



IRON ORE LIMITED

## About Legacy Iron Ore

Legacy Iron Ore Limited ("Legacy Iron" or the "Company") is a Western Australian based Company, focused on iron ore, base metals, tungsten and gold development and mineral discovery.

Legacy Iron's mission is to increase shareholder wealth through capital growth, created via the discovery, development and operation of profitable mining assets.

The Company was listed on the Australian Securities Exchange on 8 July 2008. Since then, Legacy Iron has had a number of iron ore, manganese and gold discoveries which are now undergoing drilling and resource definition.

## Board

**Mr Sumit Deb**, Non-Executive Chairman  
**Mr Rakesh Gupta**, Chief Executive Officer and board member

**Mr Devanathan Ramachandran**, Non-Executive Director

**Mr Amitava Mukherjee**, Non-Executive Director

**Mr Alok Kumar Mehta**, Non-Executive Director

**Ben Donovan**, Company Secretary

## Key Projects

Mt Bevan Iron Ore Project  
South Laverton Gold Project  
East Kimberley Gold, Base Metals and REE Project

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ASX Announcement  
8th December 2020

# EXCELLENT METALLURGICAL TESTWORK RESULTS FROM THE MT CELIA GOLD PROJECT

## HIGHLIGHTS

- **High total metallurgical gold recovery of 96.5% at a grind size of 125 µm after 24 hours (fast kinetics) & 98.0% after 48 hours**
- **High gravity gold recovery of 53%**
- **Consistently high gold recoveries in both oxide and fresh samples**
- **Low cyanide and lime consumptions of 0.5 kg/t and 0.8 kg/t respectively in Perth tap water expected to result in low processing costs**
- **No concerning levels of deleterious elements in feed**
- **Physical behaviour typical of oxide and fresh ores – no crushing, grinding or wear concerns**
- **Testing demonstrates the Mt Celia Gold Project hosts free milling gold ores, suited to processing through conventional processing facilities ubiquitous to the WA Goldfields**

Legacy Iron Limited (**Legacy Iron** or the **Company**) is pleased to provide an update of the recent metallurgical testwork results from the Company's Stage 1 metallurgical testwork program for its 100% owned Mt. Celia Gold Project, located in the Eastern Goldfields, approximately 200km NE of Kalgoorlie and 100km South of Laverton.

Legacy's Chief Executive Officer Mr Rakesh Gupta said: *"The exciting results from the first stage of the Mt Celia metallurgical testwork, have exceeded our expectations. The gold recoveries are extremely high, with plenty of gravity recoverable gold and overall gold recovery in the high nineties depending on what grind size you process them. It clearly shows that this material could be processed at any conventional gold processing facility in the area or through our own facility. We look forward to the Stage 2 testwork results which will be available by end of December to further the development of our Project".*

## Metallurgical Samples

In total, eight composite samples will be tested from the Kangaroo Bore, Blue Peter and Coronation deposits which make up the Mt Celia Gold Project. Five composites from the first round of metallurgical drilling were tested as part of the Stage 1 metallurgical testwork program. They were made up of two Kangaroo Bore samples, Two Blue Peter samples and one Coronation sample. An additional three Kangaroo Bore composite samples were assembled for the Stage 2 testwork program.

The samples were collected from five (5) PQ diameter diamond drill holes and one (1) reverse circulation (RC) drill hole. The drill holes and resulting composites were selected and assembled to ensure sample representivity. They considered:

- Gold grade (to be in line with expected mine grades)
- Variability in depth
- Different geological domains (testing both oxide ores and fresh ores and different lithologies)
- Variability along deposit strike of the prospect length
- Ensure samples are within the probable pit shell

