

Stellar Resources

ASX Announcement



24 July 2013

Pre-Feasibility Study Advances Heemskirk Tin

Highlights

- Positive PFS demonstrates technical and economic viability of Heemskirk Tin.
- Mining plan increases head grade to 1.06% tin from scoping study estimate of 0.93%.
- Annual production of 4,327 tonnes of tin in concentrate represents an 11% increase from the scoping study estimate.
- Initial mine life of 7 years with potential to expand once additional drilling within the current Severn resource is complete.
- Competitive direct mining and processing cash costs of US\$12,268/t of tin in concentrate and mine gate cash operating cost of US\$14,389/t including mine and plant business sustaining expenditure and corporate overheads.
- Capital cost of US\$114 million or US\$1594/t of tin in resources benefits from the availability of existing infrastructure.
- Base case pre-tax NPV of A\$61 million or 27 cents per share at a consensus long-term LME tin price of US\$25,500/t and A\$0.90. The 10% price upside case increases the NPV by 67% to A\$102 million.
- Next step is resource expansion drilling ahead of a commitment to a Definitive Feasibility Study.

ASX Code: SRZ

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Stellar Resources (SRZ) is an exploration and development company with assets in Tasmania and South Australia. The company is rapidly advancing its high-grade Heemskirk Tin Project, located near Zeehan in Tasmania, and plans to become Australia's second largest producer of tin.

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CEO Peter Blight said “Completion of the PFS is a significant milestone for the Heemskirk Tin Project. It demonstrates technical and financial viability using consensus tin price and exchange rate assumptions. Mine gate cash production costs of US\$14,389/t are competitive and capital costs of US\$114 million benefit from ready access to existing infrastructure. Importantly, multiple ore sources provide significant flexibility and have allowed a focus on grade (head grade 1.06% tin) to maximise net present value. Following the 3.7 year payback period, and given all mineralised zones are open at depth, a focus on mine life could see an extension well beyond the initial 7 years.”

Overview

Stellar Resources (Stellar) is pleased to announce the completion of a Pre-Feasibility Study (PFS) for the Heemskirk Tin Project in Tasmania.

In August 2011, Stellar completed a Scoping Study for the project that proposed an underground tin mine and processing facility, near Zeehan. The proposed mine was based on three mineralised zones; Queen Hill, Severn and Montana. Mining and processing was proposed at a rate of 600,000 tonnes per annum with an average tin grade for run of mine ore of 0.93%. Assuming a 70% recovery, annual tin in concentrate production of 3,900 tonnes was estimated.

Drilling during the PFS increased confidence in both the tonnage and grade of the Severn orebody, which is by far the major ore source and increased the project Mineral Resource estimate (announced on 19 February 2013) by 49% to 71,500 tonnes of contained tin.

Optimised mining plans conducted for the PFS and based on the upgraded Mineral Resource increased the run of mine ore grade to 1.06 percent tin and provided confidence that the proposed plant capacity of 600,000 tonnes per annum can be comfortably met. In addition, metallurgical test work demonstrated a 70% average recovery and showed that with further flow sheet development a concentrate grade of 48% tin is achievable. Head grade of 1.06% and recovery of 70% increased estimated tin in concentrate production to 4,327 tonnes per annum, an 11% increase from the scoping study estimate.

Direct mining and processing cash costs of US\$12,268/t of tin in concentrate are 4% lower than the scoping study estimate of US\$12,780/t. Adding mine and process plant sustaining expenditure and corporate overheads to direct costs results in a competitive mine gate cash cost of US\$14,386/t.

Tables 1 and 2 summarise the key PFS assumptions and outcomes for Heemskirk Tin. More detail on the scope, methodology, environment and costs used in the PFS are outlined in Appendix 1.

