THE CLOUDMINER LTD

PolarX: Unlocking the Alaska Range

Famed for some of the world's most impressive and prestigious minerals projects Alaska has long been a frontier for mineral explorers from the wildly successful Kennecott Mine to the supergiant Pebble copper-gold deposit, ore bodies that are polar opposites in terms of both scale, grade and popularity.

In the midst of these projects Alaska has steadily developed projects and produced minerals and added new discoveries throughout the 20th Century and has demonstrated a resurgence of late with a plethora of new exploration taking place, none more exciting than the merger that created the Alaskan Range Project; a regional play now entirely controlled by PolarX.

The Alaska Range Project comprises a 35km strike-contiguous package and already boasts two defined JORC (2012) resources. Soil sampling demonstrates the majority, if not the entire 35km belt is mineralised. The Alaska Range Project carries all the hall-marks of a large mineralised copper-gold porphyry system whilst both the Zackly and Caribou Dome deposits in their own rights stand alone as excellent prospects of differing mineralisation styles, including high grade copper and copper-gold systems.

With further exploration planned for multiple high priority targets, the viability of the initial finds is a key question that will ultimately be determined through full economic studies. Within this report The CloudMiner reviews ample peers in a bid to get an early insight into what it takes to produce an economically viable project on a scale applicable to The Alaska Range Project.

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4/2/2018

CONTENTS

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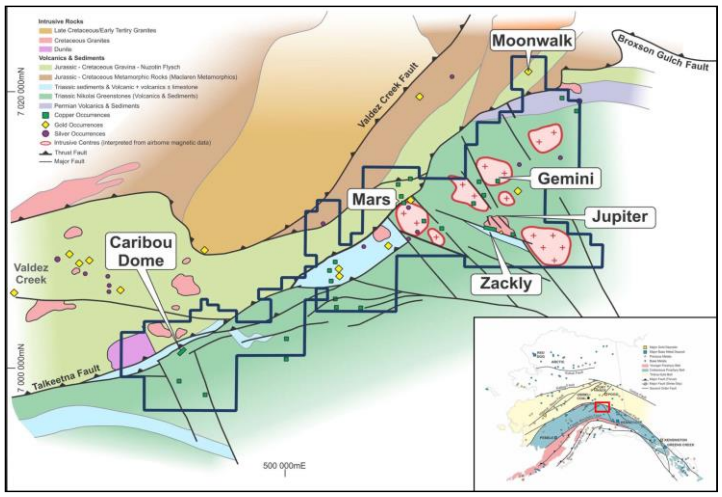
EXECUTIVE SUMMARY

PolarX's flagship project is located in South-Central Alaska, approximately 350km from Anchorage. The Alaska Range Project ("the Project") is a collection of highly prospective deposits first discovered in 1963. Prior to a merger in July 2017, the area had been independently explored by numerous entities, and never on a consolidated basis.



However, for the first time one company, ***PolarX, is now able to boast a 35km contiguous package over proven ground*** which includes the historically explored Caribou Dome and Zackly deposits.

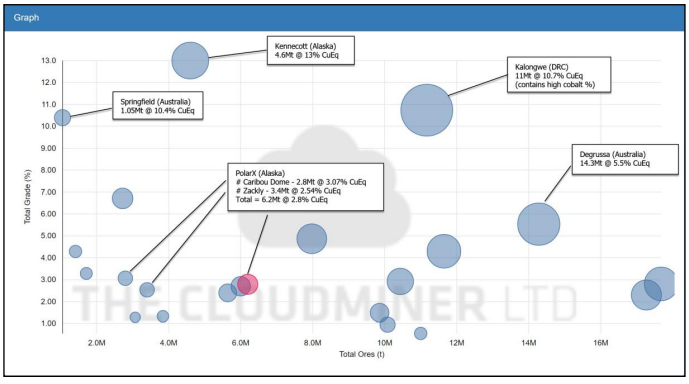
The project already boasts two JORC (2012) resources defined from both historical and updated drilling. Soil sampling demonstrates the majority, if not the entire 35km belt is mineralised.

The Alaska Range Project carries all the hall-marks of a large mineralised copper-gold porphyry system; whilst both the Zackly and Caribou Dome deposits in their own right stand alone as excellent prospects of differing mineralisation styles, including both high grade copper and copper-gold systems.

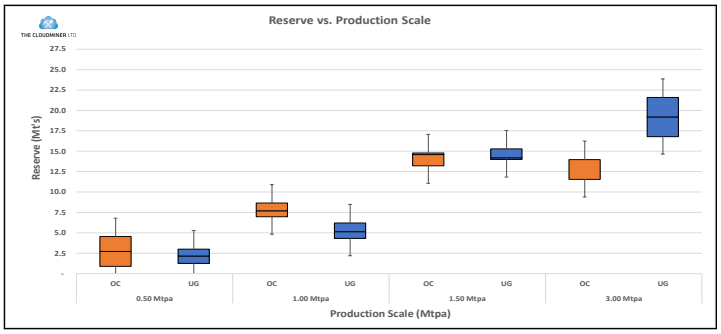
Prospect	Category	Million Tonnes	Cu (%)	Au (g/t)	Ag (g/t)	Contained Cu (t)	Contained Au (oz)	Contained Ag (Moz)
Zackly	Inferred	3.4	1.2	2.0	14.0	41,200	213,000	1.5
Caribou Dome	Inferred	1.6	3.2	-	-	52,300	-	-
	Indicated	0.6	2.2	-	-	13,000	-	-
	Measured	0.6	3.6	-	-	20,500	-	-
					Total	127,000	213,000	1.5

The initial JORC (2012) resource for the Caribou Dome Project was released on the 5th of April 2017 quickly followed by the maiden JORC (2012) resource at Zackly, reported 20th of March this year, both of which are shown in the table above.

The copper equivalent grade value of PolarX's Alaska Range project is approximately **6.2Mt @ 2.8% Cu equivalent (CuEq)**. Noteworthy projects that are currently either being developed or in operation include Sandfire's Degrussa and Springfield project at 14Mt's and 1Mt's resource respectively. Both projects validate the narrative that the style of mineralisation is consistent



with the presence of a much larger porphyry copper-gold system.



To assist in the understanding of the projects potential TCM has reviewed +100 cu-au projects globally to determine the key trends in the economic studies. The brief; to review the potential profitability of deposits which boast higher-grade reserves and their viability to mine at a small-to-modest scale of production.

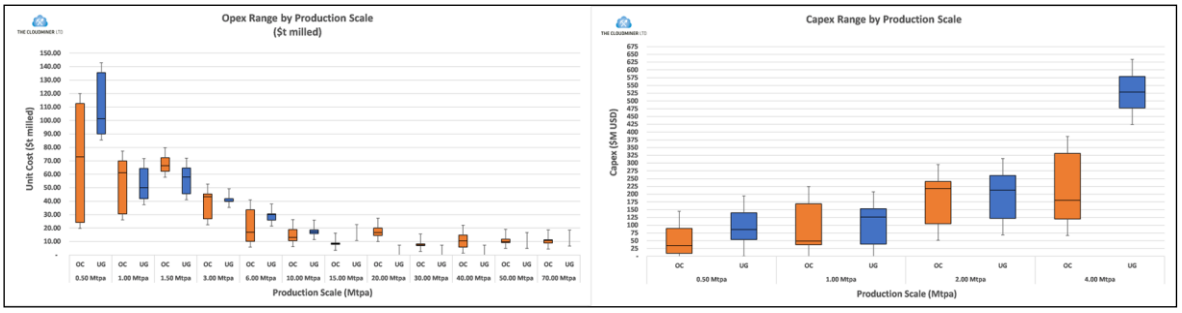
The Alaska Range Project would appear to possess reasonably high-grade deposits, Caribou Dome and Zackly inclusive, and therefore it would be reasonable to assume that a small to medium scale operation is possible, with initial production of between 300ktpa to 500ktpa entirely feasible given the high grade. In certain cases, it is potentially feasible to mine on a scale between 300ktpa to 500ktpa where not only does the required footprint reduce for operation size but also the accompanying required capital to bring the project into production is reduced.

The geometrical shape, dips and strike lengths of the Caribou Dome and Zackly deposits influence the chosen extraction sequence, methodology, and scale of production. Mineralisation at Caribou Dome is at grades and widths that could potentially support mining, and the recent resource estimate at Zackly indicates similar potential for exploitation. Although the drilling results at Zackly display a slightly lower grade, they are across thicker intersections, and strong potential for mining thus exists.

Key facets	Units	Caribou Dome	Zackly
Deposit Style		VMS	Skarn
Mineralised zone depth *(from surface)*	m	+400	+550
Strike Length	m	850 – 3,000	1,200 – 3,000
Orebody Dip	Degrees	70 - 80°	70 - 80°
Orebody Width (true)*	m	2 – 20	1 - 12

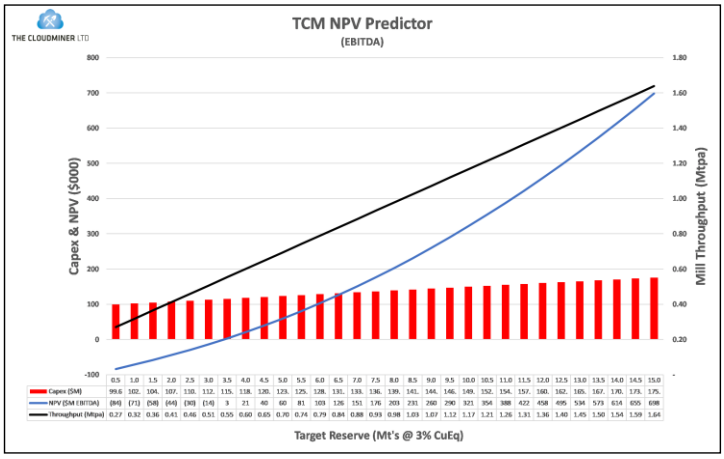
**Expected orebody width estimated based on drill-hole intercepts (sourced from publicly available information)*

A breakdown of unit and capital operating costs versus scale of production to better understand the impact of the size of the project on the operating parameters and subsequent potential economics is displayed below.



The higher unit cost per tonne milled on small to medium scale operations is typically off-set by the higher grade. Based on the Figures above; as the operation increases in scale, there is a diminishing effect on the unit rates as the scale of the operation reaches a certain inflexion point e.g. above 40Mtpa.

Conversely as the scale of operations increases so do the capital requirements. However, this is typically off-set by higher margins due to lower operating costs per unit of ore, whereas for smaller higher grade deposits the reduced upfront capital enables the higher operating unit rate to be economic.



Using this statistical analysis the TCM NPV predictor, with some set parameters for the commodity price and grade, reports a potential NPV based on EBITDA in order to explore the effects of scale on the project economics. Based on this analysis, the break-even Reserve size is approximately 3.5Mt's to 5Mt's @ 3% CuEq or 10Mt's @ 2% CuEq and represents a good target reserve to build towards at the Alaskan Range Project.

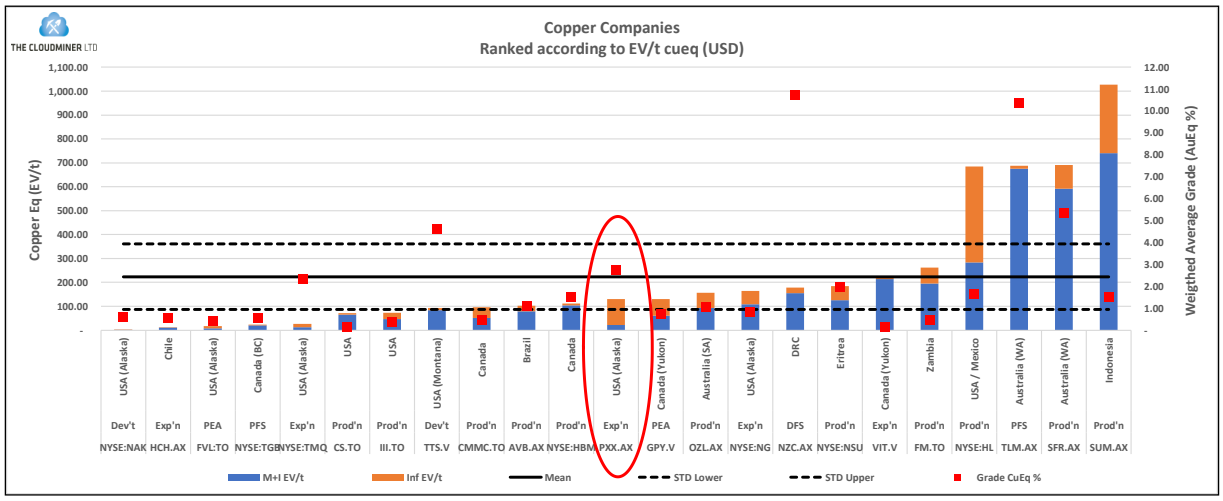
To assist the predictive analytics, TCM utilised data from several small to medium scale projects considered to be relevant peers. A summary of some of the key projects used in the analysis is provided below.

