



Tim Callaghan – Resource and Exploration Geology

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RL2/1998

ANNUAL REPORT, 2013

KING ISLAND

NW TASMANIA

December 2013

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EXECUTIVE SUMMARY

RL2/1998 is an integral component of the tenement package required for the development of the King Island Scheelite Project. The RL covers the Dolphin Mine on the eastern end of the Grassy Granite and extends southeast to cover potential resource extensions offshore. An ML application (M1/2006) covers much of the RL but has not been activated pending feasibility study and project finance completion.

During 2013, King Island Scheelite (KIS) have commenced refining the 2012 Definitive Feasibility Study, modifying the operation to reduce upfront capital. A staged commencement of operations involving production from low cost open pit mining and processing through a gravity concentration plant is being assessed. Mill upgrade to the full DFS design and rehabilitation of the Dolphin Mine will occur later in the project with development possibly from cash flow.

As part of the studies, a 5 hole diamond drilling program for 178.5m was completed west of the Dolphin Open Cut. The program was designed to test potential open cut resources to the immediate west of the Dolphin pit that may assist with early production. Assay results are pending. The West Dolphin remnant mineralisation is expected to contain approximately 140-160kt of low grade mineralisation. Resource estimation will occur when all results are received.

Investigations into early production from the Dolphin Mine by open cut mining were also completed. Conceptual pit designs to the -90mRL level using simplified design parameters based on earlier geotechnical investigations provided by King Island Scheelite (KIS) were studied.

Three areas of remnant resource can be accessed with the bulk of the high grade mineralisation located in the deeper eastern end of the current pit. This will require the eastern and northern pit walls to be cut back a further 30m and the pit deepened by 35m. Much of the historic pit will not be disturbed.

The conceptual pit contains an Indicated and Inferred Resource of 1.26Mt @ 0.67% WO₃. Assuming 10% dilution and 10% ore loss the pit design contains a potential reserve in the order of 1.2 – 1.4Mt at approximately 0.6% WO₃.

An estimated 4.6Mt of overburden will need to be removed from the pit (not including ramp design). An indicative waste to ore ratio of approximately 1:4 is suggested given the current parameters. If a more conservative design was required to access the same mineralised remnants it could reasonably be assumed that the strip ratio may increase to approximately 1:5.

Modifications to the process flow sheet are ongoing, focusing on development of a gravity concentration circuit.

1 INTRODUCTION

The King Island Scheelite Project is located in the southeastern corner of King Island, Tasmania (Figure 1). Project tenure includes a Mine Lease (1M/2006), a Retention License (RL2/1998) and two Exploration Licenses (EL19/2001 and EL16/2002). The full tenement package is integral to the development of the King Island Scheelite Project. The tenements are held by Australian Tungsten Pty Ltd a wholly owned subsidiary of King Island Scheelite Limited (KIS) a public company listed on the Australian Securities Exchange.

The Dolphin Mine located on RL2/1998 was originally operated by Geopeko Ltd. along with the satellite Bold Head Mine located several kilometers to the north on EL19/2001.

The Dolphin and Bold Head Scheelite Mines operated intermittently since their discovery and start up in 1920 until the 1990's, with several forced shutdowns due to low tungsten prices. The site was decommissioned and rehabilitated in 1996.

KIS have been investigating the potential of re-opening the mines. Initial investigations into the viability of an open cut and seawall were inconclusive and the focus has changed to rehabilitation of the underground workings and production from remnant resources. KIS completed a definitive feasibility study into a 350ktpa mine and processing facility producing 5700t of concentrate per annum over an 11 year mine life in early 2012.

Project funding has proved difficult in the current financial climate and KIS are revising the project to a staged start up commencing with a gravity concentration plant and several low cost open cut mines in the first few years of operations. Ramp up to full production is anticipated in year three with dewatering and rehabilitation of the Dolphin Mine.

Mine rehabilitation and mill construction are scheduled to commence within twelve months of securing full project funding.

Resource and reserve estimation of the Dolphin and Bold Head Deposits and historic tailings storage facility (TSF) have been completed by KIS and form the basis of the King Island Scheelite Project (Table 1 and 2).

TABLE 1. KING ISLAND SCHEELITE PROJECT RESOURCES			
	Tonnes	WO₃	Tonnes WO₃
Dolphin	0.70% WO ₃ cutoff		
Indicated	4,752,000	1.29	61,300
Inferred	7,000	0.73	50
Total	4,759,000	1.29	61,350
Bold Head	0.50% WO ₃ cut off		
Indicated	1,500,000	0.93	13,950
Inferred	150,000	1.22	1,830
Total	1,650,000	0.96	15,780
TSF	0.08% WO ₃ cut off		
Measured	2,700,000	0.17	4,590
Total	9,109,000	0.90	81,720

TABLE 2. KING ISLAND SCHEELITE PROJECT RESERVES			
	Tonnes	WO₃	Tonnes WO₃
Dolphin Probable	2,687,000	1.04	28,060
Bold Head Probable	609,000	0.76	4,640
Tailings Proven	1,910,000	0.19	3,630
Total	5,196,000	0.70	36,330

Technical studies associated with the Definitive Feasibility Study that have now been completed include:

- Resource estimation
- Mining studies
- Reserve estimation
- Metallurgical testwork
- Process flow sheet design
- Cost estimates and construction plans
- Environmental management plan
- Negotiations with potential market off-taker
- Financial modeling
- Negotiations with potential project funding providers
- Resource extension drilling

Work over the past year focused on the feasibility of commencing mining operations through initial open cut operations on the Dolphin Pit and upper Bold Head mines. Resource definition and extension drilling programs were conducted at Bold Head and the Dolphin Mines.

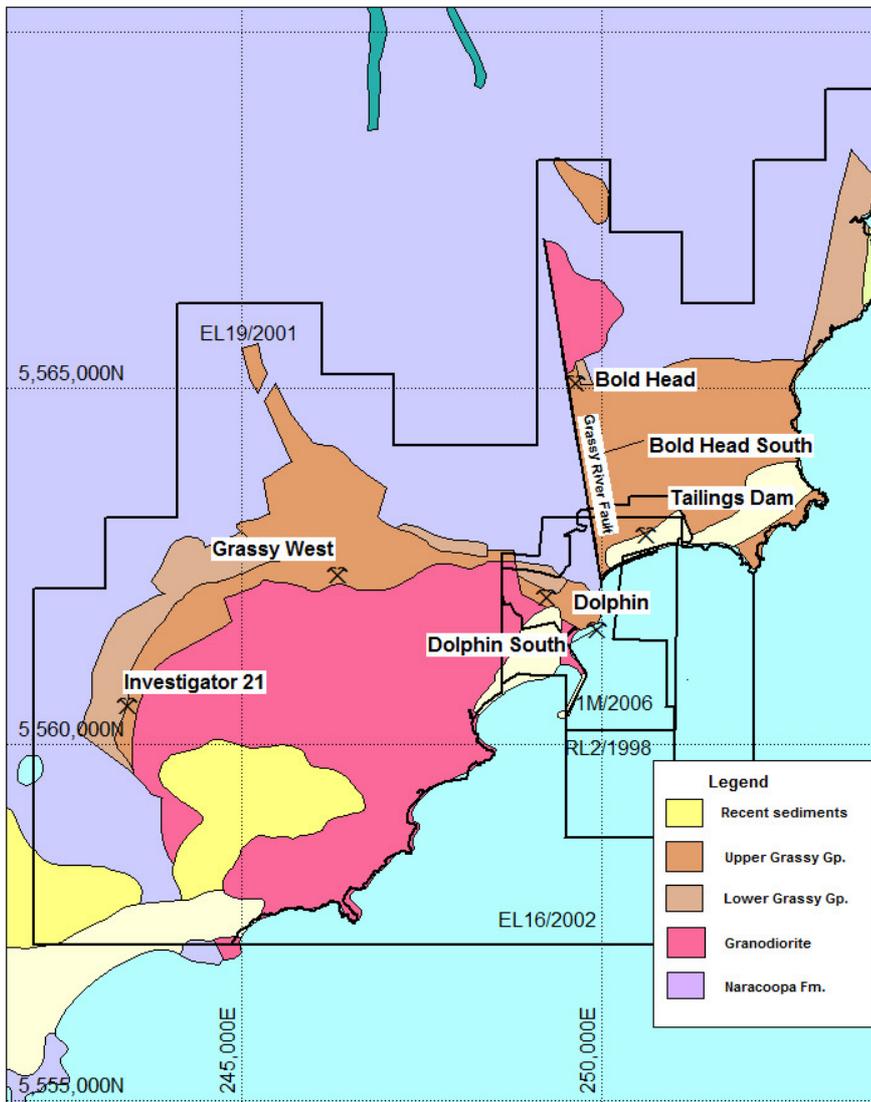


Figure 1. King Island Project Geology, Tenements and Major Prospects.

2 GEOLOGY

The regional geology of King Island is best described in Tasmanian Geological Record 2007/02, *Some Notes on the Geology of King Island* (Calver, 2007). Much of the geology described in this section is summarized from this publication (Figure 2).

The geology of King Island consists primarily of Proterozoic rocks with lesser Devonian Granites and extensive wind blown Pleistocene to Recent sand cover. The Proterozoic Geology of the eastern half of the island (hosting the Bold Head and Dolphin WO₃ deposits) is distinctly different from the geology of the western half. The relationship between the western and eastern halves remains problematic.

The western half is dominated by the Mesoproterozoic (1300Ma) Surprise Bay Formation. The Surprise Bay Formation is dominantly a N-S striking regionally metamorphosed amphibolite grade meta-sedimentary unit with minor mafic intrusives. The western margin of the Surprise Bay Group was intruded by a 790Ma granite body (Calver, 2007) post dating the 760Ma Wickham Orogeny (Cox, 1989, Turner *et. al.* 1998).

The Eastern half of the Island is dominated by the (1000-750Ma) Naracoopa Formation which appears to be a correlate of the Cowrie Siltstone in NW Tasmania (Calver, 2007). The Naracoopa Formation consists of a thick succession of relatively unmetamorphosed shale, siltstone and fine grained muscovite-quartz sandstone. Along the Southeast Coast the siltstone is conformably overlain by the 580Ma Grassy Group which is considered a correlate of the Togari Group in NW Tasmania, (Calver, 2007).

The Grassy Group in the City of Melbourne Bay area is well described by Calver (2007) and Meffre *et al* (2004). A summary of the Grassy group stratigraphic sequence is described below:

Cottons Breccia - A basal unit of polymict cobble to boulder diamictite.

Cumberland Creek Dolostone - Calcareous sediments, shale with limestone/dolomite inter-beds. (Host Horizon for the King Island Scheelite Mineralisation).

Yarra Creek Shale - Planar laminated shale with rare volcanoclastic interbeds.

Grimes Intrusive Suite - Gabbroic intrusive sills of andesitic composition.

City of Melbourne Volcanics - Tholeiitic pillow lava, peperite and volcanoclastic sandstone.

Shower Drop Volcanics – Picritic, high MgO pillow lava and hyaloclastite.

Bold Head Volcanics – Tholeiitic basalt, volcanoclastic sandstone and conglomerate.

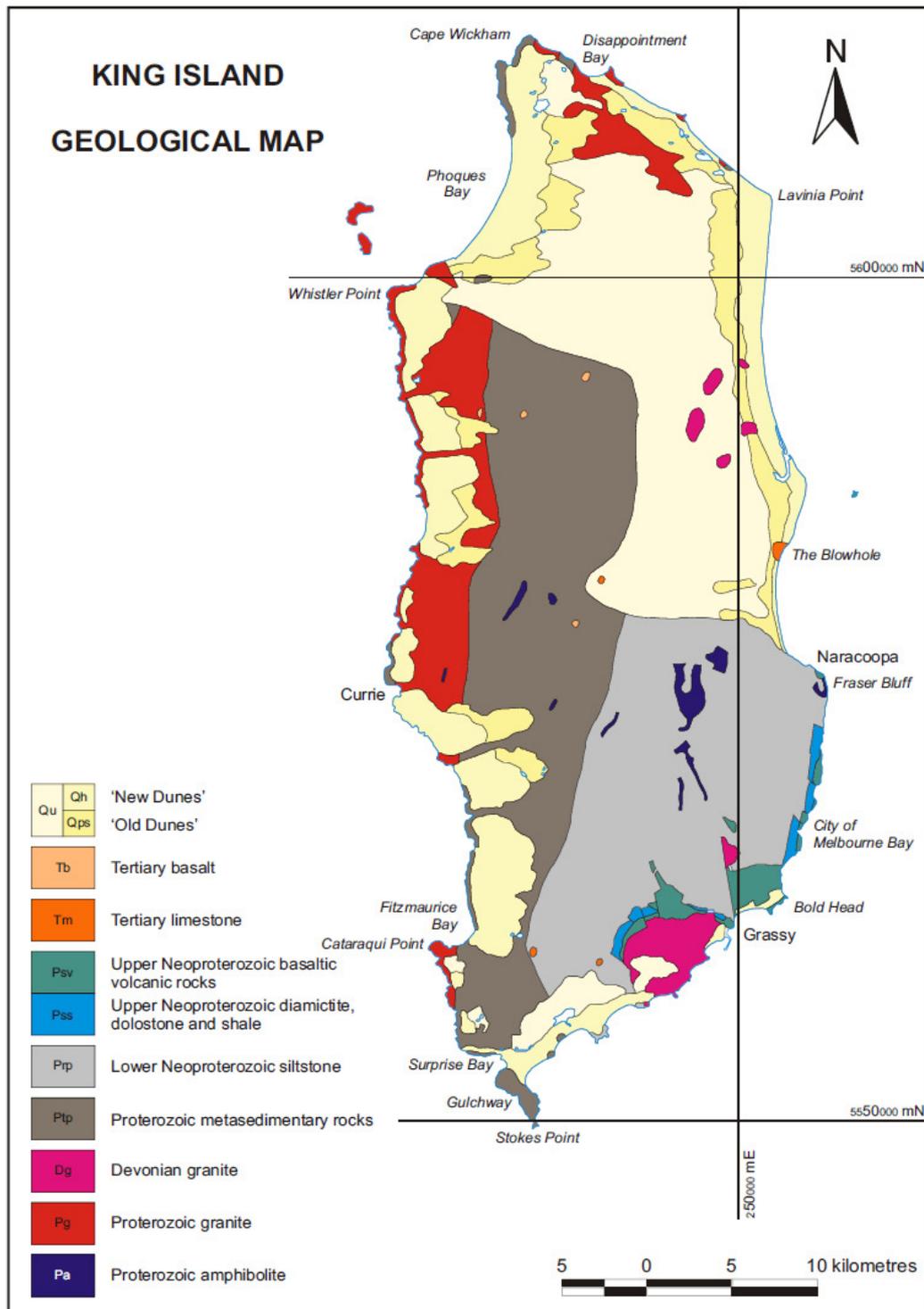


Figure 2. Regional Geology of King Island, (Calver 2007). Coordinates GDA94.

