



# Rockstone Research

June 3, 2019

## Report #8

Niobium, Tantalum and Phosphate  
in Québec, Canada



### **“Widest High-Grade Niobium Intercept to Date with 0.70% Nb2O5 over 38.3 m” On A Winning Streak In The Midst Of Trade Wars: Saville Drills High-Grade Niobium In Québec**

**After many years of going into hibernation, rare earth stocks are awakening, trading heavily amid concerns that China is on the verge of blocking exports of REEs (Rare Earth Elements) to the United States. This would be an effective retaliation as China controls more than 90% of global REE supply and the US is completely dependent on such strategic metals for its economic and national security.**

With a trade war now clearly on the horizon, prices of REEs and other critical metals are poised to escalate – a perfect storm for those (few) junior mining companies having survived the last bear market and continue to actively advance its projects on the North American continent.

**Commerce Resources Corp. (TSX.V: CCE)** almost doubled in price last month and traded more than 5.8 millions shares alone in Canada last week. With a current

market capitalization of \$25 million CAD, the company intends to advance its Ashram REE Project in Québec towards becoming the next major REE mine in North America.

Commerce Resources’ option partner for the adjoining Niobium Claim Group Property, **Saville Resources Corp. (TSX.V: SRE)**, traded more than 3.6 million shares last week. With a current market capitalization of \$2.5 million CAD, Saville aims to create significant shareholder value with the discovery and delineation of a high-grade niobium deposit while simultaneously benefitting from the development of the adjacent Ashram REE Project. Advancing the prospect of two separate mining projects in proximity should benefit both companies as synergies kick in.

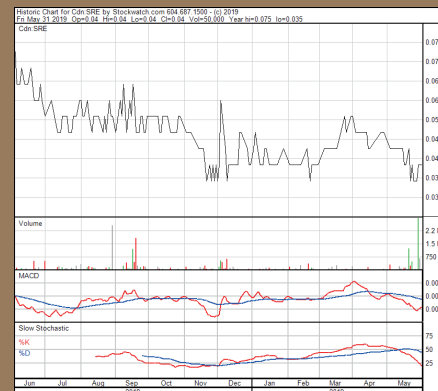
As Saville today [announced](#) the first round of drill results, confirming a high-grade discovery, the company could be on a winning streak.

## Company Details



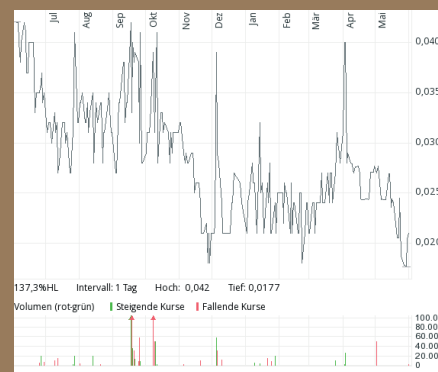
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Shares Issued & Outstanding: 63,415,400



▲Chart Canada

Canadian Symbol (TSX.V): SRE  
Current Price: \$0.04 CAD (05/31/2019)  
Market Capitalization: \$2.5 Million CAD



▲Chart Germany (Frankfurt)

German Symbol / WKN: SOJ / A2DY3Z  
Current Price: €0.021 EUR (05/31/2019)  
Market Capitalization: €1.3 Million EUR



Today, Saville Resources Inc. [announced](#) results for the first of four drill holes sampled from the Mallard Target at the Niobium Claim Group Property in Québec, Canada. With drill results pending from three other holes, Saville could be onto something of great significance.

Saville today reported that the first hole (EC19-171) of its maiden drill program has returned **“the widest high-grade niobium intercept to date on the Property at 0.70% Nb2O5 over 38.3 m, including 1.10% Nb2O5 over 5.4 m, starting from 71 m depth”**, the company stated in its news-release.

“In addition, another wide intercept of strong niobium mineralization was intersected further downhole, returning 0.60% Nb2O5 over 37.2 m, as well as another intercept of 0.76% Nb2O5 over 7.5 m higher up in the hole. Therefore, the drill hole achieved its primary objective and was successful in extending the strike of the high-grade niobium mineralization by approximately 60 m to the southeast of historic drill hole EC10-033.”

To put this into perspective: Most of the current exploration, development and operating niobium mines have resource grades with a minimum of 0.3% Nb2O5.

