# agentis



# Defense Metals Corp. (DEFN CN) Site Visit – Completed (Jul 2022)

Price	C\$	\$0.24
Shares on issue	m	183.4
Market cap	C\$m	\$43.1
Working capital <sup>1</sup>	C\$m	\$2.6
Total debt	C\$m	-
Avg, Daily Volume	3то	125,721
Valuation	C\$/sh	\$3.50
P / NAV	X	0.07x

(all figures in USD unless noted; 1. as of Jun 30/2022)

#### **DEFN vs GDXJ (rebased)**



Source: FactSet.

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3 October 2022

Agentis Capital Markets Canada Limited Partnership ("Agentis Capital")

# **Defense Metals (DEFN CN)**

Initiating Coverage: The Best Offense is a Great Defense - LREE Open Pit Developer in Canada

#### **Technical Thesis**

We are initiating coverage of Defense Metals (DEFN CN), a best of breed light rare earth element (LREE) early developer, that is advancing its 100% owned, Wicheeda LREE open pit development project, McLeod Lake Tse'khene First Nation Territory, central British Columbia (BC), Canada. Importantly, Wicheeda is very well-located with access to key infrastructure. Resources (I & I) are at critical mass with of 34.5mt at 2.0%TREO. The Nov/2021 PEA yielded an after-tax C\$517m NPV<sub>8%</sub> & 18% IRR using a price assumption of \$100/kgNdPr. Our first full coverage REE initiation strongly leveraged insights from our Sep 14/2022 REE Thematic Report.

#### Attractive Features

- Access and infrastructure increase mine potential 80km NE of Prince George (pop ~85k), Wicheeda is road accessible & <40km from power & rail.</li>
- Bulk mineable open pit with good grades Near surface resources at 2.9%TREO are in a Phase I starter pit with a low 0.63:1 (w:o) strip ratio. The LOM strip ratio of 1.75:1 is significantly ahead of the peer group average (~5.1:1).
- Critical mass via 687ktREO OP resource Mineralization is primarily coarsegrained monazite & bastnaesite. The 5.0mt indicated resource is 2.95%TREO & enriched with 0.41% Nd+Pr - the key elements used in permanent magnets.
- Largest annual production profile in the North American or Australian pipeline – The 1.8mtpa PEA scenario yields 4ktpa NdPr oxide over a 16yr LOM the largest avg annual production profile of hard rock REO developers (Fig 2).
- Solid flowsheet has strong optimization potential The caustic crack flowsheet indicates 87%REO recovery from concentrate. Ongoing metallurgical testing indicates the acid bake hydrometallurgical (HM) method could yield +5% higher recoveries at lower costs vs the PEA caustic crack flowsheet.
- Manageable initial capex via staging The PEA outlines initial capex of ~C\$440m for a flotation concentrate plant (producing saleable con in yrs 1-4) to pay down expansion capex to build a HM plant (precipitate yr 5-onward).
- Positive First Nations relationship emerging DEFN has signed a MOU with the McLeod Lake Indian Band & has completed long-lead environmental studies.

### Key Catalysts - Next 12mo

1) Results from 2022 drilling (4Q22-1Q23); 2) Acid bake & flotation metallurgical test results (4Q22-1Q23); 3) Pilot plant construction & operation (4Q22-1H23); 4) Revised mineral resource estimate (1H23); 5) Prefeasibility study (2H23-1H24)

#### Valuation

- We derive a \$551m NAV (C\$3.50/sh) via our sum of parts 12mo corporate NAV, underpinned by our DCF<sub>8%</sub> model for the Wicheeda project that yields an after-tax NPV<sub>8%</sub> of C\$699m and 25.2% IRR (using a LT price of \$130/kgNdPr, 0.75FX).
- DEFN trades at a 0.07x P/NAV, versus the core North American & Australian developer REE peer group that trades between 0.03x-0.65x P/NAV (avg 0.21x).
- See our valuation section (p20-24).

# **Company Overview**

Defense Metals Corp (Defense, DEFN) is a BC-focused REE critical metals developer headquartered in Vancouver, BC, Canada, under the stewardship of CEO Craig Taylor. Defense is focused on advancing its flagship 100% owned PEA-stage, Wicheeda REE project, McLeod Lake Tse'Khene First Nation Territory, Central BC, Canada. The Wicheeda LREE deposit hosts a 34.5mt indicated & inferred resource at 2.0%TREO for 687ktREO.

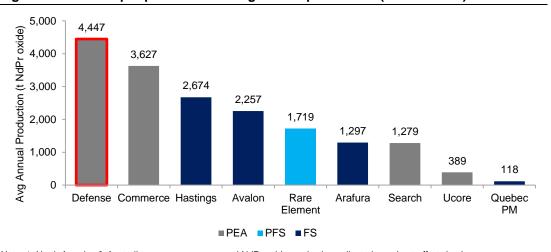
Defense trades in Canada on the TSXV (ticker DEFN), in the US in the OTC markets (ticker DFMTF) and in Germany on the FWB (ticker 35D). Defense has 183.4m shares i/o and had C\$2.6m in working capital as of Jun 30/2022. DEFN has a f/d share capital of 225.6m based on 26.6m warrants (weighted avg strike of C\$0.41; expiry Apr/2024 to May/2024) and 15.6m options (weighted avg strike of C\$0.26; expiry Feb/2023 to Sep/2025). The five largest DEFN shareholders own ~40% and management & directors own ~5%.

We are initiating coverage with a high conviction that DEFN is a best of breed North American REE developer that is well-positioned to its leverage growing global REE demand and government support to become part of a North American REE critical metals supply chain. Defense screens well relative to developer peers, with its high-grade Wicheeda deposit that could become a globally significant producer of 28.9ktpaREO including ~4.4ktpa NdPr oxide (Fig 1 & 2).

4,688 4,148 3,878 3.0% 2.000 2.5% 1,557 Resource (kt REO) 1,456 1,500 2.0% 1,000 1.5% 687 1.0% 500 216 0.5% 34 Rate Element Quebec Prin Geomeda Analon Nothern . Joré Hastings Raret Search

Fig 1 REE explorer & developer peers<sup>1</sup> – Contained REO (kt) and grade (%TREO)





Note: 1. North America & Australia peers; average annual NdPr oxide production collected on a best-efforts basis. Source: Company disclosures; Agentis Capital research.

# Insights – Opportunities and Challenges

#### **Attractive Features**

- Rare earths industry outlook is very positive The fundamentals for REE demand growth is very positive. Demand is high and forecasts suggest it will continue to grow, vis a vis the markets for EVs, wind turbines and defence technologies (Fig 3).
- Well-located near infrastructure in development-friendly Northern BC 80km NE of Prince George (pop ~85k), Wicheeda is road accessible and <40km from low-cost green hydroelectric power & rail.
- LREE deposit with favourable mineralogy Mineralization consists primarily of coarse-grained monazite and bastnaesite. The indicated resource at 2.95%TREO is enriched with 0.41% Nd+Pr the key elements used in permanent magnets.
- Critical mass via 687ktREO pit constrained resource The optimized PEA pit-shell contains 26.1mt at 2.3%TREO at a low LOM strip ratio of 1.75:1 (w:o). The higher-grade phase 1 pit drives economics with 12.5mt at 2.9%TREO and an even lower 0.63:1 strip.
- PEA outlines meaningful REO producer 1.8mtpa production scenario defines 16yr
   LOM producing 25.4ktpa REO equivalent to 9.1% of global REO production in 2021.
- Staging production keeps initial capex manageable at ~C\$440m Strategy is to start
  with a flotation concentrate plant (saleable concentrate yrs 1-4) to fund capex associated
  with the hydrometallurgy (HM) plant (precipitate production in yr 5-onward).
- Flowsheet has optimization potential PEA HM caustic crack flowsheet is a proven REE processing method, although not as prevalent as acid bake recovery (ABR). <u>Testing</u> suggests Wicheeda ore is amenable to ABR = higher recoveries & lower unit costs.
- Management & consultants position DEFN for success CEO Craig Taylor has assembled a strong team with a diverse REE technical and industry skillset including: i) John Goode (Global REE metallurgical engineering expert); ii) Luisa Moreno (President, former REE analyst); and iii) Kristopher Raffle (QP, Partner at APEX Geoscience).
- **First Nations & ESG** DEFN signed a MOU with the *McLeod Lake Indian Band* and has completed long-lead environmental baseline testing, building toward an EA application.
- Key catalysts to drive multiple re-rating Potential for strong expansionary drill results, an updated mineral resource estimate, pilot plant construction and a potential PFS within a 12-month horizon. There is also potential for an early offtake agreement with a strategic.
- Valuation (p20-24) Defense, via our sum of parts 12mo corporate NAV, is worth \$551m (C\$3.50/sh) for a 0.07x P/NAV vs the peer trading range of 0.03x-0.65x P/NAV.

# Potential Risks & Sensitivities (p19)

- Permitting & social license Canadian regulators have limited permitting experience
  with REEs; however, we expect Wicheeda to be embraced as a critical metals project.
  The Mineral Exploration Agreement with the McLeod Lake Indian Band sets the stage for
  a collaborative relationship moving forward.
- Metallurgical test work The bulk sample supporting the PEA graded 4.8%TREO (vs PEA mill feed at 2.3%), which may inaccurately reflect higher recoveries than will be realised. DEFN must also prove its HM flowsheet at the pilot-plant scale.
- LREE mineralization typically contains radioactive elements Wicheeda mineralization contains minor Th; however, a well-designed process plant can remove impurities to manage waste effectively, making Th insignificant in the LREE products.
- Execution risk Average actual initial capex since 2007 is a ~50% overrun for greenfield base metal projects. Outstanding existing nearby infrastructure (road, power, water) and negligible camp requirements will mitigate capex creep.
- Market risks and REE prices China dominates the REE market and holds ~90% of separation and refining capabilities. Critical mineral initiatives being pushed by western governments should help to establish vertically integrated REE supply chains ex-China.
- Need to upgrade resources On a contained REO basis, 78% of the Wicheeda resource is in the inferred category. We expect a relatively high conversion ratio.

