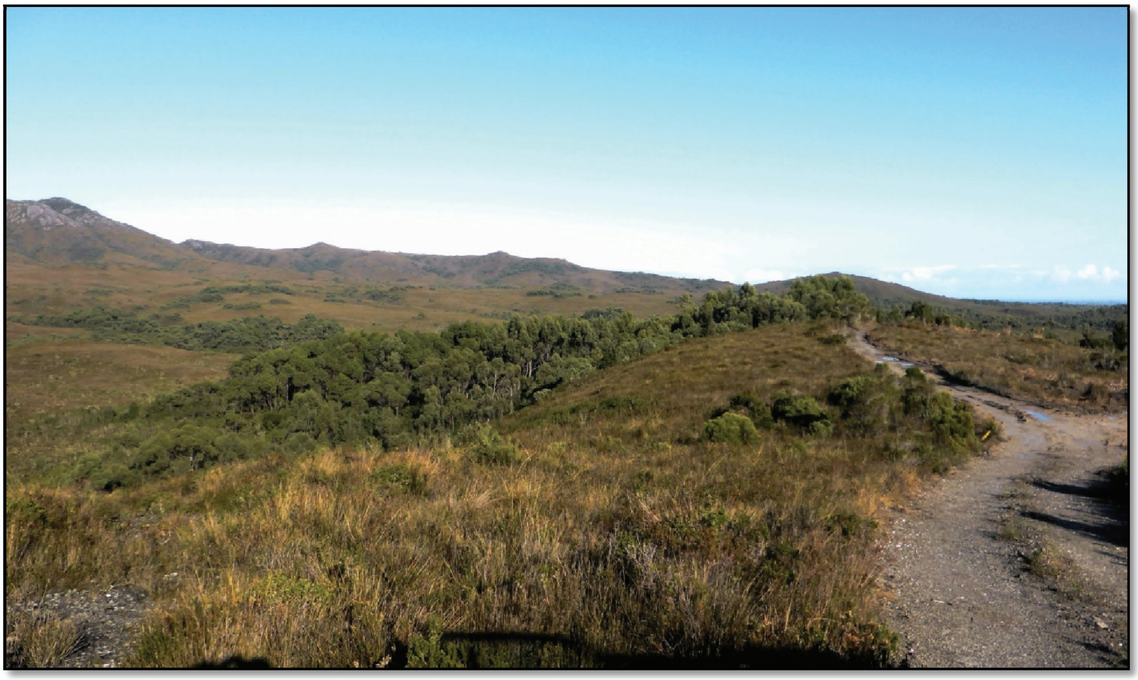
Polberro Consulting

Polberro Consulting
402 Tollymore Road, Table Cape, 7325 ph. 03 64421477 email: alanfudge@polberro.net
ABN 48740887476

St Dizier - Tin Deposit

Open Cut Mining- Scoping Study Ver 1.3

November 2014



St Dizier – Site of Deposit

Prepared for: - *Stellar Resources Ltd.*
By: - *Alan Fudge, 24 November 2014*

Executive Summary

This report is a scoping level study into the viability of an open cut operation recovering tin from the St Dizier tin/magnetite skarn mineralisation east of Granville Harbour in Western Tasmania. Scoping study reports with respect to mineral resources, geotechnical conditions, operating cost parameters and pit optimisation & design have been refined and utilised to prepare this report – in all cases the data presented in this report supersedes that in the earlier supporting reports.

Surface works include an open cut, stockpile area and a drainage diversion – all surface works may be maintained within a limited area in a single valley with limited visibility from nearby roads. At the end of the project life the pit may be flooded when the drainage diversion is returned to the original route. Waste rock will be blended and stabilised to form a permanent valley floor east of the open cut site.

An in-situ mineral resource was estimated by *Resource and Exploration Geology* and the information presented as a digital resource block model with the following resource identified.

Classification	Tonnes(M)	Sn%	Sol Sn%	WO3	Fe%	S%
Indicated Resource	1.20	0.69	0.09	0.04	23.7	2.64
Inferred Resource	1.06	0.52	0.22	0.05	22.2	1.81
Total Resource	**2.26**	**0.61**	**0.15**	**0.04**	**23.00**	**2.25**

Geological Mineral Resources

A geotechnical review to carry out a pit geometry assessment was conducted on the available data and subsequently an *optimal pit* shell was generated utilising Threedify FlowPit pit optimisation software. The following pit design assumptions derived from geotechnical analysis were utilised in this initial pit optimisation process.

From	To	Wall Angle (WA)	(WA Actual)	Height (Max)	Width	Face Angle
1070	**1120**	55	52.5	20	8	70
1120	**1140**	50	52.5	20	8	70
1140	**Surface**	40	40	15	9	60

The following recovery and dilution assumptions were also utilised in the optimisation process to derive optimal pit shells and financial outcomes for the range of 0.4, 0.5 and 0.6 process recovery.

Item	Factor%	Comment
Tin Cut off grade	0.30	Resource c/off
Mining Recovery	0.95	All cases
Mining Dilution	0.10	Optimisation estimates
Process Recovery	0.50	Sensitivity examined
Smelter Recovery	0.95	All cases

In addition the following cost and revenue assumptions and estimates were utilised to derive the *optimal pit* shell utilising the optimisation software process.

Item	Cost	Comment
Capital Cost	$3.81m	Iteratively derived
Discount Rate	8%	Heemskirk Tin Study
Waste Mining	$2.50	Above 1160m RL
Waste Mining	$4.30	Below 1160m RL
Ore Mining	$18.45	All ore costs (inc transport $5/t)
Processing cost	$35.00	Assumes Zeehan mill
Tin Price AU$	$25,000	Net of smelter charges

Utilising the preceding assumptions a base case *optimal pit* was derived for St Dizier at a process recovery (PR) of 0.5 yielding $15.8m profit and an NPV of $9.2m for a 30 month production life at a discount rate of 8%. The *optimal pit* shell that was derived for the PR 0.5 case was subsequently utilised to design an *actual pit* with benches, berms and a 15m wide haulage road - the following ore resource and mining inventory were contained within the *actual pit* design shape.

Category	Tonnes	SG	Sn%	Fe%	Waste T	Waste SG
Minable Resource	380,000	3.30	1.03	27.0	1.81M	2.95
Mining Inventory	424,000	3.27	0.86	22.9	1.75M	2.94

A 95% recovery factor was utilised in the Mining Inventory estimation.

The *actual pit* based on the *optimal pit* shell at PR 0.5 yields a $15.91m profit with some resource gained in the design process and with the inclusion of dilution containing 0.28% Sn. The Mining Inventory was estimated from mining shapes derived from 5m sectional perimeters which indicated relatively high dilution of 17% resulting from the narrow ore lenses and the thin band of internal waste between the two lenses. A 95% mining recovery factor was also applied to derive the Mining Inventory

Both the *actual pit* and *optimal pit* (PR 0.5) options examined recover the estimated project capital of $3.81M required to develop a St Dizier open pit project with a gross profit of between $15.8m *optimal* and $15.91m *actual* and a NPV of between $9.2m *optimal* and $10.3m *actual*.

Examination of potential production scenarios indicates that a starter pit within the proposed final pit boundaries will have the advantage of smoothing ore and waste production during the project life and would enable confirmation of pit operating parameters proposed prior to generation of final pit wall positions.

Process Recovery	Cash Profit	NPV	Production Life
0.4	$7.9m	$4.3m	24 months
0.5	$15.8m	$9.2m	30 months
0.6	$25.1m	$13.2m	36 months

Optimisation Project Analysis Summary

Pit optimisation sensitivity study indicates improving profitability and NPV with increasing process recovery with the *optimal pit* resource tonnage increasing from 310,000 to 480,000 tonnes for process recoveries between 0.4 and 0.6. Sensitivity analysis of the *optimal pit* shell data also indicates that a process recovery of 0.5, or greater, is required to repay any *indirect pro-rata capital* component applied from the parent Heemskirk Tin project capital of approximately $8.9M. The table above details *optimisation analysis* results for the range of sensitivities examined.

The following table summarises the *actual pit* derived from this analysis

Item	Actual Pit at Process Recovery 50%
Pit Depth	210m long x 170m wide x 60m depth
Haulage road	15m wide; 1in 7 straights; 1in 10 curves
Pit Operations	Contractor with Stellar technical supervision.
Operating time	5 days, single shift, 10 working hours
Production Life	Approximately 30 months with 2-3 months pre-production stage
In pit Resource	380,000 tonnes at 1.03% Sn
Mining Inventory	424,000 tonnes at 0.86% Sn (1.75 million tonnes waste/over burden)
Capital Cost	$3.8 million
Operating Cost	$27.4 million
Revenue	$43.3 million
Gross Profit	$15.9 million
NPV	$10.3 million

The St Dizier project has the capacity to add value to the Heemskirk Tin project and may assist in maintaining a higher level of production during the preliminary development stage of the Heemskirk Tin mine.

At this time determination of an accurate process recovery for the St Dizier mineralisation remains a high priority.

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1. Introduction

The following report examines the viability of an open cut to recover tin from the St Dizier deposit near Zeehan/Granville Harbour. Open pits have been analysed by manual and computerised methods following which a pit and haul road design were incorporated to provide realistic data for use in the scoping study.

The pit and haul road design presented in this report may change at a definitive feasibility study stage but are sufficiently accurate to permit scoping level evaluation of the financial viability of an open cut and to provide information to produce preliminary conceptual designs relating to surface works such as location and size of the open cut, surface roads, drains, stockpiles, water treatment facilities and, where appropriate, drainage diversions.

The St Dizier open cut optimisation presented in this study represents an open cut that is a component of a larger project and is based on the assumption that material produced in the open cut is transported to Zeehan for treatment within a processing plant and infrastructure that forms a part of the Heemskirk Tin project.

2. Scope of study

The scope of this report is to determine the scale and viability of a potential open cut recovering a tin product at St Dizier to add value to the Heemskirk Tin project. It is assumed that the St Dizier operation would form a component of the Heemskirk Tin project and that all material recovered from a St Dizier operation would be processed at the Heemskirk processing facility as defined in the Heemskirk Tin Pre-Feasibility Study.

3. Location and History

The St Dizier Tin deposit is located on EL46/2003, 20km west of Zeehan on the west coast of Tasmania within the Mount Heemskirk Regional Reserve. The Heemskirk district has supported mining activity since the 1880's with numerous alluvial and hard rock prospects worked. The alluvial tin deposits along the Tasman River, adjacent to St Dizier, are some of the oldest worked in Tasmania.

Figure 1 St Dizier location

There has been minor alluvial and some minor underground mining activity immediately adjacent to the St Dizier deposit but the deposit may be considered as largely undisturbed.

4. Geology

The regional and local geology is described in detail in the report *St Dizier Resource Estimation November 2013 by Resource and Exploration Geology (R.E.G)*. The deposit in layman's terms is a skarn deposit generated by the metsomatisation of the original dolomite by the intruding granite. The main minerals of interest within the deposit consist of magnetite and tin. Whilst of reasonable grade the magnetite contains a high sulphur content and is not considered in this report to be of economic significance. Mineralisation consists of magnetite, pyrrhotite, and cassiterite with minor schoenfliesite, scheelite, arsenopyrite, galena and sphalerite.

The deposit consists of a near surface western lens, a central lens split into north and south parallel components and the at depth eastward extension of the central lens known as the eastern lens. The Central lens is the main lode of interest. The central lens strikes west to east and dips steeply to the north. The immediate hangingwall is composed of Oonah quartzite and the footwall consists of Oonah shale and slate.

Figure 2 Oonah Quartzite exposure at St Dizier

Topsoil cover at the site on the valley sides is limited (see Figure 2) and is followed by a weathering zone showing some evidence of minor opening and infill of existing structure with weathered minerals.

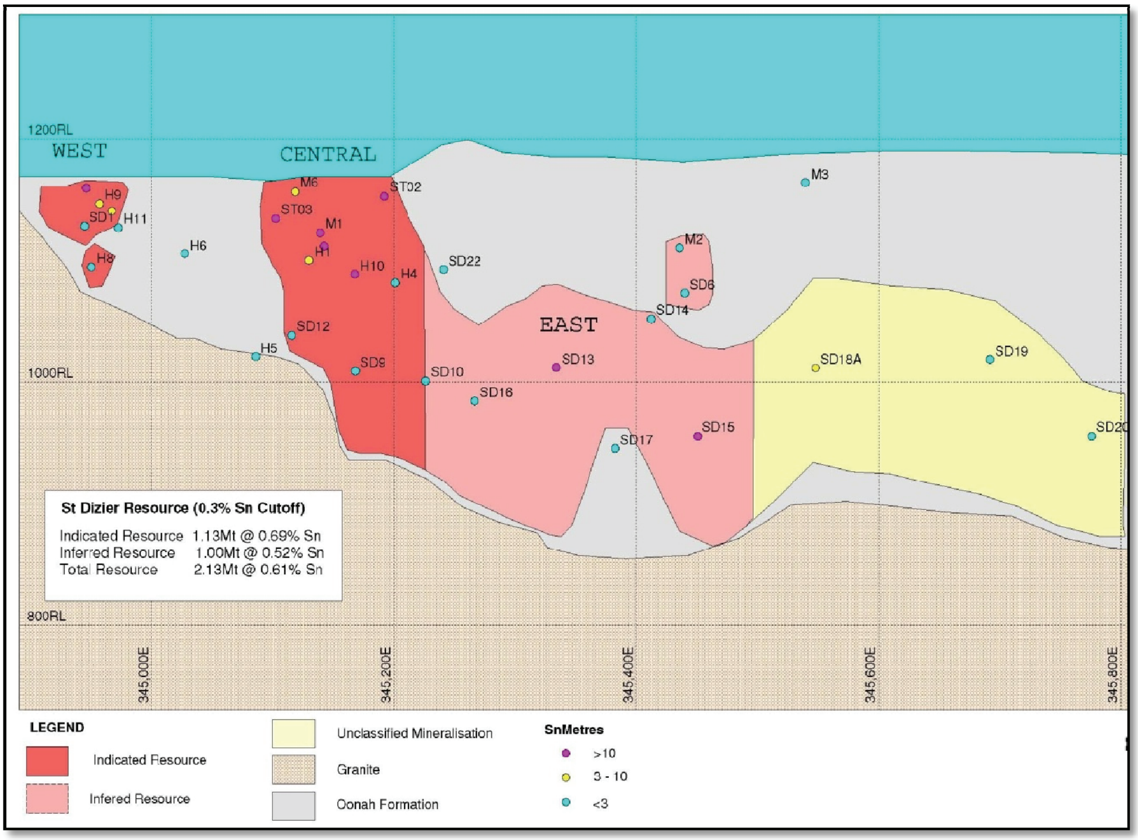

Figure 3 St Dizier Long Projection *(Callaghan 2013)*

5. In-situ Mineral Resource

In-situ resources have been estimated by Resource and Exploration Geology as outlined in the report - *St Dizier Resource Estimation R.E.G - November 2013(T.Callaghan.)*

Classification	Tonnes(M)	Sn%	Sol Sn%	WO3	Fe%	S%
Indicated Resource	1.20	0.69	0.09	0.04	23.7	2.64
Inferred Resource	1.06	0.52	0.22	0.05	22.2	1.81
Total Resource	**2.26**	**0.61**	**0.15**	**0.04**	**23.00**	**2.25**

Table 1 In-situ Mineral Resource estimate (Nov 2013)

The resource reported is a global *in-situ* resource, that is, prior to the application of a detailed assessment of the economic viability of recovery of the resource by mining. All references to resources in this report are based upon a tin cut off grade of 0.3% Sn- no other minerals have been considered to be of economic interest.

References to Mineable Resources in this report refer to the component of the Indicated Resources in Table 1 that are amenable to mining recovery at a point in time given the prevailing economic conditions and technical capacity to recover the material.

6. Mining Inventory

In this instance the deposit is to be evaluated as a potential open cut to recover tin mineralisation. In order to estimate a mining reserve, or in this instance a Mining Inventory the following were reviewed: -

- Geotechnical Environment – to permit assessment of pit wall angles
- Open Pit Bench Geometry – wall height, face angles, berm widths etc
- Open Pit Production Rate – based upon size and geometry of deposit
- Open Pit Operating Costs – determined from scoping level estimates
- Open Cut Capital Costs – determined from surface works and haulage
- Open Pit optimisation – *optimal pits* determined using above data
- Open Pit Design – *Actual pit* with haulage design using *optimal shells*
- Mineable Resource – the component of the *in-situ* resource that lies within the optimal pit shell that is economically viable under current conditions.

