

**Key Facts:**

Ticker-Exchange	DAN-TSXV
Closing Price	\$0.31
Date of Report	March 11, 2022
Company Website	www.arianne-inc.com
Analyst	Nicholas Boychuk

**Company Statistics:**

52-week High	\$0.50
52-week Low	\$0.19
Market Cap	\$60.0 MM
Shares Outstanding	
Basic	196.8 MM
Diluted	238.6 MM
Cash	\$3.8 MM
Debt	\$27.2 MM

**Major Shareholders (% Fully Diluted):**

Management	3%
Directors	6%
Mercury Financial	16%

**Price Chart:**



Source: S&P, Cormark Securities

## Potential Phos-Force In Quebec Battery Supply Chain

Unless otherwise denoted, all figures shown in C\$

**Overview:**

Arianne Phosphate is a development-stage phosphate mining company that owns the Lac à Paul project, the world's largest independent greenfield phosphate deposit. The company is looking to develop the resource to supply high-purity phosphoric acid to the burgeoning Lithium Iron Phosphate (LFP) battery industry in North America, and given the characteristics of the resource, it would more closely align with the ESG initiatives of potential offtake partners than current global supply. In line with this belief, the Province of Quebec recently added phosphate to its list of critical and strategic minerals (joining the EU and South Korea who previously recognized the importance of phosphate). As a result, DAN's resource has the potential to be a strong derivative play on the North American battery supply chain.

**Key Points:**

**Location Advantage**

DAN is well situated roughly 200km north of Saguenay, Quebec, an area with access to four-season roads, clean power via a nearby hydro resource, and deep water port access along the north shore of the Saguenay River. The project is fully permitted and ready for construction (permitted by the Government of Quebec in 2015).

**Resource Advantage**

The Lac à Paul project is ideal for the production of LFP batteries as the igneous rock present is pure and lacks the deleterious trace elements and rare earth elements that would be detrimental to the cathode. Deposits like this are rare and largely situated in countries/regions that would not support the North American push to a friendshoring of critical resources. With the company also starting work on a prefeasibility study (PFS) to construct a downstream purified phosphoric acid (PPA) plant in the region, investors can see how this resource could tie into a larger theme regionally.

Our **Emerging Ideas** publication seeks to highlight firms that we come across during our travels where, while perhaps not ready for formal research coverage, we see notable developments or inflection points that we believe may be of interest to investors.

### Phosphate 101

As discussed in our LFP Battery Overview report ([link here](#)), phosphate is a critical element in the burgeoning lithium iron phosphate (LFP) battery industry that is set to see ~4x growth by 2030. Our overview of DAN begins with an intro to this opaque commodity and covers what phosphate is, where it's found, and the ways to process it into end products.

- What is phosphate?** Phosphate is typically a soft sedimentary rock formed millions of years ago from the accumulation of organic matter on the ocean floor. This sedimentary rock accounts for around 95% of global phosphate supply and typically has heavy metals like aluminum, fluorine, iron, cadmium, uranium, and other valuable rare earth elements (see Figure 1, note that there are no economically viable processes currently in place to recover the rare earth elements, making this material less suitable for battery production). Conversely, less common igneous deposits are of higher purity and lack deleterious trace elements that would be detrimental to battery chemistry, with massify-type anorthosite deposits also having low rare earth elements, making this material perfect for LFP batteries. DAN's deposit in Northern Quebec is of this type.

**Figure 1: Sedimentary & Igneous Phosphate Deposit Characteristics (DAN deposit highlighted)**

Deposit Type	Sedimentary	Igneous	Igneous
Host rock	Upwelling-related sedimentary rocks	Carbonatite	Massif-type anorthosite
Distribution	~95% of global deposits	~5% of global deposits	~1% of global deposits
Shape of ore bodies	Bedded (stratiform)	Veins and lenses	Sheets and lenses
Rare earth elements	Variable	High	Low
Deleterious trace elements	High	Low	Low
Organic matter	High	None	None
Phosphate mineralogy	Carbonate fluorapatite	Apatite	Apatite
Associated minerals	Quartz, clay minerals, calcite, dolomite	Calcite, dolomite, magnetite	Pyroxene, plagioclase, ilmenite, magnetite
P <sub>2</sub> O <sub>5</sub> content	~8-35 wt%	~5-15 wt%	~5-15 wt%
Source	Upwelling-related organic matter	Mantle (> 50 km depth)	Mantle / crust (~30-50 km depth)
Mineralization process	Phosphate precipitation in accumulating sediment	High temp. crystallization in magma	High temp. crystallization and gravitational settling in magma

Source: Queen's University, Cormark Securities

- Where is phosphate found?** Almost all sedimentary deposits are in Morocco (~70% of the global market), followed by a mix of China, Algeria, the US, Australia, Jordan, Syria, Egypt, Peru, and Kazakhstan (see Figure 2). Far less common igneous deposits are in South Africa, Finland, Russia, Canada (Quebec and one known deposit in Ontario), and Brazil. With the global push for onshoring and the fact that the Lac-Saint-Jean Anorthosite Complex in Quebec is the largest anorthosite complex in the world, DAN is well positioned physically and geopolitically to support the emerging North American battery supply chain.

