NioCorp Succeeds in Producing Scandium Metal at Pilot-Scale as Part of its Aluminum-Scandium Master Alloy Initiative

14.08.2023 | ACCESS Newswire

NioCorp's Pilot-Scale Test Program Demonstrates an Environmentally Superior Process for Producing Scandium Metal

Testing Now Proceeds to Producing Aluminum-Scandium Master Alloy, Which NioCorp Plans to Make in Conjunction with its Expected Production of ~100 Tonnes/Year of Scandium Oxide at the Elk Creek Critical Minerals Project in Nebraska, Once Project Financing is Obtained

CENTENNIAL, August 14, 2023 - A phased program to establish U.S. commercial production of aluminum-scandium ("AlSc") master alloy took another step forward recently as NioCorp Developments Ltd. ("NioCorp" or the "Company") (NASDAQ:NB)(TSX:NB) and its development partner Nanoscale Powders LLC ("Nanoscale") successfully produced scandium metal at pilot-scale at a facility owned and operated by Creative Engineers in Pennsylvania.

The next step in the pilot-scale program is to produce kilogram-sized ingots of AlSc master alloy for independent testing and commercial product samples. The first of these AlSc master alloy ingots is expected to be produced in the coming weeks.

NioCorp and Nanoscale are employing a proprietary process developed by Nanoscale that increases efficiency and reduces environmental impacts of AlSc production over traditional approaches. Nanoscale has already developed similar metallurgical processes that are being applied to the production of rare earth metals of other operators, which behave metallurgically in a fashion similar to scandium.

AlSc master alloy, which generally contains 2% by weight scandium, is used to introduce scandium into aluminum for the purpose of producing various AlSc alloys, which generally contain a fraction of a percent scandium by weight. These alloys help to reduce weight, increase strength and corrosion resistance, and make the material weldable in automotive and mass transit, aerospace, defense, space and other systems. NioCorp's goal is to demonstrate the ability to make AlSc master alloy containing from 2% by weight scandium to as much as 10% by weight scandium.

"This successful test demonstrates that we can make scandium metal at a high-enough purity level to proceed directly to the pilot-scale production of kilogram-sized samples of aluminum-scandium master alloy," said Mark A. Smith, CEO and Executive Chairman of NioCorp. "The progress being made in this phased commercialization effort is important given the rapidly growing interest in scandium alloys across both the commercial transportation sector and in the national defense community."

NioCorp is in commercial discussions with vehicle manufacturers that have expressed interest in potentially deploying aluminum-scandium alloys in electric and other vehicles in order to reduce vehicle weight, strengthen vehicle frames and other components, and improve performance.

NioCorp also is working closely with policymakers in Washington, D.C. and other stakeholders interested in national defense applications for scandium and aluminum-scandium alloys. The House and Senate Armed Services Committees recently approved legislation that directs the Pentagon to more actively support efforts to develop domestic production of scandium, AlSc master alloy, niobium, titanium, rare earths, and other critical minerals.

Three-Phase Commercialization Program

NioCorp and Nanoscale are pursuing a three-phased development plan for commercial production of AlSc master alloy. The goal of this program is to achieve full-scale AlSc master alloy production at approximately the same time as the Elk Creek Critical Minerals Project (the "Elk Creek Project") achieves commercial operation and planned production of approximately 100 tonnes per year of scandium oxide.

1. Pilot scale batch production of 10 kilogram master alloy ingots. Master alloy produced will be fully analyzed (metals and gases) at independent test facilities. Ingot samples will be available for third-party examination and prospective customer testing / sampling.
2. Commercial demonstration production of 100 kg ingots. NioCorp expects to perform this work at a third-party ingot casting facility, which is expected to significantly reduce development timelines and cost as well as leverage existing facility permits and operator experience. The objective of this stage will be to optimize the production process and operating conditions.
3. Full scale commercial production of master alloy. Assuming successful results at the pilot scale and commercial demonstration stages, and once project financing is obtained, NioCorp intends to secure an Engineering, Procurement, and Construction contractor to construct, start up, and commission a full-scale production facility with the capacity to consume up to the Elk Creek Project's projected scandium production of approximately 100 tonnes (Sc metal contained in master alloy) per year. NioCorp intends to co-locate the full-scale production facility with the Elk Creek Project in Nebraska in order to take advantage of the infrastructure (i.e., low-cost power, water, and natural gas) that will be in place for mining operations.