6.1 Geotechnical Environment

A scoping level study of the geotechnical environment was conducted and is presented as Appendix 1. At this stage the geotechnical data source is limited to 1,257 metres of logged core from 9 drill holes and to several surface quartzite exposures on the north side of the deposit. No structural orientation studies have been conducted on the drill core. Preliminary pit wall angles, bench heights and minimum widths were determined from the geotechnical study as shown in Table 2 below.

From	To	Wall Angle (WA)	(WA Actual)	Height (Max)	Width(Min)	Face Angle
1070	**1120**	55	52.5	20	8	70
1120	**1140**	50	52.5	20	8	70
1140	**Surface**	40	40	15	9	60

Table 2 Proposed operating parameters (Scoping Study)

A finding of the geotechnical study was that better ground conditions are anticipated on the southern and eastern pit walls with poorer conditions on the upper north and upper west pit walls – this finding was used to locate the proposed haul road which was designed on the southern and lower western pit wall.

It is advisable that the development of an open cut at St Dizier comprises of a starter pit which would be mined within any proposed final pit wall limits. During the mining of such a starter pit detailed structural geotechnical analysis may be conducted sufficient to confirm, or modify, pit wall angles, wall heights and berm & haulage road widths as presented in this scoping report.

6.2 Open Pit Operating Parameters

Utilising the data in Table 2 from geotechnical studies and in order to promote a safe operating environment the following parameters were utilised for manual pit design work: -

Bench	From RL	To RL	Bench Height	Bench Width	Face Angle	Wall Angle	Comment
1885	1200	1885	15	10	60	40	Partial Bench
1870	1885	1870	15	10	60	40	Partial Bench
1855	1870	1855	15	10	60	40	Full Bench
1840	1855	1840	15	10	60	40	Full Bench
1820	1840	1820	20	10	70	52.5	Pit Floor
1810	1820	1810	10	N/A	70	52.5	Floor Strip

Table 3 Pit Operating Parameters

It was assumed that each bench will be mined in two equal "flitches" to promote safe operating conditions and to aid blasting and grade control. A 15m wide haul road was utilised to provide access to each bench horizon with maximum gradients of 1in 7 permitted on straight sections and 1 in 10 on curved sections of the haul road – the provision of run-off road sections at intersections of the haul road with each bench horizon is also assumed.

6.3 Open Pit Production Rate

The following *optimal pit* production rate data assumes a single day shift of 10 working hours and a 5 day working week. In addition to the initial site works which it is assumed will take 2-3 months the production stage will consist of the following operations: -

- Topsoil and overburden removal by excavation - 280,000m^3 (0.81Mt).
- Waste rock mining by drill and blast - 335,000 m^3 (1.0Mt)
- Ore Mining by drill and blast - 115,000m^3 (0.38Mt)

The tin mineralisation was reviewed and broken into realistic blast cycles indicating a minimum of 30 ore firings averaging 10,900 tonnes with a cycle time of 10 days – assuming that there will be no overlapping of ore cycles due to the pit size and orebody geometry a total ore cycle period of 300 days was assumed.

The waste to be drilled and blasted may be mined in a minimum of 50 cycles of 20,000 tonnes with a cycle time of 11 days - the pit is very small so the opportunity for overlapping waste cycles is limited but viable. In this instance it is assumed that a 25% waste cycle overlap is possible with some additional overlap between ore and waste cycles. From this analysis a total waste cycle period of 440 days was assumed.

Item	Material	Months	Comments
Initial site works	Roads, drainage etc	2-3	Preliminary site preparations
Excavation	Overburden	3	Start during initial site works
Drill and Blast	Tin Mineralisation	14	Independent cycles, no overlap
Drill and Blast	Waste Rock	21	Overlapping cycles (25%)
Project Life		**33-36**	**Approximation only**

(Some ore/waste cycle overlap assumed)

Table 4 Pit Life Approximation

The above analysis in Table 4 assumes some overlap of ore and waste cycles and the availability of up to 2 operating contract drill rigs to meet demand. The analysis indicates that for the PR 0.5 pit design a production life of 30-33 months with a preparation stage of 2-4 months may be expected.

A shortened one year pit life was reviewed but is considered unrealistic because the potential pit working area would be relatively small limiting how much equipment could operate effectively within it. Pit supervision and technical management costs would also rise significantly at high production rates given the limited works area and the level of control that would be required to maintain effective survey, drill & blast design and grade management.

(Note: - Taylors Rule for open cuts indicates: -

Mine Life = (Range 0.8-1.2)*6.5 * Ore Tonnage millions^0.25

Taylor's rule proposes that a pit life of 4 years may be expected as a guide to the possible life of such a deposit size. An open cut at St Dizier pit would not support the full 600,000 tonnes per annum production capacity of the proposed mill for the Heemskirk Tin project but St Dizier ore could be batch fed when sufficient material is available for a production run to support ongoing production from Heemskirk Tin (detailed production scheduling is not a component of this scoping study.)

6.4 Open Pit Operating Costs

Open pit preliminary operating and capital cost estimates were determined in the report *St Dizier Review July 2014 – Polberro Consulting*. These costs were utilised to perform optimisation analysis and generate *optimal pits*. Costs were estimated from both actual and typical industry standards for tasks assuming St Dizier as a contractor operated pit with some Stellar technical supervision. The operating cost for processing and revenue information was derived from the *Heemskirk Tin Pre-Feasibility Study Aug 2013*. A summary of the operating costs utilised in the optimisation process follows as Table 5.

Item	Cost/t	Comment
Waste Mining	2.50	Above 1160m RL
Waste Mining	4.30	Below 1160m RL
Ore Mining	18.45	All ore costs (inc transport $5/t)
Processing cost	35.00	Assumes Zeehan mill

Table 5 Open Pit Operating Cost Summary

The costs used may be considered as appropriate for a scoping level of study but should not be relied upon as the basis to proceed directly to a mining operation other than to proceed to a Pre or Definitive Feasibility Study.

It is important to note that the above costs are derived from larger scale pit operations with ore production rates of up to 400,000t/yr and waste production of up to 1M t/yr – the St Dizier pit is a small pit by mining industry standards and increasing production costs may be anticipated for production rates that exceed a practical production rate for the scale of the deposit and pit geometry – increases in cost in such a case would come from the need for greater supervision and planning (scheduling, drill and blast, grade control) and the over deployment of equipment resources compared to the size of the resource.

6.5 Open Pit Capital Costs

Capital Cost estimates were initially based on an estimate of surface works to support a pit of up to 610,000 tonnes of ore and 3.23M tonnes waste as estimated in Resource and Exploration Geology report - *St Dizier Tin Deposit Preliminary Pit design Jan2104 (Callaghan).* Preliminary capital costs were used in the optimisation process to more accurately determine the scale of a potential open cut following which the capital cost estimate was re-estimated. Direct Capital is determined as the cost required to develop and sustain an open cut operation at St Dizier. The capital costs were iteratively estimated for a 50m deep *optimal pit* option as follows: -

Item	Estimate
Mob/Demob	250,000
Roads	200,000
Fence Site Area	261,000
Stockpile Area (Single Area)	400,000
Drains and Settling Ponds	100,000
Drainage Diversion (300 x 2m2)	100,000
Overburden stripping	500,000
Pit haul road (400m)	1,000,000
Rehabilitation	500,000
Contingency 15%	496,650
Direct Pit Capital Costs	**3,807,650**

Table 6 Direct Preliminary Capital Cost estimate

An indirect capital cost could be considered as the pro-rata proportion of the Heemskirk Tin project capital to be supported by the St Dizier Project. Indirect capital was not used in this report to determine St Dizier project profits, NPV or viability but is added for completeness.

The St Dizier pit PR 0.5 project would produce up to 380,000 tonnes of ore with 1.8Mt waste rock from a 50/60m deep pit whilst the Heemskirk Tin project at this time has a mining inventory of 3.951Mt of ore at 1.06% Sn (*Heemskirk Tin PFS - Mining One).* The Capital cost estimate of the Mill and Tailings plant and infrastructure for the Heemskirk Tin PFS was estimated at $88.7M. An allocation of 10% of the capital cost $8.9M could be made in this instance based upon the relative tonnages of the two deposits.

As the St Dizier pit project was assessed for its potential to add value to the main Heemskirk Tin project the indirect capital cost was not considered.

6.6 Pit Optimisation (*Optimal Pit*)

The optimisation process utilised for the scoping study is detailed in Appendix 2 -*St Dizier Tin Deposit Optimisation Study and Pit Design - Sep 2014.* Pit optimisation software was utilised in this instance to provide an *optimal pit* shell to support the development of a manual pit design. The cost assumptions shown in Table 4 and a tin price of Au$25,000 (net of smelting costs) were utilised in the pit optimisation procedure. The following *base case* factors were assigned to the pit optimisation process.

Item	Factor
Cut off grade	0.3
Mining Recovery	0.95
Mining Dilution	0.10
Process Recovery	0.50
Smelter Recovery	0.95

Table 7 Mining and Recovery Factors

The pit geometry shown in Table 3 was utilised for the pit optimisation process as derived from the geotechnical review. The principal unknown factor in the project evaluation process was process recovery – sensitivity analysis was conducted during the optimisation analysis at 0.4, 0.5 and 0.60 process recoveries to examine the impact of recovery on the project.

Following the *optimal pit* assessment then preliminary scheduling and NPV pit evaluations were also conducted (utilising the optimisation software) incorporating the direct pit capital of $3.81m (the same capital for all projects was utilised as the surface development works is very similar for each case) but excluding the *pro-rata* indirect capital from the Heemskirk Tin project development capital. As indicated the St Dizier project was typically assessed in this report as an add-on component of the Heemskirk Tin project that does not contribute to the capital development of that project nor as a stand-alone project. Optimal open pit shells were also produced for St Dizier at the three process recovery (PR) levels examined. The open pit shell produced by the PR 0.5 optimisation was generally limited to the central lens only and to a depth just below 1120m RL. Pits produced for higher process recoveries were larger and slightly deeper.

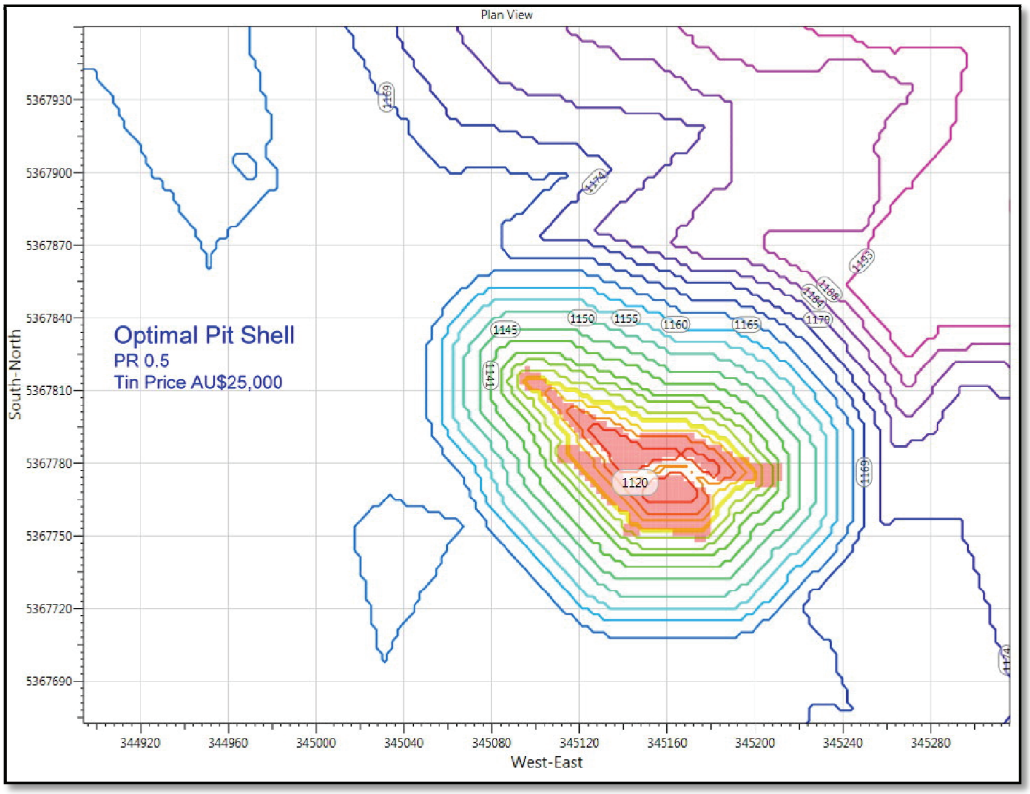

Figure 4: Optimal Pit 0.5 Process Recovery

The *optimal pit* shell for a process recovery of 0.5 returned a cash profit of $15.8m and an NPV of $9.2m.

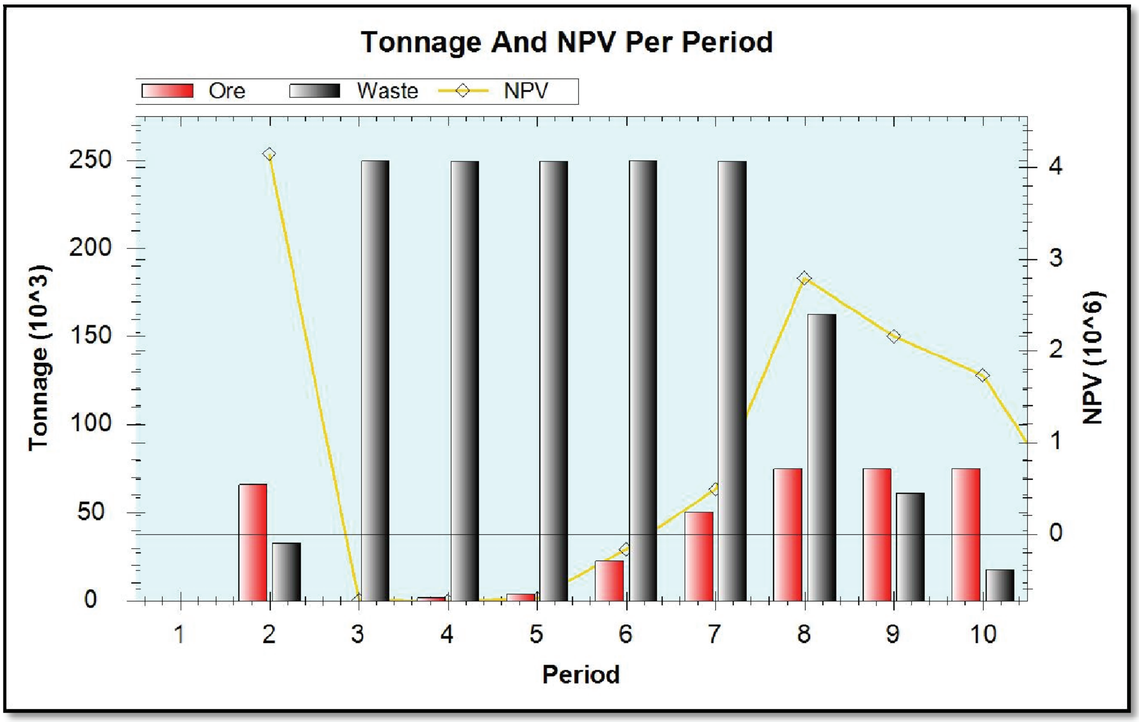

Figure 5: Optimal Pit (PR=0.5) schedule option

The above figure is one representation of a large number of potential pit schedules and NPV's and is presented solely as an example of the estimated level of NPV (and ore/waste production stream) with a project life of 33 months and a discount rate of 8%. Optimal pits were reviewed at the following process recoveries and produced the indicated cash profit (excluding capital and discounting) and NPV (including direct capital and 8% discount rate) for pits with similar production rates and thus a *variable* project life.

Process Recovery	Cash Profit	NPV	Production Life
040	$7.9m	$4.3m	24 months
0.5	$15.8m	$9.2m	30 months
0.6	$25.1m	$13.2m	36 months

Table: 8 Optimal Pit Shell Profit and NPV (Threedify Flowpit)

It is evident that the scale and profitability of an open pit at St Dizier is highly sensitive to the process recovery. It is recommended that the process recovery levels should be well understood prior to conducting final pit designs for a Definitive Feasibility Study.

6.7 Open Pit Design (*Actual Pit*)

The pit optimisation process produces a series of *optimal pit* shells which do not incorporate benches, berms and haul roads. A manual or actual pit design was thus generated incorporating a 15m wide haul road in the pit running outside the PR 0.5 *optimal pit* shell with appropriate benches and berms. In this instance the geotechnical study, and the geometry of the pit, indicated the south, lower west and east walls of the pit as the best place to locate a haulage road.

