

Good news from Norseman

Mining and exploration

18 March 2019

Galileo Mining Ltd (ASX:GAL) is a junior minerals company exploring for nickel-cobalt-copper in Western Australia. Galileo has progressed its evaluation programmes on its Norseman and Fraser Range assets with Norseman JORC resources increasing 18% and metallurgical studies underpinning assumptions for an economic scoping study. With the addition of the Goblin prospect results the Norseman JORC MRE is now some 25Mt containing ~26.6kt Co and over 122kt Ni as the basis for economic evaluation. The demand for cobalt continues to look robust over the medium to long term and although prices have fallen significantly from a peak of US\$94.50/kg in Mar-2018 to US\$32.00/kg the economic opportunity continues to appear robust with favourable, longer-term industry metrics.

Business model

Galileo Mining Ltd is a junior minerals company established with the purpose of exploring and developing nickel, cobalt and copper in Western Australia. Although the Fraser Range projects are at an early exploration stage, the company's Norseman project is progressing its preliminary economic evaluation as evidenced by the 18% increase in cobalt tonnage. The Company plans to further progress Norseman through a Scoping Study whilst continuing to explore and progress its other assets.

Scenario analysis

We have applied a comparative methodology in our considerations based on an analogue pre-development model broadly defined under scoping parameters. Given the strong similarities of Norseman to the analogue model we are comfortable in applying the same data inputs. We note the Norseman project has a smaller MRE at this stage but adjust for that through a risk overlay. With GAL working through its own scoping study we highlight that our current assumptions could be subject to significant adjustment as more project specific data comes to hand.

Valuation of \$0.36/share (previously \$0.32/share)

Valuing pre-production assets is a subjective exercise, particularly when the resource is in a continuing evaluation phase. We use a discounted cashflow methodology to assign a 'likely' value to the resource where possible, applying a discretionary probability weighting as a secondary overlay to determine a Net Present Value (NPV). On this methodology we assign a base case valuation of \$0.36/share to GAL (\$0.30 ex-cash and corporate costs). **On a look-through basis, the reference share price (\$0.165) would suggest the market is weighting the Norseman asset at a commercial probability of <10% which does reflect an exploration outlook as appropriate but rather understates the potential upgrading and progress that can be delivered on Norseman over the next 6 months. The share price is likely reflecting the uncertainty in the cobalt price...pre-development companies are not immune to commodity price volatility.**

Share details

ASX Code	GAL
Share price (13-Mar)	\$0.165
Market Capitalisation	\$20.0M
Shares on issue	120.3M
Net cash at 31 Dec 2018	\$9.1M
Free float	43.7%

Share performance (since listing)



Upside Case

- Potential for GAL to consider a smaller scale, higher grade, shorter-lead time development than modelled – there is a high-grade option at Norseman
- Resource potential could significantly expand on continuing positive exploration outcomes
- Co price (in particular) significantly higher than modelled through med-long term

Downside Case

- Capital, operating and financing assumptions maybe higher and more dilutive than modelled
- Co price (in particular) significantly lower than modelled through med-long term
- Timing of start-up could be later than modelled, particularly given the still early nature of the evaluation programme

Board of Directors

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Galileo Mining Ltd – a step forward

