

# Entrée Resources

Initiation of coverage

De-risked cash flows from a world-class mine

Metals & mining

Entrée Resources has a 20% participating interest in a JV (EJV) covering part of the Oyu Tolgoi (OT) copper mine in Mongolia. The EJV has the characteristics of a royalty with the benefits of a producer, resulting in low financial risk, low capital development risk and low operational risk. The development of Hugo North Extension (HNE) Lift 1 is fully funded by Entrée's JV partner and all development and operations are managed by Rio Tinto. We consider that future development of the deeper parts of HNE (also known as HNE Lift 2) and Heruga should follow the same path as HNE Lift 1, providing Entrée shareholders with materially de-risked cash flows for, potentially, several decades.

Year end	Revenue (C\$m)	PBT* (C\$m)	EPS* (c)	DPS (c)	P/E (x)	Yield (%)
12/15	0.0	(7.4)	(4.4)	0.0	N/A	N/A
12/16	0.0	(4.7)	(2.4)	0.0	N/A	N/A
12/17e	0.0	(2.2)	(1.3)	0.0	N/A	N/A
12/18e	0.0	(0.7)	(0.4)	0.0	N/A	N/A

Note: \*PBT and EPS are normalised, excluding amortization of acquired intangibles, exceptional items and share-based payments.

## Black-Scholes hints at value boundaries

Separate from our DCF and in-situ resource values (see section below), we have performed a Black-Scholes analysis and valuation of Entrée's future production. Using a standard Black-Scholes model derives a value for current HNE Lift 1 production of US\$350m and over US\$1.9bn if HNE Lift 2 is included. Obviously, the absence of risk in the Black-Scholes method is key, although discounting the option value by over 95% still could allow for such options to be sold for a sum comparable to Entrée's current market capitalisation (see page 10 for details).

## Valuation: Stripped back DCF gives plenty of upside

We have performed a SOTP valuation for Entrée Resources, with the majority of value derived from using the Entrée-attributable production and cost data contained within the 2018 updated Feasibility Study on HNE Lift 1 and PEA on Heruga/HNE Lift 2 (2018 Reserve Case and 2018 PEA), our long-term gold and copper prices and a 10% discount rate to reflect general equity risk. Attributable capital expenditures to Entrée are contributed on Entrée's behalf by its JV partner Oyu Tolgoi LLC (OTLLC). We have also factored in Entrée's legacy Sandstorm Equity Funding and Participation Agreement (a 50-year life with option to extend, 28.1% of Au and Ag and 2.1% of Cu production, with cash paid back to Entrée based on Cu/Au/Ag floor prices relative to spot). Contributions (plus interest at prime +2%) are repayable from 90% of available cash flow. On this basis, we value EJV HNE Lifts 1 and 2 at C\$2.32 per Entrée share, to which could be added C\$0.63 per share for the in-situ valuation of Heruga's inferred-category mineral resources. Adjusting for an 8% (used as the base for the AMEC technical report) discount rate results in a valuation of C\$3.57 (US\$2.86).

18 January 2018

Price **C\$0.65**

Market cap **C\$113m**

C\$1.25/US\$

Net cash (US\$m) at 30 September 2017 7.7

Shares in issue 173.6m

Free float 65.6%

Code ETG/EGI

Primary exchange TSX

Secondary exchange NYSE American

### Share price performance



% 1m 3m 12m

Abs 1.6 20.4 20.4

Rel (local) (0.2) 16.6 13.8

52-week high/low C\$0.86 C\$0.46

### Business description

Entrée Resources has a carried joint venture interest in certain integral parts of the Oyu Tolgoi copper-gold project in Mongolia (20% or 30% joint venture interest depending on resource depth). The first of the joint venture's deposits to be developed as part of the overall Oyu Tolgoi mine plan (managed by Rio Tinto) is the first lift of the Hugo North Extension deposit, due to enter sustained production in 2027.

### Next events

Year end results March 2018

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## Investment summary

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### Company description: Massive low-risk value of a Tier 1 asset

Entrée Resources holds a 20% carried interest in the Entrée/Oyu Tolgoi joint venture (EJV) on a significant portion of the large high-grade Oyu Tolgoi (OT) copper-gold underground mining project in Mongolia. The EJV property includes Lift 1 and Lift 2 of the Hugo North Extension (HNE) deposit and the Heruga orebody. Sustainable first production from the OT underground mine is expected in 2021. First development production from HNE Lift 1 on the EJV property is expected in 2021 followed by sustainable production in 2026. HNE Lift 2 and Heruga also host very large copper and gold resources that should be developed during the economic life of OT.

### Valuation: All methods see Entrée's equity as undervalued

We have undertaken three valuation methods: a DCF on HNE Lift 1 and 2 future production, an in-situ valuation of Heruga's mineral resources and a Black-Scholes analysis of the potential option value of HNE/Lift 1 and Lift 2 production. All methods demonstrate that Entrée's current market value considerably underestimates the value inherent in Entrée's assets.

- DCF (at a 10% discount rate) value for HNE/Lift 1 and Lift 2 copper, gold and silver production is C\$2.32 per Entrée share. This valuation assumes that Entrée's current balance sheet is sufficiently funded to carry it through to first development production in 2021 with first sustainable block cave production starting in 2026.
- A further C\$0.63 per share can be added to the above valuation for the value of 20% (ie Entrée's attributable share) of Heruga's inferred-only resource base. This uses copper (EV US\$17.58/t), gold (EV US\$11/oz) and silver (EV US\$1.28/oz) multiples as per market data obtained over the summer of 2017.

### Financials: Current treasury could see through to first cash flow

Entrée Resources at end September 2017 had cash of US\$7.7m, and a debt account totaling US\$7.7m, to be repaid to OTLLC at Royal Bank of Canada prime rate (2.95% as of 13 July 2017) plus 2%. This will start to be repaid in the development production phase in 2023. The EJV stipulates that Entrée's attributable capex is to be advanced via a loan agreement held with OTLLC. This debt account is to be repaid from 90% of cash flows available from net proceeds of sales of Entrée's attributable production in a month, less Entrée's share of operating costs for the month. Entrée will then use the remaining available cash flow from its attributable production, as well as cash payments received from Sandstorm, to purchase and deliver metal credits to Sandstorm under the Sandstorm agreement. With first sustainable cash flows less than 10 years away in 2026, Entrée has pared back all corporate expenditure to avoid any foreseeable need to return to the market to raise further funds. Management indicates that central costs have now been reduced to around US\$1.2m per annum. As long as this level of expenditure is successfully maintained, we consider the company will be able to reach full production in 2026 and should not require additional capital. Entrée also has C\$8.2m tied up in in-the-money warrants and options.

