

First Phosphate Announces Positive Results of Preliminary Economic Assessment at Its Lac à l'Original Property in Quebec, Canada

written by Raj Shah | July 26, 2023

July 26, 2023 ([Source](#)) – First Phosphate Corp. (CSE: PHOS) (OTC Pink: FRSPF) (FSE: KD0) (“**First Phosphate**” or the “**Company**”) is pleased to announce the positive results of its Preliminary Economic Assessment (“**PEA**”) on the Lac à l'Original Property (the “**Property**” or the “**Project**”) located 84 km northeast of Saguenay, Quebec, Canada.

First Phosphate acquired and negotiated a 100% royalty free interest in the Property in 2022. The PEA provides a viable case for developing the Property by open pit mining for the primary production of a phosphate concentrate and secondary recovery of magnetite and ilmenite concentrates. First Phosphate is a mineral development company fully dedicated to extracting and purifying phosphate for use in the production of cathode active material for the Lithium Iron Phosphate (“LFP”) battery industry.

Highlights (all dollar amounts in Canadian dollars on a 100% project ownership basis unless otherwise indicated):

- The Project would produce annual average of 425,000 tonnes of beneficiated phosphate concentrate at over 40% P205

content, 280,000 tonnes of magnetite and 97,000 tonnes of ilmenite over a 14.2 year mine life.

- The Project generates a pre-tax internal rate of return (IRR) of 21.7% and a pre-tax net present value (NPV) of \$795 Million at a 5% discount rate at June 30/23 approximate 18 month trailing average phosphate price and long term consensus magnetite and ilmenite prices.
- The Project generates an after-tax internal rate of return (IRR) of 17.2% and an after-tax net present value (NPV) of \$511 million at a 5% discount rate at June 30/23 approximate 18-month trailing average phosphate price and long term consensus magnetite and ilmenite prices.
- The Project would generate an after-tax cash flow of \$567 Million in years 1-5, resulting in a 4.9-year payback period from start of production.
- The Company has an MOU in place with Prayon Technologies of Belgium for up to 400,000 tonnes of annual phosphate concentrate offtake as well as a long-term purified phosphoric acid toll processing agreement.
- The Project benefits from nearby road access and electrical power line, year round accessible deep sea Port of Saguenay at 107 km by four season road.
- The PEA used Indicated and Inferred Mineral Resources in its calculations.
- The Project has no outstanding royalties or financing streams registered against it.

“We are very pleased with the results of this Preliminary Economic Assessment of our Lac à l’Original property and its timely completion. Our strategy to keep capex low and mine size controlled echoes these PEA results nicely,” says First Phosphate President, Peter Kent. “We’re now in a position to prudently evaluate next steps for the Company as we continue with our mission to apply a partnership-based approach to

integrate vertically from mine to value-added production of purified phosphoric acid and LFP cathode active material for the North America LFP battery industry.”

PEA BASE CASE FINANCIAL SUMMARY (all dollar amounts in \$Canadian unless otherwise noted, presented on a 100% ownership basis):

Pre-Tax Net Present Value (5% discount rate)	\$795 Million
After-Tax Net Present Value (5%)	\$511 Million
Pre-Tax Internal Rate of Return	21.7%
After-Tax Internal Rate of return	17.2%
After-Tax Payback	4.9 Years
Preproduction Capital	\$550 Million
Sustaining Capital	\$130 Million
Mine Life	14.2 Years
Process Plant Throughput	10,500 tpd
Concentrate Prices	
Phosphate (40% P ₂ O ₅)	\$367/t USD
Magnetite (69% Fe)	\$95/t USD
Ilmenite (39% TiO ₂)	\$250/t USD
Exchange Rate \$CAD:\$USD	\$1.32

