stock. We presently intend to retain earnings, if any, to finance the operation and expansion of our business.

Equity Compensation Plan Information

We have adopted the Aqua Metals, Inc. 2014 Stock Incentive Plan providing for the grant of non-qualified stock options and incentive stock options to purchase shares of our common stock and for the grant of restricted and unrestricted share grants. We have reserved 2,127,306 shares of our common stock under the plan. All of our officers, directors, employees and consultants are eligible to participate under the plan. The purpose of the plan is to provide eligible participants with an opportunity to acquire an ownership interest in our company. This plan expired in 2024.

In 2019, our board of directors adopted the Aqua Metals, Inc. 2019 Stock Incentive Plan (the "2019 Plan"). A total of 1,400,000 shares of common stock was authorized for issuance pursuant to the 2019 Plan. The 2019 Plan provides for the following types of stock-based awards: incentive stock options; non-statutory stock options; restricted stock; and performance stock. The 2019 Plan, under which equity incentives may be granted to employees and directors under incentive and non-statutory agreements, requires that the option price may not be less than the fair value of the stock at the date the option is granted. Option awards are exercisable until their expiration, which may not exceed 10 years from the grant date.

The following table sets forth the number and weighted-average exercise price of securities to be issued upon exercise of outstanding options and warrants, and the number of securities remaining available for future issuance, under our equity compensation plan at December 31, 2024.

	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options and Warrants	Number of Securities Remaining Available for Future Issuance Under Equity compensation Plans
Equity compensation plans approved by stockholders	1,133,687(1)	$ —	—
Equity compensation plans not approved by stockholders	1,823,856(2)	$ 5.72	

(1) Includes 311,850 relating to restricted stock units granted under the 2019 Plan in excess of the shares of common stock currently authorized for issuance pursuant to the 2019 Plan. Accordingly, the 311,850 RSUs were issued pursuant to the condition that settlement will not occur unless the stockholders of the Company approve an increase in the number of shares reserved under the 2019 at the Company's 2025 annual meeting of stockholders and that the RSUs will terminate if the stockholders do not approve the share increase.

Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 6. Reserved

None.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

General

Aqua Metals is engaged in the business of applying its commercialized clean, water-based, recycling technology principles to develop cost-efficient recycling solutions for both lead and lithium-ion ("Li") batteries. Our recycling process is a patented hydro and electrometallurgical technology that is an innovative, proprietary and patented process we developed and named AquaRefining. AquaRefining is a low-emissions, closed-loop recycling technology that has the potential to replace polluting furnaces and hazardous chemicals with electricity-powered electroplating to recover valuable metals and materials from spent batteries with higher purity, lower emissions, and with minimal waste. The modular "Aqualyzers" cleanly generate ultra-pure metal one atom at a time, closing the sustainability loop for the rapidly growing energy storage economy.

This breakthrough technology was initially applied in the lead acid battery (LAB) recycling industry, building the first integrated recycling system for breaking LAB and recovering pure metal. In 2019, we operated our demonstration AquaRefinery at commercial quantity production levels and produced over 35,000 'AquaRefined' ingots operating twenty-four hours a day, seven days a week for sustained periods of time.

We are also applying our commercialized clean, water-based recycling technology principles with the goal of developing the cleanest and most cost-efficient recycling solution for lithium-ion batteries. We believe our process has the potential to produce higher quality products at a lower operating cost without the damaging effects of furnaces and greenhouse emissions.

In February 2021, we announced our entry into the lithium-ion battery (LiB) recycling market through a key provisional patent we filed that applies the same innovative AquaRefining approach. In August 2021, we announced we had established our Innovation Center in TRIC focused on applying our proven technology to LiB recycling research and development and prototyping. Our strategic decision to apply our proven clean, closed-loop hydrometallurgical and electrochemical recycling experience to lithium-ion battery recycling is designed to meet the growing demand for critical metals driven by the global transition to electric vehicles; growth in internet data centers; and alternative energy applications including solar, wind, and grid-scale storage.

During the first half of 2022, we announced our ability to recover copper, lithium hydroxide, nickel, and cobalt from lithium-ion battery 'black mass' at bench scale at the Company's Innovation Center. During 2022, we built our fully-integrated pilot system, located within the Company's Innovation Center, which is designed to allow Aqua Metals to be the first company in North America to recycle battery minerals from black mass, sell them in the U.S. and position the Company as the first LiB recycler in North America to align with the U.S. government's goal of retaining strategic battery minerals within the domestic supply chain.

During 2022, we conducted environmental comparisons based on Argonne National Lab's modeling of lithium battery supply chains – called EverBatt. The initial results indicate that AquaRefining is a cleaner approach to LiB recycling, producing far less CO2 waste streams than smelting or chemical-driven hydrometallurgical processes currently on the market. In December 2022, we completed equipment installation and began to operate our first-of-a-kind LiB recycling facility, utilizing electricity as the catalyst to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces. In January 2023, Aqua Metals recovered its first metals from recycling lithium batteries using the patent-pending Li AquaRefining process.

In February 2023, we acquired a five-acre parcel of land with an existing building to begin development of our Li AquaRefining recycling campus at TRIC. When fully developed, the facility we envision is designed to process lithium-ion battery material each year using our proprietary Li AquaRefining technology. Subject to our receipt of the required additional capital, we expect to complete development of phase one, including all equipment installation within 3-4 quarters of securing the additional capital and to complete the commissioning and scaling of this operation at the new campus within 2 quarters of completion of the development. The Company is planning for a phased development of the campus, beginning with the already commenced redevelopment of an existing building on-site into the first commercial-scale Li AquaRefinery.

In the first half of 2024, we made significant progress on the construction of the planned first phase of the commercial Li AquaRefinery and we continue to pursue the required funding for the completion of the phase one development of our five-acre recycling campus through various sources, including debt, project finance, joint venture and strategic investment options. At the end of 2024, we completed the first multi-week continuous 7 days x 24 hours operation campaign at our pilot facility, demonstrating the ability to deliver exceptional recovery rates and produce battery-grade critical minerals.

In February 2025, the Company announced its expanded vision to more than double the output of lithium carbonate by deferring the plating of nickel and cobalt to metal form until the next phase. This allows for several improvements to the early years of scaling – reduced CAPEX by simplifying the product set to lithium carbonate and MHP (Mixed Hydroxide Precipitates), more volume of product due to the simplification, further de-risk with the simplified product set, more revenue and overall operating margins with a much improved payback on remaining capital to be financed. The Company continues to seek the funding to complete the Phase One.

During the year ended December 31, 2024, we issued 1,195,033 shares of common stock pursuant to an at the market issuance sales agreement ("ATM") for net proceeds of $5 million. On May 14, 2024, we completed a public offering of 1,006,250 shares of our common stock, at the public offering price of $7.80 per share. In connection with the sale of common stock, the Company issued warrants to purchase shares of common stock at the rate of one warrant for every share of purchased common stock, at the price of $0.20 per warrant. After the deduction of the underwriter's discount and expenses payable by us, we received net proceeds of $7.3 million. During the year ended December 31, 2023, we issued 162,215 shares of common stock pursuant to an at the market issuance sales agreement for net proceeds of $3.8 million. We raised a net of $18.3 million in the third quarter of 2023 from the public offering of our common shares and a net of $4.6 million from the sale of our common stock to Yulho. In connection with the sale of common stock in 2023, the Company issued warrants to purchase 18,193 shares of the Company's common stock to the underwriter of the Company's public offering and the Company issued a warrant to purchase 10,288 shares of the Company's common stock to the placement agent of the transaction in connection with the Yulho transaction.

Our current focus is building and operating our first-of-a-kind lithium battery recycling facility, utilizing electricity to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces. We are also pursuing potential partnership and/or joint ventures agreements and licensing agreements, particularly as our Li AquaRefining continues to develop and improve. We believe that Aqua Metals is in a position to become one of the few critical minerals recovery players for which our environmental and economic value proposition should generate both great commercial wins and potentially government grants to accelerate our credibility and progress.

Effective November 5, 2024, we effected a one-for-20 reverse stock split of our issued and outstanding common shares. All share and share price information set forth in this report has been adjusted retrospectively to reflect this reverse stock split.

Results of Operations for the Fiscal Year Ended December 31, 2024 Compared to the Fiscal Year Ended December 31, 2023

We did not engage in commercial operations in 2024 and 2023. Our operations have been devoted to developing our Li AquaRefining battery recycling technology. During the year ended December 31, 2023, revenue resulted from the sale of inventory consisting of lead compounds that were generated during operation of our former TRIC facility. The following table summarizes results of operations with respect to the items set forth below for the twelve months ended December 31, 2024 and 2023 together with the percentage change from the twelve months ended December 31, 2023 for those items (in thousands).

	Year ended December 31,			
	2024	2023	Favorable (Unfavorable)	% Change
Product sales	$ —	$ 25	$ (25)	(100)%
Plant operations	7,213	6,282	(931)	(15)%
Research and development cost	1,587	1,741	154	9%
Impairment expense	2,640	4,851	2,211	46%
Loss (gain) on disposal of property, plant and equipment	440	(23)	(463)	2013%
General and administrative expense	11,967	11,638	(329)	(3)%
Total operating expense	$ 23,847	$ 24,489	$ 642	3%

Except for nominal revenue generated from the sale of lead finished goods, we did not generate revenue during the years ended December 31, 2024 and December 31, 2023. Plant activity during 2024 and 2023 consisted of testing our lithium-ion battery recycling technology, developing the prototype system activities, and quickly advancing from the planning and validation phases to execution and operation of our pilot facility and the build out of our commercial facility.

Plant operations includes supplies and related costs, salaries and benefits, consulting and outside services costs, depreciation and amortization costs, insurance, travel and overhead costs. Plant operations increased approximately $931,000 or 15% for the twelve months ended December 31, 2024, as compared to the twelve months ended December 31, 2023. This increase was primarily driven by a $758,000 rise in payroll and related fees, as we hired additional staff to operate the pilot facility, process black mass and build out of our commercial facility during the first seven months of the year in addition to an increase of $173,000 in insurance and other service costs. In August 2024, the Company announced that due to a delay in funding, it has completed a reduction in force of personnel hired largely in expectation of securing the required funding for the completion of the Sierra ARC and commencement of operation. We expect payroll costs to be lower until funding is received and operations resume.

Research and development cost includes expenditures related to the improvement of the AquaRefining technology and the development of our lithium-ion battery recycling process. During the twelve months ended December 31, 2024, research and development costs decreased approximately $154,000 or 9% from the comparable period in 2023. Research and development is a key part of our business strategy and includes our focus on improving the Company's proprietary technology for LAB recycling and advancing our research related to the application of AquaRefining to recycling lithium-ion batteries. The decrease was driven by a reduction in payroll and payroll related fees of approximately $159,000, as we completed a reduction of force during August 2024.

For the year ended December 31, 2024, we recognized a non-cash impairment charge of $2,640,000 for impairment on equipment deposits due to the change in our recycling strategy by prioritizing mixed hydroxide precipitate, to accelerate commercialization and reduce remaining capital requirements to complete Phase One build-out of our recycling campus at TRIC. For the year ended December 31, 2023, we recognized a non-cash impairment charge of $4,851,000, subsequent to an analysis of our investment and construction in progress ("CIP") with regard to our investment in LINICO and ACME Metals. We recognized a loss on the investment in LINICO of approximately $1,400,000 during the year ended December 31, 2023 as the result of the sale of our LINICO common stock to LINICO's parent Comstock Inc., for $600,000 payable in twelve equal monthly installments commencing in January 2024. In addition, we recognized a loss of $3,451,000 related to the ACME CIP as a result of the suspension of the development of recycling operations at the ACME Metals Taiwanese facility. During 2023, management shifted focus away from the original service under the ACME lead recycling license agreement to a new primary focus on the Lithium recycling business as a Company. As a result, management projected a decrease in the utilization of the ACME plant and its related operations, and assessed that the future expected cash flows connected with ACME are at or near zero.

We recognized a loss on disposal of property, plant and equipment of approximately $440,000 during the twelve months ended December 31, 2024 compared to a gain of $23,000 for the twelve months ended December 31, 2023.

General and administrative expense increased approximately $329,000, or 3%, for the twelve months ended December 31, 2024 compared to the twelve months ended December 31, 2023. The increase in general and administrative expenses for the twelve months ended December 31, 2024 was primarily driven by higher professional fees associated with our efforts to raise capital.

The following table summarizes our other income and interest expense for the years ended December 31, 2024 and December 31, 2023 together with the percentage change in those items (in thousands).

	Year ended December 31,			
	2024	2023	Favorable (Unfavorable)	% Change
Interest and other income	$ 376	$ 1,147	$ (771)	(67)%
Interest expense	(574)	(621)	47	(8)%
Change in fair value of warrant liability	(507)	—	(507)	N/A
Total other income (expense), net	$ (705)	$ 526	$ (1,231)	(234)%

For the year ended December 31, 2024 and December 31, 2023, and we recorded approximately $376,000 and $1,147,000 in interest and other income, respectively, a decrease of $771,000 or 67%. The decrease in interest and other revenue is attributable to decreased interest on our bank deposits and the conclusion of our non-recurring engineering arrangement with 6K Energy at the end of 2023.

We recognized interest expense of $574,000 for the year ended December 31, 2024 and $621,000 for the year ended December 31, 2023. The decrease was partially due to a reduction in the outstanding balance of the note payable during 2023.

For the year ended December 31, 2024, the Company recognized a change in fair value of warrant liability of $507,000, which was primarily due to the remeasurement of the warrants issued in December 2024.

Liquidity and Capital Resources

As of December 31, 2024, we had total assets of $26,365,000 and working capital deficit of $(3,538,000).

The following table summarizes our cash provided by (used in) operating, investing and financing activities (in thousands):

	Year ended December 31,	
	2024	2023
Net cash used in operating activities	$ (13,632)	$ (3,193)
Net cash used in investing activities	$ (11,636)	$ (9,813)
Net cash provided by financing activities	$ 12,825	$ 22,446

Net cash used in operating activities

Net cash used in operating activities for the years ended December 31, 2024 and December 31, 2023 was approximately $13,632,000 and $3,193,000, respectively. Net cash used in operating activities during each of these periods consisted primarily of our net loss adjusted for non-cash items such as depreciation, amortization, and stock-based compensation charges as well as net changes in working capital. During the year ended December 31, 2024, we recognized approximately $2,640,000 expense for impairment on equipment deposits due to the change in our recycling strategy by prioritizing mixed hydroxide precipitate, to accelerate commercialization and reduce remaining capital requirements to complete Phase One build-out of our recycling campus at TRIC. During the year ended December 31, 2023, we recognized $12,278,000 proceeds from sales and leasing of building to LINICO, $1,400,000 expense for impairment on LINICO investment and approximately $3,451,000 expense for impairment on ACME CIP.

Net cash used in investing activities

Net cash used in investing activities for the year ended December 31, 2024 was $11,636,000 compared to $9,813,000 for the year ended December 31, 2023. During these periods, net cash in investing operations primarily includes fixed asset acquisitions, deposits for future fixed asset purchases and proceeds received from sale of equipment, respectively. During the year ended December 31, 2024, we received $500,000 from the note receivable with LINICO.

Net cash provided by financing activities

Net cash provided by financing activities for the year ended December 31, 2024 consisted of $5,014,000 in net proceeds from the sale of Aqua Metals shares pursuant to the at-the-market offering, or ATM, $1,500,000 in net proceeds from the loan agreement entered into on December 18, 2024, and $7,306,000 in net proceeds from our May 2024 public offering, offset by $552,000 related to tax withholdings to cover RSU vesting and $424,000 related to debt issuance costs. Net cash provided by financing activities for the year ended December 31, 2023 consisted of $3,786,000 in net proceeds from the sale of Aqua Metals shares pursuant to the at-the-market offering, or ATM, $2,931,000 in net proceeds from the loan agreement secured with Summit Investment Services, LLC, $18,318,000 in net proceeds from our July 2023 public offering and $4,629,000 in net proceeds from the Yulho transaction, offset by the $6,000,000 used to pay off the note payable and by $1,092,000 related to tax withholdings to cover RSU vesting.

As of December 31, 2024, we had total cash of $4,079,000 and working capital deficit of $(3,538,000). As of the date of this report, we believe that we will require additional capital in order to fund our current level of ongoing costs over the next twelve months and move forward with our current business strategy. There can be no assurance that we will be able to acquire the necessary funding on commercially reasonable terms or at all. We intend to seek funds through the sale of equity or debt financing. Funding that includes the sale of our equity may be dilutive. If such financing is not available on satisfactory terms, we may be unable to further pursue our business plan and we may be unable to continue operations.

Due to our lack of revenue from commercial operations, significant losses and need for additional capital,there is substantial doubt about our ability to continue as a going concern within one year after the date that the financial statements are issued.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. The preparation of our consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of expenses during the period. Significant items subject to such estimates and assumptions include the carrying amount and valuation of long-lived assets, the valuation of conversion features of convertible debt, valuation allowances for deferred tax assets, the determination of estimated asset retirement obligations, the determination of stock option expense, and the determination of the fair value of stock warrants issued. Our actual results could differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2 to the consolidated financial statements included in Item 8 of this Annual Report on Form 10-K, we believe that the following accounting policies are the most critical to assist stockholders and investors reading the consolidated financial statements in fully understanding and evaluating our financial condition and results of operations.

Property, plant and equipment, net

Property, plant and equipment are stated at cost net of accumulated depreciation. Depreciation on property and equipment is calculated on the straight-line basis over the estimated useful lives of the assets. Leasehold improvements are depreciated over the shorter of the life of the asset or the remaining term of the lease. Upon the retirement or sale of our property and equipment, the cost and associated accumulated depreciation are removed from the consolidated balance sheet, and the resulting gain or loss is reflected on the consolidated statement of operations. Maintenance and repair expenditures are expensed as incurred while major improvements that increase the functionality, output or expected life of an asset are capitalized and depreciated over the estimated useful life.

We periodically evaluate our property, plant and equipment assets for indications that the carrying amount of an asset may not be recoverable. At December 31, 2024, we recognized an impairment of approximately $2,640,000 for impairment on equipment deposits due to the change in our recycling strategy by prioritizing mixed hydroxide precipitate, to accelerate commercialization and reduce remaining capital requirements to complete Phase One build-out of our recycling campus at TRIC. The Company does not expect further impairments on remaining deposit amounts as this equipment is needed in the current plant design. During the year 2023, management shifted focus away from the original service under the license agreement (Lead business) to a new focus (Lithium business) as a Company. As such, management projected a decline in the utilization of the ACME plant and it's related operations. At December 31, 2023, we recognized an impairment of approximately $3,451,000 to equipment under construction that was not yet capitalized related to the ACME CIP as a result of the suspension of the development of recycling operations at the ACME Metals Taiwanese facility.

Income taxes

We account for income taxes in accordance with the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred assets and liabilities are recognized based upon anticipated future tax consequences attributable to differences between financial statement carrying amounts of assets and liabilities and their respective tax bases. The provision for income taxes is comprised of the current tax liability and the changes in deferred tax assets and liabilities. We established a valuation allowance to the extent that it is more-likely-than-not that deferred tax assets will not be recoverable against future taxable income.

We recognize the effect of uncertain income tax positions only if those positions are more-likely-than-not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

Warrants

The Company evaluates all freestanding warrants to determine whether they should be classified as equity or liability or asset instruments in accordance with ASC 815-40. The Company classifies common stock purchase warrants as equity if the contracts (i) require physical settlement or net-share settlement or (ii) give the Company a choice of net-cash settlement or settlement in its own shares (physical settlement or net-share settlement). The Company classifies any contracts that (i) require net-cash settlement (including a requirement to net cash settle the contract if an event occurs and if that event is outside the control of the Company), (ii) give the counterparty a choice of net-cash settlement or settlement in shares (physical settlement or net-share settlement), or (iii) contain reset provisions as either an asset or a liability. Additionally, warrants that include variable settlement provisions triggered by a change in control are classified as liabilities. The Company assesses classification of its freestanding derivatives at each reporting date to determine whether a change in classification between equity and liabilities is required.

The value of the equity classified common stock purchase warrants are estimated as of the issuance date using the Black-Scholes pricing model.

Liability classified warrants are initially recorded at fair value and remeasured at each reporting date, with changes in fair value recognized in earnings. As of December 31, 2024, the Company had outstanding warrants classified as liabilities. These instruments are valued using the Monte-Carlo option pricing model utilizing several key assumptions, including share price volatility, the risk-free rate of return, the expected dividend yield and other warrant design features

Stock-based compensation

We recognize compensation expense for stock-based compensation in accordance with ASC 718 "Compensation – Stock Compensation." For employee restricted stock units, we calculate the fair value of the award using the closing price of the common stock on date of grant date.

For restricted stock unit awards with market conditions the fair value of the award is calculated on the date of grant using a Monte Carlo simulation model utilizing several key assumptions, including share price volatility, the risk-free rate of return, the expected dividend yield and other award design features.

For restricted stock unit awards with performance conditions, consisting of our supplemental retention awards granted on October 3, 2024, compensation cost is recognized in the period in which it becomes probable that the performance target will be achieved and represents the compensation cost attributable to the period for which the service or goods already have been provided. These awards are based on a fixed dollar amount settled in a variable number of shares and as a result are liability classified. The fair value of these awards is based on the fixed dollar amount dictated in the award agreements. As the Company has considered the performance conditions are not probable to be met as of December 31, 2024, no compensation cost has been recorded in the consolidated financial statements.

If at any point in time the Company does not currently have a sufficient quantity of shares authorized for issuance under their approved stock incentive plan, the Company has established a sequencing policy that shares are issued to grants with the earliest inception date first. When multiple grants have the same inception date, shares are first allocated to non-named executive officers, then to shares with satisfied market and performance conditions, and last to service-only grants made to named executive officers. Therefore, grants to named executive officers with service-only conditions with the latest grant date will be reclassified to liabilities first. For service-based grants, the value of grants required to be reclassified to liabilities will be re-measured on a periodic basis based on the closing fair market value of our common stock.

The Company recognizes forfeitures as they occur.

Recent accounting pronouncements

See discussion of recent accounting pronouncements in Note 2 of the Consolidated Financial Statements located in Item 8 in this Annual Report.

Material cash requirements

As of December 31, 2024, we and our subsidiaries had outstanding $4,500,000 amount of indebtedness and approximately $408,000 interest payments due in the succeeding 12 months. As of December 31, 2024, our total minimum future lease payments were $338,000, due in the succeeding 12 months. For details regarding our indebtedness and lease obligations, refer to Note 10, Leases, and Note 11, Note payable, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Contractual Obligations and Commitments

Operating lease obligations

We currently have two operating leases for real estate. We lease our Reno and McCarran, Nevada spaces under non-cancelable operating leases. We elected to exercise our first extension option provided for in the Reno, Nevada lease agreement, which extended the current term of the lease to April 1, 2026. The initial lease term for our mixed office and warehouse space in McCarran, Nevada expired on December 31, 2021. We elected to exercise our second extension option provided for in the McCarran, Nevada lease agreement, which extended the current term of the lease to December 31, 2027.

Finance lease obligation

We currently maintain one finance lease for equipment. On April 1, 2024 the Company entered into a finance lease for laboratory equipment which expires in 2029.

Notes payable

Aqua Metals Reno, Inc. entered into a $3,000,000 loan agreement with Summit Investment Services, LLC, a Nevada limited liability company (the "Lender") on February 1, 2023 and due on April 27, 2025. On December 18, 2024, Aqua Metals, Inc. entered into a Securities Purchase Agreement with eight accredited investors in connection with a private placement of secured promissory notes ("Notes") in the aggregate principal amount of $1,500,000 and common stock purchase warrants ("Warrants) to purchase 750,000 shares of the Company's common stock. See Note 11 in the accompanying notes to the consolidated financial statements for additional information.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not applicable.

Item 8. Financial Statements and Supplementary Data

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Aqua Metals, Inc.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Aqua Metals, Inc. (the "Company") as of December 31, 2024 and 2023, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2024, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2024 and 2023, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2024, in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has incurred substantial operating losses and negative cash flows from operations since inception that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to this matter are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits.

We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing separate opinions on the critical audit matter or on the accounts or disclosures to which it relates.

Critical Audit Matter – Equity-Classified Warrants

As described in Note 12 and Note 13, the Company issued (1) warrants to purchase 39,125 shares and 1,006,250 shares of the Company's common stock in connection with the Company's May 2024 public offering of common stock, and (2) warrants to purchase 750,000 shares of the Company's common stock in connection with the Company's December 2024 offering of secured promissory notes. The Company evaluated whether the warrants were in the scope of ASC Topic 480 *Distinguishing Liabilities from Equity*, which discusses the accounting for instruments with characteristics of both liabilities and equity. The application of the requirements in ASC Topic 480, and the resulting classification conclusion, is dependent on whether certain criteria are met. Based on its analysis, the Company concluded that (1) the 1,045,375 total warrants issued in May 2024 did not meet any of the criteria to be subject to liability classification and are therefore classified as equity and (2) the 750,000 warrants issued in December 2024 met the criteria to be subject to liability classification.

We identified the classification of the warrants as a critical audit matter. The principal considerations for that determination included the complexity and effort required in identifying all relevant features of and obligations under the instruments for evaluation against the criteria for classification. This required a high degree of auditor effort, including specialized skills and knowledge, and complex auditor judgment in evaluating the features of and obligations under the warrants and the determination of whether such features meet the criteria for liability-classification.

The primary procedures we performed to address this critical audit matter included:

- We obtained an understanding of management's process for identifying and evaluating the critical terms of the warrant agreements in determining the classification.
- With the assistance of professionals in our firm that have specialized skills and knowledge in accounting for debt and equity instruments:
  - We evaluated management's analysis and conclusions regarding the relevant provisions and features of the warrants in light of relevant guidance and the criteria for classification.
  - We read the securities purchase agreement and underlying warrant agreements to identify the relevant features and settlement provisions for our evaluation.
  - We independently evaluated the relevant features and settlement provisions of the warrants under relevant guidance considering the criteria for classification.

/s/ Forvis Mazars, LLP

We have served as the Company's auditor since 2023.

New York, New York

March 31, 2025

AQUA METALS, INC.
Consolidated Balance Sheets
(in thousands, except share and per share amounts)

	December 31, 2024	December 31, 2023
ASSETS		
Current assets		
Cash and cash equivalents	$ 4,079	$ 16,522
Note receivable - LINICO	100	600
Accounts receivable	—	67
Inventory	251	929
Prepaid expenses and other current assets	214	181
Total current assets	4,644	18,299
Non-current assets		
Property, plant and equipment, net	16,473	10,347
Intellectual property, net	146	281
Other assets	5,102	4,673
Total non-current assets	21,721	15,301
Total assets	$ 26,365	$ 33,600
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 1,227	$ 1,836
Accrued expenses	3,130	2,467
Lease liability, current portion	289	275
Notes payable related-party, current portion	306	—
Notes payable, current portion	3,230	35
Total current liabilities	8,182	4,613
Lease liability, non-current portion	446	—
Notes payable, non-current portion	—	2,923
Warrant liability	1,493	—
Total liabilities	10,121	7,536
Commitments and contingencies (see Note 14)		
Stockholders' equity		
Common stock; $0.001 par value; 300,000,000 shares authorized; 7,760,255 and 7,730,836, shares issued and outstanding as of December 31, 2024, respectively and 5,415,433 and 5,394,005 shares issued and outstanding as of December 31, 2023	8	5
Additional paid-in capital	264,198	249,790
Accumulated deficit	(247,770)	(223,215)
Treasury stock, at cost; common shares: 29,419 and 21,428 as of December 31, 2024 and December 31, 2023, respectively	(192)	(516)
Total stockholders' equity	16,244	26,064
Total liabilities and stockholders' equity	$ 26,365	$ 33,600

The accompanying notes are an integral part of these consolidated financial statements.

AQUA METALS, INC.
Consolidated Statements of Operations
(in thousands, except share and per share amounts)

	Year ended December 31,	
	2024	2023
Product sales	$ —	$ 25
Operating cost and expense		
Plant operations	7,213	6,282
Research and development cost	1,587	1,741
Impairment expense	2,640	4,851
Loss (gain) on disposal of property, plant and equipment	440	(23)
General and administrative expense	11,967	11,638
Total operating expense	23,847	24,489
Loss from operations	(23,847)	(24,464)
Other income and expense		
Interest and other income	376	1,147
Interest expense	(574)	(621)
Change in fair value of warrant liability	(507)	—
Total other income (expense), net	(705)	526
Loss before income tax expense	(24,552)	(23,938)
Income tax expense	(3)	—
Net loss	$ (24,555)	$ (23,938)
Weighted average shares outstanding, basic and diluted	6,419,607	4,696,597
Basic and diluted net loss per share	$ (3.83)	$ (5.10)

The accompanying notes are an integral part of these consolidated financial statements.

AQUA METALS, INC.
Consolidated Statements of Stockholders' Equity
(in thousands, except share amounts)

	Common Stock				Treasury Stock		
	Shares	Amount	Additional Paid-in Capital	Accumulated Deficit	Shares	Amount	Total Stockholders' Equity (Deficit)
Balances, December 31, 2022	3,974,088	$ 4	$ 220,189	$ (199,277)	—	$ —	20,916
Stock-based compensation	—	—	2,532	—	—	—	2,532
RSUs issued for consulting services	789	—	12	—	—	—	12
Common stock issued to employees and directors, includes RSUs vesting and withholdings to satisfy tax withholdings on RSUs vesting	81,675	—	(578)	—	21,428	(516)	(1,094)
Common stock issued for public offering, net of $1,713 transaction costs	909,650	1	18,317	—	—	—	18,318
Common stock issued for Yulho agreement, net of $372 transaction costs	227,273	—	4,629	—	—	—	4,629
Warrant expense related to Yulho agreement	—	—	181	—	—	—	181
Common stock issued for employee stock purchase plan sales	9,635	—	122	—	—	—	122
Common stock issued for class action settlement	23,468	—	501	—	—	—	501
Common stock issued for ATM share sales, net of $119 transaction costs	162,215	—	3,789	—	—	—	3,789
Common stock issued for director fees	5,212	—	96	—	—	—	96
Net loss	—	—	—	(23,938)	—	—	(23,938)
Balances, December 31, 2023	5,394,005	$ 5	$ 249,790	$ (223,215)	21,428	$ (516)	$ 26,064
Stock-based compensation	—	—	2,726	—	—	—	2,726
RSUs issued for consulting services	20,111	—	150	—	—	—	150
Common stock issued to employees and directors, includes RSUs vesting and withholdings to satisfy tax withholdings on RSUs vesting	95,851	1	(876)	—	7,991	324	(551)
Common stock issued for public offering, net of $744 transaction costs	1,006,250	1	7,305	—	—	—	7,306
Common stock issued for employee stock purchase plan sales	10,635	—	54	—	—	—	54
Common stock issued for ATM share sales, net of $179 transaction costs	1,195,034	1	5,013	—	—	—	5,014
Common stock issued for director fees	9,428	—	37	—	—	—	37
Common stock cancelled for cash in lieu of fractional shares reverse split	(478)	—	(1)	—	—	—	(1)
Net loss	—	—	—	(24,555)	—	—	(24,555)
Balances, December 31, 2024	7,730,836	$ 8	$ 264,198	$ (247,770)	29,419	$ (192)	$ 16,244

The accompanying notes are an integral part of these consolidated financial statements.

AQUA METALS, INC.
Consolidated Statements of Cash Flows
(in thousands)

	Year ended December 31,	
	2024	2023
Cash flows from operating activities:		
Net loss	$ (24,555)	$ (23,938)
Reconciliation of net loss to net cash used in operating activities		
Depreciation and ROU asset amortization	1,139	1,091
Amortization of intellectual property	135	180
Warrant expense	—	181
Fair value of common stock issued for consulting services	150	12
Fair value of common stock issued for director fees	37	96
Stock-based compensation	2,737	2,534
Amortization of deferred financing costs	73	128
Loss (gain) on disposal of property, plant and equipment	440	(23)
Impairment of equipment deposits	2,640	3,451
Impairment of LINICO investment	—	1,400
Inventory NRV adjustment	283	—
Write off of debt issuance costs	563	—
Accrued interest expense	10	—
Change in fair value of warrant liability	507	—
Changes in operating assets and liabilities		
Proceeds from sale and leasing of building	—	12,278
Accounts receivable	67	(55)
Inventory	396	(651)
Prepaid expenses and other current assets	(33)	82
Accounts payable	(21)	139
Accrued expenses	1,930	209
Other assets and liabilities	(130)	(307)
Net cash used in operating activities	(13,632)	(3,193)
Cash flows from investing activities:		
Purchases of property, plant and equipment	(7,921)	(5,598)
Proceeds from sale of equipment	22	70
Proceeds from note receivable	500	—
Equipment deposits	(4,237)	(4,285)
Net cash used in investing activities	(11,636)	(9,813)
Cash flows from financing activities:		
Proceeds from issuance of common stock, net of transaction costs	7,306	22,947
Proceeds from employee stock purchase plan	54	14
Payments on note payable	—	(6,000)
Principal payments on finance leases	(72)	—
Proceeds from note payable related-party, net	1,500	—
Proceeds from note payable, net	—	2,931
Cash paid for tax withholdings on RSUs vesting	(552)	(1,092)
Cash paid for reverse split fractional shares	(1)	—
Debt issuance costs	(424)	(140)
Proceeds from ATM, net	5,014	3,786
Net cash provided by financing activities	12,825	22,446
Net increase (decrease) in cash and cash equivalents	(12,443)	9,440
Cash and cash equivalents at beginning of period	16,522	7,082
Cash and cash equivalents at end of period	$ 4,079	$ 16,522

AQUA METALS, INC.
Consolidated Statements of Cash Flows
(in thousands)

(Continued)

	Year ended December 31,	
	2024	2023
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 333	$ 480
Cash paid for income taxes	$ 3	$ —
Supplemental disclosure of non-cash transactions		
Acquisitions of property, plant and equipment included in accounts payable	$ 485	$ 1,072
Acquisitions of property, plant and equipment included in accrued expenses	$ —	$ 1,857
Increase in note receivable resulting from sale of investment	$ —	$ 600
Increase in equity included in accrued expenses	$ —	$ 608

The accompanying notes are an integral part of these consolidated financial statements.

AQUA METALS, INC.
Notes to Consolidated Financial Statements

1. Organization and Operations

Aqua Metals is engaged in the business of applying its commercialized clean, water-based recycling technology principles to develop the clean and cost-efficient recycling solutions for both lead and lithium-ion ("Li") batteries. Our recycling process is a patented hydro- and electrometallurgical technology that is a novel, proprietary and patented process we developed and named AquaRefining. AquaRefining is a low-emissions, closed-loop recycling technology that replaces polluting furnaces and hazardous chemicals with electricity-powered electroplating to recover valuable metals and materials from spent batteries with higher purity, lower emissions, and with minimal waste. The modular "Aqualyzers" cleanly generate ultra-pure metal one atom at a time, closing the sustainability loop for the rapidly growing energy storage economy.