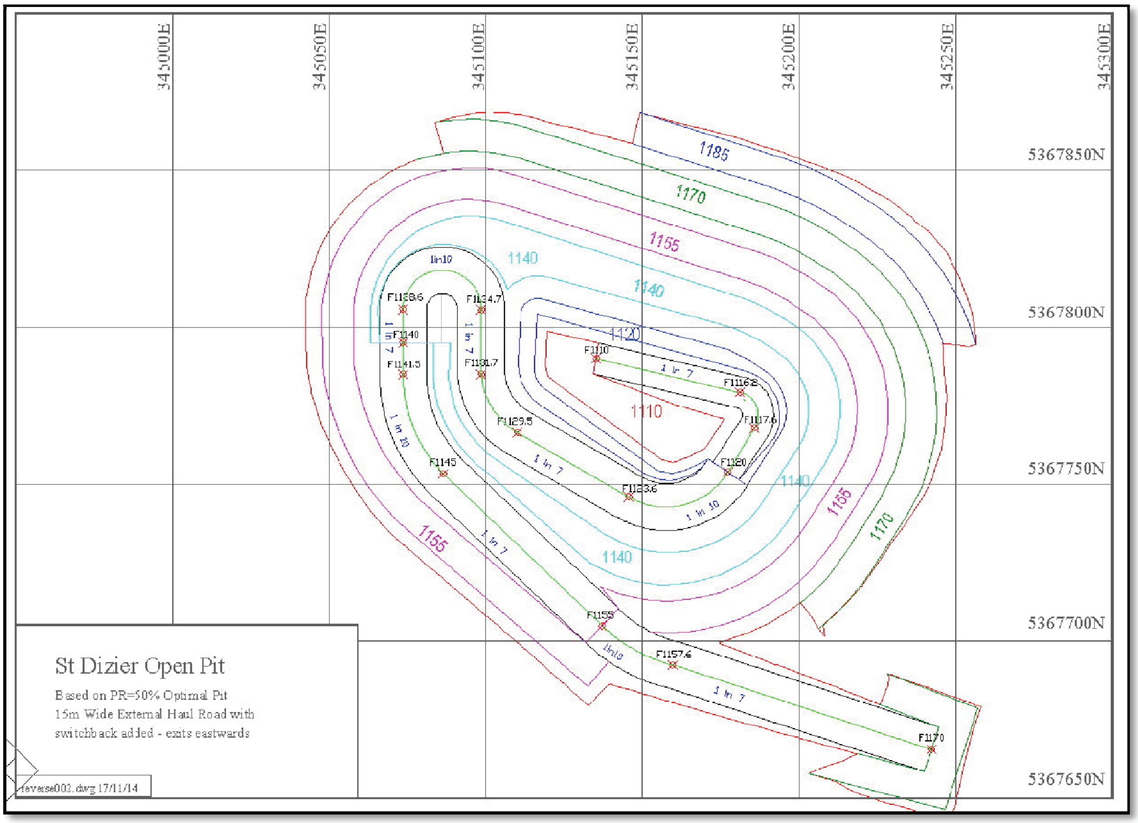

Figure 6 Preliminary Open Cut (PR=0.5)

A haulage road 15m wide, in total, with gradients of 1 in 10 on curves and up to 1:7 on straights was designed. A switchback was incorporated to keep the haulage on the south and lower west sides of the pit and to permit an exit close to the proposed stockpile area east of the open cut. In addition to 1:7 gradients on straight sections of the haulage the road design includes a box cut commencing from the east of the pit to access the first bench horizon. With such an approach the deepest pit for PR=0.5 is 1120m RL with a partial floor strip to 1110m RL. Pit depth is determined in this instance by the capacity to access lower levels more than any other factor. For higher process recovery options some additional pit depth may be attained as a result of the larger pit scale.

St Dizier PR=0.5 pit mineable resources and waste

Elevation		Waste			Mining Resource				
From	To	Vol	SG	Tonnes	Vol	SG	Tonnes	Sn%	Fe%
1200.0	1192.5	350	2.75	961			0		
1192.5	1185.0	7,150	2.77	19,798			0		
1185.0	1177.5	16,834	2.73	45,957			0		
1177.5	1170.0	43,815	2.85	124,697	359	3.30	1,185	1.20	33.1
1170.0	1162.5	161,473	2.92	471,986	9,296	3.30	30,677	1.17	26.9
1162.5	1155.0	74,643	2.95	220,048	16,359	3.30	53,984	1.16	27.5
1155.0	1147.5	173,036	2.95	509,937	12,085	3.30	39,881	1.14	27.6
1147.5	1140.0	68,339	3.02	206,589	19,475	3.30	64,268	1.13	27.8
1140.0	1130.0	39,704	3.08	122,288	22,741	3.30	75,045	1.00	26.7
1130.0	1120.0	25,041	3.10	77,602	22,236	3.30	73,379	0.95	26.7
1120.0	1110.0	3,927	3.10	12,185	12,380	3.30	40,854	0.69	24.3
Total for Pit		614,312	2.95	1,812,049	114,931	3.30	379,272	1.03	26.9

Mining Resource = resource model mineralisation within the manual pit design shell.

Mineable Resource		*Recovery*	*Dilution*	*Tonnes*	*Grade*
379,272	*1.03*	*0.95*	*1.1*	*396,339*	*0.94*

Strip Ratio	Tonnes	Volume
Waste	4.8	5.3
Ore	1	1

Table: 9 Pit Design on PR=0.5 pit shell – Pit Resource

As previously noted it is advisable that pit geometry utilised in the *actual pit* design is reviewed when further structural information becomes available during any *starter pit* stage. This report assumes that each bench interval will be mined in two "flitches" equal to half the full bench height in order to maintain an appropriate standard of grade control and to limit potential fall heights. The *actual pit* design incorporates a ramp exiting to the east of the pit and generates the following "flitch" information shown in Table 9.

Examination of the data from Table 9 indicates that large volumes of waste would need to be mined prior to any significant ore production taking place if the pit is mined on a level to level basis – in order to facilitate earlier ore production a *starter pit* may be considered as a small pit within the final pit boundaries - this would accommodate a smoothing of the ore and waste volumes produced from the pit over the project life and would permit evaluation of geological structure during the starter pit stage to confirm the preliminary pit wall geometry that has been proposed. Examination of the flitch data also reveals that tin grade falls with increasing pit depth.

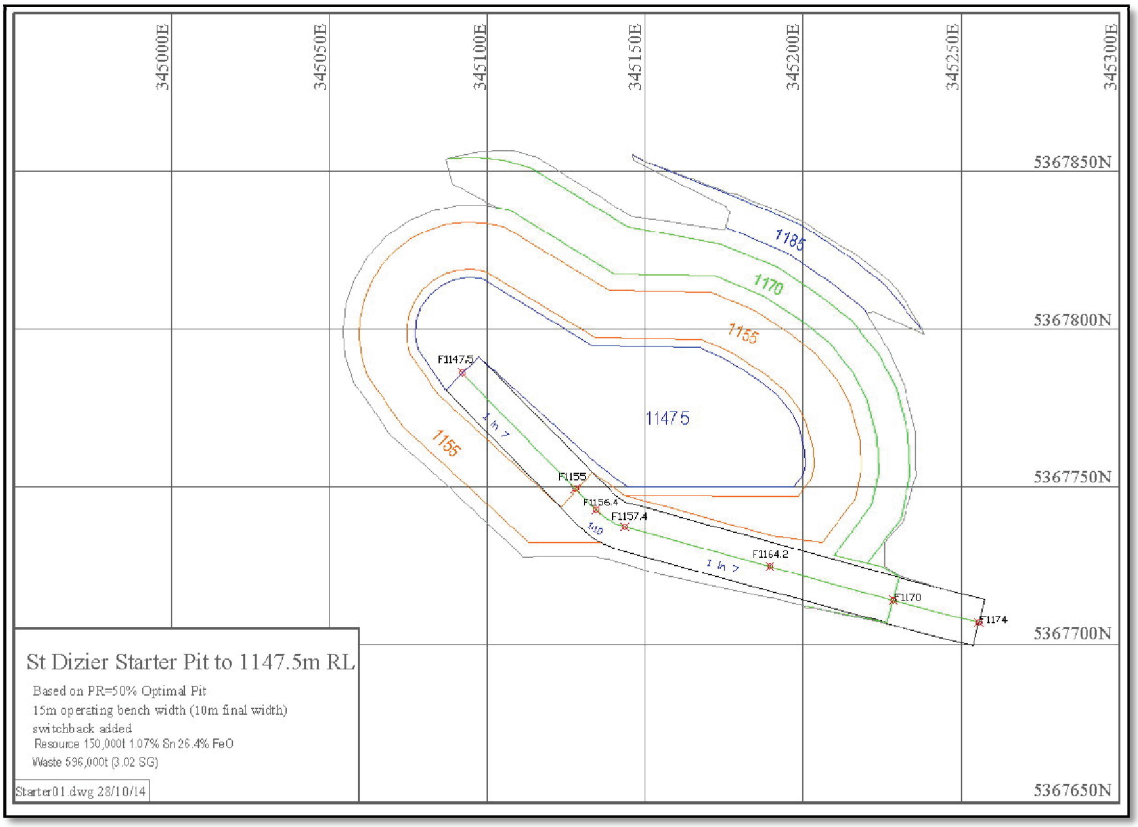

Figure 7 St Dizier - Starter Pit Example

The starter pit shell shown contains a mineable resource of 134,400t 1.16% Sn 27.5% Fe from which a mining inventory of 153,000t 0.99% Sn 24.2% Fe was estimated from drawn sectional perimeters at 5m intervals. The starter pit also contains 196,315m^3 SG 3.02 or 592,000 tonnes of waste rock. The northern lens contains the higher grade material with 83,000t @ 1.28%Sn compared to 70,000t @ 0.64% Sn for the southern lens. The Mining Inventory estimation for the PR=0.5 *actual pit* with a 15m haulage returned the following information: -

Volume	SG	Tonnes	Sn%	Fe%
114,931	3.3	379,292	1.03	26.7

Table 10 Mineable Resource within PR 0.5 actual pit design

Resource within pit shell 379,000 tonnes at 1.03% Sn

Perimeters were drawn at 5m intervals to derive the following estimated Mining Inventory:

Lens	Volume	SG	Tonnes	Sn%	Fe%
North Lens	68,419	3.27	224,004	1.04	23.2
South Lens	67,893	3.28	222,350	0.67	22.6
Total	**136,212**	**3.27**	**446,353**	**0.86**	**22.9**

Table 11 Mining Inventory within PR 0.5 actual pit design shape files

Mining Inventory within pit shell 424,000 tonnes at 0.86% Sn (Recovery 95%)

A total of 600,000m^3 of waste rock at an SG of 2.94 or 1.77 million tonnes must be mined to recover the Mining Inventory. (Note: The Mining Inventory estimate shown includes 21,000 tonnes at 0.28% Sn and 58,000 tonnes waste as both internal and external dilution derived from drawn sectional perimeters at 5m intervals). *Actual mining dilution* of 17% occurs as a result of the narrow lenses and the intervening narrow waste band.

7 Economic Evaluation

The project has been economically evaluated through the pit optimisation process which includes haul road development as a capital cost. As a comparison a basic economic evaluation of the PR 0.5 *actual pit* design case yields the following: -

Capital Cost - $3.81m

Operating Costs-

Item	Cost/t	Qty	Costs	Comment
Waste Mining	2.50	811,000	2.03	Above 1160m RL
Waste Mining	4.30	1,000,500	4.30	Below 1160m RL
Ore Mining	13.45	380,000	5.10	Ore mining and crushing
Transport	5.00	424,000	2.12	Transport to Mill
Processing cost	35.00	424,000	14.84	Heemskirk mill
Less Haul Road	-	-	-1.00	Already in Capital Allocation
Total Operating Costs			27.39	

Table 12 Actual Pit Design - Operating Costs PR 0.5

Revenue – Some additional tin is recovered in the *actual pit* case as tin between 0.2-0.3% is included as dilution (21,000 @ 0.28% Sn or 28 tonnes of recoverable tin worth $0.7m) and some additional resource was recovered during the *actual pit* bench design process. Total revenue is AU$43.3m.

Item	Optimal Pit $m	Actual Design $m
Capital Cost	3.81	3.81
Operating Cost	26.57	27.39
Operating revenue	42.37	43.27
Gross Profit	15.8	15.91
NPV	9.2	10.34

Table 13 Comparison between Optimal and Actual Pit

The principal differences are that more revenue is generated in the *actual pit* case as a result of manual design gains and the gain of some tin in low grade dilution and the actual design incorporates increased waste dilution.

The following table compares the St Dizier open project to an active open cut operation in Tasmania (2013 data) with a similar in ground product value.

Item	St Dizier	Operating O/Cut
Operation	Small scale, medium to high value product	Medium scale, bulk commodity
Mining Inventory	0.44Mt	10.0Mt
Production rate	140ktpa	385ktpa
Stripping ratio (W/O t)	4.15	1.35
Mining Costs	$25-26/t	$17-18/t
Transport to plant	$5/t	-
Processing	$35/t	$20/t

Table 14 Project comparison to Operating Open Cut

The principal differences between the above projects are the stripping ratio, scale of the operation and complexity of the process – the mining cost in particular highlights the impact of a higher stripping ratio.

8 Surface Works - *Surface works shown in plan format in Appendix 3.*

More detailed data regarding surface works would be forwarded with any notice of intent to be forwarded to government authorities including drain dimensions, water residence period and potential water flow rates. It is the intent to limit works as far as is practicable to the open pit and valley to the east of the open cut thus making environmental control as effective as possible. The surface works covered in this report cover the basic concepts of the surface works program as follows in the approximate order of completion.

8.5 Site Isolation

An area of 354,000 square metres would be fenced and gated to isolate the site from accidental public access. Existing tracks and a 2.61 km cleared "fire break" along the fence perimeter to be developed.

8.6 Preliminary Road Development

A total 1040m of existing tracks to, and at, the open cut site would be upgraded to a 15 metre wide roadway for use by heavy equipment with appropriate drainage and silt traps. The work entails 520m of track between the sealed road and the "fenced area" of the mine site and 520m inside the mine site. A further 400m of minor track would be developed for initial drainage work.

8.7 Drainage Diversion

A 300 metre drainage diversion channel with a cross-sectional area of two square metres is assumed to be developed and the creek diverted away from the existing channel and open cut area.

8.8 Drainage system

Develop 440m of stockpile and pit water drains with four 0.9 mega-litre settling ponds for sediment control and to provide appropriate retention and settling times. Set up appropriate water monitoring sites. Develop a north and south fresh water diversion drain to catch and limit fresh water run-off into the proposed open cut and stockpile area. A total of 1100 metres of minor drains, two ponds and 150m of transfer pipe would be required for the "fresh water "system. Excepting natural drainage systems and the proposed drainage diversion the site area consists of four designated drainage areas: -

Area A – Northern Catchment

The northern catchment consists of a fresh water catchment area that will be diverted through a dedicated clean water drainage system before linking with the South catchment drain, via a dedicated pipe, and flowing into the main creek.

Area A – Fresh Water	Description
Area of Catchment	46,750 square metres
Surface Cover	Dense Scrub/small trees
Slope	Steep (10-35%)
Proposed Drain to Service Area	Fall of 20m in 500m

Table 15 Area A - Catchment & Drain Data

Area B – Southern Catchment

The southern catchment consists of a fresh water catchment area that will be diverted through a dedicated clean water drainage system before being joined by flow from the north catchment drain and flowing into the main creek.

Area B – Fresh Water	Description
Area of Catchment	48,900 square metres
Surface Cover	Open Scrub/small trees
Slope	Steep (10-28%)
Proposed Drain to Service Area	Fall of 30m in 750m

Table 16 Area B - Catchment & Drain Data

Area C – Stockpile Catchment

The stockpile catchment consists of a works area water catchment that will be diverted through a dedicated working water drainage and settling system before being joined by flow from the pit area catchment drain and flowing into the final settling pond system before being released to the main creek.

Area C – Stockpile Area	Description
Area of Catchment	79,600 square metres
Surface Cover	Cleared and levelled
Slope	Gentle slope 3%
Proposed Drain to Service Area	Fall of 5m in 85m

Table 17 Area C - Catchment & Drain Data

Area D – Pit Area Catchment

The pit area catchment consists of a works area water catchment that will be diverted through a dedicated working water drainage and settling system before being joined by flow from the stockpile catchment drain and flowing into the final settling pond system before being released to the main creek.

Area D – Pit Area	Description
Area of Catchment	61,500 square metres
Surface Cover	Pit and surrounds
Slope	Gentle slope around pit
Proposed Drain to Service Area	Fall of 10m in 300m

Table 18 Area D - Catchment & Drain Data

8.9 Open Cut Stripping

The open cut area is to be cleared removing all topsoil and vegetation. The topsoil and initial weathered material may be used to create a bund around the open cut perimeter that can be spread over the area on completion of mining. Deeper weathered material recovered in the later stage of surface stripping may be used to start creation of a stockpile base to the east of the open cut and settling pond area.