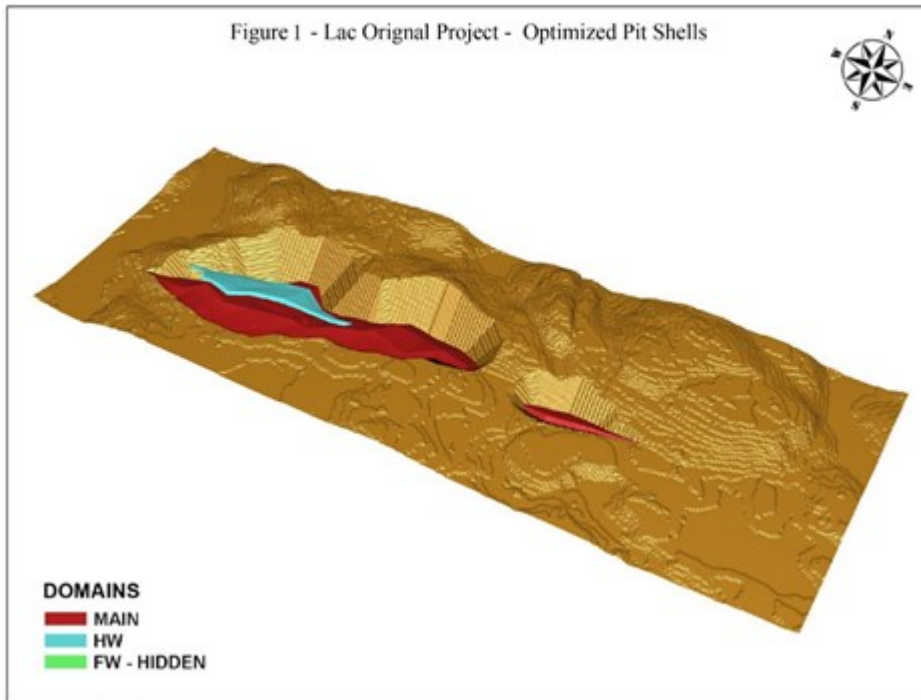
PEA TECHNICAL SUMMARY

Mine Life	14.2 years
Mine Plan Tonnage	54.0 Million tonnes
Process Plant Feed Grade	
P ₂ O ₅	4.91%
Fe ₂ O ₃	22.62%
TiO ₂	4.14%

Strip Ratio (Waste:Process Plant Feed)		1.7:1					
Operating Cost (per tonne of process plant feed)		\$30.43					
Pit-Constrained Mineral Resource Estimate (1-4) at 2.5% P2O5 Cut-off							
Class	Tonnes (M)	P ₂ O ₅ (%)	Contained P ₂ O ₅ (kt)	Fe ₂ O ₃ (%)	Contained Fe ₂ O ₃ (Mt)	TiO ₂ (%)	Contained TiO ₂ (Mt)
Indicated	15.8	5.18	821	23.90	3.8	4.23	0.67
Inferred	33.2	5.06	1,682	22.55	7.5	4.16	1.38

Note: P₂O₅ = phosphorus pentoxide, Fe₂O₃ = iron oxide/ferric oxide, TiO₂ = titanium dioxide.

1. Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability.
2. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation socio-political, marketing, or other relevant issues.
3. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
4. The Mineral Resources in this Technical Report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions (2014) and Best Practices Guidelines (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council.



P&E Mining Consultants Inc.
First Phosphate Corp., Lac Original Phosphate Property, Report No. 429

Figure 1 – Lac Original Project – Optimized Pit Shells

To view an enhanced version of Figure 1, please visit:

https://images.newsfilecorp.com/files/8917/174806_b00d00acd48efa5e_001full.jpg

The mining plan uses conventional truck/shovel open pit methods employing 90-tonne capacity haulage trucks and shovels equipped with 10 cubic metre buckets. The open pit will be mined over a period of 14.2 production years and one year of pre-stripping. Mineralized material will be transported by haulage trucks to the nearby process plant, and waste rock will be stored at a facility located at 1 (one) kilometer southeast of the open pit. Mining will be conducted at an initial rate of 8 Million total tonnes per annum (Mtpa), and will reach a peak of 14 Mtpa based on process plant feed and waste rock removal requirements.

The process plant feed is contained within an optimized subset of the Mineral Resource set out in the table above. The open pit contains 54.0 Mt of process plant feed (inclusive of mining

dilution and loss factors) averaging 4.91% P₂O₅, 22.62% Fe₂O₃ and 4.14% TiO₂. The process plant feed is associated with 91 Mt of waste rock and overburden resulting in an overall life-of-mine strip ratio of 1.7:1. It is notable that all Mineral Resources considered for mining are in the Indicated and Inferred classifications. No backfilling of the mined-out open pit with either waste rock or tailings is planned, which will allow potential open pit wall pushbacks and future mining if economic conditions become favourable.