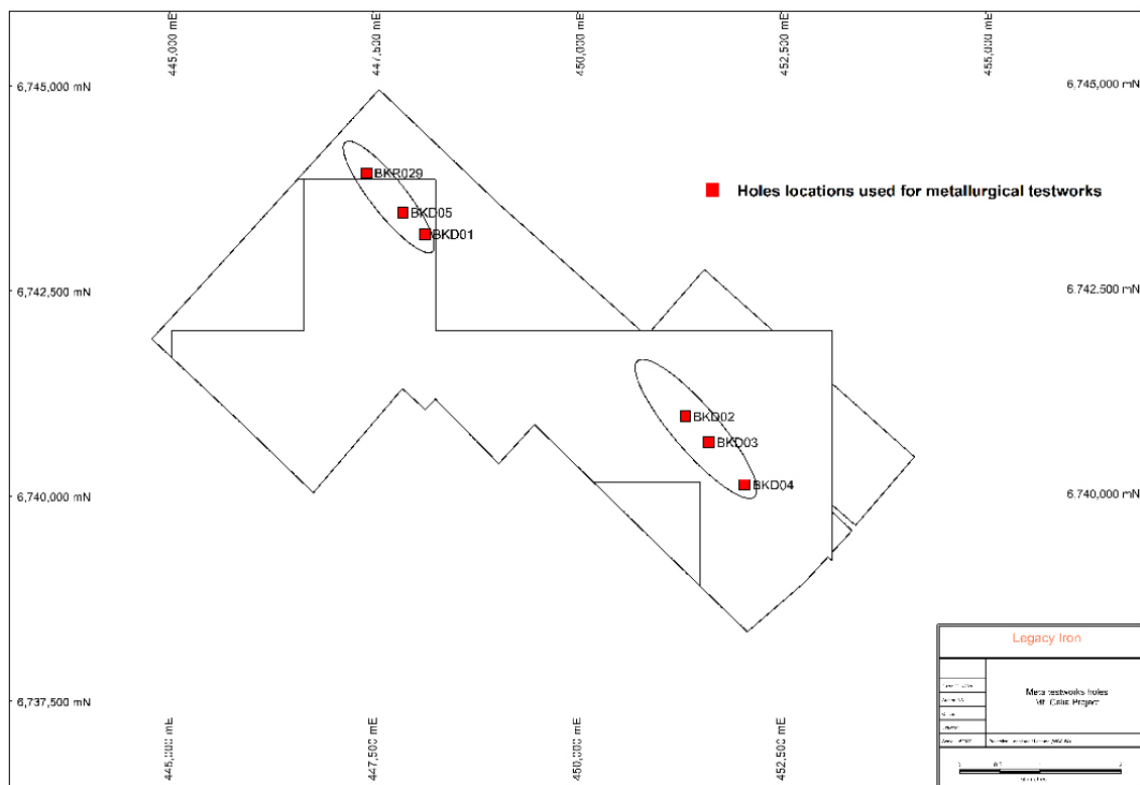


Figure 1 Location of Mt Celia Gold Project Metallurgical Drill Holes

## Metallurgical Testwork Program

A conventional metallurgical testwork program was undertaken on the Mt Celia composite samples. The intent of the testwork was to demonstrate that the samples are free milling and amenable to gold

recovery through a conventional gravity and cyanide leaching gold processing flowsheet. This work was undertaken at ALS Metallurgy Pty Ltd, located in Perth, Western Australia, a reputable, accredited and experienced metallurgical laboratory. This was done under the supervision of Legacy's consulting metallurgist, Simon Walsh. The program has been separated into two Stages, Stage 1 testing the samples from drilling completed in May 2020, and Stage 2 for additional metallurgical drill holes completed in September 2020.

The Stage 1 program incorporated testing of five (5) composite samples for:

- Comprehensive head assays
- Mineralogy
- Apparent density
- True specific gravity
- Physical tests (UCS, Bond Abrasion, Crushing, Ball Mill and Rod Mill Work Indices)
- Gravity gold recovery
- Leach testing (at 75µm, 125µm, 180µm grind sizes)

The original testwork program allowed for leach optimisation testing, for example assessing oxygen versus air addition, lead nitrate addition and carbon-in-leach (CIL) testing. The high gold recoveries from the Stage 1 testing have not necessitated this optimisation testing.

Stage 2 variability testing is now being undertaken on three additional composite samples drilled after the Stage 1 program was completed. This will be used to expand the dataset available for the prefeasibility study and engineering purposes.

Additional mineralogical assessment and diagnostic leach determination is being done for completeness and Ore Sorting testing is underway to determine the amenability of samples to upgrading through this process.

### **Head Analysis and Comminution Testing**

The comprehensive head analysis and comminution testwork program has been completed on both the Stage 1 and Stage 2 composites. The average gold grades, undertaken by fire assay in duplicate, were 0.65 g/t, 1.43 g/t, 0.65 g/t, 2.43 g/t, 2.08 g/t, 1.05 g/t, 2.00 g/t and 2.59 g/t Au for Composite 1 to Composite 8, respectively. There was some variation in the duplicated gold grades and the reconciled gold grade from testwork. This variability implies the presence of coarse and/or nuggety free gold, later borne out by gravity testwork.

