

# ASX ANNOUNCEMENT

9 February 2015



**STRANDLINE**  
resources limited

ABN 32 090 603 642

## COST REVIEW INDICATES SIGNIFICANT CAPEX & OPEX REDUCTIONS FOR CONSTRUCTION READY COBURN HMS PROJECT

### Company Facts

Strandline Resources (ASX: STA) - Exposure to major 'construction ready' Coburn Heavy Mineral Sands Project in Western Australia and emerging country-wide exploration play in Tanzania, within a major mineral sands producing corridor

### Key projects:

- Coburn Heavy Mineral Sands Project, WA (100%)
- Tanzanian Heavy Mineral Sands Exploration Projects (100%)
- Mt Gunson Copper Exploration Project, SA (100%)
- Mt Gunson MG14/Windabout Copper-Cobalt-Silver Development Project, SA (100%)
- Fowlers Bay Nickel Project, SA (100%) – Western Areas Earning In

### Corporate Structure

Shares on issue      615.5m  
Unlisted Options      15.6m

### Company Directors

#### Michael Folwell

Non-Executive Chairman

#### Richard Hill

Managing Director

#### Bill Bloking

Non-Executive Director

#### Didier Murcia

Non-Executive Director

### Investor Enquiries

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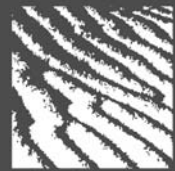
### Highlights

- Coburn the only DFS completed, fully permitted, construction ready zircon-rich HMS project of its kind globally
- 100% Strandline owned
- Long mine life of +19 years with ~\$30 million invested on the project to date
- Located in highly favourable mining jurisdiction of Western Australia with good access to existing infrastructure
- Review indicates potential cost reductions across life of mine through:
  - Upfront CAPEX reduction of \$29 million
  - OPEX reduction of \$4.6 million per annum
- Further cost reduction opportunities (not included in this review) to be pursued
- NPV\* A\$306 million, IRR 26%, with a 4.5 year payback (using TZMI base case pricing)
- Project economics strongly leveraged to improving mineral sands prices
- NPV\* A\$539 million, IRR 39%, with a 3.1 year payback (using TZMI base case pricing plus 20%)
- Cost Review prompted by the following advantageous developments:
  - Falling costs environment and falling Australian Dollar exchange rate
  - Production ready status of the Coburn Project
  - Recent strong interest from potential off-take parties and direct project participants seeking quality near term products despite cyclically low prices
  - Depleting global sources of quality zircon and titanium products in low risk jurisdictions

\*Refer to Table A on page 4 of this Announcement for further details

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Strandline Resources Limited (“Strandline” or the “Company”) is pleased to present the initial findings of a Cost Review (“Review”) investigating potential cost reductions and other value adding opportunities for its 100% owned Coburn Heavy Mineral Sands Project (“Coburn”), located in Western Australia.

Coburn is a **DFS completed, fully permitted, construction ready** project located near the coast, 250kms north of the major minerals port of Geraldton, with access to roads and gas from the Dampier to Bunbury natural gas pipeline. Coburn is a zircon-rich deposit with a global JORC 2004<sup>1</sup> Resource estimate of 979Mt @ 1.26% HM and a proved and probable Ore Reserve estimate of 308Mt @ 1.2% HM (Refer to Appendix 1). It has a projected mine life of almost 20 years as a simple open pit operation with proven high quality final products as endorsed by previous offtake arrangements with major end users such as DuPont.

The project has been the subject of some \$30 million of work, culminating in Coburn being on track for full financing and development with a large strategic partner, Korean steel producer POSCO, in 2012, however JV negotiations eventually terminated in 2013 in the face of a weakening zircon price. The Company believes Coburn is the only scalable zircon-rich mineral sands project world-wide at this level of development readiness and is highly leveraged to a rise in mineral sands prices (particularly zircon). There has been recent strong interest from potential off-take parties and direct project participants seeking quality near term products despite cyclically low prices.

In light of this recent interest and falling costs, particularly within Australia, the Company completed the Review with the objectives of identifying potential value opportunities through reductions in capital and operating costs, flowsheet innovations and alternate procurement arrangements. This was done by Strandline management in consultation with high quality EPC companies and mining contractors. These groups included Sedgman Limited (“Sedgman”) and Piacentini & Son (“Piacentini”), both groups being very well regarded by mineral sands industry participants and both having had significant involvement in Coburn previously.

## **Potential Capital Cost Savings**

The base case for comparison purposes was the study completed by Strandline and announced to the Australian Securities Exchange on 26 February 2013. This study incorporated capital and operating costs estimated by Sedgman and used August 2012 product price forecasts from TZMI.