We are in the process of demonstrating that Li AquaRefining, which is fundamentally non-polluting, can create the highest quality and highest yields of recovered minerals from lithium-ion batteries with lower waste streams and lower costs than existing alternatives.

For the lead market, our focus is on providing equipment and licensing of our lead acid battery recycling technologies in an enabler model which allows us to work with anyone in the industry globally and address the entire marketplace. Our focus for the lithium market includes operating our first-of-a-kind lithium battery recycling facility, utilizing electricity to recycle instead of intensive chemical processes, fossil fuels, or high-temperature furnaces.

Liquidity and Going Concern Assessment

For the years ended December 31, 2024 and 2023, the Company reported a net loss of $24,555,000 and $23,938,000, respectively, and cash used in operations of $13,632,000 and $3,193,000 (inclusive of $12,278,000 of non-recurring proceeds from the sale of real estate), respectively. As of December 31, 2024, the Company had cash and cash equivalents of approximately $4,079,000, a working capital deficit of approximately $(3,538,000) and an accumulated deficit of $247,770,000. In addition to cash required to fund operating activities, within the next 12 months, the Company will be required to pay cash to settle notes payable of $3,000,000 on April 27, 2025 and $1,500,000 on December 31, 2025. The Company has not generated revenues from commercial operations over the two years ended December 31, 2024 and 2023, except for nominal sales of lead finished goods, and expects to continue incurring losses for the foreseeable future.

Management believes that the Company does not have sufficient capital resources to sustain operations through at least the next twelve months from the date of this filing. Additionally, in view of the Company's expectation to incur significant losses for the foreseeable future it will be required to raise additional capital resources in order to fund its operations, although the availability of, and the Company's access to such resources, is not assured. Accordingly, management believes that there is substantial doubt regarding the Company's ability to continue operating as a going concern through the next twelve months from the date of this filing.

The accompanying consolidated financial statements have been prepared under the assumption the Company will continue to operate as a going concern, which contemplates the realization of assets and the settlement of liabilities in the normal course of business. The consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts of liabilities that may result from uncertainty related to the Company's ability to continue as a going concern.

2. Summary of Significant Accounting Policies

Basis of presentation and consolidation

The accompanying consolidated financial statements include those of Aqua Metals, Inc. and its subsidiaries (collectively, the "Company" or "Aqua Metals"), after elimination of all intercompany accounts and transactions. The Company has prepared the accompanying consolidated financial statements in accordance with accounting principles generally accepted in the United States of America ("GAAP") and pursuant to the rules and regulations of the United States Securities and Exchange Commission (the "SEC").

Use of estimates

The preparation of the consolidated financial statements requires management of the Company to make a number of estimates and assumptions relating to the reported amount of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of expenses during the period. Significant items subject to such estimates and assumptions include the carrying amount and valuation of long-lived assets, valuation allowances for deferred tax assets, the determination of stock option expense and the determination of the fair value of stock warrants issued. Actual results could differ from those estimates.

Cash and cash equivalents

The Company considers all highly liquid instruments with original or remaining maturities ofninety days or less at the date of purchase to be cash equivalents. The Company maintains its cash balances in large financial institutions. Periodically, such balances may be in excess of federally insured limits.

Accounts receivable

The Company has traditionally sold its products to large well-established companies and extends credit without requiring collateral, based on an ongoing evaluation of the customer's business prospects and financial condition. We determine if any allowance for credit losses using is required considering a combination of factors to reduce receivable balances to the net amount expected to be collected. As of December 31, 2024 and 2023, the Company had no trade accounts receivable balance and hasnot created an allowance for credit losses . The total accounts receivable balance as of December 31, 2023 consisted of proceeds from the non-recurring engineering agreement with 6K Energy.

Note receivable

The Company records notes receivable when it extends credit or financing tothird parties. The Company evaluates notes receivable for collectability at each reporting period under the current expected credit loss (CECL) model, in accordance with ASC 326 (Financial Instruments – Credit Losses). If necessary, an allowance for doubtful accounts is recorded to reflect potential losses. As of December 31, 2024, we evaluated the need for an allowance for credit loss using the guidelines set forth in ASC326 CECL, and have determined this note is fully collectible and, therefore, we have not recorded an allowance against the note receivable balance.

Inventory

Inventory is stated at the lower of cost or net realizable value. Cost is recorded on afirst-in, first-out basis using the weighted average method. Net realizable value is determined as the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. The Company records a write-down, if necessary, to reduce the carrying value of inventory to its net realizable value. The effect of these write-downs is to establish a new cost basis in the related inventory, which is not subsequently written up. During the twelve months ended December 31, 2024, we recorded write-downs of $283,000 which were included in plant operations in the condensed consolidated statement of operations.

Property, plant and equipment, net

Property, plant and equipment are stated at cost net of accumulated depreciation. Depreciation on property, plant and equipment is calculated on the straight-line basis over the estimated useful lives of the assets. Leasehold improvements are depreciated over the shorter of the life of the asset or the remaining term of the lease.

Property, plant and equipment are stated at cost net of accumulated depreciation. Depreciation on property, plant and equipment is calculated on the straight-line basis over the estimated useful lives of the assets. Leasehold improvements are depreciated over the shorter of the life of the asset or the remaining term of the lease. We periodically evaluate our property, plant and equipment assets for indications that the carrying amount of an asset may not be recoverable. At December 31, 2024, management reviewed the remaining estimated lives of our long-lived assets and determined that the estimated life of the property, plant and equipment properly reflected the current remaining economic life of the asset.

Intellectual property, net

Intellectual property consists of patent applications contributed to the Company by five founding stockholders and patent applications for technology developed by the Company. The useful life of this intellectual property has been determined to be ten years and the assets are being amortized straight-line over this period. The Company periodically evaluates its intangible and other long-lived assets for indications that the carrying amount of an asset may not be recoverable. In reviewing for impairment, the Company compares the carrying value of such assets to the estimated undiscounted future cash flows expected from the use of the assets and their eventual disposition. When the estimated undiscounted future cash flows are less than their carrying amount, an impairment loss is recognized equal to the difference between the assets' fair value and their carrying value. In addition to the recoverability assessment, the Company routinely reviews the remaining estimated lives of its long-lived assets. Any reduction in the useful life assumption will result in increased depreciation and amortization expense in the period when such determination is made, as well as in subsequent periods. The Company evaluates the need to record impairment during each reporting period. As of December 31, 2024 and 2023, the Company determined that the estimated life of the intellectual property properly reflected the current remaining economic life of the asset.

Leases

The Company determines if an arrangement is a lease at inception. Operating lease right-of-use assets ("ROU assets") and short-term and long-term lease liabilities are included in the consolidated balance sheets. ROU assets represent the right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating and finance lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As most of the Company's leases do not provide an implicit rate, the Company uses an incremental borrowing rate based on the information available at the commencement date in determining the present value of lease payments. The Company's lease terms may include options to extend or terminate the lease. Lease expense for operating lease payments is recognized on a straight-line basis over the lease term. For lease agreements with terms less than 12 months, the Company has elected the short-term lease measurement and recognition exemption, and the Company recognizes such lease payments on a straight-line basis over the lease term.

Research and development

The Company conducts research and development activities, primarily focusing on refining recycling processes to increase yield and purity of recovered materials. This entails experimenting with different techniques, equipment, and operational parameters to enhance efficiency. All research and development expenditures are expensed as incurred.

Income taxes

The Company accounts for income taxes in accordance with the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred assets and liabilities are recognized based upon anticipated future tax consequences attributable to differences between financial statement carrying amounts of assets and liabilities and their respective tax bases. The provision for income taxes is comprised of the current tax liability and the changes in deferred tax assets and liabilities. The Company establishes a valuation allowance to the extent that it is more-likely-than-not that deferred tax assets will not be recoverable against future taxable income.

The Company recognizes the effect of uncertain income tax positions only if those positions are more-likely-than-not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

Fair value measurements

The carrying amounts of cash and cash equivalents, accounts receivable, inventory, prepaid expenses and other current assets, accounts payable, and accrued expenses approximate fair value due to the short-term nature of these instruments. The carrying value of short and long-term debt, and lease liabilities also approximates fair value since these instruments bear market rates of interest or are calculated using market rates of interest. None of these instruments are held for trading purposes.

Fair value is defined as an exit price, representing the amount that would be received upon the sale of an asset or payment to transfer a liability in an orderly transaction between market participants. Fair value is a market-based measurement that is determined based on assumptions that market participants would use in pricing an asset or liability. A three-tier fair value hierarchy is used to prioritize the inputs in measuring fair value as follows:

Level 1. Quoted prices in active markets for identical assets or liabilities.

Level 2. Quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable, either directly or indirectly.

Level 3. Significant unobservable inputs that cannot be corroborated by market data.

The asset or liability's fair value measurement within the fair value hierarchy is based upon the lowest level of any input that is significant to the fair value measurement.

As of December 31, 2024, the Company had a Level 3 warrant liability related to freestanding warrants issued in connection with a private placement transaction that is measured at fair value on a recurring basis. As of December 31, 2023, the Company did not have any assets or liabilities measured at fair value on a recurring basis.

Stock-based compensation

The Company recognizes compensation expense for stock-based compensation in accordance with ASC 718 "Compensation – Stock Compensation." The fair value of restricted stock units ("RSUs") is measured on the grant date based on the closing fair market value of our common stock. The resulting cost is recognized over the period during which an employee is required to provide service in exchange for the awards, usually the vesting period, which is generally three years for RSUs. Stock-based compensation expense is recognized on a straight-line basis, net of actual forfeitures in the period.

The fair value of RSU grants with performance conditions is determined using the closing price of our common stock on date of grant. The calculated compensation cost is adjusted based on an estimate of awards ultimately expected to vest and our assessment of the probable outcome of the performance condition. The fair value of RSU grants with market conditions is calculated on the date of grant using a Monte Carlo simulation model utilizing several key assumptions, including expected share price volatility, the risk-free rate of return, the expected dividend yield and other award design features.

If at any point in time the Company does not currently have a sufficient quantity of shares authorized for issuance under their approved stock incentive plan, the Company has established a sequencing policy that shares are issued to grants with the earliest inception date first. When multiple grants have the same inception date, shares are first allocated to non-named executive officers, then to shares with satisfied market and performance conditions, and last to service-only grants made to named executive officers. Therefore, grants to named executive officers with service-only conditions with the latest grant date will be reclassified to liabilities first. For service-based grants, the value of grants required to be reclassified to liabilities will be re-measured on a periodic basis based on the closing fair market value of our common stock.

Net loss per share

Basic net loss per share is computed by dividing net loss by the weighted average number of vested shares outstanding during the period. Diluted net loss per share is computed by giving effect to all potential dilutive common securities, options and warrants. Potential dilutive common shares include the dilutive effect of the common stock underlying in-the-money stock options and is calculated based on the average share price for each period using the treasury stock method. Under the treasury stock method, the exercise price of an option and the average amount of compensation cost, if any, for future services that the Company has not yet recognized when the option is exercised, are assumed to be used to repurchase shares in the current period.

For all periods presented in this report, unvested restricted stock, stock options and warrants were not included in the computation of diluted net loss per share because such inclusion would have had an antidilutive effect.

Excluded potentially dilutive weighted average securities (1):	Year Ended December 31, 2024	2023
Options to purchase common stock	—	19,535
Unvested restricted stock	554,691	373,582
Financing warrants to purchase common stock	673,885	12,602
Total potential dilutive weighted average securities	1,228,576	405,719

(1) Securities are presented on a weighted average outstanding calculation as required if the securities were dilutive and adjusted to give effect to the November 4, 2024 reverse stock split.

Segment and geographic information

Our chief operating decision maker ("CODM") is the Chief Executive Officer. Operating segments are defined as components of an enterprise engaging in business activities for which discrete financial information is available and regularly reviewed by the CODM in deciding how to allocate resources and in assessing performance. The CODM views its operations and manages its business in one operating segment. For further discussion related to segment reporting, please refer to Note 18 - Segment reporting.

Concentration of credit risk

The Company did not have a trade receivable balance as of December 31, 2024 and December 31, 2023, respectively. The Company generated revenue of $25,000 for the year ended December 31, 2023, from the sale of lead finished goods to P. Kay Metals. Revenue from P. Kay Metals represented 100% of total revenue for the year ended December 31, 2023.

Recent accounting pronouncements

Recent accounting pronouncements adopted

In November 2023, the Financial Accounting Standards Board ("FASB") issued ASU No. 2023-07, Improvements to Reportable Segment Disclosures (Topic 280). This ASU updates reportable segment disclosure requirements by requiring disclosures of significant reportable segment expenses that are regularly provided to the Chief Operating Decision Maker ("CODM") and included within each reported measure of a segment's profit or loss. This ASU also requires disclosure of the title and position of the individual identified as the CODM and an explanation of how the CODM uses the reported measures of a segment's profit or loss in assessing segment performance and deciding how to allocate resources. The Company retrospectively adopted this guidance during the year ended December 31, 2024. The adoption did not have a significant impact on the consolidated financial statements.

Recently issued accounting pronouncements not yet adopted

In November 2024, the FASB issued ASU 2024-03, Income Statement—Reporting Comprehensive Income—Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses, which introduced new guidance on disclosures of specified information about certain costs and expenses included within expenses presented on the face or the income statements, such as purchases of inventory and employee compensation. This guidance is effective for the Company for annual reporting periods beginning January 1, 2027 and interim reporting periods beginning January 1, 2028. The Company is currently evaluating the impact that the adoption of this pronouncement will have on the Company's consolidated financial statements and disclosures.

In December 2023, the FASB issued ASU No. 2023-09, Improvements to Income Tax Disclosures (Topic 740). The ASU requires disaggregated information about a reporting entity's effective tax rate reconciliation as well as additional information on income taxes paid. The ASU is effective on a prospective basis for annual periods beginning after December 15, 2024. Early adoption is also permitted for annual financial statements that have not yet been issued or made available for issuance. This ASU will result in the required additional disclosures being included in our consolidated financial statements, once adopted.

3. Revenue recognition

The Company has historically generated revenues by recycling lead acid batteries ("LABs") and selling the recovered lead to its customers.

The Company was not in commercial production in 2024 or 2023. The nominal revenue generated during the year ended December 31, 2023 resulted from the sale of from the sale of lead finished goods that were generated during operation of the TRIC facility prior to the November 2019 fire at our TRIC facility. Revenue from products transferred to customers at a single point in time with the delivery of the Company's products to customers accounted for 100% of our revenue during the year ended December 31, 2023.

4. Inventory

Inventory consisted of the following (in thousands):

	December 31,	
	2024	2023
Work in process	$ —	$ 135
Raw materials	251	794
Total inventory	$ 251	$ 929

We write-down inventory when evidence exists that the net realizable value of inventory is less than the cost. During the twelve months ended December 31, 2024, we recorded write-downs of $283,000 which were included in plant operations in the condensed consolidated statement of operations.

5. Property, plant and equipment, net

Property, plant and equipment, net, consisted of the following (in thousands):

Asset Class	Useful Life (Years)	December 31, 2024	December 31, 2023
Operational equipment	3 - 10	$ 3,551	$ 3,581
Lab equipment	5	1,128	817
Computer equipment	3	107	89
Office furniture and equipment	3	87	90
Leasehold improvements	2.5	80	80
Land	-	1,141	1,141
Building	39	3,131	3,131
Equipment under construction		9,726	3,047
		18,951	11,976
Less: accumulated depreciation		(2,478)	(1,629)
Property, plant and equipment, net		$ 16,473	$ 10,347

Property, plant and equipment depreciation expense was $0.9 million and $0.9 million for the years ended December 31, 2024 and December 31, 2023, respectively. Equipment under construction is comprised of our lithium-ion battery recycling commercial equipment along with various components being manufactured or installed by the Company.

In 2024, management shifted its strategic focus to prioritizing lithium carbonate production alongside mixed hydroxide precipitate. This decision aimed to reduce capital and operational intensity while enabling a larger-scale facility with higher revenue and improved margins than the previous design. As a result of this strategic shift, at December 31, 2024 the Company recognized an impairment of approximately $2,640,000 related to vendor equipment deposits for equipment that was initially required for Phase One of the recycling campus at TRIC but is no longer needed under the revised plan. The $2,640,000 write-down of vendor equipment deposits was recognized as an impairment expense and is included under "Impairment expense" in the Consolidated Statement of Operations for the year ended December 31, 2024. The fair value of the impaired assets was determined based on management's assessment of recoverability, as the equipment was no longer needed.

During 2023, management had shifted focus away from the original service under the ACME lead recycling license agreement to a new primary focus on the Lithium recycling business as a Company. As a result, management sees a decrease in the utilization of the ACME plant and its related operations, and assessed that the future expected cash flows connected with ACME are at or near zero. Therefore, at December 31, 2023, we recognized an impairment of approximately $3,451,000 to equipment under construction that was not yet capitalized related to the ACME CIP as a result of the suspension of the development of recycling operations at the ACME Metals Taiwanese facility.

6. Intellectual property, net

Intellectual property, net, is comprised of the following (in thousands):

	2024	2023
Intellectual property	$ 1,794	$ 1,794
Accumulated amortization	(1,648)	(1,513)
Intellectual property, net	$ 146	$ 281

Amortization expense was $135,000 and $180,000 for the years ended December 31, 2024 and December 31, 2023, respectively.

Estimated future amortization is as follows as of December 31, 2024 (in thousands):

2025	$ 70
2026	51
2027	25
Total estimated future amortization	$ 146

7. Note receivable

During the year ended December 31,2023, the Company sold its stock in LINICO and recorded an impairment of $1,400,000 and a receivable of $600,000. The proceeds were to be received over a 12 month installment starting in January 2024. As of December 31, 2024, the Company's note receivable balance was $100,000. On December 19, 2024 the Company entered in an agreement with LINICO to receive the balance on March 31, 2025.

Comstock Inc., a Nevada corporation (NYSE-MKT: LODE), is the beneficial owner of approximately 88% of the common shares of LINICO. The Company's Chief Financial Officer, Judd Merrill, was a member of the board of directors of Comstock Inc. until April 5, 2023.

8. Other assets

Other assets consist of the following (in thousands):

	December 31,	
	2024	2023
Nevada facilities Right of Use Assets (1)	$ 542	$ 222
Equipment deposits (2)	4,540	4,291
Other assets	20	160
Total other assets, non-current	$ 5,102	$ 4,673

(1) See Footnote 10.

(2) Deposits for equipment to be acquired and utilized at the Company's Phase One build-out of our recycling campus at TRIC.

9. Accrued liabilities

Accrued liabilities consist of the following (in thousands):

	December 31,	
	2024	2023
Property, plant and equipment related	$ 560	$ 1,857
Payroll related	1,576	506
Professional services	884	26
Other	110	78
Total accrued liabilities	$ 3,130	$ 2,467

10. Leases

As of December 31, 2024, the Company maintained two operating leases for real estate. The Company's operating leases have terms of 36 and 37 months and include one or more options to extend the duration of the agreements. These operating leases are included in "Other assets" on the Company's December 31, 2024 and 2023 consolidated balance sheets and represent the Company's right to use the underlying assets for the term of the leases. The Company's obligation to make lease payments are included in "Lease liability, current portion" and "Lease liability, non-current portion" on the Company's December 31, 2024 and 2023 consolidated balance sheets.

On March 14, 2024, the Company extended its operating lease for its headquarters located at 5370 Kietzke Lane, Reno, NV. The lease extension was determined to be a lease modification that qualified as a change of accounting on the existing lease and not a separate contract. As such, the Right-of-Use ("ROU") assets and operating lease liabilities were remeasured using an incremental borrowing rate at the date of modification of 9.61%, which resulted in an increase of the ROU asset of $170,000 and an increase in the operating lease liabilities of $166,000.

On June 9, 2024, the Company extended its operating lease for its Innovation Center located at 160 Denmark Dr, McCarran, NV. The lease extension was determined to be a lease modification that qualified as a change of accounting on the existing lease and not a separate contract. As such, the Right-of-Use ("ROU") assets and operating lease liabilities were remeasured using an incremental borrowing rate at the date of modification of 9.52%, which resulted in an increase of the ROU asset of $347,000 and an increase in the operating lease liabilities of $324,000.

Based on the present value of the lease payments for the remaining lease term of the Company's existing operating leases, as of December 31, 2024, total right-of-use assets were approximately $542,000 and operating lease liabilities were approximately $552,000. As of December 31, 2023, total right-of-use assets were approximately $222,000 and operating lease liabilities were approximately $231,000. For its real estate leases, the Company has elected the practical expedient to not separate a lease into lease and nonlease components.

The Company currently maintains one finance lease for equipment. On April 1, 2024 the Company entered into a finance lease for laboratory equipment which expires in 2029. In November 2021, the Company entered into a finance lease for a modular laboratory which expired in October 2024. The Company's obligation to make finance lease payments are included in "Lease liability, current portion" and "Lease liability, non-current portion" on the Company's December 31, 2024 and 2023 consolidated balance sheets.

Information related to the Company's right-of-use assets and related lease liabilities were as follows (in thousands):

	Twelve Months Ended December 31, 2024	Twelve Months Ended December 31, 2023
Cash paid for operating lease liabilities	$ 275	$ 266
Operating lease cost	$ 282	$ 262
Cash paid for finance lease liabilities	$ 81	$ 59
Interest expense	$ 8	$ 6

	December 31, 2024	December 31, 2023
Weighted-average remaining lease term (years) - operating leases	2.1	0.9
Weighted-average discount rate - operating leases	10.49%	6.18%
Weighted-average remaining lease term (years) - finance lease	4.3	0.8
Weighted-average discount rate - finance lease	4.85%	8.17%

Maturities of lease liabilities as of December 31, 2024 were as follows (in thousands):

Due in 12-month period ended December 31,

	Operating Leases	Finance Leases
2025	$ 291	$ 47
2026	182	47
2027	149	47
2028	—	48
2029	—	12
	$ 622	$ 201
Less imputed interest	(70)	(18)
Total lease liabilities	$ 552	$ 183
Current lease liabilities	$ 249	$ 40
Non-current lease liabilities	303	143
Total lease liabilities	$ 552	$ 183

11. Notes payable

On February 1, 2023, Aqua Metals Reno, Inc., our wholly-owned subsidiary, entered into a Loan Agreement with Summit Investment Services, LLC, a Nevada limited liability company (the "Lender"), pursuant to which the Lender provided us with a loan in the amount of $3,000,000. The loan proceeds were used to purchase a building located at 2999 Waltham Way McCarran, NV 89434 (the "Building"). The loan accrues interest at a fixed annual rate of 9.50%. Interest-only payments are due monthly for the first twenty-four months and the principal and all unpaid interest is due on February 1, 2025. During 2025 we extended the existing maturity date to April 27, 2025. We have the right to prepay the loan at any time, provided that we must pay guaranteed minimum interest of $213,750 (9-months of interest). The Loan Agreement includes representations, warranties, and affirmative and negative covenants that are customary of institutional loan agreements. As of December 31, 2024 , the Company was in compliance with all of the covenants. The loan is collateralized by a first priority lien on the building and site improvements, and is guaranteed by Aqua Metals, Inc. During February 2025, Eric Gangloff, founder and CEO of Summit Investment Services, LLC was appointed as a member of the Board of Directors of the Company.

On December 18, 2024, Aqua Metals, Inc. ("Aqua Metals" or the "Company") entered into a Securities Purchase Agreement with eight accredited investors, including executives and related parties of the Company, in connection with a private placement of secured promissory notes ("Notes") in the aggregate principal amount of $1,500,000 and common stock purchase warrants ("Warrants") to purchase 750,000 shares of the Company's common stock. The Securities Purchase Agreement includes customary representations, warranties, and covenants by the investors and the Company. Certain officers and directors of the Company purchased Notes in the aggregate amount of $850,000. The Notes accrue interest at the rate of 20% per annum, subject to a payment of a minimum of 12 months interest in the event of prepayment. The entire principal amount evidenced by the Notes plus all accrued and unpaid interest is due on December 31, 2025. We have the right to prepay the loan at any time. Additionally, upon the occurrence of an event of default, the note holders may declare the Notes to be forthwith due and payable, whereupon the principal and all accrued and unpaid interest thereon, plus all costs of enforcement and collection (including court costs and reasonable attorney's fees), shall immediately become and be forthwith due and payable. The Company's obligations under the Notes are secured by a first lien on the Company's strategic metal inventory and a second lien on all other assets of the Company. Each Note purchaser received a Warrant to purchase share of the Company's common stock in an amount equal to the principal amount of the investor's Note divided by two, for a total of 750,000 shares of common stock. The Warrants are exercisable over a five-year period at an exercise price of $1.92 and $1.93 per share and are convertible to shares of common stock of the Company upon a change in control of the Company. The private placement closed on December 19, 2024 for the gross proceeds of $1,500,000. Proceeds from the transaction were first allocated to the warrants and then to the notes on a residual basis resulting in $986,000 allocated to liability-classified warrants and $514,000 to the notes, creating a discount on the notes. Any subsequent changes to the fair value of the Warrant Liability will be recorded in current period earnings. The Company incurred issuance costs of $58,000, which were proportionally allocated between the notes and warrants. Costs related to the warrants were immediately expensed, while costs associated with the notes were included in the note discount and are amortized as interest expense over the loan term. As of December 31, 2024, the outstanding principal balance on the secured notes was $1,500,000, with accrued interest of $10,000. The notes payable are presented net of discount, and the amortization of the discount is recorded as interest expense in the Company's consolidated financial statements.

Notes payable is comprised of the following (in thousands):

	December 31,	
	2024	2023
Notes payable, current portion		
Summit Investment Services, LLC	$ 3,000	$ 35
Notes related-party	850	—
Notes related-party, accrued interest payable	6	—
Notes	650	—
Notes accrued interest payable	4	—
Less issuance costs	(974)	—
Total notes payable, current portion	$ 3,536	$ 35
Notes payable, non-current portion		
Summit Investment Services, LLC	$ —	$ 3,000
Less issuance costs	—	(77)
Total notes payable, non-current portion	$ —	$ 2,923

12. Warrant liability

The Company accounted for the warrants issued in connection with the Securities Purchase Agreement on Note 11, to purchase 750,000 shares in accordance with the guidance contained in ASC Topic 815 "Derivatives and Hedging". These warrants contain provisions—such as a mandatory conversion feature upon a change in control—that preclude equity classification were recorded as a liability. Accordingly, the Company classified the warrants as a liability at fair value and adjusts them to fair value at each reporting period. This liability is re-measured at each balance sheet date until the warrants are exercised or expire, and any change in fair value will be recognized in the Company's statement of operations. The fair value of the warrants was estimated using the Monte-Carlo option pricing model to determine the fair value of its liability-classified warrants. These instruments are classified within Level 3 of the fair value hierarchy due to the use of unobservable inputs. Key assumptions used in the valuation as of December 19, 2024 and December 31, 2024, included:

	As of December 19, 2024	As of December 31, 2024
Expected life of the options to convert	5	4.97
Risk-free rate	4.34%	4.29%
Historical volatility	99.13%	96.71%
Valuation date stock price	1.75	2.52
Strike price	$1.93/$1.92	$1.93/$1.92
Probability of completing a change in control	30%	20%
Volatility if change in control occurs	100%	100%
Dividend yield	0%	0%

The following table provides a rollforward of the Level 3 warrant liability for the year ended December 31, 2024 (in thousands):

	Warrant liability
Fair value as of January 1, 2024	$ —
Initial measurement on December 19, 2024	986
Change in fair value of warrant liabilities	507
Fair value as of December 31, 2024	$ 1,493

The warrant liability was initially recorded at a fair value of $986,000 and subsequently remeasured to $1,493,000 as of December 31, 2024. The change in fair value of $507,000 was recognized as a non-cash expense in the statement of operations for the year ended December 31, 2024.

13. Stockholders' equity

Effective November 5, 2024, the Company effected a one-for-20 reverse stock split of its issued and outstanding common shares. Accordingly, all common share, stock option, per common share and warrant amounts for all periods presented in the consolidated financial statements and notes thereto have been adjusted retrospectively to reflect this reverse stock split.

Authorized capital

The authorized capital stock of the Company consists of 300,000,000 shares of common stock, par value $0.001 per share. In the event of liquidation of the Company, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities. The common stock has no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. The outstanding shares of common stock are fully paid and non-assessable.

The holders of the Company's common stock are entitled to one vote per share. Holders of common stock are entitled to receive a ratable share of dividends, if any, as may be declared by the board of directors.

Other shares issued

During the year ended December 31, 2023, the Company issued 73,141 shares of common stock upon vesting of Restricted Stock Units ("RSUs") granted by the Company to management and employees, including 25,532 of reissued treasury stock. We withheld 46,960 shares to satisfy approximately $1,092,000 of employees' tax obligations. We treat shares of common stock withheld for tax purposes on behalf of our employees in connection with the vesting of RSUs in a similar manner as common stock repurchases and reported as treasury stock.

During the year ended December 31, 2023, the Company issued 8,534 shares of common stock upon vesting of RSUs granted to Board members.

During the year ended December 31, 2023, the Company issued 5,212 shares of common stock to a Board member related to director fees and other director incentives.

During the year ended December 31, 2023, the Company issued 789 shares of common stock to a former Board member to fulfill obligations related to consulting services.

During the year ended December 31, 2023, the Company issued 162,215 shares of common stock pursuant to the At The Market Issuance Sales Agreement for net proceeds of $3,786,000.

During the year ended December 31, 2023, the Company issued 9,635 shares of common stock pursuant to the employee stock purchase plan.

During the year ended December 31, 2023, the Company issued 23,468 shares of common stock upon the settlement of the securities class action lawsuit.

In July 2023, the Company completed a public offering of 909,650 shares of its common stock, for net proceeds of $18,318,000.

In August 2023, the Company issued 227,273 shares of its common stock pursuant to that certain Securities Purchase Agreement (the "Yulho SPA"), with Yulho Co, Ltd., for net proceeds of approximately $4,629,000.

During the year ended December 31, 2024, the Company issued 78,564 shares of common stock upon vesting of Restricted Stock Units ("RSUs") granted by the Company to management and employees, including 44,261 of reissued treasury stock. We withheld 52,252 shares to satisfy approximately $552,000 of employees' tax obligations. We treat shares of common stock withheld for tax purposes on behalf of our employees in connection with the vesting of RSUs in a similar manner as common stock repurchases and reported as treasury stock.

During the year ended December 31, 2024, the Company issued 20,111 shares of common stock for consulting services.

During the year ended December 31, 2024, the Company issued 10,680 shares of common stock upon vesting of RSUs granted to Board members.

During the year ended December 31, 2024, the Company issued 9,428 shares of common stock to a Board member related to director fees.

During the year ended December 31, 2024, the Company issued 6,607 shares of common stock to a former employee related to a severance agreement.

During the year ended December 31, 2024, the Company issued 10,635 shares of common stock pursuant to the employee stock purchase plan.

During the year ended December 31, 2024, the Company issued 1,195,034 shares of common stock pursuant to the At The Market Issuance Sales Agreement for net proceeds of $5,014,000.

In May 2024, the Company completed a public offering of 1,006,250 shares of its common stock at the public offering price of $7.80 per share. In connection with the sale of common stock, the Company issued warrants to purchase shares of common stock at the rate of one warrant for every share of purchased common stock, at the offering price of $0.20 per warrant. After the deduction of the underwriter's discount and expenses payable by us, we received net proceeds of $7,306,000. The Company used the relative fair value method to allocate the net proceeds of approximately $7,306,000 between the common stock and the warrants. As presented below, the Company recorded the fair value of the warrants of $3,081,000 and common stock of $4,225,000.

Warrants outstanding

In July 2023, the Company issued a warrants to purchase 18,193 shares of the Company's common stock to the underwriter of the Company's public offering, equal to 2% of the 909,650 shares sold. The warrants are exercisable at $27.50 per share, commencing six months after July 17, 2023. The warrants have an expiration date of 5 years from the date of issuance and will expire on July 17, 2028. Using the Black Scholes Merton model, the Company estimated the warrants' fair value to be $388,000 with the assumptions as follows: $30.80 per share fair value on the date of issuance; 5-year term; 81.9% volatility; 3.81% discount rate and 0% annual dividend rate. Warrants are accounted for under the equity classification.

In August 2023, the Company issued a warrant to purchase 10,288 shares of the Company's common stock to the underwriter of the transaction in connection with the Yulho SPA. The warrants have an expiration date of 5 years from the date of issuance and are exercisable immediately at $25 per share. The warrant will expire on August 4, 2028. Using the Black Scholes Merton model, the Company estimated the warrants' fair value to be $181,000 with the assumptions as follows: $25.40 per share fair value on the date of issuance; 5-year term; 82.3% volatility; 3.81% discount rate and 0% annual dividend rate. Warrants are accounted for under the equity classification.

In May 2024, the Company issued a warrant to purchase 39,125 shares of the Company's common stock to the underwriter of the Company's public offering, equal to 2% of the shares and the number of shares underlying the warrants sold in the offering. The warrants have an expiration date of 5 years from the date of issuance and are exercisable immediately at $9.75 per share. The warrant will expire on May 14, 2029. Using the Black Scholes Merton model, the Company estimated the warrants' fair value to be $245,000 with the assumptions as follows: $9.42 per share fair value on the date of issuance; 5-year term; 80.3% volatility; 4.46% discount rate and 0% annual dividend rate. Warrants are accounted for under the equity classification.

In May 2024, in conjunction with the Company's public offering, the Company issued a warrant to purchase 1,006,250 shares of the Company's common stock. The warrants have an expiration date of 5 years from the date of issuance and are exercisable immediately at $7.80 per share. The warrant will expire on May 14, 2029. Using the Black Scholes Merton model, the Company estimated the warrants' fair value to be $6,666,000 with the assumptions as follows: $9.42 per share fair value on the date of issuance; 5-year term; 80.3% volatility; 4.46% discount rate and 0% annual dividend rate. Warrants are accounted for under the equity classification.

In December 2024, the Company issued warrants to purchase 750,000 shares of the Company's common stock to the eight accredited investors, including executives and related parties of the Company, in connection with the private placement of secured promissory notes. The warrants are exercisable over a five-year period at an exercise price of $1.92 and $1.93 per share and are convertible to shares of common stock of the Company upon a change in control of the Company. The warrant will expire on December 19, 2029.
See further discussion of the December 2024 warrants within Note 12.

Warrants outstanding to purchase shares of the Company's common stock at a weighted average exercise price per share are as follows:

Exercise Price per Share	Expiration Date	Shares Subject to Purchase at December 31, 2024
$ 27.50	07/17/2028	18,193
$ 25.00	08/04/2028	10,288
$ 9.75	05/14/2029	39,125
$ 7.80	05/14/2029	1,006,250
$ 1.93	12/19/2029	425,000
$ 1.92	12/19/2029	325,000

Stock-based compensation

2014 Stock Incentive Plan

In 2014, the Board of Directors adopted the Company's stock incentive plan (the "2014 Plan"). The 2014 Plan expired in September 2024.

