

SHEFFIELD RESOURCES LIMITED (SFX)

PFS update shows stronger economics

Sheffield Resources Ltd (SFX) has released the much anticipated PFS update for the Thunderbird mineral sands deposit in WA. This updated PFS makes significant improvements to the preliminary PFS released in May '15.

The mine life has been extended to 40 years (from 32 years). However, the most significant improvements have been the practical economics at the front end of the project. The capex has shrunk (moved to 12mtpa Phase 1, from 18Mtpa), and combined with a strong early year grade profile and very low strip ratio, the project has a low payback period (based on first six years production, on our estimates, payback is 2.6 years base case, 3.4 years on spot prices and we estimate ~2.0 years using the prices assumed in the PFS).

Total startup capex has reduced to \$295m (includes contingencies) from \$409m with sustaining capex in the order of \$4-6m pa (deferred for several years). In year 8, ~\$64m of capex is required to increase throughput to 18mtpa. This boosts output despite the lower grades in remaining years.

The first 6 year's grade profile is remarkably high (68Mt @15.7% H or 1.12% Zircon, ~0.63% HiTi/Leucoxene, 4.18% ilmenite). This means the project expects to produce ~89ktpa zircon, 21ktpa HiTi and ~369ktpa ilmenite even at 12mtpa. The global mining inventory is 685Mt @11.3% HM or 0.87% Zircon, ~0.55% HiTi/Leucoxene, 3.13% ilmenite.

Low temperature roast improves ilmenite selling prices

SFX has previously announced that that using low temperature roasting (LTR) the ilmenite product can be upgraded to a premium product (56.1%) that should sell at least at benchmark prices. This is a big change from the preliminary PFS, which had was assumed the ilmenite would sell at a substantial (~20%) quality discount to benchmark. The Company now believes that the ilmenite could sell at a 5-10% premium to benchmark prices and will easily displace inferior products. This means that the project is likely to provide significant volumes of premium zircon and ilmenite (5-10% of global supply) for a long (>40 years) mine life.

Hartleys expects early year's EBITDA ~\$115m pa

We have lowered our production estimates to be on the conservative side of today's PFS update. Using the Company price assumptions, the project delivers \$135m pa of EBITDA over the LOM, and more in the early years. In our model (we use higher fx and lower benchmark prices than the Company), our LOM EBITDA is ~\$94m pa, but in the first six years it is ~\$115m pa. On spot prices, we estimate LOM EBITDA ~\$70m pa (first 6 years ~\$90m pa).

Hartleys price target increased to \$1.21

SFX plans to complete a DFS in 2016 (we estimate a ~\$10m cost), with full production in CY19. The strong economics and large volumes (5-10% to global supply of premium zircon and ilmenite) means the project is strategically attractive and premium products mean it is less risky in terms of adding that supply to the market. Our base valuation is 74cps, but using the selling prices in the PFS (which are very realistic), our valuation would be \$1.33. If we used a lower discount rate, our valuations would be even higher (see Fig 10). We have increased our price target to \$1.21. We maintain our Buy recommendation.

	15 Oct 2015
are Price	\$0.49
luation	\$0.74
ice Target (12 month)	\$1.21

Brief Business Description:

Significant mineral sands developer (Thunderbird project in WA), plus a multi-commodity exploration portfolio (eg Fraser Range Ni).

Hartleys Brief Investment Conclusion

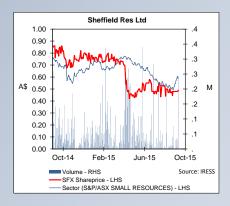
The Thunderbird project is large (could add 5-10% pa of global zircon supply) and PFS study economics to develop are robust.

Chairman & MD

Sh Va

Pri

Will Burbury (Exec-Chairman)								
Bruce McQuitty (MD)								
Top Shareholders								
Will Burbury - The Burbury Fai	mily A/C		5.9%					
Bruce McQuitty			5.8%					
David Archer Family Super Fu	nd		5.8%					
Company Address								
Level 1, 57 Havelock Street								
West Perth, WA 6005								
Issued Capital			134.4m					
- fully diluted (itm)			142.1m					
Market Cap			A\$65.9m					
- fully diluted			A\$69.6m					
Cash (30 Sep 15e)			A\$4.5m					
Debt (30 Sep 15e)			A\$0.0m					
EV			A\$61.4m					
	FY18e	FY19e	FY20e					
EBITDA	-8.8	1.5	103.5					
Op Cash Flw	-20.8	-15.5	69.6					
Norm NPAT	-25.3	-27.5	65.0					
CF/Share (cps)	-7.9	-5.9	26.5					
EPS (cps)	-9.6	-10.5	24.8					
P/E	-5.1	-4.7	2.0					



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Hartleys has assisted in the completion of a capital raising for Sheffield Resources Limited ("Sheffield") in the last 12 months for which it has earned fees. Hartleys has also provided corporate advice within the past 12 months and continues to provide corporate advice to Sheffield , for which it has fees and continues to earn fees. Analyst has a beneficial interest in SFX shares.

