

**An Independent review of Underground Mining at the Bold
Head Mine on King Island.**

**Prepared for: King Island Scheelite Project
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**A.D.Fudge
Polberro Consulting
PO Box 130, Wynyard,
TAS, 7325**



Executive Summary

The Bold Head underground resource is a low grade resource which has been extensively mined in previous years. The mine was abandoned when low scheelite metal prices forced Peko Wallsend to raise head grades produced on King Island to of the order of 1.3% WO₃. The Dolphin Mine had extensive capacity to raise head grades whilst Bold Head has little or no such capacity.

A review performed on a recently produced resource block model *bh025bmd.dm* confirms that the component of the orebody that is amenable to underground mining is low grade, divided into many small units, is mostly remnant and that the optimal Mining Inventory that could be realistically anticipated in an Underground Environment would be of the order of: -

594,000 tonnes at 0.72% WO₃ containing 425,000 mtu's

Attempting to raise the head grade of Bold Head by means of a high cut off rapidly diminishes the total Mining Inventory and the capacity, as a project, to pay off any Capital Investment costs

Given the capital costs of re-entry to the mine, the large number of small tonnage stoping sites and the low grade of the resource it is highly improbable that any stand alone underground operation could be viable at Bold Head without a significant increase in metal prices. The Bold Head underground option however does demonstrate some capacity to add value by adding Mining inventory to an existing project where Mill and Site development costs have been covered by the major production source.

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1. Scope of work

The intent of this report was to very briefly review the Bold Head Mining Inventory that could reasonably be expected from an Underground Mining Operation based upon the most recent resource block model produced *bh025bmd.dm* and the author's experience of the Bold Head mine between 1980 and its closure in August 1981.

2. Introduction

This report presents a brief technical review of the mining aspects of the proposed underground operation at the Bold Head on King Island, Tasmania.

The King Island Bold Head Mine ceased operation in 1981 as a result of low metal prices and the lower grade of the orebody compared to the Dolphin Mine i.e. There was no capacity to raise the head grade to meet difficult market conditions.

Prior to closure the underground operation was producing ore from many small scale stopes and there was no capacity to significantly raise production rates or increase head grade other than dropping off the worst performing (grade) stopes.

Mine production in the last 6 months of operation averaged 14,000 tonnes per month and despite attempts to high grade the deposit for 4 of the 6 months the grade averaged only 0.69% WO₃.

The mine has been closed and flooded for 29 years and the initial steel arch setted section of the Main Decline from the surface portal for 250 metres may require significant rehabilitation.

3. Geology

The Bold Head orebody is a shallow dipping (N-S) skarn deposit consisting of three to four repeating layers of skarn mineralisation typically up to 25m thick. The economic component of each skarn consists of relatively thin layers of higher grade material. The skarns appear as a halo above the intruded granite and consist basically of two lenses (B & C) which are repeated through low angle faulting to appear as 3 or 4 mineralised units. To the west the orebody terminates on the granite (adamellite) as does the base of the mineralisation whilst to the east the orebodies terminate at the Boundary Fault. To the East of the Boundary Fault there is an up thrown quartzite sequence in which the mine access decline is sited.