2019 Stock Incentive Plan

In 2019, the Board of Directors adopted the Company's stock incentive plan (the "2019 Plan"). The 2019 Plan was most recently amended and restated effective as of the Company's 2024 Annual Stockholders' Meeting. A total of 1,400,000 shares of common stock was authorized for issuance pursuant to the 2019 Plan. The 2019 Plan provides for the following types of stock-based awards: incentive stock options; non-statutory stock options; restricted stock; and performance stock. The 2019 Plan, under which equity incentives may be granted to employees and directors under incentive and non-statutory agreements, requires that the option price may not be less than the fair value of the stock at the date the option is granted. Option awards are exercisable until their expiration, which may not exceed 10 years from the grant date. The restricted shares that are issued from the 2019 Plan normally vest in six equal tranches over three years.

As of December 31, 2024, the Company granted 1,133,687 shares, all of which are subject to future vesting conditions under the 2019 plan which exceeds the 821,837 shares available for issuance. The Company has established a sequencing policy such that grants with the latest grant date will be reclassified to liabilities first. Considering this policy and the terms of the underlying grants, this Company has reclassified 311,850 of their service-based RSUs to liabilities as of December 31, 2024.

Stock-based compensation expense recorded was allocated as follows (in thousands):

	Year ended December 31,	
	2024	2023
Cost of product sales	$ 217	$ 130
Research and development cost	48	57
General and administrative expense	2,472	2,347
Total	$ 2,737	$ 2,534

The following table summarizes the stock-based compensation plan activity and related information through December 31, 2024.

		Options Outstanding		PSUs Outstanding		RSUs Outstanding	
	Number of Shares Available for Grant	Number of Shares	Weighted-Average Exercise Price Per Share	Number of PSUs	Weighted-Average Grant Date Fair Value Per Share	Number of RSUs	Weighted-Average Grant Date Fair Value Per Share
Balance at December 31, 2022	263,113	49,713	$ 88.00	—	$ —	319,397	$ 18.20
Granted	(255,542)	—	—	23,764	11.25	231,778	17.00
Released	—	—	—	—	—	(133,846)	19.80
Forfeited	16,081	(49,713)	88.00	—	—	(8,368)	18.40
Returned to Plan	47,371	—	—	—	—	—	—
Balance at December 31, 2023	71,023	—	—	23,764	11.25	408,961	17.20
Granted	(987,488)	—	—	158,817	2.15	828,671	1.48
Released	—	—	—	—	—	(177,641)	16.54
Forfeited	188,294	—	—	(2,400)	11.25	(185,894)	7.16
Returned to Plan	52,251	—	—	—	—	—	—
Addition to 2019 Plan	475,000	—	—	—	—	—	—
Expiration of 2014 Plan	(31,521)	—	—	—	—	—	—
Balance at December 31, 2024	(232,441)	—	—	180,181	$ 3.23	874,097	$ 3.29

There were no option exercises during the year ended December 31, 2024 and December 31, 2023, respectively. There were no outstanding stock options as of December 31, 2024.

As of December 31, 2024, there is approximately $3,830,000 of total unrecognized compensation cost related to the unvested share-based (option and RSU) compensation arrangements granted under the stock-based compensation plans. The remaining unrecognized compensation cost will be recognized over a weighted-average period of 2.2 years.

Our policy is to fulfill the required shares for a restricted share vesting by first depleting any available Treasury Stock held by the Company and the remaining outstanding balance is satisfied with unissued shares.

Stock Price Hurdle Awards

In 2023, the Company granted stock price hurdle restricted share units as a result of the pilot plant commissioning. The stock price hurdle restricted share units expire three years from the date of grant and vest based on the Corporation's common stock achieving an absolute stock price hurdles based on a 5-day VWAP at any time over the three-year term.

In 2024, the Company granted stock price hurdle restricted share units as part of the long-term incentive bonus. The stock price hurdle restricted share units expire three years from the date of grant and vest based on the Corporation's common stock achieving an absolute stock price hurdles based for 5 consecutive days closing prices at any time over the three-year term.

The following is a summary of the changes in outstanding stock price hurdle awards share units for 2024:

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at January 1, 2024	23,764	$ 11.25
Granted	79,408	1.36
Forfeited	(2,400)	11.25
Outstanding at December 31, 2024	100,772	$ 3.64

The fair value of stock price hurdle awards were calculated on the date of grant using a Monte Carlo simulation model utilizing several key assumptions, including expected Company share price volatility, the risk-free interest rate, the cost of equity, and other award design features. The following are weighted-average key assumptions for 2024 and 2023 grants.

	2024	2023
Volatility	88.03%	91.40%
Risk-free interest rate	4.26%	4.30%

Total Shareholder Return (TSR) Awards

In 2024, the Company granted TSR restricted share units as part of the long-term incentive bonus. The TSR restricted share units vest based on the Corporation achieving a total shareholder return relative to our Performance Peer Group and expire three years from the date of grant if performance conditions are not met.

The following is a summary of the changes in outstanding TSR awards share units for 2024:

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding at January 1, 2024	—	$ —
Granted	79,409	2.93
Outstanding at December 31, 2024	79,409	$ 2.93

2023 Restricted stock units

During the first quarter of 2023, the Company granted 3,207 RSUs, all of which were subject to vesting, with a grant date fair value of $70,000 to employees. The shares vest in three equal installments over a three-year period.

During the second quarter of 2023, the Company granted 10,227 RSUs, all of which were subject to vesting, with a grant date fair value of $225,000 to Board Members. The shares vest in four equal installments over a twelve-month period.

During the third quarter of 2023, the Company granted 6,812 RSUs, all of which were subject to vesting, with a grant date fair value of $155,000 to employees. The shares vest in three equal installments over a three-year period.

During the fourth quarter of 2023, the Company granted 200,398 RSUs, all of which were subject to vesting, with a grant date fair value of $3,422,275 to employees. The shares vest in six equal semi-annual installments over a three-year period. In addition, the Company granted 2,631 RSUs, all of which were subject to vesting, with a grant date fair value of $41,513 to employees. The shares vest in three equal installments over a three-year period.

During the fourth quarter of 2023, the Company granted 3,289 RSUs, all of which were subject to vesting, with a grant date fair value of $51,891 to an employee. All shares vest after six-months.

During the fourth quarter of 2023, the Company granted 23,764 stock price hurdle restricted stock units to employees. The stock price hurdle restricted share units expire three years from the date of grant and vest based on the Corporation's common stock achieving an absolute stock price hurdles based on a 5-day VWAP at any time over the three-year term.

2024 Restricted stock units

During the first quarter of 2024, the Company granted 5,574 RSUs, all of which were subject to vesting, with a grant date fair value of $60,000 to employees. The shares vest in three equal installments over a three-year period.

During the second quarter of 2024, the Company granted 6,248 RSUs, all of which were subject to vesting, with a grant date fair value of $40,000 to employees. The shares vest in three equal installments over a three-year period.

During the third quarter of 2024, the Company granted 18,579 RSUs, all of which were subject to vesting, with a grant date fair value of $83,000 to Board Members. The shares vest in four equal installments with the first installment vesting immediately and the remaining three installments vesting over a nine-month period.

During the third quarter of 2024, the Company granted 20,111 RSUs, all of which were vested immediately, with a fair value of $150,000 for consulting fees.

During the third quarter of 2024, the Company granted 6,607 RSUs, all of which were vested immediately, with a fair value of $28,000 to an employee upon termination of a severance agreement.

During the fourth quarter of 2024, the Company granted 3,968 RSUs, all of which were subject to vesting, with a grant date fair value of $10,000 to employees. The shares vest in three equal installments over a three-year period.

During the fourth quarter of 2024, the Company granted 177,763 RSUs, all of which were subject to vesting, with a grant date fair value of $311,000 to employees. The shares vest in six equal semi-annual installments over a three-year period.

On October 3, 2024, the Company approved a supplemental retention program designed to retain business-critical resources essential to ongoing operations and strategic initiatives. Participation in the program is contingent upon management achieving specified fundraising targets and subject to the continued service of eligible employees. The program established specific funding tranches tied to cumulative fundraising milestones, which must be achieved on or before March 7, 2025. The grant terms included a fixed dollar, variable share, structure with potential settlement valued from $0 to $925,014 dependent upon satisfaction of performance conditions. Once performance conditions are met, the shares to be granted are fixed and subject to an additional six-month service condition. As of December 31, 2024, the Company has not yet recognized any expenses related to this program as the performance conditions were not deemed probable of achievement. In the first quarter of 2025, the first funding tranche was achieved, triggering the issuance of 118,469 RSUs to qualified employees in accordance with the program's terms. These shares will be granted subject to continued service requirements.

On December 19, 2024, the Company approved a long-term incentive plan for its Named Executive Officers (NEOs), consisting of 474,454 time-vested RSUs and 158,817 performance stock units (PSUs) with market-based goals. RSUs will continue to vest in equal semi-annual installments over a three-year period, subject to continuation of service, 50% of PSUs granted in 2024 will vest based on total shareholder return (TSR) attainment relative to our Performance Peer Group and 50% based on hitting certain stock price hurdles within 3-years. TSR shares issued vest one third annually. The number of shares issued each year is based on where the Company compares with a peer group such that 50% of shares vest at the 25th percentile, 100% of shares vest at the at 50th percentile, and 200% of shares vest at 75th percentile.

Total intrinsic value of RSUs vested and released during 2024 was $1,462,000. Intrinsic value of RSUs outstanding at December 31, 2024 was $3,830,000.

Reserved shares

At December 31, 2024, the Company has reserved shares of common stock for future issuance as follows:

	Number of Shares
Equity Plan	
Subject to outstanding options and restricted shares	1,133,687
Officer and Director Purchase Plan	237,382
Warrants	1,823,856
2022 Employee Stock Purchase Plan	731,220
Total reserved shares	3,926,145

14. Commitments and contingencies

We may, from time to time, be party to litigation and subject to claims incident to the ordinary course of business. As our growth continues, wemay become party to an increasing number of litigation matters and claims. The outcome of litigation and claims cannot be predicted with certainty, and the resolution of any future matters could materially affect our future financial position, results of operations or cash flows. We are not party to any legal proceedings that, if determined adversely to us, would individually or taken together have a material adverse effect on our business, results of operations, financial condition or cash flows.

In October 2021, we filed an action against Johnson Controls Fire Protections, LP ("Defendant") relating to its involvement in theNovember 2019 fire at our TRIC facility (*Aqua Metals, Inc., et. al v. Johnson Controls Fire Protections, LP, Second Judicial District of the State of Nevada CV21-01891*). Our complaint alleges Defendant's liability for a portion of the fire loss based on Defendant's negligence, breach of contract and other causes of action. On March 25, 2025, the Court dismissed our complaint without leave to amend.

The Company evaluated this matter under ASC 450-30 – Gain Contingencies, which requires a gain contingency not be recognized before it is realized or realizable. The Company had not previously recognized any gains related to this matter. Accordingly, this dismissal will not have any impact on our consolidated financial statements.

15. Related party transactions

The Company has adopted a policy that any transactions with directors, officers, beneficial owners offive percent or more of our common shares, any immediate family members of the foregoing or entities of which any of the foregoing are also officers or directors or in which they have a financial interest, will only be on terms consistent with industry standards and approved by a majority of the disinterested directors of our board.

As of December 31, 2024, the Company had two debt arrangements with related parties. For further details on these related party transactions, refer to Note 11 – Notes Payable in the financial statements.

16. Income taxes

Loss before income tax expense consists of the following (in thousands):

	Year ended December 31,	
	2024	2023
US	$ (24,552)	$ (23,938)
Foreign	—	—
Total	$ (24,552)	$ (23,938)

The components of the provision for income tax expense consist of the following (in thousands):

	Year ended December 31,	
	2024	2023
Current		
Federal	$ —	$ —
State	3	2
Deferred		
Federal	—	—
State	—	—
Total provision for income taxes	$ 3	$ 2

Reconciliation of the statutory federal income tax rates consist of the following:

	Year ended December 31,	
	2024	2023
Tax at federal statutory rate	21.00%	21.00%
State tax, net of federal benefit	(0.01)%	(0.01)%
Valuation allowance	(19.81)%	(19.95)%
Disallowed executive compensation	(0.05)%	(1.45)%
Equity compensation	(1.50)%	0.08%
Other	0.36%	0.32%
Provision for taxes	(0.01)%	(0.01)%

The components of deferred tax assets (liabilities) included on the consolidated balance sheets are as follows (in thousands):

	As of December 31,	
	2024	2023
Deferred tax assets		
Capitalized start-up costs	$ 2,233	$ 2,538
Credits	577	492
Fixed assets	912	896
Net operating losses	40,380	36,287
Others	2,846	1,891
Total gross deferred tax assets	46,948	42,104
Valuation allowance	(46,928)	(42,057)
Total gross deferred tax assets (net of valuation allowance)	$ 20	$ 47
Deferred tax liabilities		
Patents	$ (20)	$ (47)
Other	—	—
Total gross deferred tax liabilities	(20)	(47)
Net deferred tax assets	$ —	$ —

Based on the available objective evidence at this time, management believes that it is more-likely-than-not that the net deferred tax assets of the Company will not be realized. Accordingly, management has applied a full valuation allowance against net deferred tax assets at both December 31, 2024 and December 31, 2023. The net valuation allowance increased by approximately $4.9 million during the year ended December 31, 2024. The increase in net valuation allowance primarily relates to net operating losses generated during 2024.

As of December 31, 2024, the Company has total net operating loss carryforwards of $190.9 million for federal income tax purposes. Approximately $25.2 million of the federal net operating losses will begin to expire in December 31, 2034, if not utilized. Approximately $165.7 million of the federal net operating losses were generated after December 31, 2017, and thus do not expire. As of December 31, 2024, the Company has state net operating loss carryforwards of $4.1 million, which will begin to expire in December 31, 2034.

Utilization of the Company's net operating loss may be subject to substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code and similar state provisions. Such an annual limitation could result in the expiration of net operating loss carryforwards prior to utilization.

At December 31, 2024, the Company had research and development credits carryforward of approximately $0.6 million and $0.5 million for Federal and California income tax purposes, respectively. If not utilized, the Federal research and development credits carryforward will begin to expire on December 31, 2034. The California credits can be carried forward indefinitely.

Effective January 1, 2022, the Company is subject to mandatory capitalization of Section 174 research and development expenditures. The capitalized expenditures are subject to amortization over five years for expenses incurred within the U.S. The Company capitalized $3.5 million and $3.6 million during the years ended December 31, 2024 and December 31, 2023, respectively.

The Company's policy is to account for interest and penalties as income tax expense. As of December 31, 2024, the Company had no interest related to unrecognized tax benefits. No amounts of penalties related to unrecognized tax benefits were recognized in the provision for income taxes.

The Company maintains liabilities for uncertain tax positions. These liabilities involve considerable judgement and estimation and are continuously monitored by management based on the best information available, including changes in tax regulations, the outcome of relevant court cases, and other information. The Company recognizes potential accrued interest and penalties related to unrecognized tax benefits as income tax expense. At December 31, 2024, the Company's total amount of unrecognized tax benefit was approximately $0.5 million, none of which will affect the effective tax rate, if recognized. The Company does not expect its unrecognized benefits to change materially over the next twelve months.

The Company files income tax returns with the United States federal government and the State of California. The Company's tax returns for 2021 to 2023 remain open to audit for Federal and California purposes.

17. 401(k) Savings plan

The Company maintains a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code (the "401(k) Plan"). The 401(k) Plan covers all employees who meet defined minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pretax or after tax basis. Beginning in January 2021, the Plan included a maximum of 4% employer matching contributions with immediate vesting. We recognized $210,000 and $180,000 of expenses related to employer contributions for the 401(k) savings plan during the years ended December 31, 2024 and 2023, respectively.

18. Segment reporting

Aqua Metals, Inc. has one operating segment: sustainable metals recycling. The Company's operations are focused on the development and commercialization of AquaRefining technology for the clean and efficient recovery of valuable metals from lead-acid and lithium-ion batteries. The Company's chief operating decision maker ("CODM") is the Chief Executive Officer. The CODM evaluates financial performance at a consolidated, entity-wide level and does not assess operating results by individual business unit or product line. Financial results are reviewed in line with the Company's consolidated financials, and resource allocation decisions are made based on overall Company performance.

The CODM assesses performance for the segment based on net loss, which is reported on the statement of operations as net loss. The measure of segment assets is reported on the balance sheet as total assets. Significant expenses within net loss, include plant operations, research and development cost, impairment expense, loss (gain) on disposal of property, plant and equipment, and general and administrative expenses, which are each separately presented on the Company's Consolidated Statements of Operations.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

(a) *Evaluation of disclosure controls and procedures.*

Our management, with the participation of our chief executive officer and chief financial officer evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based upon that evaluation, our management, including our chief executive officer and chief financial officer, concluded that for the reasons described below our disclosure controls and procedures were effective as of December 31, 2024 in ensuring all material information required to be filed has been made known in a timely manner.

(b) *Changes in internal control over financial reporting.*

There were no changes to our internal control over financial reporting, as defined in Rules 13a-15(f) under the Exchange Act that occurred during the fiscal quarter ended December 31, 2024 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

(c) *Management's report on internal controls over financial reporting.*

Our management is responsible for establishing and maintaining adequate internal controls over financial reporting, as defined under Rule 13a-15(f) under the Exchange Act. Our management has assessed the effectiveness of our internal controls over financial reporting as of December 31, 2024 based on the framework established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Our internal control system was designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements. Our management, with the participation of our chief executive officer and chief financial officer assessed the effectiveness of our internal control over financial reporting as of December 31, 2024, and based on that evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2024.

This report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to the rules of the Securities and Exchange Commission that permit us to provide only management's report in this annual report.

Item 9B. Other Information

During the year ended December 31, 2024, no director or officer adopted or terminated (i) any contract, instruction or written plan for the purchase or sale of securities of the Company intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) or (ii) any "non-Rule 10b5-1 trading arrangement" as defined in paragraph (c) of item 408 of Regulation S-K.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Set forth below are the names, ages and positions of our current executive officers and directors:

Name	Age	Position with the Company
Stephen Cotton	58	President and Chief Executive Officer and Director
Vincent L. DiVito (a), (b), (c)	65	Chairman of the Board and Independent Director
Molly Zhang (a), (b), (c)	63	Independent Director
Eric Gangloff	56	Director
Steven K. Henderson (a), (b), (c)	64	Independent Director
Judd Merrill	54	Chief Financial Officer
Benjamin Taecker	43	Chief Engineering and Operations Officer

(a) Member of the Audit Committee of our Board.

(b) Member of the Compensation Committee of our Board.

(c) Member of the Nominating and Corporate Governance Committee of our Board.

Information about Our Executive Officers and Directors

Vincent L. DiVito has served as a member of our Board since May 2015 and has served as our non-executive Chairman of the Board since June 2022. Since April 2010, Mr. DiVito has served as the owner and chief executive officer of Vincent L. DiVito, Inc., a financial and management consulting firm. From January 2008 to April 2010, Mr. DiVito served as president of Lonza America, Inc., a global life sciences chemical business headquartered in Allendale, New Jersey, and also served as chief financial officer and treasurer of Lonza America, Inc. from September 2000 to April 2010. Lonza America, Inc. is part of Lonza Group, whose stock is traded on the Swiss Stock Exchange. From 1990 to September 2000, Mr. DiVito was employed by Algroup Wheaton, a global pharmaceutical and cosmetics packaging company, first as its director of business development and later as its vice president and chief financial officer. Mr. DiVito is a certified public accountant, certified management accountant and holds an MBA in Finance. Mr. DiVito is a National Association of Corporate Directors Board Leadership Fellow. He served on the board of directors and chairman of the audit committee of Entertainment Gaming Asia Inc., a Nasdaq listed gaming company, from October 2005 until its acquisition in July 2017, and also served as a member of the board of directors of Riviera Holdings Corporation, formerly an AMEX listed gaming and resort company, from July 2002 until the consummation of a change in control of the corporation in March 2011.

Mr. DiVito has extensive knowledge of accounting and corporate governance issues from his experience serving on various corporate boards of directors and has extensive operational knowledge as a result of his experience as a senior executive officer of major corporations. As a result of these and other professional experiences, our Board has concluded that Mr. DiVito is qualified to serve as a director.

Stephen Cotton has served as President of the Company since May 2, 2018 and was promoted by the Board of Directors to President and CEO joining the Board as an Executive Director in January, 2019. Steve also served as Chief Commercial Officer of the Company from January 2015 to June, 2017. Previously, Steve co-founded Canara, Inc. (formerly Data Power Monitoring and IntelliBatt) in December 2001 and served as its Chief Executive Officer through the sale of the company to a private equity firm in June 2012, after which he served as Founder and Executive Chairman until April 2014. Canara (now part of CPG Data Center Innovators) is a global provider of stationary battery systems with integrated monitoring systems and cloud-based monitoring services to many of the largest data center operators. Prior to Canara, Steve led a team to commercialize Sendmail (the Worlds' most commonly used Internet email open source software) from free open source to a paid for commercial offering for Internet service providers and cloud offerings requiring mass email volume management including DoubleClick's standardization (acquired by Google). Steve's career began in the early days of voice messaging systems, including Octel Communications (through its $1.1B exit to Lucent Technologies in 1997 and now part of Avaya). From International Product Manager, to Product Manager for Multimedia, Steve then became the top market development person on a staff of 100+ for 2 years running while managing the AT&T Wireless account, then developing new wireless and local exchange carrier markets. His decision to convince AT&T Wireless (and ultimately other operators which followed) to offer voice messaging for free vs. charge, resulted in multi-million dollar sales of Octel equipment to each region. From April 2014 to January 2015 and June 2017 to April 2018, Steve managed his private investments.

Mr. Cotton has extensive managerial, operational and financial experience. As a result of these and other professional experiences, our Board has concluded that Mr. Cotton is qualified to serve as a director.

Molly Zhang (also known as Peifang Zhang) has served as a member of our board since March 2021. Prior to her transition to board services, Ms. Zhang served in various global leadership positions with Orica (ASX: ORI), a global mining services company, from 2011 to 2016, most recently as Vice President of Asset Management from 2015 to 2016. Ms. Zhang also served in various senior leadership positions with Dow Inc. (NYSE: DOW) from 1989 to 2009, most recently as Managing Director, SCG-Dow Group from 2009 to 2011 and as Business Vice President for Dow's Global Technology Licensing and Catalyst business from 2006 to 2009. Ms. Zhang is currently on the boards of Gates Industrial Corporation (NYSE: GTES), and Arch Resources (NYSE: Arch).

Ms. Zhang has extensive international business, operational and financial management experience, as well as services on various corporate boards of directors. As a result of these and other professional experience, our Board has concluded that Ms. Zhang is qualified as a director.

Eric Gangloff has served as a member of our Board since February 2025. Mr. Gangloff is an experienced investor and financial strategist with a background in capital markets, structured finance, and commercial lending. He is the Founder and CEO of Summit Investment Services, LLC, where he leads private commercial lending and investment strategies for growth-stage businesses. Previously, he served as Founder and CEO of Summit Alternative Investments, LLC where he oversaw the acquisition, origination, and portfolio management of over $1B of performing consumer loans. Mr. Gangloff then served as CEO and Chairman of AmeriFirst Home Improvement Finance, LLC, overseeing its national third-party loan servicing and consumer loan originations expansion before its acquisition by the country's largest privately held bank, First National Bank of Omaha, in 2022. Mr. Gangloff holds an MBA and a Master of Management in Manufacturing from Northwestern University's Kellogg School of Management and a Bachelor of Science in Electrical Engineering from Villanova University. He also serves as a Board Trustee for the Economic Development Authority of Western Nevada and as President and Chair of the Board at Sage Ridge School.

Mr. Gangloff brings deep expertise in corporate finance and investment management including relationships with numerous prominent financial institutions such as Goldman Sachs, Deutsche Bank, and First National Bank of Omaha, making him a valuable addition to Aqua Metals' Board as the company advances its clean battery recycling and critical minerals recovery strategy. He holds an MBA and a Master of Management in Manufacturing from Northwestern University's Kellogg School of Management and a Bachelor of Science in Electrical Engineering from Villanova University. He also serves as a Board Trustee for the Economic Development Authority of Western Nevada and as President and Chair of the Board at Sage Ridge School. As a result of these and other professional experience, our Board has concluded that Mr. Gangloff is qualified to serve as a director of our Company..

Steve Henderson has served as a member of our Board since February 2025. Mr. Henderson is an experienced executive and board advisor with over four decades of leadership in automotive, specialty chemicals, and global manufacturing. Mr. Henderson served as Executive Vice President at Leggett & Platt (NYSE: LEG), where he oversaw businesses generating more than half of the company's total revenue and EBITDA. Prior to that, he spent over 30 years at Dow Chemical, including eight years as President of Dow Automotive, where he led strategic investments in battery materials and EV technologies, securing partnerships with Tesla, Ford, and Magna. Mr. Henderson holds an MBA from the University of Notre Dame and a BS in Business Administration from Central Michigan University. He currently serves on the Board of Directors at L&L Products, advising on geographic and end-market expansion.

Steve brings deep expertise in global operations, strategic growth, and commercialization, making him a key addition to Aqua Metals' Board as the company scales its sustainable lithium battery recycling technology. He holds an MBA from the University of Notre Dame and a BS in Business Administration from Central Michigan University. He currently serves on the Board of Directors at L&L Products, advising on geographic and end-market expansion. As a result of these and other professional experience, our Board has concluded that Henderson is qualified to serve as a director of our Company.

Judd Merrill joined Aqua Metals in November 2018 from Klondex Mines Ltd., a Nevada based international mining company where he was Director of Finance/Accounting. Judd was responsible for overseeing the SEC compliance and the management of the Company's $200+ million budget over five subsidiaries. Before its acquisition by Hecla, Klondex was a $500 million dollar company traded on the New York Stock Exchange and the Toronto Stock Exchange. Prior to joining Klondex, Judd spent five years as Chief Financial Officer and Corporate Secretary of Comstock Mining Inc., a publicly traded gold company in Nevada where he was instrumental in establishing financial modeling and analytics. Judd was responsible for implementing procedures that reduced annual administrative costs by 50%, and handled vendor negotiations that conserved funds and managed liquidity. Judd worked directly with bankers, lenders, investment funds and major shareholders to lead the Company's fundraising and capital management activities. Judd also worked as a controller at Fronteer Gold Inc. and as an assistant controller at Newmont Mining Corp., where he developed strong financial planning, treasury and cash management experience in the mining sector. Judd began his career at Deloitte & Touche LLP and spent six years working in broader financial accounting, reporting and internal controls while managing corporate financial activities.

Judd holds a Bachelor of Science in accounting from Central Washington University and a Masters of Business Administration from the University of Nevada, Reno and is a certified public accountant.

Ben Taecker has over 20 years of experience in manufacturing and operations leadership and has been with Aqua Metals since January of 2017. Prior to relocating his family to the Tahoe-Reno area to join Aqua Metals, he spent six years in progressive leadership roles at the Johnson Controls Inc. ("JCI Power Systems Division" now Clarios) Lead Acid Battery Recycling Center in Florence, South Carolina and was a leader in the early planning, construction, commissioning, and scaling of that facility. Ben also led the engineering team to improve battery recycling processes in the new smelter which resulted in a 70% reduction in smelting emissions. Ben was instrumental in delivering a compliant plant for Clarios. He has experience in startups, environmental regulation compliance, process development and operational excellence. Ben has years of design management experience including complex design contracts for the U.S. military. He is highly motivated about being a key part of the new processes used by Aqua Metals to eliminate many of the safety and environmental hazards found at traditional smelters while making the purest lead in the world. Mr. Taecker has a Mechanical Engineering degree from South Dakota State University.

Audit Committee

Our Audit Committee currently consists of consists of Vincent L. DiVito, Steve Henderson and Molly Zhang, with Mr. DiVito serving as Chairperson. The composition of our Audit Committee meets the requirements for independence under current Nasdaq Stock Market listing standards and SEC rules and regulations. Each member of our Audit Committee meets the financial literacy requirements of the Nasdaq Stock Market listing standards. Mr. DiVito is an audit committee financial expert within the meaning of Item 407(d) of Regulation S-K under the Securities Act of 1933, as amended, or the Securities Act. Pursuant to its charter, our Audit Committee will, among other things:

- select a qualified firm to serve as the independent registered public accounting firm to audit our financial statements;
- discuss the scope and results of the audit with the independent registered public accounting firm, and review, with management and the independent registered public accounting firm, our interim and year-end operating results;
- develop procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- review our policies on risk assessment and risk management;
- review related-party transactions; and
- approve (or, as permitted, pre-approve) all audit and all permissible non-audit services, other than de minimis non-audit services, to be performed by the independent registered public accounting firm.

Our Audit Committee operates under a written charter that satisfies the applicable rules of the SEC and the listing standards of the Nasdaq Stock Market. During the year ended December 31, 2024, our Audit Committee met four times.

Process for Stockholders to Send Communications to our Board of Directors

Because we have always maintained open channels of communication with our stockholders, we do not have a formal policy that provides a process for stockholders to send communications to our Board. However, if a stockholder would like to send a communication to our Board, please address the letter to the attention of our corporate secretary, Judd Merrill, and it will be distributed to each director.

Code of Conduct

We have adopted a code of conduct for all employees, including the chief executive officer, principal financial officer and principal accounting officer or controller, and/or persons performing similar functions, which is available on our website, under the link entitled “Code of Conduct”.

Insider Trading Policy

We have adopted an Insider Trading Policy governing the purchase, sale, and other dispositions of our securities by our directors, officers, employees and consultants, including those persons serving in similar positions with our subsidiaries. Our Insider Trading Policy is reasonably designed to promote compliance with insider trading laws, rules and regulations, and any listing standards applicable to us and our directors, officers, employees and consultants. A copy of our Insider Trading Policy is filed as an exhibit to this report.

Limitation of Liability of Directors and Indemnification of Directors and Officers

The Delaware General Corporation Law provides that corporations may include a provision in their certificate of incorporation relieving directors of monetary liability for breach of their fiduciary duty as directors, provided that such provision shall not eliminate or limit the liability of a director (i) for any breach of the director’s duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for unlawful payment of a dividend or unlawful stock purchase or redemption, or (iv) for any transaction from which the director derived an improper personal benefit. Our First Amended and Restated Certificate of Incorporation provides that directors are not liable to us or our stockholders for monetary damages for breach of their fiduciary duty as directors to the fullest extent permitted by Delaware law. In addition to the foregoing, our Third Amended and Restated Bylaws provide that we may indemnify directors, officers, employees or agents to the fullest extent permitted by law and we have agreed to provide such indemnification to each of our directors.

The above provisions in our First Amended and Restated Certificate of Incorporation and Third Amended and Restated Bylaws and in the written indemnity agreements may have the effect of reducing the likelihood of derivative litigation against directors and may discourage or deter stockholders or management from bringing a lawsuit against directors for breach of their fiduciary duty, even though such an action, if successful, might otherwise have benefited us and our stockholders. However, we believe that the foregoing provisions are necessary to attract and retain qualified persons as directors.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Item 11. Executive Compensation

Summary Compensation Table

The following table sets forth the compensation awarded to, earned by or paid to those persons who served as our chief executive officer and our two other highest paid executive officers for the years ended December 31, 2024 and 2023 (in thousands).

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards (1) ($)	All Other Compensation ($)	Total ($)
Stephen Cotton, President and Chief Executive Officer	2024	511	358	568	23	1,460
	2023	488	553	1,405	17	2,463
Judd Merrill, Chief Financial Officer	2024	375	228	244	22	869
	2023	358	304	564	19	1,245
Benjamin Taecker, Chief Engineering and Operating Officer	2024	300	105	147	20	572
	2023	271	154	429	19	873

(1) Amounts shown in this column do not reflect dollar amounts actually received by our named executive officers. Instead, these amounts reflect the aggregate grant date fair value of each restricted common stock award computed in accordance with the provisions of FASB ASC Topic 718 (using the closing price of our common stock on the date of grant). Assumptions used in the calculation of these amounts are included in Note 13, Stockholders' Equity, of our audited consolidated financial statements for the year ended December 31, 2024.

Narrative Disclosure to Summary Compensation Table

Cotton Employment Agreement

Effective as of August 7, 2023, we entered into an amended and restated employment agreement with Mr. Cotton pursuant to which we agreed to pay Mr. Cotton a base salary of $491,400 effective as of March 5, 2023, along with reasonable and customary health insurance and other benefits, at our expense. Mr. Cotton will be eligible to receive short-term and long-term incentive bonuses with a target of 100% and 200% of his base salary, respectively, based on performance criteria approved by the compensation committee of our Board. In addition, the agreement provides Mr. Cotton with severance of two times his annual salary, a prorated bonus for the year of his termination and two years of health benefits in the event we terminate Mr. Cotton without cause or he resigns for good reason; provided, if he is terminated without cause or resigns for good reason within one year following a change of control of our Company, his severance will include two times his annual salary, two times his annual bonus, two years of health benefits and the immediate vesting of all unvested equity awards. The employment agreement provides for intellectual property assignment and confidentiality provisions that are customary in our industry.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 68,250 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Cotton will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Cotton's continuation of service to our Company.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 21,000 RSUs The RSUs will vest and settle based on the Company's common stock achieving absolute price hurdles based on a 5-day VWAP at any time over the three years from the date of grant, as follows: 10,500 RSUs will vest and settle upon achieving $2.50 per share; 5,250 RSUs will vest and settle upon achieving $4.00 per share; and 5,250 RSUs will vest and settle upon achieving $5.00 per share. The RSUs have been granted under the 2019 Plan and will expire on the third anniversary of the date of grant and subject to Mr. Cotton's continuation of service to our Company.

Effective as of December 31, 2023, the Compensation Committee of our Board amended the employment agreement with Mr. Cotton, to increase Mr. Cotton's salary to $511,056 per year.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 271,927 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Cotton will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Cotton's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 45,321 PSUs granted under the 2019 Plan. The PSUs were issued pursuant to a Performance Stock Unit Award Agreement pursuant to which Mr. Cotton will receive one share of our common stock upon settlement of each PSU. The PSUs vest based on the TSR, which is based on the percentage difference between the current year 30-day average VWAP closing stock price at 12/31/2024 and a future date 30-day average VWAP closing stock price. The grant includes three measurement points—December 31, 2025, December 31, 2026, and December 31, 2027—at which one-third of the PSUs will be evaluated. TSR is paid out based on where AQMS compares with our pier group based on the following percentiles (50% 25th percentile, 100% at 50th percentile, 200% at 75th percentile). The PSU vesting is subject to Mr. Cotton's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Cotton in the form of 45,321 PSUs granted under the 2019 Plan. The PSUs vests based on Stock price targets that can be achieved anytime during the period but no later than 3 years after the 12/31/2024. PSUs vests based upon hitting stock price hurdles (for five consecutive days closing prices)within three years of 12/31/2024. The stock vest in 3 hurdles, with 1/3 share vesting with a 50% increase in stock price, 1/3 vesting with a 100% increase in stock price and 1/3 vesting with a 150% increase in stock price. The base or starting stock price is calculated as the 30-day average VWAP closing price at 12/31/2024. The PSU vesting is subject to Mr. Cotton's continuation of service to our Company.