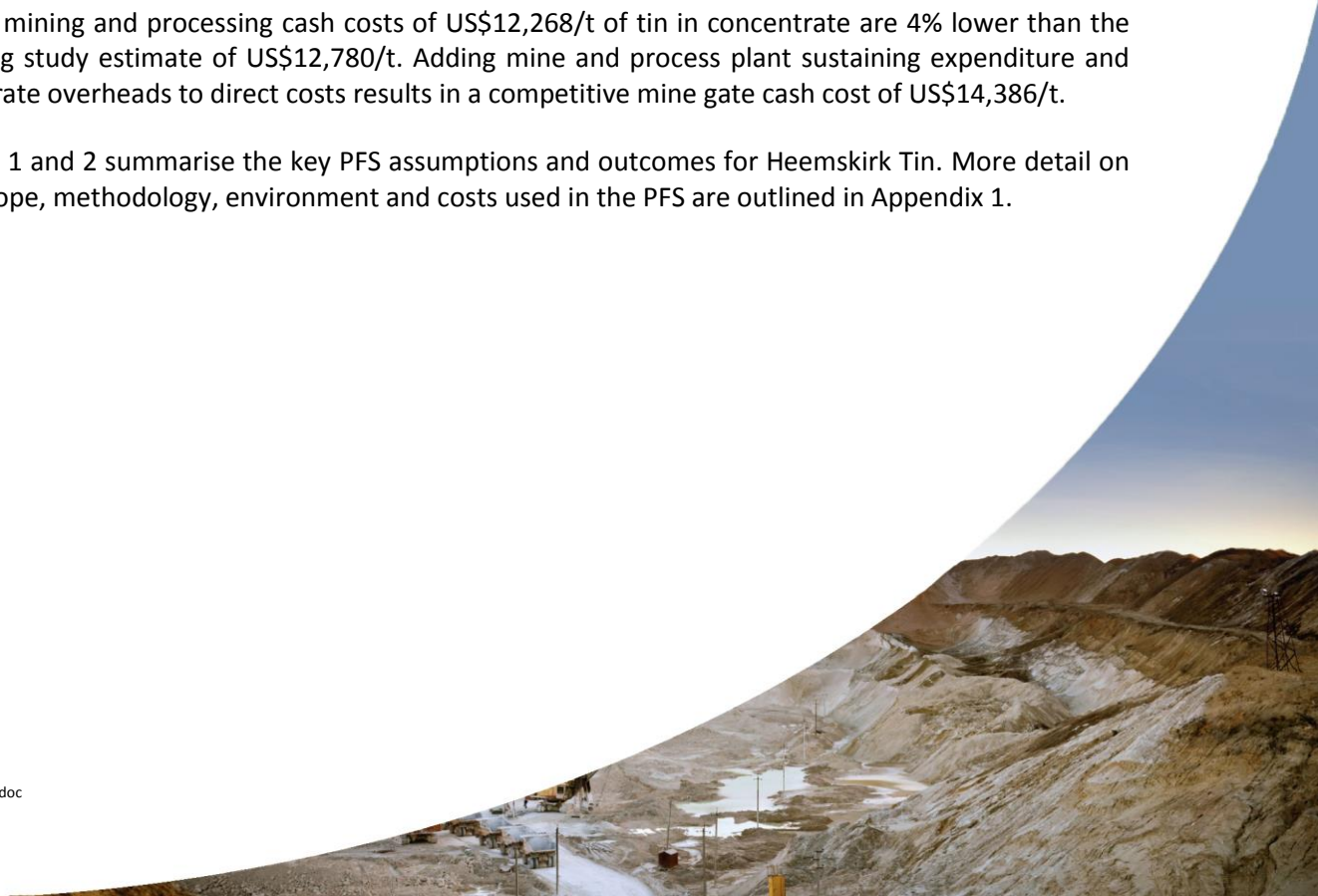


Table 1: Heemskirk Tin – PFS Technical and Cost Summary

Description	Units	Value
Mining inventory ¹	Mt	3.95
Mined ore tin grade	%Sn	1.06
Average mill throughput	Mtpa	0.6
Initial mine life ²	Years	6.75
Tin recovery	%	70
Average Concentrate grade	%	48
Average tin in concentrate production	tpa	4,327
Mine gate costs	US\$/t tin in concentrate	14,389
Pre-production capital expenditure	US\$M	114

¹ Mining inventory includes Indicated and Inferred Mineral Resources that have had mining dilution, recovery and economic factors applied to the mine design, creating an inventory of potential stope and development tonnes.

² There is potential to increase mine life within the current Mineral Resource if additional drilling of lower Severn results in an increase in average grade.