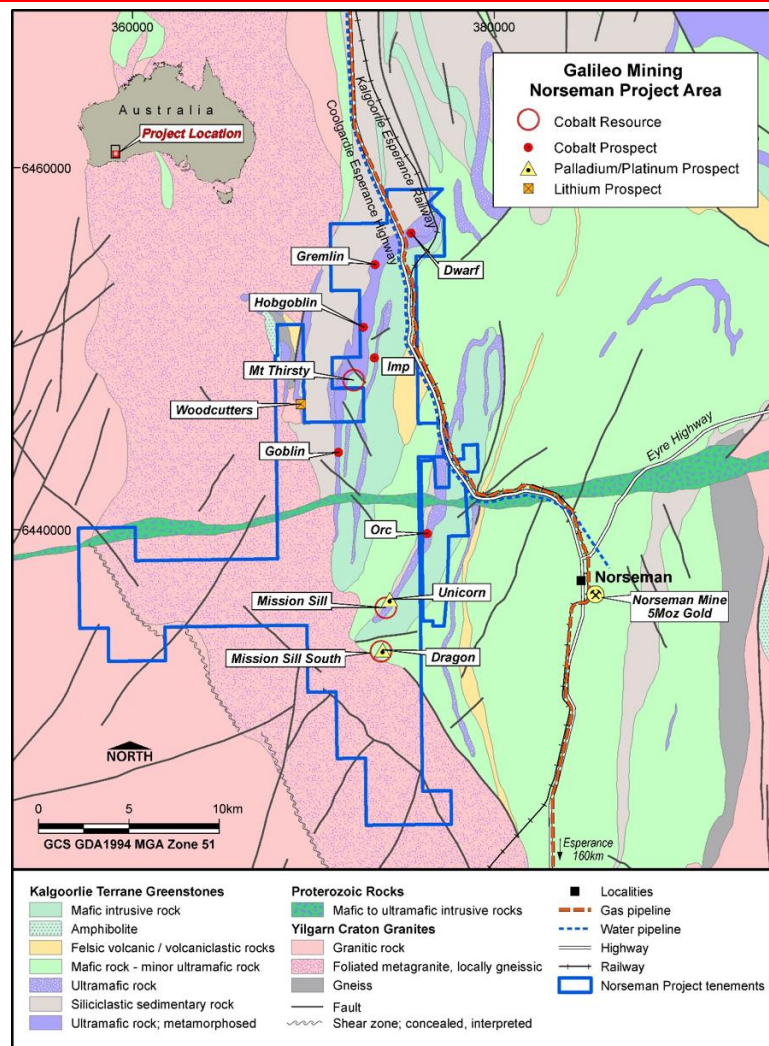
It's been a busy few months for Galileo with field programmes in full swing and significant progress on the metallurgical evaluation of concentrate samples in the Norseman/Fraser Range projects.

The company has progressed to the point where it's confident enough to now set some parameters on metal recoveries to underpin an economic scoping evaluation at Norseman and initial drilling and assay results at the Fraser Range Lantern Prospect are encouraging with nickel content ranging 0.04-0.06% and copper from 0.02-0.05%...we note that only the first 'line' of the drilling programme has been completed.

Norseman continuing to progress

As indicated in our Scoping report (12-Nov), [Riding the Cobalt Wave](#), the **Norseman Cobalt Project** is the most advanced of the company's projects with an upgraded JORC compliant cobalt-nickel resource (at the inferred/indicated category) and subject to more advanced evaluation, particularly with respect to metallurgical recoveries.

Exhibit 1: Goblin results are encouraging as an on-trend extension to Mt Thirsty



Source: Company data

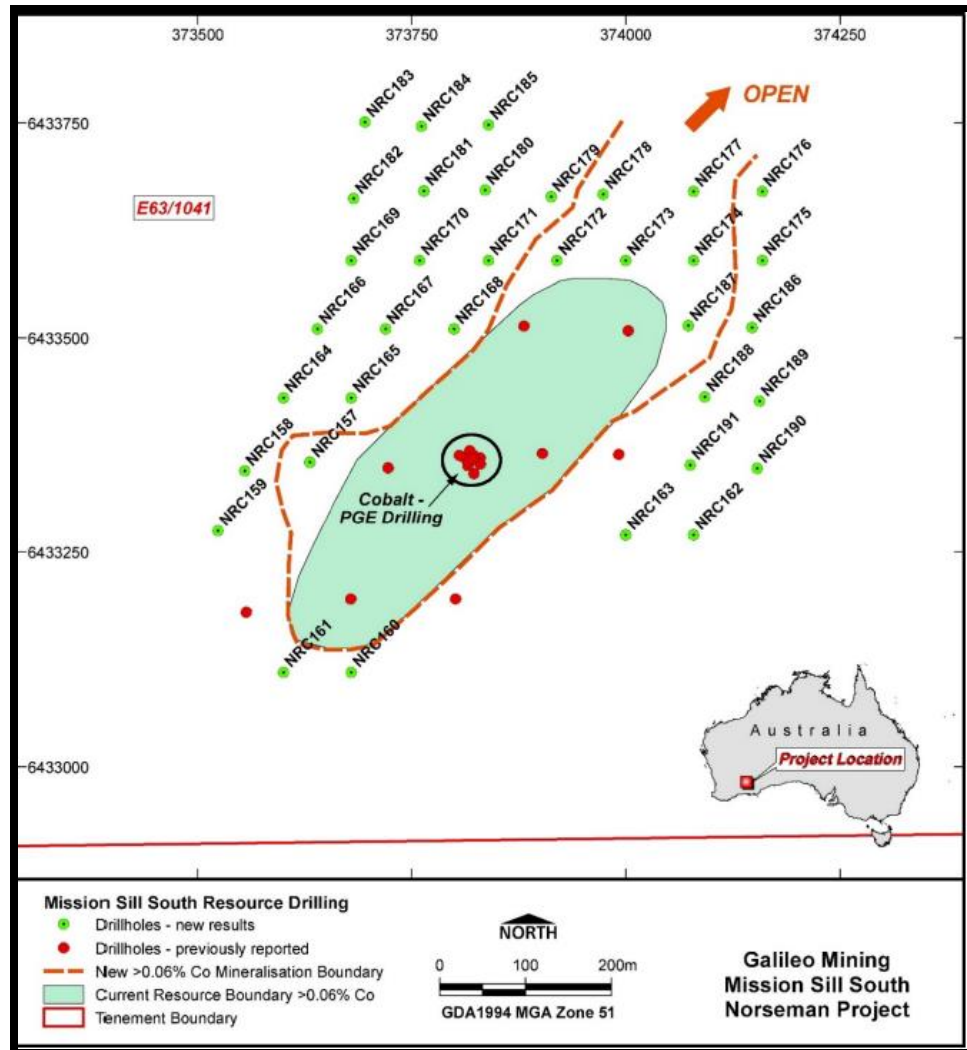
We noted in our Initiation report that the planned activity in and adjacent to the Mt Thirsty and Mission Sill project areas had the potential to deliver resource growth up to and possibly beyond our base assumptions and that the "...development potential is unlikely to be limited to the Mt Thirsty/Mission Prospects (where) we see a high likelihood of significant extensions to the existing declared mineral resources estimates".