8.10 Surface Stockpile

A surface stockpile and ore loading area will be generated east of the open cut site. Initially the ore loading and transfer area would be developed followed by the waste stockpile area. The open cut will contain both potentially acid forming and acid neutralising waste rock – these will be mixed and built up in layers at the stockpile site to limit generation of acid drainage during the mine life and for permanent storage.

8.11 Pit Haul Road

On completion of the stripping phase a haulage road will be developed to the 1155 level and open cut mining will commence within the proposed starter pit limits.

8.12 End of mine life

On completion of mining the following are to be considered: -

- Return of any unstable acid producing material to the open cut.
- Re-establish the old drainage system- includes flooding of open pit .
- Remove fencing and conduct re-vegetation, rehabilitation of tracks etc.

All of the rehabilitation works would be defined in a Mine Closure Report to be made available at the appropriate stage of project development.

9 Recommendations and conclusions

At the projected process recovery of 0.5 this pit optimisation study indicates that there is potential for a pit at St Dizier to add value to the Heemskirk Tin project but not to be viable as a stand-alone project excepting that toll milling has not been investigated in this study.

At projected process recovery levels of greater than 0.5 the optimisation process indicates that there is potential for a St Dizier project to add to overall project value including *pro-rata* repayment of Heemskirk Tin project processing plant capital attributable to St Dizier ore.

The project is highly sensitive to process recovery in terms of profitability, mined tonnage and pit dimensions - final process recovery should be determined prior to proceeding to a full feasibility study for St Dizier.

Maximum pit depth is constrained by ore body size and geometry which limits the provision of haulage access beyond 1110/1120m RL for the PR 0.5 base case.

At a process recovery of 0.5 a Mining Inventory of 424,000 tonnes at 0.86% Sn can be recovered from the open cut. In order to recover this inventory 1.75 million tonnes of waste must be mined and stockpiled.

A St Dizier open cut utilising a process recovery of 50% has the potential to generate a project NPV of $10.34m.

A starter pit – within the final pit limits of any pit design should be utilised to obtain geotechnical data to confirm pit geometry parameters and to obtain a smoothed ore/waste ratio production schedule for the project life.

The St Dizier project represents a small scale project that has the potential to add value to the Heemskirk Tin project and may be reviewed in that light when metallurgical recovery rates are better known – it does not represent a viable stand alone project at the base case process recovery of 0.5.

References

1. St Dizier Ore Resource Report (*R.E.G - Callaghan 2013*)
2. St Dizier Tin Deposit Preliminary Pit Design *(R.E.G - Callaghan 2014)*
3. St Dizier Tin Deposit Pre-scoping Study Project Review (*Polberro Consulting - Fudge 2014*)
4. St Dizier Scoping Level Geotechnical Report *(Polberro Consulting - Fudge 2014)*
5. St Dizier Tin Deposit Optimisation Study and Pit Design (*Polberro Consulting - Fudge 2014*)
6. Threedify Flowpit *(Commercial Pit Optimisation Software)*
7. Heemskirk Tin Pre-Feasibility Study (*MiningOne - Aug 2013)*

Limitations and consent

The report is provided to the Stellar Resources as a scoping study into open pit mining at St Dizier. The report has been prepared using information available to the author at the time of writing. The opinions stated herein are given in good faith and with the belief that the basic assumptions are factual and correct and the interpretations reasonable.

Statement of independence

Alan Fudge has no material interest or entitlement in the securities or assets of the Stellar Resources or any associated companies.

Map conventions/other

Coordinates in this report and in digital data associated with this report are recorded as GDA Zone 55. Levels (RL) in this report are MSL +1000m. References to cross sections look west and long sections look north. Surface topography is based upon lands department map information only.

Competent Person Statement

1. This report *does not contain any estimation of ore reserves* as defined by the JORC 2012 guidelines and does not require a supporting competent person statement in that context.

2. This report refers to the St Dizier Geological Resource as defined in the St Dizier Ore Resource Report (*R.E.G - Callaghan 2013*) and associated competent person statement..

Appendix One

St Dizier Tin Deposit -Geotechnical Data Summary - Aug 2014

Alan Fudge – Polberro Consulting

Polberro Consulting
402 Tollymore Road, Table Cape, 7325 ph. 03 64421477 email: alanfudge@polberro.net
ABN 48740887476

St Dizier - Tin Deposit

Geotechnical Data Summary

August 2014

St Dizier - Hangingwall Quartzite

Prepared for: - Stellar Resources Ltd.
By: - Alan Fudge, August 2014

Executive Summary

The St Dizier Skarn is an east-west striking skarn contained within in a metasomatised host in contact with the local Heemskirk Granite consisting of surface outcropping western and central lodes and a deeper eastern lode. The central and western lodes outcrop at the western end of the deposit and preliminary test work indicates that tin may be recovered from this material.

The hangingwall of the deposit is formed by steeply dipping Oonah formation quartzite and the steeply dipping footwall is composed of Oonah formation shales.

Mining of the deposit by open cut methods is under consideration to a depth of up to 100m below the surface. Initially the database for determining preliminary open cut parameters was extremely limited to just data from 5 drill holes incorporating 760m of core. Geotechnical logging of 4 more drill holes in drill core held at MRT in Hobart has been performed to raise the level of confidence in the prediction of overall pit angle and bench height, width and face angles.

Additionally a 1 in 10 access ramp, nominally 15m wide, for single vehicle haulage is assumed in this review for design and stability considerations.

Basic geotechnical domains have been determined as basement granite, footwall shale, ore body (skarn) and hangingwall quartzite – it appears a surface weathering zone affecting all domains will play a dominant role in near surface bench stability. The most dominant weathering affects are noted to the west and north of the proposed pit area.

The following open pit operating parameters are indicated for scoping study use and pit optimisation studies.

From	To	Wall Angle (WA)	(WA Actual)	Height (Max)	Width	Face Angle
1070	1120	55	52.5	20	8	70
1120	1140	50	52.5	20	8	70
1140	Surface	40	40	15	9	60

It is apparent that the best site (excluding entry point) for the pit haul road will be along the south and east walls of the proposed pit.

At this stage there is sufficient information only to conduct a scoping level study as there is no information on orientation of structure and the open pit parameters presented in this summary may change once additional information sufficient to conduct a pre or definitive feasibility study becomes available.

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APPENDICES

1. Introduction

The following report summarises the current geotechnical information available including processing of that material to obtain basic rock mass characterisation to permit the determination of scoping study level open cut bench parameters.

As more geotechnical information becomes available it is likely that a review of the operating parameters will be required. At this time there is only very limited knowledge of structural orientation as there is no oriented core available for review and the few cuttings on site indicate a complex structural environment and extensive near surface weathering effects

Photograph 1: - Weathered quartzite exposure looking north

2. Project Data

St Dizier project data is limited to 9 drill holes that have been logged for geotechnical characteristics and a small number of cuttings exposing mainly weathered hangingwall Oonah formation quartzite.

3. Scope of report

This report is to document and process the geotechnical data available for use in the estimation of preliminary open pit wall geometry and bench height, width and face angles to be used in scoping level designs and optimisation studies.

4. Geotechnical Data

A total of 1257 metres of core from 9 drill holes has been logged for geotechnical characteristics,

Rock ID	RQD	UCS	Q	Q prime	RMR	Samples	Length	Rock Type
BREC	9	1	13.2	13.2	24	1	3.4	Breccia
CARB	76	83	60.8	60.8	64	10	143.5	Carbonate
CLAY	29	9	6.9	6.9	31	7	77.1	Clay
CONG	100	100	75	75	68	1	2.8	Conglomerate
FALT	8	5	0.2	0.2	29	20	36.2	Fault material
GRAN	76	129	35.2	35.2	52	7	70.3	Granite
HORN	53	94	21.5	21.5	48	2	31.3	Hornfels
MMAG	88	95	119.1	119.1	74	2	21.2	Magnetite
PHLG	100	100	25.0	25.0	68	1	7.2	Phlogopite skarn
QZIT	33	120	8.5	8.5	42	27	268.4	Quartzite
SERP	83	80	26.4	26.4	66	4	16.0	Serpentine Skarn
SHAL	24	92	5.5	5.5	39	3	10.2	Shale
SILT	42	56	14.0	14.0	42	5	26.7	Siltstone
SKCS	68	89	36.9	36.9	52	15	250.7	Calc silicate skarn
SKMG	94	117	48.8	48.8	60	7	96.9	Magnetite skarn
SKSP	64	93	39.5	39.5	57	11	99.7	Calc silicate skarn and serpentinite
SSLT	69	102	23.5	23.5	55	13	95.0	Siltstone

Table 2 Summary of geotechnical properties by Rock ID code

the drill core data has been processed within the drill core log sheet to estimate geotechnical rock mass properties and permit determination of scoping study level open pit operating parameters. In addition to the summary above a copy of the processed drill log is shown in appendix one.

At this stage there has been no indication of any hydrology issues with no specific comments noted in geotechnical drilling logs that are available to be viewed.

5. Data Processing

As indicated the available drill core data was reviewed and processed to evaluate rock mass characteristics RQD, RMR and Q. The rock mass characteristics were added to drill hole files and a simple ID2 block model generated to display RQD, RMR and Q.

A simple domain set up has been considered as follows: -

Domain	Sequence
Hangingwall	Oonah Fm quartzites
Ore horizon	Magnetite and skarn assemblage
Footwall	Oonah Fm shales
Basement	Heemskirk Granite

Table 3 Basic Domains considered

however in this instance and with the current lack of structural orientation data it is quite clear that surface weathering appears likely to play the leading role in determination of scoping study parameters.

The following plots (*see following pages*) indicating the drill hole RQD data and the subsequently modelled RQD data show a distinct weaker zone near the surface composed of weathered material with low RQD and correspondingly reduced Q & RMR.

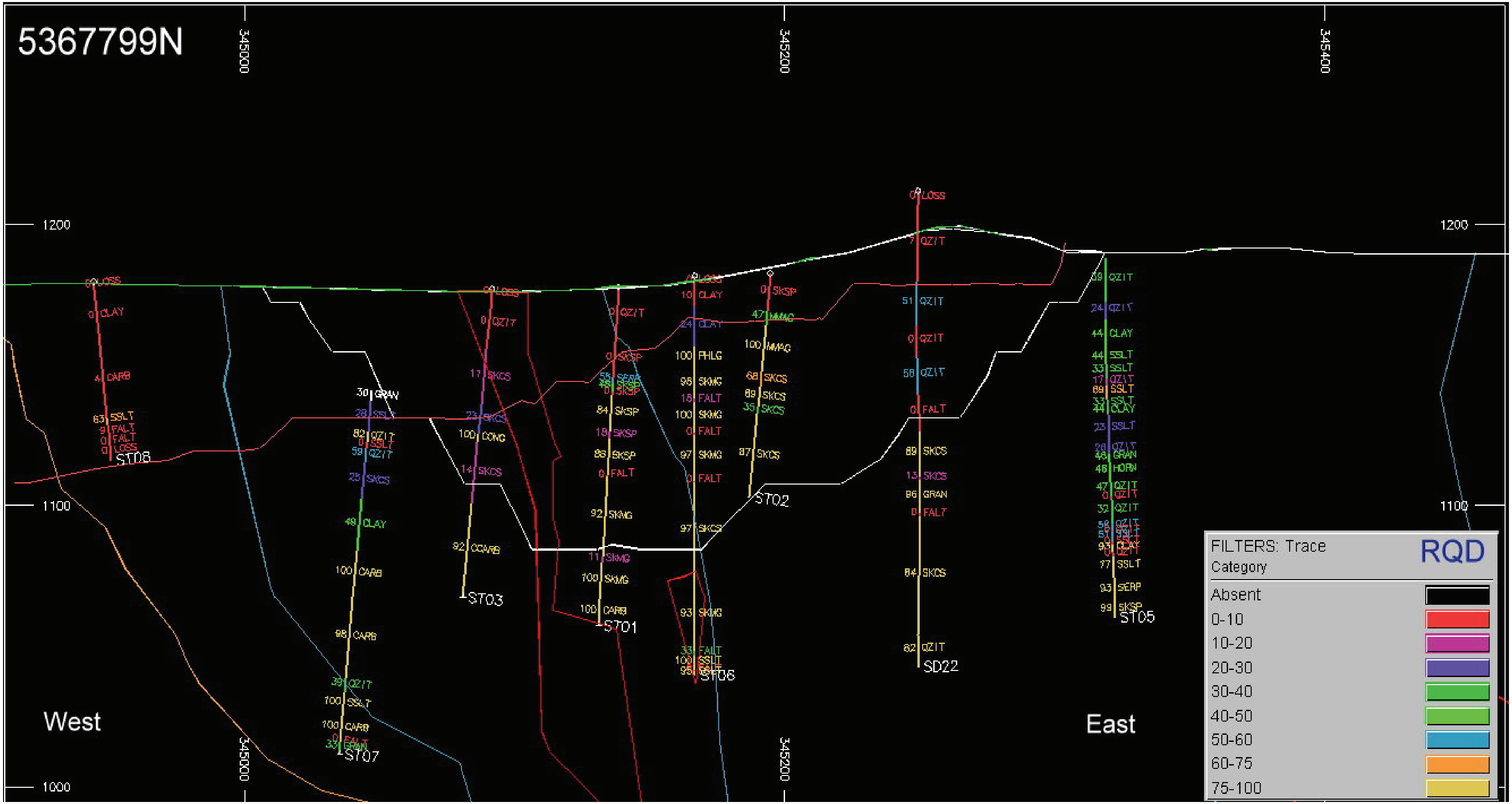
The weakness zone extends from west to east and is deeper to the west. At the western pit limit of the main pit (central lens) the zone extends up to 40m below the surface and at the eastern pit limit is up to 20m below the surface. Any pit designed on the isolated western lens units would be entirely contained within the weakness zone.

There is also a distinct trend in the north south direction with the northern pit wall likely to be effected by the weaker zone to a depth of 30-40m while the south wall is not affected.

For the purpose of the scoping study the weaker or *weathered zone* is assumed to extend to 1140m RL from surface over the whole pit area which is a conservative approach.

The western wall of the pit will probably experience weaker conditions to 1130m RL which is accommodated in this review by incorporation within the *transition* zone – further examination of the western wall between 1140m RL and 1120m RL should be conducted at the feasibility study stage.

It is assumed there is a slightly weaker *transition zone* between 1140m RL and 1120m RL and that all pit walls will be within a fresh *intact zone* below 1120m RL.