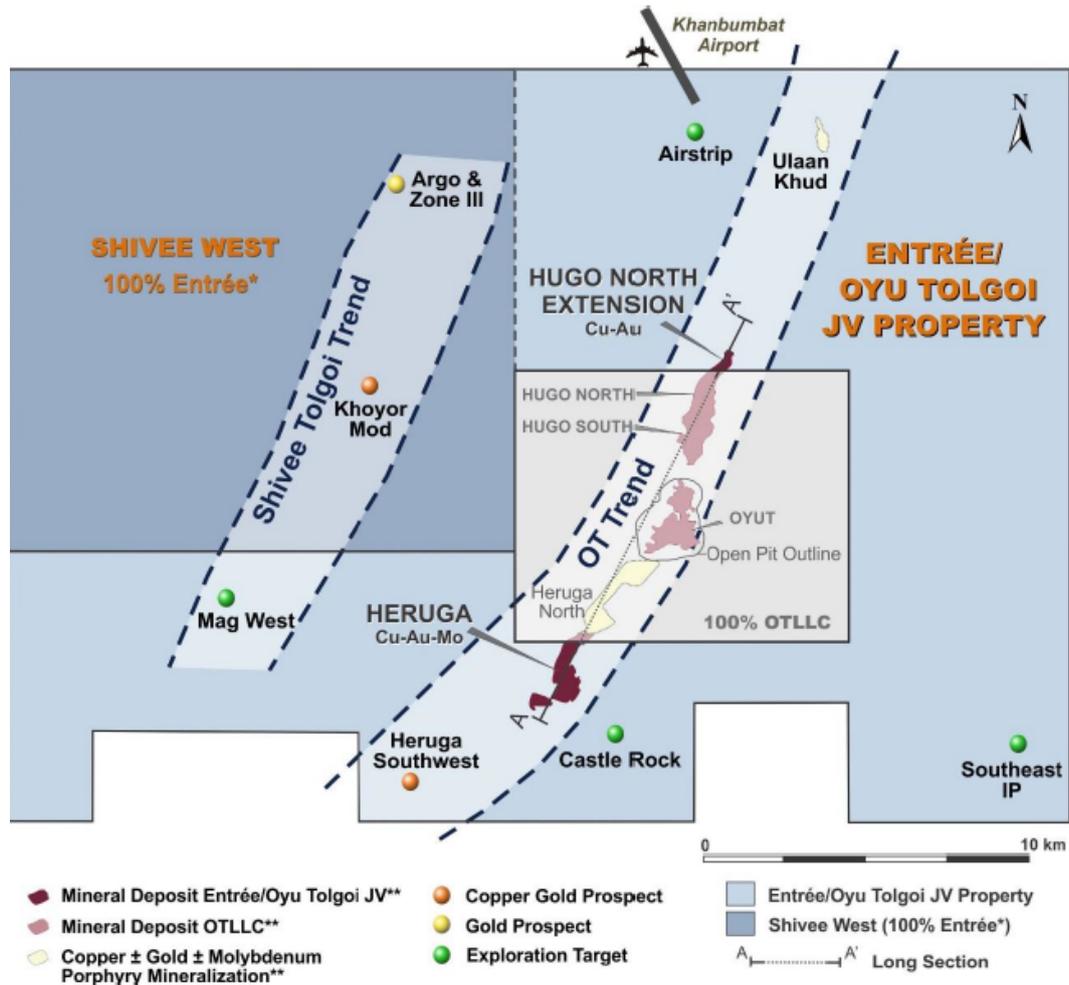
### Sensitivities: Low financial, execution and operating risks

Entrée is exposed to low financial risk (it has a decent treasury, which should see it through to production), it needs to secure no upfront capital (as it is debt carried through to production) and so there is no expected shareholder dilution. Entrée also has low development risk as Rio Tinto, as majority partner in Turquoise Hill, is the operator and manager of site development. Entrée also has very low operational risk (again with Rio Tinto acting as manager of mining operations).

## The next major copper trend

Entrée's interest in certain land holdings surrounding the main Oyu Tolgoi mining area positions it as the recipient of future cash flows from one of the world's newest, largest and highest growth potential copper trends. Current copper market forecasts predict a supply deficit of the red metal by c 2020, enhancing the cash flow generation of what will become, under current development plans, the world's third largest copper mine.

**Exhibit 1: License boundaries and project/resource locations**



Source: Entrée Resources

Entrée Resources was previously Entrée Gold; it changed to its current name following a plan of arrangement in H117. This plan of arrangement separated Entrée Gold into two Canadian companies, one maintaining the existing Entrée stamp (Entrée Resources), along with its Mongolian copper and precious metal resources centered on the Oyu Tolgoi mine, and the other new company named Mason Resources, spun out with the 100% owned Ann Mason copper porphyry resource in the US. Entrée Resources and Mason Resources were split and received cash balances proportional to the investments made on each company's asset base. Entrée Resources maintained its existing Canadian and US listings and Mason Resources listed in Canada in May 2017 and on the OTCQB in the US in November 2017. The business split provides each company (one with assets in the US, the other Mongolia) with its own risk profile linked to location of assets, ownership of assets, and timelines to first cash flows (whether funded in the case of Mongolia, or pre-funding in the case of the US).

## Non-core royalties

Entrée also owns a 56.3% JV interest in the Blue Rose copper-iron-gold-molybdenum property in Australia and a 0.5% net smelter return (NSR) royalty on the Cañariaco copper project in Peru (owned by Candente Copper). Blue Rose and Cañariaco are referenced purely for information purposes and do not form any part of our valuation of Entrée Resources shares.

## Entrée Resources: Post plan of arrangement

With the Ann Mason project now held within a separate company, Entrée Resources presents a simplified focused package of assets all potentially within economic development distances of the current Oyu Tolgoi mine site and processing complex. Further, Lift 1 of OTLLC's Hugo North deposit and the EJV's HNE deposit provide the next development opportunities now that the initial mining phase at Oyu Tolgoi, the Oyut open pit, is in production. With OTLLC incurring capital costs to date totaling in excess of US\$10bn, and notwithstanding the economic benefits to Mongolia (OT contributes c 30% to GDP, and accounts for c 89% of all exports from the country), the continuing operation of the Oyu Tolgoi mine is of clear importance to all stakeholders.