Carbon speciation assays indicate low levels of organic carbon decreasing the likelihood of pre-robbed gold in solution during cyanidation. For the majority of these composites, base metals are present in low concentrations decreasing the possibility of excess cyanide consumption through preferential complexing with these metals. There were sulphide minerals present with grades in the deeper samples ranging from 0.62% as high as 3.3% but did not present recovery issues in the samples tested. Other potentially deleterious elements such as mercury, tellurium antimony and bismuth are low.

The physical testing has shown the oxide and fresh samples to be typical of the WA Goldfields and has not highlighted any concerning behaviours. No crushing, grinding or wear concerns are expected when processing feed from these deposits. Key results are summarised below:

- Unconfined Compressive Strength (UCS) - average 21.2 MPa (<20 MPa is weak)
- Crushing Work Index (CWi) – average 6.5 kWh/t (soft)
- Abrasion Index (Ai) – average 0.19 (<0.30 slightly abrasive)
- Bond Ball Mill Work Index (BWi) – average 14.6 kWh/t (medium to hard)
- Bond Rod Mill Work Index (RWi) – average 17.8 kWh/t (medium to hard)

### Gravity and Leach Testing

For the first five Mt Celia Gold ore composite samples, laboratory scale gravity separation stage using a centrifugal style ‘Knelson’ concentrator showed that all five composites contained significant amounts of gravity recoverable gold, with recoveries of 23%, 69%, 55%, 49% and 69% respectively for an overall average of 53%.

For the overall gravity / leach tests using bottle roll tests for the first five Mt Celia Gold ore composite samples, the total extractable gold (gravity gold plus cyanidable gold) ranged from 95% to 99% across all grind sizes after 48 hours of leaching. For all composites tested, the total gold recovery was modestly increased with decreasing grind  $P_{80}$  size, indicating that all composites were slightly grind sensitive.

The gold leach kinetics were fast for most samples, with the majority of the gold leaching in the first 8 – 12 hours and often in the first four hours. The gold leach kinetics for Composites # 3 and 5 were moderately slower particularly at the coarser grind sizes, but gold recovery was still high after 24 hours. The testwork leach kinetics at the 125  $\mu\text{m}$  grind size are presented in Figure 2.

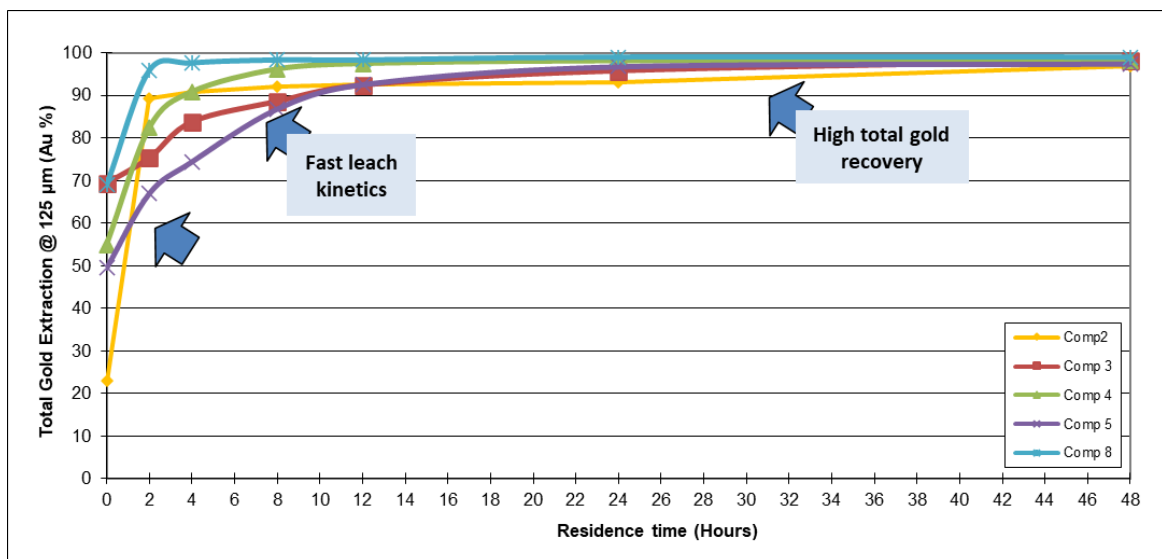


Figure 2 Leach Testwork Composite Leach Kinetics ( $P_{80}$  of 125  $\mu\text{m}$ )