SFX.asx ^{Buy}

Hartleys Limited ABN 33 104 195 057 (AFSL 230052) 141 St Georges Terrace, Perth, Western Australia, 6000 Hartleys does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Further information concerning Hartleys' regulatory disclosures can be found on Hartleys website www.hartleys.com.au

14 Oct 2015

Buy

Sheffield Res Ltd SFX				SI	hare Price \$0.490	
Key Market Information						Directors
Share Price					\$0.490	Will Burbury (
Market Capitalisation - ordir	hary				A\$66m	Bruce McQuit
Net Debt (cash) Market Capitalisation - fully	dilutod				-\$5m	David Archer
EV	alluted				A\$70m A\$60m	
EV inc. assumed new capit	al				A\$356m	
Issued Capital					134.4m	Top Shareho
Options					7.6	Will Burbury -
Issued Capital (fully diluted Issued Capital (fully diluted			-1)		142.1m	Bruce McQuit
Issued Capital (rully diluted	inc. all opti	ions and new capit	aı)		270.8m	David Archer Reserves & F
Valuation					\$0.74	Dampier
12month price target		00 1 40	00.1	001.00	\$1.21	- high grade
P&L Net Revenue	Unit A\$m	30 Jun 18 0.0	30 Jun 19 21.8	30 Jun 20 216.2	30 Jun 21 252.5	Eneabba - high grade
Total Costs	A\$m	-8.8	-20.3	-112.7	-132.6	McCalls
EBITDA	A\$m	-8.8	1.5	103.5	119.8	Production S
- margin		-	7%	48%	47%	Mill Throughp
Depreciation/Amort	A\$m	-4.4	-13.7	-21.4	-21.8	Strip Ratio
EBIT	A\$m	-13.2	-12.2	82.1	98.1	HM grade
Net Interest	A\$m	-12.1	-15.3	-17.1	-15.7	Zircon Recove
Pre-Tax Profit Tax Expense	A\$m A\$m	-25.3 0.0	-27.5 0.0	65.0 0.0	82.4 -20.0	Total VHM pro Zr production
Normalised NPAT	A\$m	-25.3	-27.5	65.0	62.3	Leuc. / Hi-Ti p
Abnormal Items	A\$m	0.0	0.0	0.0	0.0	Sulph. Ilmenit
Reported Profit	A\$m	-25.3	-27.5	65.0	62.3	Revenue to C
Minority	A\$m	0.0	0.0	0.0	0.0	Mine Life
Profit Attrib	A\$m	-25.3	-27.5	65.0	62.3	Ilmenite
Balance Sheet	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21	Zircon Leuc. / Hi-Ti p
Cash	A\$m	182.8	-56.7	4.8	83.5	2000.711111
Other Current Assets	A\$m	0.7	5.3	44.8	52.4	Costs
Total Current Assets	A\$m	183.6	-51.4	49.6	135.9	Rev milled tor
Property, Plant & Equip.	A\$m	68.3	274.6	258.2	236.4	Cost per mille
Exploration	A\$m	38.3	42.3	45.4	48.2	EBITDA / tonr
Investments/other Tot Non-Curr. Assets	A\$m A\$m	0.0 106.6	0.0 317.0	0.0 303.6	0.0 284.6	C1: Operating
Total Assets	A\$m	290.2	265.5	353.3	420.5	(a) + Royalty C2: (a) + depr
		20012	200.0	00010	12010	(a) + actual c
Short Term Borrowings	A\$m	-	-	-	-	C3: (c) + Roya
Other	A\$m	2.3	5.1	27.9	32.8	(d) + Royalty
Total Curr. Liabilities	A\$m	2.3	5.1	27.9	32.8	Price Assum
Long Term Borrowings	A\$m	207.2	207.2	207.2	207.2	AUDUSD
Other Total Non-Curr. Liabil.	A\$m A\$m	207.2	207.2	- 207.2	207.2	Ilmenite Zircon
Total Liabilities	A\$m	207.2	207.2	207.2	207.2	Rutile
Net Assets	A\$m	80.7	53.2	118.2	180.5	Leucoxene
Net Debt	A\$m	24.4	263.9	202.4	123.7	Avg selling pr
Cashflow	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21	Sensitivity A
Operating Cashflow	A\$m	-8.8	-0.2	86.7	117.2	Base Case
Income Tax Paid	A\$m	0.0	0.0	0.0	-20.0	Spot Prices
Interest & Other	A\$m	-12.1	-15.3	-17.1	-15.7	Spot USD/AU
Operating Activities	A\$m	-20.8	-15.5	69.6	81.4	AUDUSD +/-1
Property, Plant & Equip.	A\$m	-60.0	-220.0	-5.0	0.0	Ilmenite +/-10 Zircon +/-10%
Exploration and Devel.	A\$m	-4.0	-220.0	-3.1	-2.8	Rutile +/-10%
Other	A\$m	0.0	0.0	0.0	0.0	Leucoxene +/-
Investment Activities	A\$m	-64.0	-224.0	-8.1	-2.8	Operating Cos
Borrowings	A\$m	0.0	0.0	0.0	0.0	Unpaid Capit
Equity or "tbc capital" Dividends Paid	A\$m A\$m	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	Year Expires
Financing Activities	A\$m	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	30-Jun-16
· · · · · · · · · · · · · · · · · · ·						30-Jun-17
Net Cashflow	A\$m	-84.8	-239.5	61.5	78.6	30-Jun-18
Shares	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21	30-Jun-19
Ordinary Shares - End	m	262.2	262.2	262.2	262.2	30-Jun-20
Ordinary Shares - W'ted	m	262.2	262.2	262.2	262.2	30-Jun-21
Diluted Shares - W'ted Ratio Analysis	m Unit	262.2 30 Jun 18	262.2 30 Jun 19	262.2 30 Jun 20	262.2 30 Jun 21	TOTAL
Cashflow Per Share	A\$ cps	30 Jun 18 -7.9	30 Jun 19 -5.9	30 Jun 20 26.5	30 Jun 21 31.1	Valuation
Cashflow Multiple	х	-6.2x	-8.3x	1.8	1.6	100% Eneabl
EV (+ cap.)/EBIT	x	-26.9x	-29.1x	4.3x	3.6x	100% Dampie
EV (+ cap.)/EBITDA	x	-40.3x	239.7x	3.4x	3.0x	100% McCalls
Earnings Per Share	A\$ cps	-9.6	-10.5	24.8	23.8	Other Assets/
Price to Earnings Ratio	x	-5.1x	-4.7x	2.0	2.1	Forwards
Dividends Per Share	AUD	-	-	-	-	Corporate Ove
Dividend Yield Net Debt / Net Debt + Equit	% \%	0.0% 23%	0.0% 83%	0.0% 63%	0.0% 41%	Net Cash (De Tax (NPV futu
Interest Cover	у % Х	23% na	na	4.8	6.2	Options & Oth
Return on Equity	%	na	na	55%	35%	Total
						•