Entrée's top five shareholders, including three cornerstone investors, as of 9 November 2017 are:

<b>Exhibit 2: ETG top five shareholders</b>				
<b>Company name</b>	<b>Shareholding (%)</b>	<b>Share no.</b>	<b>Last trade</b>	<b>Date of last trade</b>
Sandstorm Gold	13.77	23,900,380	+914,634	13/01/2017
Rio Tinto	9.54	16,566,796	0	N/A
Turquoise Hill Resources	7.95	13,799,333	0	N/A
Royal Bank of Canada	1.53	2,654,550	+16,156	30/06/2017
Wells Fargo & Company	0.73	1,275,000	+ 1,275,000	30/06/2016

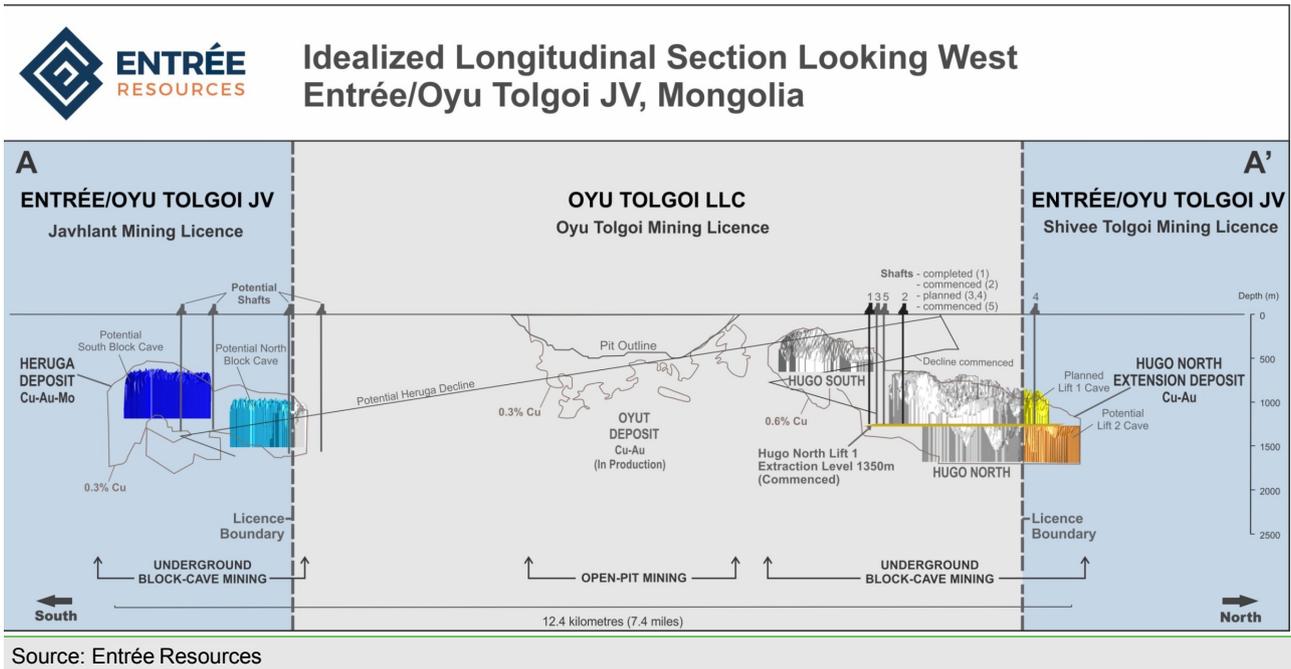
Source: Bloomberg

## Entrée/OT JV: A budding relationship

The current Oyu Tolgoi open-pit mine and processing complex is the biggest single development project to have ever been built in Mongolia. Its development cost, operation and profitability are integral to Mongolia's economic health and growth in the near term, and, along with its considerable underground resource base, provide an opportunity to extend OT's life of mine out many decades.

Currently, Oyu Tolgoi's development is focused on building out the Hugo North and Hugo North Extension Lift 1 deposits via a five-shaft and haulage ramp infrastructure design and underground block cave method of extraction. This approach to mine development was chosen to best take advantage of the vast underground tonnages of copper and gold rich ores, and requires considerable upfront capital and long lead times to first production. The underground phase of mine development re-started in 2016 following a successful conclusion to negotiations between the Mongolian government and Rio Tinto over tax and cost overruns. Underground development is being conducted alongside the current open-pit 'Oyut' operation. First sustainable production for OTLLC from the underground phase is due in 2021 (according to Turquoise Hill's August 2017 corporate presentation) and ramps up to steady-state in 2026, which roughly coincides with the current development plan held for the EJV. The EJV's HNE Lift 1 is expected to deliver first commercial cash flows to Entrée in 2027 from its 20% interest.

**Exhibit 3: South-North long-section of Oyu Tolgoi LLC and Entrée/Oyu Tolgoi JV projects & developments**



Source: Entrée Resources

The Oyut deposit, Hugo South and Hugo North deposits are predominantly situated within OTLLC's Oyu Tolgoi mining license. As can be seen in the long-section above (Exhibit 3), the northern margin to the Hugo North deposit stretches into the EJV's Shivee Tolgoi mining license. Conversely, the bulk of the Heruga deposit (situated to the south-west of the Oyu Tolgoi mining license) extends south-west into the EJV's Javhlant mining license.

It is therefore clear that future growth at the Oyu Tolgoi mine is associated with the development of resources within the EJV properties, where some of the highest copper grades also reside. The investment decision to develop Lift 1 of the HNE deposit was made in H116 by OTLLC and is the first EJV development to occur at Oyu Tolgoi. We should expect the deeper portion of the HNE (Lift 2) deposit as well as Heruga to the south-west to play important future roles in the overall mine life at Oyu Tolgoi.