Three granite bodies, the Grassy, Bold Head and Sea Elephant plutons intrude the Proterozoic sediments on the southeast coastline of King Island. The intrusions are classified as I-type monzogranite-granodiorite (Calver, 2007). The Bold Head Granite may be a sliver of the larger Grassy granite, separated by the N-S trending Grassy River Fault (Figures 1 and 2).

The Bold Head Granodiorite is porphyritic with large pink k-feldspar phenocrysts. The mineralogy consists of quartz, k-feldspar, plagioclase, biotite and amphibole with minor apatite, allanite, sphene, magnetite and zircon.

Scheelite skarn mineralisation has formed within the metamorphic aureole of the Bold Head and Grassy Granodiorite plutons where they have come into contact with the calcareous sediments and carbonates of the Lower Grassy Group Cumberland Creek Dolostone. Both the Bold Head and Grassy mineralisation is hosted in a similar stratigraphic sequence, although the carbonate units appear to be thicker in the Grassy area (Danielson, 1975, Figure 2). Mineralisation has formed by selective metasomatism, mainly within and immediately adjacent to carbonate horizons. The deposits formed over a 100-200m sequence of complex skarn mineralogy located in the lower part of the Grassy Group, with two main host horizons known as B and C lens hosted in carbonates of 10-30m thickness separated by a similar thickness of skarn altered volcanic sediments. Mineralisation appears to have occurred where carbonates come into direct contact with the intrusion, or adjacent to brittle faults tapping into the nearby intrusion. Mineralisation grades increase towards major structures such as the Central, Decline and Grassy Faults at Grassy and the Number 2 and Boundary Faults at Bold Head.

Mine sequence rocks have been intensely contact metamorphosed and metasomatised and are described in Geopeko drill logs and maps by the resultant skarn mineralogy and not the stratigraphic protolith described in the regional geology. Geopeko logging codes include:

DDH logging codes

Code	Geology
um	Upper metavolcanics
bh	Biotite-actinolite hornfels
pbh	Pyroxene-biotite hornfels
pgh	Pyroxene-garnet hornfels banded pyroxene andradite skarn (+/- Scheelite)
gh	Garnet hornfels, andradite skarn (+/- Scheelite)
ch	Marble
bfb	Banded footwall beds, interbedded marble and biotite-pyroxene grossularite skarn (+/- garnet, Scheelite)
lv	Lower metavolcanics

Mineralisation occurs predominantly as coarse Scheelite with lesser Powellite in either garnet-hornfels, pyroxene garnet hornfels and garnet-pyroxene altered banded footwall beds.

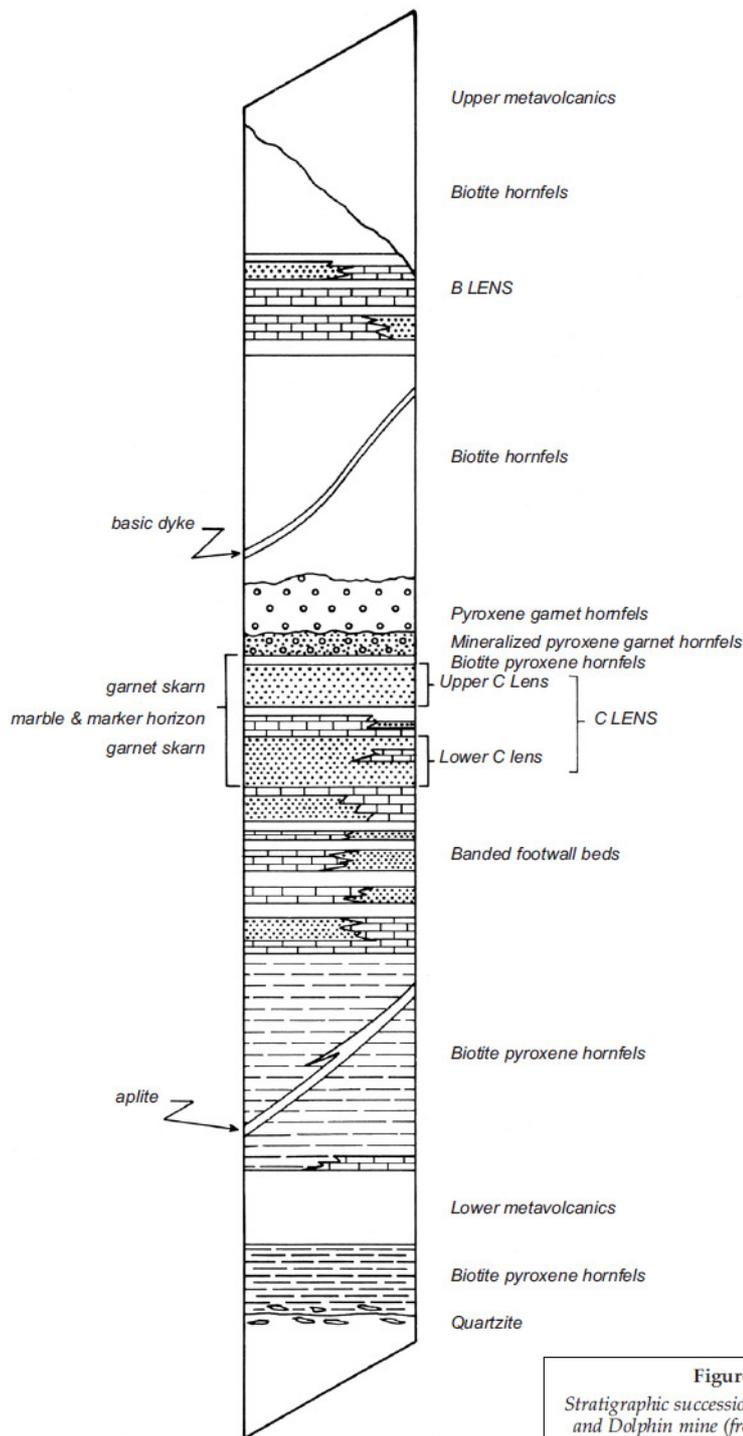


Figure 4
 Stratigraphic succession, No. 1 Open Cut
 and Dolphin mine (from Brown, 1990).

Figure 3. Stratigraphic column of the Grassy Group host sequence in the Grassy open cut (from Brown, 1990). The sequence is very similar to the Bold Head sequence 3km north.

3 WORK COMPLETED 2013

Exploration and technical studies specifically conducted on RL2/1998 during 2013 involved

- Resource definition and extension drilling West of the Dolphin Open Cut
- Initial pit cutback designs for the Dolphin Mine.
- Revised flow sheet design

4.1 DRILLING PROGRAM

A five hole diamond drilling program for 178.5m was completed to the west of the Dolphin Pit in November-December 2013. Drill sites were located on the old mine benches or previously disturbed ground immediately west of the Dolphin Pit.

The program was designed to test remnant mineralisation amenable to open cut mining immediately west of the Dolphin Open Pit. Several old drillholes confirm the presence of low grade pyroxene-garnet and garnet skarn. Further infill and definition drilling was required to allow local resource estimation and pit design.

Drilling was completed by Whole Core Drilling Pty Ltd with a track mounted Cortech CSD1800 drill rig. Sites were prepared using local earthmoving contractor Rab Denby. All sites required minor leveling and sump construction. All sites were rehabilitated on completion of the program.

Drill collars were surveyed with a hand Held Garmin GPS accurate to 3-5m. Collars will be located by licenced surveyor at the end of the program and included in the 2014 annual report.

Drill core was logged in the KIS core facility in Grassy. All core is stored in the Grassy core compound. Logging was completed on excel spreadsheets and loaded into an access database. A low wavelength ultraviolet lamp was used to delineate zones with significant scheelite mineralisation. Areas with strong fluorescence were marked for sampling. Drill core was cut with a diamond saw with samples taken on 1m lengths whilst respecting geological boundaries. Drill core was bagged on site, sealed in poly-weave bags and sent to ALS Laboratories in Burnie for Analysis. Samples were analysed for WO_3 , Sn, S, Mo and SG by fusion disc XRF. Results will be received electronically and loaded onto log sheets and uploaded to the database. Assay results were pending at the time of reporting.



Figure 4. Wholecore CSD1800 drill rig at West Dolphin Pit

Drill collar details are listed in Table 3. Drill logs are located in Appendix 1.

Table 3. Drill Collar Details and Significant Results							
BHID	Easting	Northing	RL	Depth	Azm	Dip	Results
KI004	248,936	5,562,196	37	41	3	-60	Results Pending
KI005	248,935	5,562,227	39	29	9	-58.8	Results Pending
KI006	248,848	5,562,222	54	29	4	-59.9	No significant mineralisation
KI007	248,791	5,562,227	54	47.5	4	-59.4	Results Pending
KI008	248,794	5,562,242	54	32	10	-59.7	No significant mineralisation

Three drill sections were completed on 219400E, 219310E and 219260E (Figures 5 - 8). Nine historic drillholes and five recent drillholes define the remnant mineralisation. Mineralisation consists of an east-west striking moderate to shallow south dipping C-lens garnet hornfels, pyroxene-garnet hornfels and banded footwall beds. The mineralisation outcrops on the western pit wall but west of the pit is covered by alluvial sand and waste rock fill to a depth of 5-15m. The C-lens remnant is bound to the south by the Grassy Granodiorite and the north by a brittle fault/fold. The western end of the lens is not well defined but has probably been exploited by early 20th Century open cut mining.

The garnet hornfels consists of dark brown crystalline andradite garnet with interstitial calcite and scheelite. Minor sulphide mineralisation consisting pyrrhotite and pyrite comprises 0.5-1.0% of the rock. Mineralised garnet skarn was intersected in Drill holes KI004, KI005 and KI007.

The banded footwall beds consist of brown, dark green and orange bands of garnet-pyroxene-biotite-actinolite skarn with white bands of marble. Scheelite content is highly variable.

The lower volcanics consist of dark brown and green, interbedded volcanoclastic siltstone and sandstone. The rocks are strongly hornfelsed with pervasive biotite, actinolite and pyroxene alteration and spotting.

Several phases of granodiorite intrusive are present, the most conspicuous is a Kfeldspar porphyry containing large 30-40mm Kfeldspar crystals in a medium grained equigranular quartz-plagioclase-biotite groundmass. Plagioclase is frequently sericite altered. A medium grained pale green to white quartz-plagioclase-biotite granodiorite is also present which is often strongly sericitised and silicified and can contain pyrrhotite on the contact with the skarn. Fine grained quartz-biotite aplitic dykes are common near the contact.

The drilling campaign has successfully confirmed the continuity of remnant mineralisation west of the Dolphin Pit. Approximately 140 – 160kt of low grade potentially open pitable mineralisation remains in the western wall of the Dolphin Open Cut. Stripping ratios are low and providing metallurgical recoveries are acceptable the area may supplement the higher grade Dolphin remnant resource located in the southeast of the historic pit.