Merrill Employment Agreement

Effective as of August 7, 2023, we entered into an amended and restated employment agreement with Mr. Merrill pursuant to which we agreed to pay Mr. Merrill a base salary of $360,500 effective as of March 5, 2023, along with reasonable and customary health insurance and other benefits, at our expense. Mr. Merrill will be eligible to receive short-term and long-term incentive bonuses with a target of 75% and 125% of his base salary, respectively, based on performance criteria approved by the compensation committee of our Board. In addition, the agreement provides Mr. Merrill with severance of 18 months of his annual salary, a prorated bonus for the year of his termination and 18 months of health benefits in the event we terminate Mr. Merrill without cause or he resigns for good reason; provided, if he is terminated without cause or resigns for good reason within one year following a change of control of our Company, his severance will include 18 months times of his annual salary, 150% of his annual bonus, 18 months of health benefits and the immediate vesting of unvested equity awards. The employment agreement provides for intellectual property assignment and confidentiality provisions that are customary in our industry.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 31,281 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Merrill will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Merrill's continuation of service to our Company.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 2,500 RSUs The RSUs will vest and settle based on the Company's common stock achieving absolute price hurdles based on a 5-day VWAP at any time over the three years from the date of grant, as follows: 1,250 RSUs will vest and settle upon achieving $2.50 per share; 625 RSUs will vest and settle upon achieving $4.00 per share; and 625 RSUs will vest and settle upon achieving $5.00 per share. The RSUs have been granted under the 2019 Plan and will expire on the third anniversary of the date of grant and subject to Mr. Merrill's continuation of service to our Company.

Effective as of December 31, 2023, the Compensation Committee of our Board amended the employment agreement with Mr. Merrill, to increase Mr. Merrill's salary to $374,775 per year.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 124,633 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Merrill will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Merrill's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 20,772 PSUs granted under the 2019 Plan. The PSUs were issued pursuant to a Performance Stock Unit Award Agreement pursuant to which Mr. Merrill will receive one share of our common stock upon settlement of each PSU. The PSUs vest based on the TSR, which is based on the percentage difference between the current year 30-day average VWAP closing stock price at 12/31/2024 and a future date 30-day average VWAP closing stock price. The grant includes three measurement points—December 31, 2025, December 31, 2026, and December 31, 2027—at which one-third of the PSUs will be evaluated. TSR is paid out based on where AQMS compares with our pier group based on the following percentiles (50% 25th percentile, 100% at 50th percentile, 200% at 75th percentile). The PSU vesting is subject to Mr. Merrill's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Merrill in the form of 20,772 PSUs granted under the 2019 Plan. The PSUs vests based on Stock price targets that can be achieved anytime during the period but no later than 3 years after the 12/31/2024. PSUs vests based upon hitting stock price hurdles (for five consecutive days closing prices)within three years of 12/31/2024. The stock vest in 3 hurdles, with 1/3 share vesting with a 50% increase in stock price, 1/3 vesting with a 100% increase in stock price and 1/3 vesting with a 150% increase in stock price. The base or starting stock price is calculated as the 30-day average VWAP closing price at 12/31/2024. The PSU vesting is subject to Mr. Merrill's continuation of service to our Company.

Taecker Employment Agreement

In August 2021, we entered executive employment agreement with Mr. Taecker. Pursuant to the employment agreement, we initially agreed to compensate Mr. Taecker at the annual rate of $250,000. Mr. Taecker will be eligible to receive short-term and long-term incentive bonuses of up to 50% and 100% of his base salary, respectively, based on performance criteria approved by the compensation committee of our board of directors. The employment agreement entitles Mr. Taecker to reasonable and customary health insurance and other benefits, at our expense, and severance equal to 150% of his then annual salary and target annual bonus amount in the event of his termination for good reason following a change-in-control of the Company. Effective as of January 2, 2022, the Compensation Committee of our Board amended the employment agreement with Mr. Taecker, to increase Mr. Taecker's salary to $262,500 per year.

Effective as of August 7, 2023, we entered into an amended and restated employment agreement with Mr. Taecker pursuant to which we agreed to pay Mr. Taecker a base salary of $273,000 effective as of March 5, 2023, along with reasonable and customary health insurance and other benefits, at our expense. Mr. Tacker will be eligible to receive short-term and long-term incentive bonuses with a target of 50% and 100% of his base salary, respectively, based on performance criteria approved by the compensation committee of our Board. In addition, the agreement provides Mr. Taecker with severance of 12 months of his annual salary, a prorated bonus for the year of his termination and 12 months of health benefits in the event we terminate Mr, Taecker without cause or he resigns for good reason; provided, if he is terminated without cause or resigns for good reason within one year following a change of control of our Company, his severance will include 18 months times of his annual salary, 150% of his annual bonus, 18 months of he

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 18,958 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Taecker will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Taecker's continuation of service to our Company.

On December 12, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 141 RSUs The RSUs will vest and settle based on the Company's common stock achieving absolute price hurdles based on a 5-day VWAP at any time over the three years from the date of grant, as follows: 71 RSUs will vest and settle upon achieving $2.50 per share; 35 RSUs will vest and settle upon achieving $4.00 per share; and 35 RSUs will vest and settle upon achieving $5.00 per share. The RSUs have been granted under the 2019 Plan and will expire on the third anniversary of the date of grant and subject to Mr. Taecker's continuation of service to our Company.

On December 29, 2023, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 6,500 RSUs granted under the 2019 Plan. The RSUs were, issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Taecker will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Taecker's continuation of service to our Company.

Effective as of December 31, 2023, the Compensation Committee of our Board amended the employment agreement with Mr. Taecker, to increase Mr. Taecker's salary to $300,300 per year.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 79,893 RSUs granted under the 2019 Plan. The RSUs were issued pursuant to a Restricted Stock Unit Award Agreement pursuant to which Mr. Taecker will receive one share of our common stock upon settlement of each RSU. The RSUs will settle in six equal semi-annual installments over a three-year period, subject to Mr. Taecker's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 13,315 PSUs granted under the 2019 Plan. The PSUs were issued pursuant to a Performance Stock Unit Award Agreement pursuant to which Mr. Taecker will receive one share of our common stock upon settlement of each PSU. The PSUs vest based on the TSR, which is based on the percentage difference between the current year 30-day average VWAP closing stock price at 12/31/2024 and a future date 30-day average VWAP closing stock price. The grant includes three measurement points—December 31, 2025, December 31, 2026, and December 31, 2027—at which one-third of the PSUs will be evaluated. TSR is paid out based on where AQMS compares with our pier group based on the following percentiles (50% 25th percentile, 100% at 50th percentile, 200% at 75th percentile). The PSU vesting is subject to Mr. Taecker's continuation of service to our Company.

On December 19, 2024, the Compensation Committee of our Board also approved a bonus to Mr. Taecker in the form of 13,315 PSUs granted under the 2019 Plan. The PSUs vests based on Stock price targets that can be achieved anytime during the period but no later than 3 years after the 12/31/2024. PSUs vests based upon hitting stock price hurdles (for five consecutive days closing prices) within three years of 12/31/2024. The stock vest in 3 hurdles, with 1/3 share vesting with a 50% increase in stock price, 1/3 vesting with a 100% increase in stock price and 1/3 vesting with a 150% increase in stock price. The base or starting stock price is calculated as the 30-day average VWAP closing price at 12/31/2024. The PSU vesting is subject to Mr. Taecker's continuation of service to our Company.

Potential Payments upon Termination

As noted above, the employment agreements for Mr. Cotton, Merrill, and Taecker entitle each officer to a severance payment and related benefits in the event of our termination of their employment without cause or their resignation for good reason.

If a qualifying involuntary termination had occurred on December 31, 2024, Mr. Cotton, Merrill, and Taecker would have been eligible to receive the following amounts:

Name	Base Salary ($)	Prorated Annual Bonus ($)	Health Insurance Premiums (1) ($)	Total ($)
Stephen Cotton	1,022	511	51	$ 1,584
Judd Merrill	562	281	42	$ 885
Benjamin Taecker	300	150	24	$ 474

(1) Calculated using the monthly COBRA amount based on health insurance elections at December 31, 2024.

Outstanding Equity Awards at December 31, 2024

	Option Awards				Stock Awards	
Name	Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Unexercisable	Option Exercise Price	Option Expiration Date	Number of Units of Stock that have not vested	Market value of Units of Stock that have not vested
Stephen Cotton					6,020	$ 15,170(1)
					31,765	$ 80,048(2)
					56,880	$ 143,338(3)
					271,927	$ 685,256(4)
					21,000	$ 52,920(5)
					45,321	$ 114,209(6)
					45,321	$ 114,209(7)
Judd Merrill					2,759	$ 6,953(1)
					14,556	$ 36,681(2)
					26,070	$ 65,696(3)
					124,634	$ 314,078(4)
					2,500	$ 6,300(5)
					20,772	$ 52,345(6)
					20,772	$ 52,345(7)
Benjamin Taecker					1,673	$ 4,216(1)
					8,822	$ 22,231(2)
					15,800	$ 39,816(3)
					79,893	$ 201,330(4)
					141	$ 355(5)
					13,315	$ 33,554(6)
					13,315	$ 33,554(7)
					5,418	$ 13,653(8)

(1) These RSUs were awarded on December 13, 2021. The RSUs vest in six equal semi-annual installments over a three-year period.

(2) These RSUs were awarded on December 12, 2022. The RSUs vest in six equal semi-annual installments over a three-year period.

(3) These RSUs were awarded on December 12, 2023. The RSUs vest in six equal semi-annual installments over a three-year period.

(4) These RSUs were awarded on December 19, 2024. The RSUs vest in six equal semi-annual installments over a three-year period.

(5) These PSUs were awarded on December 12, 2023. The RSUs will vest and settle based on the Company's common stock achieving absolute price hurdles based on a 5-day VWAP at any time over the three years from the date of grant, as follows: one half of the RSUs will vest and settle upon achieving $2.50 per share; one quarter of the RSUs will vest and settle upon achieving $4.00 per share; and one quarter of the RSUs will vest and settle upon achieving $5.00 per share.

(6) These PSUs were awarded on December 19, 2024. The PSUs vest based on the TSR, which is based on the percentage difference between the current year 30-day average VWAP closing stock price at 12/31/2024 and a future date 30-day average VWAP closing stock price. The grant includes three measurement points—December 31, 2025, December 31, 2026, and December 31, 2027—at which one-third of the PSUs will be evaluated. TSR is paid out based on where AQMS compares with our pier group based on the following percentiles (50% 25th percentile, 100% at 50th percentile, 200% at 75th percentile).

(7) These PSUs were awarded on December 19, 2024. The PSUs vests based on Stock price targets that can be achieved anytime during the period but no later than 3 years after the 12/31/2024. PSUs vests based upon hitting stock price hurdles (for five consecutive days closing prices) within three years of 12/31/2024. The stock vest in 3 hurdles, with 1/3 share vesting with a 50% increase in stock price, 1/3 vesting with a 100% increase in stock price and 1/3 vesting with a 150% increase in stock price. The base or starting stock price is calculated as the 30-day average VWAP closing price at 12/31/2024.

(8) These RSUs were awarded on December 29, 2023. The RSUs vest in six equal semi-annual installments over a three-year period.

Pay vs. Performance

The following table sets forth compensation information for our chief executive officer, referred to below as our CEO, and our other named executive officers, or NEOs, for purposes of comparing their compensation to the value of our shareholders' investments and our net income, calculated in accordance with SEC regulations, for fiscal years 2024, 2023 and 2022.

Year	Summary Compensation Table Total for CEO	Compensation Actually Paid to CEO	Average Summary Compensation Table Total for Non-CEO NEOs	Average Compensation Actually Paid to Non-CEO NEOs	Total Shareholder Return	Net Income
	(1)	(2)	(3)	(4)	(5)	
2024	$ 1,460,000	$ 869,740	$ 720,500	$ 737,667	$ 10.24	$ (24,555,000)
2023	$ 2,463,000	$ 1,447,590	$ 1,009,333	$ 725,337	$ 24.92	$ (23,938,000)
2022	$ 1,782,375	$ 2,393,412	$ 782,745	$ 994,189	$ 40.98	$ (15,431,000)

1. The dollar amounts reported are the amounts of total compensation reported for our CEO, Mr. Cotton, in the Summary Compensation Table for fiscal years 2024 and 2023.
2. The dollar amounts reported represent the amount of "compensation actually paid", as computed in accordance with SEC rules. The dollar amounts reported are the amounts of total compensation reported for Mr. Cotton during the applicable year, but also include (i) the year-end value of equity awards granted during the reported year, (ii) the change in the value of equity awards that were unvested at the end of the prior year, measured through the date the awards vested, or through the end of the reported fiscal year, and (iii) value of equity awards issued and vested during the reported fiscal year. See Table below for further information.
3. The dollar amounts reported are the average of the total compensation reported for our NEOs, other than our CEO, namely Mr. Merrill and Mr. Taecker in the Summary Compensation Table for fiscal year 2024. Mr. Merrill and Mr. Taecker, and Mr. McMurtry (Former CBO) were included in 2023 and 2022.
4. The dollar amounts reported represent the average amount of "compensation actually paid", as computed in accordance with SEC rules, for our NEOs, other than our CEO. The dollar amounts reported are the average of the total compensation reported for our NEOs, other than our CEO in the Summary Compensation Table for fiscal years 2023, 2022 and 2021, but also include (i) the year-end value of equity awards granted during the reported year, (ii) the change in the value of equity awards that were unvested at the end of the prior year, measured through the date the awards vested, or through the end of the reported fiscal year, and (iii) value of equity awards issued and vested during the reported fiscal year. See Table below for further information.
5. Reflects the cumulative shareholder return, computed in accordance with SEC rules, as of the end of each fiscal year assuming (i) an investment of $100 in our common shares at a price per share equal to $24.60, the closing price of our common stock on December 31, 2021 and (ii) the valuation of those shares as of the last trading day in 2022, 2023 and 2024 based on the closing prices for our common stock as of the those dates of $25.00, $15.20 and $2.52, respectively.

CEO Equity Award Adjustment Breakout

Year	Summary Compensation Table Total	Grant Date Fair Value of Equity Awards Granted in Fiscal Year	Change in Pension Value	Pension Service Cost and Associated Prior Service Cost	Fair Value at Fiscal Year End of Outstanding and Unvested Equity Awards Granted in the Fiscal Year	Change in Fair Value of Outstanding and Unvested Equity Awards Granted in Prior Fiscal Years	Fair Value at Vesting of Equity Awards Granted and Vested in the Fiscal Year	Change in Fair Value as of the Vesting Date of Equity Awards Granted in Prior Fiscal Years that Vested in the Fiscal Year	Fair Value as of the Prior Fiscal Year End of Equity Awards Granted in Prior Fiscal Years that Failed to Meet Vesting Conditions in the Fiscal Year	Value of Dividends or Other Earnings Paid on Equity Awards Not Otherwise Reflected in Total Compensation	Compensation Actually Paid
					(1)	(2)	(3)	(4)	(5)	(6)	
2024	$ 1,460,000	$ (568,000)	$ 0	$ 0	$ 1,633,561	$ (1,409,158)	$ 0	$ (246,663)	$ 0	$ 0	$ 869,740
2023	$ 2,463,000	$ (1,405,000)	$ 0	$ 0	$ 1,248,224	$ (775,034)	$ 0	$ (83,599)	$ 0	$ 0	$ 1,447,590
2022	$ 1,782,375	$ (825,375)	$ 0	$ 0	$ 1,588,236	$ 31,563	$ 0	$ (183,388)	$ 0	$ 0	$ 2,393,412

(1) Add the fair value as of the end of the covered fiscal year of all awards granted during the covered fiscal year that are outstanding and unvested as of the end of the covered fiscal year;
(2) Add the amount equal to the change as of the end of the covered fiscal year (from the end of the prior fiscal year) in fair value (whether positive or negative) of any awards granted in any prior fiscal year that are outstanding and unvested as of the end of the covered fiscal year;
(3) Add, for awards that are granted and vest in the same year, the fair value as of the vesting date;
(4) Add the amount equal to the change as of the vesting date (from the end of the prior fiscal year) in fair value (whether positive or negative) of any awards granted in any prior fiscal year for which all applicable vesting conditions were satisfied at the end of or during the covered fiscal year;
(5) Subtract, for any awards granted in any prior fiscal year that fail to meet the applicable vesting conditions during the covered fiscal year, the amount equal to the fair value at the end of the prior fiscal year; and
(6) Add the dollar value of any dividends or other earnings paid on stock or option awards in the covered fiscal year prior to the vesting date that are not otherwise included in the total compensation for the covered fiscal year.

Non-CEO NEO Equity Award Adjustment Breakout

Year	Summary Compensation Table Total	(Minus): Grant Date Fair Value of Equity Awards Granted in Fiscal Year	(Minus): Change in Pension Value	Plus: Pension Service Cost and Associated Prior Service Cost	Plus: Fair Value at Fiscal Year End of Outstanding and Unvested Equity Awards Granted in the Fiscal Year (1)	Plus/(Minus): Change in Fair Value of Outstanding and Unvested Equity Awards Granted in Prior Fiscal Years (2)	Plus: Fair Value at Vesting of Equity Awards Granted and Vested in the Fiscal Year (3)	Plus/(Minus): Change in Fair Value as of the Vesting Date of Equity Awards Granted in Prior Fiscal Years that Vested in the Fiscal Year (4)	(Minus): Fair Value as of the Prior Fiscal Year End of Equity Awards Granted in Prior Fiscal Years that Failed to Meet Vesting Conditions in the Fiscal Year (5)	Plus: Value of Dividends or Other Earnings Paid on Equity Awards Not Otherwise Reflected in Total Compensation (6)	Compensation Actually Paid
2024	$ 720,500	$ (195,500)	$ 0	$ 0	$ 797,467	$ (489,252)	$ 0	$ (95,548)	$ 0	$ 0	$ 737,667
2023	$ 1,009,333	$ (460,000)	$ 0	$ 0	$ 410,807	$ (222,200)	$ 0	$ (12,603)	$ 0	$ 0	$ 725,337
2022	$ 782,745	$ (277,411)	$ 0	$ 0	$ 519,289	$ 5,846	$ 0	$ (36,278)	$ 0	$ 0	$ 994,189

(1) Add the fair value as of the end of the covered fiscal year of all awards granted during the covered fiscal year that are outstanding and unvested as of the end of the covered fiscal year;
(2) Add the amount equal to the change as of the end of the covered fiscal year (from the end of the prior fiscal year) in fair value (whether positive or negative) of any awards granted in any prior fiscal year that are outstanding and unvested as of the end of the covered fiscal year;
(3) Add, for awards that are granted and vest in the same year, the fair value as of the vesting date;
(4) Add the amount equal to the change as of the vesting date (from the end of the prior fiscal year) in fair value (whether positive or negative) of any awards granted in any prior fiscal year for which all applicable vesting conditions were satisfied at the end of or during the covered fiscal year;
(5) Subtract, for any awards granted in any prior fiscal year that fail to meet the applicable vesting conditions during the covered fiscal year, the amount equal to the fair value at the end of the prior fiscal year; and
(6) Add the dollar value of any dividends or other earnings paid on stock or option awards in the covered fiscal year prior to the vesting date that are not otherwise included in the total compensation for the covered fiscal year.

Relationship between Pay and Performance

"Compensation actually paid" to our CEO decreased from $2,393,412 in 2022 to $1,447,590 in 2023, and subsequently decreased to $869,740 in 2024. Similarly, average “compensation actually paid” to our non-CEO NEOs decreased from $994,189 in 2022 to $725,337 in 2023, and then subsequently increased to $737,667 in 2024. These aforementioned changes in "compensation actually paid" are in line with the changes in our total shareholder return (TSR) as set forth in the above table: our TSR decreased by 39% between 2022 and 2023, and our TSR decreased by 59% between 2023 and 2024. In addition, the changes in "compensation actually paid" are in line with the changes in our net loss: that is, our net loss increased by 55% from $(15,431,000) in 2022 to $(23,938,000) in 2023, and increased by 2% to $(23,996,000) in 2023.

Short-Term Incentive Plan (STIP)

Our Board has approved, and our Compensation Committee employs, an informal Short-Term Incentive Plan, or STIP, in determining compensation for our NEOs. The STIP is focused on delivering the Company’s annual “SMART” objectives approved by the Board. The goals are objective, measurable and rigorous. Each of our NEOs participated in the STIP program. Compensation Committee discussion and feedback on the progress against the annual objectives is done at mid-year and at year-end. The year-end status is the basis for the STIP payout. Full year performance is determined by a rating (range 1 to 5) multiplied by the NEOs target bonus.

Long-Term Incentive Plan (LTIP)

Our Board has also approved, and our Compensation Committee employs, an informal Long-Term Incentive Plan, or LTIP in determining compensation for our NEOs. The LTIP is a long-term (3-year vesting) incentive program focused on improving the value of the Company over time and incentivizing the retention of employees as they benefit from the Company’s growth and value creation. The LTIP is granted based on performance. Restricted stock units (RSUs) that vest over 3-years were granted in December based on Company performance on “SMART” objectives approved by the Board.

Process for Determining Executive Compensation

Use of Peer Group and Benchmarking

Our compensation Peer Group was developed by identifying companies reasonably similar to us in terms of industry profile, business model, and size (market capitalization given our pre-revenue status). Given the limited number of directly comparable U.S. publicly traded sustainable lithium-ion battery recycling companies, our peer group was expanded to include broader recycling, battery manufacturing, battery materials, and patented technology companies. Below is a list of the companies the Compensation Committee approved for inclusion in our Compensation Peer Group with respect to executive officer compensation levels:

374Water, Inc.	CECO Environmental Corp.	ESS Tech, Inc.
American Battery Technology Company	Comstock Inc.	Perma-Fix Environmental Services, Inc.
Aris Water Solutions, Inc.	Dragonfly Energy Holdings Corp.	Quest Resource Holding Corp.
Arteris, Inc.	Energous Corp.	Smith Micro Software, Inc.
Atomera Inc.	Eos Energy Enterprises, Inc.	Telos Corp.

The positions of our named executive officers were compared to similar positions in our compensation Peer Group, and the compensation levels for comparable positions in the Peer Group were reviewed for guidance in determining:

- base salaries;
- target bonus opportunity under our short-term incentive plan; and
- the amount of equity awards under our long-term incentive plan.

The Compensation Committee approves base salaries, STIP awards and LTIP awards on a case-by-case basis for each NEO, taking into account, among other things, individual and Company performance, role expertise and experience and the competitive market, advancement potential, recruiting needs, internal equity, retention requirements, succession planning, and best compensation governance practices. The Compensation Committee does not tie individual compensation to specific target percentiles, but rather reviews the range of market data as one input in informing pay decisions.

Compensation of Directors

We do not compensate any of our executive directors for their service as a director and we have not adopted any policies or plans with regard to the compensation of our independent directors. However, our Board has adopted the following director compensation policy:

- The Chairman will receive an annual fee of $150,000; each director other than the Chairman will receive an annual fee of $90,000; each Committee person other than the Committee Chair will receive an annual fee of $7,500 per Committee position, except for the Audit Committee position who shall be paid $10,000 annually; and each Committee Chair will receive an annual fee of $10,000 per Chair, except for the Chair of the Audit Committee shall be paid $15,000. Director compensation can either be payable in cash or payable in AQMS shares based on an election made by each Board Member. The number of shares to be issued is determined by the total fee divided by the closing spot price of the last trading day of the respective quarter being paid.
- An annual grant of $75,000 worth of restricted stock units to the Chairman, $60,000 worth of restricted stock units to the Audit Committee Chairman and $50,000 worth of restricted stock units to all other independent directors. Each board member is only eligible to be granted one allotment of annual restricted stock units.

The following table sets forth the compensation we paid to our independent directors during the year ended December 31, 2024. In reviewing the table, please note that Edward Smith resigned from our Board in August 2024 and Mr. Yi resigned from the board in May 2024.

Name	Fees Earned or Paid in Cash ($)	Option Awards (1) ($)	Stock Awards (2) ($)	All Other Compensation ($)	Total ($)
Vincent DiVito	$ 188	$ -	$ 40	$ -	$ 228
Molly Zhang	$ 111	$ -	$ 44	$ -	$ 155
Edward Smith	$ 83	$ -	$ 14	$ -	$ 97
Sung Yi	$ -	$ -	$ -	$ -	$ -

(1) The dollar amounts in Option Awards column above reflect the values of options as of the grant date in accordance with ASC 718,*Compensation-Stock Compensation* and, therefore, do not necessarily reflect actual benefits received by the individuals. Assumptions used in the calculation of these amounts are included in Note 13 to our audited consolidated financial statements for the year ended December 31, 2024.

(2) Amounts shown in this column do not reflect dollar amounts actually received by our directors. Instead, these amounts reflect the aggregate grant date fair value of each restricted common stock award computed in accordance with the provisions of FASB ASC Topic 718 (using the closing price of our common stock on the date of grant). Assumptions used in the calculation of these amounts are included in Note 13, Stockholders' Equity, of our audited consolidated financial statements for the year ended December 31, 2024.

Stock Ownership Guidelines

In 2023, the Compensation Committee approved a stock ownership guideline for the board pursuant to which non-employee directors shall not sell shares of the Company's common stock if after such sale the director would hold shares of the Company's common stock having a current market value of less than three times the director's annual base cash board fee.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The following table sets forth certain information regarding the beneficial ownership of our common stock as of February 28, 2025 by:

- each person who is known by us to be the beneficial owner of more than five percent (5%) of our issued and outstanding shares of common stock;
- each of our directors and executive officers; and
- all directors and executive officers as a group.

The beneficial ownership of each person was calculated based on 8,292,077 common shares issued and outstanding as of February 28, 2025. The SEC has defined "beneficial ownership" to mean more than ownership in the usual sense. For example, a person has beneficial ownership of a share not only if he owns it, but also if he has the power (solely or shared) to vote, sell or otherwise dispose of the share. Beneficial ownership also includes the number of shares that a person has the right to acquire within 60 days, pursuant to the exercise of options or warrants or the conversion of notes, debentures or other indebtedness. Two or more persons might count as beneficial owners of the same share. Unless otherwise indicated, the address for each reporting person is 5370 Kietzke Lane, #201. Reno, Nevada 89511.

Name of Executive Officer or Directors	Number of Shares	Percentage Owned
Stephen Cotton	204,745	2.5%
Judd Merrill	59,218	*%
Ben Taecker	24,798	*%
Vincent L. DiVito	28,296	*%
Molly Zhang	25,136	*%
Eric Gangloff	57,200	*%
Steven K. Henderson	0	
Directors and executive officers as a group	342,193	4.1%

* Less than 1%.

Name and Address of 5% + Holders	Number of Shares	Percentage Owned
Alex Cushner 30 Sarah Drive Mill Valley, CA 94941	834,032(1)	10.1%
Robert W. Baird & Co. Incorporated 777 East Wisconsin Avenue Milwaukee, Wisconsin 53202	371,071	4.5%

(1) According to a Schedule 13G filed with the SEC on February 14, 2025 by Mr. Cushner, Mr. Cushner is deemed to beneficially own 809,312 shares of common stock held in client accounts over which he holds discretionary authority. These shares are also reported as beneficially owned by Robert W. Baird & Co. Incorporated, Mr. Cushner's employer, as set forth in a Schedule 13G filed by Robert W. Baird & Co. Incorporated with the SEC on February 11, 2025.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Related Party Transactions, Promoters and Director Independence

On February 15, 2021, we entered into a series of definitive agreements with LINICO Corporation, a Nevada corporation, or LINICO, pursuant to which we leased, with an option to purchase, our recycling facility at the Tahoe Reno Industrial Center, or TRIC, located in McCarran, Nevada, and acquired an approximate 11% equity interest in LINICO. Comstock Inc., a Nevada corporation (NYSE-MKT: LODE), is the beneficial owner of approximately 89% of the common shares of LINICO. Our Chief Financial Officer, Judd Merrill, served as a member of the board of directors of Comstock Inc. from September 2020 to April 5, 2023.

In December 2023, we exited our proposed collaboration with LINICO by way of the sale of our LINICO common stock to LINICO's parent, Comstock, Inc., for $600,000.

In February 2023, we entered into a $3 million secured debt facility with Summit Investment Services, LLC, an entity controlled by a member of our board of directors, Eric Gangloff, The indebtedness under the Summit debt facility is secured by all of our assets, with a few exceptions. All principal and interest under the Summit debt facility is due and payable on April 27, 2025. Please see Note 11 to our audited consolidated financial statements for a more complete description of the Summit debt facility.

On December 18, 2024, we entered into a Securities Purchase Agreement with eight accredited investors, including all of our current executive officers and most of our directors, in connection with a private placement of secured promissory notes ("Notes") in the aggregate principal amount of $1,500,000 and common stock purchase warrants ("Warrants) to purchase 750,000 shares of our common stock. The Securities Purchase Agreement includes customary representations, warranties, and covenants by the investors and us. Certain of our current officers and directors of the Company purchased Notes in the aggregate amount of $1,200,000.

Since January 1, 2023, we have not entered into any other transactions where the amount exceeded the lesser of $120,000 or one percent (1%) of the average of our total assets at December 31, 2024 and 2023 with any of our directors, officers, beneficial owners of five percent or more of our common shares, any immediate family members of the foregoing or entities of which any of the foregoing are also officers or directors or in which they have a material financial interest, other than the compensatory arrangements with our executive officers and directors described elsewhere in this report.

We have adopted a policy that any transactions with directors, officers, beneficial owners of five percent or more of our common shares, any immediate family members of the foregoing or entities of which any of the foregoing are also officers or directors or in which they have a financial interest, will only be on terms consistent with industry standards and approved by a majority of the disinterested directors of our Board. The policy has been formally adopted by resolution of our Board.

Our Board may establish the authorized number of directors from time to time by resolution. Our Board currently consists of five (5) authorized members. During the year ended December 31, 2024, our Board met seven times. All of our Board members attended at least 75% of the aggregate of all Board meetings and all meetings of the Board committees upon which they served while they were on the Board during fiscal 2024. Our Board does not have a policy regarding Board members' attendance at meetings of our stockholders and all members of our Board attended our prior year's annual meeting of stockholders.

Generally, under the listing requirements and rules of the Nasdaq Stock Market, independent directors must comprise a majority of a listed company's board of directors. Our Board has undertaken a review of its composition, the composition of its committees and the independence of each director. Our Board has determined that, other than Mr. Cotton, by virtue of his executive officer position, and Mr. Gangloff, by virtue of his $3,000,000 note payable with the Company., none of our current directors or director nominees has a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that each

is “independent” as that term is defined under the applicable rules and regulations of the SEC and the listing requirements and rules of the Nasdaq Stock Market. In making this determination, our Board considered the current and prior relationships that each nonemployee director nominee has with our Company and all other facts and circumstances our Board deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each nonemployee director nominee. Accordingly, a majority of our directors are independent, as required under applicable Nasdaq Stock Market rules, as of the date of this report.

Item 14. Principal Accountant Fees and Services

Fees Incurred for Services by Principal Accountant

The following table sets forth the aggregate fees billed to us for services rendered to us for the years ended December 31, 2024 and 2023 by our former independent registered public accounting firm, Armanino LLP, and our current independent registered public accounting firm, Forvis LLP, for the audit of our consolidated financial statements for the years ended December 31, 2024 and 2023, and assistance with the reporting requirements thereof, the review of our condensed consolidated financial statements included in our quarterly reports on Form 10-Q, the filing of our Form 8-K, and preparation of (Federal and State) Income Tax returns (in thousands).

	2024	2023
Audit Fees	$ 412	$ 292(3)
Audit - Related Fees (1)	0	46
Tax Fees (2)	0	46
	$ 386	$ 384

(1) Includes fees related to equity offerings

(2) Includes fees related to annual tax return preparation

(3) Armanino LLP audit fees were $160,000. Forvis LLP audit fees were $132,000.

Pre-Approval Policies and Procedures

The Audit Committee has responsibility for selecting, appointing, evaluating, compensating, retaining and overseeing the work of the independent registered public accounting firm. In recognition of this responsibility, the Audit Committee has established policies and procedures in its charter regarding pre-approval of any audit and non-audit service provided to the Company by the independent registered public accounting firm and the fees and terms thereof.

The Audit Committee considered the compatibility of the provision of other services by its registered public accountant with the maintenance of their independence. The Audit Committee approved all audit and non-audit services provided by Forvis and Armanino in 2024 and 2023.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Financial statements

Reference is made to the Index and Financial Statements under Item 8 in Part II hereof where these documents are listed.

(b) Financial statement schedules

Financial statement schedules are either not required or the required information is included in the consolidated financial statements or notes thereto filed under Item 8 in Part II hereof.

(c) Exhibits

The exhibits to this Annual Report on Form 10-K are set forth below. The exhibit index indicates each management contract or compensatory plan or arrangement required to be filed as an exhibit.

Number	Exhibit Description	Method of Filing
3.1	First Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 9, 2015.
3.2	Third Amended and Restated Bylaws of the Registrant	Incorporated by reference from the Registrant's Current Report on Form 8-K filed on January 21, 2022.
3.3	Certificate of Amendment to First Amended and Restated Certificate of Incorporation of the Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 25, 2015.
3.4	Certificate of Amendment to the First Amended and Restated Certificate of Incorporation	Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q filed on May 9, 2019.
3.5	Certificate of Amendment to the First Amended and Restated Certificate of Incorporation	Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q filed on July 21, 2022.
3.6	Certificate of Amendment to the First Amended and Restated Certificate of Incorporation	Incorporated by reference from the Registrant's Current Report on Form 8-K filed on November 1, 2024.
4.1	Specimen Certificate representing shares of common stock of Registrant	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on July 20, 2015.
4.2	Underwriting Agreement dated as of July 18, 2023 between the Company and The Benchmark Company, LLC	Incorporated by reference from the Registrant's Current Report on Form 8-K filed July 19, 2023.
4.3	Warrant dated August 4, 2023 issued to Network 1 Financial Services, Inc.	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
4.4	Warrant dated July 21, 2023 issued to The Benchmark Company, LLC	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
4.5	Warrant dated January 22, 2019 issued to National Securities Corporation	Incorporated by reference from the Registrant's Current Report on Form 8-K filed January 17, 2019.
4.6	Form of Non-Redeemable Common Stock Purchase Warrant issued to investors in May 2024 public offering	Incorporated by reference from the Registrant's Current Report on Form 8-K filed May 15, 2024.
4.7	Form of Warrant Agency Agreement to be entered into between the Company and VStock Transfer, LLC	Incorporated by reference from the Registrant's Current Report on Form 8-K filed May 15, 2024.
4.8	Form of Underwriter Warrant to be issued to the Benchmark Company, LLC in May 2024 public offering	Incorporated by reference from the Registrant's Current Report on Form 8-K filed May 15, 2024.
4.9	Form of Common Stock Purchase Warrant issued to investors in December 2024 private placement	Filed electronically herewith.
4.10	Description of Capital Stock	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on February 25, 2022.
10.1	Form of Indemnification Agreement entered into by the Registrant with its Officers and Directors	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed on June 9, 2015.
10.2	Loan Agreement dated January 27, 2023 with Summit Investment Services, LLC	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.