The parameters shown in Table 1 represent the base case, in which the philosophy was to maximise head grade to provide the highest net present value (NPV) under consensus tin price and exchange rate assumptions. At tin prices above the base case, the optimum outcome could be to maximise the mining inventory which would lead to an increase in mine life at slightly lower head grade. Further in-fill drilling at lower Severn could achieve the same outcome if it led to a higher average deposit grade - a possibility that will be tested during the definitive feasibility study (DFS).

Financial Summary

Table 2: Heemskirk Tin PFS – Tin Price Sensitivity

Description	Economic Outputs		
Tin price scenarios	-10%	Base Case	+10%
LME tin price US\$/t	22,950	25,500 ¹	28,050
NPV _{8%} A\$M ²	11	61	102
IRR %	10	19	26
Payback years	4.7	3.7	3.1
Operating margin A\$/t ore treated	51	70	86
Total cash surplus A\$M	77	152	214

¹ Base case LME tin price is the median of nine analyst estimates for 2016 and beyond. It is also the marginal cost of tin production according to International Tin Research Institute cost curve analysis.

² A\$/US\$ exchange rate assumption of 0.9 is the median of nine analyst estimates

Heemskirk Tin generates a net present value of \$61 million or 27 cents per Stellar share before corporate income tax at a consensus tin price and exchange rate of US\$25,500/tonne and A\$0.90. Even at a moderate tin price of US\$22,950/t, (10% below the base case) the project generates an NPV of \$11 million and life of mine surplus cash flow of \$77 million. The real potential of the Heemskirk project is demonstrated in the upside case in which a 10% increase in the average tin price to US\$28,050/t increases the NPV by 67% to \$102 million or 45 cents per Stellar share and surplus cash generation rises to \$214 million.



Targets for the next 12 months

- Drilling around and below the known deposits with the objective of expanding the Mineral Resource – all deposits are open laterally and at depth.
- Additional drilling into lower Severn. An increase in average deposit grade could transfer 1.0 million tonnes from Mineral Resource to Mining Inventory.
- Continued refinement of the process flow sheet through metallurgical test work.
- Investigation of capital reduction alternatives including the use of other suitable processing plants in the area.
- Identification of a tin industry participant to help progress the project through DFS and into development.
- Commitment to a DFS as soon as possible.

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APPENDIX 1: Preliminary Feasibility Study Scope, Methodology, Environment and Costs

1. SCOPE

The PFS is based on a 600,000 tonnes per annum underground mining operation at Heemskirk. Mining will be undertaken on four orebodies; Upper and Lower Queen Hill, Severn and Montana. Mining will be a combination of Long Hole Open Stopping and Cut and Fill methods.

Processing will be at a rate of 600,000 tonnes per annum for all orebodies except Lower Queen Hill, which will be processed at approximately 460,000 tonnes per annum. The lower throughput when treating Lower Queen Hill ore is due to the fact that this ore is not amenable to pre-concentration by heavy media separation of barren gangue prior to conventional treatment.

A conventional gravity and flotation concentrator is proposed for all orebodies producing an average of 4,327 tonnes per annum of tin in concentrate over the 7 years of ore processing. Average concentrate grade of 48 percent tin should be achievable.

The PFS was conducted by Stellar in conjunction with input from the following contractors;

Table 1 PFS Contractors and Consultant

Discipline	Company	Timing	Outcomes
Geology	Resource Estimation & Geology	2012/2013	Resource Estimation
	Stellar	2012/2013	Drilling and interpretation
Mining	Mining One	2012/2013	Mine design and costing
Metallurgy	Asther P/L	2012/2013	Lab test work supervision
	GRES	2012/2013	Lab test work supervision
	ALS AMMTEC Burnie	2011-2013	Lab Testing
	CPG	2013	Gravity circuit design advice
Processing	GRES	2012/2013	Process design
Infrastructure	GRES	2012/2013	Infrastructure design
	Rob Hill and Associates	2013	Underground electrical and power supply design
	GHD Hobart	2012/2013	TSF Design
Environment	John Miedecke and Partners	2012	Environmental baseline study
	Geo-Environmental Management P/L	2013	Rock Geochemistry

2.1 Resources

Stellar Resources announced an updated Mineral Resource Estimate for the Heemskirk Tin deposit in February 2013. The estimated resource, reported as Inferred and Indicated Resource in accordance with the 2004 edition of JORC Code, is listed in Table 2. Of the total estimated resource, 25% of the estimated resource is in the Indicated category sufficient for use as a basis for estimating a Probable Ore Reserve, 75% of the resource remains in the Inferred category.

