



Tim Callaghan – Resource and Exploration Geology



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**BLYTHE RIVER PROJECT**

**ANNUAL REPORT**

**EL25/2009 HIGHCLERE**

**NW TASMANIA**

**Prepared for: Forward Mining Limited**

**Tim Callaghan, April 2012**

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## **MAP CONVENTIONS**

Coordinates in this report and in digital data associated with this report are recorded as AGD\_66 Zone 55.

RL's in this report are MSL.

Cross sections are drawn looking west



## **EXECUTIVE SUMMARY**

This report covers exploration activities completed on EL25/2009 Highclere. The EL forms part of a tenement package prospective for Magnetite and Tungsten mineralisation around the House Top Granite in NW Tasmania.

Exploration completed on the Highclere EL over the last 12 months includes compilation of historic exploration, reconnaissance geological mapping and the drilling of 4 diamond drillholes for 220.2m on the Highclere Iron deposit. All of the holes intersected surface iron mineralisation consisting of hematite and magnetite lumps and nodules within a clay matrix. The deposit is highly weathered to about 50m from surface consisting of indeterminate clay. Patchy magnetite-hematite mineralisation is present within the weathering profile probably representing remnant magnetite skarn. One hole H6 intersected significant magnetite skarn below the weathering profile. Assays were not available at the time of writing.

The proposed work program on EL25/2009 for 2012-13 includes further data compilation, geological mapping, interpretation and targeting. The majority of the work for 2012-13 will concentrate on the Kara No 2 deposits on EL's 18/2007 and 53/2007.



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## 1 INTRODUCTION

EL25/2009 Highclere is one of 6 current exploration licenses held by either Red River Resources Ltd (RVR) or Iron Mountain Ltd (IRM) and managed by Forward Mining Ltd (FWD). FWD currently has an option to purchase the tenements off RVR and IRM pending successful listing on the ASX. Tenement details are listed in Table 1.

<b>EL</b>	<b>Name</b>	<b>Held By</b>	<b>Size</b>	<b>Expiry</b>	<b>Comments</b>
EL6/2005	Cuprona	IRM	22km <sup>2</sup>	9/2011	Apply for Extension
EL15/2006	Camena	IRM	30km <sup>2</sup>	6/2011	Apply for Extension
EL25/2009	Highclere	RVR	33km <sup>2</sup>	5/2015	4 years remaining
EL35/2006	Hampshire 1	RVR	89km <sup>2</sup>	2/2012	Expires early 2012
EL18/2007	Hampshire 2	RVR	103km <sup>2</sup>	7/2012	Expires mid 2012
EL53/2007	Mt Everett	IRM	47km <sup>2</sup>	12/2012	2 years remaining

Permission to submit a combined annual report for all tenements in the Blythe Project was granted on 10<sup>th</sup> June 2009, with EL 25/2009 being granted on 24<sup>th</sup> May 2010 and added to the reporting area. The board of FWD decided to return to separate annual reports for the tenements in early 2012. This report contains information on exploration activities completed on EL35/2006 which have been partially reported in the Combined Annual Report for the district submitted in November 2011 (Callaghan, 2011).

Five of the six tenements are nearing the end of the term of tenure and will require terms of extension and diligent commitment to work programs. The majority of the work completed over the last year was focused on EL18/2007 Hampshire 2. EL25/2009 was picked up under Mineral Resources Exploration Area Tender process. The work commitment of this EL is due for completion in May 2012.

The Blythe River Iron Project (BRIP) consists of a number of small to medium size magnetite skarn deposits located in NW Tasmania, approximately 30km south of Burnie (Figure 1 and 2). Exploration is focused on resource delineation of semi massive to massive magnetite deposits to provide a resource base for a magnetite mining operation for the iron ore market.

The Highclere EL hosts the Highclere Iron deposit, a magnetite skarn similar to the Kara skarns located further south.



## 2 REGIONAL GEOLOGY

The Blythe River Iron Project is located on the western margin of the Dial Range Trough and is underlain by lithologies of the Late Proterozoic Oonah Formation, Owen Group Siliciclastics, Gordon Group Limestone, Devonian Granites and Tertiary Basalt (Figure 1). The Dial Trough is a structurally interesting basin that includes a possible Northern Extension of the Hellyer Fault, and significant basin bounding faults on the western and eastern sides. The Devonian post orogenic Husetop Granite dominates the geology to the south of the project area and is considered to underlie much of the southern Dial Trough. The Dial Trough has been poorly mapped and stratigraphic correlations are uncertain for many units.

### *Oonah Formation*

The oldest rocks in the district are the Proterozoic Oonah formation, consisting of poly-deformed quartzwacke, siltstone and pelite with lesser dolerite intrusives. These are overlain by a sequence of pelite-carbonate with minor mafic volcanics and conglomerate. This association is host to replacement deposits at Mt Bischoff and near Zeehan and consequently represents a potential host for similar styles of skarn mineralisation.

### *Mt Read Volcanics*

Mt Read Volcanic associations have been correlated with the felsic volcanoclastics of the Western Volcano-sedimentary sequence and the Tyndall Group quartz-feldspar phyrlic volcanoclastics.

### *Owen Group*

The Late Cambrian to Ordovician Owen Group overlies the Mt Read Volcanics and is comprised dominantly of siliciclastic conglomerate and sandstone. Locally volcanic derived conglomerates are associated with basal members. The Moina Sandstone, comprised of coarse to fine siliciclastic sandstone with minor intercalated conglomerate is the uppermost siliciclastic unit of the Owen Group and has a gradational contact with the overlying Gordon Group.

### *Gordon Group Limestone*

Conformably overlying the Owen Group is the Gordon Group limestone and dolomite sequence which is the host of the Kara district magnetite skarns. The stratigraphic thickness of the limestone is regionally variable ranging between 50-1000m.

### *Husetop Granite*

The Husetop granite outcrops in much of the Blythe River Prospect and is believed to extend below much of the area (Leaman, 1993). Leaman concludes that the Husetop granite is anomalously dense and highly magnetic, which may explain the abundance of iron metasomatism in the district. The granite is responsible for massive Magnetite-Sn-WO<sub>3</sub> mineralisation of the Kara District. The association of Tasmanian Devonian granites with Magnetite, Sn-WO<sub>3</sub>, Pb-Zn-Ag and Au mineralisation is well documented.



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### *Tertiary Basalt*

Basaltic flows are widespread throughout the Blythe River Iron Project area, flooding Tertiary palaeo-topographic lows. The basalts vary widely in thickness and frequently have a high magnetic susceptibility creating difficulties for magnetite exploration below basaltic cover. Recent resource and exploration drilling at the Kara Mine indicates that the magnetite skarn extends below basalt cover.

