

ASX RELEASE | July 2, 2018 | ASX:PLL; NASDAQ:PLLL

# PIEDMONT COMMENCES BY-PRODUCT STUDY

- By-products may include quartz, feldspar and mica
- Mineral Resource Estimates for by-products expected H2 2018
- Bench scale metallurgical testwork complete with assays pending
- Historic local spodumene mines had significant by-product revenue
- Confidential discussions held with potential by-product off-take partners

Piedmont Lithium Limited ("Piedmont" or "Company") is pleased to advise that the Company has commenced a By-product Study for the Piedmont Lithium Project, located in the historic Carolina Tin-Spodumene Belt in North Carolina, United States.

Piedmont has retained CSA Global to complete Mineral Resource Estimates for potential quartz. feldspar and mica concentrate by-products. CSA Global will use the same geologic model that was used for the recently completed maiden Mineral Resource Estimate for the Piedmont Lithium Project as the basis for further study.

North Carolina State University's Minerals Research Lab has completed bench scale flotation tests and iron removal for quartz, feldspar and mica concentrates. Assays are pending for these benchscale tests. Data and samples from these bench scale test results will be provided to potential offtake partners to evaluate their commercial potential.

Piedmont plans to include revenue potential from by-products in an update to our initial Scoping Study, which is expected to be released in late-July. The update should be available in late-2018 following the definition of Mineral Resource Estimates for each by-product and will reflect feedback from potential by-product customers.

Keith D. Phillips, President and Chief Executive Officer, said, "While many spodumene pegmatites include quartz, feldspar and mica mineralization, most are located too remotely to economically serve the important markets for these products. Given our location in the industrial heartland of the USA, there is potential to deliver into the large, glass, ceramic, building products and technology businesses that are based in our region and have great need for these minerals. The historic Hallman-Beam mine derived substantial revenue from by-products, and if we are able to do the same it will have a positive impact on our production costs.'

For further information, contact:

Keith D. Phillips President & CEO T: +1 973 809 0505

E: kphillips@piedmontlithium.com

Anastasios (Taso) Arima

**Executive Director** T: +1 347 899 1522

E: tarima@piedmontlithium.com

ABN 50 002 664 4953

### **By-product Markets**

The United States Geological Survey (USGS) maintains detailed statistical and other data with respect to a broad array of commodities, including the industrial minerals quartz, feldspar and mica. The market discussion below is derived largely from USGS publications. As part of its by-product study, Piedmont Lithium will be retaining consultants with deep industry expertise to assist in the evaluation of the product and market opportunities for the Company's potential by-products.

## <u>Quartz</u>

Quartz is one of the most common minerals in the earth's crust and has many industrial applications, including in glass-making, foundry sand, chemicals, ground silica, and whole grain-fillers<sup>1</sup>.

Piedmont will study the potential for quartz by-product placement into the glass-making and optical glass markets shown in Table 1. High Grade Quartz (HPQ) is a specialty product which has rare geological occurrences globally, with the largest known deposits occurring in Spruce Pine, North Carolina where commercial operations are maintained by Sibelco and The Quartz Corp. Piedmont by-products are not currently expected to compete for HPQ market share.

Table 1: Silica Sand and Quartz Specifications by Market <sup>2</sup>									
Specification	SiO <sub>2</sub> Min. Other		Other	Indicative					
	%	Elements	Elements	Price					
		Max %	Max ppm	Range (\$/t)					
Clear glass-grade sand	99.5	0.5	5,000	\$30					
Semiconductor filler, LCD and optical glass	99.8	0.2	2,000	\$150					
"Low Grade" HPQ	99.95	0.05	500	\$300					
"Medium Grade" HPQ	99.99	0.01	100	\$500					
"High Grade" HPQ	99.997	0.003	30	>\$5,000					

<sup>&</sup>lt;sup>1</sup>Source – United States Geological Survey (USGS) 2015 Silica Minerals Yearbook

### <u>Feldspar</u>

Feldspar is one of the most common minerals on the planet, with properties that make it an exceptional functional filler and extender in a wide variety of glassmaking, ceramic and industrial applications. Due to strong demand growth and lack of incremental domestic supply, the United States has become a net importer of feldspar over the past three years. Feldspar is mined in six US states, with North Carolina being by far the largest domestic producer. Production and transportation costs for U.S. producers of feldspar are expected to increase and feldspar reserves at some operations are becoming depleted. Domestic feldspar producers may find increasing competition from imports of feldspar, which have risen substantially in the past 2 years, especially with the recent decrease in quantities of economically mineable domestic potassium feldspar.

Salient statistics on the US feldspar industry, as compiled by the United States Geological Survey (USGS), are contained in Table 2.