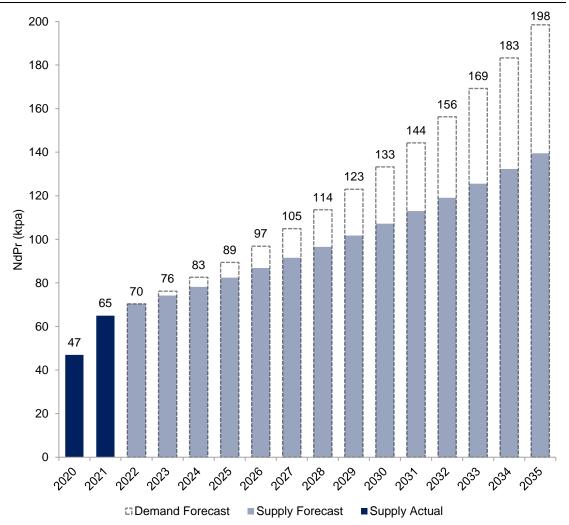
# Rare Earths Industry Outlook is Positive

We think it is an excellent time to enter the REE space. Forecasted demand for REEs in permanent magnets for electric vehicles (Evs) and wind turbines significantly outweighs projected supply (Fig 3). Total REE magnet demand is forecasted to increase at a CAGR of 8.3% to 2035, while prices are projected to increase at a CAGR of ~3.5% and supply is projected to increase at a CAGR of 5.4% over the same time period (Adamas Intelligence). More REE mines and processing facilities are required to produce the materials needed to meet EV and wind turbine demand associated with 2050 net-zero targets. As REEs have many military applications, there is strong government support to develop new mines and processing plants to secure the critical REE supply. Rising demand for magnet rare earths has triggered large price increases since 2020 – NdPr oxide (ex-China) currently sells at ~\$145/kg and reached +\$200/kg earlier this year.

The REE industry of the western world is seeing substantial investment from governments and large consumers eager to secure supply chains ex-China. We are seeing opportunities with the significant growth in REE mining in Australia, USA and Canada.

<u>See more of our insights on the REE market in our Sep 14/2022 REE Primer – 10 Things You Need to Know.</u>

Fig 3 Global neodymium and praseodymium (NdPr) demand forecast (dashed grey outline), supply forecast (blue-grey) and actual supply (dark blue) – Indicating potential annual shortages of +60kt of NdPr by 2035.



Source: USGS; Adamas Intelligence; Agentis Capital research.

# Key Asset - Wicheeda LREE Project (100%)

#### Location, Access and Infrastructure

Wicheeda is located ~80km NE of Prince George, central British Columbia, Canada (Fig 4). The property is easily accessible via all-season gravel roads, off the maintained Chuckinka Forest Service Road that connects to Highway 97 near Bear Lake. We highlight that the Wicheeda project lies on the traditional territory of the McLeod Lake Tse'Khene First Nation - a source of skilled labour and contracting corporations. We note that the Wicheeda area has been subject to resource development, with active commercial logging adjacent to the project and a decommissioned gravel pit on the property.

The local resources and infrastructure are outstanding (Fig 4). Wicheeda is <40km E of Bear Lake (pop ~150) as the crow flies (50km by road) which hosts a CN rail mainline, paved Highway 97, a natural gas pipeline and a power transmission line. An inactive sawmill in Bear Lake is an excellent potential location for the Wicheeda hydrometallurgical plant. The city of Prince George, 80km SW, provides an excellent skilled workforce base and access to road, rail, and air infrastructure. Located ~500km W is the Port of Prince Rupert, accessible from Prince George by rail and road. Port access is an attractive feature, as the predominant buyers for REE products are in Asia. The Port of Vancouver and destinations elsewhere in Canada/USA are also accessible by rail and road to the south.

We believe that Wicheeda's superior location enhances its economic potential and dramatically lowers project execution risk as existing off-site infrastructure is in place and access is very good. These factors lead us to believe that there is a reduced risk of significant capex escalation.

Chuchinka FSR
50km Forest Service Rd

Project

Wicheeda
Project

Wicheeda
Deposit

British Columbia

Wicheeda
Prince George
Prince George
40 km South

Fig 4 Plan view, location of Wicheeda project in Central BC – We highlight road access and proximity to regional infrastructure, lowering execution risk.

3 October 2022

Source: S&P Capital IQ Pro; Agentis Capital research.

British Columbia is globally regarded as a Tier I mining jurisdiction with several senior and intermediate mining companies operating in the province. BC has a well-established regulatory system, known tax regime and a rigorous environmental assessment (EA) permitting process. Although it can be slow, the permitting process is transparent and well understood. Central BC is especially resource friendly, hosting several active mines in the greater Prince George region that include Mt. Milligan (Cu-Au), Gibraltar (Cu-Mo), Mount Polley (Cu-Au), Brule (metallurgical coal) and Wolverine (metallurgical coal).

### **Land Tenure and Royalties**

The 100% owned Wicheeda property is comprised of 10 mineral claims encompassing 4,244 hectares in central British Columbia. Two privately held junior explorers, Power One Resources and Eagle Bay Resources, hold claims to the NW and SE of Wicheeda.

**Underlying Royalties are minimal** – DEFN owns 100% of Wicheeda, subject to a 2% NSR in favour of Spectrum. DEFN has the right to purchase 1% of the NSR for C\$1m at any time.

### A Synoptic History of the Wicheeda LREE Project

- 1961, early exploration involving government airborne magnetic survey
- 1986, Teck Explorations Limited (Teck) stakes initial claims
- 2001 to 2009 exploration by Spectrum Mining Corporation
- Nov 26/2018, Defense Metals options Wicheeda from Spectrum
- Jan 8/2019, maiden compliant mineral resource estimate
- Nov 24/2021, maiden development study
- Jan 14/2022, Defense fulfills option agreement, earns 100% interest in Wicheeda

See Appendix B for a detailed history of the Wicheeda project.

### McLeod Lake Tse'Khene First Nation Collaboration Agreements

During 2020 and 2021, Defense conducted several introductory virtual meetings (due to COVID-19) with the *McLeod Lake Indian Band* regarding the proposed Wicheeda exploration programs. Wicheeda exploration activities have been a source of employment for McLeod Lake community members.

On Sep 7/2022, Defense announced a Mineral Exploration Agreement (MEA) with the *McLeod Lake Indian Band*. The MEA addresses the ongoing exploration activities at Wicheeda, providing the *McLeod Lake Indian Band* with economic opportunities. We think the MEA builds a strong foundation for the relationship between Defense and McLeod Lake, paving the way for future collaboration agreements as the Wicheeda REE project is advanced along the development path.

"[The] McLeod Lake Indian Band has always been open to working with companies that respect our rights, laws and interests in the protection of our lands, and that provide meaningful economic and commercial opportunities for our community," said McLeod Lake Indian Band Chief Harley Chingee on the agreement. "We are therefore pleased to have completed this initial agreement with Defense Metals and look forward to its successful implementation." - Sep 7/2022 DEFN news release.

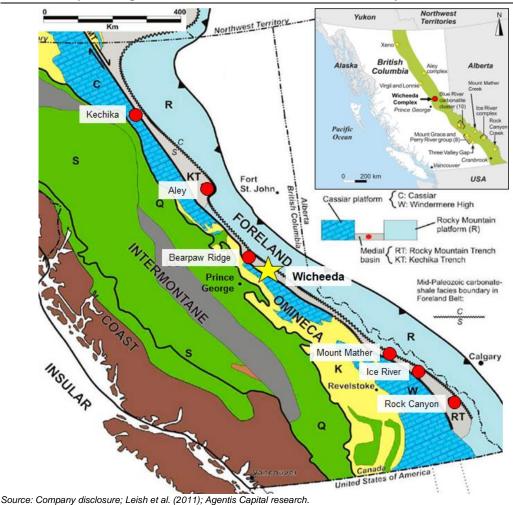
We highlight that the *McLeod Lake Indian Band* is party to a socio-economic agreement and a revenue-sharing agreement for Centerra's (CG CN) Mt. Milligan Cu-Au mine (revenue sharing from the BC Mineral Tax). There is also an Impact Benefit Agreement regarding the Coastal GasLink Pipeline and Site C Clean Energy projects. In our view, the above economic agreements underscore that the *McLeod Lake Indian Band* is open to collaborative agreements relating to responsible resource development on their Traditional Territory.

Defense commenced its baseline surface water assessment in the summer of 2020, getting an early start on hydrology and water quality data collection. This early emphasis on environmental studies reflects well on DEFN's environmental stewardship, in our view showing a solid roadmap towards an Environmental Assessment application and BC Mine Permit application in the future.

### **Regional Geological Picture**

- REEs in BC alkaline province (Fig 5) Wicheeda is a high-grade LREE deposit in the British Columbia Alkaline Province (BCAP). The BCAP is located in the Foreland Belt (FB), along the eastern mountain ranges of the Canadian Cordillera (CC). The FB contains a large alkaline province stretching through the CC and into the SW USA. It hosts the Aley (Nb), Ice River (REE-Nb), Bearpaw Ridge (REE), Rock Canyon (REE), Mount Mather Creek (REE) and Wicheeda (REE-Nb) complexes.
- Rock types in the region The BCAP is underlain by Proterozoic clastic and carbonate rocks that are +20km thick. Rocks intruded by the Wicheeda carbonatite complex include limestones, marbles, siltstones and calcareous sedimentary rocks of the upper Cambrian to lower Ordovician Kechika Group.
- Major tectonic features surround the McGregor plateau The Wicheeda carbonatite is hosted in the McGregor plateau, which is bounded by the McLeod fault to the west and a major fault to the east as an extension of the Rocky Mountain Trench. District-scale faults are typically major controlling, deep-seated features related to carbonatite & syenite emplacement.
- Alkaline-related carbonatite intrusion (Fig 6) The Wicheeda deposit is part of a steeply-dipping, NW-trending, carbonatite-syenite intrusive complex (330ma-360ma) which intruded Proterozoic metasedimentary limestone and siltstone rocks of the Kechika Group.
- Globally rare phanerozoic carbonatite-related complex Most carbonatites are restricted to Precambrian cratons and very few complexes have formed in British Columbia. In BC, carbonatites were emplaced at ~700ma, ~500ma and ~330ma (Wicheeda's age). Other carbonatite complexes of the Phanerozoic Foreland Belt are the Aley, Ice River, Bearpaw Ridge, Kechika, Mount Mather Creek and Rock Canyon occurrences. The Wicheeda carbonatite complex is known to extend +13km to the south from Wicheeda Lake.