Total potential capital cost savings identified by the latest Review were approximately A\$29 million, representing a ~14% reduction on the previously released February 2013 estimate of A\$202M. Strandline estimated the cost savings by undertaking an internal review based on current market conditions.

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<sup>1</sup> Refer to the ASX announcement dated 7 January 2010 for full details of the Ore Reserves and Mineral Resource estimates. This Ore Reserve and Mineral Resource estimate has not been updated to the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

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Key contributors to capital savings included simplification of the process flowsheet, offshore modular construction, use of second hand equipment, build-own-operate supply of in-pit mining and tailings discharge equipment and reduced drilling and road construction costs.

In regards to second hand equipment, Strandline has estimated that a saving of up to \$2.5 million is potentially available by sourcing second-hand accommodation units for the project camp.

The estimated capital cost savings of \$29 million incorporates a significant saving through offshore modular construction and delivery by major Chinese construction group North Heavy Industries Co., Ltd (“NHI”). The Company has received an offer from NHI to construct and deliver to site all equipment and structural components for the Wet Concentration Plant (“WCP”) and Mineral Separation Plant (“MSP”) for \$A37.1M, a cost saving of \$7.6M on the 2013 estimate. For the purposes of the Review, a saving of \$5M has been incorporated in the revised capital cost estimate. Further work is required to be undertaken by the Company to validate the integrity of the offer received and to confirm the technical specifications and quality of the equipment to be supplied. NHI has agreed to work closely with Strandline and its preferred EPC Contractor in design and quality control of all manufactured equipment.

NHI is a 100% Chinese government owned company and as one of mainland China’s largest mining equipment manufacturers they are qualified to assist its customers with project finance through the Chinese EximBank. Eximbank’s role as a Chinese institution is to promote foreign trade and investment out of China as well as development assistance and concessional funding. Eximbank is distinguished by its role as the sole provider of Chinese government concessional loans mainly in the infrastructure fields (roads, power plants, oil and gas pipelines, telecom and water projects) and for Chinese businesses establishing themselves overseas in the energy, mining and industrial sectors.

### ***Potential Operating Cost Savings***

Operating cost savings identified by the review were ~A\$4.6 million per year, or 4.8% lower than the February 2013 study. The main contribution was a reduction in mining costs associated with improved equipment costs, labour rates and fuel pricing. No operating cost savings associated with flowsheet simplifications were included.

### ***Potentially Significant Further Cost Reduction Opportunities***

Further opportunities under active investigation but not included in the Review include:

- *Lower Construction and Labour costs* - Through discussion with various parties during the Review, potential for additional savings associated with lower construction and operating labour rates were identified.
- *Power Pricing* - The Review did not update gas pricing. More detailed analysis will be required to consider recent movements in energy prices and associated impact on spot gas price.

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- *Additional Flowsheet Opportunities* - Incorporation of reflux classification into the WCP and MSP flowsheets has been covered only at a conceptual level, based on the experience of Sedgman. A more detailed study including testwork on Coburn material will provide a better understanding of flowsheet opportunities.
- *Greater Owner/Operator Involvement of Construction Contractor* – Potential for construction contract transferring to operations contract to streamline start-up and commissioning.

## Key Financial Results

The updated financial results following the Review (using a range of commodity prices) are presented in Table A below. The commodity prices used in the Review have been based on the TZMI Q4 2014 *Titanium Feedstock Price Forecast to 2018* report.

**Table A: Key Financial Results**

	Base Case <sup>1</sup>	Base Case <sup>1</sup> +10%	Base Case <sup>1</sup> +20%	Base Case <sup>1</sup> +40%
Life-of-Mine Exchange Rate (AUD/USD)	0.75	0.75	0.75	0.75
Total Revenue A\$M	2,852	3,137	3,422	3,993
Total Operating Costs (including Royalties) A\$M	1,713	1,727	1,742	1,771
Net Operating Margin Pre Tax A\$M	1,139	1,410	1,680	2,222
Capital Cost A\$M	173	173	173	173
IRR <sup>2</sup>	26.5%	33.0%	39.2%	51.3%
NPV <sup>2</sup> @ 8% A\$M	306	423	539	772

<sup>1</sup> Base case refers to the base case commodity price forecast in the TZMI Q4 2014 *Titanium Feedstock Price Forecast to 2018* report

<sup>2</sup> pre-tax

The material assumptions underpinning the Review financial results are set out in Appendix 1.

## Conclusions and Next Steps

The results of this preliminary Review and recent off-take interest in Coburn's quality product suite has confirmed to the Board of Strandline the significance of its 100% owned, development-ready asset in an environment of cyclically low commodity prices, depleting worldwide sources of zircon supply and increasing political risk.