<sup>&</sup>lt;sup>2</sup>Source – Modified from Richard Flook and the December 2013 Issue of Industrial Minerals Magazine (p25)

Table 2: United States Feldspar Data <sup>3</sup>								
Salient Statistics	2013	2014	2015	2016	2017			
Marketable Production (kt)	550	530	520	470	530			
Imports for Consumption (kt)	4	8	120	37	190			
Exports (kt)	18	16	15	6	6			
Apparent Domestic Consumption (kt)	540	520	625	501	710			
Import Reliance as a Percentage of Consumption	Nil	Nil	17	6	26			
Average Price (\$/t)	73	66	73	69	67			

<sup>3</sup>Source – United States Geological Survey (USGS) Mineral Commodity Summaries, January 2018

# <u>Mica</u>

Mica is a mineral name given to a group of minerals that are physically and chemically similar. They are all silicate minerals, known as sheet silicates because they form in distinct layers. The majority of domestic US mica is processed into small particle-sized mica either by wet or dry grinding. Georgia and North Carolina are the largest US domestic mica producing-states. Mica's primary uses include joint compound, additives for oil well drilling activities, paint, roofing, and rubber products. Imports represent approximately 40% of US consumption.

Salient statistics on the US mica sector are displayed in Table 3 below.

Table 3: United States Mica Data <sup>4</sup>							
Salient Statistics	2013	2014	2015	2016	2017		
Marketable Production (kt) (scrap and flake)	48.1	48.2	32.6	30.9	31.7		
Imports (kt) (scrap and flake)	30.9	33.4	33.2	31.5	30.3		
Exports (kt) (scrap and flake)	6.4	7.9	7.4	6.2	7.1		
Apparent Domestic Consumption (kt) scrap and flake	72.6	73.7	58.4	56.2	54.9		
Import Reliance as a Percentage of Consumption	34	35	44	45	42		
Production of Ground Mica (kt)	79.2	79.4	53.7	68.1	67.0		
Average Price (\$/t) scrap and flake mica	124	117	142	107	125		

<sup>&</sup>lt;sup>4</sup>Source – United States Geological Survey (USGS) Mineral Commodity Summaries, January 2018

### **About Piedmont Lithium**

Piedmont Lithium Limited (ASX: PLL; Nasdaq: PLLL) holds a 100% interest in the Piedmont Lithium Project ("Project") located within the world-class Carolina Tin-Spodumene Belt ("TSB") and along trend to the Hallman Beam and Kings Mountain mines, historically providing most of the western world's lithium between the 1950s and the 1980s. The TSB has been described as one of the largest lithium provinces in the world and is located approximately 25 miles west of Charlotte, North Carolina. It is a premier location to be developing and integrated lithium business based on its favourable geology, proven metallurgy and easy access to infrastructure, power, R&D centres for lithium and battery storage, major high-tech population centres and downstream lithium processing facilities.

#### Forward Looking Statements

This announcement may include forward-looking statements. These forward-looking statements are based on Piedmont's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Piedmont, which could cause actual results to differ materially from such statements. Piedmont makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of that announcement.

#### **Competent Persons Statements**

The information in this announcement that relates to Exploration Results and Mineral Resources is extracted from the Company's ASX announcement dated June 14, 2018 entitled 'Piedmont Lithium Announces Maiden Mineral Resource' which is available to view on the Company's website at <a href="https://www.piedmontlithium.com">www.piedmontlithium.com</a>.

The information in the original ASX announcement that related to Exploration Results was based on, and fairly represents, information compiled by Mr Lamont Leatherman, a Competent Person who is a Registered Member of the 'Society for Mining, Metallurgy and Exploration', a 'Recognised Professional Organisation' (RPO). Mr Leatherman is a consultant to the Company. Mr Leatherman has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

The information in the original ASX announcement that related to Mineral Resources was based on, and fairly represents, information compiled by Mr Leon McGarry, a Competent Person who is a Professional Geoscientist (P.Geo.) and registered member of the 'Association of Professional Geoscientists of Ontario' (APGO no. 2348), a 'Recognized Professional Organization' (RPO). Mr McGarry is a Senior Resource Geologist and full-time employee at CSA Global Geoscience Canada Ltd. Mr McGarry has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves'.

The Company confirms that: a) it is not aware of any new information or data that materially affects the information included in the original ASX announcement; b) all material assumptions and technical parameters underpinning the Mineral Resources in the original ASX announcement continues to apply and have not materially changed; and c) the form and context in which the relevant Competent Persons' findings are presented in this announcement have not been materially modified from the original ASX announcements.

# Cautionary Note to United States Investors Concerning Estimates of Measured, Indicated and Inferred Resources

The information contained in this press release has been prepared in accordance with the requirements of the securities laws in effect in Australia, which differ from the requirements of U.S. securities laws. The terms "mineral resource", "measured mineral resource", "indicated mineral resource" and "inferred mineral resource" are Australian terms defined in accordance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the "JORC Code"). However, these terms are not defined in Industry Guide 7 ("SEC Industry Guide 7") under the U.S. Securities Act of 1933, as amended (the "U.S. Securities Act"), and are normally not permitted to be used in reports and filings with the U.S. Securities and Exchange Commission ("SEC"). Accordingly, information contained herein that describes Piedmont's mineral deposits may not be comparable to similar information made public by U.S. companies subject to reporting and disclosure requirements under the U.S. federal securities laws and the rules and regulations thereunder. U.S. investors are urged to consider closely the disclosure in Piedmont's Form 20-F, a copy of which may be obtained from Piedmont or from the EDGAR system on the SEC's website at http://www.sec.gov/.