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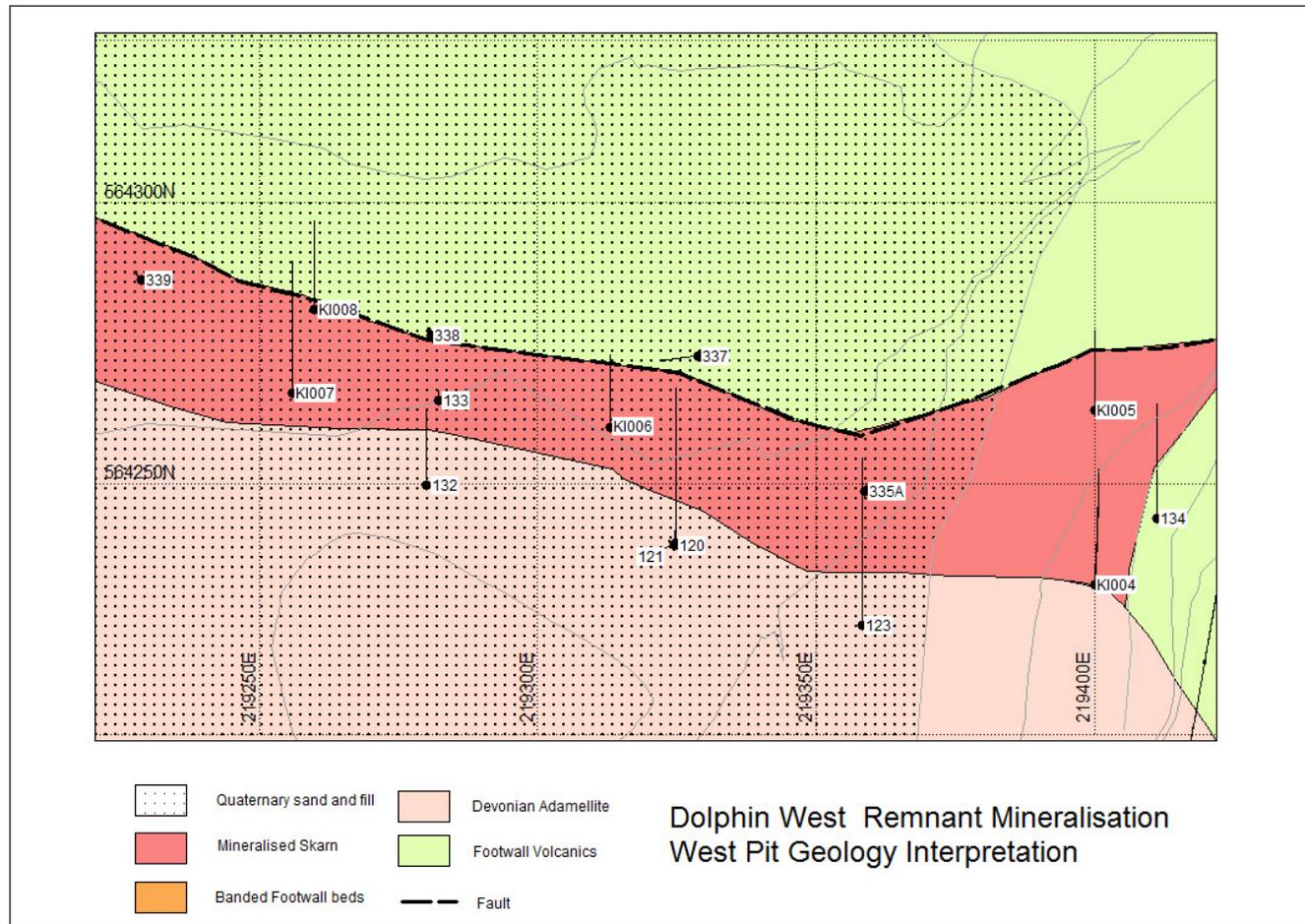


Figure 5. Dolphin West Interpretive Geology



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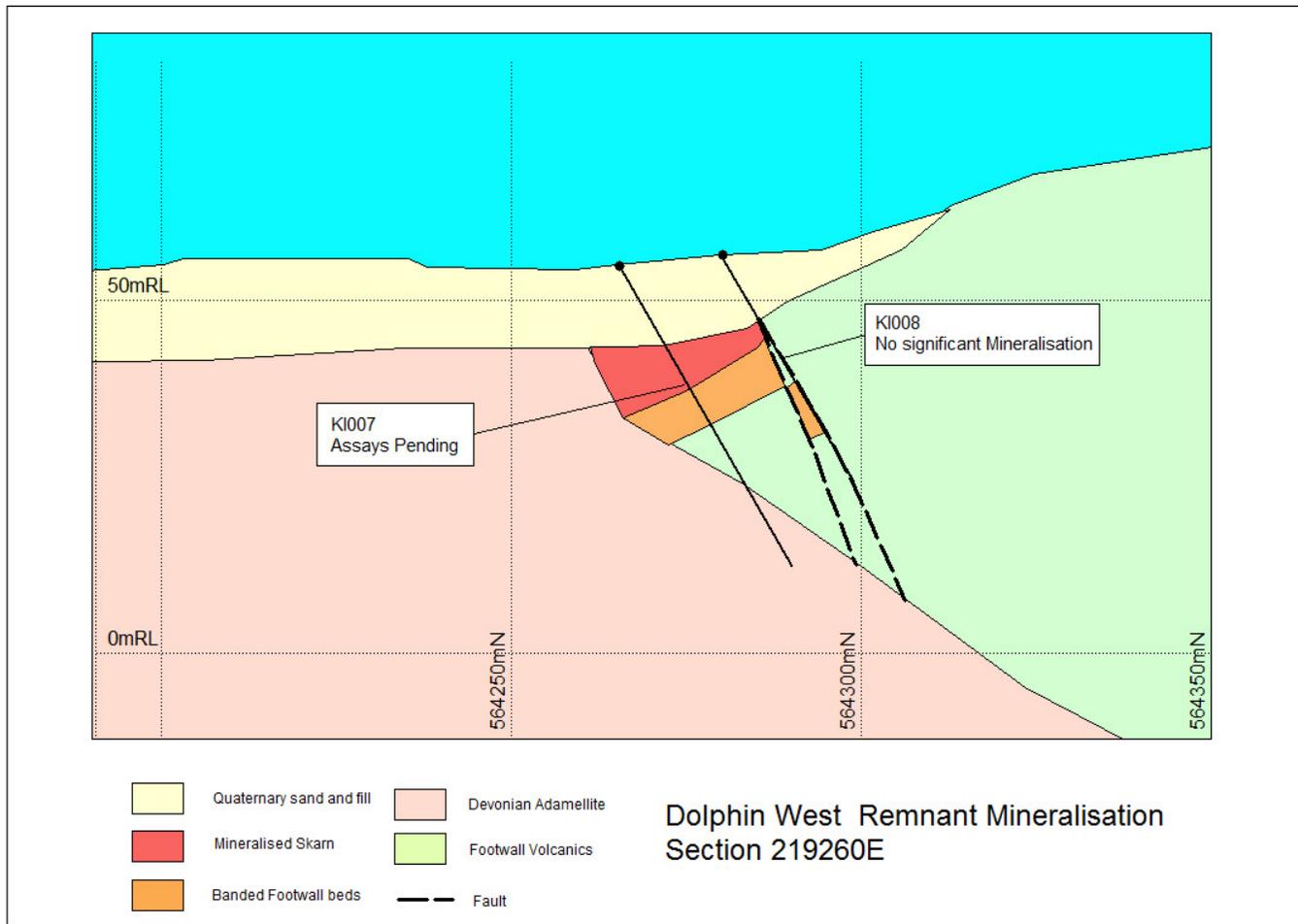


Figure 6. Dolphin West Section 219260E (ISG)



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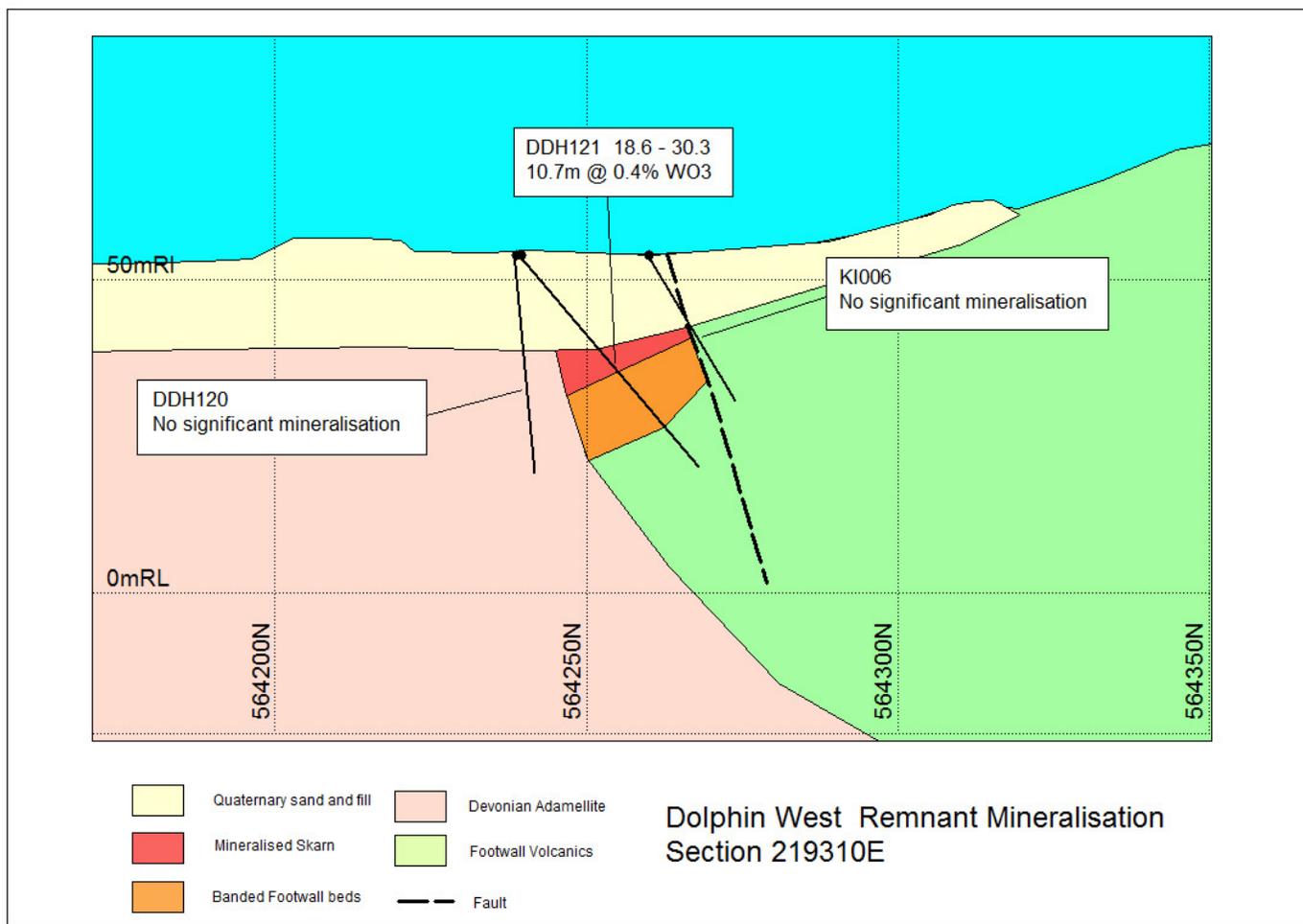


Figure 7. Dolphin West Section 219310E (ISG)



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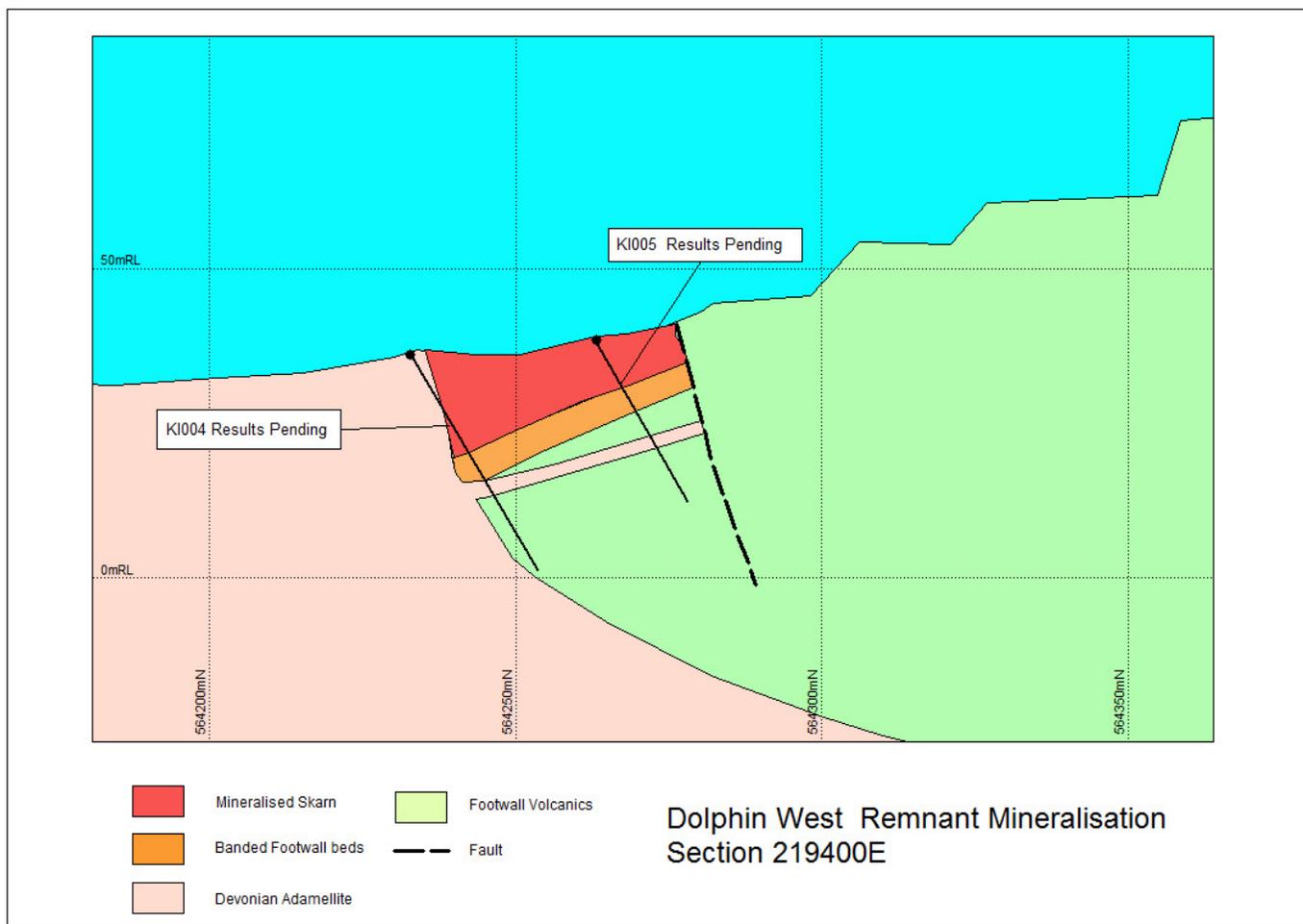


Figure 8. Dolphin West Section 219400E



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Figure 9. Garnet hornfels. Brown andradite skarn with minor pyrrhotite, calcite and scheelite.