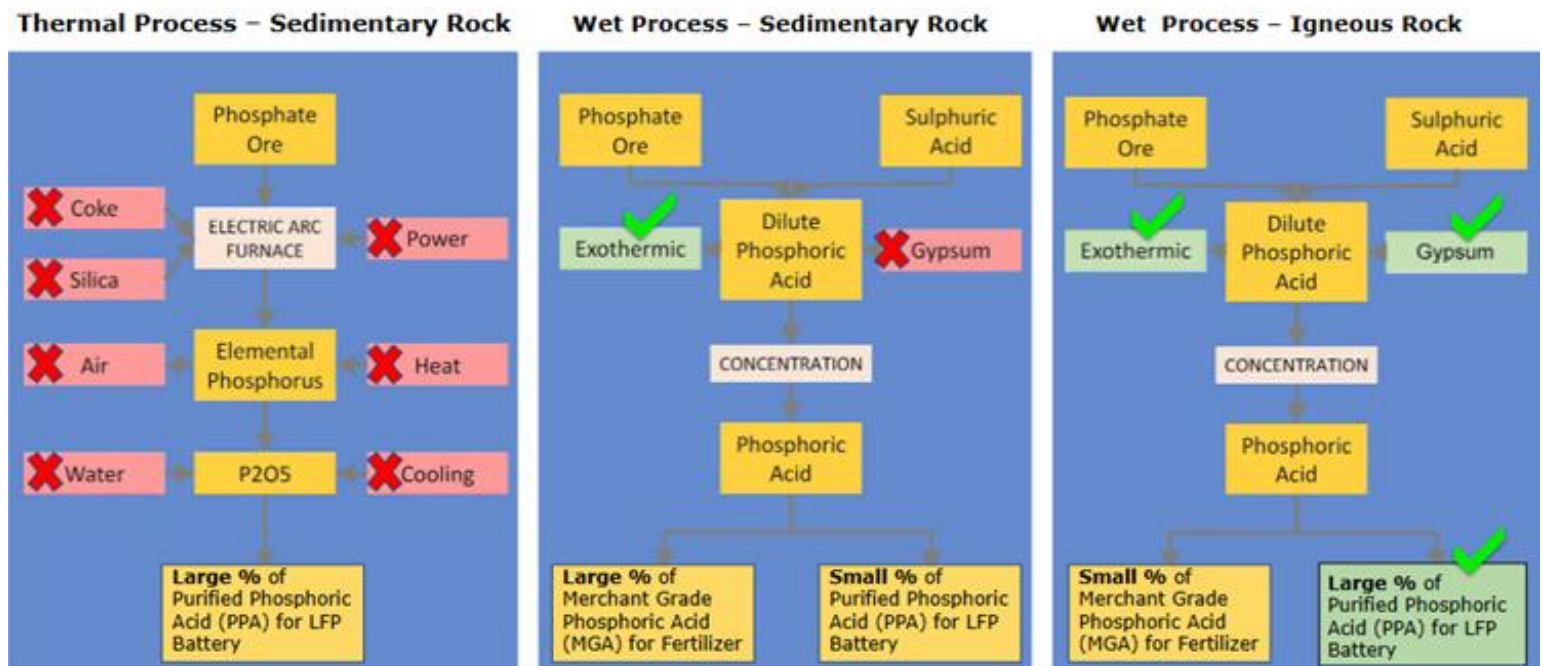
Figure 2: Global Phosphate Deposit Map



Source: Food and Agriculture Organization of The United Nations, Cormark Securities

- **Phosphate processing and products:** Phosphate rock can be sold as a dry bulk commodity or can be upgraded to merchant grade phosphoric acid (MGA, used in the production of fertilizers like MAP and DAP) or PPA (the grade needed for LFP batteries). Key considerations for each of the processes highlighted in Figure 3 include:
  - *Thermal process.* Commonly used in China to produce LFP grade PPA, this process can use a lower quality phosphate concentrate from sedimentary rock but requires considerable energy and creates a lot of pollutants. As a result, this process would not be viable in North America.
  - *Wet process.* The wet process of phosphoric acid production mixes phosphate concentrate with sulphuric acid to create phosphoric acid (and calcium sulphate). Compared to the thermal process, this requires far less energy and therefore has a lower carbon footprint. The phosphoric acid is then separated into a liquid and a solid gypsum via gravity settling and filtration (when sedimentary rock is used, the gypsum often contains deleterious elements and is radioactive making it hard to store in slag piles). Depending on the desired grade and quality of PPA, the product is then purified and concentrated before storing in tanks. Sedimentary rock only yields a small percentage of LFP grade PPA, while up to 90% or so of igneous rock feedstock can be converted to LFP grade PPA. The gypsum produced in this process is also non-radioactive and can be recycled into other agricultural, industrial or construction processes.