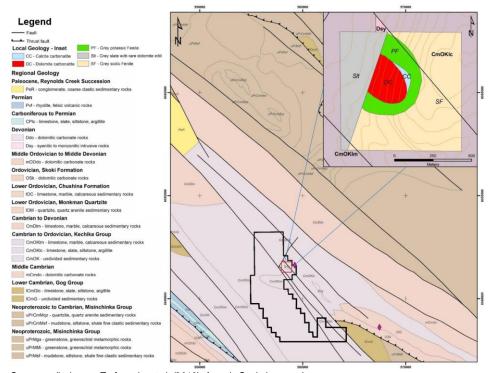
Fig 5 Plan view, British Columbia geological map – Wicheeda lies within the BC alkaline province (inset) along with other alkaline deposits Kechika, Aley, Bearpaw Ridge, Mount Mather, Ice River and Rock Canyon.



# Wicheeda Geology, Controls and Key Exploration Targets

- The Wicheeda alkaline carbonatite complex consists of an intrusive carbonatite plug (the primary area of interest at Wicheeda) along with several carbonatite and syenite dikes and sills.
- The Wicheeda LREE deposit geology is relatively simple There are only four major lithologies on site and the REE-bearing dolomitized carbonatite unit outcrops at surface. The main units are: i) dolomite carbonatite; ii) xenolithic dolomite carbonatite; iii) syenite; and iv) limestone. These units lie along a subvertical fault in contact with the Kechika Group limestone and calcareous sediments (Fig 6 & 7). The rocks subsequently underwent alkali metasomatism leading to the development of potassic fenite alteration (proximal potassic fenite: K-feldspar & biotite-rich; distal sodic fenite: amphibole & albite-rich) adjacent to the carbonatite unit in the Proterozoic sediments. Later hydrothermal activity led to a multi-stage dolomitization event, followed by REE mineral precipitation.
- Solid grade continuity that is open pittable The carbonatite host is a massive unit, with coarse-grained dolomite crystals (cream colour with hematite halos), along with minor fine-grained disseminated biotite, pyrite and apatite. REE mineralization is developed in monazite and bastnaesite-series fluorocarbonates (bastnaesite, synchysite and parisite in approximately equal proportions) in and along fractures, as clots and in vugs.

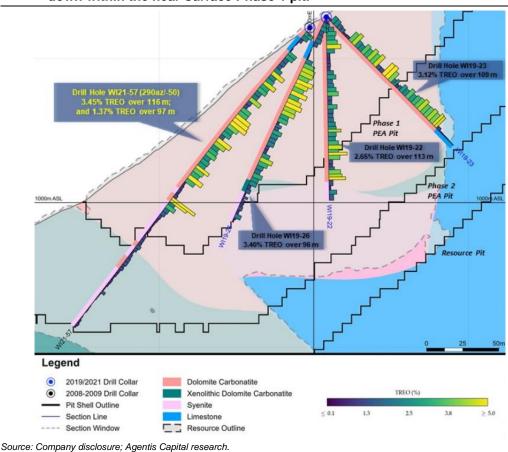
Fig 6 Plan view, district geological map (1:250,000 scale) – Wicheeda property claims total 4,244ha (black outline). Note the Wicheeda deposit property geology plan view (inset in the upper right corner).



Source: Company disclosure; Trofanenko et al. (2016); Agentis Capital research.

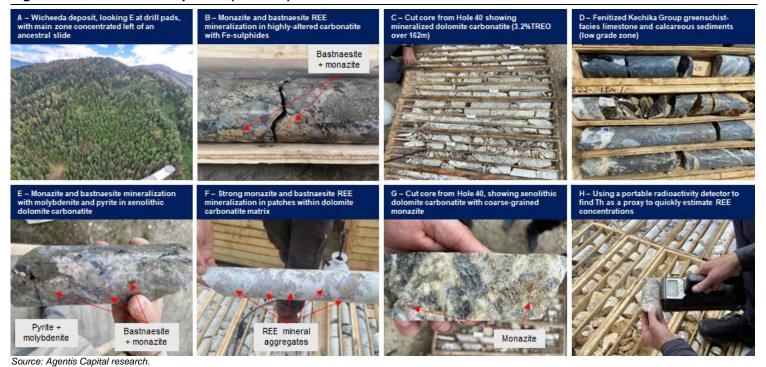
- Minimal internal waste The carbonatite is mineralized throughout, offering excellent potential grade control. Hydrothermal concentration is likely what caused the strong grade consistency and broad distribution on mineralization, with nearly all of the dolomite carbonatite containing +1%TREO.
- Well-defined geometries (Fig 7) The carbonatite is interpreted to be a deformed plug or sill, with an oblong shape and a subvertical dip. The unit is reasonably well defined by drilling as having a ~360m extent along strike N-S, ~160m thickness (E-W) and ~250m width that extends down-dip. The Wicheeda carbonatite is exposed over an area of +20,000m². Carbonatite and syenite contacts with the limestone host rock are continuous and sub-vertical, related to a major fault. These simple geometries have aided in the development of a solid geological model early in the project's life. Distinction between ore and waste is expected to be easy, as the units are clearly distinguishable in core (Fig 8).
- Grade is strongly correlated with rock type REE mineralization is zoned with low-, medium- and high-grade material. Low-grade (<1.5%TREO) mineralization is developed in fenitized Kechika Group rocks, syenitic intrusive rocks and fresh mafic dike xenoliths. The medium-grade (1.5% 2.3%TREO) zone is related to *mixed zones*, where the xenolithic dolomite carbonatite contains fenite, syenite and mafic dike xenoliths between 30% and 70% of the carbonatite. High-grade (+2.3%TREO) material is related to the massive dolomite carbonatite and to some extent, the xenolithic dolomite carbonatite where the country rock xenoliths are lesser (<30%).
- Continue to iterate geological model as knowledge base grows We note the highest grades appear to be within the dolomite carbonatite outcropping along surface, with some lower, but still economic grades in the xenolithic dolomite carbonatite and syenite units, as highlighted along the drill traces in Fig 7. In our view, geological model iteration and resource updates are always beneficial as additional drilling continues to paint the picture with respect to contacts, major structures and extents of mineralization. We think the 3.5km (12 holes) of infill and expansion drilling in 2022 will tighten the geological model and convert a large percentage of the inferred to indicated.

Fig 7 Wicheeda Main Zone, vertical cross section (looking NW) – Highlighting hole WI21-57 which returned 3.5%TREO over 116m and 1.4%TREO over 97m lower down within the near-surface Phase 1 pit.



- LREE mineralogy is favourable Unweathered coarse-grained monazite and bastnaesite are the principle REE minerals in the Wicheeda LREE deposit. These minerals are known to be readily recovered via flotation and hydrometallurgical methods. LREE mineralization is largely in aggregates and patches in veins and vugs. Vein mineralization is typically a few centimetres to over a metre in thickness and has only been documented in the dolomite carbonatite. Vuggy and disseminated mineralization has been observed in all lithologies, except the unaltered Kechika Group limestone. We highlight core photos in our site visit images in Fig 8.
- Low radioactivity The Wicheeda LREE mineralization is considered "clean" as it has minimal radioactive by-products, with <10ppmU and 300-500ppmTh (based on work to date). For reference, Mt. Weld ore contains 30ppmU and 750ppmTh on average. We think health and safety concerns are minimal, as exposure of a worker to material containing 10ppm U and 500ppmTh staying 1 m away from a large mass of the rock for a working year, leads to a total exposure of ~2.0mSv, well below the dose limit for a Naturally Occurring Radioactive Materials (NORM) worker, 20mSv.
- Solid resource established from brief, successful drilling history Resources (I & I) are at critical mass with of 34.5mt at 2.0%TREO (Fig 9). The resource outline is shown in the context of 2019 drilling in Fig 7. Defense's maiden 2019 drill program (2,008m over 13 holes) was designed to test the extents of the Wicheeda deposit, building off the 14 holes drilled in 2008 and 2009 by Spectrum. 2019 drilling highlights included:
  - o Hole 31: 4.5%TREO over 83m, incl 5.6%TREO over 33m
  - Hole 21: 3.4%TREO over 110m (from surface)
  - Hole 26: 2.9%TREO over 126m (from surface), incl 4.3%TREO over 48m

Fig 8 Wicheeda site visit photos (Jul 2022) of site terrain and drill core



#### **Wicheeda Mineral Resource Estimate**

Nov/2021 mineral resource estimate (Fig 9) – The Nov/2021 mineral resource estimate (MRE) established 5.0mt of indicated at 2.95%TREO and 29.5Mt of inferred at 1.83%TREO (CoG of 0.50%TREO and basket price deck of \$18.66/kgREO). Of the 34.5mt pit constrained resource, 26.1mt (at 2.3% TREO) was converted into the optimal pit shell depicted in the 2021 PEA. The PEA mineral inventory implies a LOM strip ratio of 1.75:1(w:o), with the higher-grade phase 1 pit (12.5mt at 2.9%TREO) at an even lower 0.63:1 strip. Fig 7 & 10 depict drilling in context of the Phase 1 PEA, Phase 2 PEA and constrained resource pits.