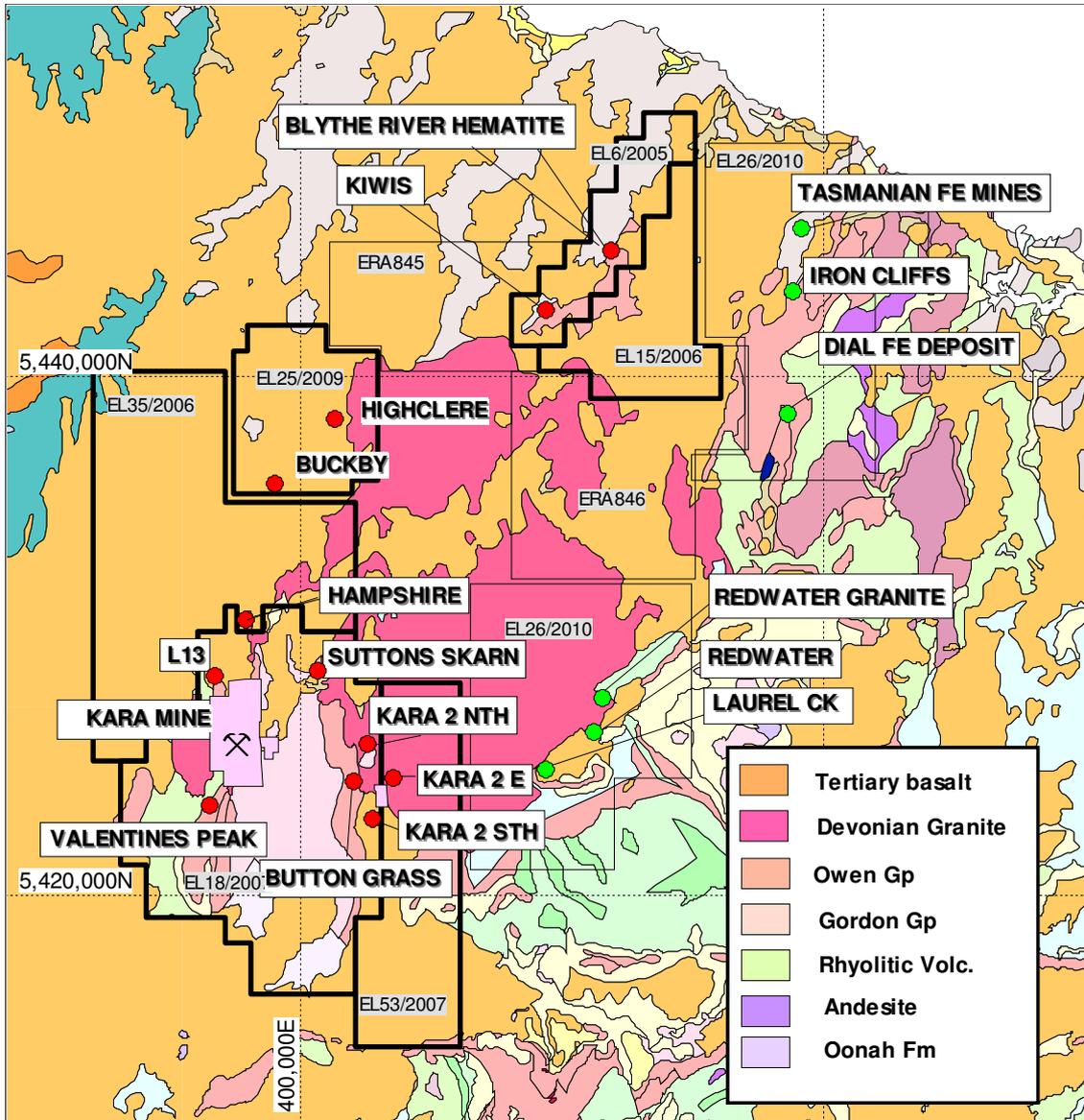
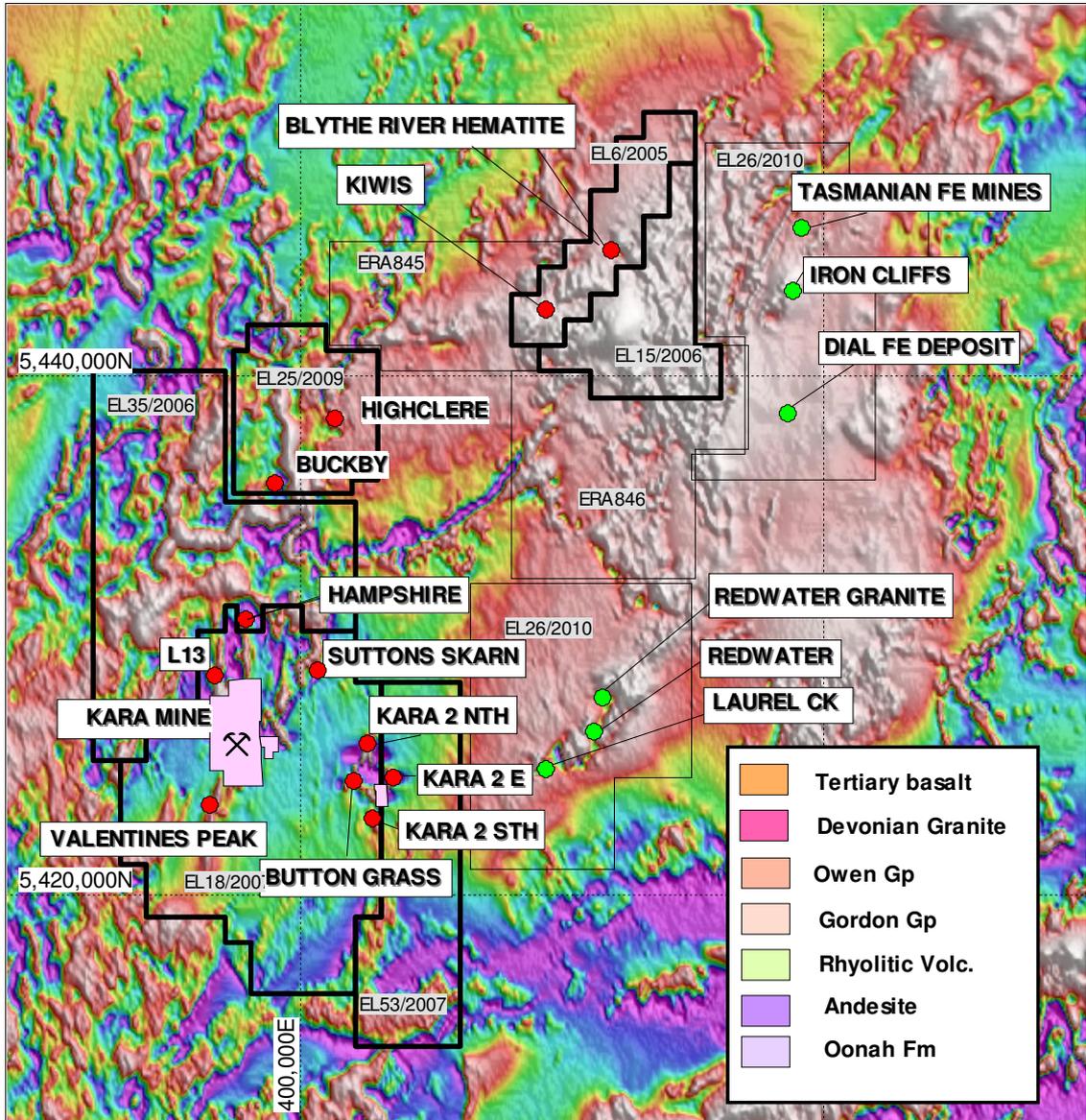


Figure 1. Blythe River Project location, Fe Prospects and MRT 250k Geology. Red dots are Blythe Project Fe prospects, green dots are other regional Fe Prospects.





### 3 EXPLORATION HISTORY

The Tasmanian Mines department assessed the deposit for its iron ore potential in the early 1960's completing an aeromagnetic survey culminating in the drilling of 4 diamond drill holes in 1964. The drillholes intersected nodules and lenses of hematite-magnetite mineralisation hosted in limonitic clay. The Mines Department holes did not appear to extend to the granite basement, most ending at less than 30m depth. Analysis of the Mines department core has returned high grade iron from a mixture of hematite and magnetite mineralisation:

H1	1.8 – 25.0m	23.2m @ 41.2 % Fe
H2	0.0 – 26.5m	26.5m @ 58.8 % Fe
H3	1.8 – 25.9m	24.1m @ 45.6 % Fe
H4	0.0 – 21.0	21.0m @ 43.3 % Fe

Iron assays from the Mines department holes are encouraging however the recoveries were poor suggesting some of the clay may have washed away, biasing the iron analyses.