**Figure 3: PPA Production Processes**

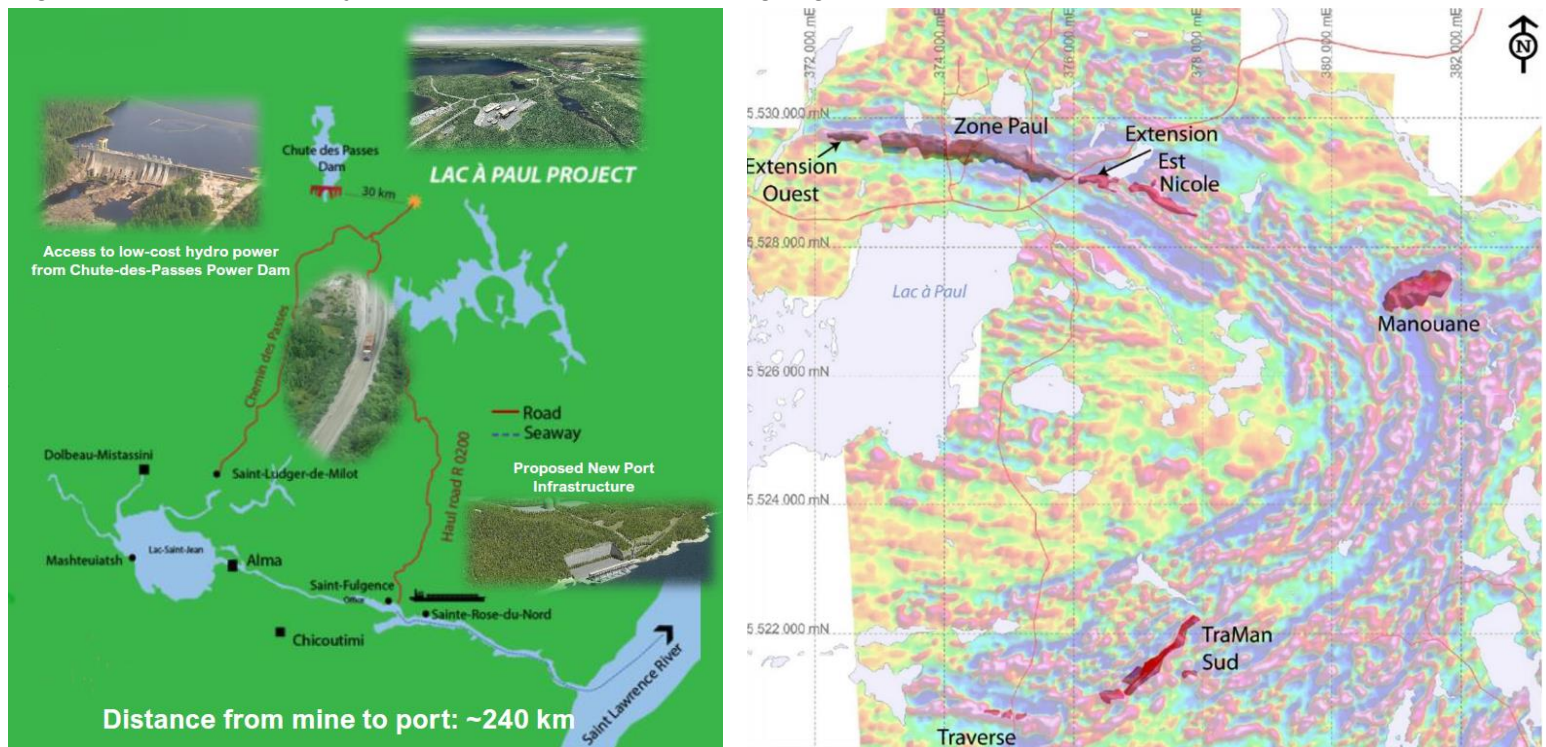


Source: Battery Metal Review 2022

### Arianne Lac à Paul Project Overview

DAN owns 100% of the Lac à Paul Project ~200km north of Saguenay, Quebec (see Figure 4). The project is part of the world's largest anorthositic complex and is expected to produce a phosphate concentrate of ~40% P<sub>2</sub>O<sub>5</sub> with recoveries around 90% (which has been confirmed by Prayon Technologies as of sufficient quality for high-purity phosphate concentration needed in the production of LFP batteries). Other high level details about the project are that it is (1) fully permitted and construction ready (permitted by the Government of Quebec in 2015), (2) a ~30k ha land package with 552 claims over nine large-scale igneous phosphate rock zones that are open in multiple directions and at depth, and (3) accessible to infrastructure; clean power is to be sourced via substation at the neighbouring Chute des Passes power plant and conveyed via a 46km-long transmission line (permitted in 2019), heavy duty all year road access is near site, and deep water port access is available from the north shore of the Saguenay River.