Fig 9 Wicheeda pit constrained MRE (effective date: November 7/2021)

Category	Tonnes (Mt)	Grade (% TREO)	Contained Metal (kt REO)
Indicated	5.0	2.95	148
Inferred	29.5	1.83	539
Total	34.5	1.99	687
PEA Mine Plan	26.1	2.33	609

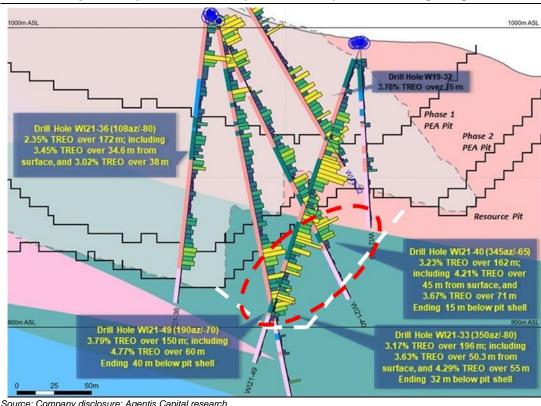
Source: Company disclosure; Agentis Capital research.

### **Resource Expansion Potential and Exploration Targets**

■ Defense has built upon the 27 holes previously drilled – 2021 drilling involved 5,349m (+29 holes), aimed at resource expansion and definition. This has approximately 100% more drilling post the Nov/2021 MRE. In our view, infill drilling in 2021 has produced the strongest results to date with 14 intercepts of +3%TREO and 21 intercepts of +100m at +1%TREO. We think this is a result of a growing knowledge of the Wicheeda deposit geology and it has positive implications for a much larger indicated resource in the pending 1Q23 updated MRE.

- Thick intercepts of LREE mineralization beyond the resource pit shell -Intervals at significantly higher grades than the MRE average grade of 2.0%TREO were intersected with 2021 drilling. Defense discovered a new high-grade zone in 2021 - it lies below the existing MRE and resource pit shells (Fig 10) and includes:
  - Hole 49: 3.8%TREO over 150m incl 4.8%TREO over 60m extending mineralization ~80m below the resource shell
  - Hole 33: 3.2%TREO over 196m incl 4.3%TREO over 55m extending mineralization ~60m below the resource shell
  - Hole 40: 3.2%TREO over 162m incl 4.2%TREO over 45m from surface and incl 3.6%TREO over 71m - extending mineralization ~40m below the resource shell
  - Hole 58: 3.1%TREO over 251m incl 3.9%TREO over 80m extending mineralization ~10m below the resource shell

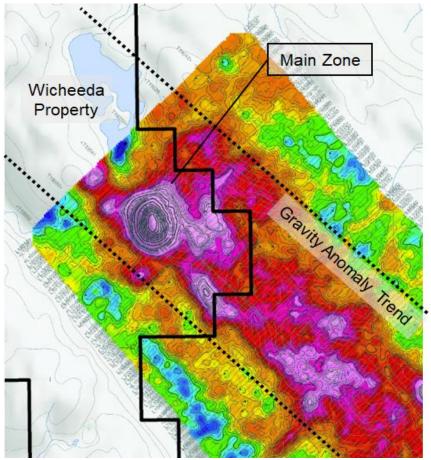
Fig 10 Cross section view of the Wicheeda Main Zone (looking W) - 2021 drilling. We highlight the +3%TREO intercept in hole 33 that extends ~60m beyond the resource limits - this resource expansion potential is highlighted in the red ellipse and a possible pit shell extension with the whitedashed line. We note the syenite is pulled below the pit and will impact a revised geological model.



- Source: Company disclosure; Agentis Capital research.
  - In 2022, Defense is drilling ~5,000m as part of an infill conversion program -Holes are strategically targeting areas of the block model to upgrade resources from inferred to indicated. These drill results are anticipated to be incorporated, along with the highly successful 2021 infill and expansionary drill results, to upgrade and expand resources in a new updated MRE. We think the indicated resource could grow substantially to ~20mt and the overall resource may increase by +25% contained TREO, possibly at a higher grade.
  - "Near Mine" exploration potential away from the Main Zone DEFN has potential to make new discoveries off-trend of the Wicheeda carbonatite. There are multiple showings west of the Main Zone and soil anomalies ~500m southwest.

- Access to historic core from holes ~300m west of the pit shell DEFN management decided the previous assay methods for historic holes were poor (with one hole not having been sampled) as they were visually enriched with REE minerals. These holes are being re-assayed by DEFN using pulp REE multi-element fusion inductively coupled ICP-MS techniques, as opposed to the Trace Element ICP-MS method used by Spectrum.
- Carbonatite intersected in historic holes to the north Spectrum drilled three
  holes in a smaller carbonatite intrusion ~400m north of the Wicheeda deposit and
  intersected carbonatite. REE mineralization was not significant (<1%TREO),
  although the accuracy of historic assay methodology is being questioned by DEFN
  management. It may be worth following up on this zone with deeper drilling.</li>
- Utilizing geophysics to identify targets across the property DEFN has identified magnetic and radiometric anomalies away from the carbonatite trend. Due to the strong magnetic properties of REEs, magnetic surveys can be a powerful tool for REE exploration. In 2011, Bolero Resources Corp conducted an airborne radiometric and magnetic gradiometer survey on the Carbo property to the SE, which captured some of the Wicheeda property. Multiple anomalies exist on the Wicheeda property; however, the survey does not extend much to the northwest beyond the Main Zone (Fig 11). We think Defense should consider conducting airborne Mag-Radiometric surveys to identify additional drill targets throughout the entire 4,244ha Wicheeda land package.
- +13km carbonatite-syenite alkaline intrusive complex The Wicheeda carbonatite may be the tip of the iceberg, as the elongate complex is interpreted to plunge north. We think there is raw exploration potential along the trend to the NW at depth.

Fig 11 Radiometric survey over Wicheeda, detecting thorium as a proxy for REE mineralization. Additional smaller anomalies lie NW of the Main Zone, within the survey extents, and we speculate that the trend continues NW.



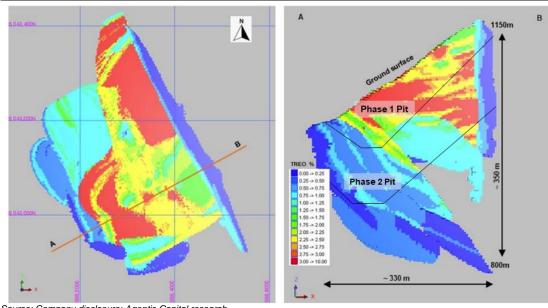
Source: Company disclosure; Agentis Capital research.

### Analysis of the 2021 PEA

The Wicheeda PEA "snapshot" contemplates a low risk, conventional open pit that highlights:

- A low strip ratio The Phase I pit (12.5mt or ~8 yrs of mine life) boasts a very low strip ratio of 0.63:1 waste to ore, minimizing operating costs for an expanded margin during the early years. The LOM strip ratio of 1.75:1 is significantly lower than the peer group average strip ratio of ~5.1:1. Over the 16 yr LOM, 26.1mt of ore will be mined along with 45.7mt of waste (minimizing the TSF & WSF footprints).
- Efficient downhill tram implying lower mining opex With the Wicheeda deposit situated on a hill (Fig 12), material haulage will be downhill, minimizing fuel costs and equipment wear. Given the nearby hydroelectric power line, we think there is potential for mining with electric haul trucks or implementing a trolley assist system.
- Phase I revenue to fund HM plant The Phase I pit shell avg grade is 2.9%TREO, with many zones of higher +3%TREO near surface material (Fig 12). The early cash flow from the near-surface Phase I resources is expected to partially fund hydrometallurgy plant construction (processing in yr 5 and forward). The Wicheeda beneficiation plant will be located at the mine site; however, the HM plant can be located elsewhere. The PEA suggests it will be located in the Prince George region.
- Relatively long payback period Early economics, driven by expansion capex for HM plant construction and higher-grade pit sequencing (Fig 12), lead to an after-tax payback period of 5 years. Mining higher grades with low waste early in the mine life is a low-risk approach as the REE market solidifies itself. The REE pricing market has been historically volatile, so it inspires confidence that Defense is not being faced with years of stripping to reach the deposit a common hurdle in the REE industry. Overall, Wicheeda's operating margin is ~60% and FCF averages \$75.5mpa (see Valuation section).
- Wicheeda property is a logistical dream When we visited Wicheeda in July 2022, we noted the favourable site layout for mine design. The deposit is located on the west side of a small mountain with moderate to steep slopes (~2:1 slope) on the eastern portion of the property. The rest of the site has subdued topography and would be easily accessible by most vehicles, with ample room for site infrastructure. See Fig 13 for the site plan in the context of topography and current infrastructure.

Fig 12 Wicheeda OP resource – Plan view (left) and cross section (right) by %TREO grade. Highlighting the high-grade Phase I pit in the context of OP resources.



Source: Company disclosure; Agentis Capital research.