NioCorp and Nanoscale also plan to develop recycling approaches for scrap alloy, including work-in-process material and post-production scrap.

Qualified Persons:

Scott Honan, M.Sc., SME-RM, COO of NioCorp Developments Ltd., a Qualified Person as defined by National Instrument 43-101, has reviewed and approved the technical information and verified the data contained in this news release.

# # #

For More Information:

Jim Sims, Corporate Communications Officer, NioCorp Developments Ltd., 720-639-4650, jim.sims@niocorp.com

@NioCorp @NioCorp $NASDAQ:NB $NB.TO #niobium #scandium #aluminum #rareearth #neodymium #dysprosium #terbium #ElkCreek #EV #electricvehicle

About NioCorp

NioCorp is developing a critical minerals project in Southeast Nebraska that will produce niobium, scandium, and titanium. The Company also is evaluating the potential to produce several rare earths from the Elk Creek Project. Niobium is used to produce specialty alloys as well as High Strength, Low Alloy ("HSLA") steel, which is a lighter, stronger steel used in automotive, structural, and pipeline applications. Scandium is a specialty metal that can be combined with Aluminum to make alloys with increased strength and improved corrosion resistance. Scandium is also a critical component of advanced solid oxide fuel cells. Titanium is used in various lightweight alloys and is a key component of pigments used in paper, paint and plastics and is also used for aerospace applications, armor, and medical implants. Magnetic rare earths, such as neodymium, praseodymium, terbium, and dysprosium are critical to the making of Neodymium-Iron-Boron ("NdFeB") magnets, which are used across a wide variety of defense and civilian applications.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the United States Private

Securities Litigation Reform Act of 1995 and forward-looking information within the meaning of applicable Canadian securities laws. Forward-looking statements may include, but are not limited to, statements about; NioCorp's expectation that its demonstration plant will produce results that demonstrate relatively high rates of overall recovery of separated rare earth oxides; expectations that losses in the additional solvent extraction steps will be low; the ability to establish U.S. commercial production of aluminum-scandium (AlSc) master alloy; the ability to develop recycling approaches for scrap allow, the timing and production of the master alloy ingots; the ability to make AlSc master alloy containing from 2% by weight scandium to as much as 10% by weight scandium; plans relating to a three-phased development plan for commercial production of AlSc master alloy; the ability to achieve full-scale AlSc master alloy production at approximately the same time as the Elk Creek Critical Minerals project achieves commercial operation and production of scandium oxide; the reduction of development timelines and cost of ingot casting through working with third-party facilities; the success of the pilot scale and commercial demonstration stages; obtaining project financing; the ability to secure a engineering, procurement, and construction contractors to construct a full-scale production facility; and NioCorp's expectation and ability to produce niobium, scandium, and titanium at the Elk Creek Project. Forward-looking statements are typically identified by words such as "plan," "believe," "expect," "anticipate," "intend," "outlook," "estimate," "forecast," "project," "continue," "could," "may," "might," "possible," "potential," "predict," "should," "would" and other similar words and expressions, but the absence of these words does not mean that a statement is not forward-looking.

