



## Power Metals' Rare Find: Cesium

**VANCOUVER, BRITISH COLUMBIA – (October 19<sup>th</sup>, 2022) - Power Metals Corp. ("Power Metals" or the "Company") (TSX VENTURE:PWM)(FRANKFURT:OAA1)(OTCQB:PWRMF)** is pleased to comment and provide information to its recent banner press release on Oct. 13<sup>th</sup>, 2022. Power Metals is extremely thrilled with the recently announced high-grade cesium discovery in the West Joe Dyke at the Company's 100% owned Case Lake Property in Cochrane, Ontario. The cesium (Cs) mineralization is enclosed in lithium (Li) and tantalum (Ta) mineralization to make West Joe a three-commodity deposit. The ongoing 2022 drill program intersected 24.07% Cs<sub>2</sub>O over 1.0 m and 7.65% Cs<sub>2</sub>O and 1.45% Li<sub>2</sub>O over 7.09 m, additionally the lithium mineralization is the highest found at Case Lake with 4.75% Li<sub>2</sub>O, 2.71% Cs<sub>2</sub>O and 396 ppm Ta over 2.0 m in white to pink coarse-grained spodumene.

In January of this year, world-leader Sinomine Resource Group ("Sinomine") joined Power Metals Corp. with a sizable investment after Power Metals' initial discovery of cesium during the 2018-2019 drilling campaign (PWM press release dated November 13, 2018). Sinomine currently owns two of the three occurrences of cesium that have been commercially mined, making them the ideal partner for Power Metals Corp.

Johnathan More, Chairman & CEO of Power Metals stated, "Sinomine's involvement with Power Metals is very strategic to both parties. There is a direct railway line from the town of Cochrane to the Tanco mine. Most importantly Sinomine has been involved in all areas of past cesium production around the world. Additionally, we are still waiting for several more assays currently at the lab and will be releasing them as soon as they are available."

The West Joe pollucite zone has Cs grades similar to that of Sinclair cesium mine, Australia now held by Essential Metals Limited (ASX: ESS). In addition to the Cs grade, West Joe has the advantages that the pollucite has shallow depths of less than 50 m below surface and road access to make it easy for future extraction. Another advantage of West Joe is that it has three economic commodities in the same zone: lithium, cesium and tantalum. Canadian, Ontario and United States governments have labelled all three commodities as critical metals.

### **What is Cesium?**

Cesium is a chemical element with the symbol Cs and atomic number in the periodic table. The ore mineral of Cesium is pollucite, a Cs aluminum silicate mineral.

### **Why is Cesium so rare?**



Pollucite crystallizes in highly fractionated lithium pegmatite dykes. Very few pegmatites are evolved enough to contain crystals of pollucite. There are only five recorded occurrences of pollucite in Ontario of which Power Metals owns three occurrences: West Joe Dyke on Case Lake Property, Marko's pegmatite on Paterson Lake Property and Tot Lake pegmatite on Gullwing-Tot Lakes Property.

Globally, there are three occurrences for cesium that have been commercially mined: Tanco pegmatite mine, Manitoba, Canada, Bikita pegmatite mine, Zimbabwe and Sinclair mine, Australia. The Tanco underground mine has been in operation since the late 1960's. Tanco is mined for tantalum (Ta) ore concentrates, pyroceramic spodumene (Li), pollucite (Cs) and rubidium (Rb). The pollucite is processed on site to produce cesium formate fluid as a heavy mud for offshore oil drilling in the North Sea. Sinomine Resources Group bought the Tanco mine from Cabot Corporation in 2019 including the underground room and pillar mine, spodumene concentrator mill and cesium chemical processing facility and the mine which employs about 100 workers.

The Bikita mine, Masvingo Province, Zimbabwe has been in operation since 1950. Its main products are technical grade petalite concentrates (Li ore) used in glass and ceramics and pollucite (Cs ore). Sinomine Resources Group bought the Bikita open pit mine in January 2022. Sinomine plans to produce spodumene, to build a plant and expand the existing mining operations at Bikita.

The Sinclair mine, Western Australia was drilled by Pioneer Resources Limited (ASX: PIO) ("Pioneer") in 2016 for petalite (Li ore) and pollucite was discovered and confirmed in November 2016 (Pioneer Resources press release dated Nov. 14, 2016). Pioneer announced that it entered into an offtake agreement with Cabot Corporation ("Cabot") to buy 100% of the cesium ore extracted from Sinclair Zone (press release dated June 20, 2018). Sinclair mine was Australia's first ever commercial cesium producer. Pioneer announced on 22 January 2019 that approximately 19,000 tonnes of pollucite-bearing rock with an average grade of 9.1% Cs<sub>2</sub>O has been mined and crushed, to be sold within a specification under the Offtake and Loan arrangement in place with Cabot. Cabot received the first shipment of cesium in April 2019 at the Tanco mine (press release Apr. 17, 2019). Pioneer entered into a separate sales agreement and off-take with Sinomine Specialty Fluids for 7,300 tonnes of ore with an estimated average grade of 4.5% Cs<sub>2</sub>O consisting of pollucite, lepidolite and quartz (press release March 16, 2020).