Figure 4: Lac à Paul Project Map (LHS) & Resource Highlight (RHS)



Source: Company documents, Cormark Securities

The Paul Zone is DAN's primary target and was the focus of the 2013 Feasibility Study. In addition to the ~472 MMt resource identified then, an updated resource estimate for the east and west extensions adds just over ~230 MMt to the overall package. We summarize the details of the resource in Figure 5 as well as the Feasibility Study and NPV sensitivity in Figure 6.

The other four zones, Manouane, South Traman, Nicole, and Traverse, also had 41 exploration drill holes in 2013 totaling 7.6k meters and have proven the presence of P<sub>2</sub>O<sub>5</sub>. We summarize each of these resources in Figures 7.

Figure 5: Paul Zone & Paul Zone Extension Reserves

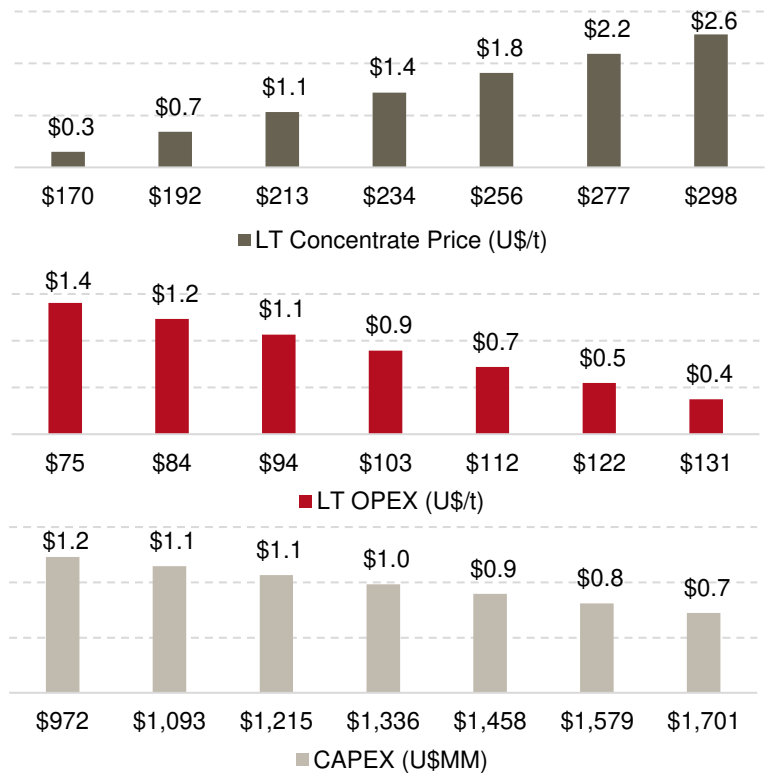
Reserves	Paul Zone COG: 3.5% (P <sub>2</sub> O <sub>5</sub> )	
	Tonnage (MMt)	Grade (%P <sub>2</sub> O <sub>5</sub> )
Proven	313.7	6.92
Probable	158.4	6.80
<b>Total</b>	<b>472.1</b>	<b>6.88</b>

Reserves	East & West Extensions COG: 4.0% (P <sub>2</sub> O <sub>5</sub> )	
	Tonnage (MMt)	Grade (%P <sub>2</sub> O <sub>5</sub> )
Measured	3.9	7.29
Indicated	226.7	7.05
<b>Total</b>	<b>230.6</b>	<b>7.16</b>

Source: Company documents, Cormark Securities

Figure 6: Paul Zone FS Summary (LHS) & NPV<sub>8%</sub> Sensitivities (U\$B, RHS)

Operational Summary	Mine type:	OP
	Total ore processed:	(MMt) 472.1
	Throughput:	(MMtpa) 18.7
	Concentrate grade:	(%P <sub>2</sub> O <sub>5</sub> ) 38.6%
	Recoveries:	(%P <sub>2</sub> O <sub>5</sub> ) 90.0%
	Total production:	(MMt%P <sub>2</sub> O <sub>5</sub> ) 75.7
	Avg. annual production:	(MMt%P <sub>2</sub> O <sub>5</sub> ) 3.0
Cost Summary	Mine life:	(yrs) 25.8
	Avg. mining cost:	(U\$/t concentrate) \$27.33
	Avg. processing cost:	(U\$/t concentrate) \$48.11
	Avg. G&A cost:	(U\$/t concentrate) \$4.27
	Avg. shipping cost:	(U\$/t concentrate) \$13.96
Capex Summary	Total operating cost:	(U\$/t concentrate) \$93.68
	Initial capex:	(U\$ B) \$1.2
Economic Summary	Sustaining / other capex:	(U\$ B) \$0.4
	LT concentrate price:	(U\$/t concentrate) \$213
	After-tax IRR:	(%) 16.7%
	After-tax NPV:	(U\$ B) \$1.1