Company Info (Exec-Chairman) Level 2, 41-47 Colin Street itty (MD) West Perth, WA 6005 (Technical Director) +61 8 6424 8440 sheffieldr m shares % The Burbury Family A/C 5.9% 8.0 itty 7.8 5.8% Family Super Fund 7.7 5.8% Bt letal (Mt) Attr. Gra 3.24 6.9% 223.6 100.0% 1.09 11.9% 129.7 100.0% 0.30 2.2% 100.0% 6.6 0.17 3.0% 5.2 100.0% 4.43 1.2% 53.2 100.0% Uni Jun 19 Jun 20 Jun 21 Jun 18 M 0.00 1.00 12.00 12.00 0.20 0.20 0.2 % 15.7% 15.7% 15.7% 66.5% 66.5% 66.5% % /ery roductio Ы 412.2 494.6 kt 73.1 87.7 18.8 production kt 22.6 320.3 384.3 ite productio k Cost ratio yr 2.2 2.2 Mt 39.0 38.0 % rev 36.2% 36.3% % rev 56.8% 56.7% 6.9% production % rev 7.1% Unit Jun 18 Jun 19 Jun 20 Jun 21 onne \$A/t 18.0 21.0 ed tonne \$A/t 9.2 9.2 nne milled ore ng Cash Cost = (a) \$A/t \$A/t final product 8.6 10.0 235 233 \$A/t final product 250 247 / = (b) \$A/t final product \$A/t final product 287 235 277 233 preciation & amortisation = (c) cash for development = (d) /alty \$A/t final product 302 292 \$A/t final product 247 250 y nptions Unit Jun 18 Jun 19 un 20 lun 21 A\$/US\$ 0.75 0.76 0.78 0.80 US\$/t 187 190 192 190 US\$/t 1260 1322 1320 1301 US\$/t 1054 1027 1090 1065 US\$/t 632 654 639 616 rice / VHM produced A\$/t 525 510 Analysis Valuation FY20 NPAT 0.74 65.0 0.20 (-73.4%) 25.1 (-61.4%) JD 0.72, Ilmenite \$110/t,Zircon \$1100/t,Rutile \$840/t. 10% 0.32 / 1.22 (-56.7% / 65.6%) 45.7 / 85.4 (-29.7% / 31.5%) 0.89 / 0.58 (21.3% / -21.7%) 72.9 / 57.1 (12.2% / -12.2%) 0% 6 0.98 / 0.48 (33.8% / -34.7%) 76.7 / 53.2 (18.1% / -18.1%) 0.74 / 0.74 (0.0% / 0.0%) 65.0 / 65.0 (0.0% / 0.0%) 0.70 / 0.77 (-4.4% / 4.4%) 0.48 / 0.98 (-34.5% / 33.6%) -/-10% 63.4 / 66.5 (-2.4% / 2.4%) 55.2 / 74.7 (-15.1% / 15.1%) osts +/-10% ital No. (m) \$m Avg price % ord 1.9 0.4 0.21 1% 1.7 0.2 0.14 1% 0.5 1.3 2.55 0% 1.9 1.5 0.81 1% 0% 0.0 0.00 0.0 1.6 1.9 1.16 1% 7.6 5.3 0.70 6% \$m /sh ba (pre-tax NAV at disc. rate of 12%) 0.00 er (pre-tax NAV at disc. rate of 12%) 323 1.19 Is (pre-tax NAV at disc. rate of 14%) 0 0.00 s/Exploration 0.02 5 0 0.00 /erheads -70 -0.26 ebt) 5 0.02 ure liability) -70 -0.26 ther Equity 0.01 199 0.74