#### Proven Processing Methods Support Project Economics

- No need to reinvent the wheel We think well-understood REE minerals are important when it comes to processing. Wicheeda REE minerals monazite and bastnaesite are well-understood, having been exploited at mines including Bayan Obo (China), Mt. Weld (LYC AU; Australia) and Mountain Pass (MP US; USA). It is preferable to work with minerals that have been processed before at full-scale mining operations. This removes significant risk from the project, as it is known that excellent recoveries can be obtained from monazite and bastnaesite in an industrial setting. Also, having relatively few REE minerals in the deposit is an advantage, as complicated varieties of minerals are problematic for producing a good concentrate, which can significantly increase opex. Wicheeda only has four main REE minerals in the deposit, three of which are of the same fluorocarbonate group.
- Conventional crushing, grinding and flotation The REO concentrate contemplated in the PEA will be produced using simple flotation techniques. Flotation optimization testing was conducted in 2019 and pilot plant testing was conducted in 2020. The early emphasis on concentrate production is important, as the downstream effects of producing a good concentrate are extremely positive in the REE space. The cost-saving benefits of producing a high-grade mineral concentrate can include a lower HM plant throughput and higher recoveries.
- Upgrade factor The upgrade factor at Wicheeda is significantly higher than the peer group average. <u>Defense can produce a concentrate +10x richer in REE than the mill feed at a 5.6% mass pull</u>. Tier 1 assets Bayan Obo and Mountain Pass have upgrade factors of ~8x. A high-grade concentrate reduces the required HM plant throughput, dramatically lowering opex. <u>The PEA reported opex of \$70/t milled is 69% lower than the developer peer average of ~\$230/t milled.</u>
- Potential concentrate benchmarks well Wicheeda's high-grade concentrate at +40%REO (PEA) outperforms North American developer peers that have reported potential concentrates grading 4%REO (Bear Lodge, REEMF US), 5%REO (Foxtrot, SMY CN), 7%REO (Nechalacho, AVL CN) and 10%REO (Ashram, CCE CN).
- Rare earth concentrate sales are a proven profit generator Producing a saleable concentrate de-risks the project with early cash flow and reduced initial capex. We think Wicheeda's excellent location near transportation infrastructure is a key element to their sales plan, with low transportation costs anticipated for the REE concentrate. For reference, MP Material's Mountain Pass Mine in California has been producing ~40ktpa of REO concentrate at ~50-60%REO since restarting operations in 2017.
- Early cash flows fund hydrometallurgical plant construction We think Wicheeda is well positioned to secure an early offtake agreement with their potential ability to produce a high-grade concentrate from indicated resources early in the mine life. CF from concentrate sales in the first four years will generate significant cash at a low cost to help fund HM plant expansion capex. Beginning in the fifth year, all concentrate is processed at a HM plant to produce a high-grade (+80%) REE precipitate product.
- Extensive bench-scale hydrometallurgical testing SGS conducted bench-scale hydrometallurgical testing on Wicheeda concentrate in 2020 and 2021. The recovery of REE using a gangue-leach caustic-crack method from the flotation concentrate is high the PEA assumes 87% recovery (overall recovery 70%REO). This level of recovery is exactly on par with the REE developer peers average of ~70%REO overall. The caustic crack system involves a high-temperature crack process using sodium hydroxide and hydrochloric acid (HCI) to break down the phosphate and carbonate minerals to dissolve the REE. This method is not currently used; however, variations of the caustic crack method have been used in past operations. We note that the hydrometallurgical work for the PEA was conducted on flotation concentrate from a high-grade (4.8%TREO) bulk sample, which is significantly higher than the projected average mill feed grade of 2.33%TREO, though this discrepancy was compensated for in the PEA by adjusting recoveries downwards.

Fig 13 Wicheeda project, oblique view photo (viewing NE) – We have annotated the 2021 PEA site plan (below) on a best-efforts basis. On the right side of the photo is the deposit, part of a moderately-sloping mountain on the E side of the property. We note the waste storage facility (WSF) is situated in a hillside valley, making WSF design and construction simple from an engineering perspective. The crusher, plant, and TSF are all on gentle topography, allowing for relatively straightforward construction of supporting infrastructure.

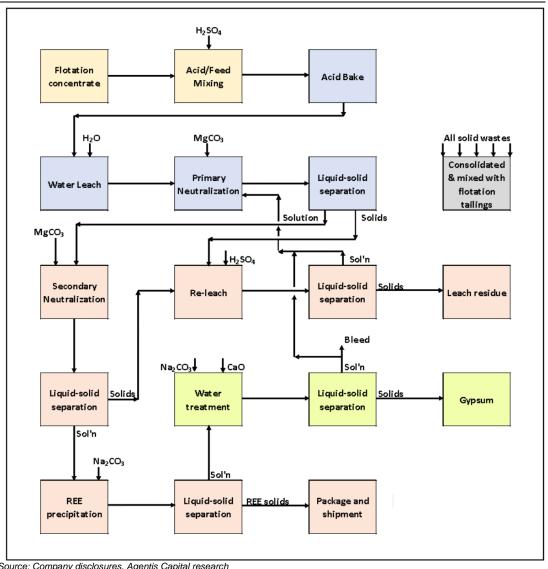


Source: Company disclosure; Agentis Capital research.

### **Optimization Potential for Upcoming PFS & Agentis Technical Insights**

- Seize the opportunity to utilize existing offsite infrastructure At the base of the Wicheeda access road, at the junction with BC Highway 97, there is a dormant sawmill with a CN line railway siding, a BC Hydro hydroelectric powerline and a large land footprint. If available to Defense, we think this is a great industrial site that could leverage the low-cost grid power and existing transportation infrastructure. Construction of a high voltage powerline to site could open the possibilities of an electric shovel and electric hauling equipment.
- Geotechnical drill holes to provide confidence in PFS pit design SRK Consulting is involved in geotechnical data collection and piezometer installation for 1,500m of core over five geotechnical holes in the 2022 drilling program. A sound geotechnical investigation will be a key ingredient to the upcoming PFS. The 2021 PEA utilizes overall slope angles of 40° (>150m height), 44° (100-150m height) and 48° (<100m height) in the limestone. As the limestone is the primary waste rock unit, we think a focus on geotechnical design will help optimize the pit geometry. Overall slope angles of +50° in the limestone could significantly reduce total waste mined.
- Flotation tests underpin reagent regimes Defense has developed a working reagent regime for flotation recovery and are continuing to test it on a variety of samples. 35 flotation tests have been completed, on the way to ~60 batch tests and 10 locked cycle tests. Results are undisclosed, but based on successful earlier testing, we think improvements will be seen over the PEA recovery estimate of 80%.
- Acid bake process test work yields promising results Technical consultant John Goode (P. Eng) joined the advisory board in February 2022. Mr. Goode, a globally acknowledged REE metallurgical expert, recommended Defense investigate an acid bake flowsheet for Wicheeda REE mineralization. Acid baking is the hydrometallurgical method that most of the world's REEs are produced from. The general flowsheet is shown in Fig 14. Preliminary met testing for the acid bake process began in late 2021 and showed strong results as announced May 31/2022, achieving ~93% average NdPr recovery from flotation concentrate, up substantially from the 87% average recovery estimate in the PEA. DEFN is confident in the ability to produce a stable REE product, removing radioactivity during processing by rejecting Th at high temperatures or by sequestering Th with phosphorous.
- Optimizing the flowsheet improves project economics We expect the acid bake method to improve upon the PEA economics with higher recoveries, as well as lower capex and opex estimations. An acid bake plant is expected to be more compact, use less reagents and use less energy than the caustic crack plant. We assume the use of the acid bake plant process in our Valuation section.
- Diverse sampling of lithologies and grades for metallurgical testing Defense
  is planning to collect enough sample mass from drilling to perform pilot plant
  processing in 2023. The flotation pilot plant campaign in 2020 produced ~1,200kg
  REO concentrate and it would be a major success to prove this hydrometallurgical
  process at an industrial scale.
- Pilot plant in the works Defense is planning to operate a continuous hydrometallurgy pilot plant (cost of ~\$2.5-5m), likely using the acid bake method. In our view this is a key de-risking milestone initiative, since proving the flowsheet at a large scale establishes accurate recovery and cost assumptions - key factors to demonstrating processing capabilities for a feasibility study.
- Hydrometallurgy plant location will have options We think the industrial centre of Prince George is an excellent location for a hydrometallurgy plant, with many mills and refineries already operating in the city. The sawmill site at Bear Lake provides another solid option. Hydrometallurgy plant operation equates to roughly half of overall opex costs due to the high consumption reagents and energy. The ability to get reagents and power to site is a necessity and is a major hurdle for many REE projects. Easy access to grid power and natural gas for process heat generation can mitigate uncertainties related to opex estimates. Additionally, Chemtrade Logistics in Prince George currently produces sulphuric acid a necessary reagent for the acid bake recovery process.

Fig 14 Acid-bake water-leach process flowsheet for Wicheeda (news release May 31/2022) - Flotation concentrate is treated with sulphuric acid (~1000 kg/t) at reasonably high temperatures (200-600°C) in a rotary furnace to convert the REEs to sulphates, which dissolve during the water leach circuit. The leachate undergoes subsequent steps to purify the REs into a saleable precipitate.



Source: Company disclosures, Agentis Capital research

# Risks & Sensitivities

We have analysed the key risks and sensitivities for DEFN and its Wicheeda project as summarized in Fig 15.

Fig 15 Defense Metals, Wicheeda REE project - Risks & sensitivities with mitigating factors

Risk/Sensitivity	Description	Mitigating Factors
Permitting	Permitting process (for REE) needs to take shape  Mining regulators in Canada have limited experience with REEs relative to other metals  There is not yet a fully integrated REE mine and process plant in Canada	Typical environmental impacts of REE mining are assumed to be nearly the same as any other commodity with respect to water management, material handling and tailings disposal; we expect Wicheeda to be treated like any other project with respect to permitting timelines and requirements  The Vital Metals (VML AU) Nechalacho T operation in NWT, Canada, has been permitted to operate
Primarily Inferred Resource	539ktREO of the 687ktREO resource (~78%) is in the inferred category	2021 & 2022 drilling program is designed to upgrade resources by targeting under-drilled areas of the deposit
Metallurgical Test Work	Bulk sample for recoveries supporting PEA was from 4.8%TREO mineralization (vs PEA mill feed at 2.3%), which may reflect higher recoveries than will be realised (PEA compensated for this discrepancy)     DEFN must prove its HM flowsheet at the pilot-plant scale	2022 met test work should reflect the expected mill feed to provide accurate recovery and mass pull estimates     Consultant John Goode is an REE processing expert; SGS is known for strong metallurgical test work
Radioactive Materials	REE minerals are often enriched with elevated levels of Th and U; Wicheeda is known to contain some low levels of Th – may impact permitting process	A well-designed process plant can manage waste effectively to keep Th out of the LREE products
Offtake Agreements	DEFN will need to secure offtake agreements for the concentrate and precipitate products, preferably from ex-China buyers to minimize off-site costs	Competitive North American landscape to secure supply of critical minerals to meet growing production targets of EVs, wind turbines and defence technologies
Execution	Avg capex overrun since 2007 is ~50% for greenfield base metal projects	Outstanding existing infrastructure mitigates capex creep     We have added a ~10% safety factor to capex and opex
Social - First Nations	Wicheeda is in the territory of the McLeod Lake Indian Band (First Nation)     First Nations require ongoing collaboration to maintain the operations' social & emotional licences in BC	A Mineral Exploration Agreement is in place with the McLeod Lake Indian Band (as of Sep/22)  The McLeod Lake Indian Band has an IBA and tax-revenue sharing agreement with the Mt. Milligan Cu-Au mine
Environmental	Radioactivity in Wicheeda mineralization (Th) will be exposed at surface Processing requires the use of many strong acids and reagents Wicheeda Lake and Wichkika Creek on the property are waterways and recreational sites that could be disrupted by mining activities The lake and surrounding area are currently covered under a recreational reserve	Ongoing metallurgical testing will aim to maximize impurity removand optimize energy and reagent usage     An extensive emergency response plan is required for TSF construction in BC and it follows best practice     Radioactivity issues can be mitigated with waste management be practices that are commonly employed in BC mining     Continuing to follow best-practice environmental monitoring procedures and transparency with regulators is expected to be beneficial through the EA process     There are currently no restrictions on exploration within the recreational reserve. We expect mitigation steps to be taken near Wicheeda Lake with any development.
Financing & Equity Dilution	DEFN will need to raise sufficient equity, at as low of a cost of capital as possible, to mitigate dilution as it advances the Wicheeda project to PFS (and beyond)  C\$440m initial capex (PEA) vs ~C\$44m market cap	Critical metals initiatives in Canada are providing worthy companies with funding in the form of grants and/or low-interest loans     Strategic investments and early offtake agreements are becoming prevalent in the critical minerals space and could lower the cost of capital
Commodity Prices	Developer share prices can be negatively impacted by downward pressure on commodity prices     REE prices can be very volatile     The REE market is dominated by China and they still hold nearly all REE refining capabilities	Rising demand for magnet rare earths has triggered large price increases since 2020 - NdPr oxide currently sells at ~\$145/kg (ex. China) and reached +\$210/kg earlier this year  Critical mineral initiatives being pushed by western governments and corporations should help to establish vertically integrated REI supply chains ex-China
COVID-19	Potential supply chain interruptions with China having a zero-case policy	Excellent location of Wicheeda should improve likelihood of findin alternative sources for necessary supplies

