Appia Confirms Monazite as the Source for High-Grade Gallium, Alces Lake Property

written by Raj Shah | February 17, 2021

February 17, 2021 (Source) – **Appia Energy Corp. (CSE: API) (OTCQB: APAAF) (FSE: A0I.F) (FSE: A0I.MU) (FSE: A0I.BE) (the "Company" or "Appia")** is pleased to announce the confirmation that monazite is the mineral host for high-grade gallium consistently observed in lithogeochemical assay results on the Company's Alces Lake high-grade rare earth element ("**REE**"), gallium and uranium property (the "**Property**"), northern Saskatchewan.

An electron microprobe study (the "**Study**") was conducted by the Saskatchewan Research Council ("**SRC**") on two samples previously submitted to SRC for lithogeochemical assay testing. The Study successfully showed that monazite from two separate REE zones and trends, Ivan and WRCB, contain similar concentrations of gallium oxide (Ga_2O_3), 0.176wt% and 0.185wt%, within the monazite crystal structure (see Table 1). The Study was a follow-up to lithogeochemical results that showed a positive linear correlation with total rare earth oxides (see News Release dated January 23, 2020).

James Sykes, Appia's Vice-President, Exploration and Development comments: "This is excellent news. Not only does the Alces Lake property contain some of the world's highest-grade REEs, but adding high-concentrations of gallium to the current suite of valuable and much sought-after critical REEs further demonstrates the potential economic importance that could exist on the Property. Gallium, especially in high concentrations,

very rarely occurs within monazite. Since gallium occurs within our monazite, this presents an easier solution to extracting and processing gallium than the current method of by-product processing to concentrate very low concentrations of gallium."

Up to 90% of primary global gallium supply is a by-product of processing bauxite (alumina ore) with lesser amounts derived from sphalerite (ZnS) production. Production of gallium is therefore limited by global economic and social factors that influence the production of the principal mineral commodities (i.e., aluminum or zinc). It takes multiple cycles of bauxite processing before the gallium content reaches its production starting concentration point of approximately 100 – 125 ppm Ga_2O_3, whereas Ga_2O_3 from Alces Lake monazite would have approximately 10x to 20x higher starting concentrations.

The current price of high-grade gallium metal (99.99%) is US$306.72/kg. On October 31st, 2020, the price of high-grade gallium metal (99.99%) was US$189.43/kg (all prices were derived from Shanghai Metals Market). This represents a greater than 60% price increase in 3.5 months. In 2011, the price for low-grade gallium oxide (99%) peaked at US$1,150/kg.

Gallium is one of several elements deemed "critical" by the United States Government (i.e., restricted supply by China, Kazakhstan and Ukraine, and in high-demand) that is used in numerous modern technological applications, in wireless communications such as 5G, cell phones, laser diodes, semiconductors, solar energy magnetic materials, and military defense. A significant potential exists for bottlenecks in the gallium supply chain because of rapid growth in areas of green/clean energy technologies.

Much like rare earth elements ("**REE**"), gallium is widely dispersed in nature but rarely found in economically extractable

quantities. For example, the Apex mine, southwestern Utah, USA, was the only primary mined source of gallium (and germanium) until its closure in 2011 by Teck Resources Limited. The mine operated intermittently over 100 years since 1884. A historic estimate for the average concentration of gallium was 0.032 wt%, with locally occurring grades up to 0.148 wt% gallium.

All lithogeochemical assay and electron microprobe results were provided by Saskatchewan Research Council's ("**SRC**") Geoanalytical Laboratory, an ISO/IEC 17025:2005 (CAN-P-4E) certified laboratory in Saskatoon, SK, for multi-element and REE analysis. The gallium results for sample 102712 were provided by ACT Labs, an ISO 17025 accredited laboratory in Ancaster, ON, for multi-element and REE analysis.

All analytical results reported herein have passed internal QA/QC review and compilation. The technical content in this news release was reviewed and approved by Dr. Irvine R. Annesley, P.Geo, Advisor to Appia's Board of Directors, and a Qualified Person as defined by National Instrument 43-101.

ALCES LAKE SUMMARY

Since detailed exploration began at Alces Lake in 2017, a total of seventy-four (74) REE, gallium and uranium bearing surface zones and occurrences over 45 km of the System have been discovered on the Property. To date, less than 1% of the Property has been explored with diamond drilling. The Property is also located in Saskatchewan, the same provincial jurisdiction that has planned to develop a "first-of-its-kind" rare earth processing facility in Canada, which is scheduled to become operational by 2022.

The Property encompasses some of the highest-grade total and critical rare earth elements ("**CREE**") and gallium mineralization in the world. CREE is defined here as those rare earth elements

that are in short-supply and high-demand for use in permanent magnets and modern electronic applications such as electric vehicles and wind turbines, (i.e: neodymium (Nd), praseodymium (Pr) dysprosium (Dy), and terbium (Tb)). The Alces Lake project area is 17,577 hectares (43,434 acres) in size, and is 100% owned by Appia. The project is located close to an old mining camp with existing support services, such as transportation (i.e., 15 km from the nearest trail), energy infrastructure (hydroelectric power), a 1,200 m airstrip that receives daily scheduled services, and access to heavy equipment.

Appia is planning to aggressively explore the Property during the summer months of 2021. The Company is fully-funded and committed to complete the largest exploration and diamond drilling program on the Property to date.

About Appia

Appia is a Canadian publicly-traded company in the uranium and rare earth element sectors. The Company is currently focusing on delineating high-grade critical rare earth elements (“REE”) and uranium on the Alces Lake property, as well as prospecting for high-grade uranium in the prolific Athabasca Basin on its Loranger, North Wollaston, and Eastside properties. The Company holds the surface rights to exploration for 65,601 hectares (162,104 acres) in Saskatchewan.