5367799N
345000
345200
345400
1200
1100
1000
West
East
ST08
ST07
ST03
ST01
ST06
ST02
SD22
ST05
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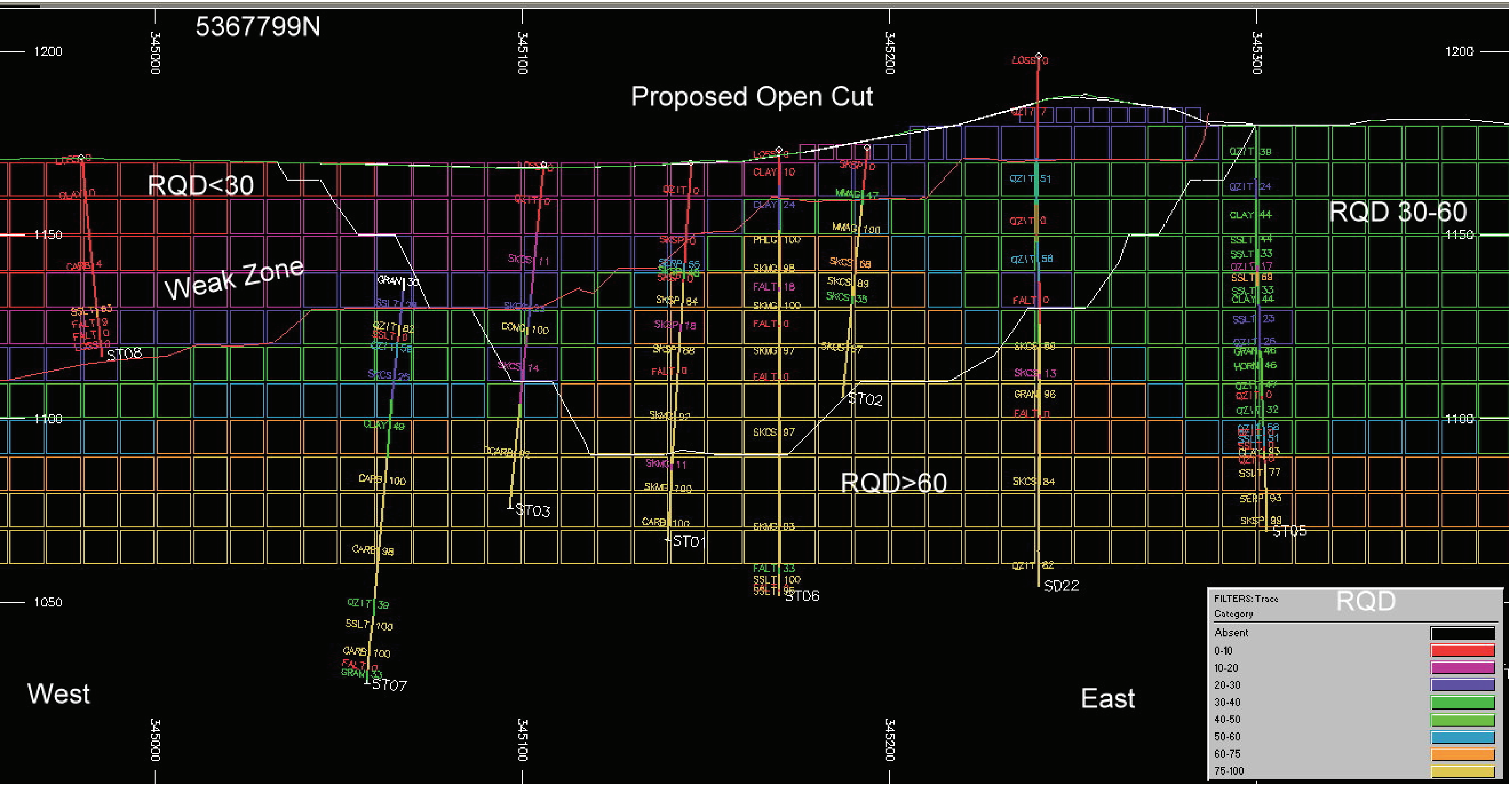
Category
RQD
Absent
0-10
10-20
20-30
30-40
40-50
50-60
60-75
75-100


5367799N
Proposed Open Cut
RQD<30
Weak Zone
RQD 30-60
RQD>60
West
East
345000
345100
345200
345300
1200
1150
1100
1050
ST08
ST07
ST03
ST01
ST06
ST02
SD22
ST05
FILTERS: Trace
Category
RQD
Absent
0-10
10-20
20-30
30-40
40-50
50-60
60-75
75-100

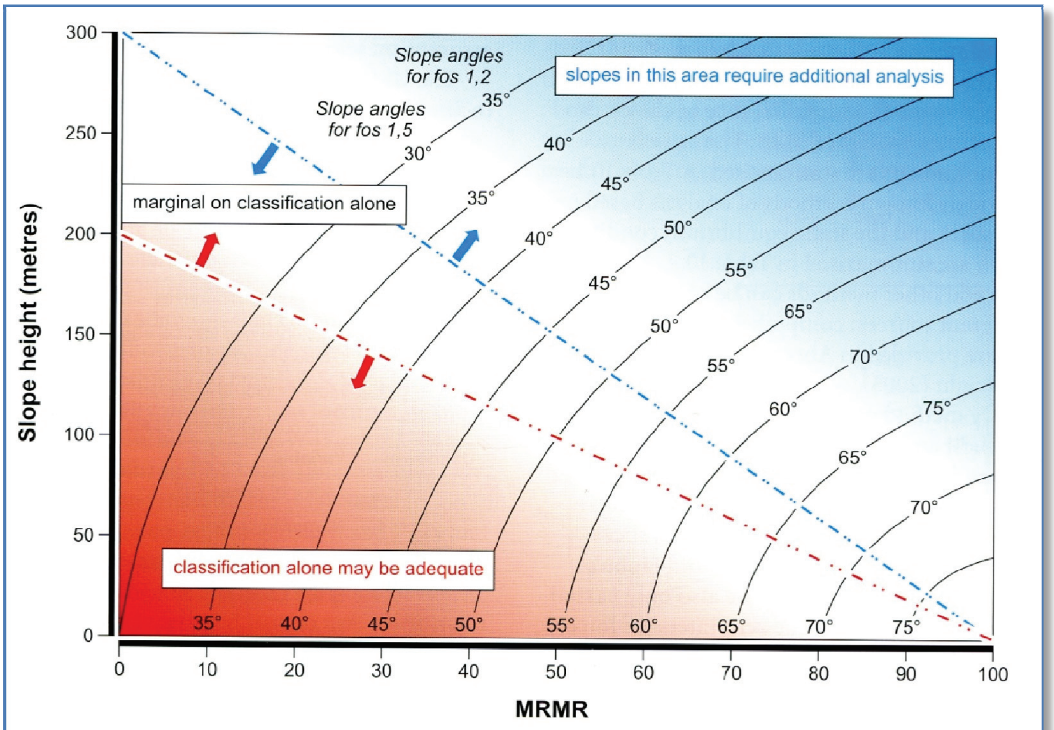
6. Open Cut Operating Parameters

The proposed pit life will be relatively short at between two and three years so long term stability of pit walls is not a critical consideration.

Pit wall angles and bench angle, height and width parameters are proposed as follows which will generate overall pit wall angle of 44-45 degrees and a pit depth of 70-700 metres prior to consideration of haul road impact (which will further reduce the overall pit wall angle where present).

From	To	Wall Angle (WA)	(WA Actual)	Height (Max)	Width	Face Angle
1070	1120	55	52.5	20	8	70
1120	1140	50	52.5	20	8	70
1140	Surface	40	40	15	9	60

Table 4 Proposed operating parameters (Scoping Study)



Haines & Terbrugge chart for determining slope angle and slope height

Figure 2: - Haines and Terbrugge chart (slope angle and height)

When reviewed on the Haines and Terbrugge chart (above) the overall pit wall angle of 45 degrees, pit depth of 100m and RMR 50 describes a stable overall pit wall.

It is considered in this analysis that the main stability consideration for St Dizier be the provision of stable bench faces and berms – with the berms capable of controlling falls from individual bench faces.

Because of the shallow nature of the pit stress variations are not expected to generate any problems. Care should be taken in the design of the pit and in the operating life of the pit to minimise open angle changes of face orientation which could reduce confinement to the extent that minor bench failures could occur – most particularly in the weathered zone.

Photograph 2: -Minor bench failure due to loss of confinement on direction change

7. Recommendations

Utilise the open cut operating parameters detailed in Table 3 for scoping study estimates and preliminary pit optimisation.

The overall pit wall angle utilised in this review is conservative and within the stable region of slope analysis charts. Bench width, height and face angles have been utilised to reduce the potential for localised bench failures.

It would be advisable to obtain details on the orientation of structure prior to conducting a full feasibility study – if necessary by the use of specifically drilled oriented core holes for the purpose of determining orientation of the major structural defects present.

Preliminary planning should locate proposed haul road ramps in the south and east walls of the proposed open pit to ensure that the haulage is sited in the most favourable ground conditions. The initial pit access from the western side may be an exception to this restriction.

References

1. Guidelines for Open Pit Slope Design *(Read & Stacey2009)*
2. Open Pit Mine Planning and Design *(Hulstrulid, Kutchta & Martin2013)*
3. St Dizier pre-scoping study project review *(Unpublished internal report Fudge2014)*

Limitations and consent

The report is provided to the Stellar Resources as a review of geotechnical information to be used to determine scoping study open pit operating parameters and should not be used or relied upon for any other purpose. The report has been prepared using information available to the author at the time of writing. The opinions stated herein are given in good faith and with the belief that the basic assumptions are factual and correct and the interpretations reasonable. This report is not intended for use as a public document and is purely intended for the internal communication of information.

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Map conventions/other

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Appendix 1

Geotechnical Drill Data

No.	BHID	FROM	TO	ROCK	RQD	UCS	Q	Q_PRIME	RMR	LEN
1	SD22	0.00	5.20	LOSS	0	2.5	0.0	0.0	24.0	5.2
2	SD22	5.20	34.00	QZIT	7	150.0	1.2	1.2	36.0	28.8
3	SD22	34.00	49.60	QZIT	51	150.0	12.7	12.7	51.0	15.6
4	SD22	49.60	61.60	QZIT	0	150.0	0.0	0.0	36.0	12.0
5	SD22	61.60	74.60	QZIT	58	150.0	14.4	14.4	51.0	13.0
6	SD22	74.60	88.40	FALT	0	2.5	0.0	0.0	30.0	13.8
7	SD22	88.40	104.50	SKCS	89	150.0	44.4	44.4	55.0	16.1
8	SD22	104.50	106.00	SKCS	13	150.0	5.0	5.0	36.0	1.5
9	SD22	106.00	117.80	GRAN	96	150.0	47.9	47.9	58.0	11.8
10	SD22	117.80	118.80	FALT	0	2.5	0.0	0.0	30.0	1.0
11	SD22	118.80	160.50	SKCS	84	150.0	31.5	31.5	55.0	41.7
12	SD22	160.50	186.50	QZIT	82	150.0	30.7	30.7	55.0	26.0
13	SD22	186.50	193.00	QZIT	0	150.0	0.0	0.0	36.0	6.5
14	SD22	193.00	214.00	GRAN	84	150.0	41.9	41.9	55.0	21.0
15	ST01	0.00	17.70	QZIT	0	2.5	0.0	0.0	24.0	17.7
16	ST01	17.70	29.00	SKSP	0	1.0	0.0	0.0	22.0	11.3
17	ST01	29.00	31.20	SERP	55	75.0	36.4	36.4	52.0	2.2
18	ST01	31.20	33.70	SKSP	48	100.0	12.0	12.0	46.0	2.5
19	ST01	33.70	34.80	SKSP	0	100.0	0.0	0.0	36.0	1.1
20	ST01	34.80	46.80	SKSP	84	100.0	42.1	42.1	55.0	12.0
21	ST01	46.80	49.00	SKSP	18	100.0	3.0	3.0	36.0	2.2
22	ST01	49.00	61.00	SKSP	88	100.0	44.2	44.2	55.0	12.0
23	ST01	61.00	61.20	FALT	0	100.0	0.0	0.0	36.0	0.2
24	ST01	61.20	87.20	SKMG	92	100.0	46.2	46.2	58.0	26.0
25	ST01	87.20	89.00	SKMG	11	75.0	3.7	3.7	37.0	1.8
26	ST01	89.00	101.00	SKMG	100	100.0	75.0	75.0	68.0	12.0
27	ST01	101.00	109.20	CARB	100	100.0	150.0	150.0	82.0	8.2
28	ST02	0.00	13.30	SKSP	0	2.5	0.0	0.0	30.0	13.3
29	ST02	13.30	18.00	MMAG	47	75.0	10.4	10.4	47.0	4.7
30	ST02	18.00	34.50	MMAG	100	100.0	150.0	150.0	82.0	16.5
31	ST02	34.50	39.80	SKCS	68	100.0	34.0	34.0	65.0	5.3
32	ST02	39.80	46.80	SKCS	89	100.0	88.6	88.6	69.0	7.0
33	ST02	46.80	49.40	SKCS	35	100.0	17.3	17.3	55.0	2.6
34	ST02	49.40	83.00	SKCS	87	100.0	86.9	86.9	69.0	33.6
35	ST02	83.00	84.00	FALT	0	2.5	0.0	0.0	38.0	1.0
36	ST02	84.00	93.90	SKCS	91	100.0	90.9	90.9	72.0	9.9
37	ST02	93.90	95.10	FALT	0	2.5	0.0	0.0	22.0	1.2
38	ST03	0.00	3.20	LOSS	0	2.5	0.0	0.0	22.0	3.2
39	ST03	3.20	21.20	QZIT	0	150.0	0.0	0.0	36.0	18.0
40	ST03	21.20	40.70	SKCS	11	2.5	0.8	0.8	22.0	19.5
41	ST03	40.70	51.00	SKCS	23	37.5	1.6	1.6	26.0	10.3
42	ST03	51.00	53.80	CONG	100	100.0	75.0	75.0	68.0	2.8
43	ST03	53.80	75.20	SKCS	14	2.5	0.9	0.9	22.0	21.4
44	ST03	75.20	108.00	CARB	92	100.0	92.1	92.1	64.0	32.8
45	ST04	214.00	217.00	CARB	17	75.0	0.8	0.8	31.0	3.0
46	ST04	217.00	219.40	SERP	60	100.0	30.1	30.1	70.0	2.4
47	ST04	219.40	228.16	CARB	84	100.0	31.7	31.7	55.0	8.8
48	ST04	228.16	233.30	CARB	60	100.0	22.5	22.5	65.0	5.1
49	ST04	233.30	234.00	SERP	100	100.0	100.0	100.0	74.0	0.7
50	ST04	234.00	237.12	CARB	99	100.0	99.4	99.4	74.0	3.1
51	ST04	237.12	242.50	SKSB	74	100.0	8.3	8.3	49.0	5.4
52	ST04	242.50	248.90	SKSP	64	100.0	32.0	32.0	70.0	6.4
53	ST04	248.90	251.90	SHAL	20	100.0	7.5	7.5	36.0	3.0
54	ST04	251.90	255.00	SHAL	0	75.0	0.0	0.0	31.0	3.1
55	ST04	255.00	259.10	SHAL	44	100.0	8.2	8.2	46.0	4.1
56	ST04	259.10	262.50	BREC	9	1.0	13.2	13.2	24.0	3.4
57	ST04	262.50	285.80	HORN	56	100.0	20.9	20.9	51.0	23.3
58	ST04	285.80	289.00	GRAN	53	100.0	19.9	19.9	51.0	3.2
59	ST05	0.00	11.00	QZIT	28	100.0	4.7	4.7	41.0	11.0
60	ST05	11.00	34.00	QZIT	39	100.0	9.8	9.8	46.0	23.0
61	ST05	34.00	41.60	QZIT	24	37.5	3.9	3.9	28.0	7.6
62	ST05	41.60	55.20	CLAY	44	0.5	26.5	26.5	48.0	13.6
63	ST05	55.20	59.70	SSLT	44	0.5	33.3	33.3	48.0	4.5
64	ST05	59.70	66.00	SSLT	33	1.0	11.1	11.1	27.0	6.3
65	ST05	66.00	68.90	QZIT	17	75.0	4.3	4.3	31.0	2.9
66	ST05	68.90	74.00	SSLT	69	2.5	25.7	25.7	39.0	5.1
67	ST05	74.00	78.80	SSLT	33	37.5	8.3	8.3	33.0	4.8
68	ST05	78.80	80.40	CLAY	44	0.5	65.6	65.6	34.0	1.6
69	ST05	80.40	93.30	SSLT	23	75.0	5.8	5.8	31.0	12.9
70	ST05	93.30	97.20	QZIT	26	100.0	9.6	9.6	41.0	3.9