Source: Company disclosure; Agentis Capital research.

# Valuation

### Methodology

We value DEFN using a sum-of-parts 12-month NAV approach, underpinned by our DCF<sub>8%</sub> model for the Wicheeda project using the methods & assumptions in Fig 16-19. We provide relative positioning vs North American & Australian REE developers in Fig 1, 2, 18 & 20.

### Wicheeda LREE OP Project DCF<sub>8%</sub>

Our DCF<sub>8%</sub> model for Wicheeda is based largely on the Nov/2021 PEA mine plan (Fig 16 for assumptions & comparisons). We provide our 12-month corporate NAV table in Fig 19, LOM production profile in Fig 21, LOM FCF profile in Fig 22 and NAVPS sensitivity analysis in Fig 23. The mine involves a conventional truck and shovel open pit feeding ore to a 4,932tpd mill and is processed via flotation to produce a REO concentrate. For the first four years, the concentrate will be sold. Beginning in yr 5, a hydrometallurgy plant will be operating, producing a saleable carbonate precipitate product. We have incorporated: i) improved hydrometallurgical recoveries via the acid bake method (May 31/22 disclosure); ii) updated LT metal prices (Agentis estimates); and iii) safety factors applied to capex and opex estimates vs the 2021 PEA. We assume DEFN will execute its buy-down right for 1% of the Wicheeda NSR for C\$1m (prior to production).

Fig 16 Wicheeda LREE Project – LOM DCF<sub>8%</sub> model assumptions, parameters & outputs

	Agentis Model	2021 DEFN PEA
Model Basis	Technical report and other public disclosure	2021 PEA technical report and 2021 mineral resource estimate
Ultimate Reserve Modelled	26.1 mt @ 2.33%TREO	26.1 mt @ 2.33%TREO
Mine Life	16 years	16 years
Mine Start Year	2030	n/a
Throughput	4,932 tpd	4,932 tpd
LOM Strip Ratio	1.75	1.75
Recoveries	80% to concentrate, 93% to precipitate (74% overall)	80% to concentrate, 87% to precipitate (70% overall)
Annual Production	28.9ktREOpa	25.4ktREOpa
Mining Cost / t Mined	C\$5.40	C\$4.89
Beneficiation Cost / t	C\$26.00	C\$23.84
HM Processing Cost / t	C\$60.00	C\$55.75
Water Treatment / t	C\$2.10	C\$1.91
Site G&A Cost / t	C\$5.25	C\$4.78
AISC / kg REO	US\$5.94	Not Detailed
Royalties	Wicheeda 2% NSR bought down to 1% for C\$1m	2% NSR
Taxes	27% corporate tax (15% federal + 12% provincial) BC Minerals Tax: > of 2% Net Current Proceeds Tax & 13% Net Revenue Tax (deductable)	25% corporate tax (12% federal + 13% provincial)
Metal Prices	Concentrate: \$6.73/kg REO contained Precipitate: \$16.43/kg REO contained Underpinned by \$130/kgNdPr	Concentrate: \$5.76/kg REO contained Precipitate: \$14.04/kg REO contained Underpinned by \$100/kgNdPr
FX (CADUSD)	0.75	0.77
Initial Capex	C\$484m	C\$440m
Expansion Capex	C\$429m	C\$390m
Sustaining Capex	C\$449m	C\$409m
NPV (after tax)	C\$699m	C\$517m
IRR (after tax)	25.2%	18.0%
Payback (after tax)	4.6 years	5 years

Source: Agentis Capital research.

### **Price Assumptions**

We think NdPr prices will be supported above historic levels by strong demand growth and lagging supply driven by the EV and wind power sectors (Fig 3). Our estimates for concentrate and precipitate prices are underpinned by a long-term price assumption of \$130/kgNdPr oxide. NdPr is the value-driver in LREE deposits but contained Ce and La must be processed along with NdPr. This has caused a global oversupply of Ce and La and we believe these elements will remain in perpetual oversupply for the medium term. Accordingly, we have developed price assumptions of \$1.10/kgCe and \$1.30/kgLa.

These price assumptions contribute to an undiscounted basket price of \$22.75/kg for the Wicheeda deposit, with NdPr contributing 88% of the value. We have outlined NdPr pricing as a key sensitivity in Fig 23, assessing the potential impacts of \$60/kgNdPr (2019 levels) and \$200/kgNdPr (2022 highs) on NAVPS.

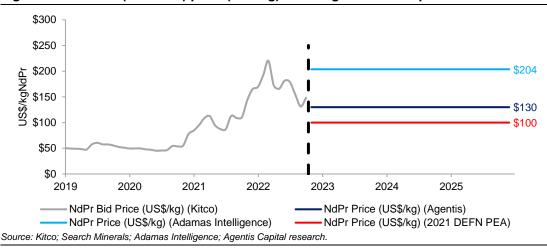
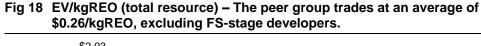
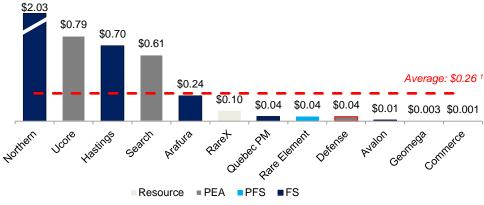


Fig 17 NdPr oxide (ex-China) price (US\$/kg) and long-term assumptions

#### Wicheeda Inferred Resource Outside PEA Mine Plan

We have elected to not add the entire Wicheeda mineral resource to the back of our DCF<sub>8%</sub> mine plan at this time and use the optimized OP resource depicted in the PEA. We are optimistic that Defense will upgrade a significant portion of the inferred resource tonnes to indicated; however, at this early PEA stage, we value the remaining inferred resource of 79.3ktREO using a peer average EV/kgREO multiple approach, excluding FS-stage developers (Fig 18).





Note: 1. Peer average excludes FS-stage developers and DEFN. Source: Company disclosures; Agentis Capital research.

### **Corporate NAV Breakdown**

Our sum-of-parts NAVPS implies a **C\$3.50/sh** valuation for DEFN (partially diluted basis). Our DCF<sub>8%</sub> model for the Wicheeda project contributes 96% of our mineral NAV (Fig 19). We have assumed DEFN will fund 100% of initial capex for Wicheeda via debt at 8% WACC (included in corporate cash flows). We value the Wicheeda inferred resource inventory (excluded from mined resources) at \$24m using an EV/resource comparable of \$0.30/kgREO. We assume a C\$5m equity raise (at market) to bridge its remaining exploration and PFS related expenditures to be incurred in 2022. We divide by a partially diluted share capital of 210m, representative of ITM dilutive securities and our 2022 financing assumption. Overall, we derive a \$551m sum-of-parts NAV for DEFN.

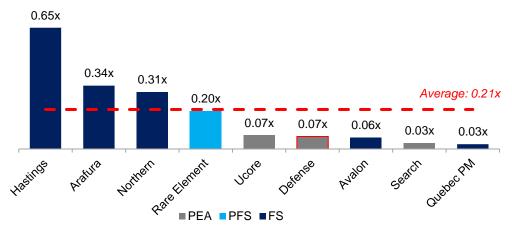
Fig 19 Corporate NAV breakdown - 12 months

NAV Breakdown	US\$mm	US\$/sh	C\$/sh	% Total
DCF				
Wicheeda - DCF8%	\$524.0	\$2.50	\$3.33	95.7%
Comparative Analysis - EV/kgREO				
Wicheeda Inferred - 79.3ktREO & \$0.30/kg	\$23.8	\$0.11	\$0.15	4.3%
Total Mineral Asset NAV	\$548	\$2.61	\$3.48	100.0%
Working capital	\$3.4	\$0.02	\$0.02	
LT Debt	-	-	-	
Total Non-Operating NAV	\$3.4	\$0.02	\$0.02	
Net Asset Value	\$551	\$2.62	\$3.50	
ource: Agentis Capital research.				

### **Relative Positioning**

Our NAVPS of C\$3.50 implies that DEFN trades at a P/NAV multiple of 0.07x, whereas North American & Australian REE developer peers trade between 0.03x-0.65x P/NAV (avg of 0.21x). North American is lacking REE developers (Rare Element, Ucore, Defense, Avalon, Search & Quebec PM), as such we include Australian developers in our relative positioning (Hastings, Arafura & Northern). These Australian FS-stage developers have garnered higher P/NAV multiples vs the North American counterparts - potentially driven by the success of Lynas Rare Earths (LYC AU) and better understanding of the REE sector(?).