The prospect has been explored for its Sn-WO<sub>3</sub> potential by ANZECO in the 1970's (Brandt, 1973, 1974), Comalco in the late 1970's (Askins, 1978 and 1980) and Shell in the 1980's (Lawton, 1982).

ANZECO completed systematic grid based ground magnetics, and mapping surveys over the prospect and re-assayed the Mines Department core for Sn-WO<sub>3</sub> with only minor tungsten mineralisation observed (Brandt, 1974). Most of the drill core was re-logged as limonitic clay. A series of short auger holes were drilled, most intersecting highly weathered granite with only 6 holes intersecting highly weathered calc-silicate skarn with minor hematite-magnetite mineralisation. The holes were assayed for WO<sub>3</sub> and Sn but not Fe. Minor localised Scheelite mineralisation has been described at the prospect (Brandt, 1974).

They concluded that the deposit consists of small roof pendants of highly weathered calc-silicate skarn with minor magnetite mineralisation.

Comalco (Askins, 1978) assessed the potential of the northern part of the Highclere Iron deposit magnetic anomaly with ground based gravity, magnetics and IP. They also re-logged the Mines Department core noting the very low recoveries. They concluded that the discontinuous nature of the magnetic and chargeability - resistivity anomalies suggest there is very limited potential for significant mineralisation from the northern part of the Highclere Iron deposit.

Most of Comalco's work concentrated on Buckby's Prospect located several Kilometers southwest of the Highclere Iron deposit. They completed a similar program of ground based magnetics, IP, soil sampling and geological mapping follow up by diamond drilling. The drillholes intersected a thick sequence of dolomitic limestone and calcareous sediments, variable metasomatised to diopside skarn with minor magnetite



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and pyrrhotite skarn. All holes ended in granite basement. No significant Sn-WO<sub>3</sub> or Fe mineralisation was observed.

Shell/Billiton re-assessed the magnetics of the district, targeting Kara style magnetite skarn mineralisation. They drilled several percussion holes into magnetic anomalies in basalt and one extra hole into the Highclere Iron deposit. They concluded that the magnetic signature of the basalt cover obstructed the delineation of magnetite skarn and discontinued work in the district.

Drill collars from the historic holes have not been surveyed and their locations are imprecise. Historic drill locations have been derived from old paper plans registered in Mapinfo. Collar locations will have an estimated error of 20m.



## 4 WORK COMPLETED APRIL 2011 – APRIL 2012

Work completed specifically on EL25/2009 included reconnaissance geological work, compilation of historic data, targeting and diamond drilling. Historical drilling records are poor with none of the historic drill collars surveyed. One historic hole collar, PRD H1 was located but the original Mines Department holes were not. There approximate locations have been derived by locating ANZECO maps on known road intersections and fence lines. Historic drill collars are estimated to have an error in the order of 30m.

### 4.1 DRILLING

A drilling program was designed to provide first pass information on the quality and depth of the iron mineralisation on the Highclere Magnetite-Hematite skarn.

The prospect is located on private property owned by the Boland family. The property runs beef cattle with the prospect covered by dominantly pasture with minor re-growth woodland.

Van Dieman Holdings Pty Ltd were contracted to complete the program with a skid mounted LY44 drill rig operating on a single 10 hour shift 5 days a week. Rig moves used an excavator provided by Grant Westcombe earthmoving contractors. All holes were drilled triple tube to maximize recoveries which were generally poor in historic drilling campaigns.

Four holes were completed, two testing the skarns close to outcropping mineralisation and historic Mines Department holes (H5 and H6) and two testing the northern extension of the magnetic anomaly (H6 and H8). Hole locations are displayed in Figures 4 and 5 and located in Table 2. Holes were located by hand held GPS. Drill logs are located in Appendix 1. Drill hole sections are displayed in Figures 6, 7 and 8.

**Table 2. Highclere drillhole locations (historic hole locations are approximate).**

Prospect	Hole Id	E_AMG	N_AMG	RL	Depth	Dip	Azm	Company	Date	Report	Hole_Type
Highclere	H1	401466	5438190	395	28.5	-90	0	MRT		1964 78_1313	diamond
Highclere	H2	401195	5438070	395	36.6	-90	0	MRT		1964 78_1313	diamond
Highclere	H3	401250	5438100	395	27.3	-90	0	MRT		1964 78_1313	diamond
Highclere	H4	401435	5438170	395	21.2	-52	105	MRT		1964 78_1313	diamond
Highclere	PDHH1	401443	5438144	450	102	-90	0	Shell		1982 82-1878	Percussion
Highclere	H5	401465	5438121	395	42	-90	0	Forward		2012	diamond
Highclere	H6	401363	5438157	392	86.7	-90	0	Forward		2012	diamond
Highclere	H7	401230	5438028	395	31.5	-90	0	Forward		2012	diamond
Highclere	H8	401380	5438240	385	60	-90	0	Forward		2012	diamond

Triple tube coring resulted in very good core recoveries with the drillers taking a lot of care with core handling. Mineralised samples were split with a diamond saw or a putty knife on a one metre basis and sent to ALS for analysis. Assay results are pending at the time of reporting (April, 2012).

Drillhole H5 was located just south of outcropping hematite-magnetite mineralisation and 30-50m south of the estimated locations of historic drillholes H1, H4 and PDH H1. The



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percussion drill hole collar was located during siting of the rig. The hole intersected deeply weathered calc-silicate skarn with numerous nodules and zones of oxidised hematite-magnetite-limonite. The iron mineralisation was sporadic over the top 24m varying between 5-80% of the recovered core. The hole intersected weathered granite from 25.9m to the end of hole depth at 42m.

Drillhole H6 was sited on a strong magnetic anomaly 50m north of outcropping mineralisation. The hole intersected deeply weathered calc-silicate skarn with lesser lenses and bands of oxidised magnetite-hematite hosted in red to yellow clay to a depth of 53m. The hole then intersected fresh magnetite-actinolite skarn between 53 and 66.9m with estimated magnetite contents between 30 and 50%. The hole intersected granite from 66.9 to the end of hole at 89.7m.

Drillhole H7 was designed to test the south-western end of the skarn adjacent to outcropping hematite-magnetite mineralisation. The hole intersected a thin layer of oxidised hematite-magnetite-limonite from surface to 3.6m before intersecting deeply weathered granite.

Drillhole H8 was designed to test the northern extension of the skarn approximately 75m north of H6. The hole intersected mostly extremely weathered clay after indeterminate calc-silicate skarn from surface to the end of hole at 60m. Only minor extremely oxidised iron mineralisation was intersected between 8.7 and 14.4m.



## **5 LOCAL GEOLOGY**

The geology of EL25/2006 is dominated by Tertiary basalt flows covering most of the Paleozoic Geology. Several basement windows expose granite intrusions with adjacent skarn mineralisation associated with metasomatised Ordovician Gordon Group calcareous sediments or Cambrian Dundas Group calcareous volcanoclastics. Two prospective skarns have been identified historically including the Highclere Iron deposit and Buckby's Prospect. Both prospects are hosted in metasomatised calcareous sediments in direct contact with the Housetop Granite.