Projects	Country	Stage	Method	Reserve (Mt)	Prod'n Ore (Mt)	Unit Opex ($/t)	Initial Capex ($M)	Total Capex ($M)	Grade (au g)	Grade (cu %)
Wolverine	Canada	Care of Maintenance	UG	5.15	0.59	71.69	155.75		1.70	1.18
The Idaho Cobalt Project (2017)	United States	Feasibility	UG	3.66	0.30	135.53	146.76	201.41		0.72
Reed Copper Project	Canada	PFS	UG	2.16	0.45	67.43	53.93	93.19	0.62	4.50
Springfield Project (Monty)	Australia	Feasibility	UG	0.92	0.40	157.50	54.38	70.58	1.61	9.40
Reed Lake	Canada	Operations	UG	1.19	0.45	90.00		40.00	0.81	4.63
Eagle Mine - Feasibility Study	United States	Feasibility	OC	4.82	0.39	140.95	102.00	161.00	0.30	3.05
King Vol Zinc Project	Australia	Scoping Study	UG	1.33	0.35	90.00	28.05			0.77
The Outokumpu Project	Finland	DFS	UG	4.34	0.55	41.90	39.30		0.68	1.25
Curipamba Project, El Domo Deposit	Ecuador	PEA	UG	6.21	0.70	64.40	126.12	235.51	2.62	2.03
Bidjovagge project - Scoping Study	Finland	Scoping Study	OC	1.77	0.35	49.03	53.90		1.61	1.12

Short-term production optionality is afforded to PolarX due to its high-grade copper deposits at Caribou Dome and Zackly. However, there is also significant potential upside of porphyry targets at the Zackly and Mars prospects. TCM's research on comparable projects illustrates that it is possible to commence production off the back of a modest sized yet high-grade reserve. Possible development strategies outlined summarised accordingly:

- **Option 1:** continue exploration, expand and delineate existing resource base; and confirm porphyry potential (Mars deposit).
- **Option 2:** focus on development of Caribou and Zackly, creating a centralised hub for production to take place from satellite projects in the vicinity.
- **Option 3:** a hybrid approach combining Option 1 and Option 2.

The relative value was determined in terms of Enterprise Value (EV) per contained copper equivalent tonne (CuEq). PolarX is undervalued relative to the average of its peers with an estimated Enterprise Value per Copper Equivalent tonne of $129t CuEq versus a mean of $224t CuEq USD. Perceived as an earlier stage company to some of the peers, the market's pricing reflects both the quality of the assets and the belief that the management can deliver.



Project Upside & Closing Remarks

The key opportunity of PolarX and the Alaska Range Project is the potenital held in the geology which appears to demonstrate high prospectivity for mulitple mineralisation styles. The identified mineralisation styles on the Alaska Range Project have a well-known history of developing into world class deposits and if regional scale mineralisation is proven then the Alaska Range Project truly could be company defining.

The current delineated mineralisation remains open at depth and along strike at the drilled deposits thus far while the geochemistry shows the footprint covering the full permitted area. Therefore, it is fair to assume that a reasonable sized discovery is highly probable but the extent to which is not yet fully understood. 2018's proposed drilling will go some way towards potentially determining some of the unknowns and prove the potential scale of the project while validating the geological model proposed by PolarX.

Mineralisation at Caribou Dome is at grades and widths that potentially support mining activity both for open-cut and underground. The recent resource estimate at Zackly also indicates similar potential for exploitation. Although the drilling results at Zackly display a slightly lower grade but over thicker intersections, strong potential for mining already exists.

2018 is clearly shaping up as a defintive year for PolarX to build from the ground work done to date as they look to rapidly advance the project and build shareholder value.

VALUE ACCRETIVE STRATEGY & REVIEW METHODOLOGY

Purpose

The purpose of this document is to review PolarX's strategy to create value for shareholders from its existing portfolio of Alaskan copper-gold projects while assessing the initial early potential of what has already been defined thus far.

The Company's current value-creation strategy

PolarX, an ASX listed company, holds a highly prospective copper-gold exploration package located in Alaska (USA). "The company's current strategy is to delineate a resource that allows for the early development of Zackly and Caribou Dome, whilst in parallel exploring the other key prospects which offer the potential for a company making discovery" (IIR, 17th Jan 2018).

Based on this, The CloudMiner (TCM) has undertaken an analysis of their projects and attempted to view the soundness of the strategy in the context of other analogous projects (peer-projects).

Possible scenarios for future value creation strategy

TCM has carried out extensive studies on different mining companies' and their strategies for growth and value creation. Generally, there are three distinct ways in which a junior mining company can create value for its shareholders, TCM refers to these strategies as the 3xD's as summarised accordingly:

- **Discover** the asset e.g. find something attractive enough to excite the majors to acquire.
- **De-risk** the asset by undertaking feasibility studies designed to increase understanding of the various associated technical, social, environmental, financial and political risks on a project. Then identify and execute the various mitigating strategies to deal with the respective risks or attract acquisitive buyers.
- **Develop** and raise the finance (debt, royalty, off-take, streaming, &/or equity) on a project with the view towards bringing into operation.

Evaluating the Value of the opportunity

TCM aims to assess PolarX's Alaska Range Project with the view towards understanding how value is derived, namely:

1. Value based on worth of an asset
2. Value based on possible entry & exit strategies of potential projects
3. Staged approach to investment/development of project

Valuing opportunities that exist within a project is an art-form and is at times highly subjective. Hence, TCM has chosen the keep-it-simple approach by relying mainly on peer comparison using an Enterprise Value (EV) per contained tonne of copper equivalent (CuEq) analysis.

ALASKA: A RICH HISTORY

Mining has played an integral role in the development of Alaska's economy since gold was discovered in the early 1800's. Fairbanks, Juneau, and Nome were founded and thrived due to the local mining with major infrastructure constructed to provide services and access to various mining opportunities in and around Alaska including the world-famous gold deposits Fort Knox, Pogo, Kensington and Donlin Creek, Figure 1.

The end of the 19th century heralded the birth of a financial empire built off the back of the bonanza copper discovery that was Kennecott, positioned in the glorious scenery that was the Wrangell Mountains, Kennecott produced over 4.6 million tonnes of ore containing some 1.183 billion pounds of copper from 1909 until 1938. First discovered in the summer of 1900 the deposit was famed for its high grades of circa 13% Cu and reported life of mine gross revenues over US$200m with its peak year in 1916 producing ore valued at US$32.4m

The Kennecott mineralisation is within the Triassic aged Nikolai Greenstones which consist of basaltic and andesitic lava flows, and the Upper Triassic Chitistone Limestone which sits within the broader Wrangellia Peninsula Arc (WPA). The WPA extends from the East and the Greens Creek polymetallic deposit (10.9Mt @ 428 g/t Ag, 7.8% Zn, 3.1% Pb & 3.3 g/t Au) to the supergiant Pebble Deposit, a copper-gold porphyry on a mega scale boasting some 10.9Bt's of resources as of 2014 albeit at a much lower grade (0.34% Cu & 0.31 g/t Au), and is separated from the Tintina Gold Belt to the north by the Denali Fault system (**Figure 2**).

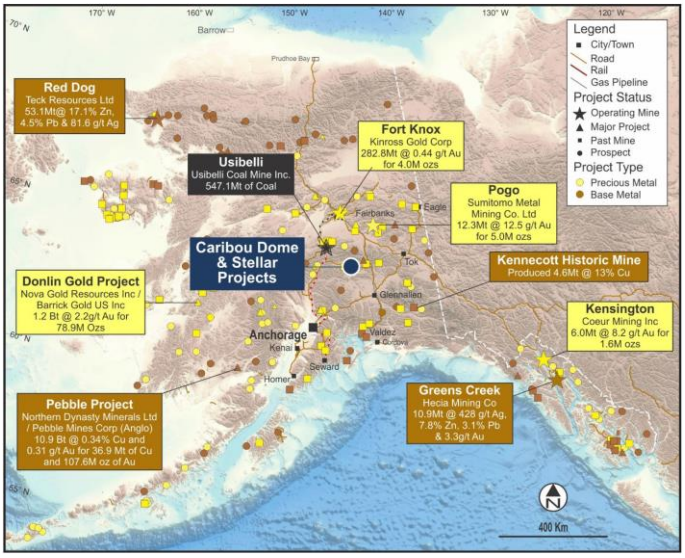


Figure 1: ***Major Projects in Alaska***
Source: Millrock

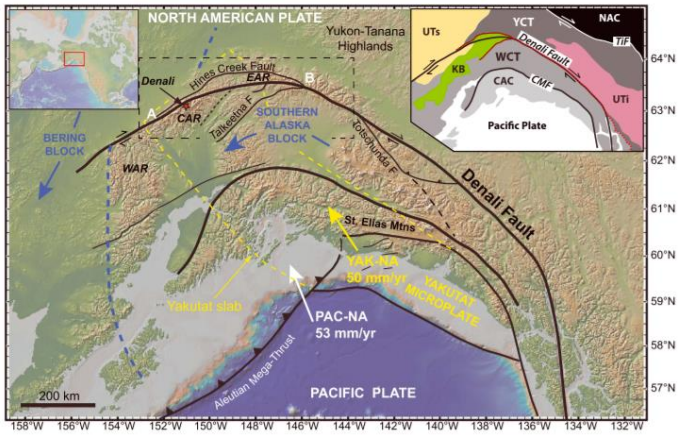


Figure 2: Major Structures of Southern Alaska including the probable boundary of the S. Alaskan Block & the Bering Block. Inset are the major terranes including the Wrangellia composite terrane (WCT) and the Tintina Gold Belt along the Tintina Failt (TiF)
Source: Fitzgerald P. G. et al 2014

THE ALASKA RANGE PROJECT OVERVIEW

PolarX's flagship project is located in South-Central Alaska, approximately 350km from Anchorage. The Alaska Range Project ("the Project") is a collection of highly prospective deposits first discovered in 1963. Prior to a merger in July 2017, the area had been independently explored by numerous entities, and never on a consolidated basis.

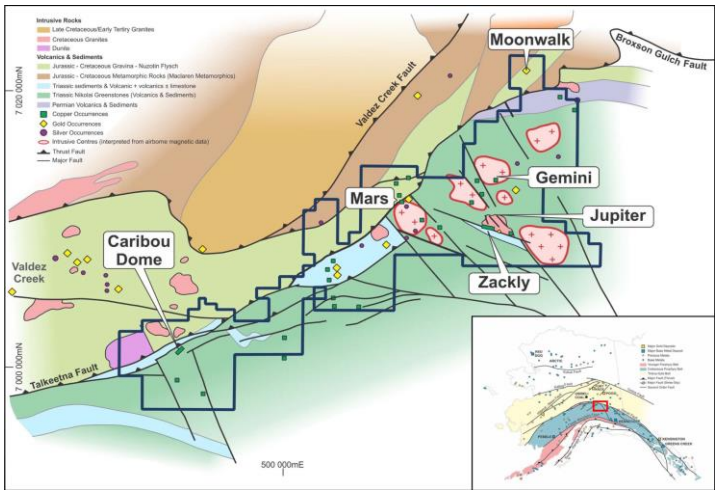
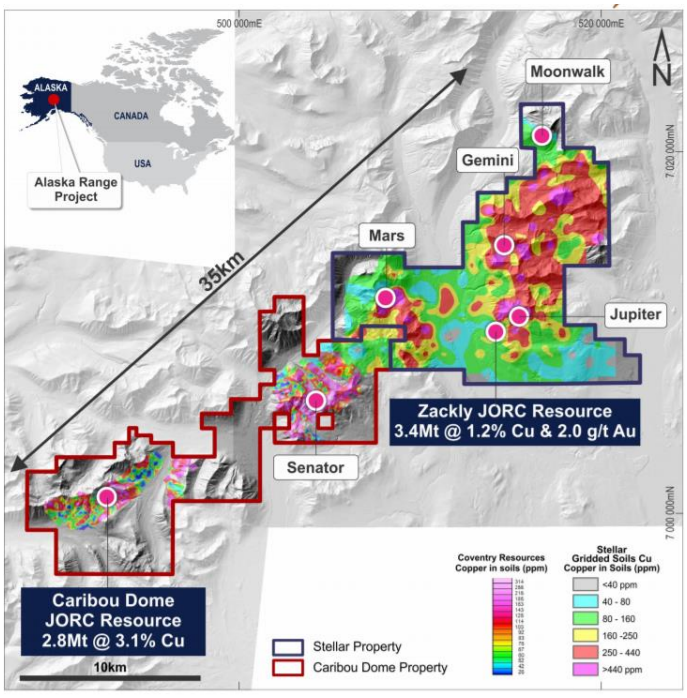


Figure 3: Geological Interpretation for the Alaska Range Project
Source: PolarX Maiden Global Resource Release 2018



(Figure 4: PolarX's Alaskan Range Project which hosts the Caribou Dome and Zackly Mineral Resources, with regional copper geochemistry in soil sampling draped on digital elevation
Source: PolarX Maiden Global Resource Release 2018

However, for the first time one company, PolarX, is now able to boast a 35km contiguous package over proven ground which includes the historically explored Caribou Dome and Zackly deposits.