Extensive metallurgical testing was carried out at SGS, Quebec City. The test work has indicated process recoveries of phosphate, magnetite and ilmenite to be reasonably high and relatively consistent. The most recent tests focused on circuit stability and maximizing concentrate recovery.

Tailings and waste rock management is designed for closure and the elimination of concerns for acid drainage or metal leaching.

Initial Capital Costs (\$Canadian Millions)

Pre-Stripping	30
Processing Plant	215
Tailings Management Facility	42
Indirects, EPCM and Owner's Costs	110
Site and Port Infrastructure	62
Contingency	91
Total Initial Capital	550

Sustaining Capital (\$C Millions)

Mining	46
Processing Plant	6
Tailings Management Facility	56

Contingency	22
Total Sustaining Capital	130

LOM Operating Costs (\$C per tonne)

Mining Cost per tonne mined material (waste and mineralized material)	2.77
Mining Cost per tonne plant feed	7.48
Processing Cost per tonne plant feed	12.60
G & A per tonne plant feed	1.67
Tailings Management	1.85
Concentrate Handling and Transport	6.83
Total Cost per tonne plant feed	30.43

The Project site is within the Mashteuiatsh, Essipt and Pessamit First Nations, which confers certain rights to aboriginal peoples in the area. First Phosphate recognizes the traditional rights of Indigenous people and acknowledges the exercising of treaty rights to preserve their cultural identity and customs. As such, since acquisition of the Property, First Phosphate has continued to regularly meet with communities to acquire information and incorporate feedback into the Project decision-making process. First Phosphate is striving to ensure these partnerships have a mutually beneficial outcome and to maintain strong and long-lasting relationships. First Phosphate and its' predecessors have been engaged in consultation and negotiations with a number of aboriginal communities with respect to the Project since 2022.

Qualified Persons

The scientific and technical disclosure for First Phosphate included in this News Release have been reviewed and approved by Gilles Laverdière, P.Geo. and Mr. Eugene Puritch, P.Eng., FEC, CET. Messrs. Laverdière and Puritch are Qualified Persons under

National Instrument 43-101 Standards of Disclosure of Mineral Projects. Mr. Puritch is independent of First Phosphate.

About First Phosphate Corp.

First Phosphate is a mineral development company fully dedicated to extracting and purifying phosphate for the production of cathode active material for the Lithium Iron Phosphate (“LFP”) battery industry. First Phosphate is committed to producing at high purity level, at full ESG standard and with low anticipated carbon footprint. First Phosphate plans to vertically integrate from mine source directly into the supply chains of major North American LFP battery producers that require battery grade LFP cathode active material emanating from a consistent and secure supply source. First Phosphate holds over 1,500 sq. km of royalty-free district-scale land claims in the Saguenay-Lac-St-Jean Region of Quebec, Canada that it is actively developing. First Phosphate properties consist of rare anorthosite igneous phosphate rock that generally yields high purity phosphate material devoid of high concentrations of harmful elements.

About P&E Mining Consultants Inc.

P&E was established in 2004 and provides geological and mine engineering consulting reports, Mineral Resource Estimate technical reports, Preliminary Economic Assessments and Pre-Feasibility Studies. P&E is affiliated with major Toronto based consulting firms for the purposes of joint venturing on Feasibility Studies. P&E’s experience covers over 400 NI 43-101 Technical Reports including First Phosphate’s Lac à l’Original NI 43-101 Mineral Resource Estimate which was completed in November 2022.

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Forward-Looking Information and Cautionary Statements

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. There is no certainty that the Indicated Mineral Resources will be converted to the Probable Mineral Reserve category, and there is no certainty that the updated Mineral Resource statement will be realized.

The Mineral Resource Estimate contained herein may be subject to legal, political, environmental or other risks that could materially affect the potential development of such Mineral Resources. See the Resources Report, once filed, for more information with respect to the key assumptions, parameters, methods and risks of determination associated with the foregoing.

The PEA is preliminary in nature, includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The PEA is subject to a number of risks and

uncertainties. See below and the Technical Report for more information with respect to the key assumptions, parameters, methods and risks of determination associated with the foregoing.