Figure 10. Banded Footwall beds. Banded grossular-actinolite-andradite-biotite-diopside skarn with minor pyrite-pyrrhotite and scheelite.



Figure 11. Sericite altered Quartz-plagioclase-biotite granodiorite.

4.2 DOLPHIN OPEN PIT RESOURCE EVALUATION

A significant remnant resource from within the base of the historic Dolphin Mine open pit can be recovered through minor pit extensions. The potential of this operation has been previously analysed in various stages by KIS in their first Scoping Study in 2009 (AMC, 2010).

KIS are currently revisiting the open pit options for the Dolphin Pit. A staged startup is being investigated involving a series of small pit cutbacks and extensions before rehabilitating the old Dolphin underground mine and proceeding with the modified 2012 DFS.

A conceptual pit design was created in Surpac software to the -90mRL level using simplified design parameters based on earlier geotechnical investigations provided by King Island Scheelite (KIS).

Three areas of remnant resource can be accessed with the bulk of the high grade mineralisation located in the deeper eastern end of the current pit. This will require the eastern and northern pit walls to be cut back a further 30m and the pit deepened by 35m. Much of the historic pit will not be disturbed.

The conceptual pit contains an Indicated and Inferred Resource of 1.26Mt @ 0.67% WO₃. Assuming 10% dilution and 10% ore loss the pit design contains a potential reserve in the order of 1.2 – 1.4Mt at approximately 0.6% WO₃.

An estimated 4.6Mt of overburden will need to be removed from the pit (not including ramp design). An indicative waste to ore ratio of approximately 1:4 is suggested given the current parameters. If a more conservative design was required to access the same mineralised remnants it could reasonably be assumed that the strip ratio may increase to approximately 1:5.

An estimated 0.02Mm³ of voids or fill from historic underground workings are contained within the modeled pit extension.

The full report can be found in Appendix 2.



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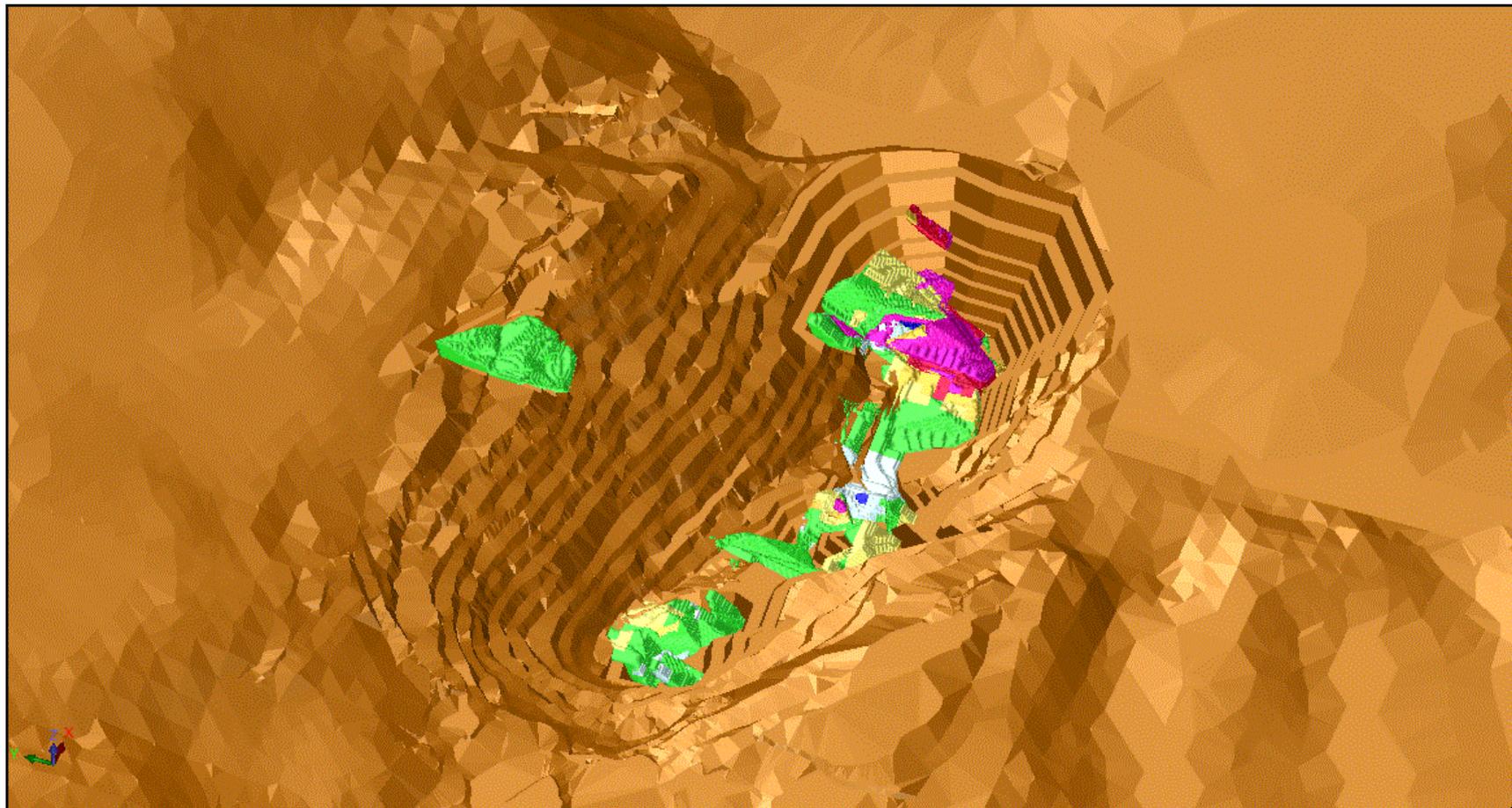


Figure 12. View of conceptual pit extension looking east.

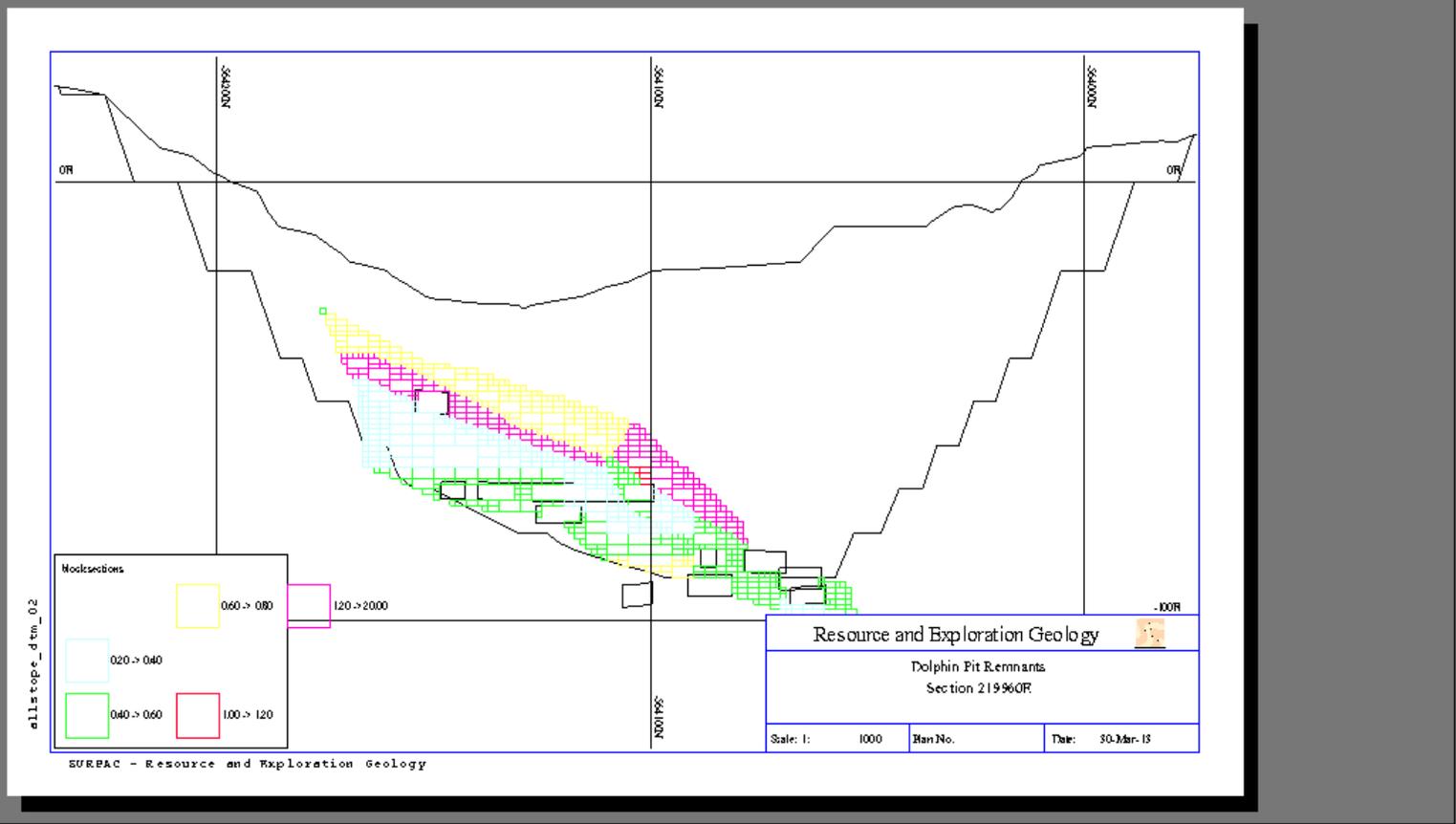


Figure 13. Section 219960E with existing pit, conceptual pit extension and contained mineralisation.



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5 PROPOSED WORK 2013

The project work program for 2013 is scheduled to include:

- Update resource model.
- Finalize Dolphin pit design and reserve revision.
- Review mine schedule and reserves.
- Finalize metallurgical testwork and flow sheet design
- Modify DFS for staged start up.

With the focus on construction and commissioning next year a limited exploration program is anticipated for 2014, though some historic data collation and targeting in preparation for future exploration drilling programs is likely. Exploration drilling of the tenement package is expected to resume once operations commence.

ADDITIONAL NOTES

COMPETENT PERSON AND JORC CODE

The information within this report that relates to Mineral Resources and Reserves and Exploration Results is based on information compiled by Mr Tim Callaghan who is a consultant geologist working for King Island Scheelite. Tim is a Member of the Australasian Institute of Mining and Metallurgy (AUSIMM) and has sufficient experience in the styles of mineralisation and types of deposits in consideration to qualify as a competent person according to the 2004 edition of the Australasian Code for reporting Exploration Results, Mineral Resources and Ore Reserves (the JORC Code). He consents to the inclusion of this material in the form and context in which it appears in this report.

The information within this report that relates to Mineral Reserves is based on information compiled by Consultant Mining Engineer Mr Alan Fudge of Polberro Consulting, who is a Member of The Australasian Institute of Mining and Metallurgy ("AusIMM") and has a minimum of five years experience in the estimation, assessment and evaluation of Mineral Reserves of this style and is a Competent Person as defined in the JORC Code (2004). This announcement accurately summarises and fairly reports his estimations and he has consented in writing to this review in the form and context in which it appears.