Table 2 Heemskirk Tin Mineral Resource, 0.6% Tin Cut-off

Classification	Deposit	M tonnes	Sn %	Sn tonnes
Indicated Resource	Queen Hill	1.41	1.26	17,790
Total indicated Resource		1.41	1.26	17,790
Inferred Resource	Queen Hill	0.19	1.63	3,090
	Severn	4.17	0.98	40,900
	Montana	0.51	1.91	9,710
Total Inferred Resource		4.87	1.10	53,710
Total Resource		6.28	1.14	71,500

The resource estimation is based on 100 historic diamond drill holes for 25,537.7m and 35 recent diamond drill holes for 10,428.5m. The estimation represents a 49% increase in tonnes of contained tin over the previous estimate (that was used in the scoping study) with 78% of the increase coming from the Severn deposit. All three deposits remain open down plunge.

2.2 Mining Inventory

The Mining Inventory has been reported from a set of stope and development shapes designed in 3 D mining software and includes mining dilution and recovery factors. The designs have been completed on the Indicated and Inferred categories of the resource and recover 5.01M tonnes @ 0.99% tin. After optimisation to maximise head grade the designs recover 3.95M tonnes @ 1.06% tin with 18% in the Indicated category.

2.3 Mining Method

The underground mine will be accessed via a decline developed at a gradient of 1:7 from a portal located on the western side of Queen Hill. The main decline will be developed in the footwall of the Severn deposit with secondary declines developed in the footwall of Queen Hill and Montana.

The mining methods will be a combination of long hole stoping with either waste or Cemented Aggregate Fill (CAF) and drift and fill mining using either Cemented Rock Fill (CRF) or waste fill. The selection of mining method has been based on the geometry and geotechnical characteristics of the individual deposits. The stoping sequence has been designed as a series of bottom up stoping blocks in both Severn and Queen Hill while the sequence in Montana will be bottom up for the entire deposit.

The separation of the 3 deposits gives flexibility in scheduling and will be capable of producing in excess of 600,000 tonnes per annum once in full production (see Figure 1).

2.4 Mining Opportunities

The resource in lower Severn (between 770RI and 630RI) has currently been excluded from the inventory as the financial analysis of this area shows it to be break even. Should additional drilling improve the grade of this area approximately 1M tonnes could be added to the inventory.

Current mining costs are based on contractor rates, with a mine life in excess of the 8 years a change to owner operator could result in a cost reduction.