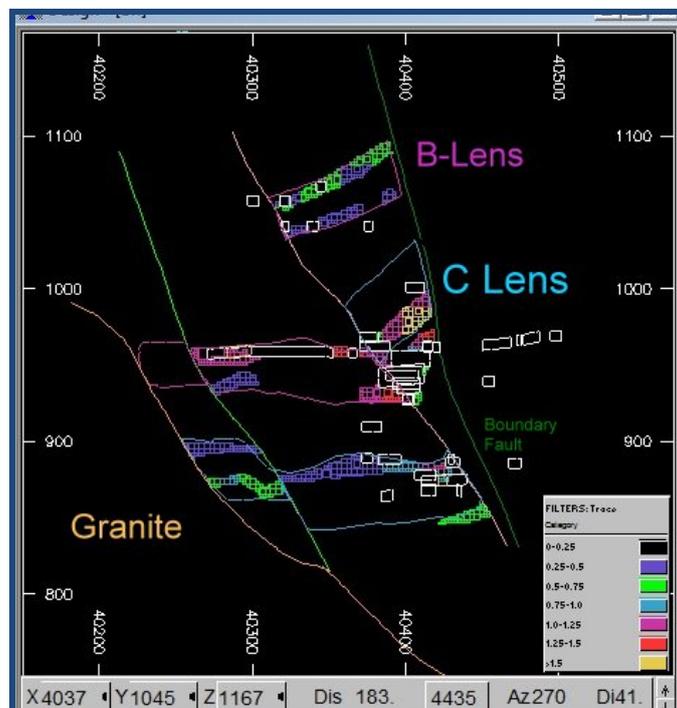


Figure 1: Bold Head West-East Section

Between the Granite and the Boundary Fault the orebody is further broken into typically three components by further internal faulting (Western Fault, No 2 Fault). There is some thickening and enrichment of the ore zone adjacent to the No 2 Fault.

The ore horizons lie in a 150m wide West to East zone and dip at 25 degrees from the North (near to the surface) to the South over 600 metres to a depth of 320m below the surface.

4. Geotechnical Report

There is no detailed information available with respect to Bold Head ground conditions. The following generalisations may be made based upon the authors opinion of ground conditions encountered in the early 1980's during the final years of the mines operating life.

The mine stress environment could be classed as a low stress environment with few discontinuities to lead to the generation of unstable areas. Poor ground conditions were only encountered in association with major faulting.

Ground conditions within the orebody and footwall series were generally good with competent intact rock present in most exposures. Large unsupported spans (>10m) were mined without cable support in some of the larger CAF and pillar stopes with no record of associated back or wedge failure.

Poor ground conditions were associated with the western fault which sub-divided off the most westerly block of ore between the granite to the west and this fault to the east. Extensive support was utilised to maintain opening through the fault. The other two major faults will exhibited more stable conditions.

There was no evidence of mining induced stress increase and, as with Dolphin Mine, the loss of horizontal confining stress through mining played a more significant role by releasing structure to allow movement – most particularly near major faults.

5. Ore resources and Mining Inventories

An underground mining inventory was derived by the following process: -

- Utilise existing wireframes of mine development and ore lenses.
- Utilise recently produced ore block model *bh025bmd.dm*.
- Generate wireframes of all fault structures and surface topography from dxf data.
- Generate a series of N-S perimeters at 5m intervals of minable resources as follows: -
 - Envelope resources above 0.75% WO₃
 - Ignore isolated small pods.
 - Ignore un-minable ore below filled stopes
 - Ignore un-minable ore in support pillars.
- The above perimeters were subsequently linked to form minable resource shapes except that perimeters were ignored if there was less than 10m support (i.e. 3 perimeters).
- The 48 mining shapes derived were evaluated against the ore block model and the estimated tonnes and grade plotted into spreadsheet.
- A global recovery of 80% and dilution of 10% were applied on the assumption that all material would be recovered by some form of cut and fill mining.

It was noted that historic recovery and dilution reserve factors were conservative indicating that the confidence, most particularly in reserve tonnes was low. A probability factor was incorporated producing a reduced recovery factor, the lower recovery quoted here represents that combined recovery. Historic Recovery ranging from 48 to 76.5% and Historic Dilution of 10 to 40% were used. The recovery factors used in this report are higher because of the increased confidence in the current digital resource model.