### **5.1 HIGHCLERE IRON DEPOSIT**

The Highclere Iron deposit is located approximately 2km east of the town of Highclere. The prospect consists of outcropping magnetite-hematite mineralisation associated with metasomatised calcareous sediments occurring as a shallow, remnant roof pendant overlying Devonian granite intrusions.

The geology of the prospect is dominated by late Tertiary basalt flows which cover much of the underlying Palaeozoic lithologies (Figure 1). The basement consists of the Housetop Granite batholith and metasomatised remnants of Gordon Group calcareous sediments variably metasomatised to calc-silicate and magnetite skarn. Outcropping hematite and magnetite mineralisation occurs on several ridge tops as rubble outcrop and boulder deposits over an area of about 250-300m. The deposits are highly weathered with depth of weathering in excess of 50m. The host rock is composed entirely of indeterminate red and yellow clays presumably after calc-silicate skarn. Most of the Hematite-Magnetite mineralisation consists of a surficial lag of boulders and nodules within a red-orange limonitic clay matrix. The surface iron deposits can extend to over 10m depth. Only one recent drillhole H6 intersected fresh magnetite mineralisation hosted in actinolite skarn in direct contact with un-weathered granite. Iron mineralisation consists of multiple iron oxide species including magnetite, hematite, limonite and goethite.

The roof pendant has been interpreted as a synclinal structure extending 3-400m in a north-easterly direction with the magnetite skarn dipping approximately 45 degrees north. The deposit has been defined by eight diamond drill holes, one percussion hole and several shallow auger holes from several exploration campaigns over the last 50 years. Historic hole collars are poorly located.

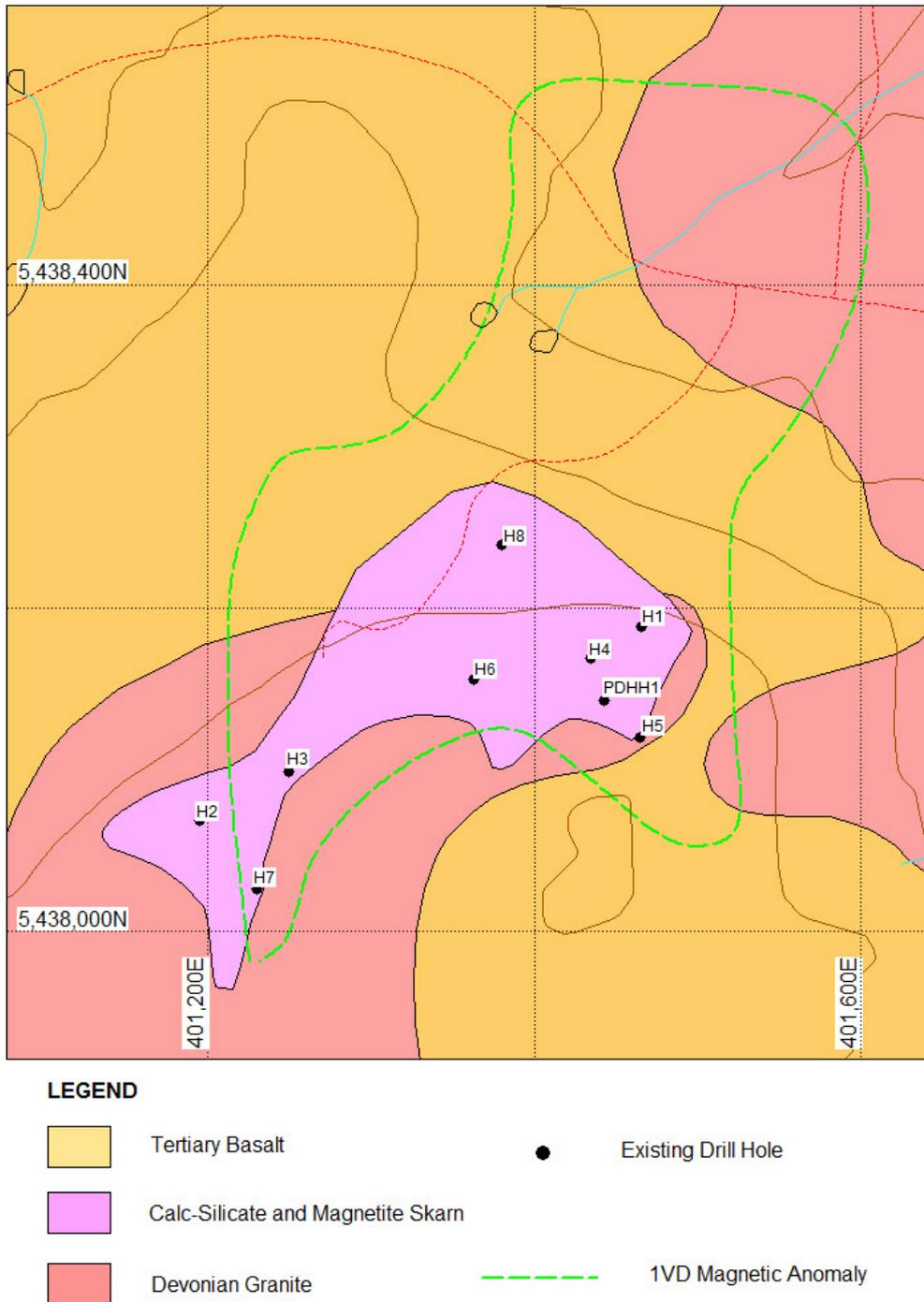


Figure 3. Highclere Geology.