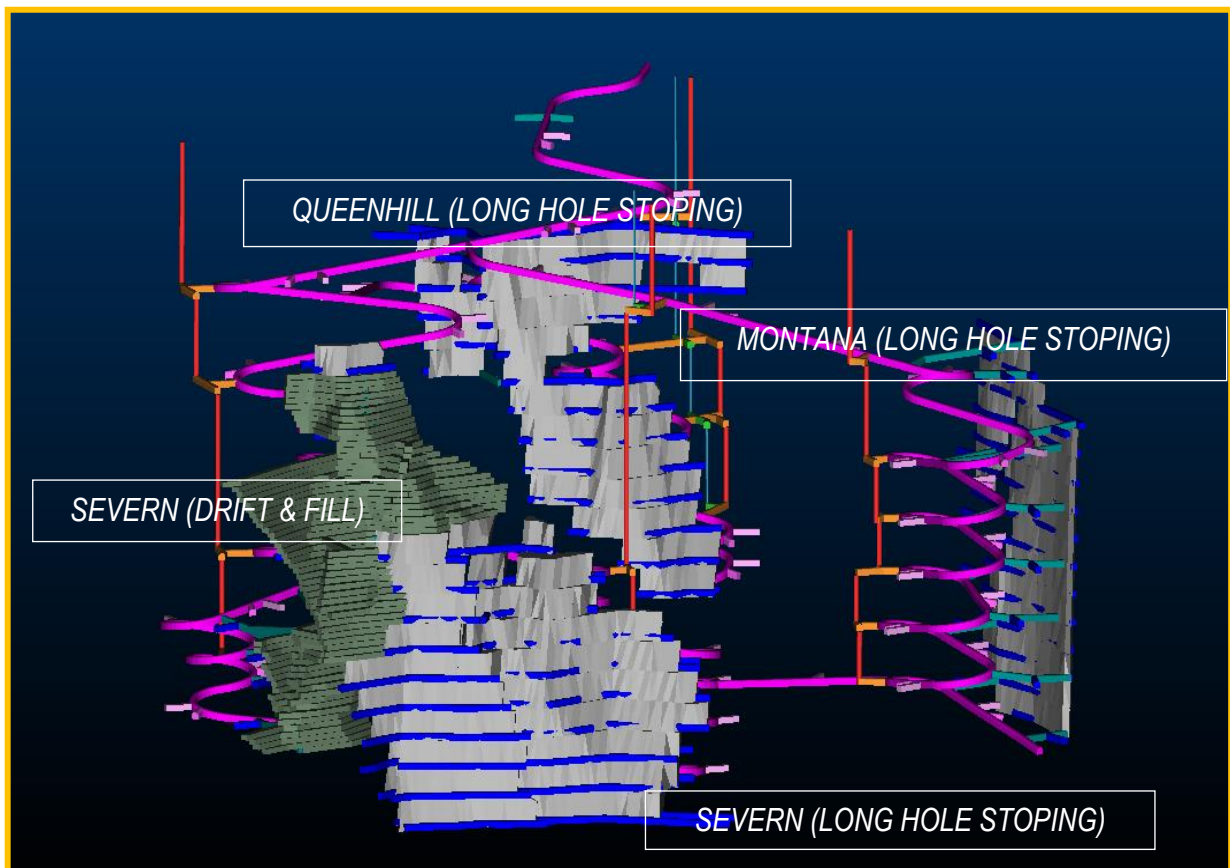


Figure 1 Fully Developed Underground Mine Plan

2.5 Metallurgy

In the earlier scoping study three main ore types were identified. (Queen Hill, Severn and Montana) The Queen Hill ore contains high amounts of sulphides, mainly pyrite and pyrrhotite, and has the finest cassiterite grains. Severn ore is lower grade than Queen Hill, but has coarser cassiterite grains and is also associated with sulphides. The third ore type is Montana, which has little sulphide content and has a cassiterite grain size between Queen Hill and Severn.

Subsequent testing has revealed that ore from the lower part of Queen Hill is metallurgically different to the upper part of this orebody. The main difference is that the cassiterite grain size is larger. The ore is

also slightly higher in grade than the upper section. Thus in this PFS, four distinct ore types are considered.

Metallurgical test programmes completed to date by, ALS/AMMTEC of Perth, Western Australia and ALS/AMMTEC (Burnie Research Laboratories) of Tasmania (BRL) have focused mainly on the Upper Queen Hill and Severn orebodies, with later work done on Lower Queen Hill. This approach was taken because Severn represents over 60% of ore to be mined and Queen Hill ores, which are next most abundant, will be mined earlier in the project life.

Cassiterite is the dominant tin-bearing mineral occurring as free grains and in complex mineral composites. Cassiterite liberation generally commences at a grind of 130 microns and is largely complete at 20 microns. These sizes vary according to ore type, with Severn having the coarsest and Upper Queen Hill having the finest cassiterite grain sizes. Montana and Queen Hill Lower are similar to one another and have grain sizes in between the other two orebodies. Cassiterite grain size has been found to be a very good indicator of metallurgical performance.

BRL has demonstrated in a locked cycle programme that primary grind, followed by successive application of gravity concentration methods based on spiral pre-concentration and tabling can achieve good recoveries at acceptable grades. There is a middlings regrind stage included to improve upon primary gravity recovery. The gravity concentrate will be upgraded by the use of magnetic and flotation techniques to remove susceptible impurities and residual sulphide minerals.

Additional tin recovery from fine gravity tails may be achieved by employing flotation.

Based on the work undertaken by BRL, Stellar anticipates that concentrates grades approaching 48% tin at an overall tin recovery of 70% should be achievable from the Heemskirk ores. Testing on the Queen Hill orebodies is ongoing.

Stellar is currently planning a drilling program to provide sample from each of the orebodies with which to execute a more detailed test programme on all ore types during the DFS.