Not only the wider than expected intercept of high-grade niobium is impressive but also the strong tantalum and phosphate by-product potential throughout the hole as Saville noted today:

“The entirety of EC19-171 was sampled, and assayed 0.51% Nb2O5 over 175.9 m and effectively bottomed in mineralization with two of the last four samples assaying >0.90% Nb2O5”, the company noted.

“The wide intercepts of niobium mineralization are also accompanied by strong tantalum and phosphate mineralization as presented in Table 1. In addition, a near-surface intercept of high-grade tantalum at 267 ppm Ta2O5 over 26 m was also returned starting from 23 m depth.”

**Table 1: Summary of mineralized intercepts for drill hole EC19-171**

Hole ID	From (m)	To (m)	Interval (m)	Ta2O5 (ppm)	Nb2O5 (%)	P2O5 (%)	Comments
EC19-171	6.23	182.16	175.93	127	0.51	6.6	Entire hole
	23.00	49.00	26.00	267	0.43	9.1	
	49.00	56.50	7.50	64	0.76	8.2	
	<b>71.22</b>	<b>109.50</b>	<b>38.28</b>	<b>116</b>	<b>0.70</b>	<b>6.6</b>	
Incl.	<b>71.22</b>	<b>76.63</b>	<b>5.41</b>	<b>182</b>	<b>1.10</b>	<b>7.2</b>	
	145.00	182.16	37.16	93	0.60	6.1	

EC19-172 Assays pending

EC19-173 Assays pending

EC19-174 No samples (hole lost)

EC19-174A Assays pending

(1) Analytical detection limits are 0.003% (30 ppm) for Nb2O5 and Ta2O5, and 0.01% for P2O5.

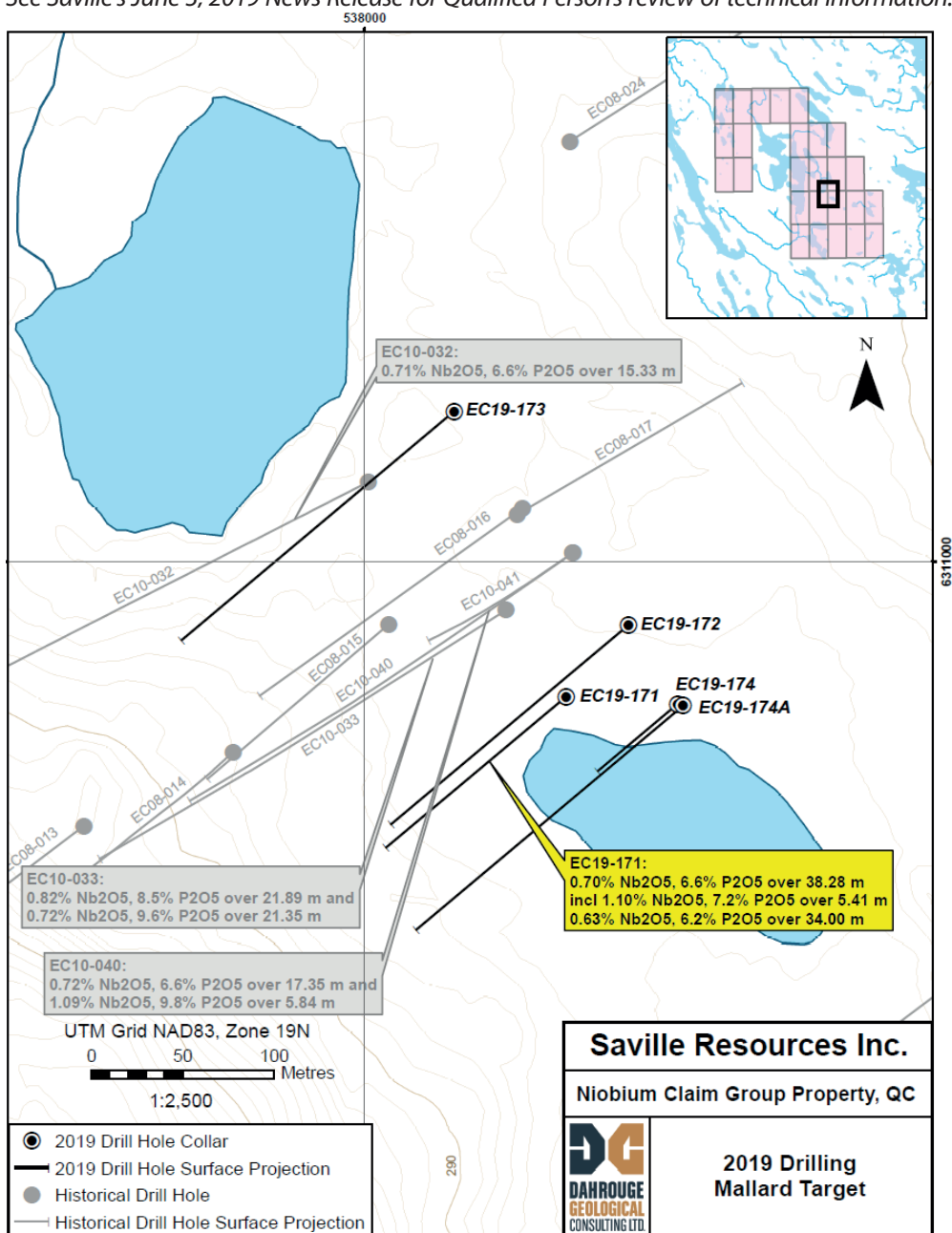
(2) Fluorine analysis yet to be completed.