Table 1 : Mining Inventory derived from 5m perimeter set

ID	Minaible Ore source			M Rec Dil			Total Inventory			Cut Inventory		
	Tonnes	WO3%	mtu's				Tonnes	WO3%	mtu's	Tonnes	WO3%	mtu's
A1	58,339	0.62	36,229	pp	0.8	0.1	51,339	0.56	28,983	51,339	0.56	28,983
A2	6,599	0.42	2,791	pp	0.8	0.1	5,807	0.38	2,233			
A3	25,647	0.42	10,874	pp	0.8	0.1	22,570	0.39	8,700			
A4	22,093	0.68	15,089	pp	0.8	0.1	19,442	0.62	12,071	19,442	0.62	12,071
A5	45,788	0.67	30,449	pp	0.8	0.1	40,293	0.60	24,359	40,293	0.60	24,359
A6	20,626	0.74	15,181	pp	0.8	0.1	18,151	0.67	12,145	18,151	0.67	12,145
A7	6,228	0.64	3,954	pp	0.8	0.1	5,480	0.58	3,164	5,480	0.58	3,164
A8	49,819	0.83	41,250	pp	0.8	0.1	43,841	0.75	33,000	43,841	0.75	33,000
A9	17,043	0.92	15,731	pp	0.8	0.1	14,998	0.84	12,584	14,998	0.84	12,584
A10	8,590	0.87	7,499	pp	0.8	0.1	7,560	0.79	6,000	7,560	0.79	6,000
A11	7,176	0.62	4,413	pp	0.8	0.1	6,315	0.56	3,531	6,315	0.56	3,531
A12	6,785	0.69	4,709	pp	0.8	0.1	5,971	0.63	3,767	5,971	0.63	3,767
A13	20,007	0.57	11,324	pp	0.8	0.1	17,606	0.51	9,059	17,606	0.51	9,059
A14	22,633	0.57	12,946	pp	0.8	0.1	19,917	0.52	10,357	19,917	0.52	10,357
A15	11,387	0.47	5,295	pp	0.8	0.1	10,021	0.42	4,236			
A16	5,727	0.48	2,743	pp	0.8	0.1	5,039	0.44	2,194			
A16A	2,971	0.48	1,423	pp	0.8	0.1	2,614	0.44	1,138			
A17	6,535	0.64	4,169	pp	0.8	0.1	5,751	0.58	3,335	5,751	0.58	3,335
A18	3,835	0.74	2,826	pp	0.8	0.1	3,375	0.67	2,261	3,375	0.67	2,261
A19	19,829	0.99	19,611	pp	0.8	0.1	17,450	0.90	15,689	17,450	0.90	15,689
A20	6,966	0.78	5,462	pp	0.8	0.1	6,130	0.71	4,369	6,130	0.71	4,369
A21	5,903	0.64	3,760	pp	0.8	0.1	5,195	0.58	3,008	5,195	0.58	3,008
A22	1,998	0.73	1,459	pp	0.8	0.1	1,758	0.66	1,167	1,758	0.66	1,167
A23	27,259	0.82	22,325	pp	0.8	0.1	23,988	0.74	17,860	23,988	0.74	17,860
A24	7,964	0.60	4,763	pp	0.8	0.1	7,009	0.54	3,810	7,009	0.54	3,810
A25	26,065	1.22	31,747	pp	0.8	0.1	22,937	1.11	25,398	22,937	1.11	25,398
A26	3,979	0.48	1,902	pp	0.8	0.1	3,501	0.43	1,521			
A27	4,586	0.59	2,710	pp	0.8	0.1	4,036	0.54	2,168	4,036	0.54	2,168
A28	4,639	0.86	3,994	pp	0.8	0.1	4,083	0.78	3,196	4,083	0.78	3,196
A29	6,794	0.61	4,171	pp	0.8	0.1	5,978	0.56	3,337	5,978	0.56	3,337
A30	7,420	0.65	4,816	pp	0.8	0.1	6,530	0.59	3,852	6,530	0.59	3,852
A31	3,368	0.80	2,708	pp	0.8	0.1	2,964	0.73	2,166	2,964	0.73	2,166
A32	6,990	0.61	4,264	pp	0.8	0.1	6,151	0.55	3,411	6,151	0.55	3,411
A33	7,027	0.67	4,729	pp	0.8	0.1	6,184	0.61	3,783	6,184	0.61	3,783
A34	4,279	0.84	3,594	pp	0.8	0.1	3,765	0.76	2,875	3,765	0.76	2,875
A35	5,102	0.76	3,878	pp	0.8	0.1	4,490	0.69	3,102	4,490	0.69	3,102
A36	6,071	1.34	8,105	pp	0.8	0.1	5,343	1.21	6,484	5,343	1.21	6,484
A37	5,485	0.91	4,986	pp	0.8	0.1	4,827	0.83	3,988	4,827	0.83	3,988
A38	10,653	0.63	6,722	pp	0.8	0.1	9,374	0.57	5,377	9,374	0.57	5,377
A39	12,906	0.65	8,440	pp	0.8	0.1	11,357	0.59	6,752	11,357	0.59	6,752
A40	6,232	1.02	6,381	pp	0.8	0.1	5,484	0.93	5,105	5,484	0.93	5,105
A41	14,392	0.87	12,549	pp	0.8	0.1	12,665	0.79	10,040	12,665	0.79	10,040
A42	7,589	1.00	7,574	pp	0.8	0.1	6,679	0.91	6,059	6,679	0.91	6,059
A43	77,275	0.92	71,015	pp	0.8	0.1	68,002	0.84	56,812	68,002	0.84	56,812
A44	38,358	0.79	30,264	pp	0.8	0.1	33,755	0.72	24,211	33,755	0.72	24,211
A45	19,302	0.82	15,731	pp	0.8	0.1	16,986	0.74	12,585	16,986	0.74	12,585
A46	30,535	0.86	26,138	pp	0.8	0.1	26,871	0.78	20,910	26,871	0.78	20,910
A47	4,858	0.82	3,989	pp	0.8	0.1	4,275	0.75	3,191	4,275	0.75	3,191
Total	731,651	0.76	556,685				643,853	0.69	445,348	594,301	0.72	425,325