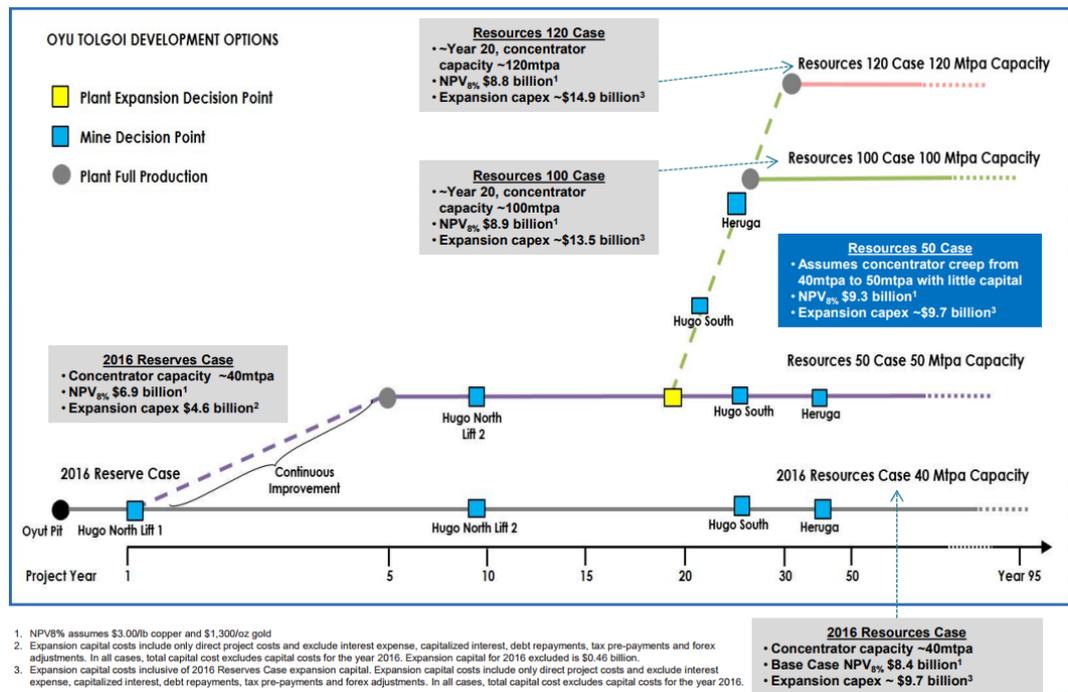
**Future development optionality captures all Entrée resources**

Framed in the light of Rio Tinto's own words (see below), Oyu Tolgoi is highly likely to be developed with a "distinctly long-term", multigenerational view:

"Given its significance to the copper industry globally and the likely multi-generational nature of the business, Oyu Tolgoi is being developed with a distinctly long-term view. With the expected development of underground mining, the business has a long and bright future."

As such, a number of development options have been explored for the mining out of OT's other mineral resources, including those held by the EJV. The following figure provides the most recent thinking towards developing OT, and is taken from Turquoise Hill's December 2017 investor presentation.

#### Exhibit 4: Potential future Oyu Tolgoi development options



Source: Turquoise Hill, December 2017 investor presentation

Current committed underground development sees mining following the 2016 Reserves Case (see above), which sees mining of ore deposits close to Hugo North Lift 1 (including the EJV's HNE) feed 40Mtpa of material through OT's surface processing complex to recover copper, gold and silver in concentrate. This mining rate is currently being achieved through mining the Oyu open pit (H117 throughput was 19.7Mt according to the Turquoise Hill 3-5 October 2017 Site Visit Presentation). This mill throughput capacity could gradually improve over time as the processing complex and mining practices are refined through the normal course of OT's operation. As such, a throughput capacity increase from 40Mtpa to 50Mtpa appears (from the above exhibit) to be easily achievable with the lowest of additional expansion capital under the five options presented above.

The 2018 Reserve Case and 2018 PEA most closely follows this 2016 Resources Case with EJV HNE Lift 1 development production from project year 4 (2021) and EJV HNE Lift 2 developed from project year 11 (ie 2028) and Heruga developed from project year 48 (ie 2065).

## Valuation: Shares at significant discount to NPV

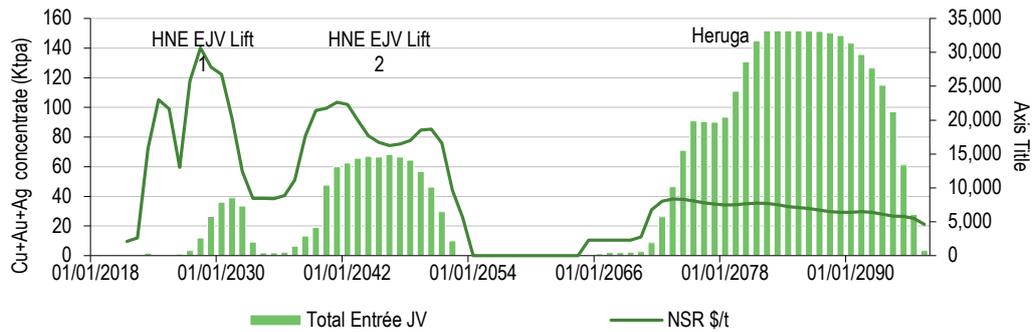
### DCF on non-Heruga cash flows provides significant upside

We conduct two approaches to valuing Entrée Resources' assets: absolute (see the following sections), resulting in a DCF-type value of Hugo North Extension Lift 1 and Lift 2 cash flows; and valuing the company's Heruga inferred-only resource base on an in-situ basis. While separate from this valuation section, we also point the reader to our Black-Scholes analysis and option pricing model outcome given on page 10.

Our base case valuation currently uses the company's newly released preliminary economic assessment completed by mining consultants AMEC Foster Wheeler America. From this we ascertain the following attributable metal and concentrate amounts due to the EJV from mining Lift 1 and Lift 2 of the Hugo North Extension deposit (Entrée has a 20% interest in each of these). Concentrate production is also forecast in the 2018 PEA for Heruga, but we omit this deposit from

our DCF valuation due to the very high levels of development capital required to mine this mineralized body. Further, the time line to develop Heruga (ie first meaningful concentrate tons produced are in the 2070s) means that its contribution to the EJV's total NPV is minimal (under Entrée's management assumptions) and nil on the basis of our conservative dividend discount valuation method. We consider Heruga, therefore, should be valued on an in-situ resource basis utilizing resource multiples reflecting current (as of the summer of 2017) market values for metals on an in-situ basis.

**Exhibit 5: EJV property gold and copper concentrate HNE Lift 1 & Lift 2 PEA**



Source: Update for new technical report title. Note: NSR = net smelter return.

