

# Millennial Potash Completes Positive PEA with After-Tax NPV(10) of \$1.07B and IRR of 32.6% for its Banio Potash Project

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Vancouver, April 23, 2024 - [Millennial Potash Corp.](#) (TSXV: MLP) (OTCQB: MLPNF) (FSE: X0D) ("MLP", "Millennial" or the "Company") is pleased to announce the completion of a Preliminary Economic Assessment ("PEA") on its Banio Potash Project. The PEA was completed by Micon International ("Micon") in partnership with Agapito Associates Inc. ("Agapito") and yielded the following highlights:

- Optimal annual production rate of 800,000 Tonnes per Year (TPY) of primarily granular K60 Muriate of Potash (gMOP)
- \$1.07B after-tax NPV<sub>(10)</sub> and 32.6% IRR
- \$480M initial CAPEX estimate, including \$62M in Contingency
- Estimated \$61/T gMOP OPEX

Positive evaluations also modelled for 400,000 TPY and 600,000 TPY were also completed as part of the PEA. All dollar amounts are in US dollars unless stated otherwise. Highlights of the PEA are presented in Table 1.

Farhad Abasov, Millennial's Chair, commented "We are extremely pleased with the results of the PEA on the Banio Potash Project and it has confirmed our belief that the project is very robust and has significant economic potential. The CAPEX for the 800,000 TPY optimal case is a very competitive \$480M and the OPEX at approximately \$61/tonne MOP reflects an expected overall low-cost structure which would make Millennial's Banio Potash Project competitive with the lowest cost producers in the sector. Moving forward the Company plans to complete a MRE update in H2 2024 followed by the completion of early engineering studies and the initiation of a Feasibility Study and Environmental Impact Assessment."

Table 1 PEA Highlights

Line Item	Unit	
Production Rate MOP	t/a	800 k TPY
Total Initial CAPEX	US\$ million	480
Capital Intensity	US\$/t	600
Total OPEX LoM	US\$/t	61
Pre-Tax NPV <sub>10</sub>	US\$ million	1,680
Pre-Tax IRR	%	41
Post-Tax NPV <sub>10</sub>	US\$ million	1,071
Post-Tax IRR	%	32.6
gMOP Price (Avg-25 years)	US\$/t	387
Shipping Cost-Brazil	US\$/t	22
NaCl price (99% purity)	US\$/t	100
Payback	Years	1.4

## PEA Outline

The Banio Potash Project PEA is based on the Mineral Resource Estimate completed by ERCOSPLAN early in 2024 (see Press Release dated Jan. 16, 2024). The MRE is comprised of an Indicated Mineral Resource Estimate of 657M tonnes grading 15.9% KCl, and an Inferred Mineral Resource of 1.159B tonnes grading 16% KCl. The Indicated Mineral Resource equates to approximately 104.6M tonnes of KCl and the Inferred Mineral Resource equates to approximately 185.3M tonnes of KCl.

The PEA utilizes both the Indicated and Inferred Mineral Resources in its mining production scenario. The

PEA is preliminary in nature, and 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. There is no certainty that the PEA will be realized.

The Inferred and Indicated Resources include up to 10 evaporite seams rich in carnallite, sylvite and halite where the cumulative thickness of the potentially exploitable potash-rich seams is in excess of 70m.

The mining method deemed most appropriate for the potential of an economic project at Banio is solution mining. The mining scenario includes the development of solution mining caverns at a wellfield at the North Target with enriched brine pumped via pipeline to a processing plant facility at the town of Mayumba 50 km north of the project area. Processing via evaporation and crystallization followed by drying and compaction producing K60 (>95% KCl), as well as 99% pure NaCl, and shipped to market from a deep-water port at Mayumba. At a production rate of 800,000 TPY gMOP the estimated Life of Mine (LOM) is 56 years.

#### Capital (CAPEX) and Operating Expenses (OPEX)

CAPEX and OPEX cost parameters have been based on benchmark data and are order of magnitude estimates with an accuracy of  $\pm 30\%$ . The Initial CAPEX estimate is summarized in Table 2.

Mine/wellfield Initial CAPEX is dominated by the 68 wells/caverns to be developed in the first two years of construction, development of brine pipelines, and the rehabilitation of a road from the mining site to Mayumba. Replacement well/cavern development has been allocated to Sustaining Capex and total LOM planned caverns is 370.

Table 2 Summary of Initial CAPEX

Parameter	800 k TPY (US\$ 000')
Mine wellfield	123,250
Processing plant	190,416
Infrastructure, G&A, Escalation	104,216
Contingency (15% of Initial CAPEX)	62,198
Total	480,080

The processing plant forms the bulk of the Initial CAPEX at \$190M. Main process plant components include Evaporators, Crystallizers, Compaction plant units, Dryers, Tanks and Clarifiers, as well as Plant Buildings and Infrastructure. The Initial CAPEX for Infrastructure includes the project power requirements, mobile equipment, conveyors, screens, salt storage and bagging, and a ship loader as well as MOP product storage. G&A and an Escalation factor (5% of Initial CAPEX) for Years 1 and 2 of construction to compensate for cost inflation during the construction stage are included. The total estimated CAPEX for a production rate of 800,000 TPY of K60 granular MOP is approximately \$480M USD.