A key focus has been on the Goblin Prospect, where the company has now declared a maiden JORC Inferred Resource (specific to Goblin) of ~4.9Mt @ 0.08% Cobalt (~4,100t Co), representing a c.18% increase in the overall resource tonnage.

The Goblin area (refer Exhibit-1) is considered to be an extension of the Mt Thirsty sill and drilling results have indicated geological parameters consistent with the main resource.

The Goblin Prospect is located 3km south of Mt Thirsty with mineralisation over >2km of strike length...the mineralisation occurs at depths of 12-60m.

Exhibit 2: Mission Sill South – results point to resource upside, especially to the north-east



Source: Company data

We would also add that work on the Mission Sill South Prospect is delivering positive results with mineralisation also intersected in extension drilling, effectively expanding the extent of the current boundaries defining the resource boundary at a >0.06% Co cut-off.

Importantly the mineralisation extends the nominal cut-off boundary to the north-east, where it is 'open-ended'. No resource redetermination has been conducted but it's reasonable to assume there could be further upside to the resource base although it's too early to imply how significant that may be.

An upgrade to the first cut on mineral resources

The company had previously declared a first pass Mineral Resource Estimates (MREs) over the Mt Thirsty and Mission Sill prospects with Inferred tonnages totalling:

- **20.2Mt grading 0.11% cobalt, 0.53% nickel** at a cut-off of 600ppm cobalt, containing 22.5kt of cobalt and 106kt of nickel (refer Exhibit 3).

Positive results from Goblin have added to the total tonnages, increasing the nominal contained cobalt resource by ~18% to 26.6kt.

Exhibit 3: An 18% increase in Inferred Resources...there is upside to valuation scenarios

Cut-off		Tonnes	Co		Ni	
Co ppm		Mt	%	kt	%	kt
Mt Thirsty and Mission Sill						
600	Total	20.2	0.11	22.5	0.53	106.1
Goblin						
600		4.9	0.08	4.1	0.36	16.4
In TOTAL						
600		25.1	0.09	26.6	0.49	122.5
% change				18.2%		

Source: Company data; Mt Thirsty/Mission Sill estimates by CSA Global in 2017 under the JORC Code (2012)

The company has also been continuing metallurgical testing of concentrate samples from the Norseman project areas.

Preliminary results have underpinned management's confidence that a concentrate with an average of 0.3% cobalt is achievable from the project and in management's words this makes "...Galileo's Norseman Cobalt Project one of the highest-grade cobalt plays in Australia".