Assimilating the above chart into our financial model provides the basis for our cash flow profile for the EJV property containing Lift 1 of the Hugo North Extension deposit. This only reflects Hugo North Extension Lift 1 resources, and not the deeper portions of Hugo North Extension Lift 2, which do not form a component of the current Oyu Tolgoi development strategy, nor the Heruga copper gold resources situated to the south-west. The mining cost and operating parameters we have used were taken from the aforementioned 2018 Reserve Case and 2018 PEA, and are:

**Exhibit 6: Unit cost data taken from updated 2018 Reserve Case and 2018 PEA**

EJV HNE Lift 1		Processing and Operating Cost	
Operating Cost	US\$/t	6.19	EJV HNE Lift 1
EJV HNE Lift 2			Operating Cost
Operating Cost	US\$/t	4.98	EJV HNE Lift 2
Heruga EJV			Operating Cost
Operating Cost	US\$/t	5.82	Heruga EJV
EJV HNE Lift 1			Operating Cost
Development Capital	US\$/t	2.60	Infrastructure & Other
Capital	US\$/t		Infrastructure & Other Operating Costs
Development Capital	M US\$/yr		EJV HNE Lift 1
EJV HNE Lift 2			Operating Cost
Development Capital	US\$/t	0.61	EJV HNE Lift 2
Capital	US\$/t	2.49	Operating Cost
Development Capital	M US\$/yr		Heruga EJV
Heruga EJV			Operating Cost
Development Capital	US\$/t	7.48	
Capital	US\$/t	4.10	

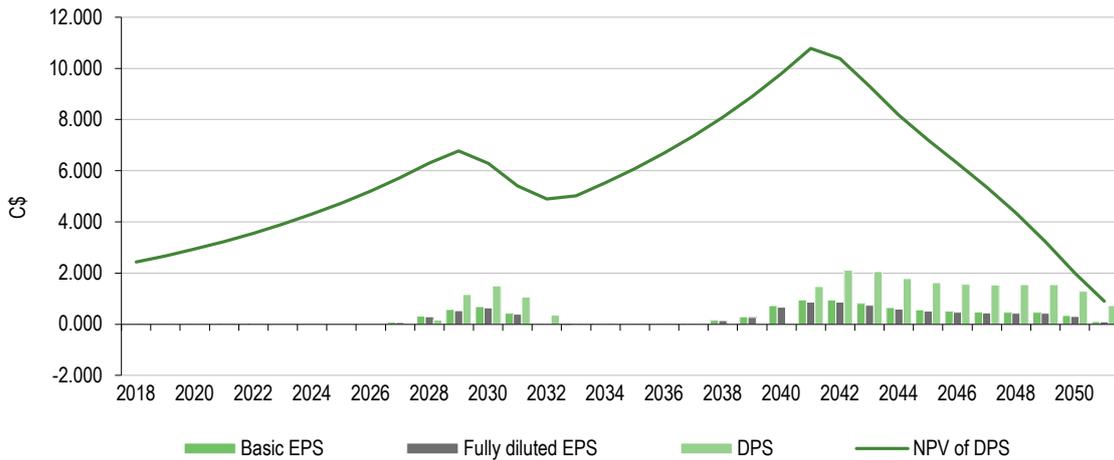
Source: AMEC Foster Wheeler America Ltd, Entrée Resources

## DCF valuation: Hugo North only, Heruga omitted

In the first instance we have used the new 2018 Reserve Case and 2018 PEA for valuing Entrée's attributable share of cash flows achieved from mining the Hugo North Extension (Lifts 1 and 2) and Hugo North Extension (Lifts 1 and 2) deposits, using a DCF method, utilizing a 10% discount. We omit the Heruga resource from our DCF valuation due to a) the considerable capital required to develop this distal asset, b) Heruga's very large inferred-only resource being too high-risk to value

using a DCF approach and c) the cash flows received from this asset not being additive to the DCF result obtained based on cash flows from the Hugo North Extension deposits (Lift 1 and Lift 2). Our valuation of Heruga is based on a comprehensively derived in-situ copper resource multiple applied to its inferred category mineral resource; see the following section. Assuming Entrée and its JV partner develop Hugo North Extension Lifts 1 and 2 as per the January 2018 Reserve Case and 2018 PEA, and operating costs and metal prices are close to our metal price forecasts, then the attributable earnings per share and theoretical dividend per share due to Entrée would follow the following earnings profile for the valuation period 2018 to 2052:

**Exhibit 7: Edison estimate of theoretical dividend per share, earnings per share, 2018 to 2052**



Source: Edison Investment Research

On the above basis, we value Entrée’s shares at C\$2.32 (US\$1.94) per share, using a 10% discount rate to reflect general equity risk and metal prices as per page 10. A sensitivity analysis using varying discount rates is given on page 10 of this report, along with analyses using varying future copper prices.

## Resources and reserves valuation

The vast resources present across the land packages that Entrée has an interest in are reflected in the following table (Exhibit 8). The effective date for both the HNE and Heruga resource is 15 January 2015.. The HNE Lift 1 reserve estimate is also effective 15 January 2015 and is not additive to the HNE Lift 1 and Lift 2 resource.

We note that the EJV has considerable amounts of inferred resources related to the Heruga deposit. These resources will need upgrading to indicated and measured levels of resource confidence before they can be converted into ore reserves. This process is very likely going to reduce tonnages and change the overall copper and gold grades mined. As such we have valued Heruga using an in-situ resource multiple. The result of this valuation is given in the following section.

**Exhibit 8: Entrée Resources' NI 43-101 compliant mineral resources and ore reserves**

Entrée/Oyu Tolgoi JV Property – Mineral Resources – effective January 2018										
Classification	Tonnage (Mt)	Cu (%)	Au (g/t)	Ag (g/t)	Mo (ppm)	CuEq (%)	Contained Metal			
							Cu (klbs) (Mlb)	Au (Koz) (Koz)	Ag (Koz) (Koz)	Mo (Mlb)
<b>Hugo North Extension (&gt;0.37% CuEq Cut-Off)</b>										
Indicated	122	1.68	0.57	4.21		2.03	4,515	2,200	16,500	
Inferred	174	1	0.35	2.73		1.21	3,828	2,000	15,200	
<b>Heruga (&gt;0.37% CuEq Cut-Off)</b>										
Inferred	1,700	0.39	0.37	1.39	113.2	0.64	14,604	20,410	75,932	424
Entrée/Oyu Tolgoi JV Property – Mineral Reserve										
Classification	Tonnage (Mt)	NSR (\$/t)	Cu (%)	Au (g/t)	Ag (g/t)	Cu (Mlb)	Recovered Metal			
							Au (Koz)	Ag(Koz)		
Probable	35	100.57	1.59	0.55	3.72	1,121	519	3,591		

Source: Entrée Resources. Entrée has a 20% interest in the above resources and reserves

## Heruga's value: NPV method significantly undervalues

NPV calculations beyond a 20-year time horizon result in vastly diminished returns in current money terms and deliver marginal value that is not truly reflective of the inherent value of the asset in question. This is the case with Heruga, a very large inferred resource at present that would not likely be developed in the next 20 years (see page 7 for further discussion on alternative development strategies). As such, we view an in-situ valuation of Heruga's current inferred only resource, utilizing our proprietary and unbiased database of junior mining explorers, as the most appropriate way to define a secure absolute value of Entrée's large Heruga resource. The following table uses in-situ resource multiples as contained in our November 2017 report, [Mining overview: Unlocking the price to NPV discount](#).