The Mining Inventory thus calculated is shown in Table 1. The Inventory confirms that Bold Head represents a low grade potential compared to

the Dolphin Mine. This is further confirmed by reviewing the application of simple cut off grades to the mining inventory in Figure 2.

The following can be concluded about the Bold Head potential mining inventory: -

1. The Mining Inventory is of a lower grade than the Dolphin Mine
2. There is only very limited capacity to raise the Mining Inventory grade by further selectivity.

Utilising 0.75% WO₃ envelope resource perimeters and a 0.5% WO₃ mining inventory cut off the Mining Inventory shown below was estimated.

594,000 tonnes at 0.72% WO₃ containing 425,000 mtu's

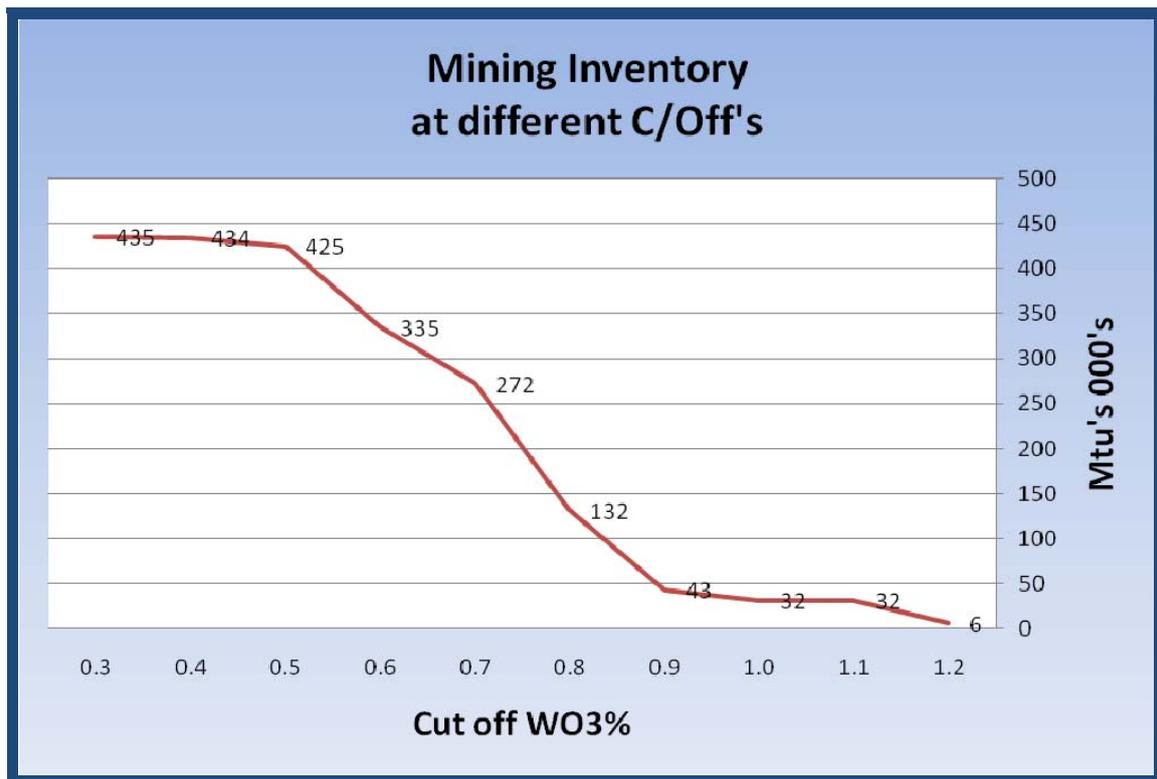


Figure 2: Mining Inventory Cut Off Curve

As a cross check a similar Mining Inventory assessment was conducted on E-W perimeters. The E-W direction is less appropriate for the appraisal nevertheless it was found that at a low (0.5% WO₃) Mining

Inventory cut off there was a 4.8% difference in the total contained scheelite for the two assessments.

(Note: The difference increased rapidly with increasing c/off grade indicating that only the total inventories were directly comparable).

The Mining Inventory estimate is significantly different to the closing reserve estimate (31/7/81) of 1.2Mt at 0.74% WO₃ as a result of the removal of ore formerly proposed as reserve which is contained within pillars, adjacent to mined stopes or directly below mined out areas (see Figure 2). There has to be some doubt cast on high grade material left adjacent to operating stopes – all faces were lamped using an Ultra Violet lamp and any grade present would have been detected and mined previously.

More detailed checking was not possible within the scope of this report as the old sectional data used to produce the ore resources could not be reviewed in the time available. The overall level of *in-situ* ore and that which can be considered as a viable mining inventory differ considerably principally because of the remnant nature of the deposit.