The Company will now look to refine and improve the cost reduction opportunities and initiatives identified in this Review through a detailed DFS update with key service providers and partners to the project. This will include flowsheet modification, updated testwork and product sample generation with a view to fully engaging with potential off-take partners and interested financial partners.

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**COMPETENT PERSON'S STATEMENT**

The details contained in this ASX announcement that pertains to Mineral Resources and Ore Reserves is based upon information compiled by Mr Brendan Cummins, a part-time employee of Strandline. Mr Cummins is a Member of the Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Cummins consents to the inclusion in this announcement of the matters based on the information in the form and context in which it appears.

**RESERVES AND RESOURCES**

The information in this ASX announcement relating to estimates of Ore Reserves and Mineral Resources has been extracted from the ASX announcement dated 7 January 2010. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of Ore Reserves and Mineral Resource estimates, that all material assumptions and technical parameters underpinning the estimates in the market announcement continues to apply and has not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not materially modified from the original market announcement.

**FORWARD LOOKING STATEMENTS**

This announcement contains certain forward looking statements. Forward looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside of the control of Strandline. These risks, uncertainties and assumptions include commodity prices, currency fluctuations, economic and financial market conditions, environmental risks and legislative, fiscal or regulatory developments, political risks, project delay, approvals and cost estimates. Actual values, results or events may be materially different to those contained in this announcement. Given these uncertainties, readers are cautioned not to place reliance on forward looking statements. Any forward looking statements in this announcement reflect the views of Strandline only at the date of this announcement. Subject to any continuing obligations under applicable laws and ASX Listing Rules, Strandline does not undertake any obligation to update or revise any information or any of the forward looking statements in this announcement to reflect changes in events, conditions or circumstances on which any forward looking statements is based.

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## Appendix 1 – Material Assumptions Underpinning the Review Financial Results

### Resources

Coburn has a JORC 2004 proven and probable Ore Reserve estimate of 308Mt @ 1.2% HM<sup>2</sup>. A summary of the Ore Reserve estimate is provided in Table 1 below:

**Table 1: Coburn HMS Mineral Ore Reserves Estimate, January 2010**

JORC Category	Prospect	Ore Million Tonnes*	HM Grade %	Zircon %	Ilmenite %	Rutile %	Leucoxene %
Proved	Amy Pit A	53	1.3	24	46	5	6
Probable	Amy Pits B-E	255	1.2	23	48	7	4
<b>Total</b>		<b>308</b>	<b>1.2</b>	<b>23</b>	<b>48</b>	<b>7</b>	<b>5</b>

\*Cut-off grade applied is 0.8% HM

The valuable mineral assemblage listed above is expressed as a percentage of the total HM content of each ore reserve category. Slimes average 2.7% of the ore and oversize 3.3%.

The Ore Reserve estimated is based upon a JORC 2004 Mineral Resource estimate of 979Mt @ 1.26% HM<sup>3</sup>. A summary of the Mineral Resource estimate is provided in Table 2 below:

**Table 2: Coburn HMS Mineral Resource Estimate, January 2010**

JORC Category	Ore Million Tonnes*	HM Grade %	Contained HM Tonnes
Measured	119	1.3	1.5
Indicated	599	1.2	7.2
Inferred	261	1.4	3.6
<b>Total</b>	<b>979</b>	<b>1.26</b>	<b>12.3</b>

\*Cut-off grade applied is 0.8% HM

### Mining

Mining is to be undertaken by a contractor using the dozer trap technique for ore and bulldozer only for overburden. Overburden is pushed aside by bulldozers equipped with carry blades. Bulldozers are used to push the ore downwards into a dozer trap (Dozer Mining Unit – DMU), where it would be mixed with water and pumped as a slurry into the wet concentrator plant (WCP). Overburden is then pushed back into the void created by the removal of the ore. Tailings from the WCP would then be pumped back into the pit, covering the previously mined overburden.

<sup>2</sup> Refer to the ASX announcement dated 7 January 2010 for full details of the Ore Reserves estimate. This Ore Reserve estimate has not been updated to the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

<sup>3</sup> Refer to the ASX announcement dated 7 January 2010 for full details of the Mineral Resource estimate. This Mineral Resource estimate has not been updated to the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

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The key mining details are shown in Table 3 below:

**Table 3: Key Mining Details**

Annual Ore Production	23.4Mtpa
Strip Ratio (tonnes of waste per tonne of ore)	0.5 to 1
Slimes	2.7%
Oversize	3.3%
Mine Life	19 years
Method	Open pit, backfill with waste and tailings

## Mineral Processing

Processing will use conventional gravity, magnetic and electrostatic separation technologies. Ore is pumped as a wet slurry from the dozer mining trap on the pit floor to the WCP located at the edge of the open pit. The WCP is moved along the ore body at approximately one to three year intervals as mining proceeds. The WCP recovers the heavy minerals by using wet spiral separation and reflux classifier units. Tailings are then pumped as a slurry back into the mine void, where they are dewatered so that the water can be reused in the mining and mineral concentration process. Concentrate from the WCP is to be trucked to the Mineral Separation Plant (MSP) which is located next to the power station.