**Exhibit 9: Residual resource valuation (Heruga – inferred resources only)**

In-situ multiples by resource category			Total in-situ value by metal				
Cu	Au	Ag	Cu	Au	Ag		
EV/t	EV/oz	EV/oz	US\$m	US\$m	US\$m		
17.58	11.00	1.28	116.5	224.6	97.2		
Entrée share (20% - ie ignoring depth limits of mineralisation)					Grand total		
			Per share (C\$)	0.17	0.32	0.14	0.63

Source: Edison Investment Research

We note that Entrée's management states the contribution to its total PEA NPV of US\$278m from Heruga, based on a DCF approach, is approximately US\$1.5m. Our assimilation of the Heruga DCF into our own financial model implies there is no value attributed to mining this asset at all. Therefore, the current 2018 Reserve Case and 2018 PEA outlined strategy for developing Heruga significantly undervalues this asset when compared with its in-situ value based on current market data for in-situ copper resource multiples. Placing our total in-situ value of C\$0.63 (US\$0.50) per Entrée share, for 20% of Heruga's inferred resource, alongside the negligible attributable value on an NPV basis (less than one cent per share) clearly demonstrates the disparity between valuation approaches.

## Summary valuation table and metal price assumptions

The following table gives a summary of our base case valuation:

**Exhibit 10: Summary valuation table**

Item	Valuation method	Value (C\$/ETG share)
HNE lifts 1 and 2	DCF	2.32
Heruga	In-situ resource value	0.63
Total	DCF/in-situ resource multiple	2.95

Source: Edison Investment Research

## Metal price assumptions

The following are Edison's metal price estimates used to value Entrée's assets:

### Exhibit 11: Edison's gold price forecasts

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030 onwards
Gold price (US\$/oz)	1,275	1,220	1,263	1,482	1,437	1,304	1,303	1,264	1,235	1,319	1,428	1,500	1,574	1,401

Source: Edison Investment Research

We use a long-term copper price of US\$2.96/lb to value Entrée's attributable production.

## Sensitivities

As with royalty companies in general, engineering, geological, metallurgical and financing risks, all relevant to mining stocks, are considerably diminished for Entrée. Development of the HNE Lift 1 is debt financed by OTLLC, a decision to develop has already been made and a clear timeline to first production is being followed. From our view of past Turquoise Hill press releases, there have been no slippages to established development timelines (however, we are still closer to the start of underground development than to its completion). As such, the risks most relevant to Entrée Resources are predominantly macroeconomic in origin, namely commodity price risk.

### Exhibit 12: Sensitivity to copper price

Copper Price (US\$/lb)	2.25	2.50	2.75	2.96	3.25	3.50	3.75	4.00
NPV (C\$)	1.52	1.81	2.07	2.32	2.72	3.03	3.39	3.70

Source: Edison Investment Research

A 50 cent change in the copper price would result in an average 15% change in our base case valuation.

### Exhibit 13: Sensitivity to gold price (held flat over LOM)

Gold price (US\$/oz)	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450
NPV (C\$)	2.26	2.28	2.30	2.32	2.34	2.36	2.38	2.44

Source: Edison Investment Research

Due to the low volumes of gold extracted (as well as minor silver), a gold price change of US\$50/oz only changes our base case value by 3 Canadian cents.

### Exhibit 14: Sensitivity to discount rate

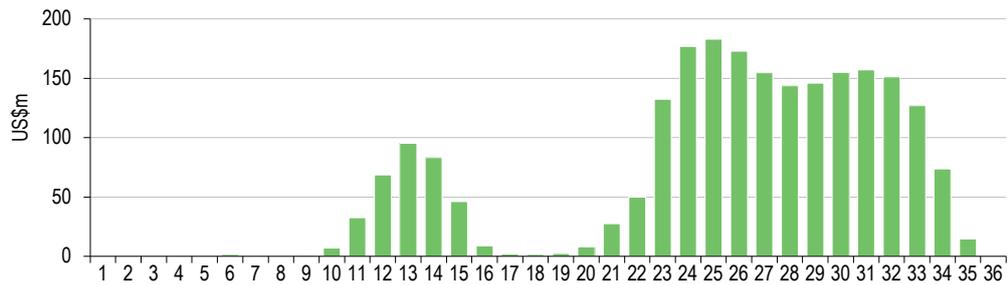
Discount rate (%)	0	5	8	10	12	15	17.5	20
NPV (C\$)	22.71	6.42	3.4	2.32	1.62	0.99	0.69	0.49

Source: Edison Investment Research

## Black-Scholes: Option value dwarfs DCF/in-situ values

The basic premise of this analysis is to apply the financials contained within the 2018 Reserve Case and 2018 PEA to calculate net cash flow after tax and OTLLC debt repayments for each copper pound attributable to Entrée in each year and to calculate an all-in cost per pound of the production attributable to Entrée. We then set the exercise price of the option to equal this number in order to cover the cost of Entrée's attributable production. We then calculate the value of an option with this exercise price, given the usual input parameters into a basic Black-Scholes option pricing model (eg long-term copper price, volatility, risk-free rate of return, time to maturity, etc). The outcome of this calculation is provided below and in Exhibit 15.

**Exhibit 15: Option value per year (US\$m); first peak represents HN Lift 1, second HN Lift 2**



Source: Edison Investment Research

### Assumptions: Take notice and treat this analysis with caution

We do not make assumptions as to the taxation effects around selling the options. We also apply some straight-line assumptions regarding the continuously compounded risk-free rate (based on the yield curve for US 10- and 30-year gilts). Our volatility assumption is based on historical copper price data for the period 1987 to the present. This derives a copper volatility measure of 30.44%, being the standard deviation of the copper price in annual percentage terms since 1987 (the earliest recorded date for LME cash settled copper price data held on Bloomberg). However, this volatility assumption covers a period of copper prices that reflect a very volatile period in the red metal's trading history. This may or may not be the correct period to use, as it reflects both physical and derivative trading. For illustrative purposes, reducing this volatility factor 10% shrinks the option value by a corresponding 6%. While beyond the scope of this analysis at present, a refinement to the volatility factor could be derived from looking at the volatility implied in the pricing of copper options currently to ascertain the market's implicit volatility assumption.