2.5.1 Processing

Based on the work completed to date by Ammtec and BRL and in consultation with GRES the Heemskirk flowsheet (refer Figure 2) has been designed to include the following stages:

- 2-stage crushing;
- Heavy Media Separation (Except for Queen Hill Lower ore);
- Primary grinding using an open circuit rod mill, feeding a closed circuit ball mill;
- Primary Sulphide Flotation;
- Coarse and fine gravity separation using spirals and wet tables;
- Gravity middlings regrind and recycle;
- Flotation of deslimed fine cassiterite followed by concentrate upgrade using sulphuric acid leaching; and

- Gravity concentrates upgrade by sulphide flotation and magnetic separation of susceptible gangue.

The combined concentrate material will report to final product where it will be filtered prior to being packed in bulk bins and loaded into containers for export. The process tails will be pumped to a tailings thickener to facilitate water conservation before being disposed of to a surface tailings management facility. Waste rock will be crushed on site to provide underground mine backfill. Tailings water will be reclaimed for reuse in the process.

2.5.2 Concentrator

Stellar has developed the processing plant on the basis that operations will be managed by Stellar's own supervisory team comprising local and Drive-In-Drive-Out (DIDO) staff.

The plant, which will be built close to the existing town of Zeehan, is designed to operate 24 hours per day, 7 days per week. Concentrate produced will be trucked to the port of Burnie for export to overseas smelters.

Figure 2 displays the overall process flow sheet for the Heemskirk Tin Project.

The flow sheet utilises very similar unit process steps to those that are currently used in the operation at Renison Tin Mine (18km NE of Heemskirk Tin Project). The unit processes (Sulphide pre-flotation, gravity and tin flotation) are adapted as required to cope with changes in mineralogy and the proportion of coarse and fine cassiterite contained in different ores. Renison has demonstrated over many years of operation the ability to operate a flexible process flow sheet to successfully recover tin from various ore types, similar to what the Heemskirk Tin Project will be required to achieve.