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"tbc capital" could be equity or debt. Our valuation is risk-adjusted for how this may be obtained.

Sources: IRESS, Company Information, Hartleys Research

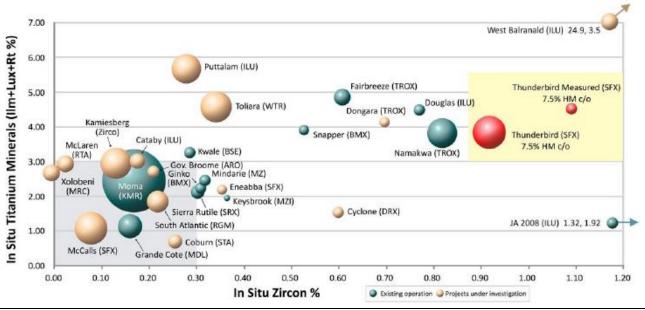
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Idew sharesn/an/anmn/anmassumed raising pricen/an/anmn/anmre-tax NAV funded, todayn/an/anmn/anmper diluted sharen/an/anmn/anmorporate o/head, taxn/an/anmn/anmFX valuation NPV12n/an/anmn/anm	re-tax <u>NPV</u> unfunded, dec. to mine re-tax <u>IRR,</u> dec. to mine			nm	2.2yrs	54%
assumed raising price n/a n/a nm n/a nm re-tax <u>NAV</u> funded, today n/a n/a nm n/a nm ber diluted share n/a n/a nm n/a nm orporate o/head, tax n/a nm n/a nm n/a nm FX valuation NPV12 n/a n/a nm n/a nm	re-tax <u>NPV</u> unfunded, dec. to mine re-tax <u>IRR,</u> dec. to mine 'ayback - LOM avg EBITDA	n/a	3.4yrs			
re-tax <u>NAV</u> funded, today n/a n/a nm n/a nm per diluted share n/a n/a nm n/a nm orporate o/head, tax n/a n/a nm n/a nm FX valuation NPV12 n/a n/a nm n/a nm	re-tax <u>NPV</u> unfunded, dec. to mine re-tax <u>IRR</u> , dec. to mine layback - LOM avg EBITDA ayback - first 6yr avg EBITDA	n/a n/a		nm	n/a	nm
ber diluted share n/a n/a nm n/a nm orporate o/head, tax n/a n/a nm n/a nm FX valuation NPV12 n/a n/a nm n/a nm	re-tax <u>NPV</u> unfunded, dec. to mine re-tax <u>IRR</u> , dec. to mine 'ayback - LOM avg EBITDA ayback - first 6yr avg EBITDA lew shares	n/a n/a n/a	n/a			
SFX valuation NPV12 n/a n/a nm n/a nm	re-tax <u>NPV</u> unfunded, dec. to mine re-tax <u>IRR.</u> dec. to mine 'ayback - LOM avg EBITDA 'ayback - first 6yr avg EBITDA lew shares - assumed raising price	n/a n/a n/a n/a	n/a n/a	nm	n/a	nm
	re-tax <u>NPV</u> unfunded, dec. to mine re-tax <u>IRR</u> , dec. to mine ayback - LOM avg EBITDA Payback - first 6yr avg EBITDA lew shares - assumed raising price re-tax <u>NAV</u> funded, today	n/a n/a n/a n/a n/a	n/a n/a n/a	nm nm	n/a n/a	nm nm
SFX valuation NPV8 n/a n/a nm n/a nm	ore-tax <u>NPV</u> unfunded, dec. to mine ore-tax <u>IRR</u> , dec. to mine Payback - LOM avg EBITDA Payback - first 6yr avg EBITDA New shares - assumed raising price ore-tax <u>NAV</u> funded, today per diluted share corporate o/head, tax	n/a n/a n/a n/a n/a n/a	n/a n/a n/a n/a n/a	nm nm nm nm	n/a n/a n/a n/a	nm nm nm nm

Fig. 2: Updated PFS versus Preliminary PFS versus Scoping Study

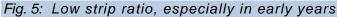
Fig. 3: Hartleys new estimates versus PFS