(3) All drill holes are NQ core size.

(4) True width is not fully constrained; however, the dip of mineralization is interpreted as moderate/steep to the northeast.

Incorporation of the 2019 drill data is anticipated to provide a proper basis for true width to be reasonably estimated.

See Saville's June 3, 2019 News Release for Qualified Person's review of technical information.







Moreover, there is strong potential of fluor spar occurrences elsewhere on the Niobium Claim Group Property as historical exploration has indicated.

The Trump Administration has deemed niobium, tantalum, and fluor spar critical for economic and national security as the US remains 100% net import reliant on these commodities, which are also included in the new tariff regime.

**Phosphate** rock ore was mined by only 5 firms in the US last year, processing it into marketable products valued at \$2.1 billion USD for 100% domestic use as intermediate feedstocks in the manufacture of fertilizers and animal feed supplements, according to [USGS](#).

The **tantalum** market is quite bizarre, however this is not on the demand side but on the supply side. Most of the world's tantalum continues to come from unattractive locations like the Democratic Republic of the Congo.

The opportunities in today's **niobium** market are huge (the market is growing by more than 5% annually), with most niobium going to the manufacture of High Strength Low Alloy (HSLA) steel. This HSLA steel is used in the construction of buildings and bridges as well as for the manufacture of stronger but lighter steel chassis for most cars, whether they are Internal Combustion (IC) engine vehicles or Electric Vehicles (EVs) because of the benefits of increasing fuel economy or extending battery range.

The global niobium market continues to be supplied by only 3 primary mines, and there have been no new additions brought into production since late 2006 when the market price quadrupled.

One of the reasons for this lack of producers, which may not be well known, is that niobium deposits can have metallurgical complications, especially if these are not hosted by a **carbonatite** which host rock's simple mineralogy enables for cost-effective conventional processing. The 3 primary niobium mines currently in production are all hosted by carbonatite. Same