COORDINATES

All coordinates in this report are recorded in AGD94 Zone 55 or ISG (Dolphin Mine Grid)

REFERENCES

- AMC, 2010. Dolphin and Bold Head Mines Scoping Study. *Unpublished company by AMC Consultants Pty Ltd for King Island Scheelite.*
- Brown, SG, 1981. Six Monthly Report to the Mines Department, Report No KI/81/5 *Unpublished company report for Warman Services Ltd.*
- Callaghan, TJ, 2009. Bold Head Geology, Resources and Mine Infrastructure Digital Model. *Unpublished consultants report for King Island Scheelite.*
- Callaghan, TJ, 2011a. King Island Tailings Mineral Resource Estimation. *Unpublished consultants report for King Island Scheelite.*
- Callaghan, TJ, 2011b. King Island Tailings Mineral Reserve Estimation. *Unpublished consultants report for King Island Scheelite.*
- Calver CR, 2007. Some Notes on the Geology of King Island. *Tasmanian Geological Survey Record 2007/02.*
- Cox, S F, 1989. 'Cape Wickham' in Burrett, CF and Martin CF, (editors) Geology and Mineral Resources of Tasmania, *Special Publication Geological society of Australia*, vol15, pp26 - 27
- Danielson MJ, 1975. King Island Scheelite deposits. In Knight CL (editor), Economic Geology of Australia and Papua New Guinea. *Monograph Serial Australian Institute of Mining and Metallurgy.*
- Meffre S, Direen NG, Crawford AJ, and Kamenetsky V, 2004. Mafic Volcanic rocks on King Island, Tasmania: Evidence for 579Ma break up in East Gondwana. *Precambrian research*, vol. 135 pp177 – 191.
- Turner NJ, Black LP, and Kamperman M, 1998. Dating of Neoproterozoic and Cambrian Orogenies in Tasmania. *Australian Journal of Earth Sciences*, vol 45, pp 789 – 806.

Appendix 1

Drill Logs

Stratigraphy

Q	Quaternary alluvial, colluvial and dune deposits
Df	Devonian fine grained qtz sst and ssst (Florence Quartzite). Fossiliferous
Dsk	Devonian Skarn
Dg	Devonian Granite
Sc	Silurian sandstone and siltstone
Scs	Silurian pebble-cobble conglomerate.
Su	Silurian sediments
Og	Limestone (Gordon Limestone)
Oc	Pebble conglomerate, PC derivation (Owen Gp).
Os	Siliceous sst and conglomerate.
Ccc	Contiguous Creek Fm
Ccch	Contiguous Creek Fm chert
Ccarb	Contiguous Creek Fm carbonate and calcareous sediments.
Cba	Cambrian Basalt (McIvor Hill Complex)
Cgg	Cambrian Grassy Group
Cbg	Cambrian gabbro
Cba	Cambrian basaltic volcanics
Csu	Cambrian ultramafic
Cud	Cambrian ultramafic dunite
Cup	Cambrian ultramafic orthopyroxenite
Lrbq	Proterozoic siltstone and sandstone, (Cassiterite Ck Fm)
Lrbl	Proterozoic carbonaceous siltstone, (Skinners Flat Siltstone)
Lrl	Proterozoic siltstone and Quartzite, (Lagoon River Quartzite)
Ln	Proterozoic Naracoopa Formation.

Rock Types

Volcanic Rocktypes have a four letter code. The first letter is the style (intrusive, volcanoclastic etc)
The second is the chemical composition (basaltic, rhyolitic), the third is the major component (qtz phyr, lithic rich etc)
the last is the texture (fine grained, breccia etc). For example IUPC is an intrusive, ultramafic, pyroxene phyr and coarse grained.

Style codes

I	Intrusive
L	Lava
V	Volcanoclastic
E	Epilastic

Composition codes

U	Ultramafic
B	Basaltic (mafic)
A	Andesitic
D	Dacitic
R	Rhyolitic

Composition Codes

Q	Qtz phyr (qtz xtal rich)
F	feldspar phyr
H	Hornblende phyr
P	Pyroxene phyr
L	Lithic rich
X	crystal rich
V	Vitric

Texture codes

F	fine
M	medium
C	coarse
B	breccia

Other Rock codes

CHRT	Chert
CARB	Carbonate
GWAC	Greywacke
SSLT	Siltstone
SAND	Sandstone
SERP	Serpentinite
CONG	Conglomerate
GRAN	Granite
GRAD	Granodiorite
SKRN	Skarn
LOSS	No Core recovery
CLAY	Clay
MMAG	Massive magnetite
SKSP	Serpentinite Skarn
SHAL	Shale
HEVC	Heamatitic Volcanoclastic
PHLG	Phlogopite schist
GABB	Gabbro
QZIT	Quartzite
gh	garnet hornfels
pgh	pyroxene-garnet hornfels
fz	fault zone
ap	aplite
bh	biotite hornfels
ph	pyroxene hornfels
bfb	banded footwall beds
ch	carbonate-chert
q	Naracoopa Formation quartzite
ad	Adamellite
mv	middle Grassy Group volcanics

Colour

Colours can be classified by shade using a 1 to 5 scale. ie. B1 = pale brown, B5=dark Brown

N	Black
B	Brown
P	Purple
G	Green
C	Cream
W	White
Y	Yellow
T	Tan
R	Red
O	Orange

Alteration

Ac	Actinolite
Ch	Chlorite
Se	Sericite
Cb	Carbonate
Di	Diopside
Ax	Axinite
Sc	Serpentine-chrysotilic
Sp	Serpentine
So	Schorl
Ph	Phlogopite
Sx	Sulphidic
Py	Pyritic
Po	Pyrrhotitic
Ht	Haematitic
Mg	Magnetite
To	Tourmaline
Si	Silica
Qz	Quartz

Geotech

Intact Rock Strength Code		UCS
Extremely weak	EW	0.5 Mpa
Very Weak	VW	
Weak	W	2.5 Mpa
Moderately strong	MS	37.5 Mpa
Strong	S	75 Mpa
Very strong	VS	100 Mpa
Extremely strong	ES	150 Mpa

Roughness type	Code	Jr
Stepped Smooth	SS	3.5
Discontinuous	DC	4
Planar Smooth	PS	1
Stepped Rough	SR	3
Planar rough	PR	1.5
Undulating Smooth	US	2
Undulating Rough	UR	3

No of Defect Sets	Code	Jn
Default	0	1
One Set	1	2
One Set + random	1.5	3
Two Sets	2	4
Two Sets + random	2.5	6
Three Sets	3	9
Three Sets + random	3.5	12
Four Sets	4	15

Joint Alteration	Code	Ja
Default	0	1
Carb	CB	2
Serpentine	SP	5
Clay	CY	5
Quartz	QZ	1
Sericite	SE	3
Chlorite	CH	3
Clean	X	1
Iron	FE	1.5
Haematite	H	2



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Drill Log													
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L. Cont.	Struct	BCA	Description	
Dolphin	KI004	0	11.6	Dg	ad	Bi	C3		Ft				Massive, coarse grained quartz-feldspar-biotite adamellite. Pale cream colour with dark biotite alteration. Very strong biotite content near contact. Finer grained chilled margin. Chloritic alteration overprint.
Dolphin	KI004	11.6	13.7	C_lens	gh	Ga	B5		Sp				Massive dark brown and green andradite skarn. Silica overprint. Coarse and fine scheelite. 1% coarse pyrrhotite disseminations.
Dolphin	KI004	13.7	15.3		vn	Si	W1		Sp				White vughy crystalline quartz vein. Aragonite in Vughs? Minor clasts of garnet hornfels. No Scheelite.
Dolphin	KI004	15.3	17.2	C_lens	gh	Ga	B5		Sp				Massive dark brown and green andradite skarn. Silica overprint. Coarse and fine scheelite. 1% coarse pyrrhotite disseminations.
Dolphin	KI004	17.2	18.7	C_lens	ph	Px	G5		lr				Very hard mottled green and white silica-tourmaline glass? Partially devitirified. Pyroxene-epidote? Spotting. No scheelite.
Dolphin	KI004	18.7	19.5	C_lens	gh	Ga	B5		Sp				Massive dark brown and green andradite skarn. Silica overprint. Coarse and fine scheelite. 1% coarse pyrrhotite disseminations.
Dolphin	KI004	19.5	20.6	Cgg	bh	Bi	B5		Sp	Bd	85		Dark Brown laminated siltstone with bands of adamellite. Intensely hornfelsed Patches of grossular garnet. 15 disseminated pyrrhotite-pyrite.
Dolphin	KI004	20.6	23.3	Cgg	bfb	GaPx	G5		Sp	Bd	70		Well banded andradite and grossular and pyroxene skarn. Bands approximately 2-5cm width. Orange, brown and green bands. Coarse and fine scheelite. 3% Pyrite.
Dolphin	KI004	23.3	26.5	Dg	ad	Bi	C3		Ft				Massive, coarse grained quartz-feldspar-biotite adamellite. Pale cream colour with dark biotite alteration.
Dolphin	KI004	26.5	27.1	Cgg	bfb	GaPx	G5		Ft	Bd	70		Well banded andradite and grossular and pyroxene skarn. Bands approximately 2-5cm width. Orange, brown and green bands. Coarse and fine scheelite. 3% Pyrite.
Dolphin	KI004	27.1	28.3		fz	CyCh	G3		Ft				Pale green vughy fault zone. Clay and hematite alteration. Oxidised. Granular.
Dolphin	KI004	28.3	41	Cgg	lv	Bi	B4			Bd	45		Well bedded to laminated volcanoclastic sitstone. Intense biotite alteration. Strongly hornfelsed. Broken and jointed. EOH



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Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length>10cm	RQD%
Dolphin	KI004	0	3.5	3.5	100	ad	F	si	ES	1.2	34
Dolphin	KI004	3.5	5.5	2	100	ad	F	si	ES	1.6	80
Dolphin	KI004	5.5	5.9	0.4	100	ad	F	si	ES	0	0
Dolphin	KI004	5.9	8.2	2.3	100	ad	F	si	ES	0.9	39
Dolphin	KI004	8.2	9.1	0.9	100	ad	F	si	ES	0.9	100
Dolphin	KI004	9.1	10.8	1.7	100	ad	F	si	ES	0.3	18
Dolphin	KI004	10.8	12.3	1.3	87	gh	F	Ga	ES	1	67
Dolphin	KI004	12.3	15.5	3.2	100	gh	F	Ga	ES	2.7	84
Dolphin	KI004	15.5	17.5	2	100	gh	F	Ga	ES	1.8	90
Dolphin	KI004	17.5	20.5	3	100	gh	F	Ga	ES	2.5	83
Dolphin	KI004	20.5	23.5	3	100	bfb	F	Ga	ES	3	100
Dolphin	KI004	23.5	26.5	3	100	ad	F	si	ES	2.8	93
Dolphin	KI004	26.5	27.1	0.6	100	bfb	F	Ga	ES	0.6	100
Dolphin	KI004	27.1	28.3	1.1	92	bfb	F	Ga	ES	0.6	50
Dolphin	KI004	28.3	30.6	2.3	100	bh	F	Bi	ES	0	0
Dolphin	KI004	30.6	32.5	1.9	100	bh	F	Bi	ES	1.2	63
Dolphin	KI004	32.5	35	2.5	100	bh	F	Bi	ES	0	0
Dolphin	KI004	35	36.4	1.4	100	bh	F	Bi	ES	0.2	14
Dolphin	KI004	36.4	39.6	3.2	100	bh	F	Bi	ES	2.2	69
Dolphin	KI004	39.6	41	1.4	100	bh	F	Bi	ES	1.2	86



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Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L. Cont.	Struct	BCA	Description
Dolphin	KI005	0	9.8	C_lens	gh	GaPx	B5	1.00	Sp			Massive, dark brown, crystalline andradite skarn. Coarse grained. Minor dark green pyroxene bands. Coarse and fine scheelite. 1-2% disseminated pyrrhotite.
Dolphin	KI005	9.8	13.9	C_lens	bfb	GaPx	B4	1.00	Sp	Bd	60	Massive, banded andradite-grossular-pyroxene skarn. Bands 2 - 20cm in thickness. Lesser biotite altered siltstone bands. Dark Brown and green. Coarse and fine scheelite. 1% Po disseminations.
Dolphin	KI005	13.9	18.1	Cgg	lv	Bi	B5			Bd	65	Laminated dark brown and grey volcaniclastic siltstone. Strong biotite alteration bands. Strongly Hornfelses. Not mineralised.
Dolphin	KI005	18.1	20.1	Dg	ap	SiBi	W					Massive, fine grained siliceous aplite dyke. Biotite porphyritic with coarse biotite to 2mm.
Dolphin	KI005	20.1	29	Cgg	lv	Bi	B5			Bd	65	Laminated dark brown and grey volcaniclastic siltstone. Strong biotite alteration bands. Strongly Hornfelses. Not mineralised. EOH



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Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length>10cm	RQD%
Dolphin	KI005	0	3	3	100	gh	F	Ga	ES	1.2	40
Dolphin	KI005	3	4.6	1.6	100	gh	F	Ga	ES	1.6	100
Dolphin	KI005	4.6	7.2	2.6	100	gh	F	Ga	ES	0	0
Dolphin	KI005	7.2	10.2	3	100	gh	F	Ga	ES	0.9	30
Dolphin	KI005	10.2	12.1	1.9	100	gh	F	Ga	ES	0.9	47
Dolphin	KI005	12.1	14	1.9	100	gh	F	Ga	ES	0.3	16
Dolphin	KI005	14	16.1	2.1	100	bh	F	Bi	ES	1	48
Dolphin	KI005	16.1	18	1.9	100	bh	F	Bi	ES	2.7	142
Dolphin	KI005	18	20	2	100	bh	F	Bi	ES	1.8	90
Dolphin	KI005	20	23	3	100	bh	F	Bi	ES	2.5	83
Dolphin	KI005	23	26	3	100	bh	F	Bi	ES	3	100
Dolphin	KI005	26	29	3	100	bh	F	Bi	ES	2.8	93