The MSP uses a conventional flowsheet to separate ilmenite, zircon and rutile into final saleable products with magnetic and electrostatic equipment.

The final products from the MSP are to be trucked to a storage shed to be built adjacent to the Geraldton port, where they will be exported to overseas markets.

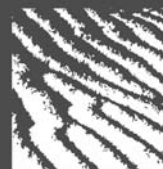
The annual output estimates of saleable products is shown in Table 4 below:

**Table 4: Heavy Mineral Production**

Product	Key Specification	Average Annual Production (Tonnes)	Life-of-Mine Production (Million Tonnes)
Zircon	66% ZrO <sub>2</sub>	49,500	0.94
Ilmenite	62% TiO <sub>2</sub>	109,000	2.07
HiTi 90	90% TiO <sub>2</sub>	23,500	0.45
<b>Total</b>		<b>182,000</b>	<b>3.46</b>

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## Infrastructure

Coburn is located approximately 45km west of the North West Coastal Highway, linking the port of Geraldton some 250km to the south with coastal towns in the Gascoyne, Pilbara and Kimberley regions. A 42.5km access road into the MSP and power station at the mine site is included in the capital cost estimate.

Power for the mine is to be provided by a build-own-operate supplier, using natural gas piped from the Dampier to Bunbury pipeline some 110km to the east.

Water supply for the mine will come from artesian aquifers directly below the mine. Potable water will be produced from a site based reverse osmosis plant.

An accommodation village will be built some 1.8km from the processing plant. Permanent offices will be built at the MSP and relocatable offices at the WCP.

## Capital Cost Estimate

The base line for reviewing the capital cost estimate was the study completed by Strandline and announced to the Australian Securities Exchange on 26 February 2013. This study incorporated capital costs previously estimated by Sedgman. Strandline through an internal review identified a number of areas where reductions in capital costs could be potentially achieved including simplification of the process flowsheet, offshore modular construction, use of second hand equipment, build-own-operate supply of in-pit mining and tailings discharge equipment and reduced drilling and road construction costs. The revised capital cost estimate is shown in Table 5 below:

**Table 5: Capital Cost Estimate**

Item	A\$M
Dozer Mining Units (mobile equipment provided by a build-own-operate supplier)	8.1
Wet Concentrator Plant	38.7
Mineral Separation Plant	40.4
Water Supply	10.2
Roads/Civil	22.9
Site Services	8.7
Village/Offices (saving of \$2.5 million for second-hand camp)	13.0
Geraldton Shed	7.8
Power, Mobilisation & General	8.7
Owners Costs	14.4
<b>Total*</b>	<b>172.9</b>

*\*Total includes average project contingency of 9.6% and EPCM costs. Does not include working capital or finance costs.*



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## Operating Costs

Operating costs have been estimated by Strandline based on test work data, detailed mine plan, labour rates for operating and maintenance, usage rates and estimated costs of water supply, power supply, maintenance materials, operating consumables and reagents.

A breakdown of the operating cash costs is provided in Table 6 below:

**Table 6: Annual Operating Cost Summary**

Item	Annual Cost A\$M	% of Total
Mining	44.7	49%
Wet Concentrator Plant	10.7	12%
Mineral Separation Plant	7.5	8%
Technical & Maintenance Services	3.7	4%
Site Admin	8.7	10%
Offsite Costs	15.1	17%
<b>Total</b>	<b>90.4</b>	<b>100%</b>

## Commodity Prices and Exchange Rates

The commodity prices used in the Review financial analysis have been based on the TZMI Q4 2014 *Titanium Feedstock Price Forecast to 2018* report. The forecast prices from TZMI included data on low case, base case and high case scenarios. Base case prices were used in the financial analysis and forecast prices were expressed in nominal terms in the TZMI report were discounted back to real (inflation adjusted) prices using a 3% discount rate. Forecast prices are expressed in US\$ per tonne, FOB basis.

Strandline has used a Life-of-Mine AUD to USD exchange rate of 0.75. The exchange rate is based on the current outlook for the Australian dollar.