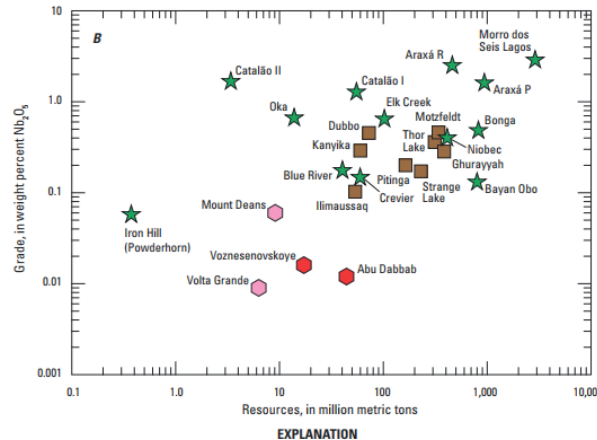
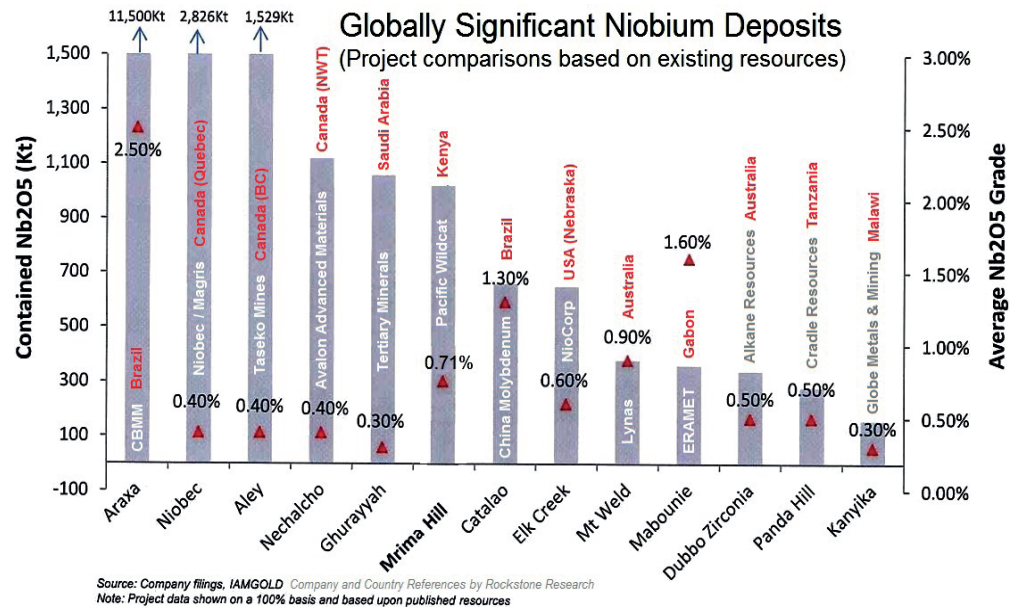


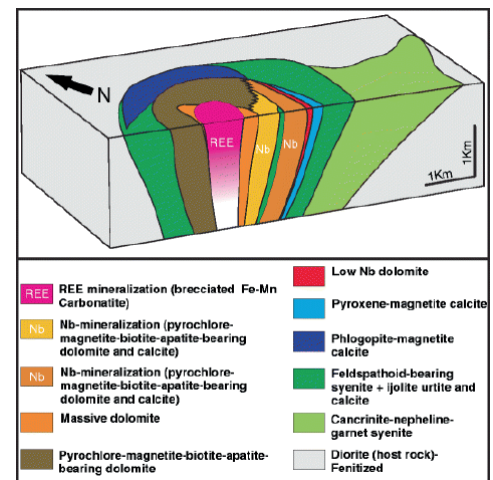
Figure M6. Log-log plots of deposit grades and tonnages of A, tantalum, and B, niobium, by deposit type. The data include different levels of probability, including measured, indicated, and inferred resources and (or) proven and probable reserves. Data and sources are given in table M4. P, primary deposit; R, residual deposit; Nb<sub>2</sub>O<sub>5</sub>, niobium pentoxide; Ta<sub>2</sub>O<sub>5</sub>, tantalum pentoxide

Source: "Critical Mineral Resources of the United States" (USGS, 2017)

applies to the **Eldor Carbonatite Complex**, where Saville's property is located.

Also note that the **Saint-Honoré Carbonatite** in Québec not only hosts the Niobec Mine but also a large **REE Zone** of more than 450 million tonnes at a grade of 1.65% TREO. In other words: It was the niobium deposit which went into production first, although the core of the carbonatite consists of REE mineralization. Who sees a striking resemblance with the Eldor Carbonatite?

The cross-section on the right (Simandl & Mackay, 2014) of Québec's Saint-Honoré Carbonatite, which hosts the Niobec Mine, illustrates that the general geology is similar to the Eldor



Carbonatite, which hosts the high-tonnage Ashram REE Deposit and the adjoining Niobium Claim Group Property.



As a matter of fact, Saville's neighbor, Commerce Resources, has historically worked with one of the most respected experts in the world of niobium, Michel Robert, who set up the flowsheet for Niobec and who ran the mine for 4 years before it was bought by IAMGOLD Corp., which later sold the mine to a consortium of Asian investment firms for \$530 million USD in 2014.

## Niobium: High Demand, Risky Supply

A newly published [market study](#) on niobium forecasts strong growth of 5.9% CAGR (Compound Annual Growth Rate) during 2019-2024, whereas it is noted that "a small number of producers around the world [...] can hinder the growth of the market studied".