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Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L. Cont.	Struct	BCA	Description
Dolphin	KI006	0	8.5		nc							Waste rock and sand. Significant core loss.
Dolphin	KI006	8.5	14.3		nc		W					Beach sand and clay. Significant core loss.
Dolphin	KI006	14.3	26	Cgg	lv	Bi	A3					Dark grey/brown banded, laminated volcaniclastic siltstone and sandstone. Strongly hornfelsed, pervasive biotite alteration. Numerous puggy brittle faults, broken, extensive core loss. EOH



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Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length>10cm	RQD%
Dolphin	KI006	0	3	1.8	60	nc	W	Ga	W	0.6	20
Dolphin	KI006	3	5.5	1	40	nc	W	Ga	W	0.3	12
Dolphin	KI006	5.5	8.5	0	0	nc	W	Ga	W	0	0
Dolphin	KI006	8.5	10.4	1.9	100	nc	W	Ga	W	0	0
Dolphin	KI006	10.4	14.3	1	26	nc	W	Ga	W	0	0
Dolphin	KI006	14.3	15.7	1.4	100	bh	F	Ga	MS	0	0
Dolphin	KI006	15.7	16.3	0.6	100	bh	F	Bi	MS	0.4	67
Dolphin	KI006	16.3	17.5	0.4	33	bh	F	Bi	MS	0	0
Dolphin	KI006	17.5	18.1	0.1	17	bh	F	Bi	MS	0	0
Dolphin	KI006	18.1	19.4	0	0	bh	F	Bi	MS	0	0
Dolphin	KI006	19.4	22	0.4	15	bh	F	Bi	MS	0	0
Dolphin	KI006	22	22.5	0.5	100	bh	F	Bi	MS	0	0
Dolphin	KI006	22.5	23.5	0.7	70	bh	F	Bi	MS	0.2	20
Dolphin	KI006	23.5	24.5	1	100	bh	F	Bi	MS	0.1	10
Dolphin	KI006	24.5	26	1.5	100	bh	F	Bi	MS	0.2	13



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Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L.Cont.	Struct	BCA	Description
Dolphin	KI007	0	8.3		nc							Beach sand and clay. Significant core loss.
Dolphin	KI007	8.3	13.4	Cgg	cy	Cy	W					Intensely weathered skarn. Green and Brown clay. Significant core loss.
Dolphin	KI007	13.4	19.5	Clens	gh	GaPx	B5	2.00	Sp	Bn	70	Massive, dark brown and green garnet skarn. Andradite and grossular garnet. Calcite vein and low angle to core. Coarse and fine scheelite disseminated in bands and blebs. Disseminated Py-Po to 2%.
Dolphin	KI007	19.5	21	Cgg	bfb	GaPx	G5	1.00	Sp	Bn	75	Massive well banded garnet-pyroxene-marble skarn. Banding 2 - 10cm in width. Grossular and andradite garnet with green actinolite and pyroxene. White marble bands. Disseminated coarse and fine scheelite in bands. Minor pyrite.
Dolphin	KI007	21	22.6	Cgg	bh	BiAc	B5			Bd	75	Massive and banded volcanoclastic sandstone. Strong biotite-actinolite alteration. Strongly hornfelsed. Garnet on contact with minor scheelite bands.
Dolphin	KI007	22.6	24.7	Dg	ad	KfBi	C5					Massive, coarse grained, crystalline Kfeldspar porphyritic adamellite. Coarse quartz-biotite-plagioclase with large Kfeldspar phenocrysts to 30mm. Kfeldspar altered.
Dolphin	KI007	24.7	27.5	Cgg	pgh	GaPx	G5	2.00	Ft	Bn	75	Massive, banded garnet-pyroxene skarn. Andradite and grossular with actinolite and pyroxene. Coarse and fine disseminated scheelite. 2-3% Py.
Dolphin	KI007	27.5	33.2	Cgg	lv	BiAc	B5			Bd	75	Laminated volcanoclastic sandstone and siltstone. Strongly hornfelsed. Pervasive banded biotite and actinolite alteration.
Dolphin	KI007	33.2	47.5	Dg	ad	KfBi	C5					Massive, coarse grained, crystalline Kfeldspar porphyritic adamellite. Coarse quartz-biotite-plagioclase with large Kfeldspar phenocrysts to 30mm. Kfeldspar altered. EOH



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Geotech Sheet											
Project	BHID	From	To	Recovery	% Recovery	Lithology	Weathering	Alteration	Strength	length>10cm	RQD%
Dolphin	KI007	0	7	0	0	nc	W		W	0	0
Dolphin	KI007	7	9.9	1.6	55.2	nc	W		W	0	0
Dolphin	KI007	9.9	12.4	1.4	56	nc	W		W	0	0
Dolphin	KI007	12.4	13.6	1.2	100	gh	F	Ga	W	0.1	8.3
Dolphin	KI007	13.6	15.6	2	100	gh	F	Ga	W	2	100
Dolphin	KI007	15.6	18	2.4	100	gh	F	Ga	VS	2.4	100
Dolphin	KI007	18	20.5	2.5	100	gh	F	Ga	VS	2.4	96
Dolphin	KI007	20.5	23.5	3	100	bh	F	Bi	VS	2.8	93
Dolphin	KI007	23.5	26.4	2.9	100	ad	F	Kf	VS	2.6	90
Dolphin	KI007	26.4	29.2	2.8	100	pgh	F	Bi	VS	2.5	89
Dolphin	KI007	29.2	32.5	3.3	100	bh	F	Bi	VS	3	91
Dolphin	KI007	32.5	35.2	2.7	100	ad	F	Kf	VS	2.2	81
Dolphin	KI007	35.2	38.3	3.1	100	ad	F	Kf	VS	3	97
Dolphin	KI007	38.3	41.4	3.1	100	ad	F	Kf	VS	2.7	87
Dolphin	KI007	41.4	43	1.6	100	ad	F	Kf	VS	0.8	50
Dolphin	KI007	43	45.6	2.6	100	ad	F	Kf	VS	1.7	65
Dolphin	KI007	45.6	47.5	1.9	100	ad	F	Kf	VS	1.1	58



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Drill Log												
Project	BHID	From	To	Stratigraphy	Rock Type	Alteration	Colour	Visual S%	L. Cont.	Struct	BCA	Description
Dolphin	KI008	0	5		nc							Beach sand and clay. Significant core loss.
Dolphin	KI008	5	9.1		clay	Cy	O3					Clay and gritty sand. Orange coloured. Poor core recoveries.
Dolphin	KI008	9.1	19.1		nc							Very poor core recoveries. Possibly overburden. Rubble and clay. Significant core loss.
Dolphin	KI008	19.1	21.6	Cgg	bfb	GaPx	B3		Ft	Bn	50	Banded pyroxene and garnet skarn, banded footwall beds. Orange grossular, green actinolite and grey diopside bands. Weathered and clay altered. Significant core loss.
Dolphin	KI008	21.6	25.4	Cgg	bfb	GaPx	B3		Ft	Bn	50	Banded pyroxene and garnet skarn, banded footwall beds. Orange grossular, green actinolite and grey diopside bands. Minor white marble bands. Banding 10-30mm in width.
Dolphin	KI008	25.4	26.5		fz	BiCy	A3		Ft			Broken and puggy core. Significant core loss.
Dolphin	KI008	26.5	27.5	Cgg	gh	Ga	B2		Ft			Massive, orange-brown, slightly weathered garnet skarn? Numerous calcite veins. Minor puggy crush zones.
Dolphin	KI008	27.5	30.7	Cgg	lv	Bi	A3			Bd	70	Laminated volcanoclastic siltstone and sandstone. Lower volcanics. Strongly hornfelsed. Pervasive biotite alteration. Very broken puggy with significant core loss.
Dolphin	KI008	30.7	32	Cgg	lv	Bi	A3			Bd	70	Laminated volcanoclastic siltstone and sandstone. Lower volcanics. Strongly hornfelsed. Pervasive biotite alteration. Very broken puggy with significant core loss. Only 15% core recovery Fault zone? EOH

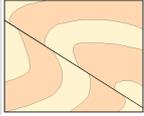


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Appendix 2
DOLPHIN OPEN PIT
REMNANT MINERALISATION RECOVERY
KING ISLAND



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DOLPHIN OPEN PIT
REMNANT MINERALISATION RECOVERY
KING ISLAND

Prepared for: King Island Scheelite Project.

Tim Callaghan, March 2013



Tim Callaghan – Resource and Exploration Geology

MAP CONVENTIONS

Coordinates in this report and in digital data associated with this report are recorded as ISG Zone 55/3.

RL's in this report are MSL.

Cross sections are drawn looking east.



EXECUTIVE SUMMARY

A significant remnant resource from within the base of the historic Dolphin Mine open pit can be recovered through minor pit extensions. A conceptual pit design was created in Surpac software to the -90mRL level using simplified design parameters based on earlier geotechnical investigations provided by King Island Scheelite (KIS).

Three areas of remnant resource can be accessed with the bulk of the high grade mineralisation located in the deeper eastern end of the current pit. This will require the eastern and northern pit walls to be cut back a further 30m and the pit deepened by 35m. Much of the historic pit will not be disturbed.

The conceptual pit contains an Indicated and Inferred Resource of 1.26Mt @ 0.67% WO₃. Assuming 10% dilution and 10% ore loss the pit design contains a potential reserve in the order of 1.2 – 1.4Mt at approximately 0.6% WO₃.

An estimated 4.6Mt of overburden will need to be removed from the pit (not including ramp design). An indicative waste to ore ratio of approximately 1:4 is suggested given the current parameters. If a more conservative design was required to access the same mineralised remnants it could reasonably be assumed that the strip ratio may increase to approximately 1:5.

An estimated 0.02Mm³ of voids or fill from historic underground workings are contained within the modeled pit extension.



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1 INTRODUCTION

The Dolphin Mine is located in the southeastern corner of King Island, Tasmania. The Mine was originally operated by Geopeko Ltd. along with the satellite Bold Head Mine located several kilometers to the north.

The Dolphin and Bold Head Scheelite Mines operated intermittently since their discovery and start up in 1920 until the 1990, with several forced shutdowns due to low tungsten prices. The site was decommissioned and rehabilitated in 1990.

King Island Scheelite (KIS) have been investigating the potential of re-opening the mine. Initial investigations into the viability of an open cut and seawall were inconclusive and the focus has changed to rehabilitation of the underground workings and production from remnant resources.

Re-estimation of the Dolphin Resource based on geological domains used by Geopeko has resulted in the definition of an Indicated and Inferred Resource 8.94Mt @ 0.92% WO_3 at a cutoff of 0.25% WO_3 (Callaghan, 2010). Subsequent reserve estimation at a 0.5% WO_3 cutoff of 3.27Mt @ 0.97% WO_3 (Fudge, 2011) has resulted in significant improvements in the viability of reopening the Dolphin Mine as an underground operation.

In addition to the remnant resource in the mine, the historic tailings dam contains a Measured Resource of 2.7 Mt @ 0.17% WO_3 at a block cutoff of 0.08% WO_3 and a Proven Reserve of 1.91Mt @ 0.19% WO_3 at a 0.10% WO_3 (Callaghan, 2011).

A positive Feasibility Study was completed in early 2012 based on the re-accessing of underground operations and retreatment of historic tailings. However prevailing financial conditions have resulted in the project being shelved for the medium term.

Resource and Exploration Geology were requested to complete a desktop review on recovering remnant resources from within the historic open cut through minor pit extensions. It is assumed that the scoping study will be used to assess the potential of reducing startup capital to develop the project. More detailed pit design will be required if a positive outcome is indicated.