Certain information in this news release constitutes forward-looking statements under applicable securities laws. Any statements that are contained in this news release that are not statements of historical fact may be deemed to be forward-looking statements. Forward-looking statements are often identified by terms such as “may”, “should”, “anticipate”, “expect”, “potential”, “believe”, “intend” or the negative of these terms and similar expressions. Forward-looking statements in this news release include statements relating to: the Company’s commitment to producing high purity phosphate materials at full ESG standard under a low carbon footprint; the Company’s plans to integrate directly into the functions of certain major North American LFP Battery producers; the Company’s proposed development of its land claims in the Saguenay Region; the results of the PEA, statements regarding the impact and implications of the economic statements related to the PEA, such as future projected production, costs, including, statements with respect to Mineral Resource Estimates, recovery rates, IRR, NPV, mine life, CAPEX, payback period, sensitivity analysis to mineral prices, timing of future studies including the pre-feasibility study, environmental assessments (including the timing of an environmental impact study) and development plans, the Company’s understanding of the project; the potential to extend mine life beyond the period contemplated in the PEA, opportunity to expand the scale of the project, the development potential and timetable of the project; the estimation of Mineral Resources; realization of Mineral Resource Estimates; the timing and amount of estimated future exploration; costs of future activities; capital and operating

expenditures; and success of exploration activities.

Forward-looking information in this press release are based on certain assumptions and expected future events, namely: the Company's ability to producing high purity phosphate materials at full ESG standard under a low carbon footprint; the Company's ability to integrate directly into the functions of certain major North American LFP Battery producers; the Company's ability to develop its land claims in the Saguenay Region; accuracy of the results of the PEA; accuracy of the statements regarding the impact and implications of the economic statements related to the PEA, such as future projected production, costs, including, statements with respect to Mineral Resource Estimates, recovery rates, IRR, NPV, mine life, CAPEX, payback period, sensitivity analysis to mineral prices, timing of future studies including the Pre-Feasibility Study, environmental assessments (including the timing of an environmental impact study) and development plans; the Company's ability to carry out its plans for its projects; the ability of the Company to extend mine life beyond the period contemplated in the PEA; the ability of the Company opportunity to expand the scale of the project; the ability of the Company to carry out the development potential and timetable of the project; the accuracy of the estimation of Mineral Resources; the Company's ability in realizing its Mineral Resource Estimates; the Company's ability in carrying out the timing and amount of estimated future exploration; the accuracy of costs of future activities; the accuracy of the Company's capital and operating expenditures estimates; and the Company's ability to carry out and achieve successful exploration activities.

These statements involve known and unknown risks, uncertainties and other factors, which may cause actual results, performance or achievements to differ materially from those expressed or implied by such statements, including but not limited to: the

Company's inability to produce high purity phosphate materials at full ESG standard under a low carbon footprint; the Company's inability to integrate directly into the functions of certain major North American LFP Battery producers; the Company's inability to develop its land claims in the Saguenay Region; inaccuracy of the results of the PEA; inaccuracy of the statements regarding the impact and implications of the economic statements related to the PEA, such as future projected production, costs, including, statements with respect to Mineral Resource Estimates, recovery rates, IRR, NPV, mine life, CAPEX, payback period, sensitivity analysis to mineral prices, timing of future studies including the Pre-Feasibility Study, environmental assessments (including the timing of an environmental impact study) and development plans; the Company's inability to carry out its plans for its projects; the inability of the Company to extend mine life beyond the period contemplated in the PEA; the inability of the Company opportunity to expand the scale of the project; the ability of the Company to carry out the development potential and timetable of the project; the inaccuracy of the estimation of Mineral Resources; the Company's inability in realizing its Mineral Resource Estimate; the Company's inability in carrying out the timing and amount of estimated future exploration; the inaccuracy of costs of future activities; the inaccuracy of the Company's capital and operating expenditures estimates; and the Company's inability to carry out and achieve successful exploration activities.

Readers are cautioned that the foregoing list is not exhaustive. Readers are further cautioned not to place undue reliance on forward-looking statements, as there can be no assurance that the plans, intentions or expectations upon which they are placed will occur. Such information, although considered reasonable by management at the time of preparation, may prove to be incorrect

and actual results may differ materially from those anticipated.

Forward-looking statements contained in this press release are expressly qualified by this cautionary statement and reflect the Company's expectations as of the date hereof and are subject to change thereafter. The Company undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, estimates or opinions, future events or results or otherwise or to explain any material difference between subsequent actual events and such forward-looking information, except as required by applicable law.