The Sustaining CAPEX estimate is dominated by expenditures in the wellfield/caverns. The initial caverns are projected to have a production life of approximately 11 years and replacements will be required every 7-10 years. Every 7-10 years an additional 51 wells/cavern will be developed to maintain the 800,000 TPY production rate. Additional Sustaining CAPEX items include piping for the wellfield as well as fresh-water infrastructure expansions at the wellfield and road extensions have been accounted for. The Sustaining CAPEX is estimated at \$180M for the first 25 years of production.

A summary of OPEX costs for the 800,000 TPY production scenario are presented in Table 3. The main OPEX items are natural gas which will feed a Combined Heat and Power plant for the processing plant and the wellfield, and maintenance costs for both the wellfield and the processing plant. Labour is also a significant cost and is comprised of 22 non-Gabonese and 388 Gabonese nationals for a total of 410 employees.

Table 3 Summary of OPEX

Item	Description	800 k TPY (US\$ million)
Natural Gas	Based on US\$0.10 per Nm <sup>3</sup>	16.380
Maintenance	Based on 4% of CAPEX	15.00
Labour	410 Employees,	9.76
Consulting	Ongoing	1.00
Legal	Contract Drafting etc.	1.00
Marketing	MOP and Salt Products	1.25
Port Fees	Estimated US\$2.00/t	1.60
Product Trucking	Estimated US\$2.00/t	1.60
Social Costs	Sponsor Local Projects	0.50
Diesel	Estimated US\$1.00/L	0.24
Demineralized Water For Steam Raising		0.42
Total OPEX US\$ million /a		48.7
Unit Cost US\$/t MOP		61

### Economic Analysis

The economic analysis considered the optimal case production rate of 800,000 TPY of MOP as well as two alternative scenarios at 600,000 TPY and 400,000 TPY. A Discounted Cash Flow Model (DCFM) was constructed with the following assumptions:

- All values, both revenue and costs are in real terms, flat lined during the Project time frame, with no inflation. The cash flow is then discounted for the NPV calculation;
- The model assumes a two-year construction phase followed by 1 year ramp-up production phase;
- Commercial production is taken as 60% of nameplate capacity and it is assumed that this occurs after a 12 month ramp-up period;
- Payback period is taken as the period to transition from cumulative cashflow negative to cumulative cashflow positive after the date of commercial production;
- As a consequence, Initial CAPEX is regarded as the first two years of construction in addition to the mine cavern construction and ramp-up period;
- Once production hits full capacity CAPEX turns into Sustaining CAPEX and OPEX begins. Everything previously being classed as "Initial CAPEX";
- Although the mine life or LOM continues beyond a 25-year time frame in each of the cases, the NPV and IRR calculations only include the first 25 years of the Project;
- All effects of stockpiles and lagging sales have been ignored and simplified to production equals sales; and,
- Brazil is the assumed market. The assumption is that Brazil would absorb the production, which de-risks this parameter in the assumption.

The main input parameters for the DCFM are outlined in Table 4:

Table 4 Summary of DCFM Inputs

Input Parameters	Unit	Value
Project Commencement	Date	01/01/2024
Valuation Base Date	Date	01/01/2027
gMOP K60 CFR Brazil (25-year average)	US\$/t	387
Shipping Cost CFR to Brazil	US\$/t	22
NaCl 99% CFR	US\$/t	100
Shipping Cost NaCl	US\$/t	22
Royalty	%	7.5%
Corporate Tax (CIT)	%	30%
Escalation Rate	%	5%
Contingency for CAPEX	%	15%
Plant Recovery	%	90%
Plant Product MOP Quality	%	95%
Discount Rate	%	10%
NPV calculation	Years	25

The DCFM indicates that at a production rate of 800,000 TPY of granular MOP the Banio Potash Project has the potential to be a compelling project. A summary of the DCFM conclusions is outlined in Table 5 indicating a robust Post-Tax NPV<sub>10</sub> of 1.07B and a sound IRR of 32.6%.

Table 5 Summary of DCFM Results

Line item	Unit	Optimal Case (800 k TPY)
Initial CAPEX	US\$ million	480
OPEX	US\$	61/tonne
Pre-Tax NPV <sub>10</sub>	US\$ million	1,680
Pre-Tax IRR	%	41
Post-Tax NPV <sub>10</sub>	US\$ million	1,071
Post-Tax IRR	%	32.6
Payback Period	Years	1.4

Micon has recommended additional drilling on the project to add to the existing resources and to hopefully upgrade Indicated and Inferred Mineral Resources to the Measured and Indicated designations in preparation for a Feasibility Study. Additional engineering studies such as dissolution testwork, geotechnical studies, a high purity NaCl market study as well as an updated standard and granular MOP study to determine demand in Africa for either product. MLP continues to work with local communities and the Gabonese government on infrastructure initiatives including the construction of a deep-water port and the gas-powered plant at Mayumba.

The information in this news release has been reviewed and approved by Liz de Klerk, Pri.Sci.Nat., FIMM, and Peter J. MacLean, Ph.D., P. Geo, Director of the Company, both of whom are Qualified Persons as that term is defined in National Instrument 43-101.

To find out more about Millennial Potash Corp. please contact Investor Relations at (604) 662-8184 or email at [info@millennialpotashcorp.com](mailto:info@millennialpotashcorp.com).

[Millennial Potash Corp.](#)

"Farhad Abasov"  
Chair of the Board of Directors

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