10.3*	Aqua Metals, Inc. Officer and Director Share Purchase Plan	Incorporated by reference from the Registrant's Quarterly Report on Form 10-Q filed on November 9, 2017.
10.4*	Aqua Metals 2019 Stock Incentive Plan	Incorporated by reference from the Registrant's Definitive Proxy Statement filed on March 4, 2019.
10.5*	Loan Agreement dated September 30, 2022 with Summit Investment Services, LLC	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 9, 2023.
10.6*	Amended and Restated Executive Employment Agreement dated August 7, 2023 between the Registrant and Stephen Cotton	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
10.7*	Amended and Restated Executive Employment Agreement dated August 7, 2023 between the Registrant and Judd Merrill	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
10.8*	Amended and Restated Executive Employment Agreement dated August 7, 2023 between the Registrant and Benjamin Taecker	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
10.9*	Amended and Restated Aqua Metals 2022 Employee Stock Purchase Plan	Incorporated by reference from the Registrant's Definitive Proxy Statement filed on April 5, 2023.
10.10	Form of Secured Promissory Note issued in December 2024 Private Placement	Filed electronically herewith.
10.11	Security Agreement dated December 18, 2024 between the Registrant and Purchasers of Notes in the December 2024 Private Placement.	Filed electronically herewith.
19.1	Aqua Metals Insider Trading Policy	Filed electronically herewith.
21.1	List of subsidiaries of Registrant.	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
23.2	Consent of Forvis, LLP, Independent Registered Public Accounting Firm.	Filed electronically herewith.
31.1	Certification under Section 302 of the Sarbanes-Oxley Act of 2002.	Filed electronically herewith.
31.2	Certification under Section 302 of the Sarbanes-Oxley Act of 2002.	Filed electronically herewith.
32.1	Certifications Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350.	Filed electronically herewith.
99.1	Aqua Metals Executive Officer Clawback Policy	Incorporated by reference from the Registrant's Annual Report on Form 10-K filed on March 28, 2024.
101.INS	Inline XBRL Instance Document	Filed electronically herewith
101.SCH	Inline XBRL Taxonomy Extension Schema Document	Filed electronically herewith
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	Filed electronically herewith
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	Filed electronically herewith
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	Filed electronically herewith
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	Filed electronically herewith
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).	Filed electronically herewith

* Indicates management compensatory plan, contract or arrangement.

Item 16. Form 10-K Summary

Not provided

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this annual report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

AQUA METALS, INC.

Date: March 31, 2025

By: /s/ *Stephen Cotton*
Stephen Cotton,
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ *Stephen Cotton* Stephen Cotton	President, Chief Executive Officer and Director *(Principal Executive Officer)*	March 31, 2025
/s/ *Judd Merrill* Judd Merrill	Chief Financial Officer *(Principal Financial and Accounting Officer*	March 31, 2025
/s/ *Vincent L. DiVito* Vincent L. DiVito	Director, Chairman of the Board	March 31, 2025
/s/ *Eric John Gangloff* Eric John Gangloff	Director	March 31, 2025
/s/ Peifang Zhang Peifang Zhang	Director	March 31, 2025
/s/ *Steven K. Henderson* Steven K. Henderson	Director	March 31, 2025

NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

COMMON STOCK PURCHASE WARRANT

AQUA METALS, INC.

Warrant Shares: _____ Initial Exercise Date: _____, 2024

THIS COMMON STOCK PURCHASE WARRANT (the "Warrant") certifies that, for value received, _____ or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the "Initial Exercise Date") and on or prior to 5:00 p.m. (New York City time) on _____[1] (the "Termination Date") but not thereafter, to subscribe for and purchase from Aqua Metals, Inc., a Delaware corporation (the "Company"), up to _____ shares (as subject to adjustment hereunder, the "Warrant Shares") of Common Stock. The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Securities Purchase Agreement (the "Purchase Agreement"), dated December 18, 2024, among the Company and the purchasers signatory thereto.

[1] Insert the date that is the five year anniversary of the Initial Exercise Date, provided that, if such date is not a Trading Day, insert the immediately following Trading Day.

Section 2. Exercise.

a) Exercise of Warrant. Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company of a duly executed PDF copy submitted by e-mail (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the "Notice of Exercise"). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier's check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation as soon as reasonably practicable of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Business Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) Exercise Price. The exercise price per share of Common Stock under this Warrant shall be **$**_____[2], subject to adjustment hereunder (the "Exercise Price").

c) Cashless Exercise. If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the resale of the Warrant Shares by the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a "cashless exercise" in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of "regular trading hours" (as defined in Rule 600(b) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. ("Bloomberg") as of the time of the Holder's execution of the applicable Notice of Exercise if such Notice of Exercise is executed during "regular trading hours" on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of "regular trading hours" on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of "regular trading hours" on such Trading Day;

[2] The exercise price shall be the average of the daily VWAP over the five trading days prior to the initial close of the of offering.

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the holding period of the Warrant Shares being issued may be tacked on to the holding period of this Warrant. The Company agrees not to take any position contrary to this Section 2(c).

"Bid Price" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

"VWAP" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if the OTCQB Venture Market ("OTCQB") or the OTCQX Best Market ("OTCQX") is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market ("Pink Market") operated by the OTC Markets, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Purchasers of a majority in interest of the Securities then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

Notwithstanding anything herein to the contrary, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to this Section 2(c).

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) the Warrant Shares are eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 (assuming cashless exercise of the Warrants), and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is three (3) Trading Days after the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the three (3) Trading Days following delivery of the Notice of Exercise.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

iv. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that, in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

v. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company (or any Subsidiary), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of greater than 50% of the outstanding Common Stock or greater than 50% of the voting power of the common equity of the Company, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires greater than 50% of the outstanding shares of Common Stock or greater than 50% of the voting power of the common equity of the Company (each a "Fundamental Transaction"), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction.

e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

f) Notice to Holder.

i . Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company (or any of its Subsidiaries) is a party, any sale or transfer of all or substantially all of its assets, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by email to the Holder at its last email address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. Subject to compliance with any applicable securities laws and the conditions set forth in Section 4(d) hereof and to the provisions of Section 4.1 of the Purchase Agreement, this Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the Initial Exercise Date and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the "Warrant Register"), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

d) Transfer Restrictions. If, at the time of the surrender of this Warrant in connection with any transfer of this Warrant, the transfer of this Warrant shall not be either (i) registered pursuant to an effective registration statement under the Securities Act and under applicable state securities or blue sky laws or (ii) eligible for resale without volume or manner-of-sale restrictions or current public information requirements pursuant to Rule 144, the Company may require, as a condition of allowing such transfer, that the Holder or transferee of this Warrant, as the case may be, comply with the provisions of Section 5(c) of the Purchase Agreement.

e) Representation by the Holder. The Holder, by the acceptance hereof, represents and warrants that it is acquiring this Warrant and, upon any exercise hereof, will acquire the Warrant Shares issuable upon such exercise, for its own account and not with a view to or for distributing or reselling such Warrant Shares or any part thereof in violation of the Securities Act or any applicable state securities law, except pursuant to sales registered or exempted under the Securities Act.

Section 5. Mandatory Conversion.

a) Conversion. Upon a Change in Control (as defined below), this Warrant (to the extent not exercised in full prior to such time prior to the Change in Control) shall automatically, and without the need for action by or notice to any party, convert into a number of shares ("Conversion Shares") of Common Stock equal to the lesser of (i) the number of Warrant Shares set forth herein (or the remaining number of Warrants Shares in the event of a partial exercise prior to the Change in Control) and (ii) the Black Scholes Value (as defined below) of this Warrant (or the remaining portion of the Warrant in the event of a partial exercise prior to the Change in Control) as of the consummation of the Change in Control divided by the average of the VWAP for the Common Stock over the five (5) Trading Days prior to the consummation of the Change in Control. As used herein, "Black Scholes Value" means the value of this Warrant based on the Black-Scholes Option Pricing Model determined as of the day of consummation of the applicable Change in Control for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable contemplated Change in Control and the Termination Date, (B) an expected volatility equal to 100%, (C) the underlying price per share used in such calculation shall be the average of the daily VWAP over the five trading days prior to the Change in Control and (D) the sum of the remaining option time equal to the time between the date of the public announcement of the applicable contemplated Change in Control and the Termination Date and (E) a zero cost of borrow. As used herein, " Change in Control" means a transaction or series of transactions, approved in advance by the board of directors of the Company, in which a Person, or group of Persons acting as a group under Rule 13d-5(b)(1) under the Exchange Act together, acquires greater than 30% beneficial ownership of the outstanding shares of Common Stock, as beneficial ownership is calculated under Rule 13d-3 under the Exchange Act.

b) Settlement. Within three (3) Trading Days of the consummation of the Change in Control, the Company shall send to the Holder a notice of the consummation of the Change in Control and the numbers of Conversion Shares into which this Warrant shall have converted. The Company shall also provide to the Holder, at the Holder's request, the Company's calculation of the number of Conversion Shares. The Conversion Shares shall be issued to Holder no later than the fifth Trading Day following the consummation of the Change in Control, however the Company may condition its obligation to deliver the Conversion Shares on the Holder's surrender of this Warrant to the Company for cancellation. The Conversion Shares shall be issued in the name and to the address set forth on the Schedule of Buyers, unless Holder has provided different instructions to the Company.

Section 6. Miscellaneous.

a) No Rights as Stockholder Until Exercise; No Settlement in Cash. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a "cashless exercise" pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Jurisdiction. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be determined in accordance with the provisions of the Purchase Agreement.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant or the Purchase Agreement, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any notice, request or other document required or permitted to be given or delivered to the Holder by the Company shall be delivered in accordance with the notice provisions of the Purchase Agreement.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

****

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

AQUA METALS, INC.

By: _____
Stephen Cotton,
President and Chief Executive Officer

NOTICE OF EXERCISE

TO: AQUA METALS, INC.

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

[ ] in lawful money of the United States; or

[ ] if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

_____

The Warrant Shares shall be delivered to the following DWAC Account Number:

_____

_____

_____

(4) Accredited Investor. The undersigned is an "accredited investor" as defined in Regulation D promulgated under the Securities Act of 1933, as amended.

[SIGNATURE OF HOLDER]

Name of Investing Entity:

_____

Signature of Authorized Signatory of Investing Entity:

_____

Name of Authorized Signatory:

_____

Title of Authorized Signatory:

_____

Date: _____

EXHIBIT B

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____
(Please Print)

Address: _____
(Please Print)

Phone Number: _____

Email Address: _____

Dated: _____ __, _____

Holder's Signature: _____

Holder's Address: _____

[FORM OF SECURED NOTE]

NEITHER THE ISSUANCE AND SALE OF THE SECURITIES REPRESENTED BY THIS CERTIFICATE NOR THE SECURITIES INTO WHICH THESE SECURITIES ARE CONVERTIBLE HAVE BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR APPLICABLE STATE SECURITIES LAWS. THESE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED OR ASSIGNED (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR (B) AN OPINION OF COUNSEL TO THE HOLDER (IF REQUESTED BY THE COMPANY), IN A FORM REASONABLY ACCEPTABLE TO THE COMPANY, THAT REGISTRATION IS NOT REQUIRED UNDER SAID ACT OR (II) UNLESS SOLD OR ELIGIBLE TO BE SOLD PURSUANT TO RULE 144 OR RULE 144A UNDER SAID ACT. NOTWITHSTANDING THE FOREGOING, THE SECURITIES MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN OR FINANCING ARRANGEMENT SECURED BY THE SECURITIES.

AQUA METALS, INC.

Secured Note

Issuance Date: December 19, 2024 Principal Amount: U.S. $[_____]

FOR VALUE RECEIVED, Aqua Metals, Inc., a Delaware corporation (the "**Company**"), hereby promises to pay to the order of [_____] or its registered assigns ("**Holder**") the amount set out above as the Principal Amount (the "**Principal**") when due, whether upon the Maturity Date (as defined below), acceleration, prepayment or otherwise (in each case in accordance with the terms hereof) and to pay interest ("**Interest**") on the outstanding Principal at the applicable Interest Rate (as defined below) from the date set out above as the Issuance Date (the "**Issuance Date**"). All unpaid Principal, together with any then unpaid and accrued Interest and other amounts payable hereunder, shall be due and payable on the earlier of (i) December 31, 2025 (the "**Maturity Date**") or (ii) when, upon the occurrence and during the continuance of an Event of Default (as defined in Section 3 hereof), such amounts are declared due and payable in accordance with Section 3(b). This Secured Note (this "**Note**") is one of an issue of Secured Notes issued pursuant to the Securities Purchase Agreement (as defined below) on the Closing Date (as defined below) (collectively, the "**Other Notes**" and together with this Note, the "**Notes**"). All other capitalized terms not defined herein shall have the meaning given to such terms in the Securities Purchase Agreement (the "**Purchase Agreement**"), dated December 18, 2024, among the Company and the purchasers signatory thereto.

1. PREPAYMENT. Subject to Section 2, the Company may, at any time prior to the Maturity Date, prepay this Note in full, and in part, including all unpaid and accrued Interest thereon. A prepayment made pursuant to this Section 1 shall be made pro rata among all Note holders.

2. INTEREST RATE. Interest on this Note shall accrue at a rate equal to twenty percent (20%) simple interest per annum. At such time as the Interest becomes payable hereunder, the Holder shall receive, regardless of the date upon which the Interest becomes payable, a minimum of twelve (12) months of Interest. Interest due on this Note shall be computed on the basis of a three hundred sixty-five (365)-day year.

3. RIGHTS UPON EVENT OF DEFAULT.

(a) Event of Default. Each of the following events shall constitute an "**Event of Default**":

(i) the Company's failure to pay to the Holder any amount of Principal, Interest when and as due under this Note or any other agreement, document, certificate or other instrument delivered in connection with the transactions contemplated hereby and thereby, including, but not limited to, any Transaction Document, except, in the case of a failure to pay Principal or Interest when and as due, in which case only if such failure remains uncured for a period of at least five (5) days;

(ii) the occurrence of any default under, redemption of or acceleration prior to maturity of any Indebtedness of the Company;

(iii) liquidation proceedings shall be instituted by or against the Company and, if instituted against the Company by a third party, shall not be dismissed within sixty (60) days of their initiation;

(iv) bankruptcy, insolvency, reorganization or other proceedings for the relief of debtors shall be instituted against the Company and shall not be dismissed within sixty (60) days of their initiation;

(v) the commencement by the Company of a voluntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law or the consent by it to the entry of a decree, order, judgment or other similar document in respect of the Company in an involuntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law or to the commencement of any bankruptcy or insolvency case or proceeding against it, or the filing by it of a petition or answer or consent seeking reorganization or relief under any applicable federal, state or foreign law, or the consent by it to the filing of such petition or to the appointment of or taking possession by a custodian, receiver, liquidator, assignee, trustee, sequestrator or other similar official of the Company or of any substantial part of its property, or the making by it of an assignment for the benefit of creditors, or the execution of a composition of debts, or the occurrence of any other similar federal, state or foreign proceeding, or the admission by it in writing of its inability to pay its debts generally as they become due, the taking of corporate action by the Company in furtherance of any such action;

(vi) the entry by a court of (i) a decree, order, judgment or other similar document in respect of the Company of a voluntary or involuntary case or proceeding under any applicable federal, state or foreign bankruptcy, insolvency, reorganization or other similar law; or (ii) a decree, order, judgment or other similar document adjudging the Company as bankrupt or insolvent, or approving as properly filed a petition seeking liquidation, reorganization, arrangement, adjustment or composition of or in respect of the Company under any applicable federal, state or foreign law; or (iii) a decree, order, judgment or other similar document appointing a custodian, receiver, liquidator, assignee, trustee, sequestrator or other similar official of the Company or of any substantial part of its property, or ordering the winding up or liquidation of its affairs, and the continuance of any such decree, order, judgment or other similar document or any such other decree, order, judgment or other similar document unstayed and in effect for a period of sixty (60) consecutive days;

(vii) a final judgment or judgments for the payment of money aggregating in excess of $250,000 are rendered against the Company and which judgments are not, within sixty (60) days after the entry thereof, bonded, discharged or stayed pending appeal, or are not discharged within sixty (60) days after the expiration of such stay;

(viii) the Company fails to pay, when due, or within any applicable grace period, any payment with respect to any Indebtedness in excess of $250,000 due to any third party (other than, with respect to unsecured Indebtedness only, payments contested by the Company in good faith by proper proceedings and with respect to which adequate reserves have been set aside for the payment thereof in accordance with GAAP) or is otherwise in breach or violation of any agreement for monies owed or owing in an amount in excess of $250,000, which breach or violation permits the other party thereto to declare a default or otherwise accelerate amounts due thereunder;

(ix) other than as specifically set forth in another clause of this Section 4(a), the Company breaches any material representation, warranty, covenant or other term or condition of any Transaction Document, except, in the case of a breach of a covenant or other term or condition that is curable, only if such breach remains uncured for a period of thirty (30) days after actual knowledge of the Company of such breach;

(x) the validity or enforceability of any provision of any Transaction Document shall be contested by the Company, or a proceeding shall be commenced by the Company seeking to establish the invalidity or unenforceability thereof;

(xi) the Security Documents shall for any reason, except (A) to the extent permitted by the terms hereof or thereof, or (B) as a result of the act or omission of Holder or the holder of any Other Note and not materially related to the failure of the Company to satisfy or tender to satisfy its obligations under the Security Documents, fail or cease to create a separate valid and perfected Lien on the Collateral (as defined in the Security Agreement) in favor of each of the Secured Parties (as defined in the Security Agreement) and such breach remains uncured for a period of three (3) Business Days after notice from Holder or the holder of any Other Note of such failure or ceasing; or

(xii) any Event of Default (as defined in the Other Notes) occurs with respect to any Other Notes.

(b) Notice of an Event of Default. Upon the occurrence of an Event of Default with respect to this Note or any Other Note, the Company shall within two (2) Business Days deliver written notice thereof via facsimile and overnight courier (with next day delivery specified) (an "**Event of Default Notice**") to the Holder. At any time after the earlier of the Holder's receipt of an Event of Default Notice and the Holder becoming aware of an Event of Default, the Holder may, by notice to the Company, declare this Note to be forthwith due and payable, whereupon the Principal and all accrued and unpaid Interest thereon, plus all costs of enforcement and collection (including court costs and reasonable attorney's fees), shall immediately become and be forthwith due and payable, without presentment, demand, protest or further notice of any kind, all of which are hereby expressly waived by the Company.

4. NONCIRCUMVENTION. The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation or Bylaws or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issue or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Note, and will at all times in good faith carry out all of the provisions of this Note and take all action as may be required to protect the rights of the Holder of this Note.

5. COVENANTS. Until all of the Notes have been satisfied in accordance with their terms:

(a) Rank. All payments due under this Note shall rank *pari passu* with all Other Notes.

(b) New Subsidiaries. Simultaneously with the acquisition or formation of each New Subsidiary, the Company shall cause such New Subsidiary to execute, and deliver to each holder of Notes, all joinders to, or as applicable additional, Security Documents (as defined in the Security Agreement) as requested by the Holder. The Company shall not, directly or indirectly, acquire or form any New Subsidiary if such New Subsidiary would not be wholly-owned, directly or indirectly, by the Company.

6. SECURITY. This Note and the Other Notes are secured to the extent and in the manner set forth in the Transaction Documents (including, without limitation, the Security Agreement and the other Security Documents).

7. AMENDING THE TERMS OF THIS NOTE. No provision of this Note may be amended other than by an instrument in writing signed by the Company and the Required Holders which hold this Note and the Other Notes then outstanding, and any amendment to any provision of this Note made in conformity with the provisions of this Section 7 shall be binding on all Holders, provided that no such amendment shall be effective to the extent that it (1) applies to less than all of the holders of the Notes then outstanding or (2) imposes any obligation or liability on any Holder without such Holder's prior written consent (which may be granted or withheld in such Holder's sole discretion). No waiver of any provision of this Note shall be effective unless it is in writing and signed by an authorized representative of the waiving party, provided that the Required Holders which hold this Note and the Other Notes then outstanding may waive any provision of this Note, and any waiver of any provision of this Note made in conformity with the provisions of this Section 7 shall be binding on all Holders, provided that no such waiver shall be effective to the extent that it (1) applies to less than all of the holders of the Notes then outstanding (unless a party gives a waiver as to itself only) or (2) imposes any obligation or liability on any Holder without such Holder's prior written consent (which may be granted or withheld in such Holder's sole discretion). No amendment to or waiver of any provision this Note shall amend or waive any provision of any other Transaction Document.

8. TRANSFER. This Note may be offered, sold, assigned or transferred by the Holder without the consent of the Company, subject only to the provisions of Section 2(g) of the Securities Purchase Agreement and any other restrictions that may be mutually agreed by the Company and the Holder hereof.

9. REISSUANCE OF THIS NOTE.

(a) Transfer. If this Note is to be transferred, the Holder shall surrender this Note to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Note (in accordance with Section 9(d)), registered as the Holder may request, representing the outstanding Principal being transferred by the Holder and, if less than the entire outstanding Principal is being transferred, a new Note (in accordance with Section 9(d)) to the Holder representing the outstanding Principal not being transferred.

(b) Lost, Stolen or Mutilated Note. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Note (as to which a written certification and the indemnification contemplated below shall suffice as such evidence), and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary and reasonable form and, in the case of mutilation, upon surrender and cancellation of this Note, the Company shall execute and deliver to the Holder a new Note (in accordance with Section 9(d)) representing the outstanding Principal.

(c) Note Exchangeable for Different Denominations. This Note is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Note or Notes (in accordance with Section 9(d) and in principal amounts of at least $1,000) representing in the aggregate the outstanding Principal of this Note, and each such new Note will represent such portion of such outstanding Principal as is designated by the Holder at the time of such surrender.

(d) Issuance of New Notes. Whenever the Company is required to issue a new Note pursuant to the terms of this Note, such new Note (i) shall be of like tenor with this Note, (ii) shall represent, as indicated on the face of such new Note, the Principal remaining outstanding (or in the case of a new Note being issued pursuant to Section 9(a) or Section 9(c), the Principal designated by the Holder which, when added to the principal represented by the other new Notes issued in connection with such issuance, does not exceed the Principal remaining outstanding under this Note immediately prior to such issuance of new Notes), (iii) shall have an issuance date, as indicated on the face of such new Note, which is the same as the Issuance Date of this Note, (iv) shall have the same rights and conditions as this Note, and (v) shall represent accrued and unpaid Interest on the Principal of this Note, from the Issuance Date.

10. REMEDIES, CHARACTERIZATIONS, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Note shall be cumulative and in addition to all other remedies available under this Note and any of the other Transaction Documents at law or in equity (including a decree of specific performance and/or other injunctive relief); provided, the Holder shall not be entitled to any duplication or multiplication of damages. The Company covenants to the Holder that there shall be no characterization concerning this instrument other than as expressly provided herein. Amounts set forth or provided for herein with respect to payments shall be the amounts to be received by the Holder and shall not, except as expressly provided herein or in the other Transaction Documents, be subject to any other obligation of the Company (or the performance thereof). The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder shall be entitled, in addition to all other available remedies, to an injunction restraining any such breach or any such threatened breach, without the necessity of showing economic loss and without any bond or other security being required. The Company shall provide all information and documentation to the Holder that is reasonably requested by the Holder to enable the Holder to confirm the Company's compliance with the terms and conditions of this Note.

11. PAYMENT OF COLLECTION, ENFORCEMENT AND OTHER COSTS. If (a) this Note is placed in the hands of an attorney for collection or enforcement of the debt evidenced hereby or is collected or enforced through any legal proceeding or the Holder otherwise takes action to collect amounts due under this Note or to enforce the provisions of this Note or (b) there occurs any bankruptcy, reorganization, receivership of the Company or other proceedings affecting Company creditors' rights and involving a claim under this Note, then the Company shall pay the reasonable costs incurred by the Holder for such collection, enforcement or action or in connection with such bankruptcy, reorganization, receivership or other proceeding, including, without limitation, reasonable attorneys' fees and disbursements.

12. CONSTRUCTION; HEADINGS. This Note shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Note are for convenience of reference and shall not form part of, or affect the interpretation of, this Note.

13. FAILURE OR INDULGENCE NOT WAIVER. No failure or delay on the part of the Holder in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege. No waiver shall be effective unless it is in writing and signed by an authorized representative of the waiving party.

14. NOTICES; PAYMENTS.

(a) Notices. Whenever notice is required to be given under this Note, unless otherwise provided herein, such notice shall be given in accordance with Section 9(f) of the Securities Purchase Agreement. The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Note, including in reasonable detail a description of such action and the reason therefore.

(b) Payments. Whenever any payment of cash is to be made by the Company to any Person pursuant to this Note, unless otherwise expressly set forth herein, such payment shall be made in lawful money of the United States of America by a check drawn on the account of the Company and sent via overnight courier service to such Person at such address as previously provided to the Company in writing (which address, in the case of each of the Buyers, which shall initially the address set forth on the Schedule of Buyers attached to the Securities Purchase Agreement), provided that the Holder may elect to receive a payment of cash via wire transfer of immediately available funds by providing the Company with prior written notice setting out such request and the Holder's wire transfer instructions. Whenever any amount expressed to be due by the terms of this Note is due on any day which is not a Business Day, the same shall instead be due on the next succeeding day which is a Business Day.

15. CANCELLATION. After all Principal, accrued Interest and other amounts at any time owed on this Note have been paid in full, this Note shall automatically be deemed canceled, shall be surrendered promptly, but in any event within ten (10) calendar days, to the Company by the Holder for cancellation and shall not be reissued.

16. WAIVER OF NOTICE. To the extent permitted by law, the Company hereby irrevocably waives demand, notice, presentment, protest and all other demands and notices in connection with the delivery, acceptance, performance, default or enforcement of this Note.

17. GOVERNING LAW. All questions concerning the construction, validity, enforcement and interpretation of this Note shall be governed by the internal laws of the State of Delaware, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of Delaware or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of Delaware. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the State of Delaware, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address for such notices to it under this Note and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. **EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE TO, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED.**

18. MAXIMUM PAYMENTS. Nothing contained in this Note shall, or shall be deemed to, establish or require the payment of a rate of interest or other charges in excess of the maximum permitted by applicable law. In the event that the rate of interest required to be paid or other charges under this Note exceeds the maximum permitted by such law, any payments in excess of such maximum shall be credited against amounts owed by the Company to the Holder and thus refunded to the Company.

19. SURRENDER OR ACKNOWLEDGEMENT AND CERTIFICATION: Upon payment in full of this Note, Holder shall surrender the original physical copy of this Note for cancellation; alternatively, if the Holder promptly requests in connection with such payment, the Holder may deliver to the Company a signed acknowledgement of payment in full and a certification that the Holder has cancelled or destroyed the Note in a form reasonably acceptable to the Company.

[*Signature page follows*]

IN WITNESS WHEREOF, the Company has caused this Note to be duly executed as of the Issuance Date set out above.

AQUA METALS, INC.,
a Delaware corporation

By: _____
Stephen Cotton,
President and Chief Executive Officer

SECURITY AGREEMENT

This **SECURITY AGREEMENT** (this "**Agreement**"), dated as of December 18, 2024, is made by and among Aqua Metals Reno, Inc., a Delaware corporation (the "**Grantor**"), and Judd Merrill, as the Collateral Agent, and the secured parties listed on the Schedule of Buyers to the Securities Purchase Agreement (as defined below) (collectively, the "**Secured Parties**" and each, individually, a "**Secured Party**").

RECITALS

WHEREAS, pursuant to that certain Securities Purchase Agreement, dated December 18, 2024 (as may be amended, restated, supplemented, or otherwise modified from time to time, including all schedules and exhibits thereto, collectively, the "**Securities Purchase Agreement**"), by and among the Aqua Metals, Inc., a Delaware corporation and parent of Grantor ("**Borrower**"), Borrower and each of the Secured Parties, Borrower has agreed to sell, and each of the Secured Parties have each agreed to purchase, severally and not jointly, certain Notes;

WHEREAS, a condition to the Secured Parties' obligation to purchase the Notes is (i) Grantor's execution and delivery of a Guaranty Agreement ("**Guaranty**") in favor of the Secured Parties in the form of Guaranty attached to the Securities Purchase Agreement as Exhibit D and (ii) the collateralization of Grantor's obligation under the Guaranty by way of a perfected security interest in certain assets of the Grantor pursuant to this Agreement.

WHEREAS, Grantor has previously granted a first priority security interest in all of the Grantor's assets to Summit Investment Services, LLC, a Nevada limited liability company ("**Summit**"), pursuant to a Security Agreement dated December 2023 between Grantor and Summit and related Deed of Trust and Assignment Rents and Leases (collectively, "**Summit First Lien**").

WHEREAS, Summit has consented to the Note offering pursuant to the Securities Purchase Agreement, Grantor's Guaranty and grant of a security interest pursuant to the Security Agreement and agreed to subordinate its Summit First Lien to the Secured Parties security interest in the Grantor's iridium, however Summit has not otherwise agreed to subordinate its security interest in the assets of Grantor and, therefore, the Secured Parties will receive a second priority security interest in the Collateral (as defined below) subject to Summit's senior security interest, except with respect to Grantor's iridium, in which Secured Parties shall have a first priority security interest.

WHEREAS, Grantor shall substantially benefit, directly or indirectly, from the Borrower's sale of the Notes.

WHEREAS, in order to induce the Secured Parties to purchase, severally and not jointly, the Notes as provided for in the Securities Purchase Agreement, Grantor has agreed to grant a continuing security interest in and to the Collateral in order to secure the prompt and complete payment, observance and performance of the Secured Obligations (as defined below).

AGREEMENTS

NOW, THEREFORE, for and in consideration of the recitals made above and other good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Defined Terms. All capitalized terms used herein (including in the preamble and recitals hereof) without definition shall have the meanings ascribed thereto in the Notes. Any terms used in this Agreement that are defined in the Code shall be construed and defined as set forth in the Code unless otherwise defined herein or in the Notes; provided, however, if the Code is used to define any term used herein and if such term is defined differently in different Articles of the Code, the definition of such term contained in Article 9 of the Code shall govern. In addition to those terms defined elsewhere in this Agreement, as used in this Agreement, the following terms shall have the following meanings:

(a) "**Account**" means an "account" (as that term is defined in Article 9 of the Code).

(b) "**Account Debtor**" means an "account debtor" (as that term is defined in Article 9 of the Code).

(c) "**Bankruptcy Code**" means title 11 of the United States Code, as in effect from time to time.

(d) "**Books**" means books and records (including, without limitation, the Grantor's Records) indicating, summarizing, or evidencing the Grantor's assets (including the Collateral) or liabilities, the Grantor's Records relating to its business operations (including, without limitation, stock ledgers) or financial condition, and the Grantor's goods or General Intangibles related to such information.

(e) "**Chattel Paper**" means "chattel paper" (as that term is defined in Article 9 of the Code) and includes tangible chattel paper and electronic chattel paper.

(f) "**Code**" means the Delaware Uniform Commercial Code, as in effect from time to time; provided, however, in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, priority, or remedies with respect to any Secured Party's Lien on any Collateral is governed by the Uniform Commercial Code as enacted and in effect in a jurisdiction other than the State of Delaware, the term "Code" shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies.

(g) "**Collateral**" has the meaning set forth in Section 2.

(h) "**Commercial Tort Claims**" means "commercial tort claims" (as that term is defined in Article 9 of the Code), and includes those commercial tort claims listed on **Schedule 1** attached hereto.

(i) "**Equipment**" means all "equipment" (as that term is defined in Article 9 of the Code) in all of its forms of the Grantor, wherever located, and including, without limitation, all machinery, apparatus, installation facilities and other tangible personal property, and all parts thereof and all accessions, additions, attachments, improvements, substitutions, replacements and proceeds thereto and therefor.

(j) "**Copyrights**" means all copyrights and copyright registrations, and also includes (i) all reissues, continuations, extensions or renewals thereof, (ii) all income, royalties, damages and payments now and hereafter due or payable under and with respect thereto, including payments under all licenses entered into in connection therewith and damages and payments for past or future infringements or dilutions thereof, (iii) the right to sue for past, present and future infringements and dilutions thereof, (iv) the goodwill of Grantor's business symbolized by the foregoing or connected therewith, and (v) all of Grantor's rights corresponding thereto throughout the world.

(k) "**Event of Default**" has the meaning set forth in the Notes.

(l) "**GAAP**" means United States generally accepted accounting principles, consistently applied.

(m) "**General Intangibles**" means "general intangibles" (as that term is defined in Article 9 of the Code) and, in any event, includes payment intangibles, contract rights, rights to payment, rights arising under common law, statutes, or regulations, choses or things in action, goodwill, programming materials, purchase orders, customer lists, monies due or recoverable from pension funds, route lists, rights to payment under any royalty or licensing agreements (including Intellectual Property Licenses), infringement claims, commercial computer programs, information contained on computer disks or tapes, software, literature, reports, catalogs, pension plan refunds, pension plan refund claims, insurance premium rebates, tax refunds, and tax refund claims, interests in a partnership or limited liability company which do not constitute a security under Article 8 of the Code, and any other personal property other than Commercial Tort Claims, money, Accounts, Chattel Paper, goods, Negotiable Collateral, and oil, gas, or other minerals before extraction.

(n) "**Governmental Authority**" means any domestic or foreign federal, state, local, or other governmental or administrative body, instrumentality, board, department, or agency or any court, tribunal, administrative hearing body, arbitration panel, commission, or other similar dispute-resolving panel or body.

(o) "**Insolvency Proceeding**" means any proceeding commenced by or against any Person under any provision of the Bankruptcy Code or under any other state or federal bankruptcy or insolvency law or any equivalent laws in any other jurisdiction, assignments for the benefit of creditors, formal or informal moratoria, compositions, extensions generally with creditors, or proceedings seeking reorganization, arrangement, or other similar relief.

(p) "**Intellectual Property**" means Patents, Copyrights, Trademarks, the goodwill associated with such Trademarks, trade secrets and customer lists, and Intellectual Property Licenses.

(q) "**Intellectual Property Licenses**" means rights under or interests in any patent, trademark, copyright or other intellectual property, including software license agreements with any other party, whether the Grantor is a licensee or licensor under any such license agreement, as may be amended, restated, supplemented, or otherwise modified from time to time.

(r) "**Inventory**" means all "inventory" (as that term is defined in Article 9 of the Code) in all of its forms of the Grantor, wherever located, including, without limitation, (i) all goods in which the Grantor has an interest in mass or a joint or other interest or right of any kind (including goods in which the Grantor has an interest or right as consignee), and (ii) all goods which are returned to or repossessed by the Grantor, and all accessions thereto, products thereof and documents therefor.

(s) "**Lien**" means any mortgage, deed of trust, pledge, hypothecation, assignment for security, security interest, encumbrance, levy, lien or charge of any kind.

(t) "**Negotiable Collateral**" means letters of credit, letter-of-credit rights, instruments, promissory notes, drafts, and documents.

(u) "**New Subsidiary**" has the meaning set forth in the Notes.

(v) "**Notes**" has the meaning set forth in the Securities Purchase Agreement.