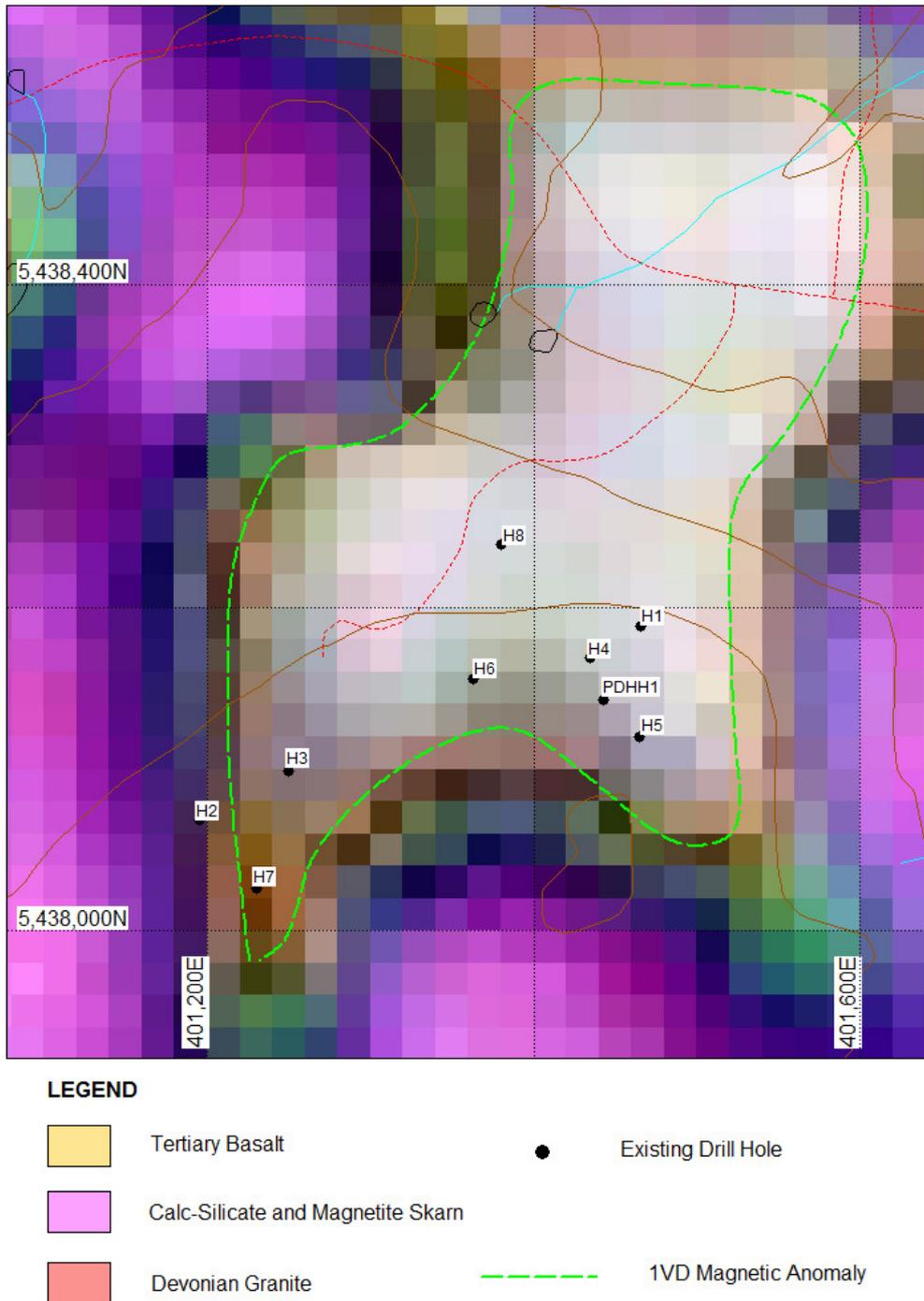


Figure 4. Highclere 1vd TMI



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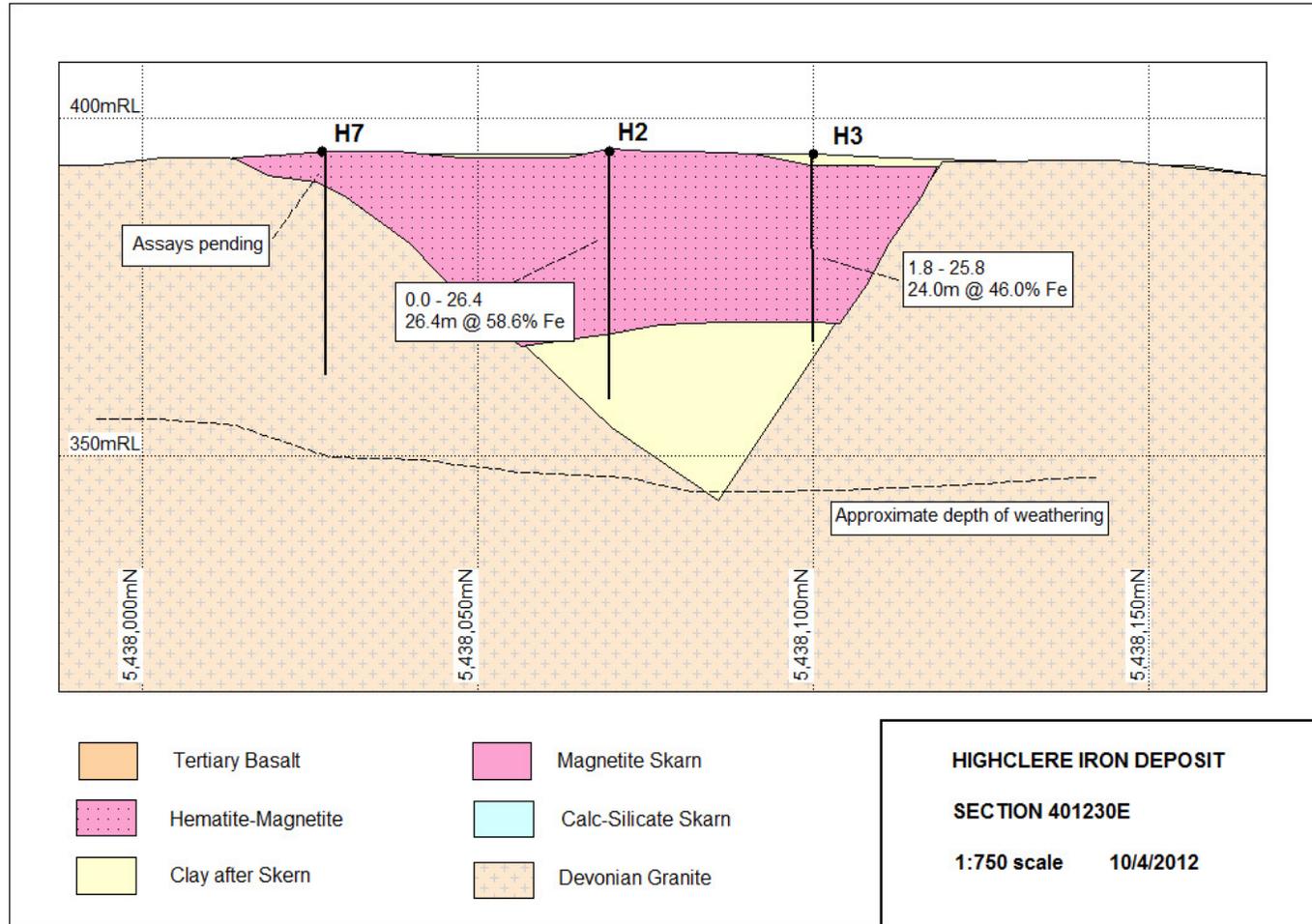


Figure 5. Highclere Iron Deposit Section 401230E. Collar locations of H2 and H3 are approximate. Poor recoveries in H2 and H3 may have resulted in the Fe analyses reporting high.