Figure 3: Bold Head Plan showing resources in pillars and adjacent to old stopping areas

It became clear during the exercise of generating a mining inventory from 5m spaced perimeters that the inventory thus produced was of insufficient accuracy to be proposed as a reserve. Production of an accurate mining reserve utilising a perimeter based approach would in my opinion require perimeters spaced at most 2.5m apart because of the complexity of the ore lenses and the existing openings.

6. Bold Head Mine Access

6.1. Historical Development

The operating mine was accessed via a main decline (4.2m x 4.8m) driven at a 1 in 7 gradient parallel to the Boundary Fault. The first 250m of the decline was supported with steel arch sets. The remainder of the decline (1250m) had no support except in localised instances of poor ground conditions.

Strike drives were driven off the decline to provide orebody access at various horizons. A system of centrally located raises provided a second means of egress (emergency retreat route).

Up to 70 m³/second of fresh air entered the mine through the main decline and secondary egress system, ventilated mine development and stopes and returned to surface through twin 1.8m diameter raise bored rises each fitted with a Richardson GW 45KW axial flow fan.

Cavo stopes were accessed from raises and ore from Cavo stopes passed through a second raise (ore pass).

6.2. Re-access

In order to re-access the Bold Head mine a total of 250m of decline (setted section) would first need to be recovered by providing a 100mm shotcrete shell sprayed from floor to floor onto the set timbers.

The remaining 1.25km of Main Decline would require either 50-75mm shotcrete or split-sets and mesh as a primary support – intersections with stope access would require intersection cable support (typically 6 x 6m single strand cables).

All stope access would require split-set and mesh support as would any stoping area that was re-entered.

Cable support would be required in any stoping area with a span greater than 6m and in some poorer areas where the span is smaller but conditions are poor.