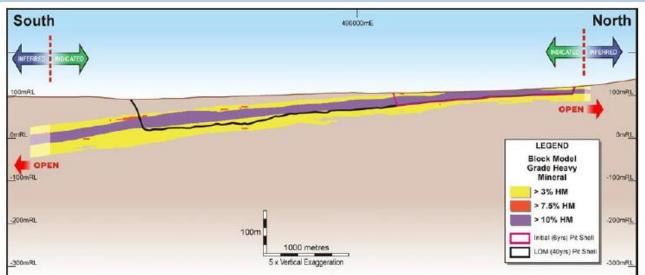
Production Assumptions:	PFS Study (14 October 2015)	Hartleys New Base Case	Hartleys Difference v. Updated PFS	Hartleys Old	Hartleys changes	Hartleys using spot prices	Hartleys Spot v. Hartleys Base
Mining inventory					1		
Mining inventory Mining inventory grade	685.0Mt 11.3%	664.4Mt 11.3%	-3.0% -0.3%	581.5Mt 11.7%	14.3% -3.4%		
Zircon in-situ mining inventory grade	0.87%	0.87%	-0.3%	0.93%	-7.0%		
- first 10 years	n/a	0.99%	nm	1.08%	-8.2%		
 first 6 years Leuc / HiTi. in-situ mining inventory grade 	1.12% 0.55%	1.10% 0.37%	-1.9% -32.4%	nm 0.29%	nm 28.3%		
- first 10 years	n/a	0.42%	nm	0.29%	45.3%		
- first 6 years	0.63%	0.47%	-25.4%	nm	nm		
Ilmenite in-situ mining inventory grade	3.13%	3.40% 3.93%	8.7%	3.30% 3.32%	3.0% 18.4%		
- first 10 years - first 6 years	n/a 4.18%	4.71%	nm 12.7%	5.52% nm	18.4% nm		
Mined Zircon	149kt pa	144.1kt pa	-3.6%	167.9kt pa	-14.1%		
- first 10 years	n/a	122.9kt pa	-3.0 % nm	193.6kt pa	-36.5%		
- first 6 years	n/a	124.6kt pa	nm	nm .	nm		
Mined Leuc./HiTi	66kt pa	61.7kt pa	-5.7%	52.1kt pa	18.4%		
- first 10 years - first 6 years	n/a n/a	52.6kt pa 53.2kt pa	nm nm	52.4kt pa nm	0.4% nm		
Mined Ilmenite	581kt pa	564.9kt pa	-2.8%	594.5kt pa	-5.0%		
- first 10 years	n/a	488.4kt pa	nm	596.9kt pa	-18.2%		
- first 6 years	n/a	533.8kt pa	nm	nm	nm		
Mining & processing Average Mining Rate	17.1Mt pa	16.6Mt pa	-2.9%	18.0Mt pa	-7.7%		
- first 10 years	n/a	12.4Mt pa	-2.9% nm	18.0Mt pa	-30.9%		
- first 6 years	12.2Mt pa	11.3Mt pa	-7.1%	nm	nm		
Peak Mining Rate	18.0Mt pa	18.0Mt pa	0.0%	18.0Mt pa	0.0%		
Strip ratio LOM - first 10 years	0.66x n/a	0.63x 0.20x	-4.7% nm	0.69x 0.22x	-8.4% -9.1%		
Mine Life	40.0yrs	40.0yrs	0.0%	32.0yrs	25.0%		
HMC processed	1935kt pa	1870kt pa	-3.3%	2119kt pa	-11.7%		
HMC production - recovery	1300kt pa	1187kt pa	-8.7%	1381kt pa	-14.0%		
	67%	63%	-5.5%	65%	-2.6%		
Recoveries Zircon Recoveries Leuc./HiTi	67% 40%	67% 40%	-0.7% 0.0%	67% 52%	-0.4% -23.3%		
Recoveries Ilmenite	68%	68%	-0.3%	75%	-9.7%		
Production Zircon	100.2kt pa	95.8kt pa	-4.3%	112.1kt pa	-14.5%		
- first 10 years	n/a	79.2kt pa	nm	128.8kt pa	-38.5%		
- first 6 years	89.0kt pa	82.8kt pa	-6.9%	n/a	nm		
Production Leuc./HiTi - first 10 years	26.2kt pa n/a	24.7kt pa 20.4kt pa	-5.7% nm	27.2kt pa 27.5kt pa	-9.2% -26.0%		
- first 6 years	21.0kt pa	21.3kt pa	1.4%	n/a	-20.0 % nm		
Production Ilmenite	396.4kt pa	384.1kt pa	-3.1%	447.4kt pa	-14.1%		