Source: Company documents, Cormark Securities

**Figure 7: Lac à Paul Additional Resource Review**

Reserves	Manouane COG: 2.43% (P <sub>2</sub> O <sub>5</sub> )		Reserves	South Traman COG: 3.5% (P <sub>2</sub> O <sub>5</sub> )	
	Tonnage (MMt)	Grade (%P <sub>2</sub> O <sub>5</sub> )		Tonnage (MMt)	Grade (%P <sub>2</sub> O <sub>5</sub> )
Measured	136.9	5.93	Measured	-	-
Indicated	26.9	5.64	Indicated	-	-
<b>Total</b>	<b>163.8</b>	<b>5.88</b>	<b>Total</b>	-	-
Inferred	-	-	Inferred	146.0	5.3

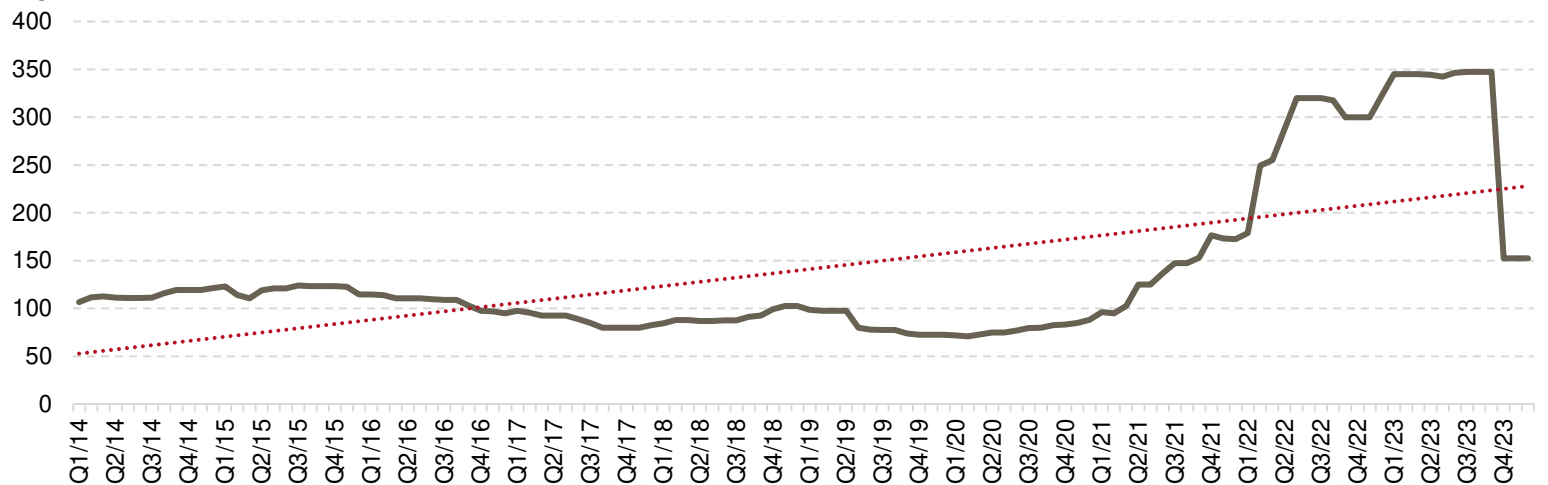
  

Reserves	Nicole COG: 3.5% (P <sub>2</sub> O <sub>5</sub> )		Reserves	Traverse COG: 3.5% (P <sub>2</sub> O <sub>5</sub> )	
	Tonnage (MMt)	Grade (%P <sub>2</sub> O <sub>5</sub> )		Tonnage (MMt)	Grade (%P <sub>2</sub> O <sub>5</sub> )
Measured	-	-	Measured	-	-
Indicated	-	-	Indicated	-	-
<b>Total</b>	-	-	<b>Total</b>	-	-
Inferred	78.2	5.34	Inferred	17.0	5.98

Source: Company documents, Cormark Securities

Since the original Feasibility Study in 2013, DAN conducted an updated capex study in late 2022 and early 2023 that updated the estimated capex for the Lac à Paul project to be ~U\$1.55 B (assuming a USD/CAD FX rate of 1.35). This assumption still includes necessary infrastructure upgrades like the hydroelectric transmission line from dam to site, and a ship-loading facility on the north side of the Saguenay River. Additionally, the long-term concentrate price estimated in 2013 of U\$213/t appeared conservative during the 2022/2023 rally, but has since abruptly returned to U\$153/t. The long-term trend of this chart suggests that the originally estimated U\$213/t may be appropriate; however, additional clarity will be needed to confirm. Given these changes and the time that has lapsed since the original Feasibility Study (also assuming a change in opex to a similar magnitude as capex at a ~25% increase, eq. to ~U\$117/t or so), we estimate the current NPV<sub>8%</sub> would fall somewhere closer to U\$800 MM all else equal. Despite this potential downward revision to the projects' NPV, it continues to exhibit value relative to phosphate peers (see Figure 9).