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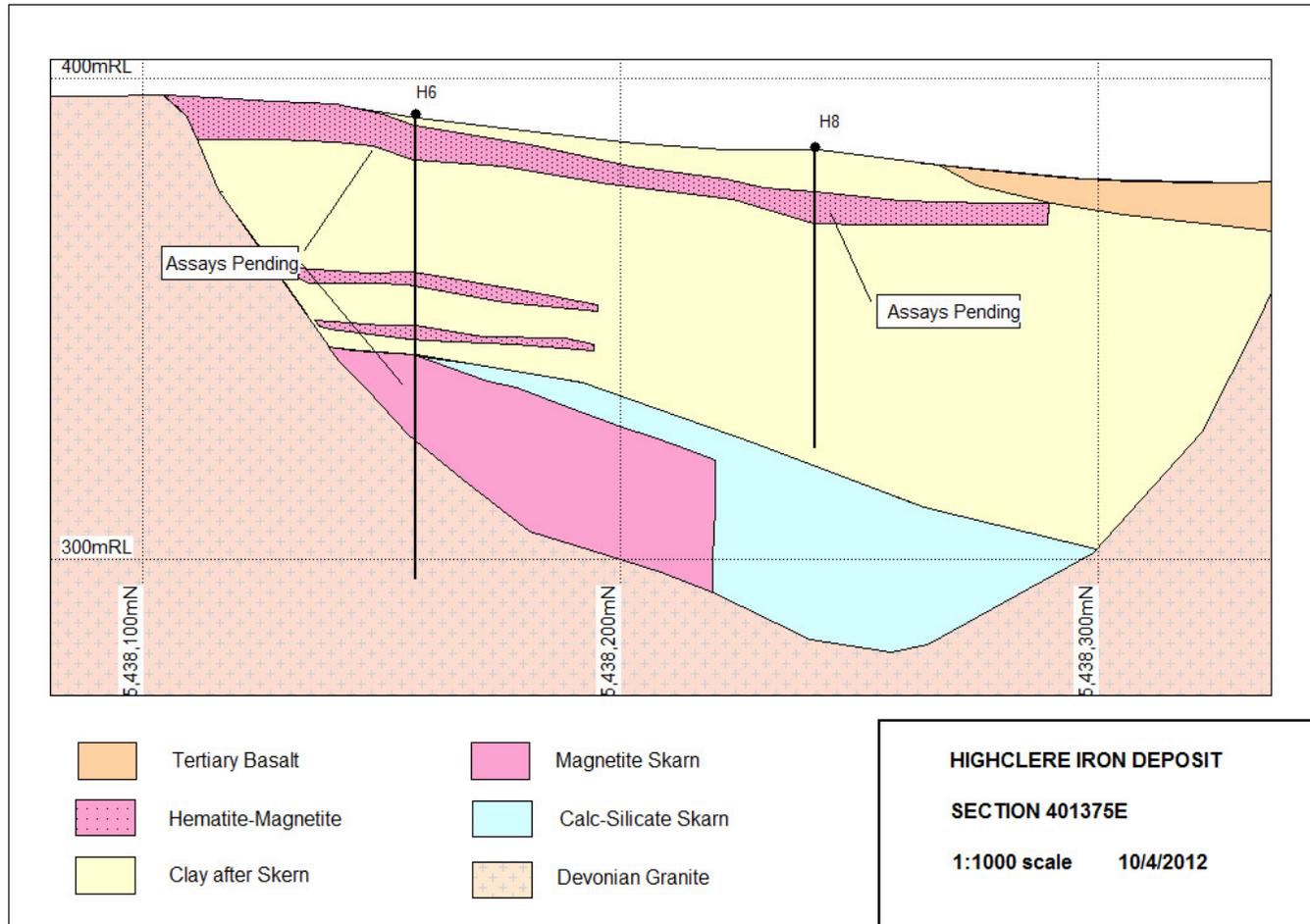
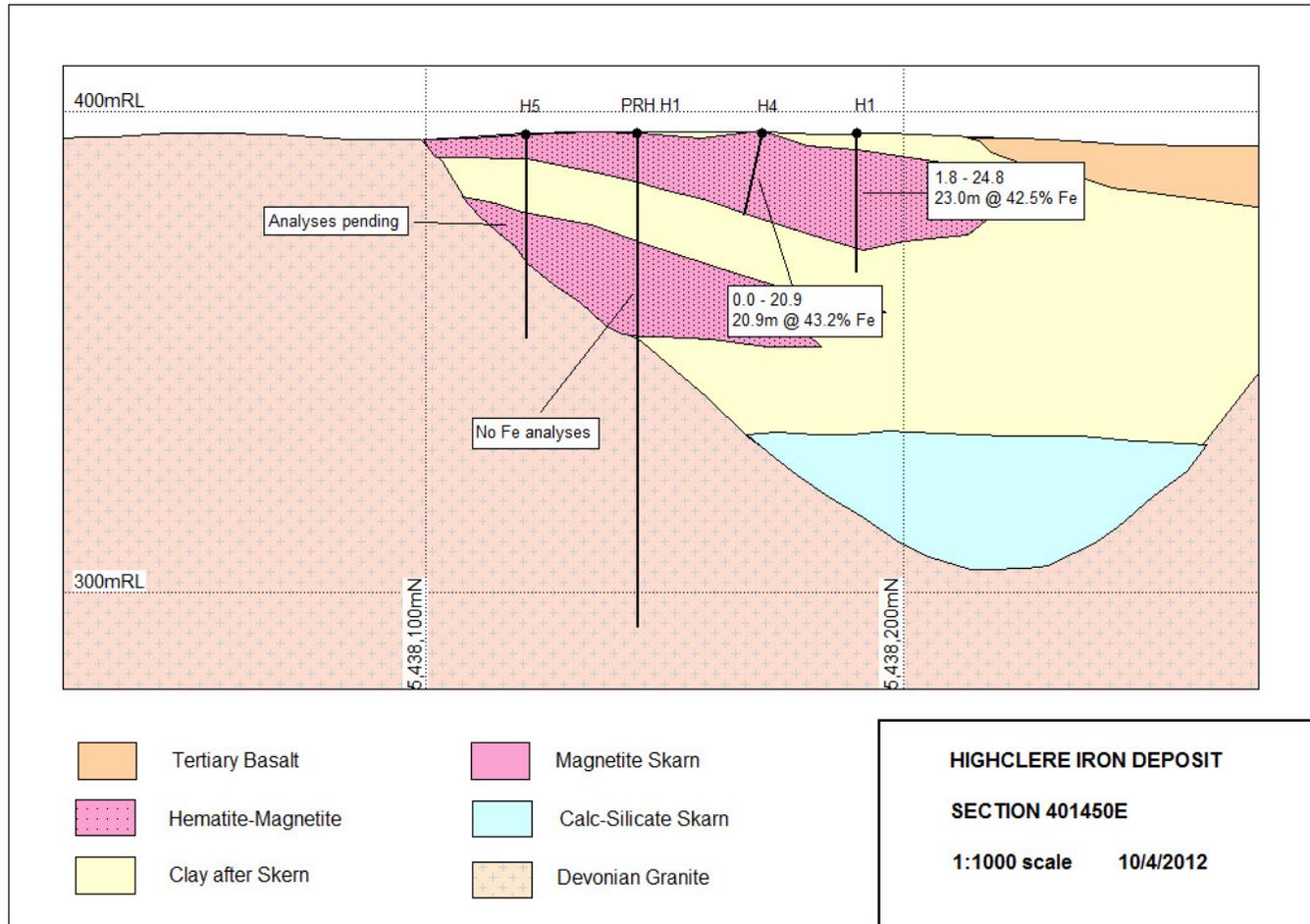


Figure 6. Highclere Iron Deposit Section 401375E.



**Figure 7. Highclere Iron Deposit Section 401450E. Collar locations of H1 and H4 are approximate. Poor recoveries in H1 and H4 may have resulted in the Fe analyses reporting high.**



## 5.2 BUCKBY'S PROSPECT

Buckby's Prospect was identified by Comalco in the 1980's. The geology of the prospect is dominated by Tertiary basalt flows covering most of the earlier lithologies. A window through the basalt reveals a basement of Cambrian Dundas Group dolomite and dolomitic conglomerate interbedded with acid volcanoclastics intruded by the Devonian Husetop Granite. The geology consists of north striking, moderately west dipping sediments and volcanics intruded by the Husetop Granite on the eastern margin. The dolomites have been variably metasomatised to phlogopite-diopside±magnetite±pyrrhotite skarn. The Cambrian carbonate in close proximity to a known tin-tungsten granite encouraged Shell and Comalco to explore the prospect for tin and tungsten mineralisation based on analogies with the Cleveland tin deposit or Dolphin Scheelite mines.

The outcropping Cambrian geology is characterised by a magnetic high of 400m by 100m length. Ground magnetic surveys indicate the anomaly is made up of several discrete highs of small size. Soil sampling surveys indicate the prospect to be anomalous in Cu, F and Sn supporting the exploration model of Comalco.

Comalco drilled several diamond drillholes and Shell drilled one into the prospect. Most drill holes intersected metasomatised dolomites with low level tin-tungsten mineralisation. Pyrrhotite bearing carbonates and magnetite skarn was intersected in drillholes KD5 and KD6. Sn and WO<sub>3</sub> analyses were low but considered to be anomalous.

The Exploration model employed by Comalco is valid. Further investigation of this style of mineralisation around the Husetop Granite is warranted. The extensive basalt cover will make exploration difficult.