The Company also has a 100% interest (subject to a 1% Uranium Production Payment Royalty and a 1% Net Smelter Return Royalty on any precious or base metals payable, provided that the price of uranium is greater than US$130 per pound) in 12,545 hectares (31,000 acres), with rare earth element and uranium deposits over five mineralized zones in the Elliot Lake Camp, Ontario. The Camp historically produced over 300 million pounds of U_3O_8 and is the only Canadian camp that has had significant rare

earth element (yttrium) production. The deposits are largely unconstrained along strike and down dip.

Appia has 92.3 million common shares outstanding, 108.4 million shares fully diluted.

For more information, visit Appia's website at www.appiaenergy.ca

Cautionary Note Regarding Forward-Looking Statements: This News Release contains forward-looking statements which are typically preceded by, followed by or including the words "believes", "expects", "anticipates", "estimates", "intends", "plans" or similar expressions. Forward-looking statements are not guarantees of future performance as they involve risks, uncertainties and assumptions. We do not intend and do not assume any obligation to update these forward- looking statements and shareholders are cautioned not to put undue reliance on such statements.

Neither the Canadian Securities Exchange nor its Market Regulator (as that term is defined in the policies of the CSE) accepts responsibility for the adequacy or accuracy of this release.

For further information, please contact:

Tom Drivas, President, CEO and Director: (tel) 416-546-2707, (fax) 416-218-9772 or (email) appia@appiaenergy.ca

James Sykes, VP Exploration & Development, (tel) 306-221-8717, (fax) 416-218-9772 or (email) jsykes@uraniumgeologist.com

Frank van de Water, Chief Financial Officer and Director, (tel) 416-546-2707, (fax) 416-218-9772 or (email) fvandewater@rogers.com

Table 1 – Lithogeochemical and microprobe results for REEs and Gallium

Whole Rock Lithogeochemical Results

Zone	Sample #	From (m)	To (m)	Interval (m)	La_2O_3 wt%	CeO_2 wt%	Pr_6O_{11} wt%	Nd_2O_3 wt%	Sm_2O_3 wt%	Eu_2O_3 wt%	Gd_2O_3 wt%	Tb_4O_7 wt%	Dy_2O_3 wt%	Ho_2O_3 wt%	Er_2O_3 wt%	Yb_2O_3 wt%	Lu_2O_3 wt%	Y_2O_3 wt%	Ga_2O_3 wt%	ThO_2 wt%	U_3O_8 wt%	TREO wt%	CREO wt%
WRCB	1682	11.90	12.40	0.50	1.923	4.233	0.435	1.692	0.731	0.001	0.092	0.007	0.019	0.002	0.002	0.000	0.000	0.051	0.021	0.996	0.028	8.451	1.956
Ivan	102712	1.51	2.08	0.57	12.784	25.674	2.972	9.691	1.206	0.016	0.680	0.034	0.116	0.014	0.036	0.002	0.001	0.319	0.115	6.088	0.150	54.450	12.629

Monazite Mineral Microprobe results

Zone	Sample #	From (m)	To (m)	Interval (m)	La_2O_3 wt%	CeO_2 wt%	Pr_6O_{11} wt%	Nd_2O_3 wt%	Sm_2O_3 wt%	Eu_2O_3 wt%	Gd_2O_3 wt%	Tb_4O_7 wt%	Dy_2O_3 wt%	Ho_2O_3 wt%	Er_2O_3 wt%	Yb_2O_3 wt%	Lu_2O_3 wt%	Y_2O_3 wt%	Ga_2O_3 wt%	ThO_2 wt%	U_3O_8 wt%	TREO wt%	CREO wt%
WRCB	1682	11.90	12.40	0.50	13.382	28.909	3.355	11.502	1.672	0.030	0.877	0.056	0.072	bdl	bdl	nr	nr	0.344	0.176	7.447	nr	60.199	15.015
Ivan	102712	1.51	2.08	0.57	13.608	29.011	3.366	11.418	1.627	0.030	0.858	0.058	0.075	bdl	bdl	nr	nr	0.357	0.185	7.450	nr	60.408	14.947

The REEs Thulium (Tm) and Promethium (Pm) are not reported because they are both extremely scarce in nature, and Pm forms as a product of spontaneous fission of U-238
TREO = Total Rare Earth Oxide = sum of La_2O_3+CeO_2+Pr_6O_{11}+Nd_2O_3+Sm_2O_3+Eu_2O_3+Gd_2O_3+Tb_4O_7+Dy_2O_3+Ho_2O_3+Er_2O_3+Yb_2O_3+Lu_2O_3+Y_2O_3
CREO = Critical Rare Earth Oxide = sum of Pr_6O_{11}+Nd_2O_3+Eu_2O_3+Tb_4O_7+Dy_2O_3

Indicates light rare earth elements
Indicates heavy rare earth elements
Indicates radioactive elements

bdl = below detection limit
nr = not reported

Richard sample 1682 is from drill hole RI-20-004 (2020). Ga_2O_3 results reported for lithogeochemical results are from SRC (January 25, 2021 news release. NOTE: the individual sample was incorporated as part of a reported composite result)
Ivan sample 102712 is from channel sample line 4 (2018). Ga_2O_3 results reported for lithogeochemical results are from ACT Labs (January 23, 2020 news release. NOTE: the individual sample was incorporated as part of a reported composite result)

To view an enhanced version of Table 1, please visit: https://orders.newsfilecorp.com/files/5416/74720_appiaorig.JPG