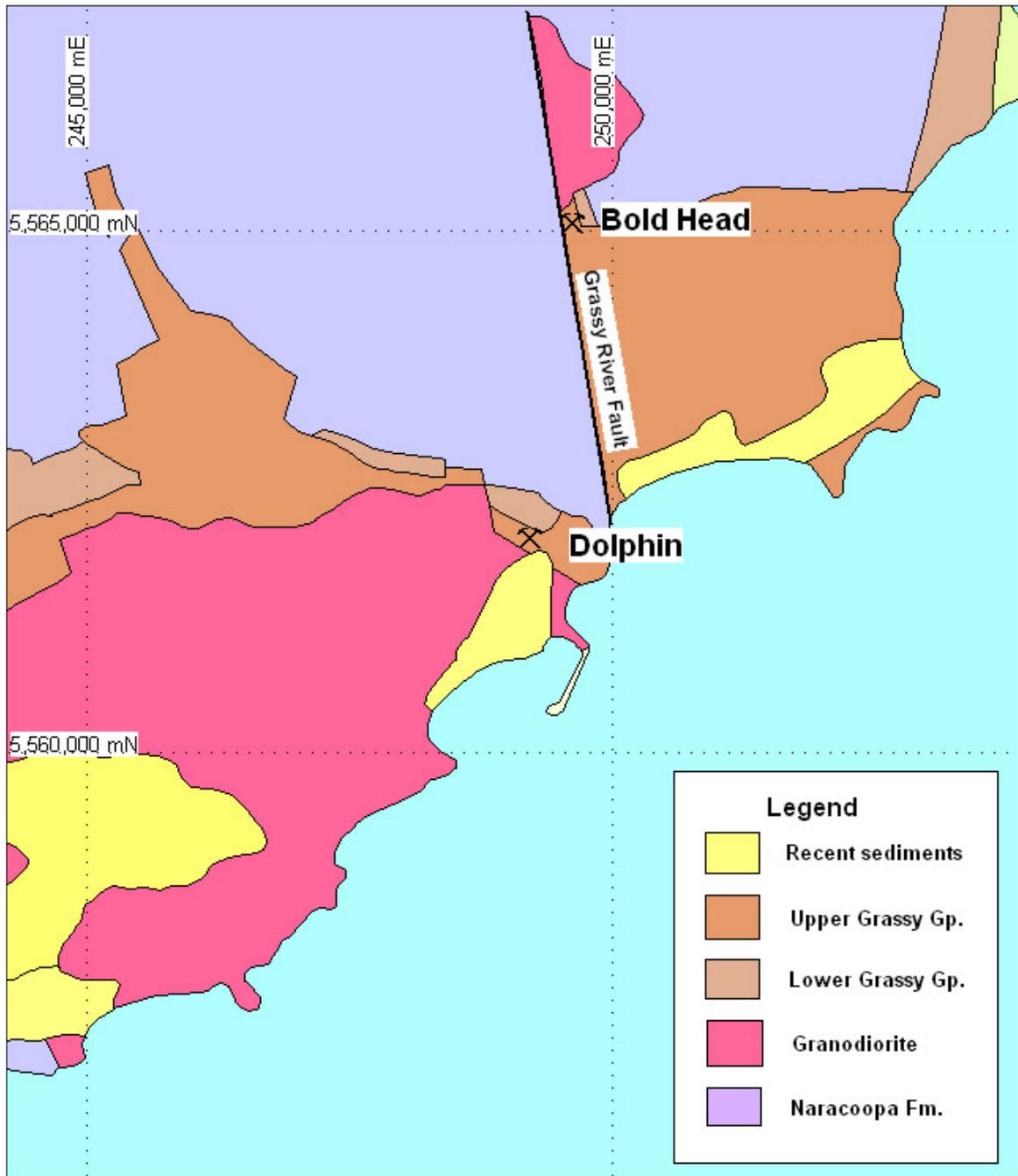


Figure 1. Dolphin and Bold Head Location Plan and Simplified Geology.



2 DATA

Data used for the review includes:

- Drilling database (Access)
- Resource Blockmodel (Surpac)
- Topographic DTM (surpac, dxf)

Data provided with this report includes:

- Topographic DTM (Surpac)
- Modeled pit shells (Surpac)
- Block modeled resource estimate (Surpac)
- Dolphin Open Pit Remnant Mineralisation Recovery Report (pdf)
- Cross sections



3 CONCEPTUAL PIT DESIGN METHODOLOGY

The Dolphin Pit Extension Remnant Mineral Resource has been derived from a kriged block model created with Surpac™ software licensed to Tim Callaghan. A series of east-west and north-south cross sections were supplied to KIS for analyses of potentially recoverable resources. Generalized sketches of recoverable resources from a conceptual pit model were made on the supplied sketches.

Historic geotechnical reports were supplied to an independent geotechnical engineer by KIS. After analyses of the reports, KIS provided pit shell parameters to be applied to a scoping study pit design. The base of the pit from the sketches provided by KIS was approximately -90m RL. The pit design was created from level plans commencing at -90mRL and increasing on 10m increments, expanding to 20m levels above the mineralisation level.

Design parameters include:

- 20m batter heights in the upper pit
- Bench width of 10m in the upper pit
- Total pit slope 50° (46)
- Batter slope 71° (65)

Design parameters were reduced to 10m benches with 5m bench widths in the ore zones to improve recovery of modeled ore zones.

Pit design parameters are slightly more aggressive than those defined by AMC geotechnical analysis (AMC, 2009) which prescribed a total pit slope of 46° and batter slopes of 71° with similar 20m bench heights and 10m bench widths.

The historic pit has a total slope angle of 54° on the southern wall and 28° on the north wall. The low angle on the north wall has resulted from the moderate SE plunging morphology of the deposit rather than geotechnical conditions. Historic pit walls have stood up well with few major failures evident.

Three separate bodies of mineralisation were modeled, the deepest, highest grade and best mineralised section was located in the east of the pit. The west of the pit contains modest low grade mineralisation and a faulted lens of low grade mineralisation is located in the north of the pit. From sketches applied to the cross-sections, pit shells were created with Surpac software. Two pit shells were generated, one deepening the main dolphin pit and the other a small pit on the high northern wall recovering a faulted resource remnant (Figure 2).



4 RESULTS

Most of the mineralisation is located in the deeper eastern end of the current open pit. The new pit design will require the eastern and northern pit wall to be pushed back creating a new high wall of 100m in the east of the pit. The pit outline only extends a further 30m east of its current position and should not significantly impact the proposed Mill site or the existing mine vent rises.

The remnant resource that can be recovered from the pit design includes an Indicated and Inferred Resource of 1.26Mt @ 0.67% WO₃ (Table 1).

	Mm³	MTonnes	WO₃%
Inferred	0.10	0.35	0.49
Indicated	0.27	0.91	0.74
Total Resource	0.37	1.26	0.67

Assuming 10% dilution and 10% ore loss the pit design contains a potential reserve in the order of:

1.2 – 1.4Mt at approximately 0.6% WO₃

An estimated 4.6Mt of overburden will need to be removed although this does not include ramp design. An indicative waste to ore ratio of approximately 1:4 is suggested assuming the current pit design is applicable. If a more conservative design was required to access the same mineralised remnants it could reasonably be assumed that the strip ratio may increase to approximately 1:5.

An estimated 0.02Mm³ of voids or fill from historic underground workings are contained within the modeled pit extension.



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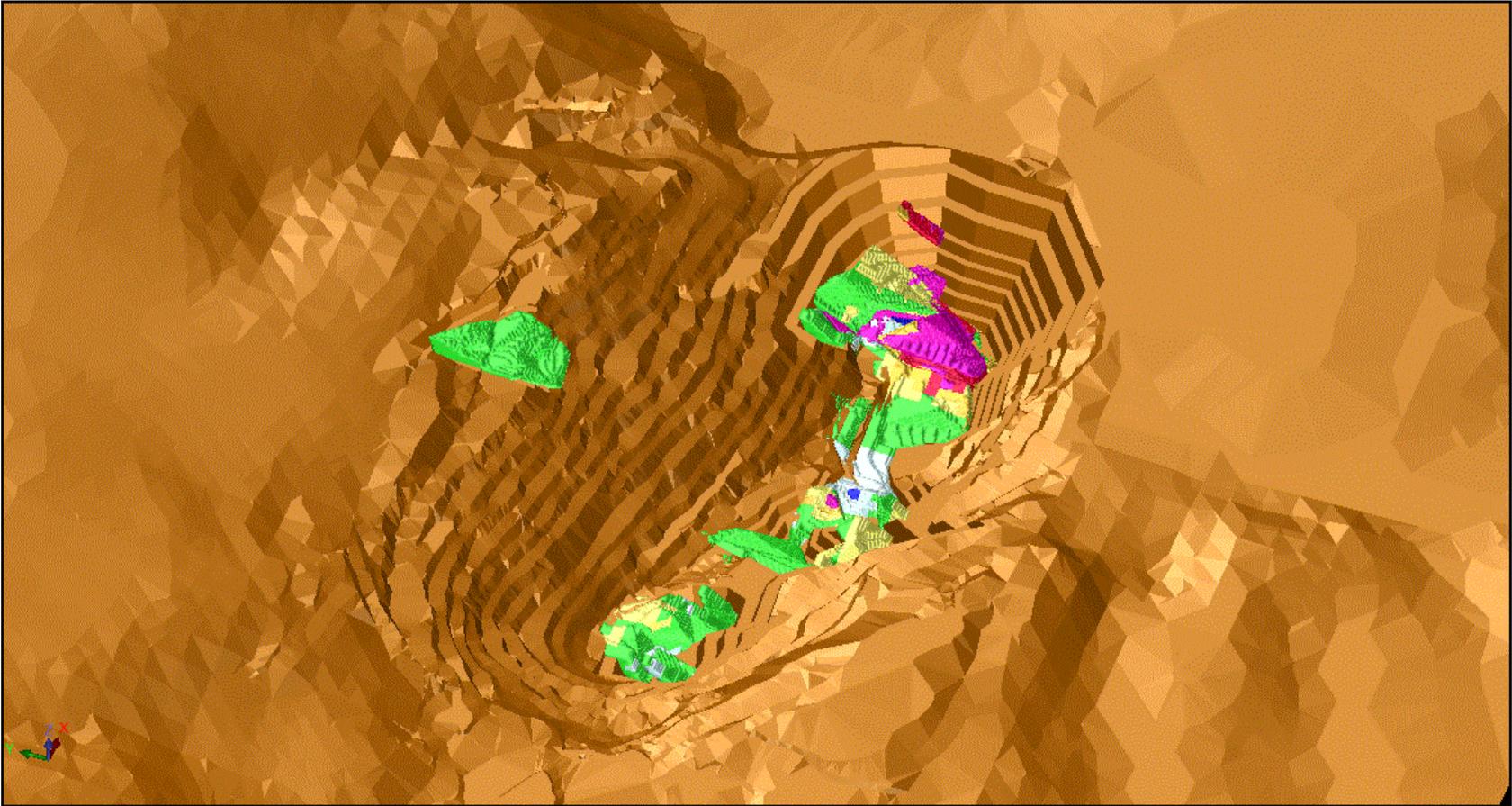


Figure 2. View of conceptual pit extension looking east.

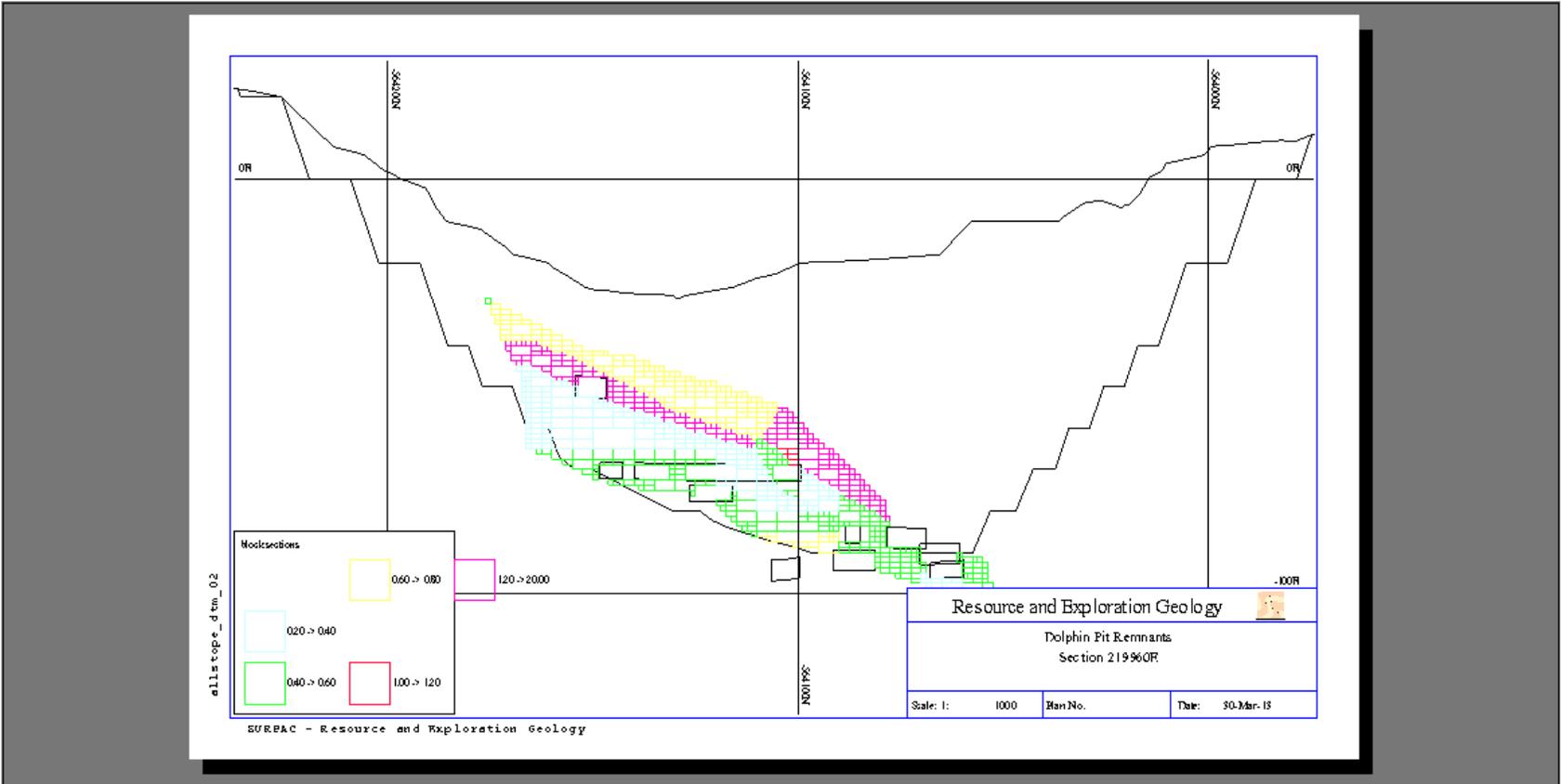


Figure 3. Section 219960E with existing pit, conceptual pit extension and contained mineralisation.