**Figure 8: Phosphate Rock Price (U\$/t)**



\* Red trend-line

Source: World Bank Group, Bloomberg, Cormark Securities

Figure 9: DAN Comp. Table

Company	Ticker	Project	Location	Deposit Type	EV C\$MM	Mkt. Cap. C\$MM	Last Study	Year of Study	Reser. (Mt)*	P <sub>2</sub> O <sub>5</sub> %	Throughput Mmtpa**	Strip Ratio	Mine Life (yrs.)	P <sub>2</sub> O <sub>5</sub> ktpa	Concent. Grade (%)	P <sub>2</sub> O <sub>5</sub> Recovery Ratio (%)
Itafos Inc.	IFOS	Farim	Guinea-Bissau	Sedimentary	\$318	\$230	FS	2023	43.8	30.0%	1.8	11.3	25.0	2,657	33.1%	79%
Minbos Resources	MNB	Cabinda	Angola	Sedimentary	\$124	\$151	DFS	2021	8.4	29.6%	NA	NA	20.0	236	NA	NA
Centrex Metals Ltd.	CXM	Ardmore	Australia	Sedimentary	\$95	\$95	DFS (U)	2021	10.1	30.2%	0.8	NA	10.0	NA	34.0%	77%
Avenira Ltd.	AEV	Wonarah	Australia	Sedimentary	\$41	\$41	FS	2023	66.0	30.0%	NA	NA	NA	NA	NA	NA
Kropz PLC	KRPZ	Hinda	Rep. of Congo	Sedimentary	\$96	\$24	FS (U)	2021	405.0	11.0%	8.8	NA	28.0	NA	NA	NA
Fox River Resources	FOX	Martison	Ontario	Igneous	\$13	\$15	PEA	2022	193.6	18.1%	3.4	3.9	26.0	1,410	37.3%	73%
First Phosphate Corp.	PHOS	Lac à l'Original	Quebec	Igneous	\$11	\$12	PEA	2023	49.0	5.1%	3.8	1.7	14.2	425	40.3%	91%
<b>Average</b>									<b>110.8</b>	<b>22.0%</b>	<b>3.7</b>	<b>5.6</b>	<b>20.5</b>	<b>1,182</b>	<b>36.2%</b>	<b>80%</b>
<b>Arianne Phosphate</b>	<b>DAN</b>	<b>Lac à Paul</b>	<b>Quebec</b>	<b>Igneous</b>	<b>\$82</b>	<b>\$59</b>	<b>PFS</b>	<b>2013</b>	<b>472.1</b>	<b>6.9%</b>	<b>18.7</b>	<b>1.1</b>	<b>25.8</b>	<b>3,000</b>	<b>38.6%</b>	<b>90%</b>

Company	Ticker	Project	Location	Deposit Type	Initial Capex C\$MM	Sust. Capex C\$MM	Capex / tpa C\$ / t	Operating Cost C\$ / t conc.	Project NPV C\$ MM	Mkt. Cap / Project NPV	Project NPV Disc. Rate	Project NPV Price Est. (C\$/t)
Itafos Inc.	IFOS	Farim	Guinea-Bissau	Sedimentary	\$416	\$631	\$394	\$93	\$772	0.30x	10.0%	NA
Minbos Resources	MNB	Cabinda	Angola	Sedimentary	NA	NA	NA	NA	\$274	0.55x	NA	NA
Centrex Metals Ltd.	CXM	Ardmore	Australia	Sedimentary	NA	NA	NA	NA	\$182	0.52x	7.0%	159.9
Avenira Ltd.	AEV	Wonarah	Australia	Sedimentary	\$10	\$13	NA	\$140	NA	NA	NA	NA
Kropz PLC	KRPZ	Hinda	Rep. of Congo	Sedimentary	NA	NA	NA	NA	\$536	0.04x	11.1%	NA
Fox River Resources	FOX	Martison	Ontario	Igneous	\$2,510	\$736	\$2,302	\$71	\$1,980	0.01x	8.0%	NA
First Phosphate Corp.	PHOS	Lac à l'Original	Quebec	Igneous	\$550	\$139	\$1,619	\$272	\$511	0.02x	5.0%	495.5
<b>Average</b>					<b>\$872</b>	<b>\$380</b>	<b>\$1,438</b>	<b>\$144</b>	<b>\$709</b>	<b>0.24x</b>	<b>8.2%</b>	<b>327.7</b>
<b>Arianne Phosphate</b>	<b>DAN</b>	<b>Lac à Paul</b>	<b>Quebec</b>	<b>Igneous</b>	<b>\$1,640</b>	<b>\$519</b>	<b>\$720</b>	<b>\$126</b>	<b>\$1,439</b>	<b>0.04x</b>	<b>8.0%</b>	<b>287.6</b>