71	ST05	97.20	100.00	GRAN	46	1.0	23.2	23.2	34.0	2.8
72	ST05	100.00	108.00	HORN	46	75.0	23.1	23.1	41.0	8.0
73	ST05	108.00	114.20	QZIT	47	150.0	11.5	11.5	46.0	6.2
74	ST05	114.20	115.30	QZIT	0	150.0	0.0	0.0	36.0	1.1
75	ST05	115.30	125.20	QZIT	32	150.0	1.1	1.1	39.0	9.9
76	ST05	125.20	128.30	QZIT	58	150.0	14.2	14.2	51.0	3.1
77	ST05	128.30	129.00	QZIT	0	150.0	0.0	0.0	36.0	0.7
78	ST05	129.00	132.50	SILT	51	75.0	12.6	12.6	46.0	3.5
79	ST05	132.50	134.10	SILT	0	75.0	0.0	0.0	31.0	1.6
80	ST05	134.10	137.10	CLAY	93	37.5	4.7	4.7	48.0	3.0
81	ST05	137.10	139.10	QZIT	0	150.0	0.0	0.0	36.0	2.0
82	ST05	139.10	147.30	SILT	77	75.0	37.7	37.7	50.0	8.2
83	ST05	147.30	158.00	SERP	93	75.0	18.7	18.7	67.0	10.7
84	ST05	158.00	189.40	SKSP	99	150.0	73.7	73.7	82.0	31.4
85	ST05	189.40	189.80	FALT	0	2.5	0.0	0.0	38.0	0.4
86	ST05	189.80	193.70	SSLT	67	150.0	49.5	49.5	65.0	3.9
87	ST05	193.70	195.80	SKSP	95	150.0	142.9	142.9	72.0	2.1
88	ST05	195.80	196.40	FALT	0	2.5	0.0	0.0	30.0	0.6
89	ST05	196.40	202.80	SSLT	73	100.0	36.4	36.4	65.0	6.4
90	ST05	202.80	204.30	FALT	20	2.5	0.8	0.8	38.0	1.5
91	ST05	204.30	205.10	QZIT	88	150.0	85.8	85.8	69.0	0.8
92	ST06	0.00	4.20	LOSS	0	1.0	0.0	0.0	22.0	4.2
93	ST06	4.20	10.20	CLAY	10	1.0	0.1	0.1	22.0	6.0
94	ST06	10.20	23.30	CLAY	24	37.5	0.3	0.3	26.0	13.1
95	ST06	23.30	30.50	PHLG	100	100.0	25.0	25.0	68.0	7.2
96	ST06	30.50	40.10	SKMG	98	150.0	36.7	36.7	58.0	9.6
97	ST06	40.10	41.20	FALT	18	1.0	0.2	0.2	22.0	1.1
98	ST06	41.20	51.10	SKMG	100	150.0	50.0	50.0	68.0	9.9
99	ST06	51.10	51.80	FALT	0	37.5	0.0	0.0	26.0	0.7
100	ST06	51.80	66.70	SKMG	97	150.0	48.3	48.3	58.0	14.9
101	ST06	66.70	67.10	FALT	0	2.5	0.0	0.0	22.0	0.4
102	ST06	67.10	99.10	SKCS	97	75.0	48.4	48.4	53.0	32.0
103	ST06	99.10	121.80	SKMG	93	100.0	46.3	46.3	58.0	22.7
104	ST06	121.80	123.60	FALT	33	37.5	1.1	1.1	31.0	1.8
105	ST06	123.60	128.10	SSLT	100	150.0	22.1	22.1	74.0	4.5
106	ST06	128.10	128.60	FALT	0	2.5	0.0	0.0	22.0	0.5
107	ST06	128.60	134.60	SSLT	95	150.0	21.0	21.0	64.0	6.0
108	ST06	134.60	135.30	FALT	0	2.5	0.0	0.0	22.0	0.7
109	ST06	135.30	147.80	QZIT	96	150.0	23.9	23.9	72.0	12.5
110	ST06	147.80	149.50	FALT	0	2.5	0.0	0.0	22.0	1.7
111	ST06	149.50	174.50	SSLT	89	150.0	29.5	29.5	69.0	25.0
112	ST06	174.50	176.20	FALT	71	2.5	1.2	1.2	37.0	1.7
113	ST07	0.00	7.30	QZIT	10	37.5	1.6	1.6	28.0	7.3
114	ST07	7.30	24.00	QZIT	4	150.0	0.6	0.6	36.0	16.7
115	ST07	24.00	31.80	QZIT	36	2.5	0.8	0.8	27.0	7.8
116	ST07	31.80	39.70	GRAN	30	37.5	1.5	1.5	31.0	7.9
117	ST07	39.70	51.00	SILT	28	37.5	1.9	1.9	39.0	11.3
118	ST07	51.00	54.80	QZIT	82	150.0	40.0	40.0	61.0	3.8
119	ST07	54.80	56.90	SILT	0	37.5	0.0	0.0	26.0	2.1
120	ST07	56.90	62.00	QZIT	59	150.0	6.5	6.5	57.0	5.1
121	ST07	62.00	75.60	SKCS	25	37.5	2.8	2.8	39.0	13.6
122	ST07	75.60	94.50	CLAY	49	2.5	2.5	2.5	32.0	18.9
123	ST07	94.50	111.10	CARB	100	75.0	74.6	74.6	77.0	16.6
124	ST07	111.10	140.60	CARB	98	75.0	73.4	73.4	77.0	29.5
125	ST07	140.60	146.00	QZIT	39	37.5	0.9	0.9	36.0	5.4
126	ST07	146.00	154.30	SSLT	100	150.0	37.3	37.3	68.0	8.3
127	ST07	154.30	163.60	CARB	100	150.0	37.3	37.3	68.0	9.3
128	ST07	163.60	163.80	FALT	0	2.5	0.0	0.0	22.0	0.2
129	ST07	163.80	168.00	GRAN	33	150.0	5.4	5.4	41.0	4.2
130	ST08	0.00	2.60	LOSS	0	1.0	0.0	0.0	22.0	2.6
131	ST08	2.60	23.50	CLAY	0	1.0	0.0	0.0	22.0	20.9
132	ST08	23.50	50.60	CARB	4	37.5	0.7	0.7	42.0	27.1
133	ST08	50.60	53.60	SSLT	63	37.5	4.2	4.2	49.0	3.0
134	ST08	53.60	59.40	FALT	9	2.5	0.3	0.3	22.0	5.8
135	ST08	59.40	61.10	FALT	0	2.5	0.0	0.0	38.0	1.7
136	ST08	61.10	76.10	LOSS	0	2.5	0.0	0.0	38.0	15.0
137	ST08	76.10	102.00	SKCS	85	100.0	31.8	31.8	69.0	25.9
138	ST08	102.00	106.30	SSLT	72	150.0	12.0	12.0	57.0	4.3
139	ST08	106.30	106.50	FALT	0	2.5	0.0	0.0	30.0	0.2
140	ST08	106.50	116.80	SKCS	73	150.0	8.1	8.1	57.0	10.3
141	ST08	116.80	136.20	GRAN	91	150.0	44.5	44.5	58.0	19.4

Appendix 2

Site Photographs of cuttings in quartzite


23/JUL/2014


23/JUL/2014


23/JUL/2014

Polberro Consulting

Appendix Two

St Dizier Tin Deposit Optimisation Study and Pit Design - Sep 2014

(Data in the following report has been superseded the report is attached to demonstrate the process utilised.)

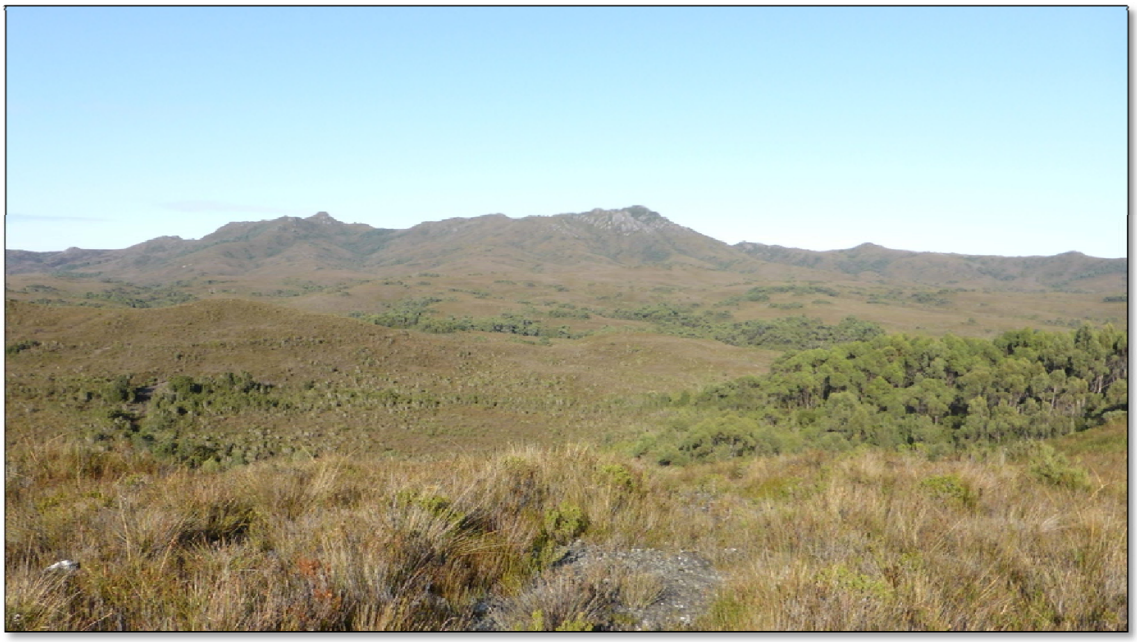
Alan Fudge – Polberro Consulting

Polberro Consulting
402 Tollymore Road, Table Cape, 7325 ph. 03 64421477 email: alanfudge@polberro.net
ABN 48740887476

St Dizier - Tin Deposit

Open Cut Design – Optimisation Study and Pit Design

September 2014



St Dizier – Site of Deposit

Prepared for: - Stellar Resources Ltd.
By: - Alan Fudge, September 2014

Executive Summary

This report refers to the initial optimisation process and subsequent design of an open cut and access ramp for the St Dizier tin resource and is intended for use as a part of a scoping level study only.

Optimal pit designs were generated utilising Threedify FlowPit pit optimisation software at a series of process recoveries between 50% and 60%. Sensitivity analysis was conducted upon the optimal pit shells derived using process recovery (PR) levels of 50, 60 and 70% to examine the impact of improved process recovery.

Pit depth was limited by the provision of a haulage access to between 50m and 60m depth (surface at 1170m RL).

An open pit was designed utilising the base case (PR=50%) optimisation shell incorporating a 15m wide haulage. Utilising the pit design a mining inventory of 375,000 tonnes at 0.98% Sn and 2.2M tonnes of waste was derived.

Pit sensitivity analysis indicates rapidly improving profitability with increasing process recovery between process recoveries of 50% and 70%. In the same range pit shell resource tonnages increase from 310,000 and 511,000 tonnes at 1.10% and 0.96% total Sn respectively

All options examined repay the capital invested directly in development of a St Dizier pit of up to $4.25M but sensitivity analysis indicates that a process recovery of 55% or more is required to repay a *pro-rata* component of the overall Heemskirk project capital of between $9M and $10M (tied *pro-rata* to tonnes mined from pit).

All options have the potential to add value to an overall Heemskirk project but a process recovery of 55% or greater may be required to consider St Dizier as a potential stand alone project.

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APPENDICES

1. Introduction

The following report examines the viability of an open cut to recover tin from the St Dizier deposit near Zeehan for inclusion in a scoping level study. Potential open pits have been reviewed by manual and computerised methods following which a pit design and haul road have been incorporated to provide realistic data for use in the scoping study.

The pit design and haulage road presented in this report may change at a definitive feasibility study stage but are sufficiently accurate to permit early evaluation of the financial viability of an open cut and to provide information to produce preliminary conceptual designs relating to surface works such as location and size of the open cut, surface roads, drains, stockpiles, water treatment facilities and, where appropriate, drainage diversions.

The St Dizier open cut optimisation presented in this study represents an open cut that is a component of a larger project and is based on the assumption that material produced in the open cut is transported to Zeehan for treatment within a processing plant and infrastructure that forms a part of the Heemskirk Tin project.

2. Project data, software and scope of study

This report utilises the geological resource model developed by *REG*[1], references the scoping study geotechnical report by *Polberro Consulting*[2] and utilises *Threedify Flowpit*[3] for basic pit optimisation study. In addition reference is made to cost estimates produced in the *St Dizier Tin Deposit Pre- scoping Study Project Review*[4].

The scope of this report is to determine the scale and viability of a potential open cut at St Dizier to add value to the Heemskirk Tin project and to present data for the scoping study stage of the St Dizier project.

3. Pit Optimisation process

Pit optimisation software was utilised in this instance in order to support the development of a manual pit design. The deposit is of a relatively small size in open cut terms and the orientation, surface profile and grade characteristics present a deposit type that generally requires a more individualised approach to satisfy those characteristics. The following cost and revenue assumptions were utilised in the pit optimisation procedure.

Item	Cost/t	Comment
Waste Mining	2.50	Above 1160m RL
Waste Mining	4.30	Below 1160m RL
Ore Mining	18.45	All ore costs inc transport
Processing cost	41.00	Assumes Zeehan mill
Tin price	22,500	Net of smelter costs

(Superseded)

Table: 1 Pit Optimisation Financial Assumptions

The following additional *base case* factors were assumed in the pit optimisation process.

Item	Factor
Cut off grade	0.3
Mining Recovery	0.95
Mining Dilution	0.10
Process Recovery	0.50
Smelter Recovery	0.95

Table: 2 Mining and Recovery Factors

The following general pit geometry was utilised for the pit optimisation process which was derived from an erlier geotechnical review.

From	To	Wall Angle	Bench Height	Width	Face Angle
1070	1120	55(52.5)	20	8	70
1120	1140	50(52.5)	20	8	70
1140	SFC	40	15	9	60

Table: 3 Optimal Pit Geometry

During open pit optimisation the cells in the digital resource model must be standardised to a single cell shape and size. This can, if not monitored, lead to smearing of the resource and errors in tonnage/grade estimations carried out during optimisation.

A manual pit design was prepared for comparison purposes to the optimal pit and to check that the block models created by the “regularisation” of the model cells was not presenting significantly changed data for optimisation.

Block model cell sizes of 10x10x10 and 5x5x5 generated significant variance while regularised model cells of 2.5x2.5x5 generated a model that did not significantly change the resources within the manual pit.

Output from the above process was stored in a *csv* file for editing and subsequent inclusion in the optimising process.

In addition to the factors previously described the critical sensitivity of process recovery was reviewed and optimal pits at process recoveries of 50%, 60% and 70% were examined.

Following optimisation preliminary scheduling and NPV pit evaluations were also conducted incorporating the direct pit capital of $4.25m but excluding the *pro-rata* capital for the overall Heemskirk project.

The St Dizier project was typically assessed in this report as an add-on component to the Heemskirk project that does not contribute capital to that project.

(Note: - *Pro-rata* capital for the overall Heemskirk project for the three St Dizier process recovery levels (50%, 60% &, 70%) would be of the order of $7.6M, $8.6M and $10.2M respectively) based upon the increased tonnage mined with increasing process recovery.)

4. Pit Optimisation Results

Optimal open pit shells were produced for St Dizier at the three process recovery levels examined. It should be noted that the pit shells produced by any optimisation process do not incorporate benches or haulage roads and a traditional manual design is typically produced from the optimal pit outline.

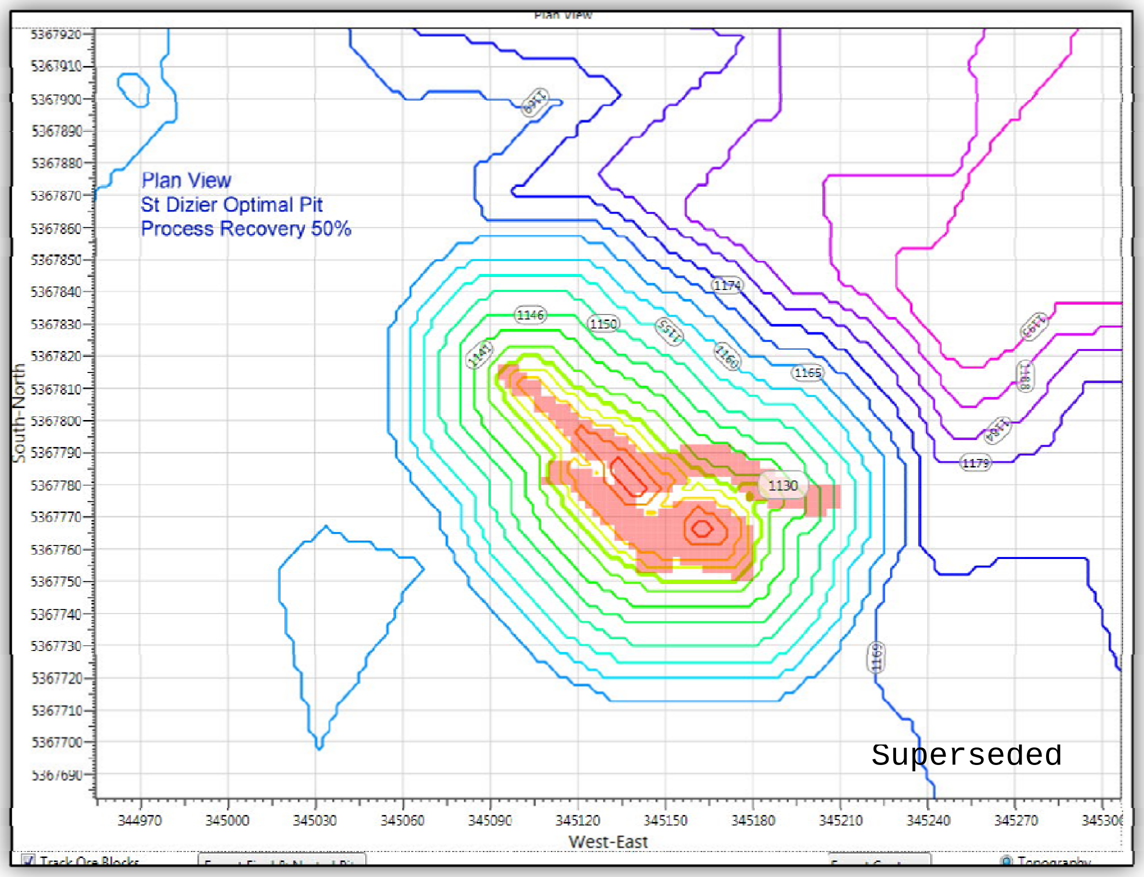


Figure 1: Optimal Pit 50% Process Recovery

The open pit shell produced by optimisation was limited to the central lenses only and to a depth just below 1120m RL. Pits produced for process recoveries of 60% and 70% respectively were larger and deeper with the 70% recovery case including a small pit on the west lens.