Escape raises would need to be checked and re-fitted with ladder ways and platforms or modular raise ladder units if.

Development

A total of 400m of decline development is required to provide access to the whole of the Mining Inventory (source 1981 internal report).

Up to 600m of access and service development will be required to extract the Mining Inventory.

A total of 100m of vertical rise development will be required to provide ventilation and escape rise facilities.

7. Mining Method

7.1. Historical

There was a diverse range of stoping methods to match the varied geometry of different sections of the orebody which included the following:-

Mechanised Room and Pillar

Larger span sections of the orebody that were less than 5m in thickness were mined by simple Room and Pillar development of the whole ore body with permanent pillars left to support the remaining back profile. No back cable support was utilised.

Mechanised Cut and Fill

Larger span sections of the orebody that were thicker than 5m were mined by simple cut and fill maintaining post pillars if required to support local backs. No back cable support was utilised.

Airleg –Cavo Cut and Fill

Small steeply dipping ore pods and chimneys were mined utilising an airleg and an entrapped air operated Cavo loader. As each horizontal cut was mined it was filled before mining the next “lift”. Access to the stope was by laddered raise and the ore was collected at the bottom of the stope via an ore pass. No back support was utilised.

Airleg – Room and Pillar

Steeper dipping sections of the orebody were mined by air leg utilising scrapers and raises to return the mined ore to a gathering position for loading to a truck leaving either local post pillars or elongated rib pillars. No back support was utilised.

The methods were highly selective but, airleg stopes in particular, were associated with lower productivity and most methods incorporated some loss of ore in permanent pillars.

7.2. Revised operation

Remnant Areas

The majority of the ore that remains is remnant ore adjacent to old mine workings. The major percentage of this remnant ore could be extracted by a combination of simple development, cut & fill and floor/wall/back stripping all utilising standard development drilling equipment.

The level of ground support placed in old stoping areas and development was minimal – after a 29 year exposure it is highly probable that all development and stope exposures that required re-entry would require rehabilitation with a minimum of split-set and mesh coverage.

Unmined Areas

There are a small number of unmined areas that could be stoped by normal development, cut and fill and/or bench stoping.

Re-entry to old airleg Cavo stopes would be extremely difficult and resources adjacent to such stopes may be unrecoverable. Such areas should be reviewed as bench stopes on the merit of re-access and long hole mining.

7.3. Hydraulic Fill

The majority of fill placed at Bold Head stope was classified mill tailings because of the much greater flexibility of hydraulic fill as a filling medium. Bold Head had a separate small (60 tonnes/hour) classified tailings delivery system similar to the Dolphin Mine system described in the following paragraph.

“All stoping areas are filled to enable access to the next horizontal cut of ore to be mined. All development waste mined is added to the fill used, but only forms a small proportion of the total fill placed at 1,000 -2,000 tonnes/month. The majority of the material used, currently 10 -12,000 tonnes/month is classified mill tailings.

The material from the Mill is currently relatively coarse with between 15-20% of the material only being in the -325 mesh size range. The mill tailings are currently pumped to the tailings classification plant for a single pass through a cyclone with the underflow reducing the -325 mesh component to the 5-8% range. The overflow is returned to the slimes dam. The grade of the slimes portion is higher than the coarser classified fill material (0.3 to 0.5% W03 compared to 0.17 to 0.20% W03) and thus the slimes dam could represent a resource at some future time, whilst the fill will not. The underflow from the cyclone is dropped onto a stockpile which is allowed to drain. When fill is required underground it is collected with a Cat 988 Front End Loader and tipped into a hopper which feeds onto a belt which runs the material through water sprays, which re-pulp the fill to around 50% solids. The mixture is then fed underground, using gravity only, through 110mm poly pipe (Class 12 for vertical runs, Class 6 for horizontal runs) to the eventual destination where the fill is run into the stope and allowed to drain.

Flygt pumps are used to collect excess run off and decanted water in the stope, in addition drainage is facilitated using drainage towers which are built up through the stope and act as a 'continuous drainage medium. The towers are built out of 150mm square timbers 1.5 metre long built into a crib tower. The gaps between the timbers are covered with permeable plastic cloth held in place by cyclone mesh. At the bottom of the tower will be a 165mm diameter drain hole to allow passage of drainage water.