\* Resource, not reserve for MNB, AEV, FOX, and PHOS, FOX resource as of 2015 report and not full 2021 FS(U)

\*\* KRPZ throughput based on two-phased approach, Phase I is 31 MM tonnes of ore, Phase II is 214 MM tonnes of ore

Source: Company documents, Eikon, Cormark Securities



### Arianne Financial Overview

DAN exited Q3/23 with \$3.8 MM in cash on hand against a credit facility totaling ~\$27.3 MM. As highlighted in Figure 10 below, the facility allows for the payment of interest in common shares and should not result in any solvency issues (assuming a renegotiation can occur after the March, 31, 2026, maturity as has been successfully negotiated before as recently as 2021).

**Figure 10: DAN Credit Facility Terms**

	Amended Credit Facility (as of Q3/23)*
Outstanding balance	- \$27.3 MM
Maturity	- March 31st, 2026
Interest rate	- 8% annually, all interest capitalized and payable annually in cash or shares (at DAN's 1-yr. VWAP)
Warrant history	- On Mar. 31, 2021, Mercury exercised ~26.8 MM warrants and reduced the debt facility by ~C\$6.6 MM - Mercury still holds 32 MM warrants at C\$0.33 (exp. 03/31/26)**
Royalties granted	- Total royalty of C\$1.75/t P <sub>2</sub> O <sub>5</sub> granted to Mercury - Royalties can be bought back for pre-determined lump sums
Other terms	- DAN must raise C\$3.0 MM within 1-year of credit facility refinance and every year after for 3-years or 5 MM warrants will be issued to Mercury per year
2023 payment	- On Mar. 16th, 2023, DAN sold its James Bay area 1.5% NSR royalty to Lithium Royalty Corp. (TSX: LIRC, Buy rec., \$20.10 target price) for ~C\$2.3 MM and subsequently repaid C\$1.0 MM to Mercury facility

\* Mercury Financing Corp. ("Mercury") is the lender that holds a first ranking security of C\$27 MM on the Lac à Paul property claims

\*\* Subject to a 'warrant blocker' that prevents Mercury's holdings from exceeding 19.9% to certain limited circumstances  
Source: Company documents, Company documents

## Management Team & Board

**Brian Ostroff – President, Director:** Mr. Ostroff has been the Executive Chair of the Board at Madoro Metals Corp. since 2021 and has served as its Director since 2020. Prior to serving as Arianne Phosphate's President in 2021, he served as the company's Chief Executive Officer from 2016 until 2021 and has been a Non-Independent Director since 2014. Additionally, Mr. Ostroff served as an Executive Vice-President and Director of Windermere Capital from 2009 until 2022.

**Jeff Beck – CEO, Director:** Mr. Beck was the Founding Managing Director and Chairman of Ocean Partners Holding Limited, serving in this capacity from 2004 until 2020. Additionally, he had led Pechiney World Trade's Ores and Concentrates Division from 1992 until 2004. Mr. Beck graduated from Queen's University in Mining (1980) and received his MBA from the University of Tennessee (1983) while working at ASARCO's Tennessee zinc mine.

**Geneviève Ayotte – CFO:** Ms. Ayotte has served as the Chief Financial Officer of Arianne Phosphate Inc. since 2022. Within her current position as CFO at Arianne, she also serves as an Independent Director at Quebec Precious Metals and Director at Kintavar Exploration Inc. since 2023. Ms. Ayotte is a member of the Certified Professional Accountants of Quebec and graduated from HEC Montreal with a Bachelor's in Business Management and a D.E.S.S. in public accounting (2008). Since 2008, she developed extensive mining knowledge, specifically in public accounting at PricewaterhouseCoopers LLP.

**Raphael Gaudreault – COO:** Mr. Gaudreault, P.Eng. has served as the Chief Operating Officer at Arianne Phosphate Inc. since 2021 and served as the company's Mining Director previously. Prior to Arianne, he served as a Mine Engineer at IAMGOLD and worked on two expansions of ArcelorMittal's Mont-Wright operation. Mr. Gaudreault graduated from Laval University with a degree in Mining Engineering (2004) and a certificate in Business Administration from Mount Saint Vincent University (2005). He is a member of the Order of Quebec Engineers.

**Claude Lafleur – Director:** Mr. Lafleur served as the Chief Executive Officer (CEO) of Coop fédérée for eight years, the CEO of Indian Farmers Fertilizer Cooperative Limited (IFFCO) Canada, and the CEO of Solio Groupe Coopératif. Currently, he is a member of Anges Quebec and continues to sit on several boards as Chairman.