The optimal pit shell at 50% process recovery returned a cash profit of $9.2m and an NPV of $4.7m (excluding *pro-rata* capital for process plant).

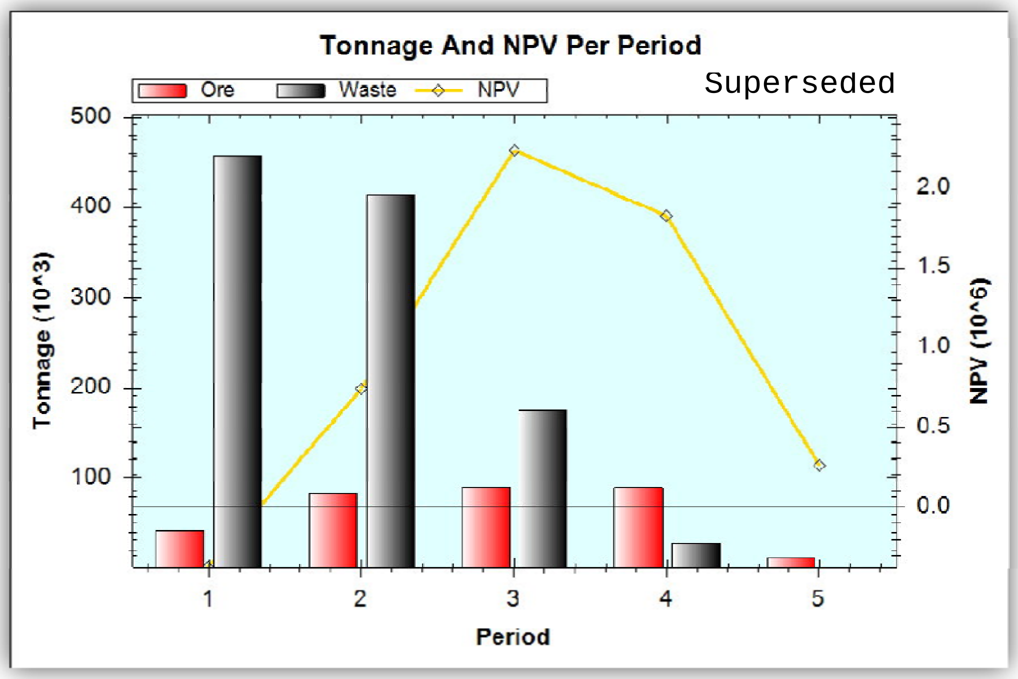


Figure 4: Optimal Pit (PR=50%) schedule option

(Note this one of many potential pit schedules and is presented only as an example of the level of NPV and ore/waste production stream)

5. Sensitivity Analysis

Optimal pits were reviewed at the following process recoveries and produced the indicated cash (before capital and time discounting)

Process Recovery	Cash Profit
50%	$9.2m
60%	$16.5m
70%	$25.9m

Table: 4 Optimal Pit Gross Cash

Superseded

Three dimensional representations of the “Optimal Pits” associated which the above are shown in the following Pit Plots.

It is clearly apparent that the actual scale and profitability of an open pit mined at St Dizier is highly sensitive to the process recovery. It is thus recommended that the process recovery levels should be well understood prior to conducting any final pit design for a Definitive Feasibility Study.

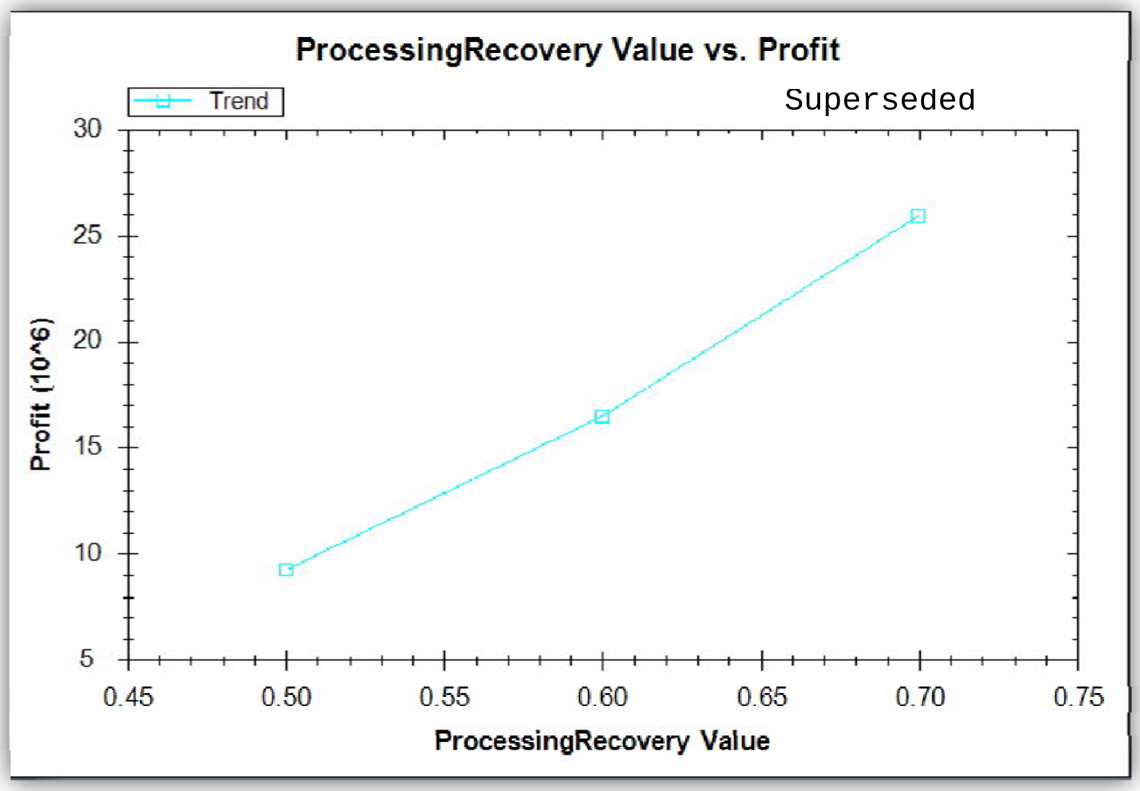
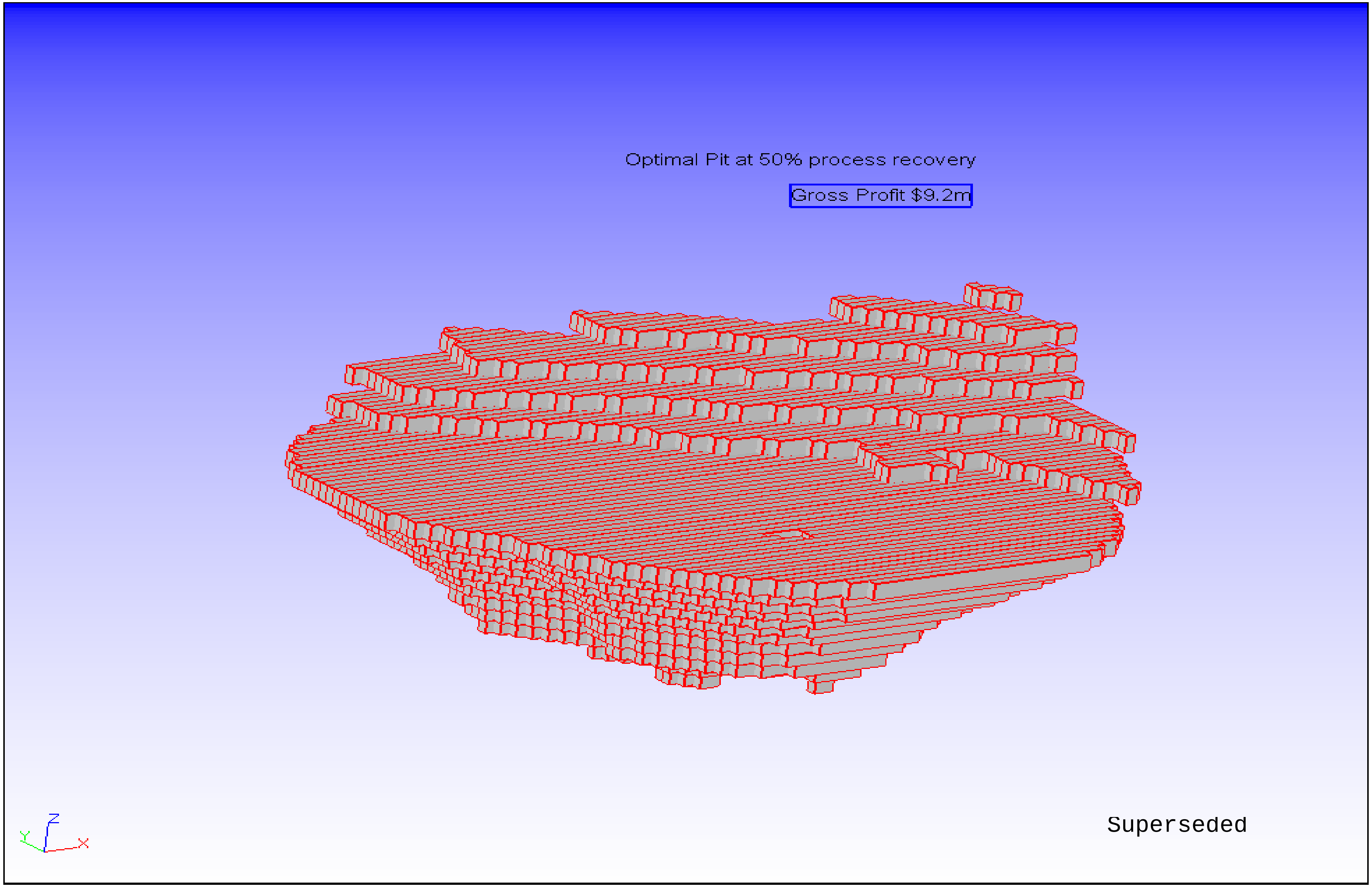


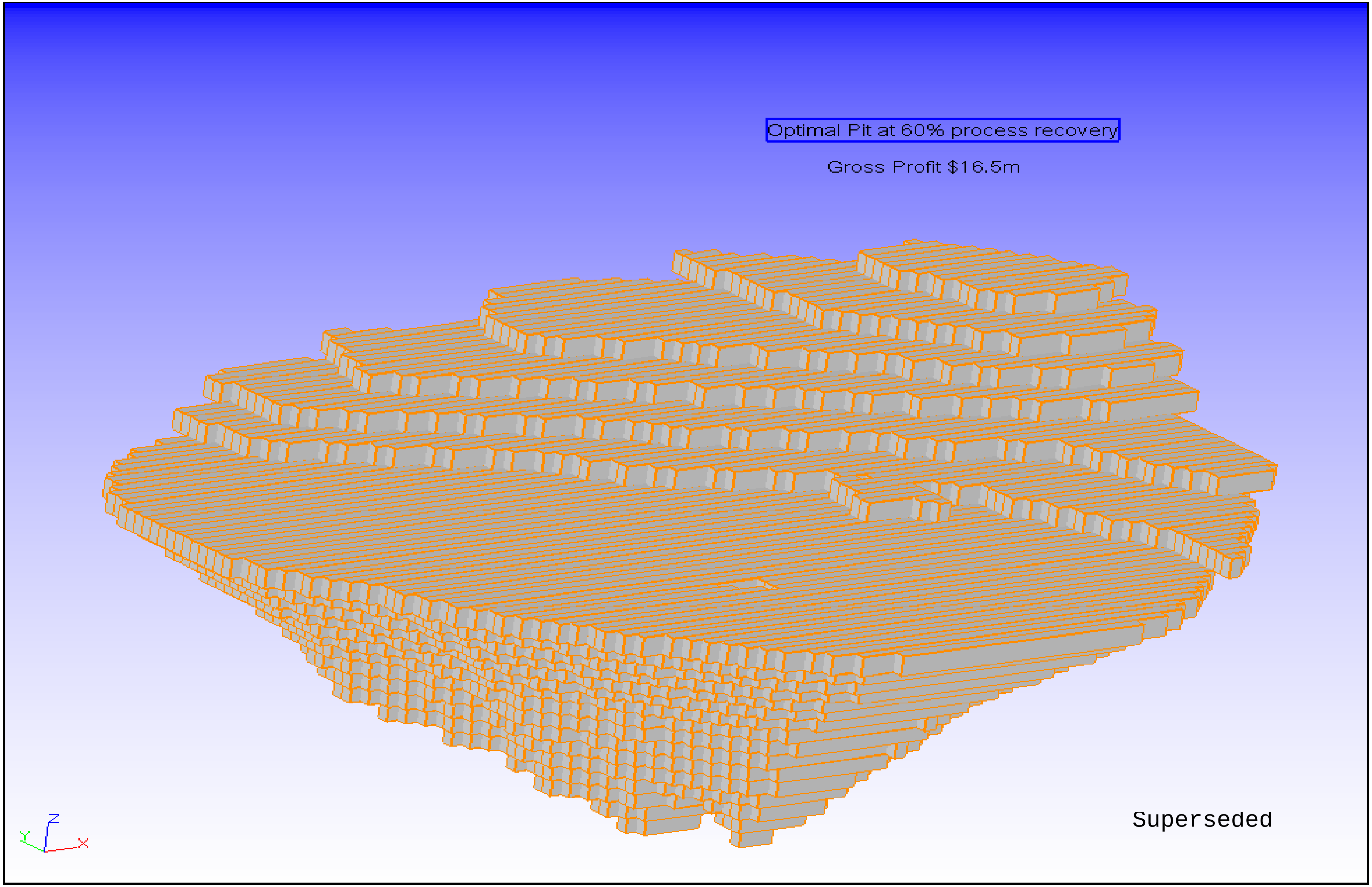
Figure 5: Pit sensitivity Analysis

6. Open Cut Design and Haulage

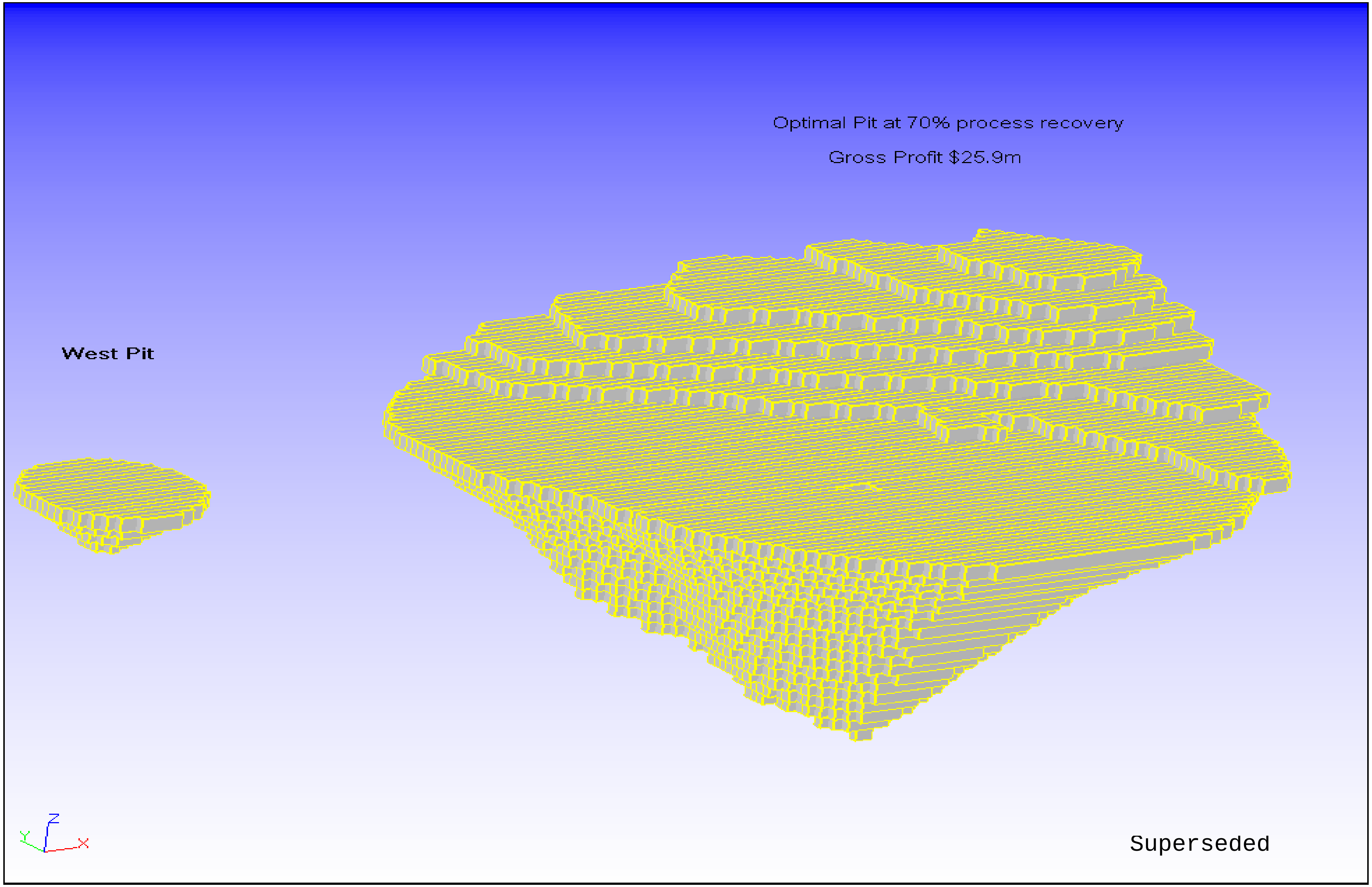
As indicated the optimisation process produces a series of pit shells which do not incorporate actual benches, berms and haul roads.