- first 10 years	n/a	322.0kt pa	nm	452.7kt pa	-28.9%		
 first 6 years Total production saleable product 	369.0kt pa 522.8kt pa	363.0kt pa 504.7kt pa	-1.6% -3.5%	n/a 586.8kt pa	nm -14.0%		
Financials							
Zircon selling price	US\$1371/t	US\$1301/t	-5.1%	US\$1236/t	5.2%	US\$1100/t	-15.4%
Leuc/Hiti selling price	US\$700/t	US\$616/t	-11.9%	US\$636/t	-3.0%	US\$630/t	2.2%
Ilmenite selling price AUD/USD	US\$183/t	US\$190/t	3.8%	US\$152/t 0.83cents	25.1%	US\$110/t	-42.1%
	0.74cents	0.83cents	11.8%		0.2%	0.70cents	-14.9%
Zircon contribution to revenue Leuc/Hiti contribution to revenue	59% 8%	59% 7%	-0.4% pts -0.8% pts	62% 8%	-3.4% pts -0.6% pts	65% 10%	6.0% pts 2.4% pts
Ilmenite contribution to revenue	33%	34%	1.3% pts	30%	3.9% pts	26%	-8.4% pts
LOM revenue	\$11,829m	\$10,291m	-13.0%	\$8,672m	18.7%	\$9,271m	-9.9%
Unit Revenue EBITDA	\$565.7/t \$135m pa	\$509.8/t \$92.8m	-9.9% -31.3%	\$461.9/t \$92.4m	10.4% 0.4%	\$459.3/t \$67.3m	-9.9% -27.4%
- first 10 years	n/a	\$96.9m	-31.376 nm	\$132.5m	-26.9%	\$73.2m	-24.5%
- first 6 years	n/a	\$118.1m	nm	n/a	nm	\$89.5m	-24.2%
Unit cash costs Unit cash costs	\$307.5/t	\$326.0/t -\$165m pa	6.0%	\$304.3/t	7.1%	\$325.9/t	0.0%
Unit EBITDA margins	-\$161m pa 45.7%	-\$165m pa 36.1%	2.4% -21.0%	-\$179m pa 34.1%	-7.9% 5.7%	-\$164.5/t 29.0%	-19.5%
Rev./Cost Ratio	1.8x	1.6x	-15.0%	1.5x	3.1%	1.4x	-9.9%
Pre-production capex (inc conting. & studies) Stage 2 Capex	\$305.0m \$64.0m	\$331.2m \$72.0m	8.6% 12.5%	\$448.2m nm	-26.1% nm	\$331.2m \$72.0m	0.0%
Valuation							
Decision to mine	CY17	CY17		CY16	nm	CY17	
First production	Q2 2019	Q2 2019		Dec qtr 2018	nm	Q2 2019	
Discount rate Capital requirement	n/a n/a	12% \$296m		12% \$470m	0% -37%	12% \$296m	
pre-tax <u>NPV</u> unfunded, dec. to mine	n/a	\$347m		\$421m	-18%	\$172m	-50.3%
pre-tax IRR, dec. to mine	n/a	31.2%		29.0%	8%	21.7%	
Payback - LOM avg EBITDA	n/a	3.2yrs				4.4yrs	
Payback - first 6yr avg EBITDA New shares	n/a n/a	2.5yrs 128.8m		211.2m	-39%	3.3yrs 305.6m	137.3%
- assumed raising price	n/a	\$0.84/shr		\$0.50/shr	68%	\$0.31/shr	107.070
pre-tax NAV funded, today	n/a	\$323m		\$329m	-2%	\$177m	-45.3%
per diluted share corporate o/head, tax	n/a n/a	\$1.19/shr -\$0.46/shr		\$0.93/shr -\$0.45/shr	28%	\$0.39/shr -\$0.19/shr	-66.9% -57.9%
SFX valuation NPV12	n/a	\$0.74/shr		\$0.48/shr	53%	\$0.20/shr	-72.5%
SFX valuation NPV8	n/a	\$1.52/shr		\$1.07/shr	42%	\$0.71/shr	-53.0%