As such, new niobium supply is needed, especially on the North American continent, because "The global niobium market is dominated by [Brazilian based] CBMM accounting for 84% of the market, which holds a monopoly over niobium supply. The other prominent companies include China Molybdenum Co. Ltd (CMOC International), NIOBEC (Magris Resources Company), Alkane Resources Ltd, and Grandview Materials..."

The niobium market is witnessing a growing usage in the automotive industry as lightweight materials and designs are key to enhance fuel economy in ICE (Internal Combustion Engines) as well as in EV (Electric Vehicles).

### According to Mordor Intelligence's March 2019 report "[Niobium Market - Growth, Trends, and Forecast \(2019-2024\)](#)":

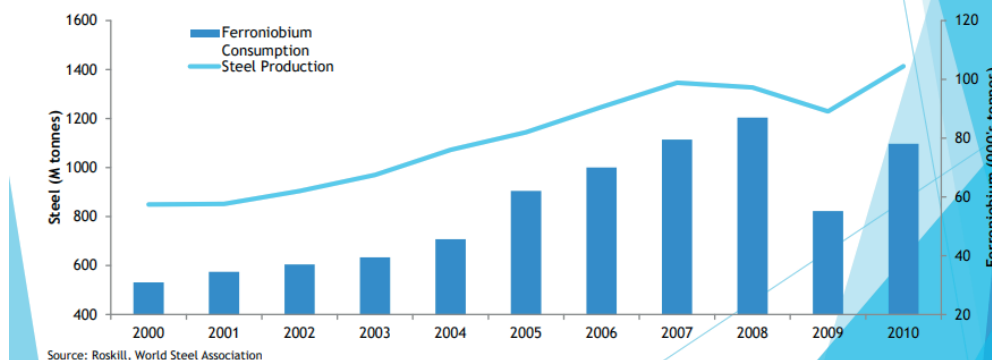
"The construction industry dominated the market in 2017 and is expected to grow during the forecast period as niobium-based alloys are exceptionally meeting the challenges regarding fire resistance and seismic requirement of modern artistic construction..."

Lightweight materials and designs have been important concerns in the manufacturing of automobiles, where driving dynamics is a major factor.



### Global demand for niobium increased 10% annually from 2000 to 2018

- ▶ Niobium primarily used to produce high-grade structural steel and superalloys (in the form of ferroniobium)
- ▶ Demand increasing due to increased steel production and percentage growth of alloy amount of niobium used to produce stronger and higher grade steel
- ▶ Significant supply risk - top three niobium mines produce nearly 100% of the world's demand



Source: Saville's [Corporate Presentation](#) (November 2018)

Additionally, the emerging focus of governments across the world on minimizing carbon emissions and enhancing fuel economy (as per the Corporate Average Fuel Economy standards) of the vehicle has increased the importance of lightweight materials in the production of automobiles.

In the past couple of years, the automotive industry has been consistently focusing on vehicle weight, as it has a direct impact on driving dynamics, fuel consumption, and agility.

The shifting focus of automobile manufacturers toward the development of light-weight vehicles is becoming the biggest opportunity for growth in the niobium market.

The usage of niobium as a micro-alloy enhances the toughness and strength of steel, while also ensuring that the automobile body structure is light.

At the same time, it also makes vehicles safe in the event of a collision. For instance, usage of about 300 gram of niobium in steel for a mid-size passenger car reduces the weight of the vehicle by approximately 200 kg, in

turn, improving the fuel economy of the vehicle (1 liter per 200 km) and reducing exhaust emissions.

With the growing automotive industry, the consumption of niobium is projected to increase through the forecast period.

Asia-Pacific dominated the global market in 2017. With accelerating usage in structural steels and growing usage in the automobile and aerospace industry in countries, such as China, India, and Japan, the consumption of niobium is increasing in the region.

The consumption of niobium is very high in steel manufacturing in the form of ferroniobium, and the construction industry is thriving in several emerging economies, such as China and India, among others.

The Chinese automotive manufacturing industry is the largest in the world. The automotive industry is growing steadily, with high production and demand for passenger cars. Further, the aviation industry is currently running 2,185 general aviation aircraft. Moreover, it is planning to have more than 5,000





aircraft and 500 airports by 2020.

With the growing demand from various end-user industries in different countries, the demand for niobium is [projected] to increase at a high rate during the forecast period... The market for niobium is expected to witness a CAGR of 5.90 % during the forecast period of 2019-2024."