## 5.3 OTHER

Several other magnetic anomalies were drilled at Nolan's Hill (KD1, KD2), south of Buckby's prospect (KD3) and in the Guide River (GRD1) by Comalco and Shell in the 1980's. The magnetic anomalies were found to be associated with magnetite bearing Tertiary Basalt and no further work is recommended.



## 6 DISCUSSION

The Highclere Iron Deposit is a small roof pendant of remnant calc-silicate skarn located in a synclinal structure over the Housetop Granite. Historic gravity, ground magnetic and IP surveys suggest it is of limited extent, possibly of the order of 300m strike length.

Limited drilling has identified deeply weathered clay after calc-silicate skarn near surface, containing irregular lenses and remnant lag deposits of oxidised hematite-magnetite-limonite. One drillhole has intersected un-weathered magnetite (H6) at more than 50m downhole. Assay results are pending for the recent drilling campaign. Historic Mines Department drilling returned high grade Fe assays from the surficial magnetite-hematite mineralisation but recoveries were very poor suggesting some of the clays may have washed away during drilling, upgrading the nodular iron mineralisation. Triple tube coring employed in the recent program ensured good recoveries, providing a true sample of the oxidised mineralisation.

The magnetic anomaly extends further north beneath basalt cover. Drillhole H8 did not intersect any significant mineralisation below the top 14m. It is likely that the magnetic anomaly represents down slope creep of magnetite lag deposits. Magnetite pebbles were noted in the soil profile. An extra drill hole or two testing the anomaly below the basalt cover is warranted if further work is to proceed on the deposit.

Historic Tin and Tungsten assays are generally low. No fluorescent mineralisation was observed in the recent drill core.

The Highclere Iron Deposit has the potential to host a resource of 1-2Mt. The variable quality and species of iron oxides suggests beneficiation will not result in good recoveries of magnetite only. The lack of significant magnetic anomalies in the district suggests there is limited potential to find additional resources. Given the limited size, high degree of weathering and quality of the deposit this should be regarded as a lower priority target for follow up work compared to the Kara No2 deposits.



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## **7 PROPOSED WORK PROGRAM**

A 2 year exploration program for the Blythe River Project involving a full expenditure of \$1.9M was proposed to the board of Forward Mining. Most of the proposed work for 2012 was likely to occur on EL's 18/2007 and 53/2007 involving definition drilling and completion of a feasibility study on the Kara No2 skarns.

Work planned for EL25/2009 for 2012 - 2013 involves further geological reconnaissance mapping, historic data compilation, interpretation and target generation. Further exploration drilling may be warranted after higher priority targets in the district have been investigated.



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## **8 ENVIRONMENTAL**

All drill sites were rehabilitated after completion of the program. Farm water was used for initiating drilling and then water was recycled from sumps. All sumps were backfilled on completion of drilling. The Boland family were compensated for loss of production from the paddocks used.



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## 9 EXPENDITURE

Expenditure during the April 2011 to April 2012 period is anticipated to be approximately \$80,000.



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## **ADDITIONAL NOTES**

### ***LIMITATIONS AND CONSENT***

The report is provided to Forward Mining Ltd in the context of an Annual Report 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 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.

### ***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.

### ***STATEMENT OF INDEPENDENCE***

Tim Callaghan has no material interest or entitlement in the securities or assets of the Forward Mining Ltd or any associated companies.



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## **Appendix 1**

### **Drill logs**



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**Forward Mining LTD  
DRILL HOLE LOGGING CODES**

**ALTERATION**

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

**GRAINSIZE**

UF	Ultra fine-grained
VF	Very fine-grained
FG	Fine-grained
MG	Medium-grained
CG	Coarse-grained
VC	Very coarse-grained

**Weathering**

X	Extreme Weathering and Loss
W	Weathered
Y	Partially weathered
F	Fresh



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### COLOUR/SHADE

Colours can be further qualified by shade, using a 1 to 5 (lightest to darkest) scale.

Example : B1 = lightest brown; B5 = very dark brown

B	Brown	R	Red	Metallic	K	Gold
C	Cream	T	Tan		S	Silver
G	Green	W	White		X	Brass
M	Mottled	Y	Yellow		Z	Bronze
N	Black					
O	Orange					
P	Purple					

### DOWN HOLE CONTACT

Nature of down hole contact of geological unit

BD	Brecciated
BR	Broken
CM	Chilled margin
DF	Diffuse
FT	Faulted
GC	Gradational colour change
GD	Gradational
GL	Gradational lithological change
IN	Intrusive
NR	Not recovered (core loss zone)
SI	Sharp irregular
SP	Sharp planar
UN	Unconformity

### CRYSTAL FORM

Crystal form of dominant minerals

AM	Amorphous (no crystalline structure)
XD	Crystallised (well developed crystals)
XL	Crystalline (imperfect crystal grain aggregates)
CX	Crypto-crystalline (traces of crystal structure only)
PX	Partly crystalline



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## FORWARD MINING LTD DRILL HOLE LOGGING CODES

### GEOTECHNICAL LOGGING

Physical state of core logged for calculation of rock mass quality classification indices  
(**Q and Q-PRIME indices**)

<b>Intact rock strength</b>	<b>Code</b>	<b>UCS</b>	<b>Strength Test</b>
Extremely weak	EW	0.5 Mpa	Core can be indented by thumbnail
Very weak	VW		Core crumbles
Weak	W	2.5 Mpa	Core can be cut with knife
Moderately strong	MS	37.5 Mpa	Core indents when struck with hammer
Strong	S	75 Mpa	Core breaks from single blow with hammer
Very strong	VS	100 Mpa	Core breaks from multiple blows with hammer
Extremely strong	ES	150 Mpa	Core only chips from multiple blows with hammer

<b>Roughness type</b>	<b>Code</b>	<b>Jr</b>
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

<b>No. of defect sets</b>	<b>Code</b>	<b>Jn</b>
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

<b>Joint alteration/infill</b>	<b>Code</b>	<b>Ja</b>
Default	0	1
Carbonate	CB	2
Chlorite	CH	3
Clay	CY	5
Clean	X	1
Hematite	HE	2
Iron oxides	FE	1.5
Quartz	QZ	1
Sericite	SE	3
Serpentine	SP	5