A conceptual pit design was generated incorporating the design of a 15m wide haul road in the pit running outside (external) of the pit shell. In this


Optimal Pit at 50% process recovery
Gross Profit $9.2m
Superseded
Z
Y
X



Optimal Pit at 60% process recovery
Gross Profit $16.5m
Superseded
Z
Y
X


Optimal Pit at 70% process recovery
Gross Profit $25.9m
West Pit
Z
Y
X
Superseded

instance the geotechnical study, and the geometry of the pit, indicated the south and east walls of the pit as the best place to locate a haulage road.

A haulage road 15m wide, in total, with gradients of 1 in 10 on curves and up to 1:7 on straights was designed. Due to the small size of the pit a switchback is required to keep the haulage on the south and east sides of the pit. (Pit maximum dimension 250m long x 180m wide x 50m deep)

In order to get as deep as practically viable the first cut was also designed incorporating a box cut commencing from the west of the pit to get down to the first bench horizon. Even with such an approach the deepest viable pit for PR=50% is to the 1120m RL. Some minor recovery is possible from below the floor of the bottom bench but pit depth is determined in this case by the capacity to access lower levels rather than any other factor. For higher process recovery options some additional pit depth may be attained by extension of the box cut - in any event a maximum pit depth in such circumstances should not be anticipated to extend much beyond 1110-1100m RL.

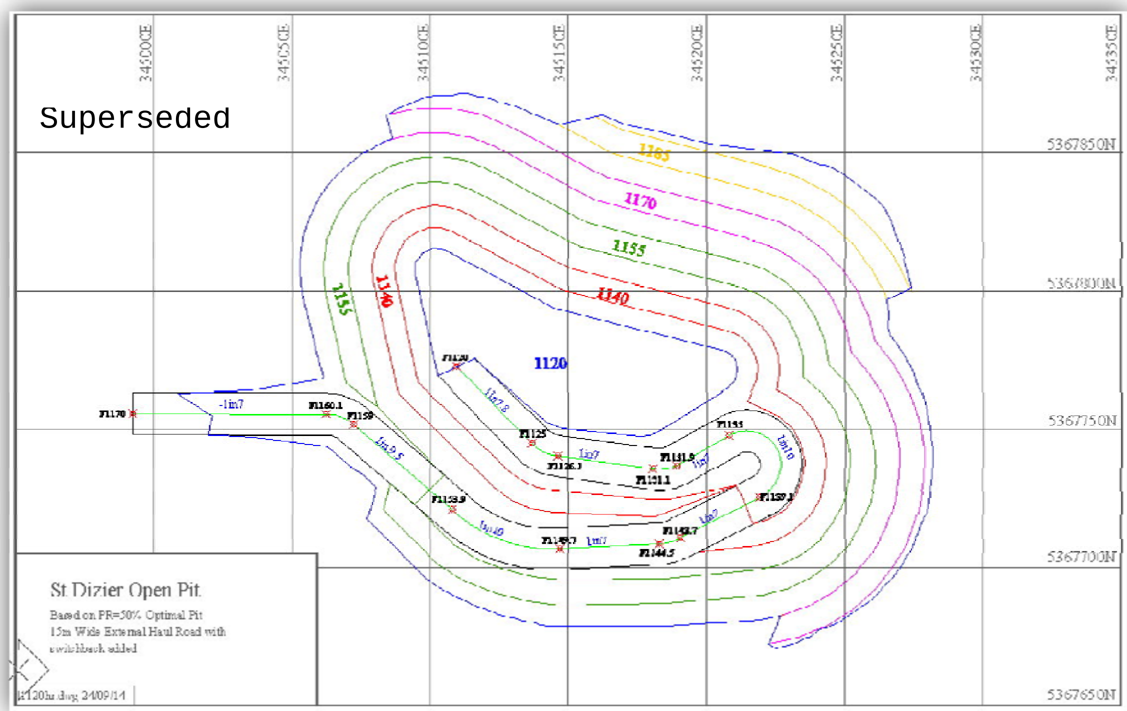


Figure 6: Manual Pit Design with Haulage based on PR=50% pit shell

7. Pit Data

The pit geometry utilised in the optimisation and/or manual design was as follows based upon the preliminary geotechnical guidelines. Berm widths indicated are final bench widths and do not reflect what may be required as a safe operating berm width during operations.

From	To	Bench Ht	Final Berm	Face Angle	Wall Angle
1185	1200	15	8	60	40
1170	1185	15	8	60	40
1155	1170	15	8	60	40
1140	1155	15	8	60	40
1120	1140	20	9	70	52.5

Table: 5 Pit Geometry

The geometry utilised is conservative and may be enhanced when additional structural information becomes available either following further drilling or as rock exposures are generated during the mining process.

In practical operating terms it may be necessary to mine the open cut in horizontal cuts that are less than the bench interval in “flitches” of typically 7.5-10m. This report assumes that each bench will be mined in two equal “flitches” equal to half the full bench height in order to obtain an appropriate standard of grade control and to limit potential fall heights.

The in-pit waste and undiluted resources are shown in the following table and are based on the above mining height assumption to provide a preliminary understanding of production waste and mining inventory streams.

Preliminary investigation of site surface works indicate that it may be more beneficial to exit the pit haul road at the eastern end of the pit – reversing, or mirroring, the haulage will have no impact on this evaluation

St Dizier PR=50% contained pit resources and waste (Superseded)

Elevation		Waste			Mining Resource				
From	To	Vol	SG	Tonnes	Vol	SG	Tonnes	Sn%	Fe%
1200.0	1192.5	6,305	2.75	17,332	0	0.00	0	0.00	0.0
1192.5	1185.0	17,616	2.79	49,201	0	0.00	0	0.00	0.0
1185.0	1177.5	15,968	2.80	44,773	0	0.00	0	0.00	0.0
1177.5	1170.0	75,024	2.87	215,469	359	3.30	1,185	1.20	33.1
1170.0	1162.5	228,181	2.93	667,886	13,670	3.30	45,111	1.18	27.0
1162.5	1155.0	82,749	3.00	248,578	11,984	3.30	39,549	1.15	27.6
1155.0	1147.5	162,073	2.93	474,874	16,710	3.30	55,143	1.14	27.6
1147.5	1140.0	70,570	3.01	212,698	14,851	3.30	49,008	1.18	28.2
1140.0	1130.0	53,419	3.06	163,355	23,667	3.30	78,102	1.02	26.8
1130.0	1120.0	26,783	3.09	82,867	23,894	3.30	78,850	1.00	27.0
1120.0	1115.0	1,903	3.11	5,918	3,784	3.30	12,487	0.68	29.1
Total for Pit		740,591	2.95	2,182,952	108,920	3.30	359,435	1.08	27.4

Mining Resource = resource model mineralisation within the manual pit design shell.

	Resource	Recovery	Dilution	Tonnes
Mining Inventory	359,435	0.95	1.1	375,610
Inventory Grade			(1.08/1.1)	0.98

Strip Ratio	Tonnes	Volume
Waste	6.1	6.8
Ore	1	1

Table: 6 Pit Design on PR=50% pit shell – Pit Resources

The break down between potentially acid forming waste materials (PAF) and non-PAF materials is known and the treatment and storage of these materials will be considered in the surface works review which will form the final supporting study report for the scoping level review of St Dizier.

8. Recommendations and conclusions

At the projected process recovery of 50% this analysis indicates that there is potential for a pit at St Dizier to add value to an overall Heemskirk project but not to be viable as a stand-alone project.

At projected process recovery levels of 55%, and greater, the optimisation indicates that there is potential for a St Dizier open cut to add significantly to overall project value including *pro-rata* repayment of Heemskirk project processing plant capital attributable to St Dizier ore.

The project is extremely sensitive to process recovery in terms of profitability, mined tonnage and pit dimensions - accurate information regarding final process recovery should be known prior to proceeding to a full feasibility study for St Dizier.

Maximum pit depth is constrained by ore body size and geometry and the provision of a haulage access than by any other factor.

The completion of preliminary work for a scoping level requires a review of surface works such as roads, a drainage diversion and provision of stockpile locations.

The current surface information is derived from lands department maps and 10m contours – this level of information is inadequate and improved survey within the area of the proposed pit (see appendix 1) is required before such work can be realistically assessed.

References

1. St Dizier Ore Resource Report (*Resource and Exploration Geology* - *Callaghan 2013*)
2. St Dizier Scoping Level Geotechnical Report *(Polberro Consulting* - *Fudge 2014)*
3. Threedify Flowpit *(Commercial Pit Optimisation Software)*
4. St Dizier Tin Deposit Pre-scoping Study Project Review (*Polberro Consulting* - *Fudge 2014*)

Limitations and consent

The report is provided to the Stellar Resources as a pit optimisation and design component to be used as a part of a scoping study into open pit mining at St Dizier. The report has been prepared using information available to the author at the time of writing. The opinions stated herein are given in good faith and with the belief that the basic assumptions are factual and correct and the interpretations reasonable. This report is not intended for use as a public document and is purely intended for the internal communication of information for Scoping Study level purposes.

Statement of independence

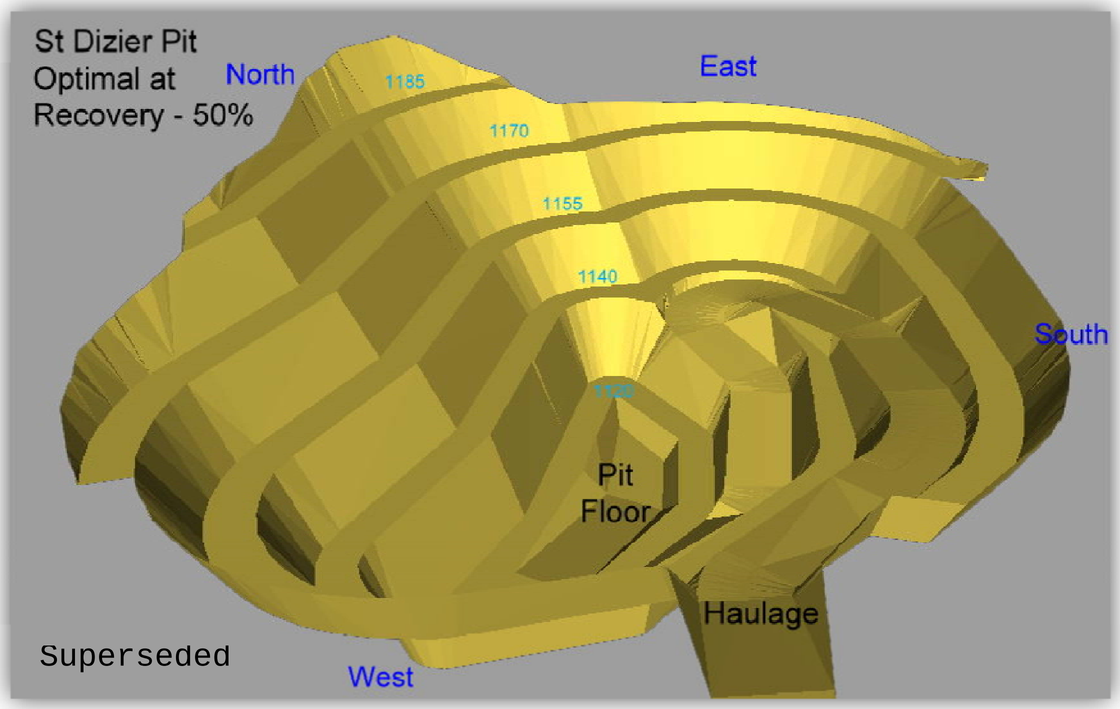
Alan Fudge has no material interest or entitlement in the securities or assets of the Stellar Resources or any associated companies.

Map conventions/other

Coordinates in this report and in digital data associated with this report are recorded as GDA Zone 55. Levels (RL) in this report are MSL +1000m. References to cross sections look west and long sections look north. Surface topography is based upon lands department map information only.

Appendix One

Pit Isometric at 50% Process Recovery
Sensitivity – Pit Data
Conceptual Site Works Plan



Pit and Ramp isometric at PR=50%

OPTIMAL PIT SHELL OUTPUT DATA (Pit shell only NOT a pit design)

Process Recovery	Mining tonnes	Ore SG	Total tin Sn%	Iron Fe%	Waste tonnes	Waste SG	Max Depth RL	Pit Profit
50%	310,000	3.30	1.103	27.2	1,177,155	2.98	1115	9.2
60%	424,000	3.30	1.016	26.6	2,063,043	2.94	1106	16.5
70%	511,000	3.30	0.96	25.8	3,001,409	2.92	1100	25.9

(All data shown to Max depth (haulage limit) except pit profit which is for total shell)

Optimal pit shell sensitivity data – digital model resources and waste within pit shells shown

344700E
344800E
344900E
345000E
345100E
345200E
345300E
345400E
345500E
345600E
345700E
345800E
5368300N
5368200N
5368100N
5368000N
5367900N
5367800N
5367700N
5367600N
TUNNEL
Monitoring Station
Drawing Superseded
ACCESS ROAD
ACCESS ROAD
SITE WORKS AREA 354,250 SQUARE METRES
MIRROR IN PIT RAMP SO THAT RAMP EXITS EAST OF THE PIT CLOSE TO THE PROPOSED TRANSIT AND STOCKPILE AREA
300m Drainage Channel
POTENTIAL SURFACE STOCKPILES AND TRANSIT AREA
200 METRES
CHANGE IN PIT HAULAGE RAMP TO EXIT NEAR PROPOSED STOCKPILE AREA
Drawing Superseded
ST DIZIER PROJECT
POTENTIAL SURFACE WORKS SITES
Drawing Superseded
Scoping Study - NOT a design drawing
SEPT - 2014

Appendix Three

Surface Works Drawings

ST DIZIER PROJECT

POTENTIAL SURFACE WORKS SITES

PIT - EASTERN ACCESS SHOWN

GENERAL DRAINAGE ARRANGEMENTS

Scoping Study - NOT a design drawing

OCT - 2014


ST DIZIER PROJECT
SURFACE WORKS
SITE CATCHMENT AREAS
Scoping Study - NOT a design drawing
NOV - 2014
344700E
344800E
344900E
345000E
345100E
345200E
345300E
345400E
345500E
345600E
345700E
345800E
5368300N
5368200N
5368100N
5368000N
5367900N
5367800N
5367700N
5367600N
TUNNEL
Monitoring Station
REVISED PIT DESIGN
PIT AREA
Area D
61,500 m2
Pit and surrounds
300m Drainage Channel
NORTH CATCHMENT
Area A
46,750 m2
Dense Scrub
Slope 10-30% (1:3 to 1:10) Steep
STOCKPILE AREA
Area C
79,600 m2
To be cleared and levelled
SOUTH CATCHMENT
Area B
48,900 m2
Open Scrub
Slope 10-30% (1:3 to 1:10) Steep
FRESH WATER DRAIN (A)
FRESH WATER DRAIN (B)
FRESH WATER DRAIN
PIPE
PIT POND
SP2
SP1
STOCKPILE POND
ROAD DRAIN
SETTLING AND RELEASE PONDS
SP4
SP3
1170
1180
1190
1200