The project consists of numerous highly prospective exploration targets and advanced exploration targets namely; Mars, Jupiter, Gemini and Moonwalk as depicted in **Figure 3**.

Originally discovered in 1963, Caribou Dome generated excitement as the basaltic-hosted mineralisation occurred in the Nikolai Greenstone's of Late and/or Middle Triassic age (Figure 3). Much like the world class Kennecott Mine, Caribou too had extremely high showings of copper, up to 12% and in 1970 R.H. Seraphim estimated the drilled reserves to equal 550kt @ 5.84% Copper (unpublished report, 1970, cited in Stevens, 2008).

Zackly on the other hand was not discovered until 1979 and although the mineralisation was originally thought to have been generated from the Nikolai Greenstones it is in fact a skarn deposit hosted within Triassic limestones, tuff and sedimentary rocks (Nokleberg et. al., 1991). A maiden (non-JORC) resource was published in 1982 for 1.25Mt @ 2.69% Copper, 6.17g/t Gold and 32.9g/t Silver (UNC Teton Exploration and Drilling, Inc., 1982).

PolarX has embarked on a compelling and ambitious task of unlocking the potential of the Alaska Range Project. Primarily, PolarX has set about achieving this by applying fundamentally proven and well-regarded exploration techniques and by executing a programme that progressively explores and defines the potential along the 35km strike package whilst effectively building upon the historical exploration work carried out since the early 60's.

Regional geochemistry, confirmation of existing drill data and additional drilling has enabled PolarX to publish JORC (2012) resource estimates for the two most advanced prospects at Caribou Dome and Zackly while proving that the majority if not the entire 35km strike could be mineralised.

Exploration drill-hole benchmarking

Due to the sheer variety of mineralisation styles identified across the Alaska Range Project, from the basaltic copper style likened to the Kennecott Mine and that of Michigan, Zackly's Skarn, and the additional potential for a copper-gold porphyry discovery; The CloudMiner reviewed drill intercepts, resources and mine plans from across a wide range of similar projects in North America and then more globally to better understand the potential that exists within the Alaska Range Project.

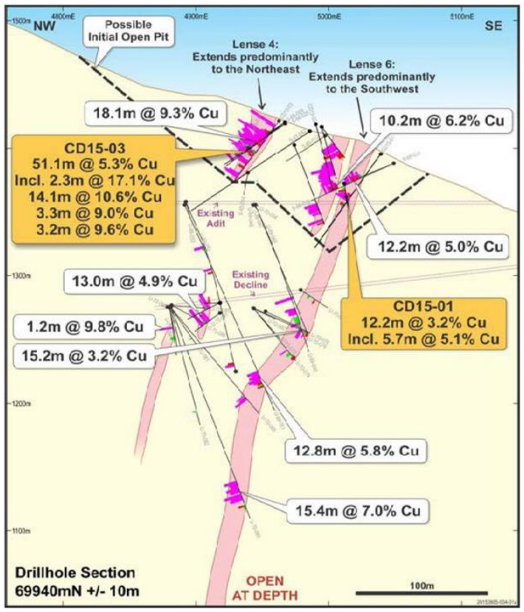


Figure 5: Cross-Sections of Caribou Dome Deposit

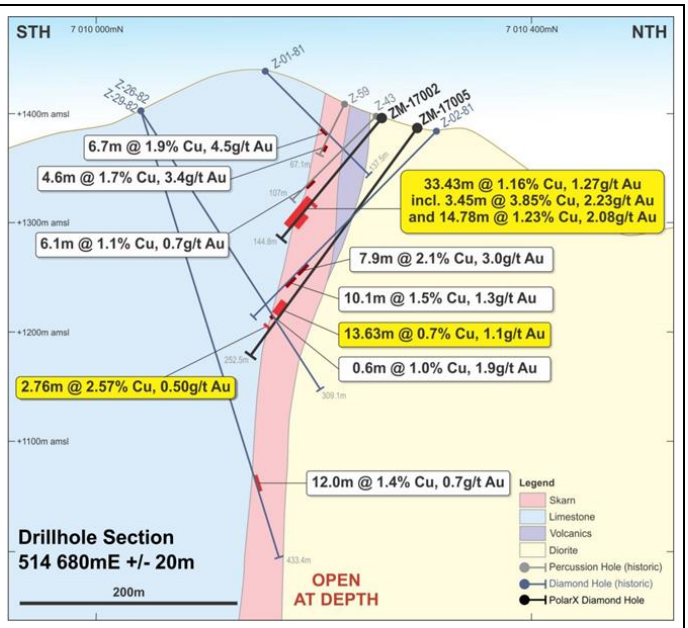


Figure 6: Cross-Sections of Zackly Deposit

Figure 7 provides a comparative view of the drill intercepts plotted across select N. American copper projects that fall within the identified styles of mineralisation at the Alaska Range Project.

As illustrated, Caribou Dome clearly stands above its peers much like Kennecott must have done. Based on copper percent in assays, Caribou Dome's closest contenders being from Volcanic Massive Sulphide (VMS) deposits such as the Reed Lake in Manitoba, Canada. The Artic Deposit in Alaska and the Black Butte Deposit in Montana are not far behind. The Zackly Skarn deposit is slightly more modest but remains similar in grade to the basaltic deposits that define Michigan and the Skarns of Alaska and Arizona, while the traditional porphyry deposits not surprisingly prop up the peers within Alaska for grade but would eclipse for massive size.

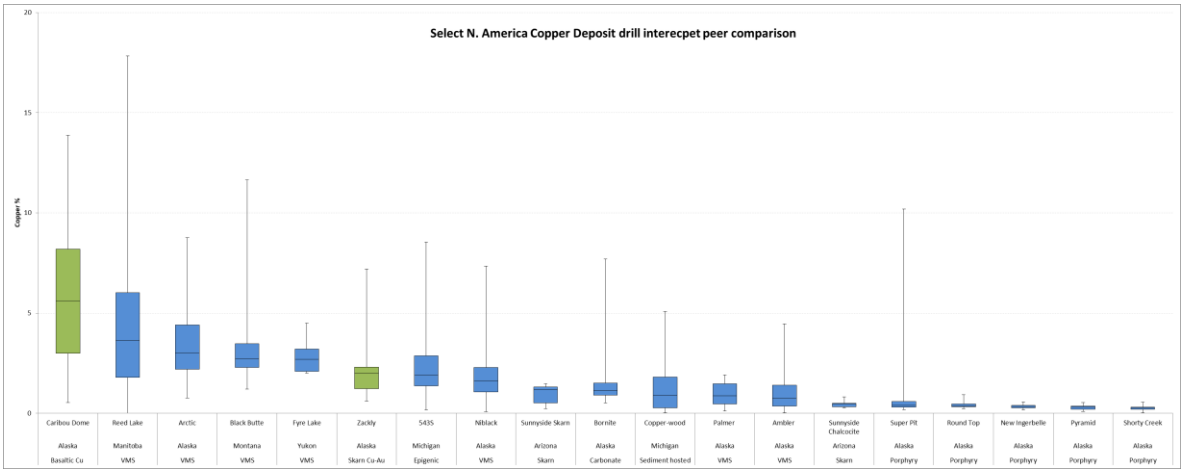


Figure 7: Select N. American Copper Deposit Drill intercept peer comparisons

Resource Estimate (JORC 2012)

On the 5th of April 2017, PolarX announced their maiden JORC (2012) resource for the Caribou Dome Project. A total resource of 2.8Mt @ 3.1% Cu (0.5% cut-off) further cementing the high-grade copper resources that were published historically and rewarding the hard work to date. This has now been quickly followed by the maiden JORC resource at Zackly which was reported on the 20th of March 2018. The maiden JORC (2012) Inferred Resource is 3.4Mt @ 1.2% Cu but has an additional 2.0g/t Au and 14g/t Ag, validating the historical drilling while confirming the style of mineralisation is consistent with the presence of a much larger porphyry copper-gold system. The global PolarX resources to date are published below in Error! Reference source not found..

Table 1: Global JORC Resource at the Alaska Range Project, March 2018

Prospect	Category	Million Tonnes	Cu (%)	Au (g/t)	Ag (g/t)	Contained Cu (t)	Contained Au (oz)	Contained Ag (Moz)
Zackly	Inferred	3.4	1.2	2.0	14.0	41,200	213,000	1.5
Caribou Dome	Inferred	1.6	3.2	-	-	52,300	-	-
	Indicated	0.6	2.2	-	-	13,000	-	-
	Measured	0.6	3.6	-	-	20,500	-	-
Total						127,000	213,000	1.5

PolarX plans to immediately expand resource delineation drilling at Zackly to confirm the extension of the mineralisation in both directions along strike while initiating the first drilling programs at the nearby Mars and Moonwalk prospects. Regional geochemical sampling has shown positive results for copper mineralisation at all prospects as can be seen in **(Figure** *4*.

Resource Peer-Analysis

Figure 8 and **Figure 9** compare the aggregate resource for the Alaska Range Project (combined Zackly and Caribou Dome deposits) with other notable North American and global high-grade copper projects, most of which have positive economic studies or are commencing studies in the coming 12 months. The Alaska Range project as it currently stands offers a good initial blend of scale and grade. With the prospect remaining open at depth and along strike and new definition drilling planned, the possibility of increasing the aggregate resources looks promising and if the grade can be maintained then a target project like Fyre Lake, Sun Deposit (**Figure 8**) or even Ambler (**Figure 9**) is within reach.

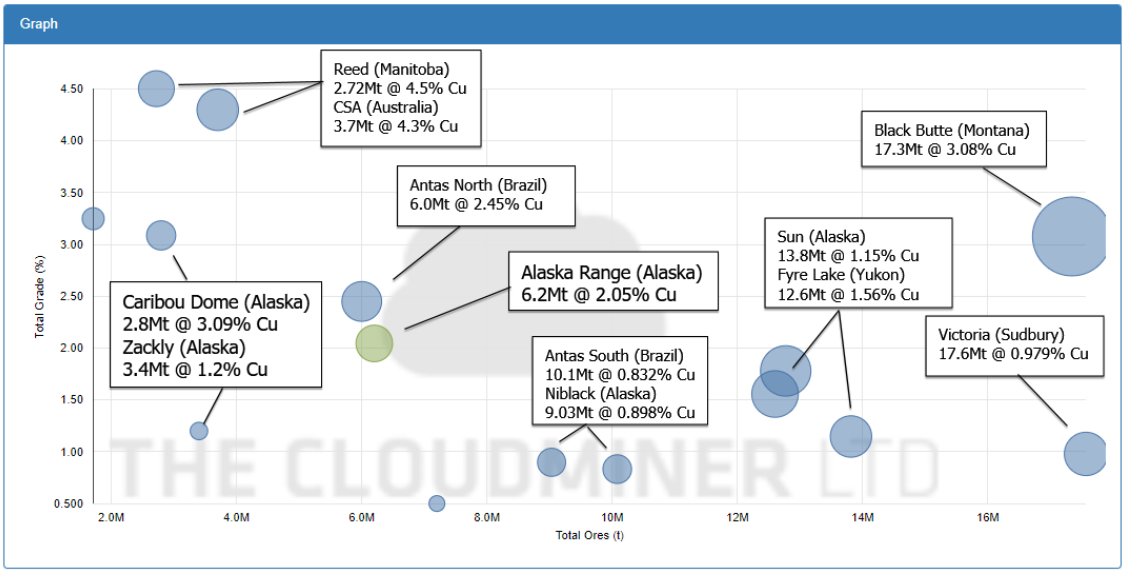


Figure 8: Select America's Peers controlled by a Copper Grade <5% and Total Resource Tonnes <20Mt

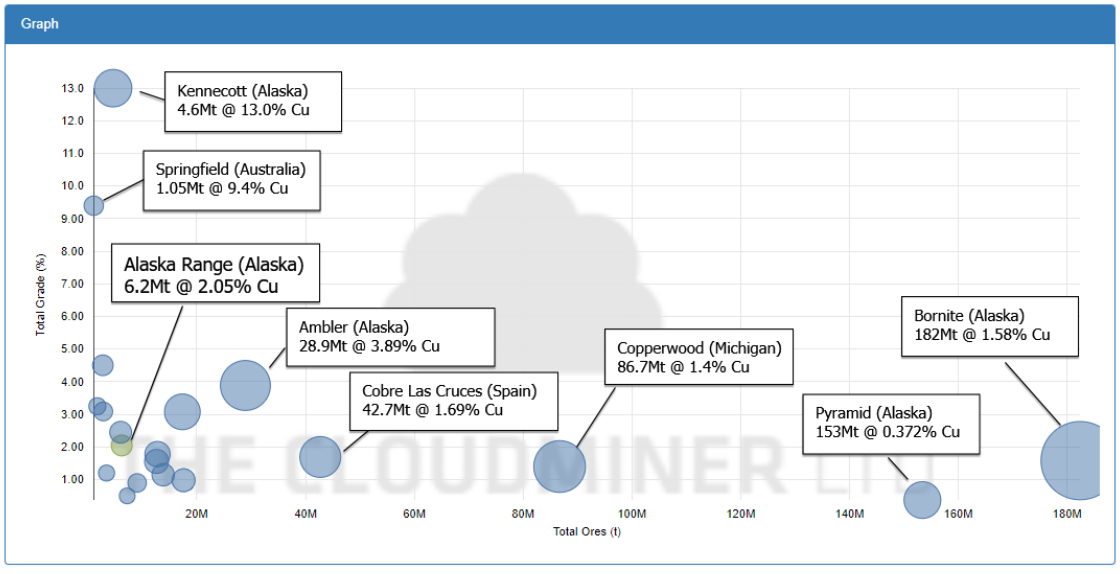


Figure 9: Completing N. American Peers without capping and Including analogous deposits

Resource Peer-Analysis ranked according to Copper Equivalent value (CuEq %)

The copper equivalent grade value of PolarX's Alaska Range project is approximately 6.2Mt @ 2.8% Cu equivalent (CuEq). Noteworthy projects that are currently either being developed or in operation include Sandfire's Degrussa and Springfield project at 14Mt's and 1Mt's resource respectively.