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Project	Prospect	BHID	From	To	Magus
Blythe	Highclere	H6	0.0	1.5	0.000
Blythe	Highclere	H6	1.5	2.2	35.700
Blythe	Highclere	H6	2.2	3.0	37.000
Blythe	Highclere	H6	3.0	4.5	40.000
Blythe	Highclere	H6	4.5	6.0	129.000
Blythe	Highclere	H6	6.0	7.5	281.000
Blythe	Highclere	H6	7.5	9.0	41.000
Blythe	Highclere	H6	9.0	10.5	9.160
Blythe	Highclere	H6	10.5	12.0	8.000
Blythe	Highclere	H6	12.0	13.5	3.760
Blythe	Highclere	H6	13.5	15.0	0.000
Blythe	Highclere	H6	15.0	16.5	98.000
Blythe	Highclere	H6	16.5	18.0	-0.100
Blythe	Highclere	H6	18.0	19.5	-0.200
Blythe	Highclere	H6	19.5	21.0	-0.200
Blythe	Highclere	H6	21.0	22.5	-0.150
Blythe	Highclere	H6	22.5	24.0	-0.040
Blythe	Highclere	H6	24.0	25.5	-0.080
Blythe	Highclere	H6	25.5	27.0	-0.100
Blythe	Highclere	H6	27.0	28.5	0.040
Blythe	Highclere	H6	28.5	30.0	21.000
Blythe	Highclere	H6	30.0	31.5	-0.070
Blythe	Highclere	H6	31.5	33.0	130.000
Blythe	Highclere	H6	33.0	34.3	142.000
Blythe	Highclere	H6	34.3	35.9	87.000
Blythe	Highclere	H6	35.9	36.5	91.000
Blythe	Highclere	H6	36.5	37.8	-0.100
Blythe	Highclere	H6	37.8	39.0	-0.040
Blythe	Highclere	H6	39.0	40.5	-0.200
Blythe	Highclere	H6	40.5	42.0	-0.150
Blythe	Highclere	H6	42.0	43.5	133.000
Blythe	Highclere	H6	43.5	45.0	141.000
Blythe	Highclere	H6	45.0	46.5	126.800
Blythe	Highclere	H6	46.5	48.0	3.230
Blythe	Highclere	H6	48.0	49.5	8.000
Blythe	Highclere	H6	49.5	51.0	106.900
Blythe	Highclere	H6	51.0	53.0	180.700
Blythe	Highclere	H6	53.0	54.0	568.000
Blythe	Highclere	H6	54.0	55.5	225.500
Blythe	Highclere	H6	55.5	58.1	999.000
Blythe	Highclere	H6	58.1	59.7	769.000
Blythe	Highclere	H6	59.7	62.9	588.000
Blythe	Highclere	H6	62.9	64.1	999.000
Blythe	Highclere	H6	64.1	67.2	609.000
Blythe	Highclere	H6	67.2	70.3	-0.070
Blythe	Highclere	H6	70.3	72.3	-0.110











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<b>Project</b>	<b>Prospect</b>	<b>BHID</b>	<b>From</b>	<b>To</b>	<b>MagSus</b>
Blythe	Highclere	H7	0.0	1.5	0.000
Blythe	Highclere	H7	1.5	3.6	44.730
Blythe	Highclere	H7	3.6	4.7	0.070
Blythe	Highclere	H7	4.7	6.0	-0.069
Blythe	Highclere	H7	6.0	7.8	0.039
Blythe	Highclere	H7	7.8	9.0	0.022
Blythe	Highclere	H7	9.0	10.5	-0.400
Blythe	Highclere	H7	10.5	12.0	0.030
Blythe	Highclere	H7	12.0	13.5	9.460
Blythe	Highclere	H7	12.0	15.0	0.487
Blythe	Highclere	H7	13.5	16.5	0.083
Blythe	Highclere	H7	15.0	18.0	0.018
Blythe	Highclere	H7	16.5	19.5	0.068
Blythe	Highclere	H7	18.0	21.0	0.056
Blythe	Highclere	H7	19.5	22.5	0.033







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Forward Mining Ltd - Drill Hole Geotechnical Log																				
Project	Prospect	BHID	From	To	Recovery (m)	Lithology	Weathering	Alteration	Strength	Core > 10cm	RQD (%)	No. defects	Defect sets	Defect type	BCA struct 1	BCA struct 2	Roughness	Infill	Description/comments	
Blythe	Highclere	H8	0.0	2.0	0.0	LOSS	X	Cy	W											No Core recovery
Blythe	Highclere	H8	2.0	3.0	1.0	CLAY	X	Cy	W											Deeply weathered clay
Blythe	Highclere	H8	3.0	4.5	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	4.5	6.0	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	6.0	7.5	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	7.5	8.7	1.2	CLAY	X	Cy	W											
Blythe	Highclere	H8	8.7	10.3	1.6	SKMG	X	Cy	MS											Clay and ironstone.
Blythe	Highclere	H8	10.3	12.0	1.7	SKMG	X	Cy	MS											
Blythe	Highclere	H8	12.0	12.8	1.7	SKMG	X	Cy	MS											
Blythe	Highclere	H8	12.8	14.4	0.8	SKMG	X	Cy	MS											
Blythe	Highclere	H8	14.4	16.0	1.6	CLAY	X	Cy	W											
Blythe	Highclere	H8	16.0	17.5	1.6	CLAY	X	Cy	W											
Blythe	Highclere	H8	17.5	18.9	0.8	CLAY	X	Cy	W											
Blythe	Highclere	H8	18.9	19.5	0.4	CLAY	X	Cy	W											
Blythe	Highclere	H8	19.5	21.0	1.2	CLAY	X	Cy	W											
Blythe	Highclere	H8	21.0	22.5	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	22.5	24.0	1.4	CLAY	X	Cy	W											
Blythe	Highclere	H8	24.0	25.5	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	25.5	27.0	0.4	CLAY	X	Cy	W											
Blythe	Highclere	H8	27.0	28.5	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	28.5	30.0	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	30.0	31.5	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	31.5	33.0	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	33.0	34.5	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	34.5	36.0	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	36.0	37.5	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	37.5	39.0	1.5	CLAY	X	Cy	W											
Blythe	Highclere	H8	39.0	40.5	1.5	CLAY	X	Cy	W											



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Project	Prospect	BHID	From	To	Magus
Blythe	Highclere	H8	0.0	2.0	0.000
Blythe	Highclere	H8	2.0	3.0	1.070
Blythe	Highclere	H8	3.0	4.5	0.802
Blythe	Highclere	H8	4.5	6.0	-0.160
Blythe	Highclere	H8	6.0	7.5	0.086
Blythe	Highclere	H8	7.5	8.7	0.033
Blythe	Highclere	H8	8.7	10.3	1.070
Blythe	Highclere	H8	10.3	12.0	0.869
Blythe	Highclere	H8	12.0	12.8	13.280
Blythe	Highclere	H8	12.8	14.4	11.180
Blythe	Highclere	H8	14.4	16.0	0.430
Blythe	Highclere	H8	16.0	17.5	0.917
Blythe	Highclere	H8	17.5	18.4	0.308
Blythe	Highclere	H8	18.4	19.5	0.340
Blythe	Highclere	H8	19.5	21.0	0.350
Blythe	Highclere	H8	21.0	22.5	0.268
Blythe	Highclere	H8	22.5	24.0	0.575
Blythe	Highclere	H8	24.0	25.5	0.774
Blythe	Highclere	H8	25.5	27.0	1.669
Blythe	Highclere	H8	27.0	28.5	0.358
Blythe	Highclere	H8	28.5	30.0	0.344
Blythe	Highclere	H8	30.0	31.5	0.348
Blythe	Highclere	H8	31.5	33.0	0.112
Blythe	Highclere	H8	33.0	34.5	0.234
Blythe	Highclere	H8	34.5	36.0	0.058
Blythe	Highclere	H8	36.0	37.5	-0.102
Blythe	Highclere	H8	37.5	39.0	-0.566
Blythe	Highclere	H8	39.0	40.5	0.060
Blythe	Highclere	H8	40.5	42.0	-0.596
Blythe	Highclere	H8	42.0	43.5	-0.334
Blythe	Highclere	H8	43.5	45.0	-0.487
Blythe	Highclere	H8	45.0	46.5	-0.242
Blythe	Highclere	H8	46.5	48.0	-0.312
Blythe	Highclere	H8	48.0	49.5	-0.349
Blythe	Highclere	H8	49.5	51.0	-0.336
Blythe	Highclere	H8	51.0	52.5	-0.440
Blythe	Highclere	H8	52.5	54.0	-0.356
Blythe	Highclere	H8	54.0	55.5	-0.440
Blythe	Highclere	H8	55.5	57.0	-0.337
Blythe	Highclere	H8	57.0	58.5	-0.406
Blythe	Highclere	H8	58.5	60.0	-0.185