Extraction analysis from concentrate samples delivered maximum recoveries of 95.7% cobalt and 66.1% nickel – but we highlight that these results were from a limited sample set (3 tests only) and should be considered, as indicated, preliminary in nature.

However, Galileo is sufficiently confident to use assumptions for metal recovery rates from beneficiated concentrate as 90% for cobalt and 60% for nickel as inputs for an economic scoping study (supporting capex and opex estimates).

As indicated, the metal recovery assumptions should be considered as somewhat conservative, given the average recovery rates over the three tests were 93.4% (Co) and 62.1% (Ni).

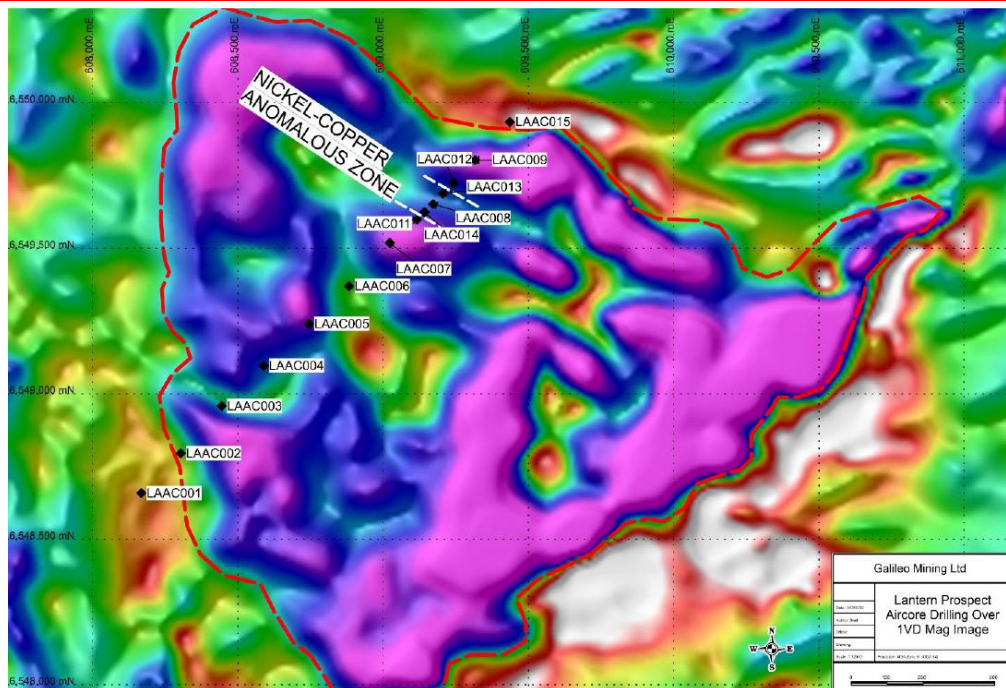
There's movement at Fraser Range as well

The company has released initial results from the maiden air-core programme being conducted over Fraser Range which is expected to consist of 5,000-7,000m of drilling over the Empire Rose, Nightmarch and Lantern prospects (refer Exhibit 6).

The 'first line of drilling' has been completed at Lantern with encouraging data albeit from a limited sample set.

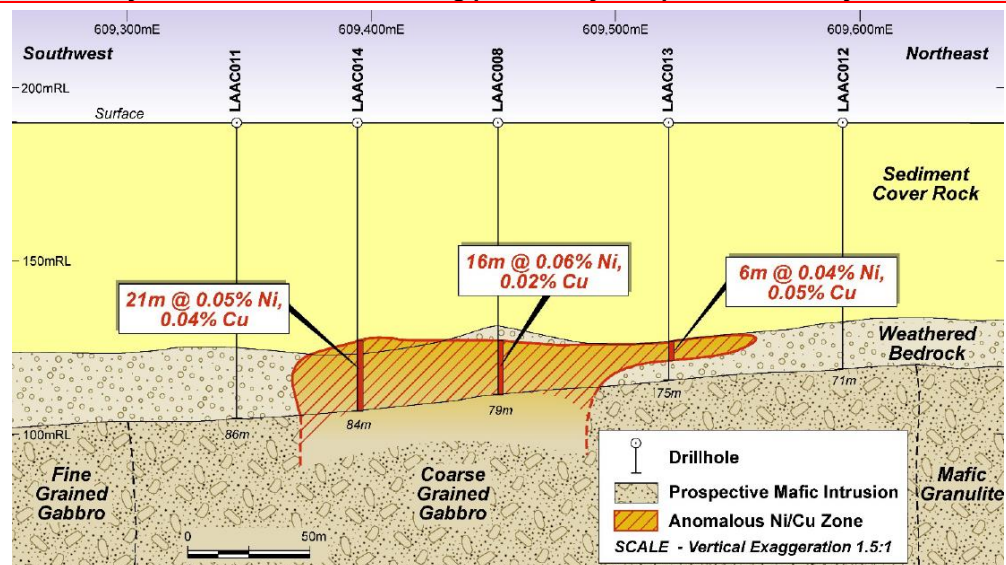
The best three holes of the fourteen drilled returned a nickel range of 0.04-0.06% with copper ranging 0.02-0.05% with the host lithology being similar to the analogue Nova and Silver Knight discoveries. We note a further 3,000m of drilling is to be conducted on the prospect.