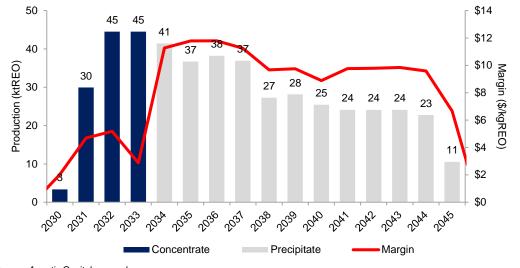
Fig 20 Relative Positioning, P/NAV¹ – REE developers trade between 0.03x-0.65x



Note: 1. NAV collected on a best-efforts basis, development study NPV(8-10%) used in lieu of analyst consensus where unavailable. Source: FactSet; Agentis Capital research.

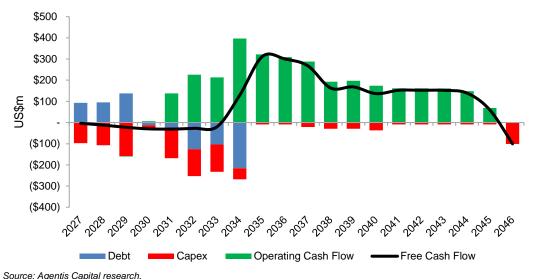
#### **Agentis LOM Estimates**

Fig 21 Wicheeda Project - Agentis model, production profile (ktREO) and margin (\$/kgREO). Production averages 28.9ktpa REO at a margin of \$8.73/kg over a 16yr LOM.



Source: Agentis Capital research.

Fig 22 Wicheeda Project - Agentis model, FCF profile (\$130/kgNdPr, 0.75CADUSD, 8% WACC). FCF averages \$137mpa over a 16yr LOM.



Source: Agentis Capital research.

Fig 23 DEFN – C\$NAVPS sensitivity analysis (NdPr price vs discount rate, FX, capex, opex, grade & HM recovery).

Wie	Wicheeda Project NAVPS (C\$) Sensitivity - Discount Rate (%) vs NdPr Price (US\$/kg)							
			NdF	Pr Price (US	\$/kg)			
		\$60	\$90	\$110	\$130	\$150	\$170	\$200
Rate	10%	(\$0.63)	\$0.75	\$1.63	\$2.53	\$3.38	\$4.25	\$5.55
	8%	(\$0.59)	\$1.19	\$2.34	\$3.50	\$4.62	\$5.75	\$7.45
Ē	7%	(\$0.55)	\$1.47	\$2.79	\$4.12	\$5.40	\$6.70	\$8.64
Discount	5%	(\$0.43)	\$2.22	\$3.96	\$5.71	\$7.41	\$9.13	\$11.70
ق	-	\$0.33	\$5.78	\$9.43	\$13.12	\$16.71	\$20.35	\$25.79

	Wicheeda Project NAVPS (C\$) Sensitivity - FX (CADUSD) vs NdPr Price (US\$/kg)								
			NdP	r Price (US	\$/kg)				
		\$60	\$90	\$110	\$130	\$150	\$170	\$200	
	0.85	(\$1.24)	\$0.48	\$1.51	\$2.50	\$3.50	\$4.50	\$6.00	
SD	0.80	(\$0.90)	\$0.83	\$1.88	\$2.97	\$4.02	\$5.09	\$6.68	
CADUSD	0.75	(\$0.59)	\$1.19	\$2.34	\$3.50	\$4.62	\$5.75	\$7.45	
CA	0.70	(\$0.24)	\$1.63	\$2.86	\$4.11	\$5.30	\$6.51	\$8.32	
	0.65	\$0.15	\$2.14	\$3.46	\$4.81	\$6.08	\$7.38	\$9.33	

	Wicheeda Project NAVPS (C\$) Sensitivity - CAPEX Δ (%) vs NdPr Price (US\$/kg)									
			NdP	r Price (US	\$/kg)					
		\$60	\$90	\$110	\$130	\$150	\$170	\$200		
	+20%	(\$1.15)	\$0.70	\$1.86	\$3.01	\$4.17	\$5.29	\$6.99		
X	+10%	(\$0.87)	\$0.97	\$2.12	\$3.25	\$4.43	\$5.52	\$7.22		
CAPEX	-	(\$0.59)	\$1.19	\$2.34	\$3.50	\$4.62	\$5.75	\$7.45		
Ö	-10%	(\$0.31)	\$1.44	\$2.58	\$3.72	\$4.85	\$5.98	\$7.69		
	-20%	(\$0.04)	\$1.70	\$2.83	\$3.95	\$5.08	\$6.21	\$7.90		

	Wicheeda Project NAVPS (C\$) Sensitivity - OPEX Δ (%) vs NdPr Price (US\$/kg)								
			NdP	r Price (US	\$/kg)				
		\$60	\$90	\$110	\$130	\$150	\$170	\$200	
	+20%	(\$2.06)	\$0.20	\$1.30	\$2.45	\$3.62	\$4.73	\$6.42	
×	+10%	(\$1.24)	\$0.71	\$1.87	\$2.99	\$4.13	\$5.26	\$6.96	
OPEX	-	(\$0.59)	\$1.19	\$2.34	\$3.50	\$4.62	\$5.75	\$7.45	
0	-10%	(\$0.07)	\$1.64	\$2.79	\$3.96	\$5.06	\$6.19	\$7.88	
	-20%	\$0.38	\$2.06	\$3.18	\$4.32	\$5.46	\$6.59	\$8.28	

	Wicheeda Project NAVPS (C\$) Sensitivity - Grade Δ (%) vs NdPr Price (US\$/kg)							
			NdP	r Price (US	\$/kg)			
	_	\$60	\$90	\$110	\$130	\$150	\$170	\$200
	-20%	(\$1.72)	\$0.07	\$0.98	\$1.89	\$2.79	\$3.73	\$5.06
<u>e</u>	-10%	(\$1.11)	\$0.61	\$1.66	\$2.68	\$3.73	\$4.73	\$6.26
Grade	-	(\$0.59)	\$1.19	\$2.34	\$3.50	\$4.62	\$5.75	\$7.45
O	+10%	(\$0.12)	\$1.78	\$3.03	\$4.28	\$5.53	\$6.77	\$8.65
	+20%	\$0.34	\$2.34	\$3.74	\$5.08	\$6.44	\$7.79	\$9.82

Wic	Wicheeda Project NAVPS (C\$) Sensitivity - HM Recovery (%) vs NdPr Price (US\$/kg)							
			NdP	r Price (US	\$/kg)			
		\$60	\$90	\$110	\$130	\$150	\$170	\$200
>	87%	(\$0.84)	\$0.91	\$2.01	\$3.07	\$4.14	\$5.21	\$6.82
ЭVС	90%	(\$0.71)	\$1.07	\$2.16	\$3.28	\$4.38	\$5.48	\$7.13
Recovery	93%	(\$0.59)	\$1.19	\$2.34	\$3.50	\$4.62	\$5.75	\$7.45
W H	96%	(\$0.46)	\$1.34	\$2.52	\$3.71	\$4.86	\$6.02	\$7.76
uraa: Agantia (	99%	(\$0.34)	\$1.49	\$2.70	\$3.93	\$5.10	\$6.29	\$8.07

Source: Agentis Capital research.

# Multiple Key Catalysts – Next 18 Months

We think there are a series of key catalysts that will be important in driving DEFN's valuation over the next 12-18 months and beyond (Fig 24).

Fig 24 Key catalysts - next 18mo

Catalyst	Description & Potential Impact	Target Date
Near mine infill & exploration drilling results	DEFN is completing ~5,000m of diamond drilling in 2Q22-3Q22 to: i) delineate/upgrade existing resources; ii) assess exploration targets; iii) collect key geotechnical and hydrogeological data, and; iv) produce samples for ongoing met testing. We like DEFN's emphasis on mine & processing optimization - proof of concept in the REE space is key to de-risking.	(4Q22-1Q23)
	Potential Impact: Minor positive to very positive – strong results from the infill drilling program will have positive implications for the updated MRE. The geological model will keep being refined, aiding in ongoing exploration efforts.	
Met testing results	Flotation testing and hydrometallurgical testing using the acid bake method are ongoing. Results will dictate the construction decision of the pilot plant and the methods that will be used in the large-scale testing.	(4Q22-1Q23)
	Potential Impact: Positive – more results achieving +95% REE extraction (~93% recovery from concentrate) from acid bake testing will help decide the hydrometallurgy flowsheet that provides the basis for the PFS study and beyond. Flotation testing will continue to optimize mass pull, recovery and concentrate grade.	
Pilot plant construction	Defense is planning a HM pilot plant (PEA), likely using the acid bake method. We think this is a key milestone for REE projects. Proving the flowsheet at pilot plant scale establishes accurate recovery and cost assumptions.	(4Q22-1Q23)
	<b>Potential Impact:</b> Very positive and de-risking milestone – mass pull, recovery and grade results for the REE precipitate will provide sound assumptions for economic analysis. Pilot plant studies will be necessary for a feasibility study.	
Revised mineral resource estimate	The 2021 diamond drilling of 29 holes (5.4km) are not included in the MRE (or the planned 5km in 2022) and we have a high conviction that a revised MRE will see strong upgrades from inferred to indicated, as well as a potential +20% expansion in tonnage (Fig 9).	(1H23)
	<b>Potential Impact:</b> Very positive – upgrading inferred tonnes to indicated tonnes will increase confidence in the MRE. An expanded updated MRE could provide the basis for an extended mine life.	
Pre-feasibility study	Defense is conducting ongoing metallurgical testing, geotechnical investigations and resource upgrade drilling. We think Defense is doing the right things towards producing a PFS. The added detail of the study will improve the accuracy of the project economics estimate and we think it has strong potential to reflect positively.	(2H23-1H24)
	<b>Potential Impact:</b> Positive – we think the Wicheeda asset will start to get on the market's radar as a project that has critical mass.	
Property wide exploration?	The Wicheeda property hosts numerous magnetic/radiometric anomalies that should be followed up on with drilling. We think additional airborne geophysics could potentially identify additional drilling targets. Defense is using multi-element fusion ICP-MS to re-assay 2008/2009 core from drilling away from the Main Zone.	?
	Potential Impact: Minor positive to positive – discovery of another potential deposit along strike or off-trend could expand Wicheeda into a district-scale operation. Results from the re-assay program could warrant additional drilling.	
Potential strategic investment?	Senior REE companies have been making strong profits and are expanding their portfolios. Governments and large consumers are also making strategic investments to secure supply of REE products.	?
	Potential Impact: Major positive – involvement of a senior mining company could bring funding and technical insights to rapidly advance Wicheeda.	
Early offtake agreement?	Corporate consumers are making investments in the REE space and are willing to make investments with early offtake agreements.	?
	Potential Impact: Positive to very positive – an early offtake agreement could bring in the necessary capital to develop Wicheeda and ensure that the REE product has a prospect of being sold. Locking in a long-term contract would also alleviate some market and price risks. A North American offtake agreement could be a big potential breakthrough for Defense.	