## America First

In a trade war with China, there will not only be losers but also winners – and it is not hard to see who they will be, although global media just seems to constantly focus on the losers.

One of the winners is certainly going to be the mineral exploration industry outside of China, as the United States – and perhaps the Western World – will be forced to realign commodity distribution routes. While the stage is set, the time to act has come, for nations and investors alike.

The escalating trade war between China and the US puts the spotlight on a number of commodities in Zimtu Capital's portfolio – REEs, niobium, tantalum, fluorspar, magnesium, and lithium – and certainly presents an opportunity for growth in the exploration and mining sector.

This trade war is going to focus attention on the exploration industry to discover and develop new sources of supply in friendly jurisdictions, first and foremost on the North American continent. This will be particularly effective for the REE and battery metals sector, which are heavily dominated by China.

I am not alone with my contention that it is Trump's full intention to engage in an all-out trade war with China.

It should come as no surprise that China is seen by the US as an unreliable supplier of resources, and that market manipulation is endemic with the Chinese. I strongly believe that the trade war is the catalyst that will direct focus on other, more attractive sources for these commodities, such as Canada.



Ryan Castelloux, Managing Director of [Adamas Intelligence](#), an independent research and advisory firm, provided Rockstone the following statement in the summer of 2018:

"The tariffs are good news for emerging rare earth producers outside of China. The tariffs will boost rare earth prices in North America by a minimum of 10% by as early as next week. This will bolster

the economics of advanced rare earth development projects in North America, and particularly those in Canada given the persistently low value of the Canadian dollar relative to the U.S. For end-users of rare earths in the U.S., the tariffs are undoubtedly cause for concern. With the prolonged imposition of tariffs, and potential for further increases down the road, we expect the current trade war will spur many



end-users in the U.S. to take a serious look at potential sources of supply closer to home – if not because of China uncertainty, than perhaps because of U.S. unpredictability.”

It may seem dull to start putting tariffs on commodities like REEs that are deemed critical to the economic and national security of the United States. However, consider this argumentation recently contributed on [Forbes](#):

“China, of course, currently produces more than 90% of the world’s supply of rare earth materials and obviously prioritizes its own domestic customers. Defense wise, rare earths are vital to the sophisticated technologies that our [Military increasingly depends](#) on to keep us safe, such as missile guidance and control systems, disk drive motors, lasers, satellite communications, radar, night vision goggles, armored vehicles, and other essential equipment...

The U.S. shale oil and natural gas revolution since 2008 demonstrates how quickly we can grab control of our own natural resource future, with our goal for policies to support constantly evolving technologies. There’s no reason why our mineral supply system shouldn’t be allowed to follow suit. Fortunately, the Trump administration seeks to change our surging import reliance on these materials, [signing an executive order to expand critical minerals production](#)... With national security at risk, the time for action is now.”

Last year, [Roskill](#) cut right to the chase:

“The implementation of further tariffs to rare earth compounds and metals & alloys would be required to support the development of a domestic rare earth mining and processing industry in the USA... Further tariffs could even promote the transfer of manufacturing capacity outside of the USA...”

Since the [Hyde Park Agreement](#) of 1941, Canada is probably the single most important ally for the US, such that “in mobilizing the resources of this continent each country should provide

the other with the defense articles which it is best able to produce.”

Simon Moores, Managing Director of [Benchmark Mineral Intelligence](#) provided Rockstone the following statement last summer:

“There is no doubt that President Trump’s tariffs are the most significant geopolitical action in the speciality mineral space since the rare earths crisis of 2010 when China blocked rare earths export to Japan. Not only have rare earth elements been targeted but also lithium, cobalt and graphite – crucial minerals for electric vehicles and hi tech and military equipment. Such a wide sweeping action is quite incredible. This action puts North American resources and US mineral supply security firmly back on the agenda after nearly a decade.”

## Bottom Line

With today’s announced assays from the first drill hole, Saville has delivered better than expected results, thus confirming significant niobium mineralization throughout the hole. The associated tantalum and phosphate mineralization is also impressive as both commodities are also in high demand and show strong market fundamentals going forward.