Exhibit 4: First 'line' of drilling at Lantern with the 'anomalous zone' defined by the LAAC-008, -013 and -014 holes



Source: Company data

Exhibit 5: Stylised cross-section outlining preliminary interpretation of early results



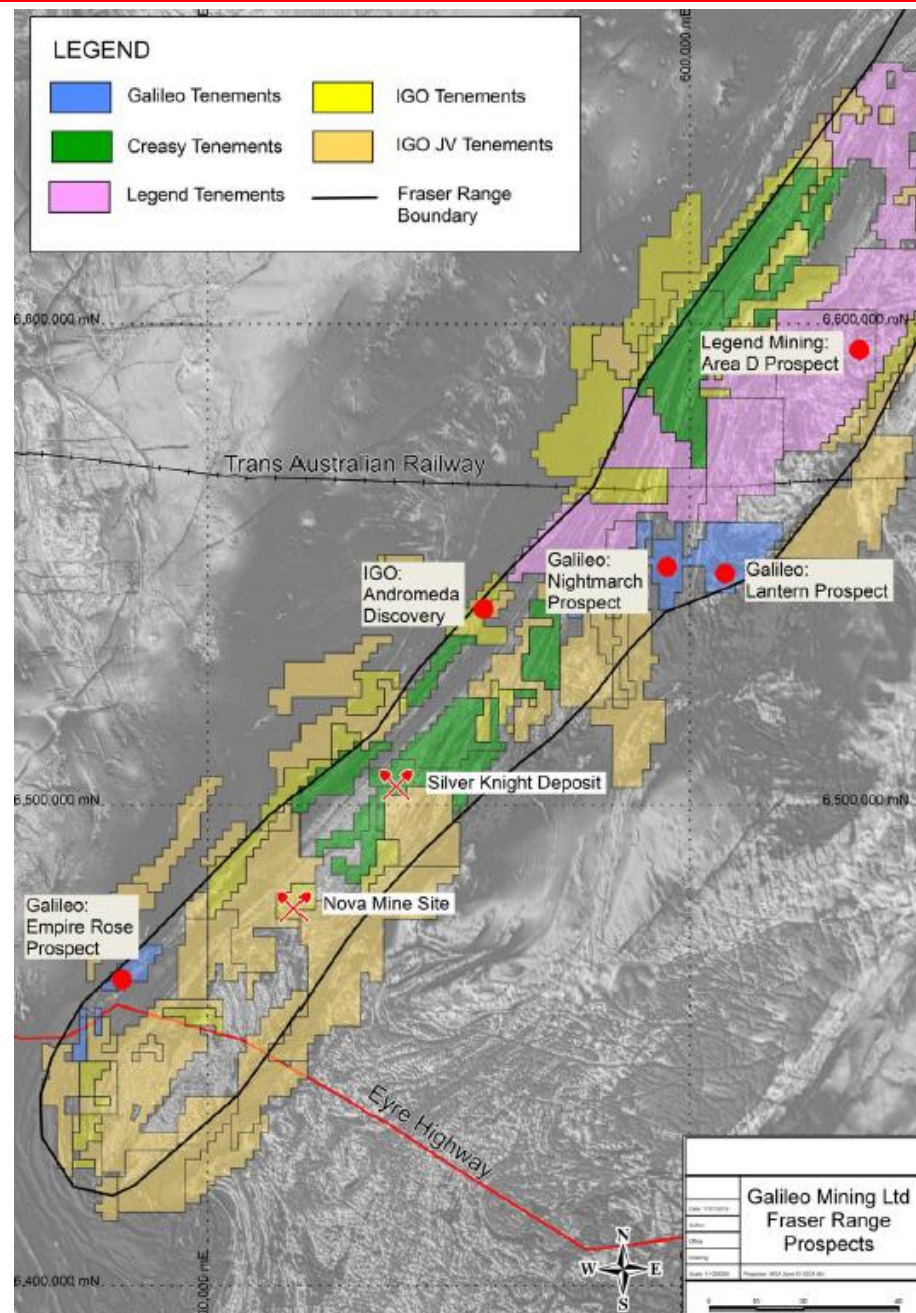
Source: Company data

The definition of the anomalous zone is shown in Exhibit 5 being nickel-copper mineralisation ~100m wide overlying coarse-grained mafic intrusives.

Geophysical mapping suggests the interpretation that the Lantern Prospect may consist of a number of discrete intrusive units and as cautioned by the company "...magmatic nickel systems often display compound intrusive patterns, with mineralisation frequently restricted to particular sills within (a) larger complex".

This points to a complex system that will likely require significant evaluation work to determine the quality and extent of the mineralised potential and significantly, the economics.

Exhibit 6: Fraser Range Prospects – looking for Nova and Silver Knight opportunities



Source: Company data

The maiden drilling programme on the Nightmarch prospect (2,000-3,000m) is expected to commence sometime in March 2019. The company will also be looking to follow up the anomalies revealed in the

Empire Rose prospect through 4Q18, with the next phase of drilling expected to commence there in May 2019.

Risk adjusted DCF Valuation at \$0.30/share (ex-cash)

We value GAL using a combination of the estimated NPV of producing and development assets; and unit values on contingent resources adjusted for our discretionary project probability weighting (1-risk %), to derive a value per share. Probability weightings are subject to change as the company delivers key milestones.

Putting a value on GAL at this point in the evaluation of its assets is a subjective exercise with timing and capex estimates; and assuming successful progress on the Norseman cobalt project(s) leads to a development decision. Our estimates are underpinned by a significant number of assumptions and a probability weighted confidence assessment of ultimate commercial outcomes. The assignment of probability weightings is subjective, but initial data can be benchmarked against published scoping studies in the immediate (adjacent licences) based on an the JORC certified resource estimate.