Source: Agentis Capital research.

# Appendix A - Management & Board

#### Management Team

**Craig Taylor, CEO & Director** – Mr. Craig Taylor has been a Director and the CEO of Defense Metals since 2018 and has helped advance the project into the development stage with the 2022 PEA. From 2007 until 2016, he was a director of Advantage Lithium Corp (AAL CN), a formerly TSX-V listed junior exploration company. From 2012 until 2016, he was a Director of Clear Mountain Resources Corp. (CY CN), now named Patriot One Technologies Inc. (PAT CN).

**Luisa Morena, PhD, President & Director** – Dr. Luisa Moreno is a Physics Engineer with a PhD in Materials Science and Mechanics from Imperial College London, in the United Kingdom. Dr. Moreno is the CEO of Graphano Energy Ltd. and the Founder & Managing Director of Tahuti Global Inc. She has held Senior Analyst positions at Toronto-based investment companies, specializing in rare earths. She assists companies, governments and institutional investors with economic and technical assessments of mineral assets and technologies. Dr. Moreno holds officer/director positions with Tantalex Lithium (TTX CN), Amex Exploration (AMX CN), Graphano Energy (GEL CN) and Tahuti Global.

**Ryan Cheung, CFO & Director** – Mr. Ryan Cheung, CPA, CA, has been providing accounting, management, securities regulatory-compliance services to private and publicly listed companies. Mr. Cheung also serves as an officer and/or director of several publicly listed companies. Mr. Cheung holds a Bachelor of Commerce degree from the University of Victoria and is a member of the Chartered Professional Accountants of British Columbia.

**Kristopher J. Raffle, QP & Director** – Mr. Kristopher J. Raffle, B.Sc., PGeo, serves as the Qualified Person for Defense Metals. Mr. Raffle is also a current director of New Placer Dome Gold Corp. Mr. Raffle is a Partner and Principal Geologist with geologic consulting firm APEX Geoscience. Mr. Raffle has over 20 years' experience conducting property evaluation, intensive exploration data analysis, exploration-program design, and geological modelling, with respect to Archean and Carlin-type gold, copper-gold porphyry, gold-silver epithermal, volcanic-hosted massive sulphide, rare earth element, and kimberlite diamond deposits throughout Canada, USA, and Mexico.

**William H. Bird, Director** – Dr. William H. Bird, PGeo, has a combination of business and mining industry expertise, with a background as officer and independent director for publicly traded mineral resource companies. He is the former the CEO of Medallion Resources (MDL CN) and Rare Element Resources (REEMF US). Dr. Bird taught various mineralogy courses at the University of Colorado and Colorado State University. His research has generally dealt with the mineralogy and ore deposits of precious, base, and minor metals. As a consultant and a company executive, he managed projects involving industrial, ferrous, precious, minor, and base metals.

**Maximilian Sali, Director** – Mr. Sali has been in the capital markets for ten years managing private family assets. He is the president of Baccarat Investments Inc., a private company providing investing and management consulting services to publicly listed companies.

**Andrew Burgess, Director** – Mr. Andrew S. Burgess, C.A., C.P.A. is a Chartered Accountant, a Certified Public Accountant, and the former CFO of Spectrum Mining Corporation. He is an experienced professional with more than 35 years accounting, finance, and financial reporting experience with listed companies. Mr. Burgess has a broad base of experience with natural resource, service, and industrial companies. He has extensive public company and IPO experience.

John Goode, Head of Metallurgy – Mr. Goode has been responsible for design, monitoring, and interpretation of several programs of beneficiation and hydrometallurgical testwork. He has conducted engineering and economic evaluations of new and existing processing operations for the recovery of rare earth elements, and other elements. Mr. Goode holds a Bachelor of Science (Chemical Engineering in Metallurgy) from the Royal School of Mines, London University, United Kingdom. Mr. Goode spent 18 years at Kilborn Engineering, where he attained the title of Vice President, Mining and Metallurgy and Director, managing a team of engineers responsible for feasibility and due diligence studies, and the design and commissioning of REE recovery and separation facilities. Mr. Goode has over 50 years' experience as a metallurgist and has worked on numerous rare earth projects located in Canada, USA, China, Australia, Russia, and elsewhere.

# Appendix B – Wicheeda Project History

### A Synoptic History of the Wicheeda LREE Project

- Early exploration Involved a 1961 regional aeromagnetic survey by the Geological Survey of Canada, which identified a magnetic high anomaly over the Wicheeda carbonatite.
- 1986 Teck Explorations Limited (Teck) Staked initial claims and conducted surface work, outlining the carbonatite and discovering the enrichment of LREEs.
   When the Teck claims lapsed, the area was re-staked in 2001 by private company Spectrum Mining Corporation (Spectrum).
- 2001 to 2009 Spectrum Spectrum Mining Corporation, led by Chris Graf, completed 4 drill holes in 2008 and 15 drill holes in 2009 that were designed to test REE soil anomalies. Subsequently, Spectrum conducted mineralogical testing, several bench-scale metallurgical testing programs and established a non-compliant inferred resource estimate of 11.3mt at 2.0%LREE.
- Nov 26/2018, Defense Metals options Wicheeda from Spectrum To acquire 100% of the Wicheeda REE project, DEFN was required to: i) incur qualifying expenditures of C\$1.93m; ii) make staged cash payments totalling C\$370k; iii) make staged common share payments totalling 600k; iv) issue a 2% NSR (buyback provision of 1% for C\$1m); and v) upon completion of all other obligations, issue shares equal to 49% of the i/o of DEFN (subsequently 78.1m shares) and a final cash payment of C\$100k.
- Jan 8/2019, maiden mineral resource estimate Defense announced a NI 43-101 compliant inferred resource estimate of 11.4mt of 2.0%LREE. Defense also completed a 30t bulk sample for metallurgical test work.
- Oct 24/2019, metallurgical test results for flotation testing Defense announced results from 40 batch flotation tests, achieving 85.7% recovery and a 48.7%REO concentrate grade.
- **Feb 18/2020**, **hydrometallurgical test results** Defense announced results from bench-scale HM testing, achieving 90% REE extraction from REO concentrate.
- May 13/2020, updated mineral resource estimate Defense announced an updated MRE of 4.9mt indicated resources at 3.0%LREO and 12.1mt inferred resources at 2.9%LREO.
- Sep 23/2020, flotation pilot plant results Defense announced results from pilot plant processing, with average REO recovery of 77.3% and concentrate grading 51.6%REO.
- Feb 16/2021, bench-scale hydrometallurgical testing results Results from prepilot hydrometallurgical test work achieved 91.5% to 97.3% REE extraction from flotation concentrate.
- Nov 24/2021, maiden development study and updated MRE Positive results from its PEA that yielded an after-tax C\$512m NPV<sub>8%</sub> & 18% IRR.
- Jan 14/2022, Defense fulfills option agreement Earned a 100% interest in Wicheeda upon fulfilling all staged payments, exploration expenditures and final lump sum cash/share payments (no additional milestone payments outstanding).
- May 31/2022, acid bake process achieves improved hydrometallurgical recoveries – Defense announced results from bench-scale acid bake hydrometallurgical testing, which achieved +95% NdPr extraction from flotation concentrate.
- Sept 7/2022, Defense signs mineral exploration agreement with the McLeod
   Lake Indian Band DEFN and the McLeod Lake Indian Band entered an
   agreement addressing the interests of both parties with respect to Wicheeda
   exploration. The agreement established a framework for cooperation going forward.

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#### Company specific disclosure details

Company Name	Symbol	Disclosures
Ascot Resources Ltd.	AOT CN	1,2,3,4,8
Defense Metals Corp.	DEFN CN	1
Imperial Metals Corporation	III CN	1,2,3,4
K92 Mining Inc.	KNT CN	1,4,8
NorthIsle Copper and Gold Inc.	NCX CN	1,2,3,4,8
Skeena Resources Limited	SKE CN	1,2,3,4,8
Arizona Metals Corp.	AMC CN	2,3,4,8
Capitan Mining Inc.	CAPT CN	1
Dolly Varden Silver Corporation	DV CN	1
Endurance Gold Corporation	EDG CN	1,2,3,4,8
GFG Resources Inc.	GFG CN	1
Heliostar Metals Ltd.	HSTR CN	1,2,3,4
Inflection Resources Ltd.	AUCU CN	2,3,4,8
Maple Gold Mines Ltd.	MGM CN	1,2,3,4,8
Mawson Gold Limited	MAW CN	4,8
Mayfair Gold Corp.	MFG CN	1,2,3,4
Minaurum Gold Inc.	MGG CN	1,4,8
Northern Superior Resources Inc.	SUP CN	2,3
NorthWest Copper Corp.	NWST CN	2,3,4
Outback Goldfields Corp.	OZ CN	4,8
Rockhaven Resources Ltd.	RK CN	1,4,8
Snowline Gold Corp.	SGD CN	1,4,8
Southern Cross Gold Ltd.	SXG AU	4,8
Vizsla Silver Corp.	VZLA CN	1
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