(w) "**Patents**" means all patents and patent applications, and also includes (i) all renewals thereof, (ii) all income, royalties, damages and payments now and hereafter due or payable under and with respect thereto, including payments under all licenses entered into in connection therewith and damages and payments for past or future infringements or dilutions thereof, (iii) the right to sue for past, present and future infringements and dilutions thereof, and (iv) all of Grantor's rights corresponding thereto throughout the world.

(x) "**Permitted Liens**" means (i) any Lien for taxes not yet due or delinquent or being contested in good faith by appropriate proceedings for which adequate reserves have been established in accordance with GAAP, (ii) any statutory Lien arising in the ordinary course of business by operation of law with respect to a liability that is not yet due or delinquent or that is being contested in good faith for which adequate reserves have been established in accordance with GAAP, (iii) any Lien created by operation of law, such as materialmen's liens, mechanics' liens and other similar liens, arising in the ordinary course of business with respect to a liability that is not yet due or delinquent or that is being contested in good faith by appropriate proceedings, (iv) Liens on Equipment having a fair market value of not more than $450,000 in the aggregate, but only if the lien constitutes a purchase money security interest incurred in connection with the purchase of such Equipment, (vi) the Summit First Lien and (vii) Liens securing Grantor's obligations under the Guaranty.

(y) "**Permitted Transfers**" means (i) sales of Inventory in the ordinary course of business, (ii) licenses for the use of Intellectual Property in the ordinary course of business that could not result in a legal transfer of title of the licensed property, or (iii) dispositions of worn-out, obsolete or surplus Equipment at fair market value in the ordinary course of business.

(z) "**Person**" has the meaning set forth in the Securities Purchase Agreement.

(aa) "**Proceeds**" has the meaning set forth in Section 2.

(bb) "**Real Property**" means any estates or interests in real property now owned or leased or hereafter acquired or leased by Grantor and the improvements thereto.

(cc) "**Records**" means information that is inscribed on a tangible medium or which is stored in an electronic or other medium and is retrievable in perceivable form.

(dd) "**Secured Obligations**" means all of the present and future payment and performance obligations of Grantor arising under the Guaranty, including, without duplication, reasonable outside attorneys' fees and out-of-pocket expenses and any interest, fees, or expenses that accrue after the filing of an Insolvency Proceeding, regardless of whether allowed or allowable in whole or in part as a claim in any Insolvency Proceeding.

(ee) "**Security Documents**" means, collectively, this Agreement and each other security agreement, control agreement pledge agreement, assignment, mortgage, security deed, deed of trust, and other agreement or document executed and delivered by the Grantor as security for any of the Secured Obligations, as each may be amended, restated, supplemented, or otherwise modified from time to time.

(ff) "**Security Interest**" and "**Security Interests**" have the meanings set forth in Section 2.

(gg) "**Supporting Obligations**" means "supporting obligations" (as such term is defined in Article 9 of the Code).

(hh) "**Trademarks**" means all trademarks, trade names, trademark applications, service marks, service mark applications, and also includes (i) all renewals thereof, (ii) all income, royalties, damages and payments now and hereafter due or payable under and with respect thereto, including payments under all licenses entered into in connection therewith and damages and payments for past or future infringements or dilutions thereof, (iii) the right to sue for past, present and future infringements and dilutions thereof, (iv) the goodwill of Grantor's business symbolized by the foregoing or connected therewith, and (v) all of Grantor's rights corresponding thereto throughout the world.

(ii) "**Transaction Documents**" has the meaning set forth in the Securities Purchase Agreement.

(jj) "**URL**" means "uniform resource locator," an internet web address.

2 . Grant of Security. The Grantor hereby unconditionally grants, assigns, and pledges to each Secured Party a separate, continuing security interest (each, a "**Security Interest**" and, collectively, the "**Security Interests**") in the following assets of the Grantor whether now owned or hereafter acquired or arising and wherever located (collectively, the "**Collateral**:

(a) any Iridium;

(b) Equipment and fixtures;

(c) rights in respect of any settlement or judgment proceeds in that certain litigation*Aqua Metals, Inc.; and Aqua Metals Reno, Inc., Plaintiffs, vs. Johnson Controls Fire Protection, LP, F/K/A SimplexGrinnell LP or Tyco Simplex Grinnell, LLP, and Does 1-10, inclusive, Defendants;* and

(d) all of the proceeds and products, whether tangible or intangible, of any of the foregoing, including proceeds of insurance or Commercial Tort Claims covering or relating to any or all of the foregoing, and any and all Accounts, Books, Chattel Paper, Equipment, General Intangibles, Intellectual Property, Inventory, Negotiable Collateral, Real Estate, Supporting Obligations, money, or other tangible or intangible property resulting from the sale, lease, license, exchange, collection, or other disposition of any of the foregoing, the proceeds of any award in condemnation with respect to any of the foregoing, any rebates or refunds, whether for taxes or otherwise, and all proceeds of any such proceeds, or any portion thereof or interest therein, and the proceeds thereof, and all proceeds of any loss of, damage to, or destruction of the above, whether insured or not insured, and, to the extent not otherwise included, any indemnity, warranty, or guaranty payable by reason of loss or damage to, or otherwise with respect to any of the foregoing (the "**Proceeds**").

3 . Security for Obligations. This Agreement and the Security Interests created hereby secures the payment and performance of the Secured Obligations, whether now existing or arising hereafter.

4. Grantor Remains Liable. Anything herein to the contrary notwithstanding, (a) the Grantor shall remain liable under the contracts and agreements included in the Collateral, to perform all of the duties and obligations thereunder to the same extent as if this Agreement had not been executed, (b) the exercise by Secured Parties, or any of them, of any of the rights hereunder shall not release the Grantor from any of its duties or obligations under such contracts and agreements included in the Collateral, and (c) no Secured Party shall have any obligation or liability under such contracts and agreements included in the Collateral by reason of this Agreement, nor shall any Secured Party be obligated to perform any of the obligations or duties of the Grantor thereunder or to take any action to collect or enforce any claim for payment assigned hereunder. Until an Event of Default shall occur and be continuing, except as otherwise provided in this Agreement or any other Guaranty, the Grantor shall have the right to possession and enjoyment of the Collateral for the purpose of conducting the ordinary course of its businesses, subject to and upon the terms hereof and the other Transaction Documents.

5. Representations and Warranties. The Grantor hereby represents and warrants as follows:

(a) The exact legal name of the Grantor is set forth in the preamble this Agreement.

(b) **Schedule 2** attached hereto sets forth (i) all Real Property owned or leased by the Grantor, together with all other locations of Collateral, as of the date hereof, and (ii) the chief executive office of the Grantor as of the date hereof.

(c) This Agreement creates a valid security interest in all of the Collateral of the Grantor, to the extent a security interest therein can be created under the Code, securing the payment of the Secured Obligations. Except to the extent a security interest in the Collateral cannot be perfected by the filing of a financing statement under the Code, all filings and other actions necessary to perfect such security interest have been duly taken or will have been taken upon the filing of financing statements listing the Grantor, as a debtor, and Secured Parties, as secured parties, in the jurisdictions listed on **Schedule 3** attached hereto. Upon the making of such filings, Secured Parties shall each have a second priority perfected security interest in all of the Collateral of the Grantor, except for Grantor's iridium, subject and junior to the Summit First Lien and to the extent such security interest can be perfected by the filing of a financing statement.

(d) Except for the Security Interests created hereby, no Collateral is subject to any Lien as of the date hereof other than Permitted Liens.

(e) Except for the consent of Summit, which has been obtained, no consent, approval, authorization, or other order or other action by, and no notice to or filing with, any Governmental Authority or any other Person is required for the grant of a Security Interest by the Grantor in and to the Collateral pursuant to this Agreement or for the execution, delivery, or performance of this Agreement by the Grantor.

6. Covenants. The Grantor covenants and agrees with each Secured Party that from and after the date of this Agreement and until the date of termination of this Agreement in accordance with Section 22 hereof:

(a) Commercial Tort Claims. The Grantor shall promptly (and in any event within five (5) Business Days of receipt thereof) notify the Secured Parties in writing upon incurring or otherwise obtaining a Commercial Tort Claim having a value or involving an asserted claim, in excess of $50,000 in the aggregate after the date hereof and, upon the written request of any Secured Party, promptly amend **Schedule 1** to this Agreement to describe such after-acquired Commercial Tort Claim in a manner that reasonably identifies such Commercial Tort Claim, and hereby authorizes the filing of additional financing statements or amendments to existing financing statements describing such Commercial Tort Claims, and agrees to do such other acts or things deemed necessary by any Secured Party to give the Secured Parties a first priority, perfected security interest (subject to Permitted Liens) in any such Commercial Tort Claim.

(b) Transfers and Other Liens. The Grantor shall not (i) sell, lease, license, assign (by operation of law or otherwise), transfer or otherwise dispose of, or grant any option with respect to, any of the Collateral, except for Permitted Transfers or as expressly permitted by this Agreement and the Guaranty, or (ii) except for Permitted Liens, create or permit to exist any Lien upon or with respect to any of the Collateral without the consent of the Collateral Agent (acting on behalf of the Secured Parties). The inclusion of Proceeds in the Collateral shall not be deemed to constitute consent by any Secured Party to any sale or other disposition of any of the Collateral except as expressly permitted in this Agreement or the Guaranty.

(c) Preservation of Existence. The Grantor shall maintain and preserve its existence, rights and privileges, and become or remain duly qualified and in good standing in each jurisdiction in which the character of the properties owned or leased by it or in which the transaction of its business makes such qualification necessary, except where the failure to do so would not cause a Material Adverse Effect (as defined in the Securities Purchase Agreement).

(d) Maintenance of Properties. The Grantor shall maintain and preserve all of its properties which are reasonably necessary or useful in the proper conduct of its business in good working order and condition, ordinary wear and tear excepted, and comply at all times with the provisions of all leases to which it is a party as lessee or under which it occupies property, so as to prevent any loss or forfeiture thereof or thereunder.

(e) Maintenance of Insurance. The Grantor shall maintain insurance with responsible and reputable insurance companies or associations (including, without limitation, comprehensive general liability, property, hazard, rent and business interruption insurance) with respect to all of its assets and properties (including, without limitation, all real properties leased or owned by it and any and all Inventory and Equipment) and business, in such amounts and covering such risks as is required by any governmental authority having jurisdiction with respect thereto or as is carried generally in accordance with sound business practice by companies in similar businesses similarly situated, in each case, reasonably acceptable to the Secured Parties.

(f) Other Actions as to Any and All Collateral. The Grantor shall promptly and in any event within five (5) Business Days(or such longer period as agreed to by the Collateral Agent (acting on behalf of the Secured Parties), in his reasonable discretion) of (i) acquiring or otherwise obtaining any Collateral after the date hereof consisting of Chattel Paper (electronic, tangible or otherwise), documents (as defined in Article 9 of the Code), promissory notes (as defined in the Code) or instruments (as defined in the Code) or (ii) any amount payable under or in connection with any of the Collateral being or becoming evidenced after the date hereof by any Chattel Paper, documents, promissory notes, or instruments and, in each such case, of clauses (i) and (ii) above, having an aggregate value with respect to Collateral of the same type or an individual value (or face amount) in excess of $50,000 and, upon the written request of any Secured Party, promptly execute such other documents, or if applicable, deliver such Chattel Paper and do such other acts or things reasonably requested by Collateral Agent (acting on behalf of the Secured Parties) to protect the Secured Parties' respective Security Interests therein.

7. Relation to Other Transaction Documents. In the event of any conflict between any provision in this Agreement and any provision in the Securities Purchase Agreement or Notes, such provision of the Securities Purchase Agreement or Notes shall control, except to the extent the applicable provision in this Agreement is more restrictive with respect to the rights of the Grantor or imposes more burdensome or additional obligations on the Grantor, in which event the applicable provision in this Agreement shall control.

8. Further Assurances.

(a) The Grantor agrees that from time to time, at its own expense, it will promptly execute and deliver all further instruments and documents, and take all further action, that may be reasonably necessary or that the Collateral Agent (acting on behalf of the Secured Parties) may reasonably request, in order to perfect and protect the Security Interests granted or purported to be granted hereby or to enable any Secured Party to exercise and enforce its rights and remedies hereunder with respect to any of the Collateral; provided, however, in no event shall the Grantor be required to take any action to perfect a Security Interest in any Collateral represented by a certificate of title.

(b) The Grantor authorizes the filing by Collateral Agent (acting on behalf of the Secured Parties) of financing or continuation statements, or amendments thereto, including, but limited to, the recordation of the security interests granted hereunder in Patents, Trademarks and Copyrights in the United States Patent and Trademark Office and the United States Copyright Office, and Grantor will execute and deliver to Collateral Agent such other instruments or notices, as may be necessary or as the Collateral Agent (acting on behalf of the Secured Parties) may reasonably request, in order to perfect and preserve the Security Interests granted or purported to be granted hereby. Upon the Satisfaction in Full of the Secured Obligations, the Collateral Agent shall (at Grantor's expense) file a termination statement and/or other necessary documents terminating and releasing any and all financing statements or Liens on the Collateral pursuant to Section 22.

(c) The Grantor authorizes any Secured Party at any time and from time to time to file, transmit, or communicate, as applicable, financing statements and amendments (i) describing the Collateral as "all real and personal property of debtor" or "all assets of debtor" or words of similar effect, (ii) describing the Collateral as being of equal or lesser scope or with greater detail, or (iii) that contain any information required by part 5 of Article 9 of the Code for the sufficiency or filing office acceptance. The Grantor also hereby ratifies any and all financing statements or amendments previously filed by any Secured Party in any jurisdiction.

(d) The Grantor acknowledges that except as provided pursuant to clause (b) above it is not authorized to file any financing statement or amendment or termination statement with respect to any financing statement filed in connection with this Agreement without the prior written consent of the Collateral Agent (acting on behalf of the Secured Parties), subject to the Grantor's rights under Section 9-509(d)(2) of the Code.

(e) Upon ten (10) Business Days advance notice, the Grantor shall permit each Secured Party or its employees, accountants, attorneys or agents, access to examine and inspect any Collateral or any other property of the Grantor at any time during ordinary business hours, at such Secured Party's expense.

9. Collateral Agent's Right to Perform Contracts, Exercise Rights, etc. Upon the occurrence and during the continuance of an Event of Default, the Collateral Agent (acting on behalf of the Secured Parties) may proceed to perform any and all of the obligations of the Grantor contained in any contract, lease, or other agreement and exercise any and all rights of the Grantor therein contained as fully as the Grantor itself could.

10. Collateral Agent Appointed Attorney-in-Fact. The Grantor, on behalf of itself and each New Subsidiary of the Grantor, hereby irrevocably appoints the Collateral Agent (acting on behalf of the Secured Parties) as the attorney-in-fact of the Grantor and each such New Subsidiary upon the occurrence and during the continuance of an Event of Default. In the event the Grantor or any New Subsidiary fails to execute or deliver in a timely manner any Transaction Document or other agreement, document, certificate or instrument which the Grantor or New Subsidiary now or at any time hereafter is required to execute or deliver pursuant to the terms of the Securities Purchase Agreement or any other Transaction Document, upon the occurrence and during the continuance of an Event of Default and after advance written notice to the Grantor, the Collateral Agent (acting on behalf of the Secured Parties) shall have full authority in the place and stead of the Grantor or New Subsidiary, and in the name of the Grantor, such New Subsidiary or otherwise, to execute and deliver each of the foregoing. Without limitation of the foregoing, upon the occurrence and during the continuance of an Event of Default, the Collateral Agent (acting on behalf of the Secured Parties) shall have full authority in the place and stead of the Grantor and each New Subsidiary, and in the name of any the Grantor, any such New Subsidiary or otherwise, to take any action and to execute any instrument which the Collateral Agent (acting on behalf of the Secured Parties)may reasonably deem necessary or advisable to accomplish the purposes of this Agreement, including, without limitation:

(a) to ask, demand, collect, sue for, recover, compromise, receive and give acquittance and receipts for moneys due and to become due under or in connection with any Collateral of the Grantor or New Subsidiary;

(b) to receive and open all mail addressed to the Grantor or New Subsidiary and to notify postal authorities to change the address for the delivery of mail to the Grantor or New Subsidiary to that of an address approved by the Collateral Agent;

(c) to receive, indorse, and collect any drafts or other instruments, documents, Negotiable Collateral or Chattel Paper;

(d) to file any claims or take any action or institute any proceedings which the Collateral Agent (acting on behalf of the Secured Parties)may deem necessary for the collection of any of the Collateral of the Grantor or New Subsidiary or otherwise to enforce the rights of any Secured Party with respect to any of the Collateral; and

(e) to use any labels, patents, trademarks, trade names, URLs, domain names, industrial designs, copyrights, customer lists, advertising matter or other industrial or intellectual property rights, in advertising for the exclusive purpose of sale and selling Inventory and other Collateral and to collect any amounts due under Accounts, contracts or Negotiable Collateral of the Grantor or New Subsidiary.

To the extent permitted by law, the Grantor hereby ratifies, for itself and each New Subsidiary, all that such attorney-in-fact shall lawfully do or cause to be done by virtue hereof. Such power-of-attorney granted pursuant to this Section 10 is coupled with an interest and shall be irrevocable until this Agreement is terminated.

11. Collateral Agent May Perform. If the Grantor fails to perform any agreement contained herein, upon the occurrence and during the continuance of an Event of Default, after advance written notice to the Grantor, the Collateral Agent (acting on behalf of the Secured Parties)may itself perform, or cause performance of, such agreement, and the reasonable out-of-pocket expenses of the Collateral Agent incurred in connection therewith shall be payable by the Grantor.

12. Collateral Agent's Duties; Bailee for Perfection. The powers conferred on the Collateral Agent (acting on behalf of the Secured Parties) hereunder are solely to protect the Secured Parties' respective interests in the Collateral and shall not impose any duty upon the Collateral Agent in favor of the Grantor or any other Secured Party to exercise any such powers. Except for the safe custody of any Collateral in its actual possession and the accounting for moneys actually received by it hereunder and except as provided in the Code, the Collateral Agent (acting on behalf of the Secured Parties) shall not have any duty to the Grantor or any other Secured Party as to any Collateral or as to the taking of any necessary steps to preserve rights against prior parties or any other rights pertaining to any Collateral. The Collateral Agent (acting on behalf of the Secured Parties) shall be deemed to have exercised reasonable care in the custody and preservation of any Collateral in its actual possession if such Collateral is accorded treatment substantially equal to that which is accorded to its own property. The Collateral Agent (acting on behalf of the Secured Parties) agrees that, with respect to any Collateral at any time or times in its possession and in which any other Secured Party has a Lien, the Collateral Agent (acting on behalf of the Secured Parties) shall be the bailee of each Secured Party solely for purposes of perfecting (to the extent not otherwise perfected) the Secured Parties Lien in such Collateral, provided that the Collateral Agent (acting on behalf of the Secured Parties) shall be obligated to obtain or retain possession of any such Collateral.

13. Collection of Accounts, General Intangibles and Negotiable Collateral. At any time upon the occurrence and during the continuation of an Event of Default, the Collateral Agent (acting on behalf of the Secured Parties)may, following delivery of advance written notice to the Grantor, (a) notify Account Debtors of the Grantor that the Accounts, General Intangibles, Chattel Paper or Negotiable Collateral have been assigned to the Collateral Agent (acting on behalf of the Secured Parties) or that Secured Parties have a security interest therein, and (b) collect the Accounts, General Intangibles and Negotiable Collateral directly, and any collection costs and expenses shall constitute part of the Secured Obligations.

14. Remedies. Upon the occurrence and during the continuance of an Event of Default:

(a) The Collateral Agent (acting on behalf of the Secured Parties) may exercise in respect of the Collateral, in addition to other rights and remedies provided for herein, in the other Transaction Documents, or otherwise available to it, all the rights and remedies of a secured party on default under the Code or any other applicable law. Without limiting the generality of the foregoing, the Grantor expressly agrees that, in any such event, the Collateral Agent (acting on behalf of the Secured Parties) without any demand, advertisement, or notice of any kind (except a notice specified below of time and place of public or private sale) to or upon the Grantor or any other Person (all and each of which demands, advertisements and notices are hereby expressly waived to the maximum extent permitted by the Code or by any other applicable law), may take immediate possession of all or any portion of the Collateral and (i) require the Grantor to, and the Grantor hereby agrees that it will at its own expense and upon request of the Collateral Agent (acting on behalf of the Secured Parties) forthwith, assemble all or part of the Collateral as directed by the Collateral Agent and make it available to the Collateral Agent at one or more locations of the Grantor, and (ii) without notice except as specified below, sell the Collateral or any part thereof in one or more parcels at public or private sale, at the Collateral Agent's offices or elsewhere, for cash, on credit, and upon such other terms as the Collateral Agent may deem commercially reasonable. The Grantor agrees that, to the extent notice of sale shall be required by law, at least 10 days' notice of the time and place of any public sale or the time after which any private sale is to be made shall constitute reasonable notification and specifically such notice shall constitute a reasonable "authenticated notification of disposition" within the meaning of Section 9-611 of the Code. The Collateral Agent (acting on behalf of the Secured Parties) shall not be obligated to make any sale of Collateral regardless of notice of sale having been given. Any Secured Party may adjourn any public or private sale from time to time by announcement at the time and place fixed therefor, and such sale may, without further notice, be made at the time and place to which it was so adjourned.

(b) Any cash held by the Collateral Agent (acting on behalf of the Secured Parties) as Collateral and all proceeds received by the Collateral Agent (acting on behalf of the Secured Parties) in respect of any sale of, collection from, or other realization upon all or any part of the Collateral shall be applied against the Secured Obligations in the order set forth in Section 15 hereof. In the event the proceeds of Collateral are insufficient for the Satisfaction in Full of the Secured Obligations (as defined below), the Grantor shall remain jointly and severally liable for any such deficiency.

(c) The Grantor hereby acknowledges that the Secured Obligations arose out of a commercial transaction, and agrees that if an Event of Default shall occur and be continuing the Collateral Agent (acting on behalf of the Secured Parties) shall have the right to an immediate writ of possession without notice of a hearing. The Collateral Agent (acting on behalf of the Secured Parties) shall have the right to the appointment of a receiver for the properties and assets of the Grantor, and the Grantor hereby consents to such rights and such appointment and hereby waives any objection it may have thereto or the right to have a bond or other security posted by any Secured Party or the Collateral Agent (acting on behalf of the Secured Parties).

(d) The Collateral Agent (acting on behalf of the Secured Parties) may, in addition to other rights and remedies provided for herein, in the other Transaction Documents, or otherwise available to it under applicable law and without the requirement of notice to or upon the Grantor or any other Person (which notice is hereby expressly waived to the maximum extent permitted by the Code or any other applicable law).

15. Priority of Liens; Application of Proceeds of Collateral. Each Secured Party hereby acknowledges and agrees that, notwithstanding the time or order of the filing of any financing statement or other registration or document with respect to the Collateral and the Security Interests, or any provision of this Agreement, any other Security Document, the Code or other applicable law, solely as amongst the Secured Parties, the separate Security Interests of the Secured Parties shall have the same rank and priority; provided, that, the foregoing shall not apply to any Security Interest of a Secured Party that is void or voidable as a matter of law. In furtherance thereof, all proceeds of Collateral received by any Secured Party shall be applied as follows:

(a) first, ratably to pay any expenses due to the Collateral Agent (acting on behalf of the Secured Parties) (including, without limitation, the reasonable costs and out-of-pocket expenses paid or incurred by the Collateral Agent (acting on behalf of the Secured Parties)to correct any default under or enforce any provision of the Transaction Documents, or after the occurrence of any Event of Default in gaining possession of, maintaining, handling, preserving, storing, shipping, selling, preparing for sale, or advertising to sell the Collateral, or any portion thereof, irrespective of whether a sale is consummated) or indemnities then due to any of the Secured Parties under the Transaction Documents, until paid in full;

(b) second, ratably to pay any fees or premiums then due to any of the Secured Parties under the Transaction Documents, until paid in full;

(c) third, ratably to pay interest due in respect of the Secured Obligations then due to any of the Secured Parties, until paid in full;

(d) fourth, ratably to pay the principal amount of all Secured Obligations then due to any of the Secured Parties, until paid in full;

(e) fifth, ratably to pay any other Secured Obligations then due to any of the Secured Parties; and

(f) sixth, to Grantor or such other Person entitled thereto under applicable law.

16. Remedies Cumulative. Each right, power, and remedy of any Secured Party as provided for in this Agreement or in any other Transaction Document or now or hereafter existing at law or in equity or by statute or otherwise shall be cumulative and concurrent and shall be in addition to every other right, power, or remedy provided for in this Agreement or in the other Transaction Documents or now or hereafter existing at law or in equity or by statute or otherwise, and the exercise or beginning of the exercise by any Secured Party, of any one or more of such rights, powers, or remedies shall not preclude the simultaneous or later exercise by such Secured Party of any or all such other rights, powers, or remedies. The Grantor acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to each Secured Party and that the remedy at law for any such breach may be inadequate. The Grantor therefore agrees that, in the event of any breach or any threatened breach, the Collateral Agent (acting on behalf of the Secured Parties) shall be entitled, in addition to all other available remedies, to an injunction restraining any such breach or any such threatened breach, without the necessity of showing economic loss and without any bond or other security being required.

17. Marshaling. No Secured Party shall be required to marshal any present or future collateral security (including but not limited to the Collateral) for, or other assurances of payment of, the Secured Obligations or any of them or to resort to such collateral security or other assurances of payment in any particular order, and all of its rights and remedies hereunder and in respect of such collateral security and other assurances of payment shall be cumulative and in addition to all other rights and remedies, however existing or arising. To the extent that it lawfully may, the Grantor hereby agrees that it will not invoke any law relating to the marshaling of collateral which might cause delay in or impede the enforcement of any Secured Party's rights and remedies under this Agreement or under any other instrument creating or evidencing any of the Secured Obligations or under which any of the Secured Obligations is outstanding or by which any of the Secured Obligations is secured or payment thereof is otherwise assured, and, to the extent that it lawfully may, the Grantor hereby irrevocably waives the benefits of all such laws.

18. Acknowledgment.

(a) The Secured Parties hereby appoint Judd Merrill to act as the initial collateral agent on behalf of all Secured Parties (the "**Collateral Agent**"). Notwithstanding anything in this Agreement to the contrary, one or more Secured Parties (other than the then Collateral Agent) holding a majority of the then aggregate outstanding principal balance of the Notes (excluding any Notes held by the then acting Collateral Agent) may remove the then-acting Collateral Agent and appoint any other Secured Party to act as the Collateral Agent under this Agreement. Upon such appointment such Secured Party shall act as Collateral Agent pursuant to the terms of this Agreement.

(b) Each Secured Party hereby agrees and acknowledges that no other Secured Party has agreed to act for it as an administrative or collateral agent, and each Secured Party is and shall remain solely responsible for the attachment, perfection and priority of all Liens created by this Agreement or any other Security Document in favor of such Secured Party. No Secured Party shall have by reason of this Agreement or any other Transaction Document an agency or fiduciary relationship with any other Secured Party. No Secured Party (which term, as used in this sentence, shall include reference to each Secured Party's officers, directors, employees, attorneys, agents and affiliates and to the officers, directors, employees, attorneys and agents of such Secured Party's affiliates) shall: (i) have any duties or responsibilities except those expressly set forth in this Agreement and the other Security Documents or (ii) be required to take, initiate or conduct any enforcement action (including any litigation, foreclosure or collection proceedings hereunder or under any of the other Security Documents). Without limiting the foregoing, no Secured Party shall have any right of action whatsoever against any other Secured Party as a result of such Secured Party acting or refraining from acting hereunder or under any of the Security Documents except as a result and to the extent of losses caused by such Secured Party's actual gross negligence or willful misconduct. No Secured Party assumes any responsibility for any failure or delay in performance or breach by the Grantor or any other Secured Party of its obligations under this Agreement or any other Transaction Document. No Secured Party makes to any other Secured Party any express or implied warranty, representation or guarantee with respect to any Secured Obligations, Collateral, Transaction Document or the Grantor. No Secured Party nor any of its officers, directors, employees, attorneys or agents shall be responsible to any other Secured Party or any of its officers, directors, employees, attorneys or agents for: (i) any recitals, statements, information, representations or warranties contained in any of the Transaction Documents or in any certificate or other document furnished pursuant to the terms hereof; (ii) the execution, validity, genuineness, effectiveness or enforceability of any of the Transaction Documents; (iii) the validity, genuineness, enforceability, collectability, value, sufficiency or existence of any Collateral, or the attachment, perfection or priority of any Lien therein; or (iv) the assets, liabilities, financial condition, results of operations, business, creditworthiness or legal status of the Grantor or any Account Debtor. No Secured Party nor any of its officers, directors, employees, attorneys or agents shall have any obligation to any other Secured Party to ascertain or inquire into the existence of any default or Event of Default, the observance or performance by the Grantor of any of its duties or agreements under any of the Transaction Documents or the satisfaction of any conditions precedent contained in any of the Transaction Documents.

(c) Each Secured Party hereby acknowledges and represents that it has, independently and without reliance upon any other Secured Party, and based upon such documents, information and analyses as it has deemed appropriate, made its own credit analysis of the Grantor and its own decision to enter into the Transaction Documents and to purchase the Notes, and each Secured Party has made such inquiries concerning the Transaction Documents, the Collateral and the Grantor as such Secured Party feels necessary and appropriate, and has taken such care on its own behalf as would have been the case had it entered into the Transaction Documents without any other Secured Party. Each Secured Party hereby further acknowledges and represents that the other Secured Parties have not made any representations or warranties to it concerning the Grantor, any of the Collateral or the legality, validity, sufficiency or enforceability of any of the Transaction Documents. Each Secured Party also hereby acknowledges that it will, independently and without reliance upon the other Secured Parties, and based upon such financial statements, documents and information as it deems appropriate at the time, continue to make and rely upon its own credit decisions in taking or refraining to take any other action under this Agreement or the Transaction Documents. No Secured Party shall have any duty or responsibility to provide any other Secured Party with any notices, reports or certificates furnished to such Secured Party by the Grantor or any credit or other information concerning the affairs, financial condition, business or assets of the Grantor (or any of its affiliates) which may come into possession of such Secured Party.

19. Indemnity and Expenses.

(a) Without limiting any obligations of the Grantor under the Securities Purchase Agreement, the Grantor agrees to indemnify all Secured Parties from and against all claims, lawsuits and liabilities (including reasonable external attorneys' fees) arising out of or resulting from this Agreement (including enforcement of this Agreement) or any other Transaction Document, except claims, losses or liabilities resulting from the gross negligence or willful misconduct of the party seeking indemnification as determined by a final non-appealable order of a court of competent jurisdiction. This provision shall survive the termination of this Agreement and the Transaction Documents and the Satisfaction in Full of the Secured Obligations.

(b) The Grantor shall, upon demand, pay to the Collateral Agent all of the reasonable costs and out-of-pocket expenses which the Collateral Agent (acting on behalf of the Secured Parties) may incur in connection with (i) the custody, preservation, use or operation of, or, upon an Event of Default, the sale of, collection from, or other realization upon, any of the Collateral in accordance with this Agreement and the other Transaction Documents, (ii) the exercise or enforcement of any of the rights of such Secured Party hereunder or (iii) the failure by the Grantor to perform or observe any of the provisions hereof.

20. Merger, Amendments; Etc. THIS AGREEMENT, TOGETHER WITH THE OTHER TRANSACTION DOCUMENTS, REPRESENTS THE FINAL AGREEMENT BETWEEN THE PARTIES SOLELY WITH RESPECT TO THE SUBJECT MATTER HEREOF AND THEREOF AND MAY NOT BE CONTRADICTED BY EVIDENCE OF PRIOR, CONTEMPORANEOUS OR SUBSEQUENT ORAL AGREEMENTS OF THE PARTIES. THERE ARE NO UNWRITTEN AGREEMENTS BETWEEN THE PARTIES. No provision of this Agreement may be amended other than by an instrument in writing signed by the Grantor, the Collateral Agent and the Required Holders and any amendment to any provision of this Agreement made in conformity with the provisions of this Section 20 shall be binding on all Secured Parties, provided that no such amendment shall be effective to the extent that it (1) applies to less than all of the Secured Parties or (2) imposes any obligation or liability on any Secured Party without such Secured Party's prior written consent (which may be granted or withheld in such Secured Party's sole discretion). No waiver shall be effective unless it is in writing and signed by an authorized representative of the waiving party, provided that no such waiver shall be effective to the extent that it (1) applies to less than all the Secured Parties (unless a party gives a waiver as to itself only) or (2) imposes any obligation or liability on any Secured Party without such Secured Party's prior written consent (which may be granted or withheld in such Secured Party's sole discretion).

21. Addresses for Notices. All notices and other communications provided for hereunder (a) shall be given in the form and manner set forth in the Securities Purchase Agreement and (b) shall be delivered, (i) in the case of notice to the Grantor, by delivery of such notice to the Grantor's address specified in the Securities Purchase Agreement or at such other address as shall be designated by the Grantor in a written notice to each of the Secured Parties in accordance with the provisions thereof, and (ii) in the case of notice to any Secured Party, by delivery of such notice to such Secured Party at its address specified in the Securities Purchase Agreement or at such other address as shall be designated by such Secured Party in a written notice to the Grantor and each other Secured Party in accordance with the provisions thereof.

22. Separate, Continuing Security Interests; Assignments under Transaction Documents. This Agreement shall create a separate, continuing security interest in the Collateral in favor of each Secured Party and shall (a) remain in full force and effect until Satisfaction in Full of the Secured Obligations, (b) be binding upon the Grantor, and its permitted successors and permitted assigns, and (c) inure to the benefit of, and be enforceable by, the Secured Parties and their respective successors, transferees and assigns. Without limiting the generality of the foregoing clause (c), any Secured Party may, in accordance with the provisions of the Transaction Documents, assign or otherwise transfer all or any portion of its rights and obligations under the Transaction Documents to any other Person, and such other Person shall thereupon become vested with all the benefits in respect thereof granted to such Secured Party herein or otherwise. Upon Satisfaction in Full of the Secured Obligations, this Agreement shall terminate and the Security Interests granted hereby shall terminate and all rights to the Collateral shall revert to the Grantor or any other Person entitled thereto, in each case, automatically, without any further consent or action of any Secured Party. At such time, (i) the Grantor shall be authorized to file appropriate termination statements to terminate such Security Interests, (ii) each Secured Party shall promptly return to the Grantor any Collateral in its possession and (iii) each Secured Party shall execute and deliver such other releases and terminations as may be reasonably requested by the Grantor. No Secured Party shall by any act, delay, omission or otherwise, be deemed to have waived any of its rights or remedies hereunder, unless such waiver is in writing and signed by such Secured Party and then only to the extent therein set forth. A waiver by any Secured Party of any right or remedy on any occasion shall not be construed as a bar to the exercise of any such right or remedy which such Secured Party would otherwise have had on any other occasion.