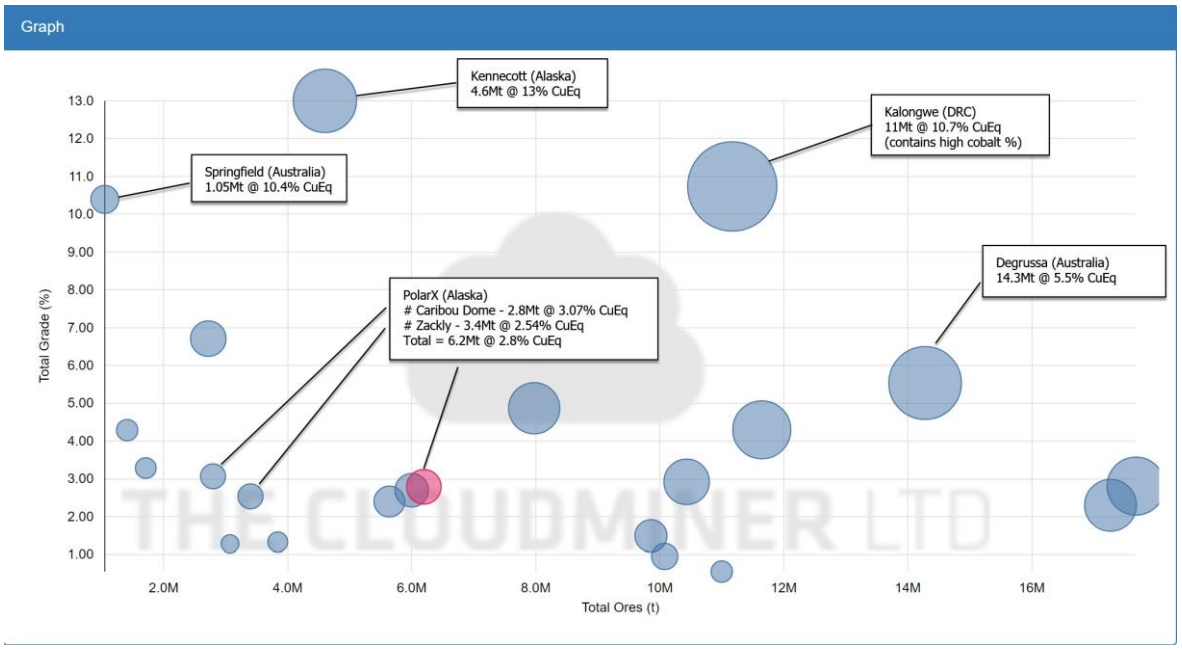


Figure 10. Peer Analysis (CuEq%)

Notes;

- All calculations are denominated in United States Dollar (USD)
- Price assumptions; $1,324oz Au, $6,883.19t Cu, $16.62oz Ag (USD) as of 13th March 2018
- Inflation adjustment factor of 3% pa was applied to each project used in the analysis, from date of report
- All figures rounded to one decimal place
- Equivalents are based on in-situ grades and take no account of metallurgical recovery factors

ANALOGOUS PROJECTS

As touched upon in earlier chapters the selection of analogous projects was based on them being of a commodity that matched PolarX's Alaskan projects. Regard was also given to other projects similar either in terms of grade, scale of operation, mining method, operational environment and/or mineralisation style. TCM have identified several analogous projects in this regard as summarised below:

Company: Northern Dynasty **Project:** Pebble Creek **Location:** USA (Alaska) **Stage:** Operations **Mining Method:** Open Cut & Underground **Resource:** 12.88Bt's @ 0.33% Cu, 0.3gpt Au **Mineralisation Style:** Copper Porphyry	Pebble Creek is a large copper porphyry project located in the Bristol Bay area of Alaska (USA). In terms of size, it is the second largest undeveloped copper project globally. However, due to the proposed scale of operations and its proximity to important salmon fisheries in the region; significant environmental concerns about its development have arisen. This remains a key standing issue with this project. The principal mining method will be a combination of Open Cut and Underground. According to the founders of Millrock Resources, "PolarX's tenement area contains some of the same geological signatures to Pebble Creek". Phil St.George of Millrock was directly involved in the discovery of Pebble.

Company: Sumitomo Metal Mining Co. Ltd **Project:** Pogo **Location:** USA (Alaska) **Stage:** Operations **Mining Method:** Underground **Resource:** 12.3Mt's @ 12.5gpt Au **Mineralisation Style:** Intrusion Related Gold (IRTG), Tintina Gold Belt	The Pogo Deposit is located along the Goodpaster River, 61 Km north of Delta Junction and 137 Km to southeast of Fairbanks, Alaska. This deposit sits in the center of the "Tintina Gold Province", which represents a region of similar "Intrusion Related Gold" (IRTG) deposits in Interior Alaska, the Yukon and British Columbia Canada. (McCoy et al. 1997) Full production commenced in 2006. Exploration has continued since the start because of its short (10 years) mine life assumed from the feasibility study and has looked to increase the mines resource near current mine workings. As of 2018, the mine continues to operate as a high-grade project (0.5oz/t Au). Projected life remaining, a further 4yrs. PolarX's Moonwalk prospect shares many similarities in terms of its geological setting and surface expression of mineralisation.

Project: Kennecott **Company:** Government **Location:** USA (Alaska) **Stage:** Decommissioned **Mining Method:** Underground **Reserve:** 4.6Mt's @ 13% Cu **Mineralisation Style:** Basaltic Copper Mineralisation	Kennecott, also known as Kennecott and Kennecott Mines, is an abandoned mining camp in the Valdez-Cordova Census Area in the U.S. state of Alaska that was the center of activity for several copper mines. The mine produced over 4.6Mt @ 13% Cu during its 29-year mine-life (1909 to 1938) and was one of the world's richest mines in history. It is located beside the Kennecott Glacier, northeast of Valdez, inside Wrangell-St. Elias National Park and Preserve. The camp and mines are now a National Historic Landmark District administered by the National Park Service. It was declared a National Historic Landmark in 1986.

Project: Springfield Project (Monty) **Company:** Sandfire Resources (30% JV with Talisman Mining) **Location:** Australia (WA) **Stage:** Feasibility **Mining Method:** Underground **Resource:** 1Mt's @ 1.6gpt Au, 9.3% Cu **Mineralisation Style:** Volcanic Massive Sulphide (VMS)	The Springfield Project is prospective for Volcanogenic Massive Sulphide (VMS) copper-gold mineralisation and is being explored under a Joint Venture agreement with Sandfire Resources (refer to the Springfield Joint Venture for more details). The Monty project is located 10km east of Sandfire's Degrussa copper-gold mine in Gascoyne Region of West-Australia. Following the completion of a positive feasibility study, approval has been granted to progress the project through to production.

Project: Reed Copper **Company:** Hudbay Minerals **Location:** Canada (Manitoba) **Stage:** Operations **Mining Method:** Underground **Resource:** 2.72Mt's @ 4.5% Cu, 0.9% Zn, 0.6gpt Au **Mineralisation Style:** Stratabound Volcanic Massive Sulphide (VMS)	On July 5, 2010, Hudbay entered into a joint venture agreement giving Hudbay a 70% interest and VMS a 30% interest in a 917ha area that hosts the Reed deposit. Despite the project being in a remote and environmentally sensitive area, the project went into production in September 2013. The Reed deposit is a stratabound massive sulphide deposit that occurs within Precambrian metavolcanic rocks. Mineralization is generally fine to medium-grained disseminated to solid sulphides consisting of pyrrhotite, pyrite, chalcopyrite, sphalerite and magnetite.

Project: Victoria Mine **Company:** KGHM **Location:** Canada (Ontario) **Stage:** Feasibility **Mining Method:** Underground **Resource:** 17Mt's @ 0.35gpt Au, 0.32gpt Pd, 0.23gpt Pt, 1.3% Ni, 0.98% Ni **Mineralisation Style:** not reported	In 2002 KGHM INTERNATIONAL LTD. acquired the mineral deposits rights in the area of Victoria and began prospecting and exploration works. The project is located in Ontario, Canada, about 35 km west from the city of Greater Sudbury. In 2002 the mineral deposits rights were acquired and exploration work begun. The entire ore mined will be processed in plant Clarabelle, belonging to the Vale located in Sudbury. The current scenario of development of the project involves development of the deposit with 2 shafts (production and ventilation shaft). In 2015 the preparation of a technical document designing and describing the process of building the mine were completed. Further exploration work Is to be carried out aimed to confirm the potential continuity of the orebody and mineralization.

Project: Cobre Las Cruces **Company:** First Quantum Minerals **Location:** Spain (Seville) **Stage:** Operations **Mining Method:** Open Cut **Resource:** 17.6Mt's @ 6.2% Cu **Mineralisation Style:** Stockwork, Volcanic Massive Sulphide (VMS)	Although the production phase started in June 2009, the project itself began in 1992 when exploration started. The project site straddles the municipalities of Gerena, Guillena and Salteras in the province of Seville, in southern Spain, and occupies 946 hectares including both the mine pit and the process plant. The expected annual production averages 72,000 tonnes of copper, equivalent to 25% of Spanish internal demand. The total for the entire 15-year operating period is estimated at 1 million tonnes of copper. In December 2012 reserves stood at 14.1 million tonnes grading 5.4% Cu, giving the Project an operating future of 10 years, plus two years for closure.

Project: CSA Mine **Company:** Glencore **Location:** Australia (NSW) **Stage:** Operations **Mining Method:** Underground **Reserve:** 5.7Mt's @ 4.3% Cu **Mineralisation Style:** Volcanic Massive Sulphide (VMS)	The mine initially started in 1871 with an erratic production history until 1964, when Broken Hill South Ltd began large scale production. The mine passed to CRA in 1980 and then to Golden Shamrock Mines in 1992. The mine was closed in 1997/8 following its acquisition by Ashanti Goldfields and was reopened in 1999 by Glencore. Since 1965 the mine has extracted substantial quantities of zinc, lead, silver and copper, but today, CSA Mine focuses on mining copper, with a silver co-product. The underground mine produces over 1.1 million tonnes of copper ore and produces in excess of 185,000 tonnes of copper concentrate per annum. The concentrate contains approximately 29% copper metal.

Project: Antas (North) **Company:** Avanco Resources **Location:** Brazil **Stage:** Operations **Mining Method:** Open Cut **Resource:** 6Mt's @ 2.4% Cu, 0.4gpt Au **Mineralisation Style:** iron-oxide-copper-gold (IOCG)	Antas is a high-grade open pit copper-gold mine. It was discovered by the Avanco team in 2011, developed under budget in under 12-months, and after entering commercial production in July 2016 is already operating above its original design capacity. Antas is 100% owned by Avanco, recently subject to a buyout proposal from Oz Minerals.

When is the right time to start a Feasibility Study?

The resources are continuing to grow at the Alaska Range Project and with more drilling imminent, one may expect the management team to focus solely on increasing resources and targeting larger scale production potential. However, what many forget is that like everything else, mining is a business and the prospect of cash flow should always be of a paramount concern.

On this basis, evaluating the potential of an asset to produce whilst continuing with exploration should become common practice. The potential is an attribute of the Alaska Range Project that elevates it above many of PolarX's peers.