Fig. 4: World Class Mineral Sands Project



Source: SFX





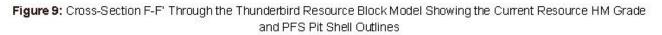


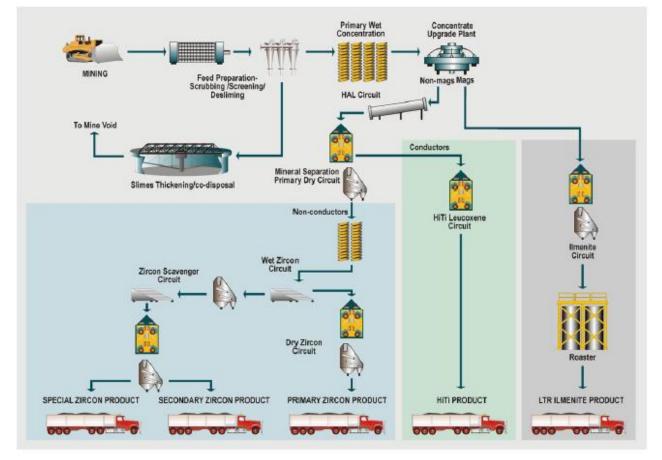




Figure 11: Sequence (from L-R) of Shallow Mineralisation Being Lifted from Bauer Hole THBA005, August 2015.

Source: SFX







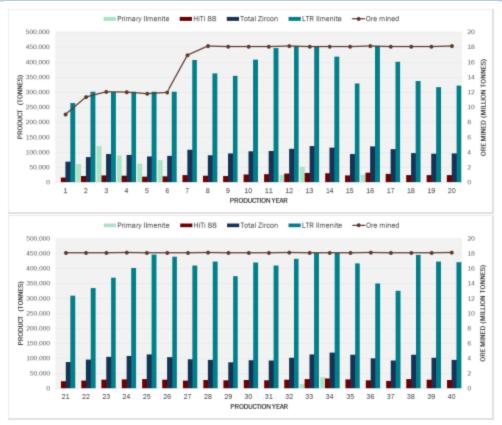


Fig. 8: Consistent production overt a long mine life (>40 years)

Source: SFX

Fig. 9: Indicative timeline

	201	2015				2016 20			201	2017			2018				2019		
ACTIVITY	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
PFS update																			
Permitting																			
Definitive Feasibility Study																			
Environmental Approvals																			
Infrastructure																			
Engineering Construction																			
Commissioning																			
First Products																			

PRICE TARGET

We have increased our price target to \$1.21 (from \$0.90).