23. Governing Law; Jurisdiction; Service of Process; Jury Trial. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by the internal laws of the State of Delaware, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of Delaware or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of Delaware. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the State of Delaware, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper; provided, however, any suit seeking enforcement against any Collateral or other property may be brought, at any Secured Party's option, in the courts of any jurisdiction where such Secured Party elects to bring such action or where such Collateral or other property may be found. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address for such notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. **EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE TO, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

24. Miscellaneous.

(a) This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party. In the event that any signature is delivered by facsimile transmission or by an e-mail which contains a portable document format (.pdf) file of an executed signature page, such signature page shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such signature page were an original thereof. Any party delivering an executed counterpart of this Agreement by facsimile or other electronic method of transmission also shall deliver an original executed counterpart of this Agreement but the failure to deliver an original executed counterpart shall not affect the validity, enforceability, and binding effect of this Agreement. The foregoing shall apply to each other Security Document *mutatis mutandis*.

(b) Any provision of this Agreement which is prohibited or unenforceable shall be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof in that jurisdiction or affecting the validity or enforceability of such provision in any other jurisdiction.

(c) Headings used in this Agreement are for convenience only and shall not be used in connection with the interpretation of any provision hereof.

(d) The pronouns used herein shall include, when appropriate, either gender and both singular and plural, and the grammatical construction of sentences shall conform thereto.

(e) The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party. For clarification purposes, the Recitals are part of this Agreement.

(f) Unless the context of this Agreement or any other Transaction Document clearly requires otherwise, references to the plural include the singular, references to the singular include the plural, the terms “includes” and “including” are not limiting, and the term “or” has, except where otherwise indicated, the inclusive meaning represented by the phrase “and/or.” The words “hereof,” “herein,” “hereby,” “hereunder,” and similar terms in this Agreement or any other Transaction Document refer to this Agreement or such other Transaction Document, as the case may be, as a whole and not to any particular provision of this Agreement or such other Transaction Document, as the case may be. Section, subsection, clause, schedule, and exhibit references herein are to this Agreement unless otherwise specified. Any reference in this Agreement or in any other Transaction Document to any agreement, instrument, or document shall include all alterations, amendments, changes, extensions, modifications, renewals, replacements, substitutions, joinders, and supplements, thereto and thereof, as applicable (subject to any restrictions on such alterations, amendments, changes, extensions, modifications, renewals, replacements, substitutions, joinders, and supplements set forth herein). “Satisfaction in Full of the Secured Obligations” shall mean the payment in full in cash of all Secured Obligations (other than any obligations which expressly survive such payment in full). Any reference herein to any Person shall be construed to include such Person’s permitted successors and permitted assigns. Any requirement of a writing contained herein or in any other Transaction Document shall be satisfied by the transmission of a Record and any Record so transmitted shall constitute a representation and warranty as to the accuracy and completeness of the information contained therein.

(g) All dollar amounts referred to in this Agreement and the other Transaction Documents are in United States Dollars ("**U.S. Dollars**"), and all amounts owing under this Agreement and all other Transaction Documents shall be paid in U.S. Dollars. All amounts denominated in other currencies shall be converted into the U.S. Dollar equivalent amount in accordance with the Exchange Rate on the date of calculation. "**Exchange Rate**" means, in relation to any amount of currency to be converted into U.S. Dollars pursuant to this Agreement, the U.S. Dollar exchange rate as published in The Wall Street Journal on the relevant date of calculation.

[*signature pages follow*]

IN WITNESS WHEREOF, the undersigned parties hereto have executed this Agreement by and through their duly authorized officers, as of the day and year first above written.

GRANTOR:

AQUA METALS RENO, INC.,
a Delaware corporation

By: */s/ Stephen Cotton*
Stephen Cotton,
President and Chief Executive Officer

COLLATERAL AGENT:

/s/ Judd Merrill
Judd Merrill

SECURED PARTY SIGNATURE PAGE FOR SECURITY AGREEMENT

AQUA METALS RENO, INC.

[*Secured Party's signature to be provided by way of its execution of the Securities Purchase Agreement*]

SECURITY AGREEMENT

This **SECURITY AGREEMENT** (this "**Agreement**"), dated as of December 18, 2024, is made by and among Aqua Metals Reno, Inc., a Delaware corporation (the "**Grantor**"), and Judd Merrill, as the Collateral Agent, and the secured parties listed on the Schedule of Buyers to the Securities Purchase Agreement (as defined below) (collectively, the "**Secured Parties**" and each, individually, a "**Secured Party**").

RECITALS

WHEREAS, pursuant to that certain Securities Purchase Agreement, dated December 18, 2024 (as may be amended, restated, supplemented, or otherwise modified from time to time, including all schedules and exhibits thereto, collectively, the "**Securities Purchase Agreement**"), by and among the Aqua Metals, Inc., a Delaware corporation and parent of Grantor ("**Borrower**"), Borrower and each of the Secured Parties, Borrower has agreed to sell, and each of the Secured Parties have each agreed to purchase, severally and not jointly, certain Notes;

WHEREAS, a condition to the Secured Parties' obligation to purchase the Notes is (i) Grantor's execution and delivery of a Guaranty Agreement ("**Guaranty**") in favor of the Secured Parties in the form of Guaranty attached to the Securities Purchase Agreement as Exhibit D and (ii) the collateralization of Grantor's obligation under the Guaranty by way of a perfected security interest in certain assets of the Grantor pursuant to this Agreement.

WHEREAS, Grantor has previously granted a first priority security interest in all of the Grantor's assets to Summit Investment Services, LLC, a Nevada limited liability company ("**Summit**"), pursuant to a Security Agreement dated December 2023 between Grantor and Summit and related Deed of Trust and Assignment Rents and Leases (collectively, "**Summit First Lien**").

WHEREAS, Summit has consented to the Note offering pursuant to the Securities Purchase Agreement, Grantor's Guaranty and grant of a security interest pursuant to the Security Agreement and agreed to subordinate its Summit First Lien to the Secured Parties security interest in the Grantor's iridium, however Summit has not otherwise agreed to subordinate its security interest in the assets of Grantor and, therefore, the Secured Parties will receive a second priority security interest in the Collateral (as defined below) subject to Summit's senior security interest, except with respect to Grantor's iridium, in which Secured Parties shall have a first priority security interest.

WHEREAS, Grantor shall substantially benefit, directly or indirectly, from the Borrower's sale of the Notes.

WHEREAS, in order to induce the Secured Parties to purchase, severally and not jointly, the Notes as provided for in the Securities Purchase Agreement, Grantor has agreed to grant a continuing security interest in and to the Collateral in order to secure the prompt and complete payment, observance and performance of the Secured Obligations (as defined below).

AGREEMENTS

NOW, THEREFORE, for and in consideration of the recitals made above and other good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

1. Defined Terms. All capitalized terms used herein (including in the preamble and recitals hereof) without definition shall have the meanings ascribed thereto in the Notes. Any terms used in this Agreement that are defined in the Code shall be construed and defined as set forth in the Code unless otherwise defined herein or in the Notes; provided, however, if the Code is used to define any term used herein and if such term is defined differently in different Articles of the Code, the definition of such term contained in Article 9 of the Code shall govern. In addition to those terms defined elsewhere in this Agreement, as used in this Agreement, the following terms shall have the following meanings:

(a) "**Account**" means an "account" (as that term is defined in Article 9 of the Code).

(b) "**Account Debtor**" means an "account debtor" (as that term is defined in Article 9 of the Code).

(c) "**Bankruptcy Code**" means title 11 of the United States Code, as in effect from time to time.

(d) "**Books**" means books and records (including, without limitation, the Grantor's Records) indicating, summarizing, or evidencing the Grantor's assets (including the Collateral) or liabilities, the Grantor's Records relating to its business operations (including, without limitation, stock ledgers) or financial condition, and the Grantor's goods or General Intangibles related to such information.

(e) "**Chattel Paper**" means "chattel paper" (as that term is defined in Article 9 of the Code) and includes tangible chattel paper and electronic chattel paper.

(f) "**Code**" means the Delaware Uniform Commercial Code, as in effect from time to time; provided, however, in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, priority, or remedies with respect to any Secured Party's Lien on any Collateral is governed by the Uniform Commercial Code as enacted and in effect in a jurisdiction other than the State of Delaware, the term "Code" shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies.

(g) "**Collateral**" has the meaning set forth in Section 2.

(h) "**Commercial Tort Claims**" means "commercial tort claims" (as that term is defined in Article 9 of the Code), and includes those commercial tort claims listed on **Schedule 1** attached hereto.

(i) "**Equipment**" means all "equipment" (as that term is defined in Article 9 of the Code) in all of its forms of the Grantor, wherever located, and including, without limitation, all machinery, apparatus, installation facilities and other tangible personal property, and all parts thereof and all accessions, additions, attachments, improvements, substitutions, replacements and proceeds thereto and therefor.

(j) "**Copyrights**" means all copyrights and copyright registrations, and also includes (i) all reissues, continuations, extensions or renewals thereof, (ii) all income, royalties, damages and payments now and hereafter due or payable under and with respect thereto, including payments under all licenses entered into in connection therewith and damages and payments for past or future infringements or dilutions thereof, (iii) the right to sue for past, present and future infringements and dilutions thereof, (iv) the goodwill of Grantor's business symbolized by the foregoing or connected therewith, and (v) all of Grantor's rights corresponding thereto throughout the world.

(k) "**Event of Default**" has the meaning set forth in the Notes.

(l) "**GAAP**" means United States generally accepted accounting principles, consistently applied.

(m) "**General Intangibles**" means "general intangibles" (as that term is defined in Article 9 of the Code) and, in any event, includes payment intangibles, contract rights, rights to payment, rights arising under common law, statutes, or regulations, choses or things in action, goodwill, programming materials, purchase orders, customer lists, monies due or recoverable from pension funds, route lists, rights to payment under any royalty or licensing agreements (including Intellectual Property Licenses), infringement claims, commercial computer programs, information contained on computer disks or tapes, software, literature, reports, catalogs, pension plan refunds, pension plan refund claims, insurance premium rebates, tax refunds, and tax refund claims, interests in a partnership or limited liability company which do not constitute a security under Article 8 of the Code, and any other personal property other than Commercial Tort Claims, money, Accounts, Chattel Paper, goods, Negotiable Collateral, and oil, gas, or other minerals before extraction.

(n) "**Governmental Authority**" means any domestic or foreign federal, state, local, or other governmental or administrative body, instrumentality, board, department, or agency or any court, tribunal, administrative hearing body, arbitration panel, commission, or other similar dispute-resolving panel or body.

(o) "**Insolvency Proceeding**" means any proceeding commenced by or against any Person under any provision of the Bankruptcy Code or under any other state or federal bankruptcy or insolvency law or any equivalent laws in any other jurisdiction, assignments for the benefit of creditors, formal or informal moratoria, compositions, extensions generally with creditors, or proceedings seeking reorganization, arrangement, or other similar relief.

(p) "**Intellectual Property**" means Patents, Copyrights, Trademarks, the goodwill associated with such Trademarks, trade secrets and customer lists, and Intellectual Property Licenses.

(q) "**Intellectual Property Licenses**" means rights under or interests in any patent, trademark, copyright or other intellectual property, including software license agreements with any other party, whether the Grantor is a licensee or licensor under any such license agreement, as may be amended, restated, supplemented, or otherwise modified from time to time.

(r) "**Inventory**" means all "inventory" (as that term is defined in Article 9 of the Code) in all of its forms of the Grantor, wherever located, including, without limitation, (i) all goods in which the Grantor has an interest in mass or a joint or other interest or right of any kind (including goods in which the Grantor has an interest or right as consignee), and (ii) all goods which are returned to or repossessed by the Grantor, and all accessions thereto, products thereof and documents therefor.

(s) "**Lien**" means any mortgage, deed of trust, pledge, hypothecation, assignment for security, security interest, encumbrance, levy, lien or charge of any kind.

(t) "**Negotiable Collateral**" means letters of credit, letter-of-credit rights, instruments, promissory notes, drafts, and documents.

(u) "**New Subsidiary**" has the meaning set forth in the Notes.

(v) "**Notes**" has the meaning set forth in the Securities Purchase Agreement.

(w) "**Patents**" means all patents and patent applications, and also includes (i) all renewals thereof, (ii) all income, royalties, damages and payments now and hereafter due or payable under and with respect thereto, including payments under all licenses entered into in connection therewith and damages and payments for past or future infringements or dilutions thereof, (iii) the right to sue for past, present and future infringements and dilutions thereof, and (iv) all of Grantor's rights corresponding thereto throughout the world.

(x) "**Permitted Liens**" means (i) any Lien for taxes not yet due or delinquent or being contested in good faith by appropriate proceedings for which adequate reserves have been established in accordance with GAAP, (ii) any statutory Lien arising in the ordinary course of business by operation of law with respect to a liability that is not yet due or delinquent or that is being contested in good faith for which adequate reserves have been established in accordance with GAAP, (iii) any Lien created by operation of law, such as materialmen's liens, mechanics' liens and other similar liens, arising in the ordinary course of business with respect to a liability that is not yet due or delinquent or that is being contested in good faith by appropriate proceedings, (iv) Liens on Equipment having a fair market value of not more than $450,000 in the aggregate, but only if the lien constitutes a purchase money security interest incurred in connection with the purchase of such Equipment, (vi) the Summit First Lien and (vii) Liens securing Grantor's obligations under the Guaranty.

(y) "**Permitted Transfers**" means (i) sales of Inventory in the ordinary course of business, (ii) licenses for the use of Intellectual Property in the ordinary course of business that could not result in a legal transfer of title of the licensed property, or (iii) dispositions of worn-out, obsolete or surplus Equipment at fair market value in the ordinary course of business.

(z) "**Person**" has the meaning set forth in the Securities Purchase Agreement.

(aa) "**Proceeds**" has the meaning set forth in Section 2.

(bb) "**Real Property**" means any estates or interests in real property now owned or leased or hereafter acquired or leased by Grantor and the improvements thereto.

(cc) "**Records**" means information that is inscribed on a tangible medium or which is stored in an electronic or other medium and is retrievable in perceivable form.

(dd) "**Secured Obligations**" means all of the present and future payment and performance obligations of Grantor arising under the Guaranty, including, without duplication, reasonable outside attorneys' fees and out-of-pocket expenses and any interest, fees, or expenses that accrue after the filing of an Insolvency Proceeding, regardless of whether allowed or allowable in whole or in part as a claim in any Insolvency Proceeding.

(ee) "**Security Documents**" means, collectively, this Agreement and each other security agreement, control agreement pledge agreement, assignment, mortgage, security deed, deed of trust, and other agreement or document executed and delivered by the Grantor as security for any of the Secured Obligations, as each may be amended, restated, supplemented, or otherwise modified from time to time.

(ff) "**Security Interest**" and "**Security Interests**" have the meanings set forth in Section 2.

(gg) "**Supporting Obligations**" means "supporting obligations" (as such term is defined in Article 9 of the Code).

(hh) "**Trademarks**" means all trademarks, trade names, trademark applications, service marks, service mark applications, and also includes (i) all renewals thereof, (ii) all income, royalties, damages and payments now and hereafter due or payable under and with respect thereto, including payments under all licenses entered into in connection therewith and damages and payments for past or future infringements or dilutions thereof, (iii) the right to sue for past, present and future infringements and dilutions thereof, (iv) the goodwill of Grantor's business symbolized by the foregoing or connected therewith, and (v) all of Grantor's rights corresponding thereto throughout the world.

(ii) "**Transaction Documents**" has the meaning set forth in the Securities Purchase Agreement.

(jj) "**URL**" means "uniform resource locator," an internet web address.

2 . Grant of Security. The Grantor hereby unconditionally grants, assigns, and pledges to each Secured Party a separate, continuing security interest (each, a "**Security Interest**" and, collectively, the "**Security Interests**") in the following assets of the Grantor whether now owned or hereafter acquired or arising and wherever located (collectively, the "**Collateral**:

(a) any Iridium;

(b) Equipment and fixtures;

(c) rights in respect of any settlement or judgment proceeds in that certain litigation*Aqua Metals, Inc.; and Aqua Metals Reno, Inc., Plaintiffs, vs. Johnson Controls Fire Protection, LP, F/K/A SimplexGrinnell LP or Tyco Simplex Grinnell, LLP, and Does 1-10, inclusive, Defendants;* and

(d) all of the proceeds and products, whether tangible or intangible, of any of the foregoing, including proceeds of insurance or Commercial Tort Claims covering or relating to any or all of the foregoing, and any and all Accounts, Books, Chattel Paper, Equipment, General Intangibles, Intellectual Property, Inventory, Negotiable Collateral, Real Estate, Supporting Obligations, money, or other tangible or intangible property resulting from the sale, lease, license, exchange, collection, or other disposition of any of the foregoing, the proceeds of any award in condemnation with respect to any of the foregoing, any rebates or refunds, whether for taxes or otherwise, and all proceeds of any such proceeds, or any portion thereof or interest therein, and the proceeds thereof, and all proceeds of any loss of, damage to, or destruction of the above, whether insured or not insured, and, to the extent not otherwise included, any indemnity, warranty, or guaranty payable by reason of loss or damage to, or otherwise with respect to any of the foregoing (the "**Proceeds**").

3 . Security for Obligations. This Agreement and the Security Interests created hereby secures the payment and performance of the Secured Obligations, whether now existing or arising hereafter.

4. Grantor Remains Liable. Anything herein to the contrary notwithstanding, (a) the Grantor shall remain liable under the contracts and agreements included in the Collateral, to perform all of the duties and obligations thereunder to the same extent as if this Agreement had not been executed, (b) the exercise by Secured Parties, or any of them, of any of the rights hereunder shall not release the Grantor from any of its duties or obligations under such contracts and agreements included in the Collateral, and (c) no Secured Party shall have any obligation or liability under such contracts and agreements included in the Collateral by reason of this Agreement, nor shall any Secured Party be obligated to perform any of the obligations or duties of the Grantor thereunder or to take any action to collect or enforce any claim for payment assigned hereunder. Until an Event of Default shall occur and be continuing, except as otherwise provided in this Agreement or any other Guaranty, the Grantor shall have the right to possession and enjoyment of the Collateral for the purpose of conducting the ordinary course of its businesses, subject to and upon the terms hereof and the other Transaction Documents.

5. Representations and Warranties. The Grantor hereby represents and warrants as follows:

(a) The exact legal name of the Grantor is set forth in the preamble this Agreement.

(b) **Schedule 2** attached hereto sets forth (i) all Real Property owned or leased by the Grantor, together with all other locations of Collateral, as of the date hereof, and (ii) the chief executive office of the Grantor as of the date hereof.

(c) This Agreement creates a valid security interest in all of the Collateral of the Grantor, to the extent a security interest therein can be created under the Code, securing the payment of the Secured Obligations. Except to the extent a security interest in the Collateral cannot be perfected by the filing of a financing statement under the Code, all filings and other actions necessary to perfect such security interest have been duly taken or will have been taken upon the filing of financing statements listing the Grantor, as a debtor, and Secured Parties, as secured parties, in the jurisdictions listed on **Schedule 3** attached hereto. Upon the making of such filings, Secured Parties shall each have a second priority perfected security interest in all of the Collateral of the Grantor, except for Grantor's iridium, subject and junior to the Summit First Lien and to the extent such security interest can be perfected by the filing of a financing statement.

(d) Except for the Security Interests created hereby, no Collateral is subject to any Lien as of the date hereof other than Permitted Liens.

(e) Except for the consent of Summit, which has been obtained, no consent, approval, authorization, or other order or other action by, and no notice to or filing with, any Governmental Authority or any other Person is required for the grant of a Security Interest by the Grantor in and to the Collateral pursuant to this Agreement or for the execution, delivery, or performance of this Agreement by the Grantor.

6. Covenants. The Grantor covenants and agrees with each Secured Party that from and after the date of this Agreement and until the date of termination of this Agreement in accordance with Section 22 hereof:

(a) Commercial Tort Claims. The Grantor shall promptly (and in any event within five (5) Business Days of receipt thereof) notify the Secured Parties in writing upon incurring or otherwise obtaining a Commercial Tort Claim having a value or involving an asserted claim, in excess of $50,000 in the aggregate after the date hereof and, upon the written request of any Secured Party, promptly amend **Schedule 1** to this Agreement to describe such after-acquired Commercial Tort Claim in a manner that reasonably identifies such Commercial Tort Claim, and hereby authorizes the filing of additional financing statements or amendments to existing financing statements describing such Commercial Tort Claims, and agrees to do such other acts or things deemed necessary by any Secured Party to give the Secured Parties a first priority, perfected security interest (subject to Permitted Liens) in any such Commercial Tort Claim.

(b) Transfers and Other Liens. The Grantor shall not (i) sell, lease, license, assign (by operation of law or otherwise), transfer or otherwise dispose of, or grant any option with respect to, any of the Collateral, except for Permitted Transfers or as expressly permitted by this Agreement and the Guaranty, or (ii) except for Permitted Liens, create or permit to exist any Lien upon or with respect to any of the Collateral without the consent of the Collateral Agent (acting on behalf of the Secured Parties). The inclusion of Proceeds in the Collateral shall not be deemed to constitute consent by any Secured Party to any sale or other disposition of any of the Collateral except as expressly permitted in this Agreement or the Guaranty.

(c) Preservation of Existence. The Grantor shall maintain and preserve its existence, rights and privileges, and become or remain duly qualified and in good standing in each jurisdiction in which the character of the properties owned or leased by it or in which the transaction of its business makes such qualification necessary, except where the failure to do so would not cause a Material Adverse Effect (as defined in the Securities Purchase Agreement).

(d) Maintenance of Properties. The Grantor shall maintain and preserve all of its properties which are reasonably necessary or useful in the proper conduct of its business in good working order and condition, ordinary wear and tear excepted, and comply at all times with the provisions of all leases to which it is a party as lessee or under which it occupies property, so as to prevent any loss or forfeiture thereof or thereunder.

(e) Maintenance of Insurance. The Grantor shall maintain insurance with responsible and reputable insurance companies or associations (including, without limitation, comprehensive general liability, property, hazard, rent and business interruption insurance) with respect to all of its assets and properties (including, without limitation, all real properties leased or owned by it and any and all Inventory and Equipment) and business, in such amounts and covering such risks as is required by any governmental authority having jurisdiction with respect thereto or as is carried generally in accordance with sound business practice by companies in similar businesses similarly situated, in each case, reasonably acceptable to the Secured Parties.

(f) Other Actions as to Any and All Collateral. The Grantor shall promptly and in any event within five (5) Business Days(or such longer period as agreed to by the Collateral Agent (acting on behalf of the Secured Parties), in his reasonable discretion) of (i) acquiring or otherwise obtaining any Collateral after the date hereof consisting of Chattel Paper (electronic, tangible or otherwise), documents (as defined in Article 9 of the Code), promissory notes (as defined in the Code) or instruments (as defined in the Code) or (ii) any amount payable under or in connection with any of the Collateral being or becoming evidenced after the date hereof by any Chattel Paper, documents, promissory notes, or instruments and, in each such case, of clauses (i) and (ii) above, having an aggregate value with respect to Collateral of the same type or an individual value (or face amount) in excess of $50,000 and, upon the written request of any Secured Party, promptly execute such other documents, or if applicable, deliver such Chattel Paper and do such other acts or things reasonably requested by Collateral Agent (acting on behalf of the Secured Parties) to protect the Secured Parties' respective Security Interests therein.

7. Relation to Other Transaction Documents. In the event of any conflict between any provision in this Agreement and any provision in the Securities Purchase Agreement or Notes, such provision of the Securities Purchase Agreement or Notes shall control, except to the extent the applicable provision in this Agreement is more restrictive with respect to the rights of the Grantor or imposes more burdensome or additional obligations on the Grantor, in which event the applicable provision in this Agreement shall control.

8. Further Assurances.

(a) The Grantor agrees that from time to time, at its own expense, it will promptly execute and deliver all further instruments and documents, and take all further action, that may be reasonably necessary or that the Collateral Agent (acting on behalf of the Secured Parties) may reasonably request, in order to perfect and protect the Security Interests granted or purported to be granted hereby or to enable any Secured Party to exercise and enforce its rights and remedies hereunder with respect to any of the Collateral; provided, however, in no event shall the Grantor be required to take any action to perfect a Security Interest in any Collateral represented by a certificate of title.

(b) The Grantor authorizes the filing by Collateral Agent (acting on behalf of the Secured Parties) of financing or continuation statements, or amendments thereto, including, but limited to, the recordation of the security interests granted hereunder in Patents, Trademarks and Copyrights in the United States Patent and Trademark Office and the United States Copyright Office, and Grantor will execute and deliver to Collateral Agent such other instruments or notices, as may be necessary or as the Collateral Agent (acting on behalf of the Secured Parties) may reasonably request, in order to perfect and preserve the Security Interests granted or purported to be granted hereby. Upon the Satisfaction in Full of the Secured Obligations, the Collateral Agent shall (at Grantor's expense) file a termination statement and/or other necessary documents terminating and releasing any and all financing statements or Liens on the Collateral pursuant to Section 22.

(c) The Grantor authorizes any Secured Party at any time and from time to time to file, transmit, or communicate, as applicable, financing statements and amendments (i) describing the Collateral as "all real and personal property of debtor" or "all assets of debtor" or words of similar effect, (ii) describing the Collateral as being of equal or lesser scope or with greater detail, or (iii) that contain any information required by part 5 of Article 9 of the Code for the sufficiency or filing office acceptance. The Grantor also hereby ratifies any and all financing statements or amendments previously filed by any Secured Party in any jurisdiction.

(d) The Grantor acknowledges that except as provided pursuant to clause (b) above it is not authorized to file any financing statement or amendment or termination statement with respect to any financing statement filed in connection with this Agreement without the prior written consent of the Collateral Agent (acting on behalf of the Secured Parties), subject to the Grantor's rights under Section 9-509(d)(2) of the Code.

(e) Upon ten (10) Business Days advance notice, the Grantor shall permit each Secured Party or its employees, accountants, attorneys or agents, access to examine and inspect any Collateral or any other property of the Grantor at any time during ordinary business hours, at such Secured Party's expense.

9. Collateral Agent's Right to Perform Contracts, Exercise Rights, etc. Upon the occurrence and during the continuance of an Event of Default, the Collateral Agent (acting on behalf of the Secured Parties) may proceed to perform any and all of the obligations of the Grantor contained in any contract, lease, or other agreement and exercise any and all rights of the Grantor therein contained as fully as the Grantor itself could.

10. Collateral Agent Appointed Attorney-in-Fact. The Grantor, on behalf of itself and each New Subsidiary of the Grantor, hereby irrevocably appoints the Collateral Agent (acting on behalf of the Secured Parties) as the attorney-in-fact of the Grantor and each such New Subsidiary upon the occurrence and during the continuance of an Event of Default. In the event the Grantor or any New Subsidiary fails to execute or deliver in a timely manner any Transaction Document or other agreement, document, certificate or instrument which the Grantor or New Subsidiary now or at any time hereafter is required to execute or deliver pursuant to the terms of the Securities Purchase Agreement or any other Transaction Document, upon the occurrence and during the continuance of an Event of Default and after advance written notice to the Grantor, the Collateral Agent (acting on behalf of the Secured Parties) shall have full authority in the place and stead of the Grantor or New Subsidiary, and in the name of the Grantor, such New Subsidiary or otherwise, to execute and deliver each of the foregoing. Without limitation of the foregoing, upon the occurrence and during the continuance of an Event of Default, the Collateral Agent (acting on behalf of the Secured Parties) shall have full authority in the place and stead of the Grantor and each New Subsidiary, and in the name of any the Grantor, any such New Subsidiary or otherwise, to take any action and to execute any instrument which the Collateral Agent (acting on behalf of the Secured Parties)may reasonably deem necessary or advisable to accomplish the purposes of this Agreement, including, without limitation:

(a) to ask, demand, collect, sue for, recover, compromise, receive and give acquittance and receipts for moneys due and to become due under or in connection with any Collateral of the Grantor or New Subsidiary;

(b) to receive and open all mail addressed to the Grantor or New Subsidiary and to notify postal authorities to change the address for the delivery of mail to the Grantor or New Subsidiary to that of an address approved by the Collateral Agent;

(c) to receive, indorse, and collect any drafts or other instruments, documents, Negotiable Collateral or Chattel Paper;

(d) to file any claims or take any action or institute any proceedings which the Collateral Agent (acting on behalf of the Secured Parties)may deem necessary for the collection of any of the Collateral of the Grantor or New Subsidiary or otherwise to enforce the rights of any Secured Party with respect to any of the Collateral; and

(e) to use any labels, patents, trademarks, trade names, URLs, domain names, industrial designs, copyrights, customer lists, advertising matter or other industrial or intellectual property rights, in advertising for the exclusive purpose of sale and selling Inventory and other Collateral and to collect any amounts due under Accounts, contracts or Negotiable Collateral of the Grantor or New Subsidiary.

To the extent permitted by law, the Grantor hereby ratifies, for itself and each New Subsidiary, all that such attorney-in-fact shall lawfully do or cause to be done by virtue hereof. Such power-of-attorney granted pursuant to this Section 10 is coupled with an interest and shall be irrevocable until this Agreement is terminated.

11. Collateral Agent May Perform. If the Grantor fails to perform any agreement contained herein, upon the occurrence and during the continuance of an Event of Default, after advance written notice to the Grantor, the Collateral Agent (acting on behalf of the Secured Parties)may itself perform, or cause performance of, such agreement, and the reasonable out-of-pocket expenses of the Collateral Agent incurred in connection therewith shall be payable by the Grantor.

12. Collateral Agent's Duties; Bailee for Perfection. The powers conferred on the Collateral Agent (acting on behalf of the Secured Parties) hereunder are solely to protect the Secured Parties' respective interests in the Collateral and shall not impose any duty upon the Collateral Agent in favor of the Grantor or any other Secured Party to exercise any such powers. Except for the safe custody of any Collateral in its actual possession and the accounting for moneys actually received by it hereunder and except as provided in the Code, the Collateral Agent (acting on behalf of the Secured Parties) shall not have any duty to the Grantor or any other Secured Party as to any Collateral or as to the taking of any necessary steps to preserve rights against prior parties or any other rights pertaining to any Collateral. The Collateral Agent (acting on behalf of the Secured Parties) shall be deemed to have exercised reasonable care in the custody and preservation of any Collateral in its actual possession if such Collateral is accorded treatment substantially equal to that which is accorded to its own property. The Collateral Agent (acting on behalf of the Secured Parties) agrees that, with respect to any Collateral at any time or times in its possession and in which any other Secured Party has a Lien, the Collateral Agent (acting on behalf of the Secured Parties) shall be the bailee of each Secured Party solely for purposes of perfecting (to the extent not otherwise perfected) the Secured Parties Lien in such Collateral, provided that the Collateral Agent (acting on behalf of the Secured Parties) shall be obligated to obtain or retain possession of any such Collateral.

13. Collection of Accounts, General Intangibles and Negotiable Collateral. At any time upon the occurrence and during the continuation of an Event of Default, the Collateral Agent (acting on behalf of the Secured Parties)may, following delivery of advance written notice to the Grantor, (a) notify Account Debtors of the Grantor that the Accounts, General Intangibles, Chattel Paper or Negotiable Collateral have been assigned to the Collateral Agent (acting on behalf of the Secured Parties) or that Secured Parties have a security interest therein, and (b) collect the Accounts, General Intangibles and Negotiable Collateral directly, and any collection costs and expenses shall constitute part of the Secured Obligations.

14. Remedies. Upon the occurrence and during the continuance of an Event of Default:

(a) The Collateral Agent (acting on behalf of the Secured Parties) may exercise in respect of the Collateral, in addition to other rights and remedies provided for herein, in the other Transaction Documents, or otherwise available to it, all the rights and remedies of a secured party on default under the Code or any other applicable law. Without limiting the generality of the foregoing, the Grantor expressly agrees that, in any such event, the Collateral Agent (acting on behalf of the Secured Parties) without any demand, advertisement, or notice of any kind (except a notice specified below of time and place of public or private sale) to or upon the Grantor or any other Person (all and each of which demands, advertisements and notices are hereby expressly waived to the maximum extent permitted by the Code or by any other applicable law), may take immediate possession of all or any portion of the Collateral and (i) require the Grantor to, and the Grantor hereby agrees that it will at its own expense and upon request of the Collateral Agent (acting on behalf of the Secured Parties) forthwith, assemble all or part of the Collateral as directed by the Collateral Agent and make it available to the Collateral Agent at one or more locations of the Grantor, and (ii) without notice except as specified below, sell the Collateral or any part thereof in one or more parcels at public or private sale, at the Collateral Agent's offices or elsewhere, for cash, on credit, and upon such other terms as the Collateral Agent may deem commercially reasonable. The Grantor agrees that, to the extent notice of sale shall be required by law, at least 10 days' notice of the time and place of any public sale or the time after which any private sale is to be made shall constitute reasonable notification and specifically such notice shall constitute a reasonable "authenticated notification of disposition" within the meaning of Section 9-611 of the Code. The Collateral Agent (acting on behalf of the Secured Parties) shall not be obligated to make any sale of Collateral regardless of notice of sale having been given. Any Secured Party may adjourn any public or private sale from time to time by announcement at the time and place fixed therefor, and such sale may, without further notice, be made at the time and place to which it was so adjourned.

(b) Any cash held by the Collateral Agent (acting on behalf of the Secured Parties) as Collateral and all proceeds received by the Collateral Agent (acting on behalf of the Secured Parties) in respect of any sale of, collection from, or other realization upon all or any part of the Collateral shall be applied against the Secured Obligations in the order set forth in Section 15 hereof. In the event the proceeds of Collateral are insufficient for the Satisfaction in Full of the Secured Obligations (as defined below), the Grantor shall remain jointly and severally liable for any such deficiency.

(c) The Grantor hereby acknowledges that the Secured Obligations arose out of a commercial transaction, and agrees that if an Event of Default shall occur and be continuing the Collateral Agent (acting on behalf of the Secured Parties) shall have the right to an immediate writ of possession without notice of a hearing. The Collateral Agent (acting on behalf of the Secured Parties) shall have the right to the appointment of a receiver for the properties and assets of the Grantor, and the Grantor hereby consents to such rights and such appointment and hereby waives any objection it may have thereto or the right to have a bond or other security posted by any Secured Party or the Collateral Agent (acting on behalf of the Secured Parties).

(d) The Collateral Agent (acting on behalf of the Secured Parties) may, in addition to other rights and remedies provided for herein, in the other Transaction Documents, or otherwise available to it under applicable law and without the requirement of notice to or upon the Grantor or any other Person (which notice is hereby expressly waived to the maximum extent permitted by the Code or any other applicable law).