Provided properly classified material is used, machinery can operate on the surface within 48 hours of filling.”

The type of fill arrangement that will be suitable for a re-opened operation would depend upon the fill size range of the proposed mill tailings – if practicable a cheap to build and run coarse classified tailings option should be utilised.

8. Mining Project Schedules

No project schedules are proposed at this stage, the main items that would lie on the critical path of any proposed re-opening of the Bold Head mine after the provision of site services would be: -

- Commence dewatering – Stage 1 to below setted section of Main Decline – 1 month
- Examine and rehabilitate first 250m of the Main Decline with 100mm shotcrete shell – 1 month.
- Dewater decline in stages and establish escape and ventilation raises as the mine water level falls – ongoing off critical path
- Advance main decline rehabilitation as split-set and mesh placement over 1250m of decline. (Scale, drill, mesh at 30m/day). Plus rehabilitation of all intersections with cables support. Total time – 2 months
- Access, escapeway and stope rehabilitation. Installation of services and ventilation – 2 months

At the completion of rehabilitation and service work - at the latest – the mine could resume production within a six month time frame – some stoping areas would be available sooner but rehabilitation and re-establishment of services and ventilation should take precedence.

9. Financial Evaluation

9.1. Operating

Operating costs utilised in the AMC scoping studies are generic scoping study costs and as such are appropriate. No new operating costs are proposed in this brief review.

9.2. Capital Costs

Capital costs utilised in the AMC scoping studies were based upon the various re-entry options and appeared to be appropriate for the proposed options. The Capital Cost to support the proposed mining inventory in this report via the proposed re-access process is as follows.

Table 2: Bold Head Capital Cost Estimate

Item	Quantity	Cost \$M
Decline Development	400m	1.8
Rehab Sets	250m	0.5
Rehab Decline	1250m	2.9
Rehab Old Drives	500m	1.2
Cable intersections	1000m	0.1
Initial Dewatering	-	0.3
Fans/Pumps	-	0.3
Electrical Reticulation	-	0.3
Communications	-	0.1
Workshop	-	0.2
Miscellaneous	-	0.1
Total Capital		7.8

NB It is assumed all stope access, stripping and ore development are operating cost items.

9.3. Revenue

AMC produced a relatively low revenue stream from the underground option by attempting to raise head grade beyond the capacity of the ore source. AMC proposed a Mining Inventory of 260,000 tonnes at 1% WO₃ (260,000 mtu's) based on a 0.9% c/off. By lowering the c/off to 0.5% a much higher Mining Inventory of 594,000 tonnes at 0.72% WO₃ (420,000 mtu's) may be derived which has more capacity to repay development costs of the project.

9.4. Modelling

Both AMC and KIS have modelled the financial forecast of a scoping level option.

It can simply be demonstrated that Bold Head could not stand alone to support the costs of a Mill and Site development (Capital exceeds Revenue) but could potentially add value to a combined project where those development costs have already been allocated and where the total costs associated with processing each tonne of Bold Head ore mined were of the order or less than \$100/t milled (simple BE at \$130/t).

A greater degree of confidence can not be given for this option until the Dolphin Mine stand alone project financial model is completed and a Bold Head add on option can be appraised. (Note: For a combined project underground production of 275,000 and 125,000 for Dolphin and Bold Head were considered and an annual processing rate of 400,000t.)

10. Risk

Risk factors that may be minimised at a full feasibility stage which lie within the scope of this report may be defined as follows: -

Mining Inventory – There is a risk of overvaluing/undervaluing the project. The current mining inventories are not of sufficient accuracy to be termed reserves because of the complexity of the deposit and the existing stope development. In my opinion a Mining Reserve estimated from 2.5m spaced perimeters in either a horizontal or N-S vertical direction is required to accurately define the reserve. In addition any mining reserve estimate should be calculated from areas with a realistic chance of exploitation and not include pillars, skin pillars and isolated pods.