We use the project data of an analogue project, the Barra resources Mt Thirsty Cobalt project as a guide to determining the nominal value on Norseman noting the differences in progress of both assets and the still lower MRE defined at Norseman, which we account for in our risk (discount) overlay.

Our development scenario model delivers a value of ~A\$31mn (A\$0.26/share) on an ungeared basis (NPV₁₀ and Pr-15%).

We note the project is at an early stage and our development scenario and assumptions are subject to potentially significant change but intuitively we suggest our ascribed value is not unreasonable given the asset is located in a strongly similar geological setting and the error margins associated with scoping study analyses.

Valuation Considerations

We estimate the value of the Norseman Project to be ~A\$31mn or A\$0.26/share based on an average US\$33.65/lb life of project cobalt price, ungeared and risk weighted (Pr=15%) development scenario. This is a significant upgrade to our previous carrying value based on the higher level of JORC Inferred resources (hence contained Co and Ni) and a roll-forward of assumptions.

Whilst the project remains cum final resource definition and pre-feasibility, the economic scoping study being undertaken by the company should provide an asset specific look-through and further calibration against the Barra scoping parameters used to benchmark the project potential, particularly with respect to capital and operating costs.

Our benchmarking is currently based on the assumptions contained in the Scoping Study report of the **Mt Thirsty Cobalt Project** released by the Barra Resources Ltd (BAR.ASX), Conico Ltd (CNJ.ASX) JV (BAR JV) which is currently subject to PFS evaluation studies and projected to move through a PFS in 1Q19.

The most critical variable is the cobalt price and **we model the project scenario as being NPV positive at ~US\$27/lb** (average over life of project scenario) but note given the modelling uncertainties (cost/timing) the project has the potential to be economic on a lower Co price deck.

Galileo has no currently producing assets so will be reliant on existing cash balances through the early stage of the evaluation process and equity financing in development phase. We assume a Norseman cobalt project would be funded, approximately 65% debt:35% equity.