15. Priority of Liens; Application of Proceeds of Collateral. Each Secured Party hereby acknowledges and agrees that, notwithstanding the time or order of the filing of any financing statement or other registration or document with respect to the Collateral and the Security Interests, or any provision of this Agreement, any other Security Document, the Code or other applicable law, solely as amongst the Secured Parties, the separate Security Interests of the Secured Parties shall have the same rank and priority; provided, that, the foregoing shall not apply to any Security Interest of a Secured Party that is void or voidable as a matter of law. In furtherance thereof, all proceeds of Collateral received by any Secured Party shall be applied as follows:

(a) first, ratably to pay any expenses due to the Collateral Agent (acting on behalf of the Secured Parties) (including, without limitation, the reasonable costs and out-of-pocket expenses paid or incurred by the Collateral Agent (acting on behalf of the Secured Parties)to correct any default under or enforce any provision of the Transaction Documents, or after the occurrence of any Event of Default in gaining possession of, maintaining, handling, preserving, storing, shipping, selling, preparing for sale, or advertising to sell the Collateral, or any portion thereof, irrespective of whether a sale is consummated) or indemnities then due to any of the Secured Parties under the Transaction Documents, until paid in full;

(b) second, ratably to pay any fees or premiums then due to any of the Secured Parties under the Transaction Documents, until paid in full;

(c) third, ratably to pay interest due in respect of the Secured Obligations then due to any of the Secured Parties, until paid in full;

(d) fourth, ratably to pay the principal amount of all Secured Obligations then due to any of the Secured Parties, until paid in full;

(e) fifth, ratably to pay any other Secured Obligations then due to any of the Secured Parties; and

(f) sixth, to Grantor or such other Person entitled thereto under applicable law.

16. Remedies Cumulative. Each right, power, and remedy of any Secured Party as provided for in this Agreement or in any other Transaction Document or now or hereafter existing at law or in equity or by statute or otherwise shall be cumulative and concurrent and shall be in addition to every other right, power, or remedy provided for in this Agreement or in the other Transaction Documents or now or hereafter existing at law or in equity or by statute or otherwise, and the exercise or beginning of the exercise by any Secured Party, of any one or more of such rights, powers, or remedies shall not preclude the simultaneous or later exercise by such Secured Party of any or all such other rights, powers, or remedies. The Grantor acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to each Secured Party and that the remedy at law for any such breach may be inadequate. The Grantor therefore agrees that, in the event of any breach or any threatened breach, the Collateral Agent (acting on behalf of the Secured Parties) shall be entitled, in addition to all other available remedies, to an injunction restraining any such breach or any such threatened breach, without the necessity of showing economic loss and without any bond or other security being required.

17. Marshaling. No Secured Party shall be required to marshal any present or future collateral security (including but not limited to the Collateral) for, or other assurances of payment of, the Secured Obligations or any of them or to resort to such collateral security or other assurances of payment in any particular order, and all of its rights and remedies hereunder and in respect of such collateral security and other assurances of payment shall be cumulative and in addition to all other rights and remedies, however existing or arising. To the extent that it lawfully may, the Grantor hereby agrees that it will not invoke any law relating to the marshaling of collateral which might cause delay in or impede the enforcement of any Secured Party's rights and remedies under this Agreement or under any other instrument creating or evidencing any of the Secured Obligations or under which any of the Secured Obligations is outstanding or by which any of the Secured Obligations is secured or payment thereof is otherwise assured, and, to the extent that it lawfully may, the Grantor hereby irrevocably waives the benefits of all such laws.

18. Acknowledgment.

(a) The Secured Parties hereby appoint Judd Merrill to act as the initial collateral agent on behalf of all Secured Parties (the "**Collateral Agent**"). Notwithstanding anything in this Agreement to the contrary, one or more Secured Parties (other than the then Collateral Agent) holding a majority of the then aggregate outstanding principal balance of the Notes (excluding any Notes held by the then acting Collateral Agent) may remove the then-acting Collateral Agent and appoint any other Secured Party to act as the Collateral Agent under this Agreement. Upon such appointment such Secured Party shall act as Collateral Agent pursuant to the terms of this Agreement.

(b) Each Secured Party hereby agrees and acknowledges that no other Secured Party has agreed to act for it as an administrative or collateral agent, and each Secured Party is and shall remain solely responsible for the attachment, perfection and priority of all Liens created by this Agreement or any other Security Document in favor of such Secured Party. No Secured Party shall have by reason of this Agreement or any other Transaction Document an agency or fiduciary relationship with any other Secured Party. No Secured Party (which term, as used in this sentence, shall include reference to each Secured Party's officers, directors, employees, attorneys, agents and affiliates and to the officers, directors, employees, attorneys and agents of such Secured Party's affiliates) shall: (i) have any duties or responsibilities except those expressly set forth in this Agreement and the other Security Documents or (ii) be required to take, initiate or conduct any enforcement action (including any litigation, foreclosure or collection proceedings hereunder or under any of the other Security Documents). Without limiting the foregoing, no Secured Party shall have any right of action whatsoever against any other Secured Party as a result of such Secured Party acting or refraining from acting hereunder or under any of the Security Documents except as a result and to the extent of losses caused by such Secured Party's actual gross negligence or willful misconduct. No Secured Party assumes any responsibility for any failure or delay in performance or breach by the Grantor or any other Secured Party of its obligations under this Agreement or any other Transaction Document. No Secured Party makes to any other Secured Party any express or implied warranty, representation or guarantee with respect to any Secured Obligations, Collateral, Transaction Document or the Grantor. No Secured Party nor any of its officers, directors, employees, attorneys or agents shall be responsible to any other Secured Party or any of its officers, directors, employees, attorneys or agents for: (i) any recitals, statements, information, representations or warranties contained in any of the Transaction Documents or in any certificate or other document furnished pursuant to the terms hereof; (ii) the execution, validity, genuineness, effectiveness or enforceability of any of the Transaction Documents; (iii) the validity, genuineness, enforceability, collectability, value, sufficiency or existence of any Collateral, or the attachment, perfection or priority of any Lien therein; or (iv) the assets, liabilities, financial condition, results of operations, business, creditworthiness or legal status of the Grantor or any Account Debtor. No Secured Party nor any of its officers, directors, employees, attorneys or agents shall have any obligation to any other Secured Party to ascertain or inquire into the existence of any default or Event of Default, the observance or performance by the Grantor of any of its duties or agreements under any of the Transaction Documents or the satisfaction of any conditions precedent contained in any of the Transaction Documents.

(b) Each Secured Party hereby acknowledges and represents that it has, independently and without reliance upon any other Secured Party, and based upon such documents, information and analyses as it has deemed appropriate, made its own credit analysis of the Grantor and its own decision to enter into the Transaction Documents and to purchase the Notes, and each Secured Party has made such inquiries concerning the Transaction Documents, the Collateral and the Grantor as such Secured Party feels necessary and appropriate, and has taken such care on its own behalf as would have been the case had it entered into the Transaction Documents without any other Secured Party. Each Secured Party hereby further acknowledges and represents that the other Secured Parties have not made any representations or warranties to it concerning the Grantor, any of the Collateral or the legality, validity, sufficiency or enforceability of any of the Transaction Documents. Each Secured Party also hereby acknowledges that it will, independently and without reliance upon the other Secured Parties, and based upon such financial statements, documents and information as it deems appropriate at the time, continue to make and rely upon its own credit decisions in taking or refraining to take any other action under this Agreement or the Transaction Documents. No Secured Party shall have any duty or responsibility to provide any other Secured Party with any notices, reports or certificates furnished to such Secured Party by the Grantor or any credit or other information concerning the affairs, financial condition, business or assets of the Grantor (or any of its affiliates) which may come into possession of such Secured Party.

19. Indemnity and Expenses.

(a) Without limiting any obligations of the Grantor under the Securities Purchase Agreement, the Grantor agrees to indemnify all Secured Parties from and against all claims, lawsuits and liabilities (including reasonable external attorneys' fees) arising out of or resulting from this Agreement (including enforcement of this Agreement) or any other Transaction Document, except claims, losses or liabilities resulting from the gross negligence or willful misconduct of the party seeking indemnification as determined by a final non-appealable order of a court of competent jurisdiction. This provision shall survive the termination of this Agreement and the Transaction Documents and the Satisfaction in Full of the Secured Obligations.

(b) The Grantor shall, upon demand, pay to the Collateral Agent all of the reasonable costs and out-of-pocket expenses which the Collateral Agent (acting on behalf of the Secured Parties) may incur in connection with (i) the custody, preservation, use or operation of, or, upon an Event of Default, the sale of, collection from, or other realization upon, any of the Collateral in accordance with this Agreement and the other Transaction Documents, (ii) the exercise or enforcement of any of the rights of such Secured Party hereunder or (iii) the failure by the Grantor to perform or observe any of the provisions hereof.

20. Merger, Amendments; Etc. THIS AGREEMENT, TOGETHER WITH THE OTHER TRANSACTION DOCUMENTS, REPRESENTS THE FINAL AGREEMENT BETWEEN THE PARTIES SOLELY WITH RESPECT TO THE SUBJECT MATTER HEREOF AND THEREOF AND MAY NOT BE CONTRADICTED BY EVIDENCE OF PRIOR, CONTEMPORANEOUS OR SUBSEQUENT ORAL AGREEMENTS OF THE PARTIES. THERE ARE NO UNWRITTEN AGREEMENTS BETWEEN THE PARTIES. No provision of this Agreement may be amended other than by an instrument in writing signed by the Grantor, the Collateral Agent and the Required Holders and any amendment to any provision of this Agreement made in conformity with the provisions of this Section 20 shall be binding on all Secured Parties, provided that no such amendment shall be effective to the extent that it (1) applies to less than all of the Secured Parties or (2) imposes any obligation or liability on any Secured Party without such Secured Party's prior written consent (which may be granted or withheld in such Secured Party's sole discretion). No waiver shall be effective unless it is in writing and signed by an authorized representative of the waiving party, provided that no such waiver shall be effective to the extent that it (1) applies to less than all the Secured Parties (unless a party gives a waiver as to itself only) or (2) imposes any obligation or liability on any Secured Party without such Secured Party's prior written consent (which may be granted or withheld in such Secured Party's sole discretion).

21. Addresses for Notices. All notices and other communications provided for hereunder (a) shall be given in the form and manner set forth in the Securities Purchase Agreement and (b) shall be delivered, (i) in the case of notice to the Grantor, by delivery of such notice to the Grantor's address specified in the Securities Purchase Agreement or at such other address as shall be designated by the Grantor in a written notice to each of the Secured Parties in accordance with the provisions thereof, and (ii) in the case of notice to any Secured Party, by delivery of such notice to such Secured Party at its address specified in the Securities Purchase Agreement or at such other address as shall be designated by such Secured Party in a written notice to the Grantor and each other Secured Party in accordance with the provisions thereof.

22. Separate, Continuing Security Interests; Assignments under Transaction Documents. This Agreement shall create a separate, continuing security interest in the Collateral in favor of each Secured Party and shall (a) remain in full force and effect until Satisfaction in Full of the Secured Obligations, (b) be binding upon the Grantor, and its permitted successors and permitted assigns, and (c) inure to the benefit of, and be enforceable by, the Secured Parties and their respective successors, transferees and assigns. Without limiting the generality of the foregoing clause (c), any Secured Party may, in accordance with the provisions of the Transaction Documents, assign or otherwise transfer all or any portion of its rights and obligations under the Transaction Documents to any other Person, and such other Person shall thereupon become vested with all the benefits in respect thereof granted to such Secured Party herein or otherwise. Upon Satisfaction in Full of the Secured Obligations, this Agreement shall terminate and the Security Interests granted hereby shall terminate and all rights to the Collateral shall revert to the Grantor or any other Person entitled thereto, in each case, automatically, without any further consent or action of any Secured Party. At such time, (i) the Grantor shall be authorized to file appropriate termination statements to terminate such Security Interests, (ii) each Secured Party shall promptly return to the Grantor any Collateral in its possession and (iii) each Secured Party shall execute and deliver such other releases and terminations as may be reasonably requested by the Grantor. No Secured Party shall by any act, delay, omission or otherwise, be deemed to have waived any of its rights or remedies hereunder, unless such waiver is in writing and signed by such Secured Party and then only to the extent therein set forth. A waiver by any Secured Party of any right or remedy on any occasion shall not be construed as a bar to the exercise of any such right or remedy which such Secured Party would otherwise have had on any other occasion.

23. Governing Law; Jurisdiction; Service of Process; Jury Trial. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by the internal laws of the State of Delaware, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of Delaware or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of Delaware. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the State of Delaware, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper; provided, however, any suit seeking enforcement against any Collateral or other property may be brought, at any Secured Party's option, in the courts of any jurisdiction where such Secured Party elects to bring such action or where such Collateral or other property may be found. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address for such notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. **EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE TO, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

24. Miscellaneous.

(a) This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party. In the event that any signature is delivered by facsimile transmission or by an e-mail which contains a portable document format (.pdf) file of an executed signature page, such signature page shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such signature page were an original thereof. Any party delivering an executed counterpart of this Agreement by facsimile or other electronic method of transmission also shall deliver an original executed counterpart of this Agreement but the failure to deliver an original executed counterpart shall not affect the validity, enforceability, and binding effect of this Agreement. The foregoing shall apply to each other Security Document *mutatis mutandis*.

(b) Any provision of this Agreement which is prohibited or unenforceable shall be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof in that jurisdiction or affecting the validity or enforceability of such provision in any other jurisdiction.

(c) Headings used in this Agreement are for convenience only and shall not be used in connection with the interpretation of any provision hereof.

(d) The pronouns used herein shall include, when appropriate, either gender and both singular and plural, and the grammatical construction of sentences shall conform thereto.

(e) The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party. For clarification purposes, the Recitals are part of this Agreement.

(f) Unless the context of this Agreement or any other Transaction Document clearly requires otherwise, references to the plural include the singular, references to the singular include the plural, the terms “includes” and “including” are not limiting, and the term “or” has, except where otherwise indicated, the inclusive meaning represented by the phrase “and/or.” The words “hereof,” “herein,” “hereby,” “hereunder,” and similar terms in this Agreement or any other Transaction Document refer to this Agreement or such other Transaction Document, as the case may be, as a whole and not to any particular provision of this Agreement or such other Transaction Document, as the case may be. Section, subsection, clause, schedule, and exhibit references herein are to this Agreement unless otherwise specified. Any reference in this Agreement or in any other Transaction Document to any agreement, instrument, or document shall include all alterations, amendments, changes, extensions, modifications, renewals, replacements, substitutions, joinders, and supplements, thereto and thereof, as applicable (subject to any restrictions on such alterations, amendments, changes, extensions, modifications, renewals, replacements, substitutions, joinders, and supplements set forth herein). “Satisfaction in Full of the Secured Obligations” shall mean the payment in full in cash of all Secured Obligations (other than any obligations which expressly survive such payment in full). Any reference herein to any Person shall be construed to include such Person’s permitted successors and permitted assigns. Any requirement of a writing contained herein or in any other Transaction Document shall be satisfied by the transmission of a Record and any Record so transmitted shall constitute a representation and warranty as to the accuracy and completeness of the information contained therein.

(g) All dollar amounts referred to in this Agreement and the other Transaction Documents are in United States Dollars ("**U.S. Dollars**"), and all amounts owing under this Agreement and all other Transaction Documents shall be paid in U.S. Dollars. All amounts denominated in other currencies shall be converted into the U.S. Dollar equivalent amount in accordance with the Exchange Rate on the date of calculation. "**Exchange Rate**" means, in relation to any amount of currency to be converted into U.S. Dollars pursuant to this Agreement, the U.S. Dollar exchange rate as published in The Wall Street Journal on the relevant date of calculation.

[*signature pages follow*]

IN WITNESS WHEREOF, the undersigned parties hereto have executed this Agreement by and through their duly authorized officers, as of the day and year first above written.

GRANTOR:

AQUA METALS RENO, INC.,
a Delaware corporation

By: _____
Stephen Cotton,
President and Chief Executive Officer

COLLATERAL AGENT:

_____
Judd Merrill

SECURED PARTY SIGNATURE PAGE FOR SECURITY AGREEMENT

AQUA METALS RENO, INC.

[*Secured Party's signature to be provided by way of its execution of the Securities Purchase Agreement*]

Exhibit 19.1

Statement of Policies on Trading In Securities

Aqua Metals, Inc. has adopted several policies on trading in securities both of Aqua Metals, Inc. and of other corporations. These policies apply equally to employees, officers, directors and consultants of Aqua Metals, Inc. and of companies owned by Aqua Metals, Inc. (all of which are referred to collectively for convenience as "**Aqua Metals**" or the "**Company**"). "Securities" includes stock, preferred stock, warrants, convertible debentures and exchange-traded derivative securities. Please read this document carefully.

Policy Statement No. 1: ("**Insider Trading**")	No director, officer, employee or consultant of Aqua Metals who has any material nonpublic information relating to the Company or to any publicly-traded companies with which the Company does business, such as customers, partners, or suppliers, may buy or sell securities of the Company or such other companies, pass the information to others or otherwise attempt to take advantage of the information. All memoranda, correspondence and other documents that contain nonpublic information must be kept in a secure place, such as a locked office or locked file cabinet, where others do not have access to such materials. Even if you are not in possession of inside information, you must not recommend to any other person to buy or sell securities of the Company or any other publicly-traded companies with which the Company does business.
Policy Statement No. 2: ("**Speculative Trades**")	No director, officer, employee or consultant of Aqua Metals may engage in any short term or speculative transactions involving securities of the Company. These prohibited speculative transactions include: short sales, publicly traded options, hedging transactions, margin accounts and pledged securities, and standing and limit orders.

Questions and Answers About Insider Trading

1. Why do we need a written policy?

Both the Securities and Exchange Commission (the "**SEC**") and Congress are very concerned about maintaining the fairness of the U.S. securities markets. The securities laws are continually reviewed and amended to prevent people from taking unfair advantage of their position and to increase the punishment for those individuals who do. These laws require publicly-traded companies to have clear policies on insider trading. In addition, Aqua Metals takes seriously its goal of upholding very high standards of ethics and conduct. We wish to avoid even the appearance of improper conduct on the part of anyone employed by or associated with the Company. We have worked hard to establish a reputation for integrity and ethical conduct and cannot afford to have it damaged.

2. What are the penalties for violating the policy?

For individuals who trade on inside information or tip information to others:

A jail term of up to 20 years;

A civil penalty of up to the greater of $1,000,000 and three times the profit gained or loss avoided; and

A criminal fine of up to $5 million (no matter how small the profit).

For a company (as well as certain supervisors) that fails to take appropriate steps to prevent illegal trading:

A civil penalty of the greater of $25 million or three times the profit gained or loss avoided as a result of the employee's violation.

In addition, the Company may impose discipline, up to and including termination, for failing to comply with the Company's policies.

3. What is material information?

Material information is any information that a reasonable investor would consider important in deciding to buy, hold or sell stock or that could reasonably be expected to affect the price of the stock. It can be positive or negative information. Again, it can be information about the Company and its subsidiaries or about a company with which we do business.

Examples:

Projections of future earnings or losses;

The proposed acquisition of a company or business, or sale of a company or any assets;

New equity or debt offerings;

Significant new discoveries, or grants or allowances of patents;

A stock split or change in dividend policy;

Significant price changes;

Significant product defects or modifications;

The gain or loss of a significant sale, customer or collaborator;

Significant regulatory actions;

Results of product or process trials;

Financial problems or plans to file bankruptcy;

Changes in senior management;

Plans to raise additional capital through stock sales or otherwise; and

Significant litigation exposure due to actual or threatened litigation.

4. When is information nonpublic?

Information is considered to be nonpublic until 48 hours after the Company has disclosed the information by issuance of a press release to the news services or by an appropriate disclosure filing with the SEC.

5. How can I tell if something I know is material?

Employees are not expected to make the determination of whether information that they have and that they know is not public is "material," nor should they take the risk of doing so. If you are aware of some information that might be material and are contemplating a stock trade, you should contact the Chief Financial Officer of Aqua Metals. You are encouraged to err on the side of caution.

6. How do I know if information is now public and it is OK to start trading?

Once you know that there is material information that needs to be publicly released before anyone can trade, you must wait until two full business days after the public release is made. If it is information relating to the Company, you can ask the Chief Financial Officer if the news release has been made. If it is information relating to a customer, supplier, etc., you might need to investigate other news sources or ask the member of management who is responsible for the relationship with that company. Please remember that the decision of when any information about a company will be publicly released belongs solely to senior management of that company. The timing of news releases can involve many complicated legal and business factors and delays of several days or longer are not uncommon. No employee should ever disclose material information to the public unless specifically authorized to do so by a senior executive officer of Aqua Metals, no matter the amount of inconvenience to the employee.

7. Once information is released publicly, can I go ahead and trade?

The markets require some time to process new information. Generally, you must wait two full business days after any release prior to trading. Most press releases are made after the market has closed. For instance, if the Company issues a press release after the close of business on Tuesday, you should wait until Friday to trade.

8. I work for a subsidiary of Aqua Metals. Do these policies apply to me?

These policies apply to all employees, officers, directors and consultants of Aqua Metals and its majority-owned subsidiaries, even such persons located outside the United States. Even though you might not have daily access to information about Aqua Metals itself, information about your employer or about dealings between your employer and Aqua Metals could have an effect on the price of Aqua Metals stock. You also might have access to information about customers, suppliers and the like that also is covered by this policy.

9. What can I tell my family members and friends? Prohibition on Tipping.

You are responsible for ensuring that every person who lives in your household, including any adult relatives or other unrelated persons, complies with this policy. The SEC and the courts often view people in the same household as a "unit" and impose penalties accordingly. In addition, any person who possesses material nonpublic information about the Company is an "insider" for as long as the information is not publicly known and must not pass that information on to others intentionally or unintentionally ("tipping").

You also should be aware that trading in securities by anyone who receives any material nonpublic information (including information in the form of a recommendation to buy or sell stock, even if the material nonpublic information is not disclosed) from you, including your relatives, friends, doctor, lawyer or accountant, can result in liability for you, for them and for the Company. This is true whether you told them in the hopes that they could trade and make some money, whether you were telling stories over a cocktail, or whether you thought they were under an obligation of confidence to you. It does not matter if you benefit personally from their trading, The courts are continually broadening this type of liability, resulting in substantial penalties. The SEC, the stock exchanges and FINRA use sophisticated electronic surveillance techniques to uncover insider trading and the SEC has imposed large penalties even when the disclosing person did not profit from the trading. You should exercise extreme discretion in making any disclosures. Of course, your confidentiality agreement also prohibits you from making unauthorized disclosures of the confidential information of the Company or of those with whom the Company does business.

10. Are there any exceptions?

Unfortunately, the SEC and the courts do not recognize any exceptions, even the need to raise immediate cash for personal emergencies such as medical expenses. The policy does not, however, apply to exercises of outstanding options (but does apply to sales of any shares purchased by exercising options) because the other party to the transaction is the Company itself. The policy also does not apply to any transactions where there is no real transfer of ownership, such as the transfer of stock into trusts, or any gift transactions. Be aware that a sale or purchase of stock that you arrange privately, rather than through the open market, can still result in liability.

11. Do I need permission to trade in stock?

Certain executives of the Company will be subject to additional policies regarding trading in Company securities, including pre-approval of trading and limitations on trading during certain "blackout periods." These executives have been separately notified of their obligations.

In addition, there may be times when the Company is aware of material nonpublic news that is not widely disseminated inside the Company. At such times, the Company may impose upon selected groups of employees an obligation to refrain from trading. Please also see the below section on "Questions and Answers About Speculative Trades" as there are restrictions on "speculative trades" and a restriction on short term trading. Otherwise, there is no need to obtain prior permission.

Questions and Answers About Speculative Trades

1. What are speculative trades and why shouldn't I do them?

Speculative trades are transactions such as purchasing on margin (i.e., borrowing from a brokerage or bank, but not including "cashless" option exercises), short sales (where you sell stock you do not currently own, in the hope that by the time you have to deliver the market price will have declined), puts and calls (including options on stock trading on any stock exchange or futures exchange), and hedging transactions (including forwards and equity swaps). The Company believes that speculative trading in Aqua Metals stock reflects poorly on the Company. Employees, officers, directors and consultants should not be engaging in any types of transactions that are commonly viewed as a form of "betting" for or against the Company. These prohibited speculative transactions include: short sales, publicly-traded options, hedging transactions, and standing and limit orders.

2. Am I supposed to hold any stock that I purchase for a particular period of time?

As a general rule, the Company encourages all employees to hold any stock that they purchase in the open market (i.e., not including stock purchased upon exercise of an employee stock option) for at least six months. The top executives of the Company are already subject to the SEC's "short-swing" profit rule, which prohibits sales and purchases inside of any six-month period.

Rule 10b5-1 Trading Plans

You may establish a trading plan that meets the requirements of SEC Rule 10b5-1(c), and which has been approved by the Company. Adoption of such a trading plan would relieve you of certain restrictions within the policies as to the shares covered by the plan. Typically, your broker would provide a form of plan which our counsel would review. If you are interested in adopting a trading plan, we recommend you contact Aqua Metals' Chief Financial Officer.

Where to go for additional information

Any person who has any questions about specific transactions or trading plans may obtain additional information from Aqua Metals' Chief Financial Officer. Note that the ultimate responsibility for adhering to these policies, however, rests with you. Use your best judgment and act with the Company's interests, as well as your own, in mind.

STATEMENT OF POLICIES ON TRADING IN SECURITIES BY OFFICERS, DIRECTORS AND CERTAIN KEY EMPLOYEES

In addition to its policies on trading in securities applicable to all employees, Aqua Metals, Inc. ("**Aqua Metals**" or the "**Company**") has adopted several policies on trading in securities that apply specifically to its directors, officers and certain key employees. Please read this document carefully.

Policy Statement No. 1: ("**Window Period**")	Directors, officers and certain key employees of Aqua Metals (see below) may engage in transactions in Aqua Metals securities only during "window" periods commencing on the third business day following the publication of the Company's quarterly or annual financial results and ending on the 15th of the last month in the next fiscal quarter, unless pursuant to an approved 10b5-1 trading plan.
Policy Statement No. 2: ("**Pre-clearance**")	Directors, officers and certain key employees of Aqua Metals may only engage in stock trades, even during the window periods, after obtaining prior clearance from the Chief Financial Officer, unless the stock trades are made pursuant to an approved 10b5-1 trading plan (see attached Pre-Clearance Notice).
Policy Statement No. 3: ("**10(b)5-1 Trading Plans**")	Directors, officers and employees of Aqua Metals may engage in stock sales in Aqua Metals securities pursuant to an approved 10b5-1 trading plan (as defined below).

Questions and Answers About Window Periods and Preclearance

1. Who is subject to these policies?

Each member of Aqua Metals' Board of Directors and each executive officer of Aqua Metals is subject to these policies. In addition, the Company may designate certain additional persons as being subject to these policies. Such individuals may include the top executives of important subsidiaries and certain other personnel whose jobs involve both executive level responsibility and significant access to material information. The Chief Financial Officer will at all times maintain a list of those individuals who are subject to these policies. Once you have been informed that you are subject to these policies, you will remain so until notified otherwise.

Please note that these policies are different from the "short-swing trading" restrictions imposed under Section 16 of the Securities Exchange Act of 1934, as amended. Only the members of the Aqua Metals Board of Directors and the most senior executive officers are subject to these additional restrictions. Persons who are subject to Section 16 have been notified separately of their status. The Memorandum on Section 16 of the Exchange Act previously distributed to you contains a description of the obligations of Section 16 persons.

2. When do the window periods begin and end?

The window periods will begin on the third business day following the publication of the Company's quarterly or annual financial results and end on the 15th of the last month in the next fiscal quarter.

For example, as of June 10, 2016, the window would be open and the then window period would have commenced on May 24, 2016, which is the 3rd business day following the filing of the Company's Form 10-Q for the quarter ended March 31, 2016 (which was the first publication of results for the such fiscal quarter), and the window period will end on June 15, 2016, which is the 15th of the last month in the next fiscal quarter. Further, assume that on August 3, 2016, Aqua Metals issues an earnings release for the quarter ending June 30, 2016. The window period would reopen on August 8, 2016, which is the 3rd business day following the first publication of results for the such fiscal quarter, and end on September 15, 2016, which is the 15th of the last month of the next fiscal quarter. Any questions concerning the beginning and ending of the window period should be directed to the Chief Financial Officer.

3. Are there any exceptions?

As with the general policy on trading, these policies do not apply to exercises of outstanding options (but they do apply to sales of any shares purchased by exercising stock options) and any other transactions as to which the officer or director has no control over the timing, such as any exchange of shares pursuant to a merger, etc. The policies also do not apply to any private transactions where there is no real transfer of ownership, such as the transfer of stock into trusts or any gift transactions. In addition, the policies regarding window periods and pre-clearance do not apply to transactions made pursuant to an approved Rule 10b5-1 trading plan.

4. Are trades during the window periods presumptively OK?

No. That is why we have the additional pre-clearance requirement. Any director, executive officer or key employee who is actually aware of material nonpublic information should never trade until the public disclosure is made, even during the window periods, unless the stock trades are made pursuant to an approved 10b5-1 trading plan. From time to time, we may declare a special "blackout period" and prohibit trading due to material nonpublic information developments. Such "blackout periods," however, would not apply to approved 10b5-1 trading plans. Since not every director, officer and key employee will he aware at all times of all material information, the pre-clearance procedure is needed to ensure that no trades are inadvertently made prior to disclosure of material information. A copy of a Pre-clearance notice and checklist is attached for your files.

Questions and Answers About 10b5-1 Trading Plans

1. What is an approved 10b5-1 trading plan?

A 10b5-1 trading plan is a contract, instruction or written plan for the purchase or sale of Aqua Metals Securities that meets the requirements of SEC Rule 10b5-1 and is approved by our Chief Financial Officer. Typically, your broker would provide a form of plan which our counsel would review. An "approved Rule 10b5-1 trading plan" is a plan that has been approved by the Company in writing.

2. What are Aqua Metals' requirements on 10b5-1 trading plans?

Aqua Metals imposes some requirements on 10b5-1 trading plans. These requirements are as follows:

The 10b5-1 trading plan must be in writing and signed by the person adopting the trading plan.

The plan must be established at a time when you do not possess material nonpublic information about the Company.

The trading plan must be approved by the Chief Financial Officer.

Amendment or modification to the plan is permissible as long as the amendment or modification is approved by the Chief Financial Officer.

The first trade made pursuant to the plan may take place no less than thirty (30) days after adoption of the plan.

The plan must specify a fixed number or dollar amount of shares to be purchased or sold, or specify or establish a formula for the amount of stock to be purchased or sold, the dates on which the stock is to be purchased or sold, and the prices (which can be the market price) at which the stock is to be purchased or sold. The dates of the purchases or sales must be in a range of not less than five trading days, and the choice of the exact trading day must be left to the stockbroker.

Alternatively, a trading plan can he adopted that completely delegates to another independent person who is free of any inside information (e.g., a stock broker) complete discretion, without any influence whatsoever by the person adopting the plan, over the authority as to how, when and whether to sell or purchase shares.

Trades made under the trading plan must be executed by a stockbroker other than the stockbroker that executes trades in other securities for the person adopting the trading plan, and the person adopting the trading plan acknowledges that, during the term of the trading plan, he or she may not confer with the stockbroker executing trades under the trading plan regarding Aqua Metals or its securities.

3. What actions are necessary to adopt a plan?

You must provide the proposed 10b5-1 trading plan to the Chief Financial Officer for approval. It must meet the requirements described in this Statement. Once you obtain Aqua Metals' approval, you must sign and deliver the trading plan to your stockbroker. The trading plan also must be filed with the Chief Financial Officer of Aqua Metals.

Aqua Metals will only review trading plans for compliance with its own internal requirements and not for compliance with Rule 10b5-1. You remain individually responsible for compliance with all applicable laws, rules and regulations on insider trading and remain subject to disciplinary action for any violations, regardless of whether a 10b5-1 trading plan has been adopted.

Aqua Metals strongly recommends that you consult with a stockbroker and outside attorney before adopting a trading plan.

4. I am subject to the window period, which currently is closed. May I adopt a trading plan while the window is closed?

Rule 10b5-1 trading plans must be established at a time when you are not in possession of material nonpublic information. Although there is no specific prohibition on adopting a plan during a closed trading window, you should carefully consider whether you are in possession of material nonpublic information. In addition, the first trading under the plan may not occur until 30 days after adoption of the plan.

5. Can I trade outside the 10b5-1 plan?

Yes. You may sell or purchase Aqua Metals securities outside of the 10b5-1 trading plan if such trades are pre-cleared and made during the window periods.

6. Must I publicly disclose my 10b5-I trading plan?

No. Persons subject to Rule 144 or Section 16 are, however, required to file applicable forms under those rules. Note that your stockbroker most likely will work with you regarding Form 144 filings and Form 4 filings under Section 16.

7. Can I terminate the 10b5-1 trading plan?

Yes. You may terminate your Trading Plan at any time so long as you promptly provide written notice to the Chief Financial Officer. Note that if you terminate the plan, the Company will not approve a new Trading Plan for ninety (90) days post-termination, and the new Trading Plan must be adopted in accordance with these policies. You may also want to consider whether your Trading Plan should provide for automatic suspension or termination upon certain events (e.g., an insider's death or bankruptcy, the announcement of a tender offer for Aqua Metals stock, or a merger).

If you choose to terminate your Trading Plan prior to its expiration date, we encourage you to consider not trading in the Company's stock for at least ninety (90) days after termination or longer, to help reduce any appearance that you terminated the Trading Plan and subsequently traded because you learned of material nonpublic information. The Company will exercise great care in pre-clearing trades during this period.

As with all other Company policies, officers, directors, and certain designated employees must exercise their best judgment and act with the best interests of the Company in mind.

Exhibit 23.2

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-267780) and Form S-8 (Nos. 333-211810, 333-218709, 333-220171, 333-232148, 333-281548, 333-268881, 333-267054 and 333-248112) of Aqua Metals, Inc. (the "Company"), of our report dated March 31, 2025, with respect to the consolidated financial statements of the Company, included in this Annual Report on Form 10-K for the year ended December 31, 2024. Our report contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ Forvis Mazars, LLP

New York, New York
March 31, 2025

Exhibit 31.1

CERTIFICATIONS

I, Stephen Cotton, certify that:

(1) I have reviewed this annual report on Form 10-K of Aqua Metals, Inc.;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

(4) The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:

(a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the period covered by this report based on such evaluation; and

(d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent quarter (the registrant's fourth quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

(5) The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

AQUA METALS, INC.

Date: March 31, 2025

By: /s/ *Stephen Cotton*
Stephen Cotton, Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Judd Merrill, certify that:

(1) I have reviewed this annual report on Form 10-K of Aqua Metals, Inc.;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

(4) The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:

(a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the period covered by this report based on such evaluation; and

(d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent quarter (the registrant's fourth quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

(5) The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

AQUA METALS, INC.

Date: March 31, 2025

By: */s/ Judd Merrill*
Judd Merrill, Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. ss.1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Aqua Metals, Inc. (the "Company") on Form 10-K for the period endedDecember 31, 2024 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Stephen Cotton, the Chief Executive Officer, and Judd Merrill, the Chief Financial Officer, of the Company, respectively, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By: /s/ *Stephen Cotton* Dated: March 31, 2025
Stephen Cotton
Title: Chief Executive Officer
(Principal Executive Officer)

By: /s/ Judd Merrill Dated: March 31, 2025
Judd Merrill
Title: Chief Financial Officer
(Principal Financial and Accounting Officer)

This certification is made solely for the purposes of 18 U.S.C. Section 1350, subject to the knowledge standard contained therein, and not for any other purpose.