We then apply Entrée's current price to NPV ratio 60%, based on an Entrée market capitalisation of US\$115m and the 2018 PEA NPV<sub>10</sub> of US\$192m) to obtain a theoretical risk-adjusted option value for the period 2018 to 2037. This time period reflects the production achieved from mining the Hugo North Extension (HNE) Lift 1 but not production from the Hugo North Extension Lift 2 or Heruga developments, which are at present pre-investment decision assets. On this basis, we consider the discounted option-equivalent value of HNE Lift 1 production to be worth US\$347m. Further, if these options were sold at a 95% discount to their theoretical value, they would still generate an equity valuation for ETG that is in line with its current market capitalisation.

Applying the same methodology for HNE Lift 2 production only, forecast as per the 2018 PEA, to be over the period 2037-51, results in an option value of US\$1.87bn. Although we note that no commitment has been made to develop HNE Lift 2 by OTLLC; however likely its development is considering the long-term development strategies published by OTLLC's majority partner Turquoise Hill (see Exhibit 5). We do not attempt a Black-Scholes analysis for Heruga, as a) the resource defined is entirely within the inferred category and therefore too high-risk, and b) this deposit is situated over 12km to the south of current haulage, mining and processing infrastructure and considerable further work is needed to understand the deposit's future viability.

Also, this Black-Scholes analysis takes no account of the transfer of risk onto the option holder, as a result of which, they are unlikely to want to pay full value for the options. As such, this analysis could be regarded as defining the parameters within which a transactional value of Entrée's interests could be made, if they were to be treated as an option on Entrée's production, all-in cost of production and the copper price.

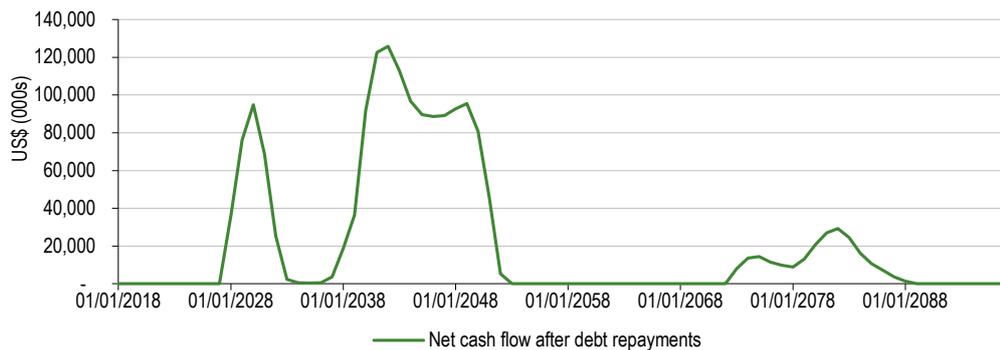
Within this context, if options could be sold at a 93.8% discount (ie applying a discount factor of 0.062), they would yield a value to Entrée equity holders that is equal to the NPV<sub>10</sub> for the period of mining HNE Lift 1. Prima facie, Entrée equity therefore appears to be a cheap investment in future copper output on an option-equivalent basis.

## Financials

Entrée Resources at end September 2017 had cash of US\$7.7m, and a loan account totaling US\$7.7m, to be repaid to OTLLC at Royal Bank of Canada prime rate (2.95% as of 13 July 2017) plus 2%. This will be repaid as sustainable production commences in 2026. The EJV stipulates that Entrée's attributable capex is to be advanced via a loan agreement held with OTLLC. This loan account is to be repaid from 90% of cash flows available from net revenues from Entrée's attributable production in a month, less its share of operating costs for the month. Entrée will then use the remaining net revenues from the sale of its attributable production, as well as cash payments received from Sandstorm, to purchase and deliver metal credits to Sandstorm under the Sandstorm agreement.

The following line chart gives the annual cash amounts net of debt repayment due back to Entrée over the course of the entire development horizon (ending 2097):

**Exhibit 16: Entrée's net cash flow after debt repayments**



Source: Entrée Resources and Edison Investment Research

Total attributable capex to Entrée for the building out of HNE Lift 1 is US\$52.3m (C\$65.4m). This is added to the OTLLC loan account as and when the development takes place. We also note that the 2018 PEA includes a total of US\$79.1 M (reserve case) and US\$369.3m (PEA case) in amortization charges that are treated like an operating cost and therefore not added to the OTLLC loan account. This covers development and sustaining capital not on the joint venture (shafts 2, 3, 5, underground construction of Lift 1 and 2, infrastructure, concentrator, tailings, reclamation).

With first sustainable cash flows 10 years away in 2026, Entrée has pared back all corporate expenditure to avoid any foreseeable need to return to the market to raise further funds. Management indicates that central costs have now been reduced to around US\$1.2m (C\$1.5m) per annum. As long as this level of expenditure is successfully maintained, we consider the company will be able to reach full production in 2026 should not require additional capital. Entrée also, potentially, has C\$8.2m tied up in in-the-money warrants and options

## Deferred revenue

Upon the delivery of metal credits, Sandstorm will make a cash payment to Entrée equal to the lesser of the prevailing market price and US\$220 per ounce of gold, US\$5 per ounce of silver and US\$0.50 per pound of copper (subject to inflation adjustments). After approximately 8.6 million

ounces of gold, 40.3 million ounces of silver and 9.1 billion pounds of copper have been produced from the entire current EJV property, the cash payment will be increased to the lesser of the prevailing market price and US\$500 per ounce of gold, US\$10 per ounce of silver and US\$1.10 per pound of copper (subject to inflation adjustments). To the extent that the prevailing market price is greater than the amount of the cash payment, the difference between the two will be credited against the deposit. This arrangement does not require the delivery of actual metal, and the company may use revenue from any of its assets to purchase the requisite amount of metal credits.