Exhibit 7: GAL NAV – the share price reflects a <10% probability of commercial success

		Risky					
		Pr	A\$m	A\$/sh	FY20	FY21	FY22
Norseman	100%	15%	\$31	\$0.26	\$0.34	\$0.43	\$0.28
Unwinding of risk diluted by scenario equity issue							
Fraser Range	100%		\$5	\$0.04	\$0.04	\$0.05	\$0.03
We assume only incremental progress							
Other Exploration	100%	10%	\$1	\$0.00	\$0.01	\$0.01	\$0.01
			\$36	\$0.30	\$0.39	\$0.49	\$0.32
Net Cash/(debt)			\$8	\$0.07	\$0.05	\$0.02	\$0.13
Corporate costs			(\$1)	(\$0.01)	(\$0.01)	(\$0.02)	(\$0.01)
TOTAL			\$43	\$0.36	\$0.44	\$0.49	\$0.45
Shares issued (mn)*	120				120	120	470

Source: RaaS analysis; Issued capital adjusted for modelled equity raising on a scenario Norseman development

The company is in a strong cash position to chase a project

The company is in a strong cash position holding \$9.1mn as at 31-Dec against an expected expenditure commitment for 1Q19 of \$1.3mn. We see the company as adequately funded at this stage through field programmes and studies to progress its Norseman Project and to continue to evaluate the Fraser Range opportunities.

Our assumptions include continuation of the work programmes in the portfolio over the forecast period, but with exploration expenditure trailing off as the company focusses more on evaluation and development activity.

We have made no assumptions with respect to further funding requirements for the remainder of the portfolio beyond the current period.

Exhibit 8: Summary cashflow statement noting commencement of debt drawdown and further equity raisings

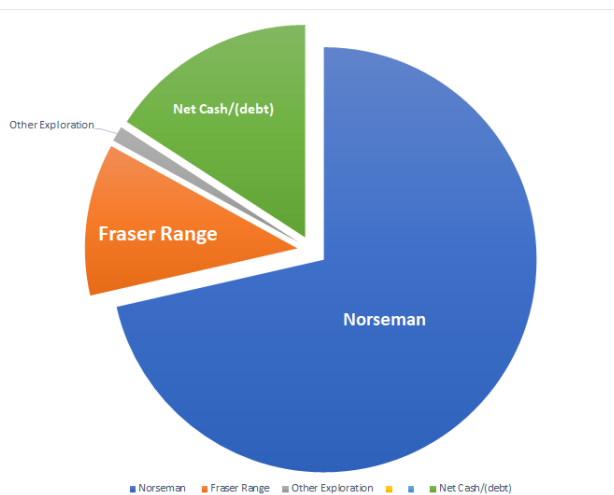
CASHFLOW	FY19e	FY20e	FY21e	In A\$000's
Operational Cash Flow	(631)	(670)	(669)	
Net Interest	181	18	55	
Net Operating Cashflow	(450)	(652)	(614)	
Exploration	(4,325)	(3,372)	(1,400)	We assume investment at Norseman will be categorised as Exploration and Evaluation until a project is formally sanctioned
Development	0	0	(3,800)	Commencement of development expenditure
Net Investing Cashflow	(4,325)	(3,372)	(5,200)	
Net Debt Drawdown	0	0	2,470	We assume a development will be 65% debt funded
Net Equity Issues/(Buyback)*	0	0	65,800	We assume all equity contributions will be raised in the market for project sanction
Net Financing Cashflow	0	0	68,450	
Net Change in Cash	(4,775)	(4,024)	62,636	

Source: RaaS analysis; *we assume equity issues at a reference share price of A\$0.20/share in parity with the exercise price of listed options