**Dominique Bouchard – Director:** Mr. Bouchard serves as the President of QIT-Fer et Titane Inc. and previously served as the Executive Chairman of Arianne from 2017 until 2023. Mr. Bouchard served as the President of Rio Tinto Iron & Titanium until his retirement in 2013. He also served as the Primary Metal Vice President within Rio Tinto Alcan from 2005 until 2010. Mr. Bouchard holds a Master's degree in Management from McGill University, graduated from the International Master's Programme in Practicing Management from INSEAD University in France and received an Electrical Engineering degree from Laval University.

**Steven Pinney – Director:** Mr. Pinney served as the President of Cargill Fertilizer and Vice President of Phosphates and Supply Chain at Mosaic from 2007 until 2009. He has held various executive positions, including Chairman and Director of Adolfsen & Peterson Inc. and the Vice President of Operations for all Cargills mining and manufacturing operations in Florida.

**Siva Pillay – Director:** Mr. Pillay has been an Independent Director of Arianne since 2013. Additionally, he has served as the Managing Director and Chief Financial Officer of Ocean Partners Holdings Ltd. since 2015 and 2005, respectively. Mr. Pillay's experiences include various positions in commodity finance and related fields at The Bank of New York, Fortis and Standard Bank. He has also established his own boutique advisory company arranging Trade Project Finance.

**James Cowley – Director:** Mr. Cowley has been an Independent Director of Arianne since 2019 and served as its Director from 2011 until 2019. Additionally, he previously served as Arianne's President from 2011 to 2014 and as its Chief Financial Officer from 2015 until 2019. Mr. Cowley is a Metallurgical Engineer with a Master of Business Administration in finance.

Marco Gagnon – Director: Mr. Gagnon has been an Independent Director of Arianne since 2011 and has served as the Independent Chairman since 2023. He has been the Executive Vice President and Director of Probe Metals Inc. since 2016 and was the President, CEO and a Director of Adventure Gold Inc. from 2007 to 2016. From 2004 to 2007, Mr. Gagnon served as the Vice-President of Exploration and Acquisitions with Société D'exploration Minière Vior inc. Additionally, he served as the President of the Quebec Mining Exploration Association from 2007 to 2009. Mr. Gagnon is a graduate in geology from the Université du Québec à Chicoutimi.

## Risks

**Industry & Competition:** DAN competes with other businesses that will provide similar phosphate product into the battery materials industry. If the market evolves as expected and an incremental 700k tpa or more of PPA is required by 2030 and DAN's production reaches its goal of 350k tpa, the company will account for roughly half of the world's incremental PPA supply. There is a risk that new production capacity will come online from other producers that would negatively impact DAN's market position. Some of these players are considerably larger, more established, have stronger financial positions, and produce PPA from existing resources. Should these companies expand PPA production or acquire new resources to address the growing PPA demand, and/or technological improvements or shifting market dynamics make it easier or more economically viable for producers of sedimentary rock to upgrade their deposits to PPA (processes like distillation, crystallization, ion exchange, floatation, membrane filtration, demineralization, chemical, and magnetic, among others, already exist but are generally uneconomic), it would have a negative effect on DAN. There is also the risk that the LFP battery market does not materialize globally, and/or particularly in North America, to support DAN. The company is heavily exposed to the Quebec battery materials market and related companies and requires their success as part of its growth strategy. There is no guarantee that the industry will evolve in a manner that supports DAN.

**Operating Risk:** DAN is exposed to development, construction, operation, and remediation risks with its project (among others). There are many variable costs involved in these processes, some of which DAN will have no ability to control and could negatively impact shareholders. There is no assurance that the company will be able to successfully bring its projects into operation.

**Capital Markets:** The future capital requirements of DAN depend on many factors and the company may be forced to consider raising capital via public or private financings (debt or equity, the latter of which could result in the dilution of existing DAN shares). There is also no guarantee DAN will always have the liquidity available to meet its obligations. DAN shares are also subject to fluctuations and volatility related to quarterly operating results and overall market themes, among other reasons. Should DAN take on more leverage, the company would also be exposed to changing interest rates which could increase the company's cost of borrowing, and of FX rates which could negatively impact foreign business. Last, situations may arise where DAN disposes of minority / majority interests in select business lines to cover financial losses or fund future growth. These decisions could have a negative impact on DAN shareholders.

**Legal & Regulatory:** DAN operates in a fluid industry that is and will likely continue to see significant regulatory changes; there is no guarantee that the company will benefit from these developments, or that current supportive policies remain. In its normal course of business, the company also must interact with multiple stakeholder groups, which could expose the company to legal risks in multiple jurisdictions. The company could also become involved in litigation, or may already be involved in litigation, which might have a negative impact on the business.

**Other:** From its normal course of business, DAN may be subject to foreign sourcing risk (i.e., political instability, production/transportation delays, duties, tariffs, etc.) or external events (such as natural disasters, disease outbreaks, cyber security risk, acts of terrorism, insurance limits etc.), among other things.

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