The objective of early feasibility studies such as a Scoping or Preliminary Economic Assessment (PEA) is to identify and focus on the most appropriate development strategy.

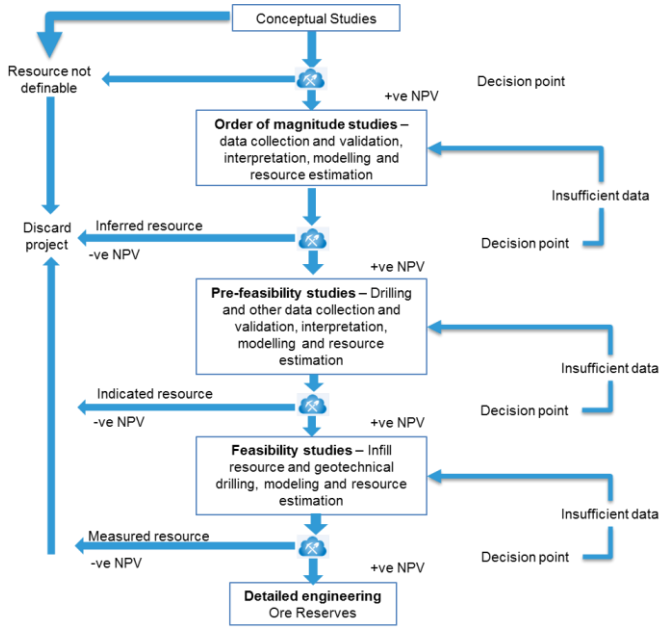


Figure 11: Project Feasibility Decision Tree Analysis

This activity is an iterative process as depicted in **Figure 11** and on this basis, there is no "right time" to commence feasibility studies. Rather, feasibility work should be reviewed and updated periodically as new information comes in from the various exploration, metallurgical and engineering studies allowing for the management team to improve the model and react in a more agile manner to changing market conditions and technical understanding on the project at that time.

Based on PolarX's current resource size, TCM feels that PolarX's current focus of continuing to explore and expand and delineate the respective orebodies on their Alaska Range Project is a prudent strategy. Prior to embarking on a full economic study, it is often a good practice to be able to draw comparisons from other similar projects globally and regionally. In doing so, provide insight into the potential economics of the project along with various technical requirements that may be associated with bringing the project into production.

This is in no way intended to replace competent third party detailed studies moreover to provide the current management team with a broader base of business intelligence to assist with decision making and future strategies.

PROJECT DEVELOPMENT BENCHMARKING & PREDICTIVE ANALYTICS

The CloudMiner carried out a predictive analytics exercise intended purely as a guide to assist the project developer in understanding potential development scenarios based each level of resource delineation that may be achieved and/or targeted in the future.

Table 2 contains a select list of projects used to carry-out the analysis which contains a mix of operational and feasibility stage projects. The list is by no means exhaustive but is sufficient and broad enough to give the reader an indication of the types of projects globally that are advancing towards development and the costs associated to do so. Each deposit has its own unique set of characteristics and challenges, as do the deposits contained on the Alaska Range Project. In time, the list should be further refined as project knowledge is improved and a more realistic handle on the relative scale and costs can be determined.

Table 2. Selected peers for predictive analytics

Projects	Country	Stage	Method	Reserve (Mt)	Grade (au g)	Grade (cu %)	Production (Mtpa)	Unit Opex ($/t)	Capex ($M)
Timok Copper-Gold Project	Serbia	PEA	UG	42.1	1.89	3.02	3.2	31.0	630.0
Red Chris Copper-Gold Project	Canada	Operations	OC	287.8	0.33	0.32	21.5	7.5	332.7
New Prosperity Copper-Gold Project	Canada	PFS	OC	831.0	0.40	0.24	25.6	6.9	605.4
Gibraltar	Canada	PFS	OC	688.0		0.01	30.0	7.5	525.0
Santo Domingo	Chile	PFS	OC	391.7	0.04	0.33	5.4	16.9	1,750.7
Minto	Canada	PFS	UG	14.4	0.36	1.05	1.9	39.5	77.0
Pinto Valley (Phase3 PFS, 2016)	USA	PFS	OC	473.8		0.29	20.4	9.8	459.7
Tulsequah	Canada	Feasibility	UG	5.4	2.85	1.55	0.7	65.0	151.1
Wolverine	Canada	Care of Maintenance	UG	5.2	1.70	1.18	0.6	71.7	155.7
The Idaho Cobalt Project (Feasibility Study, 2017)	USA	Feasibility	UG	3.7		0.72	0.3	135.5	146.8
The Idaho Cobalt Project (PEA, 2015)	USA	PEA	UG	3.5		0.74	0.3	135.5	146.8
Reed Copper Project	Canada	PFS	UG	2.2	0.62	4.50	0.5	67.4	53.9
Springfield Project (Monty)	Australia	Feasibility	UG	0.9	1.61	9.40	0.4	157.5	54.4
KOV (Kamoto East, Oliveira, Virgule and FNSR deposits)	DRC	Operations	UG	92.6		3.67	2.2	40.0	426.7
Sierra Gorda Project - Technical Report	Chile	PFS	OC	850.1	0.06	0.40	64.4	11.7	2,877.3
Carrapateena Project	Australia	Feasibility	UG	297.6	0.29	0.78	12.4	15.2	2,238.8
Pampacancha	Peru	Operations	OC	43.0	0.23	0.37	4.0	10.0	11.0
The Constancia Copper Project - Feasibility	Peru	Feasibility	OC	372.0	2.00	0.18	25.5	6.9	920.0
Rosemont Copper Project	USA	Feasibility	OC	592.0		0.36	32.9	11.0	1,920.9
Pedra Branca	Brazil	Scoping Study	UG	10.8	0.64	2.41	1.0	50.0	153.0
Kalongwe Project (Scoping, 2015)	DRC	Scoping Study	OC	7.0		2.71	1.0	23.5	38.9
Kalongwe Project (Stg1 Update, 2017)	DRC	Feasibility	OC	7.0		2.71	1.0	33.0	53.1
Black Butte	USA	PEA	OC	11.8	0.01	2.80	1.2	66.5	217.8
Productora Copper Project - PFS	Chile	PFS	OC	167.0	0.10	0.48	18.0	13.0	725.0
Hillside Project	Australia	Feasibility	OC	82.0	0.13	0.58	6.0	21.5	360.0

Table 2 continued

Projects	Country	Stage	Method	Reserve (Mt)	Grade (au g)	Grade (cu %)	Production (Mtpa)	Unit Opex ($/t)	Capex ($M)
Little Eva (DFS - 2017 Update)	Australia	DFS	OC	85.6	0.05	0.58	7.0	16.2	220.5
Pebble Porphyry Copper-Gold Deposit	USA	PEA	UG	3,449.0	0.30	0.33	67.0	11.2	4,695.0
Savannah North - Scoping Study	Australia	Scoping Study	OC	6.1		0.77	1.0	90.0	31.5
The Savannah Nickel Project - Optimised Feasibility	Australia	Feasibility	OC	7.6		0.75	0.9	69.0	13.5
Eagle Mine - Feasibility Study	USA	Feasibility	OC	4.8	0.30	3.05	0.4	141.0	102.0
Mirador Copper-Gold Project - Feasibility Study	Ecuador	Feasibility	OC	181.0		0.62	11.0	7.1	418.3
Geditepe Project	Turkey	PFS	OC	24.9	0.96	0.83	2.2	17.1	119.7
Çöpler Gold Mine	Turkey	Operations	OC	58.0	1.76	0.04	2.2	42.0	743.7
Cukaru Peki	Serbia	PEA	UG	24.0	2.10	3.39	1.9	43.9	213.0
Halilaga	Turkey	PEA	OC	124.0	0.27	0.25	8.9	13.1	346.0
Skouries (construction, 2017)	Greece	Project Development	UG	168.0	0.48	0.40	6.0	21.8	540.0
Rovina Valley Project - PEA	Romania	PEA	OC	265.5	0.58	0.17	7.8	9.9	509.4
Kipoi Copper Project - PEA	DRC	PEA	OC	36.0		1.57	10.0	22.0	372.8
Yenipazar Project	Turkey	Feasibility	OC	29.2	0.94	0.31	2.5	29.7	229.6
Tepal Project	Mexico	PFS	OC	153.4	0.28	0.19	13.6	13.4	353.8
Brisas Project	Venezuela, Bolivarian Republic of	Project Development	OC	482.7	0.65	0.13	25.2	5.7	548.3
King-King Copper-Gold Project - PFS	Philippines	PFS	OC	617.9	0.32	0.25	36.5	10.6	2,041.9
Serrote da Laje Project	Brazil	Feasibility	OC	85.5	0.09	0.49	7.0	13.0	420.0
Ilovitza Gold-Copper Project	Macedonia, Republic of	PFS	OC	255.0	0.33	0.22	10.0	18.9	501.8
San Javier Copper Project	Mexico	PEA	OC	28.5		0.41	3.2	8.3	100.9
Berta Project	Chile	PEA	OC	17.6		0.43	2.0	11.1	15.0
San Jorge 25kt/y Copper Leach Project	Chile	PFS	OC	48.4	0.20	0.48	6.3	12.9	184.5
Jervois Copper-Silver Project	Australia	Scoping Study	OC	8.4		1.12	2.2	18.8	142.1
Cañariaco Norte Copper Project	Peru	PFS	OC	728.2	0.06	0.39	33.1	6.3	1,435.2
Kwanika Property - PEA	Canada	PEA	OC	78.8	0.25	0.28	5.4	15.9	272.7
Los Azules Copper Project - PEA	Argentina	PEA	OC	310.0	0.06	0.50	49.0	8.7	3,092.0
Viscaria Copper Project - Scoping Study 2013	Sweden	Scoping Study	OC	33.7		1.20	3.5	33.7	180.0
Jiama Phase 2 Expansion Project	China	Feasibility	OC	440.8		0.39	16.5	24.5	716.2
King Vol Zinc Project (Scoping)	Australia	Scoping Study	UG	1.3		0.77	0.4	90.0	28.1
Woodlawn Zinc-Copper Project (PEA)	Australia	PEA	OC	15.0		1.21	1.5	58.1	105.0
The Outokumpu Project - DFS	Finland	DFS	UG	4.3	0.68	1.25	0.6	41.9	39.3
Back Forty Gold-Zinc Deposit	USA	PEA	OC	7.8	2.03	0.33	0.9	66.2	177.0
Curipamba Project, El Domo Deposit - PEA	Ecuador	PEA	UG	6.2	2.62	2.03	0.7	64.4	126.1
Ilovica Gold-Copper Project - Feasibility	Macedonia, Republic of	Feasibility	OC	198.1	0.32	0.20	10.0	10.6	474.3

Reserve & Production Rate

To determine the potential production rates, the peer projects' reserves have been plotted against their respective mill throughputs as both scatter plots and box and whisker plots in normal and in log scale. The data was separated into mining method, production scale and commodity. The data accumulated focussed primarily on copper-gold projects.

Projects with reserves of up to 15Mt are categorised as a small to medium-scale based on the data analysed. The analysis revealed that these projects tend to be of a higher grade in both copper and gold and as such their combined equivalency.

Deposits with higher-grade reserves become increasingly more viable to mine at a small-to-modest scale of production. In certain cases, it is potentially feasible to mine on a scale between 300ktpa to 500ktpa where not only does the required footprint reduce for operation size but also the accompanying required capital to bring the project into production is reduced. The Alaska Range Project would appear to possess reasonably high-grade deposits, Caribou Dome and Zackly inclusive, and therefore it would be reasonable to assume that a small to medium scale operation is possible, with initial production of between 300ktpa to 500ktpa entirely feasible given the high grade.