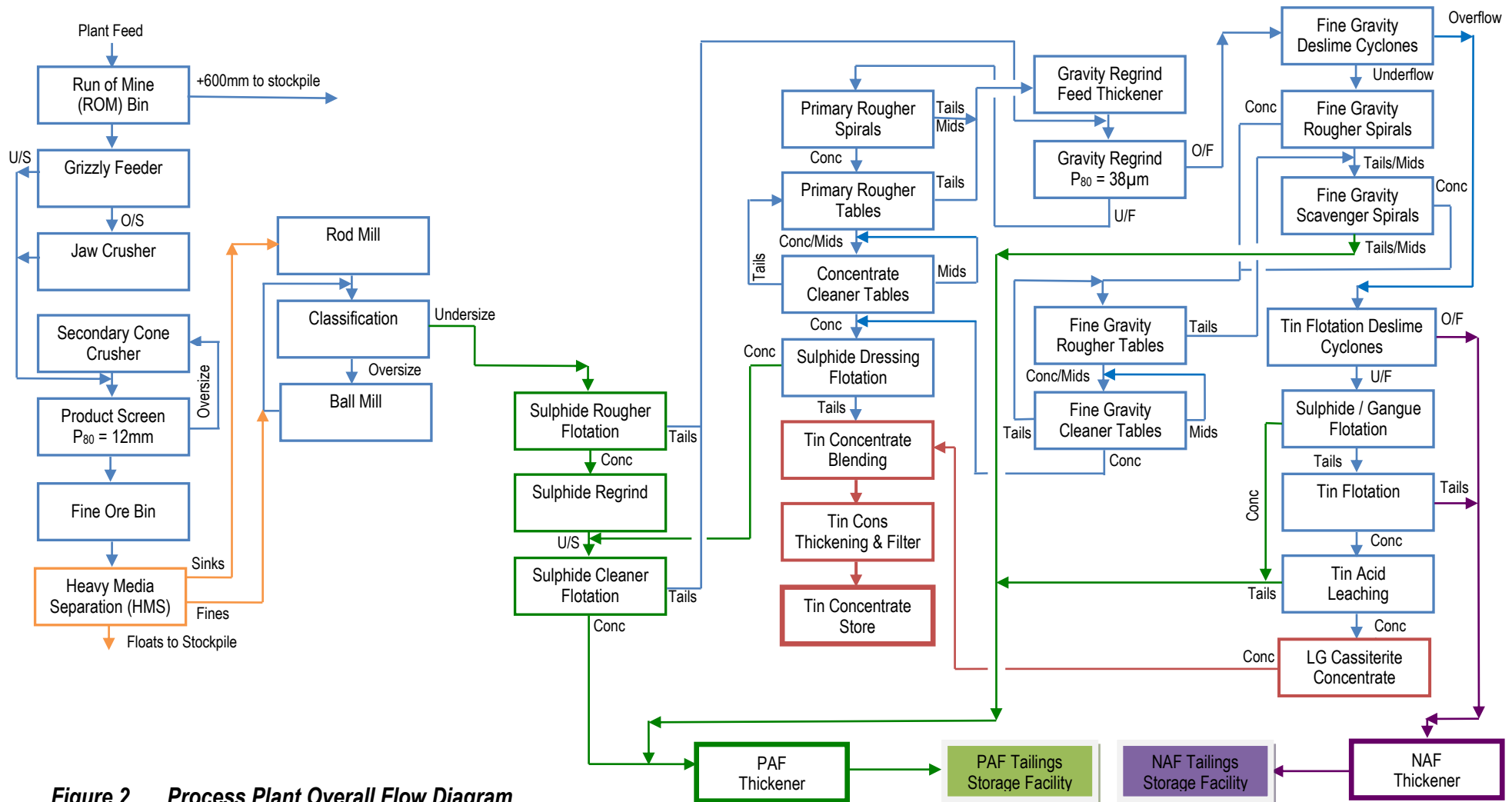


Figure 2 Process Plant Overall Flow Diagram

2.6 Infrastructure

Zeehan has over 100 years of mining history and four operating mines within 30 kilometres. The port of Burnie is only 150km from Zeehan by all-weather road and has adequate loading facilities for containerised concentrate shipments. Several trucking contractors operate on the west coast of Tasmania and provide concentrate transport services to existing mines.

The town is well serviced with good roads, communication services and town water supply. Adequate power is available for the project from the nearby 22kV state grid through distribution company Aurora Energy. Several sites for a possible tailings storage facility have been investigated by Stellar and the preferred sites discussed with the regulatory authorities.

Housing is available in Zeehan for mine workers. The project capital cost includes a provision for site offices and workshops.

3. ENVIRONMENT AND COMMUNITY

3.0 Environment

In the 1890s, the project area was the site of numerous silver, lead workings with five significant underground mines. According to a preliminary assessment undertaken by John Miedecke and Partners, the disturbance created by previous mining and the subsequent removal of mining structures means that flora, fauna, aboriginal heritage and archaeology are unlikely to be issues for the Heemskirk project. Surveys to support this view will be required for the Development Proposal and Environmental Management Plan (DPEMP).

A 12 month program of water quality sampling from the proposed mining and tailings containment areas and surrounding water catchments was recently completed. This will serve as a baseline for the submission of a DPEMP to the Environment Protection Authority.

A geochemical assessment of ore, waste and tailings was completed by Geo-Environmental Management. The geochemical classification of mined rock determines how it will be handled at the surface – another key input to the DPEMP.

3.1 Community

The Heemskirk Tin deposits surround Queen Hill, a prominent topographical feature that marks the northwest extremity of the town. Underground access to the tin deposits is planned via a decline located on the west side of Queen Hill, above the Trial Harbour road. The access route avoids any interaction between mine vehicles and private vehicles operated within the town.

All processing plant and surface mine facilities are also located on the west side of Queen Hill and above the Trial Harbour road to prevent the transmission of noise and dust into the town precinct.

Underground mine development, particularly for the Severn deposit, will extend below the sparsely populated northwest section of Zeehan. Much of this activity will occur below 150 metres from the surface and should have no impact on surface dwellings. Stellar expects to confirm this assessment with vibration and seismic modelling during the DFS.

Zeehan has a population of 728 people, many of whom are involved in the mining industry and would support an increase in mining activity in the area. The town also has 170 unoccupied dwellings that could provide accommodation for the Heemskirk workforce.

4.0 COST ESTIMATES

Stellar has developed the capital cost estimates summarised in Table 3 with assistance from GR Engineering, GHD and Mining One. The capital costs are in second quarter 2013 \$AUD to an accuracy of +/-25%.