**Exhibit 17: Financial summary**

	C\$'000s	2015	2016	2017e	2018e	2019e	2020e
December		US GAAP					
<b>PROFIT &amp; LOSS</b>							
Revenue	0	0	0	0	0	0	0
Cost of Sales	(7,140)	(4,802)	(2,208)	(1,234)	(936)	(1,051)	(1,051)
Gross Profit	(7,140)	(4,802)	(2,208)	(1,234)	(936)	(1,051)	(1,051)
EBITDA	(7,021)	(4,565)	(2,208)	(967)	(675)	(696)	(696)
Operating Profit (before amort. and except.)	(7,021)	(4,565)	(2,339)	(1,098)	(806)	(827)	(827)
Intangible Amortisation	0	0	0	0	0	0	0
Exceptionals	(119)	(237)	0	0	0	0	0
Other	0	0	0	0	0	0	0
Operating Profit	(7,140)	(4,802)	(2,339)	(1,098)	(806)	(827)	(827)
Net Interest	(412)	(177)	121	367	263	181	181
Profit Before Tax (norm)	(7,433)	(4,742)	(2,218)	(730)	(543)	(646)	(646)
Profit Before Tax (FRS 3)	(7,552)	(4,979)	(2,218)	(730)	(543)	(646)	(646)
Tax	(160)	553	0	0	0	0	0
Profit After Tax (norm)	(7,593)	(4,189)	(2,218)	(730)	(543)	(646)	(646)
Profit After Tax (FRS 3)	(7,712)	(4,426)	(2,218)	(730)	(543)	(646)	(646)
Average Number of Shares Outstanding (m)	173.0	173.0	173.0	173.6	173.6	173.6	173.6
EPS - normalised (c)	(4.4)	(2.4)	(1.3)	(0.4)	(0.3)	0.0	0.0
EPS - normalised and fully diluted (c)	(4.0)	(2.2)	(1.2)	(0.4)	(0.3)	0.0	0.0
EPS - (IFRS) (c)	(4.5)	(2.6)	(1.3)	(0.4)	(0.3)	(0.4)	(0.4)
Dividend per share (p)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)	N/A						
EBITDA Margin (%)	N/A						
Operating Margin (before GW and except.) (%)	N/A						
<b>BALANCE SHEET</b>							
Fixed Assets	38,467	39,579	42,293	43,701	44,809	50,619	50,619
Intangible Assets	0	0	0	0	0	0	0
Tangible Assets	38,467	39,579	42,293	43,701	44,809	50,619	50,619
Investments	0	0	0	0	0	0	0
Current Assets	23,195	13,701	7,697	5,580	3,929	275	275
Stocks	0	0	0	0	0	0	0
Debtors	98	35	0	0	0	0	0
Cash	22,786	13,391	7,422	5,305	3,654	0	0
Other	311	275	275	275	275	275	275
Current Liabilities	(1,350)	(455)	0	(22)	(21)	(2,823)	(2,823)
Creditors	(1,350)	(455)	0	(22)	(21)	(29)	(29)
Short term borrowings	0	0	0	0	0	(2,794)	(2,794)
Long Term Liabilities	(39,316)	(33,336)	(36,087)	(36,087)	(36,087)	(36,087)	(36,087)
Long term borrowings	(6,824)	(7,334)	(10,085)	(10,085)	(10,085)	(10,085)	(10,085)
Other long term liabilities	(32,492)	(26,002)	(26,002)	(26,002)	(26,002)	(26,002)	(26,002)
Net Assets	20,996	19,489	13,903	13,173	12,630	11,984	11,984
<b>CASH FLOW</b>							
Operating Cash Flow	(7,600)	(10,961)	(2,628)	(945)	(675)	(688)	(688)
Net Interest	279	279	121	367	263	181	181
Tax	0	0	0	0	0	0	0
Capex	(516)	34	(11,688)	(1,539)	(1,239)	(5,941)	(5,941)
Acquisitions/disposals	0	0	0	0	0	0	0
Financing	41	612	5,237	0	0	0	0
Dividends	0	0	0	0	0	0	0
Net Cash Flow	(7,796)	(10,036)	(8,958)	(2,117)	(1,651)	(6,448)	(6,448)
Opening net debt/(cash)	(23,759)	(15,962)	(6,057)	2,663	4,780	6,431	6,431
HP finance leases initiated	0	0	0	0	0	0	0
Other	0	131	238	(0)	(0)	0	0
Closing net debt/(cash)	(15,963)	(6,057)	2,663	4,780	6,431	12,879	12,879

Source: Entrée Resources accounts and Edison Investment Research. Note: 2015 and 2016 are pre-plan of arrangement. US\$5.2m financing in 2017 was a private placement made in January 2017, and was also pre-plan of arrangement.

<b>Contact details</b> Suite 1650 – 1066 West Hastings Street Vancouver, B.C. Canada V6E 3X1 Canada +1 604 687 47777 www.entreeresourcesltd.com	<b>Revenue by geography</b> N/A
<b>Management team</b> <b>President &amp; CEO: Stephen Scott</b> Mr Scott has more than 25 years of global experience in all mining industry sectors. Prior to joining Entrée Gold, he was the president and chief executive officer of Minenet Advisors, a capital markets and management advisory consultancy providing a broad range of advice and services to clients relating to planning and execution of capital markets transactions, strategic planning, generation and acquisition of projects. Between 2000 and 2014, he held various global executive positions with Rio Tinto and currently serves on the board of directors for a number of public and private mining companies.	<b>CFO: Duane Lo</b> Mr Lo has over 17 years of experience in accounting and financial management, including 13 years in the financing, management and administration of mining operations and development projects in Brazil, Africa and other jurisdictions. He was previously the executive vice president and CFO of Luna Gold and corporate controller for First Quantum Minerals. He holds a Canadian chartered accountant designation from the Institute of Chartered Accountants of British Columbia.
<b>VP Legal Affairs: Susan McLeod</b> Ms McLeod has been practicing law in Vancouver, Canada since 1997. She has worked as outside counsel to public companies engaged in international mineral exploration and mining. She has advised clients with respect to corporate finance activities, mergers and acquisitions, corporate governance and continuous disclosure matters, and mining-related commercial agreements. Ms McLeod holds a BSc and an LLB from the University of British Columbia, and is a member of the Law Society of British Columbia.	<b>VP Corporate Development: Robert Cinits</b> Mr Cinits has worked in the mineral exploration industry for the past 32 years and has held a variety of positions with junior mining companies and consulting groups. Most recently, between 2007 and 2011, Mr Cinits was the COO of MinCore, a private Toronto-based exploration company, and prior to this position, he worked for AMEC, as a Principal Geologist and Head of the Mining/Geology Group for the Lima, Peru office between 2003 and 2007. Mr Cinits holds a BSc in geology from the University of Toronto and is a member of the Association of Professional Engineers and Geoscientists of BC.
<b>Principal shareholders</b>	<b>(%)</b>
Sandstorm Gold	13.8
Rio Tinto	9.5
Tuquoise Hill Resources	8.0
Royal Bank of Canada	1.5
Wells Fargo	0.7
De Witt, David	0.6
Awram, David	0.6
<b>Companies named in this report</b> Turquoise Hill, Rio Tinto, Ivanhoe Mines	

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