Exhibit 9: Financial Summary

GALILEO MINING			GAL											
YEAR END			June		nm = not meaningful									
NAV			A\$		\$0.36		na = not applicable							
SHARE PRICE			A\$		\$0.165		priced COT		12-Mar					
MARKET CAP			A\$M		20									
ORDINARY SHARES			M		120									
OPTIONS			M											
COMMODITY ASSUMPTIONS			FY17A	FY18A	FY19E	FY20E	FY21E	PRODUCTION		FY17A	FY18A	FY19E	FY20E	FY21E
Cobalt Price			US\$/lb		26.81		27.21		27.62					
Nickel Price			US\$/lb		8.04		8.16		8.29					
AUDUSD					0.7232		0.7285		0.7322					
RATIO ANALYSIS			FY17A	FY18A	FY19E	FY20E	FY21E	RESERVES & RESOURCES						
Shares Outstanding			M	120	120	120	470	Cut-off Co		Co		Ni		Mn
EPS (pre sig items)			Acps	(2.1)	(0.7)	(0.9)	(0.2)	ppm		Mt	%	kt	%	%
EPS (post sig items)			Acps	Mt Thirsty Sill										
PER (pre sig items)			x	na	na	na	na	Indicated		10.5	0.12	12.1	0.58	60.8
OCFPS			Acps	(0.5)	(0.4)	(0.5)	(0.1)	600 Inferred		2.0	0.11	2.2	0.51	10.2
CFR			x	na	na	na	na			12.5	0.11	14.3	0.57	71.1
DPS			Acps	Mission Sill										
Dividend Yield			%					600 Inferred		7.7	0.11	8.2	0.45	35.0
BVPS			Acps	13.8	13.0	12.2	16.9	Goblin						
Price/Book			x	1.2x	1.3x	1.4x	1.0x	600 Inferred		4.9	0.08	4.1	0.36	16.4
ROE			%											
ROA			%											
(Trailing) Debt/Cash			x	TOTAL JORC Compliant resource										
Interest Cover			x					600		25.1	0.11	26.6	0.49	122.5
Gross Profit/share			Acps											
EBITDAX			A\$M											
EBITDAX Ratio			%											
EARNINGS			A\$'000s	FY17A	FY18A	FY19E	FY20E	FY21E	EQUITY VALUATION					
Revenue				0	0	0	0	0	Interest		Pr	A\$M	Acps	
Cost of sales				0	0	0	0	0	Norseman		100%	15%	\$31	
Gross Profit				0	0	0	0	0	Fraser Range		100%		\$5	
Other revenue				40	0	0	0	0	Other Exploration		100%		\$1	
Other income				15	181	18	55							
Exploration written off														
Finance costs														
Impairment														
Other expenses				(733)	(993)	(1,070)	(1,070)					\$36	\$0.30	
EBIT				(677)	(812)	(1,052)	(1,014)	Net Cash/(debt)		100%		\$8	\$0.07	
Profit before tax				(677)	(812)	(1,052)	(1,014)	Corporate costs				(\$1)	(\$0.01)	
Taxes				0	0	0	0	TOTAL				\$43	\$0.36	
NPAT Reported				(677)	(812)	(1,052)	(1,014)	Cash Producing Assets						
Underlying Adjustments				0	0	0	0							
NPAT Underlying				(677)	(812)	(1,052)	(1,014)							
CASHFLOW			A\$'000s	FY17A	FY18A	FY19E	FY20E	FY21E						
Operational Cash Flow				(625)	(631)	(670)	(670)							
Net Interest				15	181	18	55							
Taxes Paid														
Other														
Net Operating Cashflow				(610)	(450)	(652)	(614)							
Exploration				(918)	(4,325)	(3,372)	(1,400)							
PP&E														
Development				0	0	0	(3,800)							
Net Asset Sales/other														
Net Investing Cashflow				(2,239)	(4,325)	(3,372)	(5,200)							
Dividends Paid														
Net Debt Drawdown				(956)	0	0	2,470							
Equity Issues/(Buyback)				15,066	0	0	65,980							
Other				0	0	0	0							
Net Financing Cashflow				14,109	0	0	68,450							
Net Change in Cash				11,261	(4,775)	(4,024)	62,636							
BALANCE SHEET			A\$'000s	FY17A	FY18A	FY19E	FY20E	FY21E						
Cash & Equivalents				11,275	6,500	2,476	65,112							
PP&E & Development				17	0	0	3,800							
Exploration				5,287	9,612	12,984	14,384							
Total Assets				16,851	16,112	15,460	83,296							
Debt				0	0	0	2,680							
Total Liabilities				185	415	815	3,685							
Total Net Assets/Equity				16,666	15,697	14,645	79,611							
Net Cash/(Debt)				11,275	6,500	2,476	62,432							
Gearing (d _v /(d _v +e))						na		na						

Legend: ■ Norseman ■ Fraser Range ■ Other Exploration ■ Net Cash/(debt)



Source: RaaS Advisory

FINANCIAL SERVICES GUIDE

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Effective Date: 26th November 2018

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