The main assumptions for Capital and Operating costs are;

- Green fields construction site on west side of Queen Hill, Zeehan;
- All new equipment to be utilised for the process plant;
- Single shift crushing of feed material to the process plant;
- Power supply from the local distribution network at a connection cost of \$0.5M;
- Mining equipment to be supplied by a contractor.

4.1 Capital

The mine cost of \$37.9 million assumes an 18 month period of decline and stope development ahead of first ore milling. Decline development of 120 metres per month for the first 6 months is conservative according to contractors surveyed. The processing plant equipment list is costed at current prices with EPC included in the total cost of \$75.5 million. Tailings dam construction includes stage 1, single wall, with capacity for the first three years of production. Site infrastructure includes offices, workshops and roads. The contingency of \$4.5 million applies to the processing plant.

Table 3 Pre-Production Capital Expenditure

Pre-Production Capital	US\$ Million	AU\$ Million
Mine	34.1	37.9
Process Facilities including first fills and spares	68.0	75.5
Infrastructure Including Tailings Storage Facility	6.4	7.2
Owners Costs	1.4	1.5
Contingencies	4.0	4.5
Total Project Pre-Production Capital	113.9	126.6

4.2 Operating Costs

Life of mine cash operating costs are summarised in Table 4. Mining costs are based on a current schedule of contractor rates for a similar sized underground mining operation in Australia. All consumable costs including power supply are based on current rates at the mine site.

Direct mining and processing cash operating costs are US\$12,268/t of tin in concentrate. Including business sustaining expenditure on mine development and maintaining the processing plant results in a total mine gate cost of US\$14,389/t.

Table 4 Cash Operating Costs

Item	US\$/t of tin in conc	AU\$/t of ore
Mining	8,137	65.2
Processing	4,131	33.1
Direct Cash Cost	12,268	98.3
Mine Sustaining	1,735	13.9
Site Sustaining	175	1.4
Corporate Overheads	212	1.7
Total Mine Gate Operating Cost	14,389	115.3

5.0 FORWARD WORK PROGRAM

Development of the Heemskirk Tin Project from PFS to DFS will include:

- Drilling to further define the existing Mineral Resource to measured and indicated status
- Recovery of core from the four ore bodies for further metallurgical testing and variability investigations
- Core sampling to test the acid generating capability of ore and waste
- Collection of geotechnical data and bore-hole water samples to investigate hydrology
- Process plant cost and performance optimisation based on further metallurgical testing
- Completion of flora, fauna, aboriginal heritage and archaeology surveys
- Completion of a community impact report.
- Submission of a Development Plan and Environmental Management Plan
- Preparation of an Engineering Definition Study / Feasibility study.

6.0 COMPETENT PERSONS STATEMENT

The information in this report that relates to Exploration Results is compiled by Mr R K Hazeldene who is a Member of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists and a Consultant of the Company. Mr Hazeldene has sufficient experience relevant to the style of mineralisation and type of deposits being considered to qualify as a Competent Person as defined by the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2004 Edition). Mr Hazeldene consents to the inclusion in the report of the matters based on his information in the form and context in which it appears in this report.

The information in this report that relates to Mineral Resources was prepared in accordance with the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC Code") by Tim Callaghan of Resource and Exploration geology, who is a Member of The Australian Institute of Mining and Metallurgy ("AusIMM"), has a minimum of five years experience in the estimation and assessment and evaluation of Mineral Resources of this style and is the Competent Person as defined in the JORC Code. This report accurately summarises and fairly reports his estimations and he has consented to the resource report in the form and context in which it appears.

The information in this report that relates to Mining Inventory is based on information reviewed by Phil Bremner, who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Bremner is an employee of Mining One Consultants Pty Ltd. Mr Bremner has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC code). This report accurately summarises and fairly reports his estimations and he consents to their use in the form and context in which they appear.

7.0 FORWARD LOOKING STATEMENT

This report contains a number of forward looking statements with respect to the company's plans for mineral development. Known and unknown risks and uncertainties and factors outside of the company's control may cause the actual results, performance and achievements of the company to differ materially from those expressed or implied in this report. To the maximum extent permitted by law and stock exchange rules, the company does not warrant the accuracy, currency or completeness of the information in this report, nor the future performance of the company and will not be responsible for any loss or damage arising from use of the information.