The forward-looking statements are based on the current expectations of the management of NioCorp and are inherently subject to uncertainties and changes in circumstances and their potential effects and speak only as of the date of such statement. There can be no assurance that future developments will be those that have been anticipated. Forward-looking statements reflect material expectations and assumptions, including, without limitation, expectations, and assumptions relating to: the commercial discussions with vehicle manufacturers result in deployment of aluminum-scandium alloys in electric and other vehicles; the translatability of the demonstration-scale process to recover niobium, scandium, and titanium from ore to the ore that NioCorp expects to extract from the Elk Creek Project. Such expectations and assumptions are inherently subject to uncertainties and contingencies regarding future events and, as such, are subject to change. Forward-looking statements involve a number of risks, uncertainties or other factors that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to, those discussed and identified in public filings made by NioCorp with the SEC and with the applicable Canadian securities regulatory authorities and the following: the success of the Nanoscale technology at pilot-scale and its impact on NioCorp's potential production of AlSc master alloy; NioCorp's ability to recognize the anticipated benefits of the business combination with GX Acquisition Corp. II (the "Business Combination") and the standby equity purchase agreement (the "Yorkville Equity Facility Financing Agreement" and, together with the Business Combination, the "Transactions") with YA II PN, Ltd., an investment fund managed by Yorkville Advisors Global, LP, including NioCorp's ability to access the full amount of the expected net proceeds under the Yorkville Equity Facility Financing Agreement over the next three years; unexpected costs related to the Transactions; the outcome of any legal proceedings that may be instituted against NioCorp following closing of the Transactions; NioCorp's ability to receive a final commitment of financing from the Export-Import Bank of the United States on the anticipated timeline, on acceptable terms, or at all; NioCorp's ability to continue to meet the listing standards of The Nasdaq Stock Market LLC; NioCorp's ability to operate as a going concern; risks relating to NioCorp's common shares, including price volatility, lack of dividend payments and dilution or the perception of the likelihood any of the foregoing; NioCorp's requirement of significant additional capital; the extent to which NioCorp's level of indebtedness and/or the terms contained in agreements governing NioCorp's indebtedness or the Yorkville Equity Facility Financing Agreement may impair NioCorp's ability to obtain additional financing; covenants contained in agreements with NioCorp's secured creditors that may affect its assets; NioCorp's limited operating history; NioCorp's history of losses; the restatement of NioCorp's consolidated financial statements as of and for the fiscal years ended June 30, 2022 and 2021 and the interim periods ended September 30, 2021, December 31, 2021, March 31, 2022, September 30, 2022, and December 31, 2022 and the impact of such restatement on NioCorp's future financial statements and other financial measures; the material weaknesses in NioCorp's internal control over financial reporting, NioCorp's efforts to remediate such material weaknesses and the timing of remediation; the possibility that NioCorp may qualify as a passive foreign investment company under the U.S. Internal Revenue Code of 1986, as amended (the "Code"); the potential that the Transactions could result in NioCorp becoming subject to materially adverse U.S. federal income tax consequences as a result of the application of Section 7874 and related sections of the Code; cost increases for NioCorp's exploration and, if warranted, development projects; a disruption in, or failure of, NioCorp's information technology systems, including those related to cybersecurity; equipment and supply shortages; variations in the market demand for, and prices of, niobium, scandium, titanium and rare earth products; current and future offtake agreements, joint ventures, and partnerships; NioCorp's ability to attract qualified management; the effects of the COVID-19 pandemic or other global health crises on NioCorp's business plans, financial condition and liquidity; estimates of mineral resources and reserves; mineral exploration and production activities; feasibility study results; the results of metallurgical testing; changes in demand for and price of commodities (such as fuel and electricity) and

currencies; competition in the mining industry; changes or disruptions in the securities markets; legislative, political or economic developments, including changes in federal and/or state laws that may significantly affect the mining industry; the impacts of climate change, as well as actions taken or required by governments related to strengthening resilience in the face of potential impacts from climate change; the need to obtain permits and comply with laws and regulations and other regulatory requirements; the timing and reliability of sampling and assay data; the possibility that actual results of work may differ from projections/expectations or may not realize the perceived potential of NioCorp's projects; risks of accidents, equipment breakdowns, and labor disputes or other unanticipated difficulties or interruptions; the possibility of cost overruns or unanticipated expenses in development programs; operating or technical difficulties in connection with exploration, mining, or development activities; management of the water balance at the Elk Creek Project site; land reclamation requirements related to the Elk Creek Project; the speculative nature of mineral exploration and development, including the risks of diminishing quantities of grades of reserves and resources; claims on the title to NioCorp's properties; potential future litigation; and NioCorp's lack of insurance covering all of NioCorp's operations.

Should one or more of these risks or uncertainties materialize or should any of the assumptions made by the management of NioCorp prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements.

All subsequent written and oral forward-looking statements concerning the matters addressed herein and attributable to NioCorp or any person acting on its behalf are expressly qualified in their entirety by the cautionary statements contained or referred to herein. Except to the extent required by applicable law or regulation, NioCorp undertakes no obligation to update these forward-looking statements to reflect events or circumstances after the date hereof to reflect the occurrence of unanticipated events.

SOURCE: NioCorp Developments Ltd.

View source version on accesswire.com:
https://www.accesswire.com/774010/NioCorp-Succeeds-in-Producing-Scandium-Metal-at-Pilot-Scale-as-Part-of-its-Alu