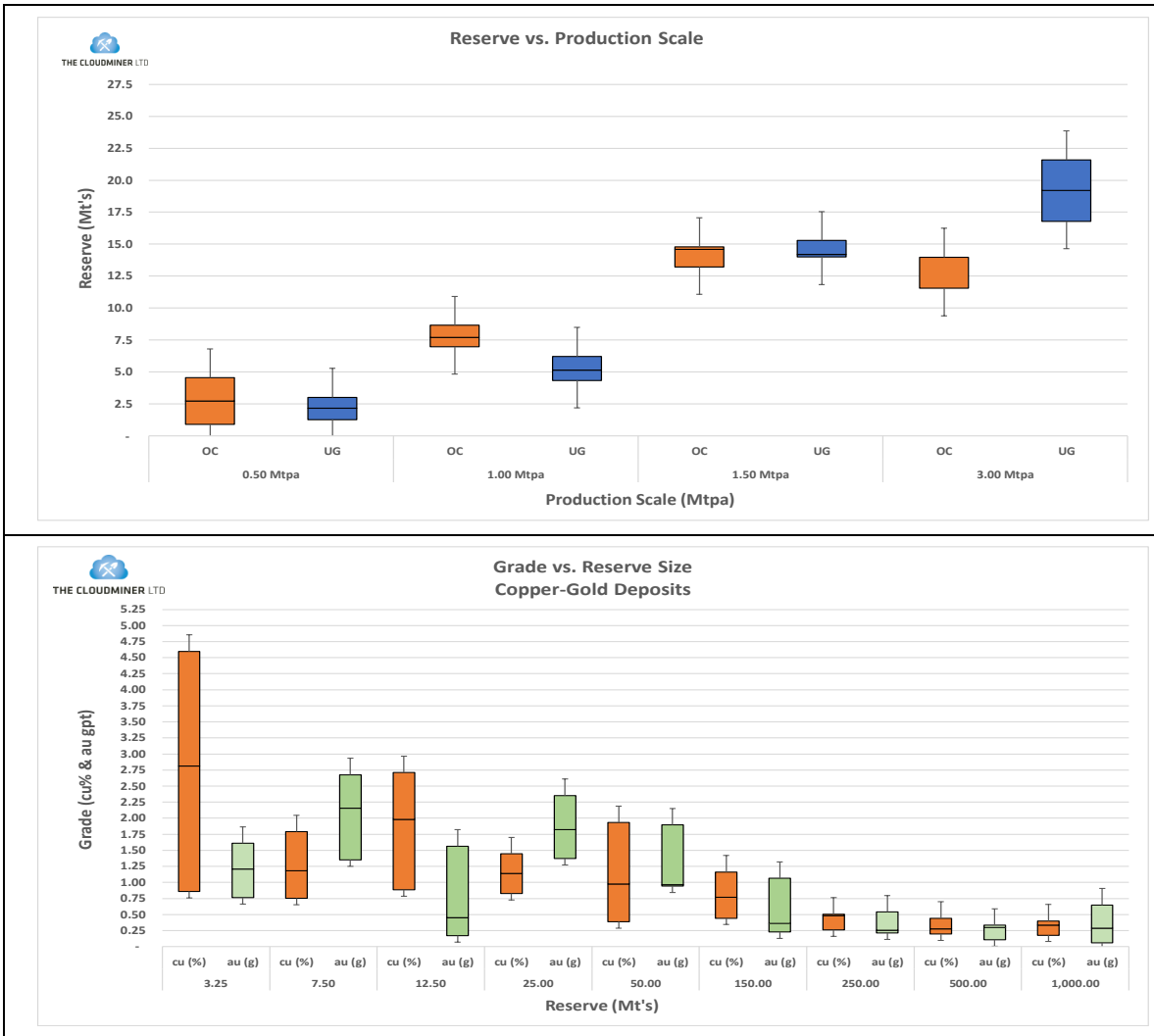


Figure 12. Reserve vs. Production Schedule and Figure 13. Grade vs. Reserve

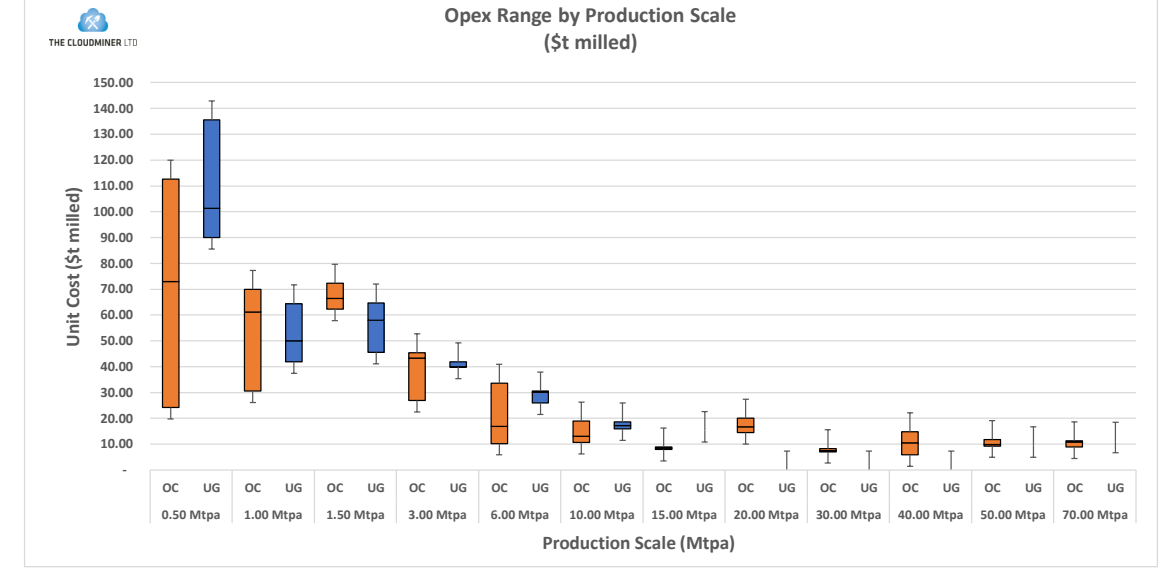
Operating & Capital Costs

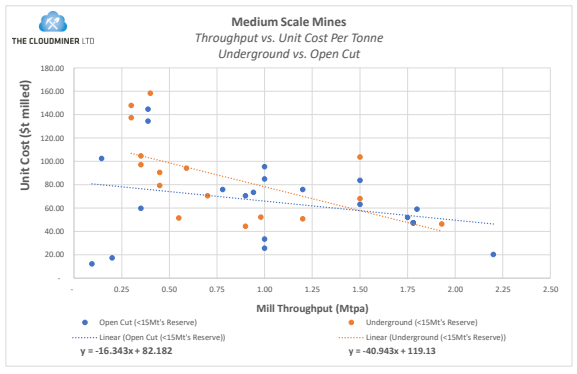
A statistical line of best fit was created using a relationship between the production scale in Millions of Tonnes per annum (Mtpa) and the Operational Costs (Opex, $t milled). The purpose is to provide guidance on the appropriate production rate for small, medium and large-scale projects.

Since the Caribou and Zackly deposits are at currently at a relatively early stage of exploration, the extent and geometry of the deposits are not yet fully defined. TCM therefore put together a breakdown of unit and capital operating costs versus scale of production to better understand the impact of the size of the project on the operating parameters and subsequent potential economics.

Operating Costs

Higher unit cost per tonne milled on small to medium scale operations is typically off-set by the higher grade. Based on **Figure 14** below; as the operation increases in scale, there is a diminishing effect on the unit rates as the scale of the operation reaches a certain inflexion point e.g. above 40Mtpa.





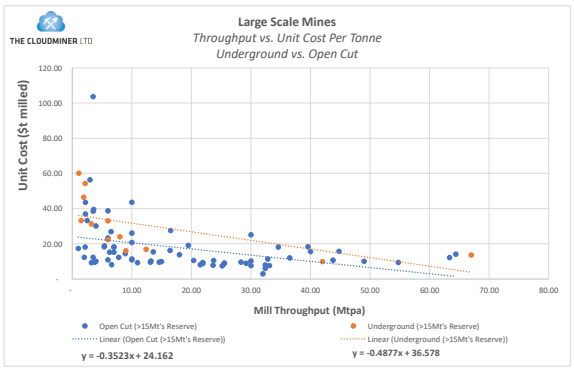
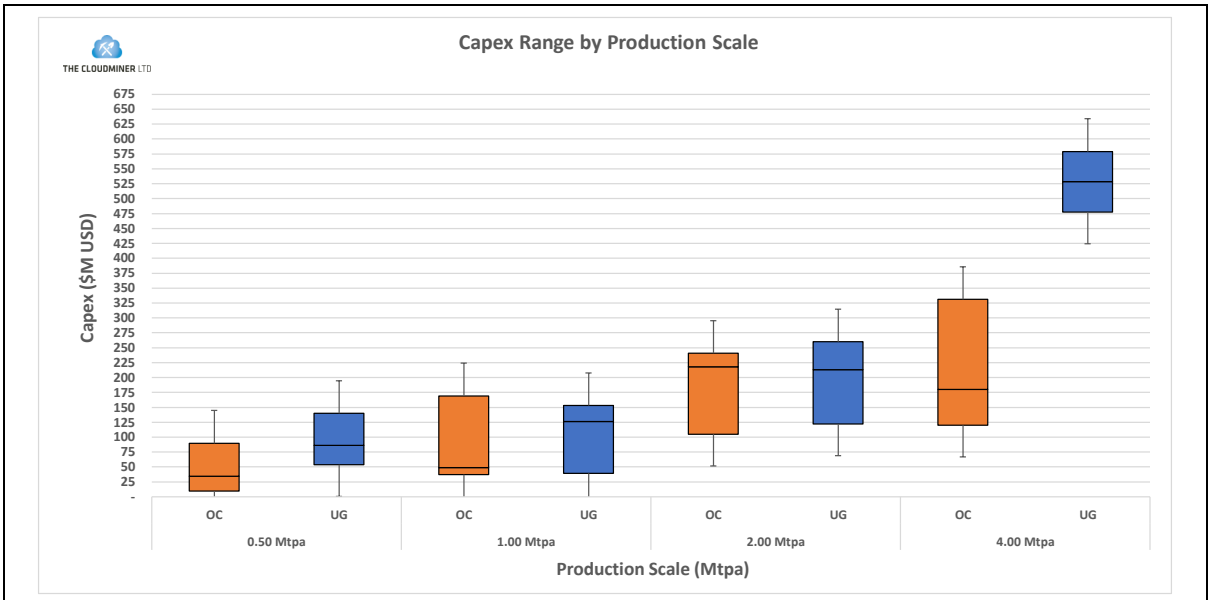


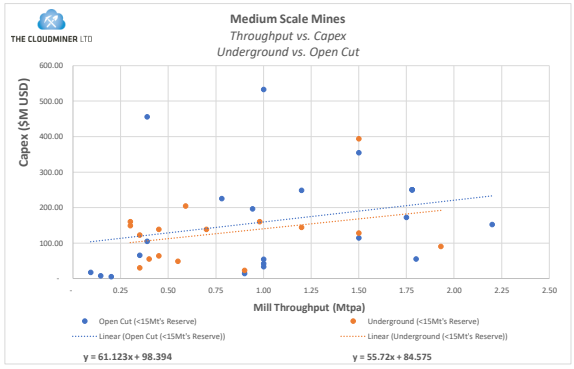
Figure 14. Opex vs. Scale, Figure 15. Medium scale mines (thoughput vs. unit cost), Figure 16. Large scale mines (throughput vs. unit cost)

At the small to medium scale of production (<500ktpa), the average operating costs per tonne milled for open cut and underground operations is $80t and $116t USD respectively. However, as the rate of production increases above 30Mtpa, the average operating cost can decrease to as little as $10t in some cases.

Capital Costs

Conversely as the scale of operations increases so do the capital requirements as reflected in **Figure 17** below. However, this is typically off-set by higher margins due to lower operating costs per unit of ore.





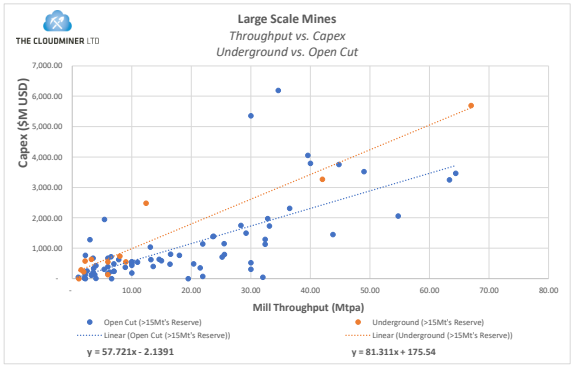


Figure 17. Capex range vs. Product scale, Figure 18. Medium scale mines (throughput vs. capex), Figure 19. Large scale mines (throughput vs. capex)

Cautionary Statement: This analysis is intended as a guide only. The ability to physically mine at the different volumes per annum will be dependent on the characteristics of the mineralised zone which includes; orebody strike, width, shape and dip etc. Therefore, to better understand the respective orebodies, additional drilling and exploration must be undertaken to ensure the orebody is sufficiently delineated and understood.

PREDICTIVE ANALYTICS

Typically for scoping studies and preliminary feasibility studies the operating parameters can be estimated by looking at comparable operations for which published data is available. This method is quick and provides a reality check on projects whilst they are in their early stages of development often to a ±35% to ±50% accuracy.

As the project advances, a definitive feasibility study (DFS) will require a greater level of detail and rigour of cost-estimation and application of engineering design principals. Such inputs include; mine planning, metallurgical test-work, process flowsheet design, logistics, product marketing, environmental considerations and closure costs etc.

But what does this analysis tell us for similar projects generally and specifically about those most relevant to the Alaska Range Project? To assist the predictive analytics, TCM utilised data from several small to medium scale projects considered to be relevant peers. A summary of some of the key projects used in the analysis is provided in **Table 3**.