### **What is Cesium used for?**

The primary use of the cesium mined at Tanco, Manitoba is for cesium formate brines used for high pressure, high temperature well drilling for oil and gas. Cesium bromide is used in infrared detectors, optics, photoelectric cells, scintillation counters and spectrometers (United States Geological Survey Mineral Commodity Summaries 2022). Cesium isotopes are used in atomic resonance frequency in standard atomic clocks which play a vital role in aircraft guidance



systems, global positioning satellites and internet and cellular telephone transmissions (USGS Mineral Commodity Summaries 2022).

### **What is the price of Cesium?**

Pioneer sold 19,000 tonnes of pollucite ore with an average grade of 9.1 %  $\text{Cs}_2\text{O}$  from the Sinclair mine for an expected total of A\$17.4 million between Jan and Nov. 2019, excluding the sales of the low-grade material (press release dated Sep. 11, 2019).

Pioneer sold 7,300 tonnes of pollucite ore with an estimated average grade of 4.5 %  $\text{Cs}_2\text{O}$  for approximately \$1.2 million from its Sinclair mine (press release dated March 16, 2020).

Dr. Julie Selway, VP of Exploration commented, “Power Metals is excited to have such a rare critical mineral on the Case Lake Property and the ore grade lithium and tantalum at shallow depths is an extra bonus.”

### **Quality Control**

The drill core was sampled so that 1 m of the Case Batholith tonalite host rock was sampled followed by 1 m long samples of the pegmatite dyke and 1 m of the Case Batholith. The sampling followed lithology boundaries so that only one lithology unit is within a sample, except for the < 20 cm pegmatite veins in tonalite which were merged into one sample. The drill core samples were delivered to SGS preparation lab in Cochrane by Power Metals’ geologists. The core was prepared at SGS Garson and analyzed at SGS Burnaby, British Columbia which has ISO 17025 certification. Every 20 samples included one external quartz blank, one external lithium standard and one core duplicate. The ore grade  $\text{Li}_2\text{O}\%$  was prepared by sodium peroxide fusion with analysis by ICP-OES with a detection limit of 0.002 %  $\text{Li}_2\text{O}$ . A Quality Control review of the standards, blanks and core duplicates indicated that they all passed. The ore grade  $\text{Cs}_2\text{O}\%$  for > 10000 ppm Cs was prepared by alkaline metal digestion with analysis by FAAS with a detection limit of 0.002 % Cs. Ore grade cesium was analyzed by SGS Lakefield, Ontario which also has ISO 17025 certification.

### **Case Lake Property**

Case Lake Property is located 80 km east of Cochrane, northeastern Ontario close to the Ontario-Quebec border. Case Lake Property consists of 585 cell claims in Steele, Case, Scapa, Pliny, Abbotsford and Challies townships, Larder Lake Mining Division. The Property is 10 km x 9.5 km in size with 14 identified tonalite domes. The Case Lake pegmatite swarm consists of six spodumene dykes: North, Main, South, East and Northeast Dykes on the Henry Dome and the West Joe Dyke on a new tonalite dome. The Case Lake Property is owned 100% by Power Metals Corp. A National Instrument 43-101 Technical Report has been prepared on Case Lake Property and filed on July 18, 2017.



### **Qualified Person**

Julie Selway, Ph.D., P.Geo. supervised the preparation of the scientific and technical disclosure in this news release. Dr. Selway is the VP of Exploration for Power Metals and the Qualified Person ("QP") as defined by National Instrument 43-101. Dr. Selway is supervising the exploration program at Case Lake. Dr. Selway completed a Ph.D. on granitic pegmatites in 1999 and worked for 3 years as a pegmatite geoscientist for the Ontario Geological Survey. Dr. Selway also has twenty-three scientific journal articles on pegmatites.

### **About Power Metals Corp.**

Power Metals Corp. is a diversified Canadian mining company with a mandate to explore, develop and acquire high quality mining projects. We are committed to building an arsenal of projects in both lithium and high-growth specialty metals and minerals. We see an unprecedented opportunity to supply the tremendous growth of the lithium battery and clean-technology industries. Learn more at [www.powermetalscorp.com](http://www.powermetalscorp.com)

ON BEHALF OF THE BOARD,

*Johnathan More, Chairman & CEO*

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