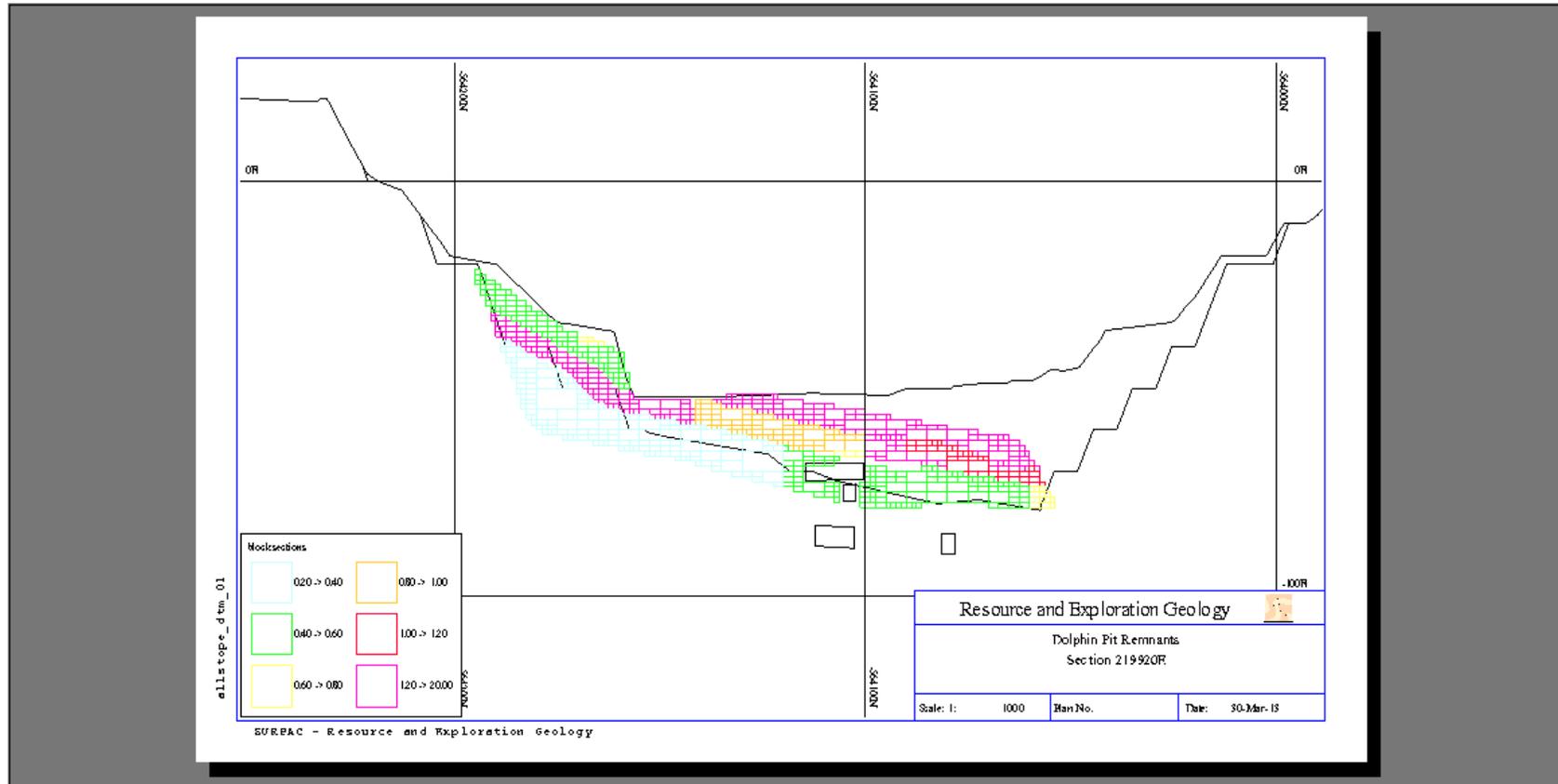


Figure 4. Section 219920E with existing pit, conceptual pit extension and contained mineralisation.

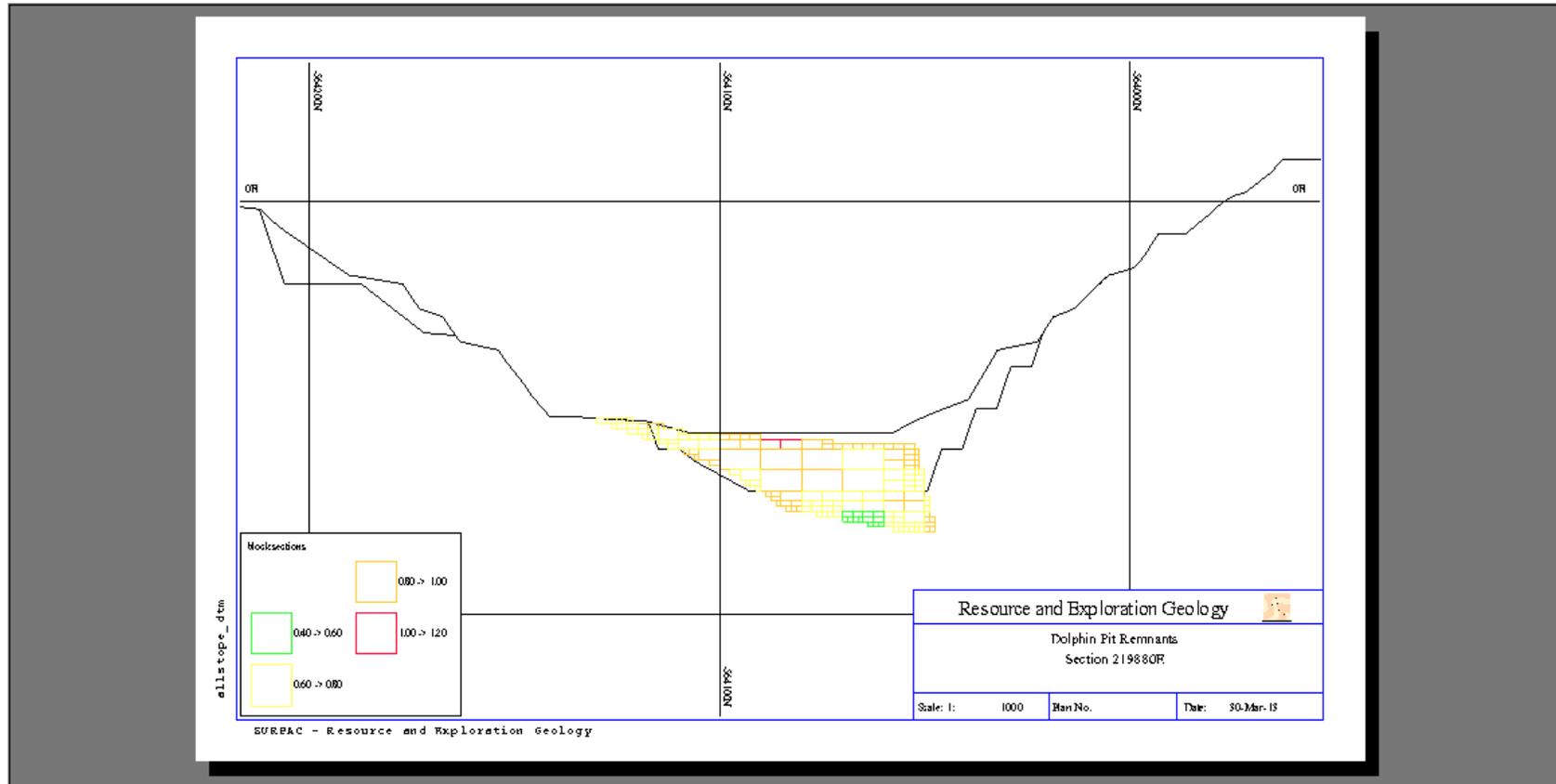


Figure 5. Section 219880E with existing pit, conceptual pit extension and contained mineralisation.

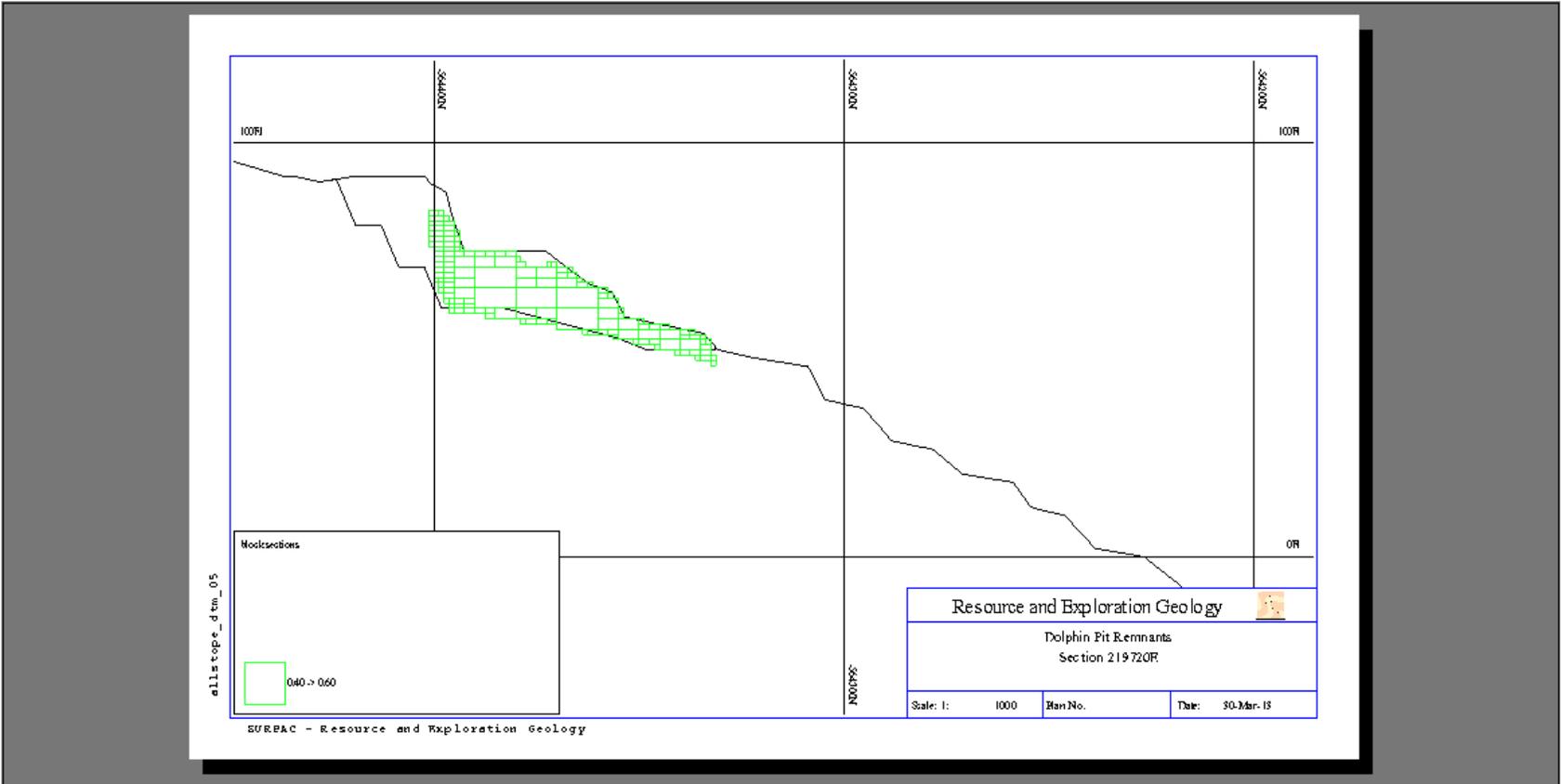


Figure 6. Section 219720E with existing pit, conceptual pit extension and contained mineralisation in faulted remnant in the north of the pit.



5 RECOMMENDATIONS

Recommendations for further work include:

- Adoption of geotechnical guidelines completed in the 2009 feasibility study for detailed pit design
- Minor infill drilling of the Inferred Resource in the west of the pit



ADDITIONAL NOTES

LIMITATIONS AND CONSENT

The report is provided to the King Island Scheelite Project in the context of a Mineral Resource Estimate and first pass open pit design and should not be used or relied upon for any other purpose.

This 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 the 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.

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COMPETENT PERSON AND JORC CODE

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

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STATEMENT OF INDEPENDENCE

Tim Callaghan has no material interest or entitlement in the securities or assets of the King Island Scheelite project or any associated companies.



References

- AMC, 2010. Dolphin and Bold Head Mines Scoping Study. *Unpublished company by AMC Consultants Pty Ltd for King Island Scheelite.*
- Callaghan, TJ, 2010. Dolphin Mine Mineral Resource Estimation. *Unpublished company report by REG for King Island Scheelite.*
- Callaghan, TJ, 2011. King Island Historic Tailings Mineral Resource Estimation. *Unpublished company report by REG for King Island Scheelite.*
- Fudge, A, 2011. Mining Inventory and Grade Tonnage Estimates from a 0.50% WO₃ Perimeter Data Set. *Unpublished company by Polberro for King Island Scheelite.*