Table 3. Short-list of medium-scale projects

Projects	Country	Stage	Method	Reserve (Mt)	Prod'n Ore (Mt)	Unit Opex ($/t)	Initial Capex ($M)	Total Capex ($M)	Grade (au g)	Grade (cu %)
Wolverine	Canada	Care of Maintenance	UG	5.15	0.59	71.69	155.75		1.70	1.18
The Idaho Cobalt Project (2017)	United States	Feasibility	UG	3.66	0.30	135.53	146.76	201.41		0.72
Reed Copper Project	Canada	PFS	UG	2.16	0.45	67.43	53.93	93.19	0.62	4.50
Springfield Project (Monty)	Australia	Feasibility	UG	0.92	0.40	157.50	54.38	70.58	1.61	9.40
Reed Lake	Canada	Operations	UG	1.19	0.45	90.00		40.00	0.81	4.63
Eagle Mine - Feasibility Study	United States	Feasibility	OC	4.82	0.39	140.95	102.00	161.00	0.30	3.05
King Vol Zinc Project	Australia	Scoping Study	UG	1.33	0.35	90.00	28.05			0.77
The Outokumpu Project	Finland	DFS	UG	4.34	0.55	41.90	39.30		0.68	1.25
Curipamba Project, El Domo Deposit	Ecuador	PEA	UG	6.21	0.70	64.40	126.12	235.51	2.62	2.03
Bidjovagge project - Scoping Study	Finland	Scoping Study	OC	1.77	0.35	49.03	53.90		1.61	1.12

Characteristics of mineralised zones

The geometrical shape, dips and strike lengths of the Caribou Dome and Zackly deposits influence the chosen extraction sequence, methodology, and scale of production. Mineralisation at Caribou Dome is at grades and widths that could potentially support mining, and the recent resource estimate at Zackly indicates similar potential for exploitation. Although the drilling results at Zackly display a slightly lower grade, they are across thicker intersections, and strong potential for mining thus exists.

Table 4. Mineralisation characteristics

Key facets	Units	Caribou Dome	Zackly
Deposit Style		VMS	Skarn
Mineralised zone depth *(from surface)*	m	+400	+550
Strike Length	m	850 – 3,000	1,200 – 3,000
Orebody Dip	Degrees	70 - 80°	70 - 80°
Orebody Width (true)*	m	2 – 20	1 - 12

**Expected orebody width estimated based on drill-hole intercepts (sourced from publicly available information)*

Key High-Level Engineering Assumptions

TCM undertook a conceptual analysis based on publicly available data pertaining to PolarX's Alaskan portfolio of projects. The accuracy of such an analysis is typically ±35% and should be referred to as a guide only.

A summary of the key driving assumptions is provided below:

- **Likely project development sequence:**
  - **Stage 1:** Caribou Dome; and
  - **Stage 2:** Zackly
- **Principal mining methodology:**
  - Mineralised zones outcrop at surface at both Caribou Dome and Zackly. The respective mineralised zones defined thus far have modest widths and are relatively steeply dipping. Therefore, the principal mining methodology is expected to be Open Cut initially, before transitioning into an underground style of operation early on.
- **Process Facility:**
  - **Concentrate Grade;** Conventional 600tpd to 1,200tpd flotation plant to produce 25% to 30% copper concentrate product.
  - **Location;** the facility should be as centrally located to key areas of mining activity as much as practicable whilst also taking into consideration; tailings, access etc.
  - **Metallurgical Recoveries;** metallurgical test-work that was carried on Caribou Dome deposit, Lenses 4, 5, 6 and 7, 8 demonstrated that recoveries in excess of 95% is possible.
  - **Process flowsheet design considerations;** ore type and beneficiation of each deposit may differ resulting in design and engineering adjustments which could impact costs.
- **Initial target production rate:**
  - Based on TCM's benchmarking exercise, it is possible to develop the project commencing with a modest scale of production in range outlined below;
    - Lower case: 300ktpa
    - Upper case: 500ktpa

Discussion on limitations and opportunities of using a probabilistic approach

The statistical approach is intended as a guide only and does not purport to have undertaken detailed engineering studies on the specific project in question. Engineering constraints include but are not limited to; physical capacity of the project/mine to reach the proposed target derived from the analysis. Specifically, this may be referring to such things as geological, technological, manpower or scheduling related etc.

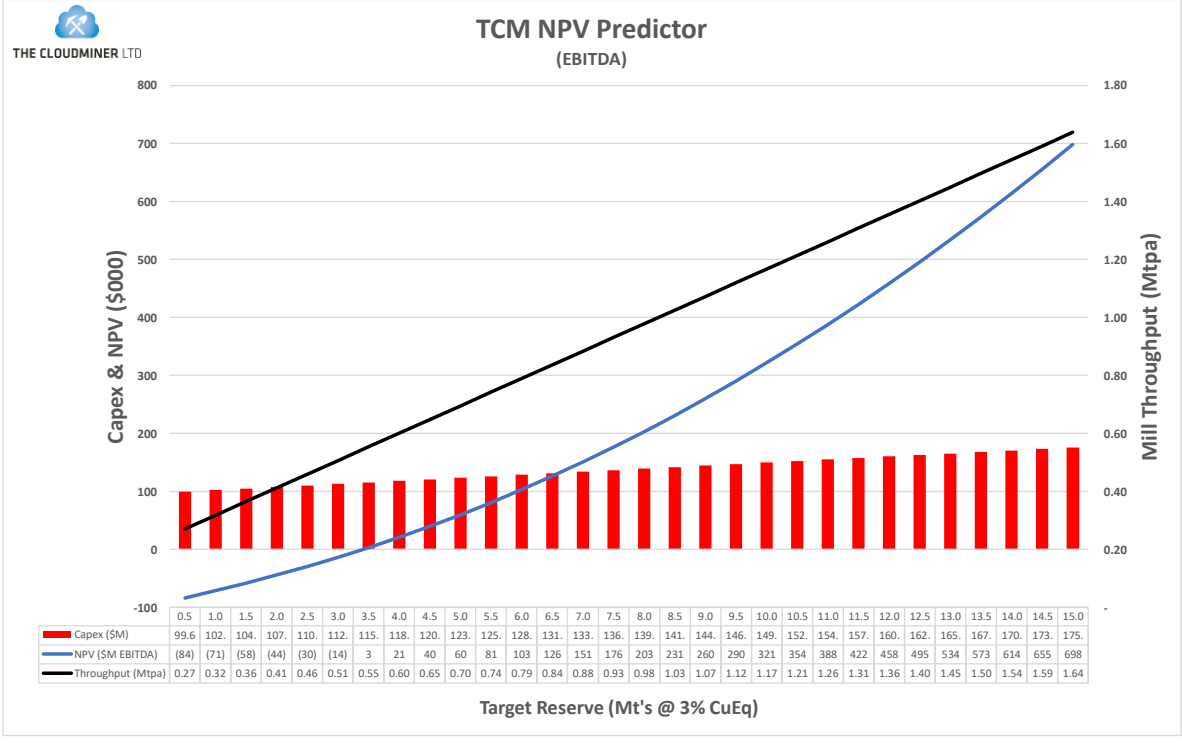
This exercise presents an opportunity to understand better the impact of project scale, grade, scheduling and engineering, mine planning on the economics of the projects and to define targets for the project during the study phase.

It should be pointed out that the projects used in this analysis are quite variable in terms of geology and mineralisation style to reflect what is currently unknown on PolarX's portfolio of Alaskan projects.

Breakeven Reserve Target

Based on data analysed from similar projects it is possible to envisage what the break-even target reserve size might need to be for PolarX to achieve a size that is potentially economic.

Based on this analysis, the break-even Reserve size is approximately 3.5Mt's to 5Mt's @ 3% CuEq or 10Mt's @ 2% CuEq. Based on a statistical analysis of 160 copper project, the average reserve to resource ratio is 60%. Based on the rule-of-thumb metric, a conservative target aggregate Resource of 15Mt's to 20Mt's should be established. Thereby ensuring a foundation for attractive returns from the project. Refer to **Figure 20**.



	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0
Capex ($M)	99.6	102.	104.	107.	110.	112.	115.	118.	120.	123.	125.	128.	131.	133.	136.	139.	141.	144.	146.	149.	152.	154.	157.	160.	162.	165.	167.	170.	173.	175.
NPV ($M EBITDA)	(84)	(71)	(58)	(44)	(30)	(14)	3	21	40	60	81	103	126	151	176	203	231	260	290	321	354	388	422	458	495	534	573	614	655	698
Throughput (Mtpa)	0.27	0.32	0.36	0.41	0.46	0.51	0.55	0.60	0.65	0.70	0.74	0.79	0.84	0.88	0.93	0.98	1.03	1.07	1.12	1.17	1.21	1.26	1.31	1.36	1.40	1.45	1.50	1.54	1.59	1.64

Figure 20. TCM NPV Predictor

Notes;

- Estimated reserve grade was based on resource grade. Therefore, it is important to note that based on a sample of the drill-hole intercepts, it is possible to expect that the reserve grades will likely be somewhat higher comparative to resource grade (impact of dilution and recovery not yet fully understood). This will reduce the required target Reserve tonnes significantly.
- All calculations are denominated in United States Dollar (USD)
- Price assumptions; $1,324oz Au, $6,883.19t Cu, $16.62oz Ag (USD) as of 13th March 2018
- Inflation adjustment factor of 3% pa was applied to each project used in the analysis, from date of report
- All NPV's are based on EBITDA which excludes tax, depreciation and amortisation
- All figures rounded to one decimal place
- Equivalents are based on in-situ grades and take no account of metallurgical recovery factors

OPPORTUNITY & VALUE PROPOSITION

Short-term production optionality is afforded to PolarX due to its high-grade copper deposits at Caribou Dome and Zackly. However, there is also significant potential upside of porphyry targets at the Zackly and Mars prospects. TCM's research on comparable projects illustrates that it is possible to commence production off the back of a modest sized yet high-grade reserve. Possible development strategies outlined summarised accordingly:

- **Option 1:** continue exploration, expand and delineate existing resource base; and confirm porphyry potential (Mars deposit).
- **Option 2:** focus on development of Caribou and Zackly, creating a centralised hub for production to take place from satellite projects in the vicinity.
- **Option 3:** a hybrid approach combining Option 1 and Option 2.

With this in mind, the list of companies selected for value comparison were based on two key relationships; principal commodity and principal country/region of activity. The relative value was determined in terms of Enterprise Value (EV) per contained copper equivalent tonne (CuEq).

General observations (refer to **Figure 21**) from this exercise show that companies with their primary activity in Alaska generally rank lower in terms of EV/t CuEq then companies whose projects are located in Canada, Africa and Australia.

Table 5. Selected peers for EV analysis

Company	Symbol	Status	Country of principal activity	Grade CuEq %	Total Contained (kt's CuEq)
Northern Dynasty Minerals Ltd.	NYSE:NAK	Dev't	USA (Alaska)	0.59	75,827.74
Hot Chili	HCH.AX	Exp'n	Chile	0.58	1,366.00
Freegold Ventures Ltd.	FVL:TO	PEA	USA (Alaska)	0.43	567.36
Taseko	NYSE:TGB	PFS	Canada (BC)	0.58	21,801.77
Trilogy Metals (frmly Nova Copper)	NYSE:TMQ	Exp'n	USA (Alaska)	2.35	5,207.78
Hudbay Minerals	NYSE:HBM	Prod'n	Canada	3.08	51,192.66
Capstone Mining Corp.	CS.TO	Prod'n	USA	0.16	7,391.99
Imperial Metals	III.TO	Prod'n	USA	0.39	11,709.21
Copper Mountain Mining Corp.	CMMC.TO	Prod'n	Canada	0.45	3,760.42
Avanco Resources	AVB.AX	Prod'n	Brazil	1.11	1,358.26
PolarX	PXX.AX	Exp'n	USA (Alaska)	3.00	158.65
Golden Predator	GPY.V	PEA	Canada (Yukon)	0.75	296.81
Tintina	TTS.V	Dev't	USA (Montana)	2.92	67.09
Oz Minerals	OZL.AX	Prod'n	Australia (SA)	1.06	10,209.32
Nova Gold Resources Inc.	NYSE:NG	Exp'n	USA (Alaska)	0.83	7,930.54
Nevsun Resources	NYSE:NSU	Prod'n	Eritrea	1.97	3,295.81
Victoria Gold Corp	VIT.V	Exp'n	Canada (Yukon)	0.16	613.49
First Quantum Minerals	FM.TO	Prod'n	Zambia	0.46	58,195.49
Hecla Mining Co.	NYSE:HL	Prod'n	USA / Mexico	1.66	2,753.83
Talisman Mining	TLM.AX	PFS	Australia (WA)	10.39	32.74
Nzuri Copper	NZC.AX	DFS	DRC	2.71	90.80
Sandfire Resources	SFR.AX	Prod'n	Australia (WA)	4.77	1,105.00
Sumatra Copper & Gold	SUM.AX	Prod'n	Indonesia	1.54	99.77

As illustrated in **Figure 21,** PolarX is undervalued relative to the average of its peers with an estimated Enterprise Value per Copper Equivalent tonne of $129t CuEq versus a mean of $224t CuEq USD. Perceived as an earlier stage company to some of the peers, the market's pricing reflects both the quality of the assets and the belief that the management can deliver.