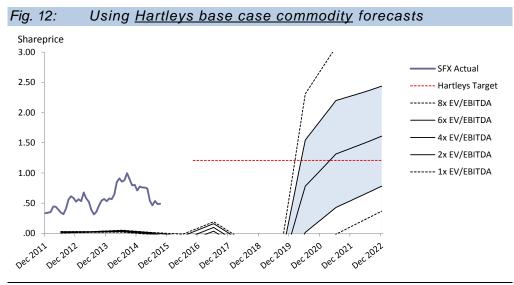
Fig. 10:SFX price target

Weighting	Spot	12 mth out
45%	\$0.74	\$0.89
25%	\$1.52	\$1.71
4%	\$0.20	\$0.25
4%	\$0.71	\$0.82
6%	\$1.33	\$1.59
6%	\$2.56	\$2.87
4%	\$1.45	\$1.45
4%	\$0.24	\$0.24
2%	\$0.03	\$0.03
	\$1.05	
	\$1.21	
	\$0.490	
	147%	
	45% 25% 4% 4% 6% 6% 4% 4%	45% \$0.74 25% \$1.52 4% \$0.20 4% \$0.71 6% \$1.33 6% \$2.56 4% \$1.45 4% \$0.24 2% \$0.03 \$1.05 \$1.21 \$0.490 \$0.490

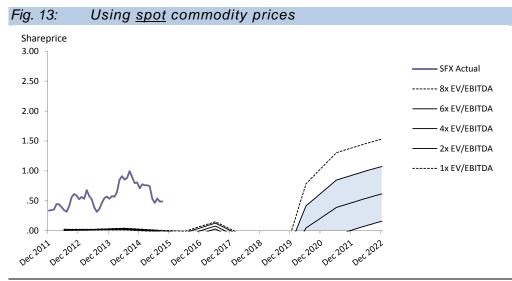
Source: Hartleys Estimates

Assumption	Risk of not realising	Downside risk to	Comment
ssumption	assumption	valuation if assumption is incorrect	Comment
irst production in mid CY19 or Thunderbird	High	Moderate	The construction period for any future mine is expected to be long with significant approval and construction timeframes.
/lineral sands prices in line vith sell-side consensus	Moderate	Significant	The consensus is for modestly improving prices
0 year mine life	Moderate to high	More likely to be upside	Our model assumes only the high grade resource is mined and none of the low grade resource. It's possible that mine life is too conservative.
Capex for Thunderbird is 0:30 debt/equity	Moderate	upside/downside risk is equal as we are conservative on our assumption for equity dilution.	Capital requirements are large for a company of this size and there is risk that SFX will not be able to raise sufficient funds
Operating costs	Moderate	Moderate	We are happy with our operating cost assumptions
<i>I</i> inimal value for other rojects	High	Upside	Our valuation is based only on the Thunderbird project. Although it seems difficult to see the equity market attributing much value for the other projects in the near term, it should be remembered that potentially asset sales could fund a large proportion of the development studies.
Conclusion		nsequential reduction to o	able, we consider some assumptions as moderate to our valuation would be significant if they were not ieved.

EV/EBITDA BANDS



Source: Hartleys Estimates, IRESS



Source: Hartleys Estimates, IRESS

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Buy	Share price appreciation anticipated.
Accumulate	Share price appreciation anticipated but the risk/reward is not as attractive as a "Buy". Alternatively, for the share price to rise it may be contingent on the outcome of an uncertain or distant event. Analyst will often indicate a
Navitual	price level at which it may become a "Buy".
Neutral	Take no action. Upside & downside risk/reward is evenly balanced.
Reduce /	It is anticipated to be unlikely that there will be gains over
Take profits	the investment time horizon but there is a possibility of some price weakness over that period.
Sell	Significant price depreciation anticipated.
No Rating	No recommendation.
Speculative	Share price could be volatile. While it is anticipated that,
Buy	on a risk/reward basis, an investment is attractive, there
	is at least one identifiable risk that has a meaningful
	possibility of occurring, which, if it did occur, could lead to
	significant share price reduction. Consequently, the
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