With pending drill results from three more holes, Saville is expected to continue a strong newsflow. More work at other promising targets on the Niobium Claim Group Property is also planned as today’s news-release indicated:

“In summary, the Company’s Phase I drill program on the Property included a total of 1,049 m completed over five (5) holes, focused at the Mallard Target in the Southeast Area of the Property. The primary objective of the drill program was to test, through drill holes EC19-171, 172, and 173, the southeastern extension of the high-grade and near-surface niobium mineralized intercepts returned historically from drill hole EC10-033. In addition, a single drill hole (EC19-173) was also completed to test the strike

extension of the main mineralized zone to the northwest.

The Mallard Target is the most advanced prospect on the Property, with 2,490 m over nine (9) drill holes completed historically (2008 and 2010), and 1,049 m over five (5) drill holes now completed by the Company (2019). Coupled with the strong mineralization returned historically, the Company’s Phase I drill program at Mallard will provide the foundation for advancement towards an initial mineral resource estimate. Further drilling at Mallard as well as several other high-priority targets, including Miranna, is planned as part of Phase II.”

## Previous Coverage

[Report #7](#): “Saville to start drilling for a niobium discovery in Quebec”

[Report #6](#): “Perfect Timing: Saville Discovers High-Grade Niobium-Tantalum Boulders, And Possibly The Source, Ahead Of Drilling”

[Report #5](#): “Strong potential for discovery of niobium-tantalum deposit(s) of significance, says independent report filed today”

[Report #4](#): “Saville Releases High-Grade Assays from the Niobium Claim Group”

[Report #3](#): “Eager to Start the Treasure Hunt for Niobium in Quebec”

[Report #2](#): “Win-Win Situation to Develop One of the Most Attractive Niobium Prospects in North America”

[Report #1](#): “Saville Resources: Getting Ready to Create Shareholder Value”







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All statements in this report, other than statements of historical fact should be considered forward-looking statements. Much of this report is comprised of statements of projection. Statements in this report that are forward looking include that Saville Resources Inc. ("Saville"), Commerce Resources Corp., or any other company or market will perform as expected; that exploration has or will discover a mineable deposit; that there is strong potential for discovery of niobium-tantalum deposit(s) of significance; that the niobium market will continue to grow and that the automotive industry will use niobium increasingly; that past or current exploration has indicated potential for a near-surface deposit with high grades of niobium, tantalum, and phosphate, and that the recently completed drill program has confirmed such; that Saville's project is attractive due to mineralization identified to date indicating a carbonatite host rock, which is the dominant niobium source globally making cost-effective conventional processing possible; that Saville is on a winning streak in the midst of trade wars, and that it can continue such; that rare earth stocks are awakening and continue to trade heavily and upwards; that China is on the verge of blocking REEs to the USA and that such would be an effective retaliation; that a trade war is now clearly on the horizon and will happen, and that prices of REEs and other critical metals are poised to escalate, representing a perfect storm for those (few) junior mining companies having survived the last bear market and continue to actively advance its projects on the North American continent; that Saville will benefit from the development of the adjacent Ashram REE Project from Commerce Resources; that advancing the prospect of two separate mining projects in proximity should benefit both companies as synergies kick in; that more drill results will be announced shortly and that Saville will continue a strong newsflow; that there is strong potential of fluorospar occurrences elsewhere on the property; that there are similarities between the Saint-Honore Carbonatite and the Eldor Carbonatite. Such statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in these forward-looking statements. There can be no assurance that such statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Risks and uncertainties include: The receipt of all necessary approvals; the ability to find sufficient high-grade niobium and/or tantalum to mine; uncertainty of future production, capital expenditures and other costs; financing and additional capital requirements for exploration, development and construction of a mine; mineral grade on the overall project may not be as high as expected; samples found to date may not be indicative of any further potential on the property; the receipt in a timely fashion of further permitting; legislative, political, social or economic developments in the jurisdictions in which Saville carries on business; there may be no agreement with neighbors, partners or government on developing infrastructure; operating or technical difficulties or cost increases

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(Dortmund, Germany), the European Business School (London, UK) and the University of Queensland (Brisbane, Australia). Under [Prof. Dr. Hans J. Bocker](#), Stephan completed his diploma thesis ("Gold In A Macroeconomic Context With Special Consideration Of The Price Formation Process") in 2002. A year later, he marketed and translated into German Ferdinand Lips' bestseller "Gold Wars". After working in Dubai's commodity markets for 5 years, he now lives in Switzerland and is the CEO of [Elementum International AG](#) specialized in duty-free storage of gold and silver bullion in a high-security vaulting facility within the St. Gotthard Mountain in central Switzerland.

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