When the company is ranked according to grade against 24 other copper focussed companies listed on the NYSE, TSX and ASX respectively, the company looks potentially undervalued as illustrated in **Figure 22**.

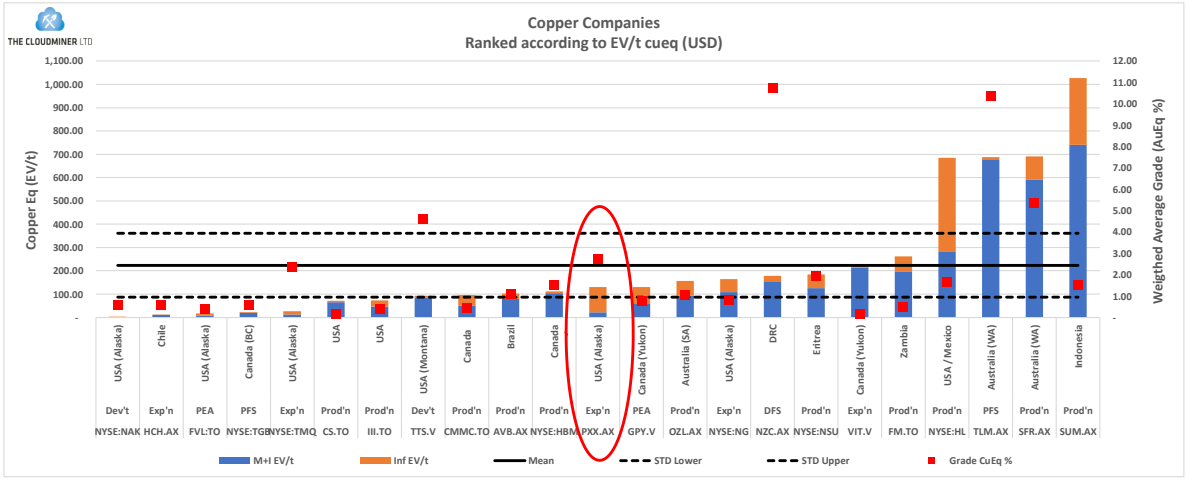


Figure 21: EV/t Analysis of Global Copper Companies (USD)

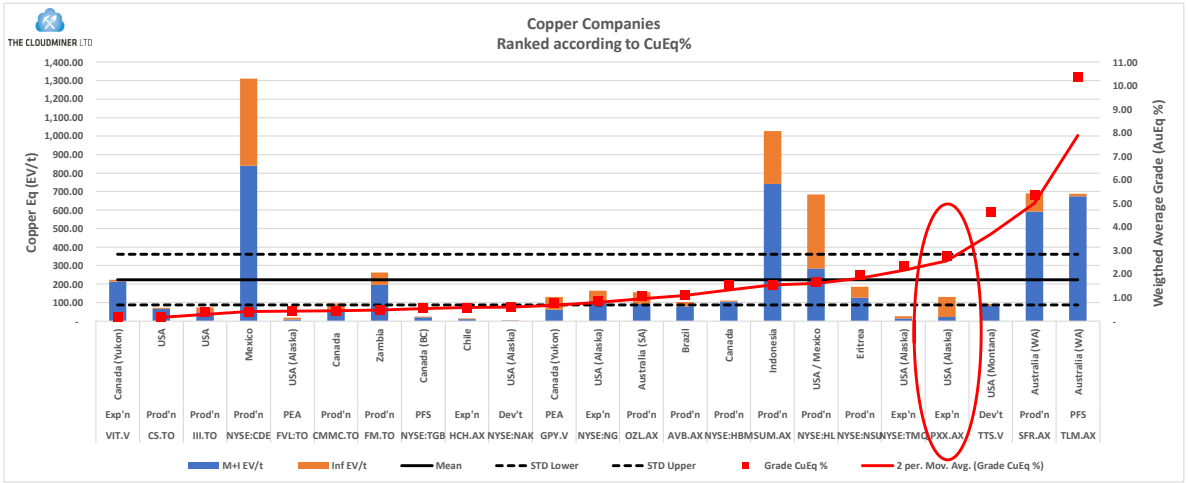
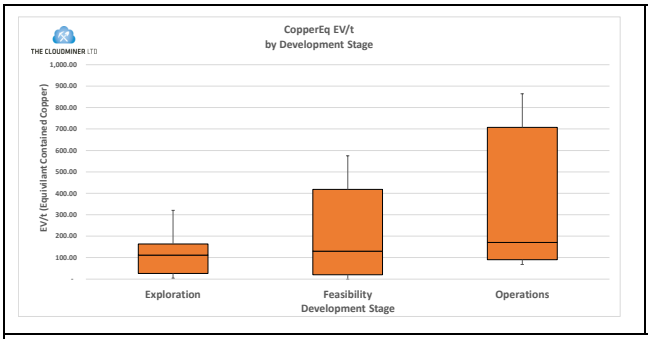


Figure 22. Grade CuEq (%) of Global Copper Companies (USD)

PolarX is currently regarded as an exploration stage company. As illustrated in the below charts, it is possible to enhance value significantly by progressing the project from exploration stage through to feasibility and eventually production. The progressive value accretion appears to go from an average EV of $111t, to $245t and eventually to $400t CuEq as companies advance from exploration, through feasibility then eventually production respectively. Thus, the value uplift is greatly enhanced as the project is derisked and moves closer to becoming production ready.

An outlier to this analysis of course being SolGold whose flagship deposit has caught the attention of the majors and the market pre-resource.



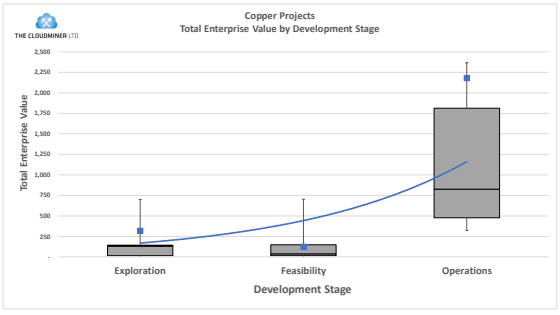


Figure 23. CuEq EV/t and Figure 24. Total EV (USD)

PROJECT DEVELOPMENT EXECUTION RISKS

Management

As an essential ingrediant for success, PolarX appear to posess a good management team. The current stage of development, the company personnel have significant experience and success in the junior resources sector, and also have well aligned interests with shareholders as a result of significant holdings in PolarX.

Jurisdiction & Soveriegn Risk Aspects

As discussed in earlier sections of the report, Alaska is a well regarded and mature mining jurisdiction, with a long history of successful mining operations and low soveriegn risk according to Fraser Institute which places Alaska in the top 10 jurisdictions in the world for investment attractiveness.

Climatic & Environmental Conditions

There are obvious challenges associated with mining in remote areas with extreme climates, and Alaska is one such place. Climate conditions play an important role in the planning and execution of any mining project with the largest consideration being logistics and the importance of providing year-round access to site to ensure operational continuity throughout the year.

Unlike Pebble Mine, the Alaska Range Project lies on State land and environmental permitting is predominatly a State based process. The only federal involvement in permitting will be the Army Corps of Engineers, and then only if the projects' development would have an impact on Weltlands. Further, the Alaska Range Project is in an unpopulated area and is not considered a particularly environmentally sensitive area due to the lack of spawning salmon in the rivers and the categorised low significance the local waterways. However, further Environmental studies will be carried out as required.

Infrastructure & Transportation

Transportation to the project is via one of two routes, either via Cantwell which is within 110km and has both rail and road options, or via Paxson. The preferred route is from Cantwell along the Denali Highway (compacted gravel highway) which can be made accessible all year round should the Company decide to fund snow-ploughing during winter. Access to the site from the Denali Highway requires a short 15 miles road to be upgraded to cope with expected increased traffic from mine operations. For the time being though, it is sufficient for exploration activities with annual maintenance.

Permitting

A singular centralised state based permitting system applies in Alaska thereby providing a streamlined system of approvals. As the project advances from exploration to mining, permitting will continue to be state based unless there is deemed to be any impact on wetlands, in which case, permitting will need to include the Army Corps of Engineers.

Ownership

PolarX holds either a majority or 100% ownership thereby ensuring control over the direction of future development of the respective projects as summarised below:

- Caribou Dome (80%): Earn-In type structure. The total costs for the Caribou Dome earn-in is **EITHER** conducting a Feasibility Study **OR** expending in the order of US$11 million, with US$8 million expenditure spent over an eight year period, and US$3 million cash payments due in the 9th year of the Earn-In arrangement. PolarX is currently well ahead of its minimum earn-in requirements.
- Stellar Project (100%): The Company holds 100% of the Stellar claims, which host the Zackly, Mars and Moonwalk prospects.

CLOSING REMARKS

The key opportunity of PolarX and the Alaska Range Project is the potenital held in the geology which appears to demonstrate high prospectivity for mulitple mineralisation styles. The identified mineralisation styles on the Alaska Range Project have a well-known history of developing into world class deposits and if regional scale mineralisation is proven then the Alaska Range Project truly could be company defining.

The current delineated mineralisation remains open at depth and along strike at the drilled deposits thus far while the geochemistry shows the footprint covering the full permitted area. Therefore, it is fair to assume that a reasonable sized discovery is highly probable but the extent to which is not yet fully understood. 2018's proposed drilling will go some way towards potentially determining some of the unknowns and prove the potential scale of the project while validating the geological model proposed by PolarX.

Mineralisation at Caribou Dome is at grades and widths that potentially support mining activity both for open-cut and underground. The recent resource estimate at Zackly also indicates similar potential for exploitation. Although the drilling results at Zackly display a slightly lower grade but over thicker intersections, strong potential for mining already exists.

2018 is clearly shaping up as a defintive year for PolarX to build from the ground work done to date as they look to rapidly advance the project and build shareholder value.

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First Quantum Minerals: http://www.first-quantum.com/
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Sandfire Resources: http://www.sandfire.com.au/
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ANNEXURE A – QUALIFICATIONS AND EXPERIENCE

Daniel Bloor: BSc (Geology), MSc (Applied Geosciences)
Senior Geologist

Daniel has over a decade of experience in the mineral and engineering geology industry with a further three years in the UK financial industry. Having worked with multiple commodities as an exploration and production geologist Daniel moved to Hong Kong where he was a consulting resource geologist both for due diligence and independent technical assessments for investment purposes. Daniel Co-Founded the CloudMiner Limited in 2012 and has spent the last five years evaluating and researching a wide spectrum of minerals projects around the globe.

Will Coverdale: BEng (Mining), MAusImm
Senior Mining Engineer

Will is a qualified Mining Engineer with a diverse range of experiences and specialties encompassing both underground and open cut mining across several commodities. This includes specific underground operational experience with the following methodologies; large sub-level caving operations (Cu & Au), board & pillar (coking coal), remnant mining (Au) and cut & fill mining (Au). Technical experience also covers a number of other commodities including uranium, gold, iron ore and high-grade silica. Country specific mining experience includes Australia, Kazakhstan, Mongolia and the Philippines. Roles have varied from design work, modelling, mine planning and scheduling through to feasibility study management and operational management.

ANEXURE B –

Limitations and Exclusions

TCM's opinions contained herein are based on information held in the public domain, which in turn reflect various technical and economic conditions at the time of writing. This is an initial review of what is provided but in no way is to be classified as an in-depth due diligence report. As previously discussed these are typically carried out by a team of experienced professionals which would include reviewing the geology, block models, mine plans, schedule, metallurgy and cost assumptions from an independent view point.

This report includes technical information, which requires subsequent calculations to derive subtotals, totals, averages and weighted averages. Such calculations may involve a degree of rounding and consequently introduce an error. Where such errors occur, TCM does not consider them to be material.

It is also TCM's opinion that the information provided at the time of writing was complete and not incorrect, misleading or irrelevant in any material aspect.

All work has been performed in accordance with and subject to our Standard Conditions of Engagement. Highlighted are some of the more pertinent points:

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- Without derogating from the aforesaid provisions, we shall not under any circumstances whatsoever be liable to any third party whether or not they are shown a copy of any work that we have done pursuant to the terms of our engagement and whether or not we have consented to such work being shown to them, save and except where we specifically agreed in writing to accept such liability;
- Except as a result of our own negligence or wilful default, in the event that we find ourselves subject to a claim or incur legal costs from another party as a result of false or misrepresented information provided by Management in connection with this engagement, any claim established against us and the cost we necessarily incur in defending it would form part of the expenses we would look to recover from the management of the Company.

Mining Unknown Factors

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