Mine Re-access – The risk associated with mine re-access is the introduction of cost, delay and operator hazard by the selection of an inappropriate course of re-entry. The only viable means of re-entry are to rehabilitate the existing decline – including the first 250m of setted decline or to establish a new portal and access to the existing decline. The cost of rehabilitating the first 250m of decline would be \$0.5M compared to \$1.2M to redevelop the initial decline – thus the risk may be quantified as \$0.7M.

Dewatering/Inundation – There is a potential risk of inundation of workings if the dewatering of development and stoping areas is not conducted in a controlled manner. Both re-access options present controlled dewatering capacity as the lowering of the water levels can be controlled as the rehabilitation process advances. Extensive use of probe drilling and monitoring of the water levels in the old development would be required. The risk at Bold Head is lower than for Dolphin because of the limited vertical height of the majority of the stopes.

Stability of old stopes – The stoping areas in the mining inventory are mostly existing workings which contain an active face position but no advance sill development. Any significant deterioration that has taken

place during the period of flooding has the potential to reduce mining inventory but this risk is low for Bold Head.

Lost opportunity – The Bold Head orebody is of much lower average grade than is the Dolphin deposit however the capital development cost is comparatively very low and the potential to add to the project value as an underground secondary ore source should be fully examined – the main risk is that the option to add value may be overlooked because of the lower grade nature of the resource.

Mill Recovery – Processing recovery of Dolphin Mine and Bold Head mine ores has been modelled at much higher levels than earlier actual milling recoveries. The confidence in the higher mill recoveries should be confirmed as the project appears highly sensitive to mill recovery.

11. Recommendations/Conclusions

The following may be assumed from basic scoping level financial evaluation.

- A Bold Head underground mining option appears to demonstrate some capacity to add value to an established project under given operating cost conditions.
- A Bold Head underground mine could not support a stand alone project as the Capital Costs would exceed and Revenue base.
- Bold Head has the capacity to add 36.5% more scheelite to a Dolphin Mine underground project revenue stream.

As a result the following is recommended: -

- Demonstrate through Financial Modelling that a Bold Head u/g option has the capacity to add value to a Dolphin Mine underground project.
- Following the completion of the Dolphin Mine ore reserve (April 2010) and associated financial modelling consider or discount Bold Head be as an option to add value to that project.
- If a combined Dolphin & Bold Head project presents an economically viable option then conduct a JORC level reserve assessment on Bold Head to bring forward the stage that this may be added to the project at the appropriate level of certainty.

12. Statement of capability

This review has been undertaken by Alan Fudge, of Polberro Consulting. Alan Fudge is a qualified mining and geotechnical engineer with over 30 years experience of mining projects principally in Australia, UK and Zambia. He has extensive experience in the areas of reserve estimation, mining method selection, providing of mining and geotechnical technical support (for underground and surface mining operations), scheduling, mine design and project feasibility. He has been involved in all stages of mine development from feasibility to closure and has worked at both open-pit and underground mines.

Alan Fudge is a Member of the AUSIMM and has prepared reserve statements as a competent person as defined by the 2004 Edition of the JORC code. He has worked on and produced reserve statements for tin, copper, nickel, zinc, lead, tungsten, magnetite, gold and uranium.

Limitations and consent

This report is provided to the King Island Scheelite Pty Ltd in the context of an independent review of the mining inventory pertaining to the Bold Head ore deposit that could be reasonably expected from an underground mining operation 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 nor, in whole or in part, in a public document without written consent to the form and context in which it appears.

Statement of independence

Alan Fudge has no material interest or entitlement in the securities or assets of King Island Scheelite Pty Ltd or any associated companies.

13. References

The following documents and data were referenced and form the principal basis for inferences drawn and recommendations made in this report. Only documents that could be studied and commented on within the time frame of this review are included and areas not covered by these reports and references have not been considered in this review.

1. Dolphin and Bold Head Mine Scoping Study AMC 109058
2. Operations at King Island Scheelite 3rd Edition 1981
3. Internal Ore Reserve Report July 1981