For all five composites tested, the calculated gold grades from all three grind size tests, i.e. 180, 125 and 75  $\mu\text{m}$ , were similar for each separate set of tests. However, when compared to the initial gold head assay values for each composite, there were some differences in the calculated head and the assay head values. These disparities are most likely due to the high levels of gravity gold in these composites.

For all leach tests, the sodium cyanide and lime consumption levels were low, averaging 0.5 kg/t and 0.8 kg/t respectively. This indicates relatively lower operating costs when processing these ores. The testing was done in Perth tap water.

In summary, the gravity gold content of all composites tested was elevated and the overall gold recovery levels were high, above 95%. The largest general increase in gold recovery from one grind stage to another was from a P<sub>80</sub> 180µm to P<sub>80</sub> 125µm. The gold recovery results are summarised below in Table 1. The testing shows these ores are amenable to conventional grinding, gravity and cyanide recovery processes.

Sample ID	Deposit	Grind size (µm)	Gravity Gold Recovery (%)	Total Gold Recovery (%) - 24h	Total Gold Recovery (%) - 48h	Calculated grade (Au g/t)	Assayed Head (Au g/t)	Tails solids (Au g/t)	NaCN (kg/t)	Lime (kg/t)
Comp 2	Kangaroo Bore	180	23.1	93.6	96.2	1.58	1.43	0.06	0.10	0.35
Comp 2	Kangaroo Bore	125	22.9	93.0	96.9	1.59	1.43	0.05	0.07	0.39
Comp 2	Kangaroo Bore	75	23.4	97.4	97.4	1.56	1.43	0.04	0.14	0.44
Comp 3	Blue Peter	180	70.2	94.7	97.6	1.63	0.65	0.04	1.49	1.14
Comp 3	Blue Peter	125	69.4	95.7	98.2	1.65	0.65	0.03	1.57	0.97
Comp 3	Blue Peter	75	69.2	96.8	98.8	1.66	0.65	0.02	1.59	0.97
Comp 4	Blue Peter South	180	55.1	94.9	96.8	2.16	2.43	0.07	0.25	0.82
Comp 4	Blue Peter South	125	55.0	98.2	98.2	2.16	2.43	0.04	0.22	0.77
Comp 4	Blue Peter South	75	54.6	98.6	98.6	2.18	2.43	0.03	0.25	0.84
Comp 5	Coronation	180	49.8	93.5	94.9	0.98	2.08	0.05	0.54	1.96
Comp 5	Coronation	125	49.6	96.8	97.5	0.99	2.08	0.03	0.53	1.73
Comp 5	Coronation	75	49.4	97.3	98.0	0.99	2.08	0.02	0.47	2.23
Comp 8	Kangaroo Bore	180	70.5	98.7	99.0	2.01	2.59	0.02	0.10	0.31
Comp 8	Kangaroo Bore	125	68.9	99.0	99.0	2.06	2.59	0.02	0.10	0.31
Comp 8	Kangaroo Bore	75	68.5	99.5	99.5	2.07	2.59	0.01	0.10	0.33

*Table 1 Gravity and Leach Testwork Results Summary*

## Next Steps

Legacy will now complete the Stage 2 metallurgical testing on the additional three composite samples from the later drilling as well as completing ore sorting and diagnostic leach tests. The testing is expected by the end of this year, with reporting soon after.

Further variability testwork will be undertaken on additional composites as they become available as part of the next Mt Celia drilling program. This work will be undertaken under the optimum leach conditions to provide further confidence around the metallurgical behaviours of these deposits.

**Yours faithfully,**

**Rakesh Gupta**

**Chief Executive Officer**

This announcement has been authorized for release by the Board of Legacy Iron Ore.



## Background

The Mt Celia Project lies within the Laverton Tectonic Zone, some 40km south of the Sunrise Dam gold mine (approximately 8 Moz gold resource), as shown in Figure 3

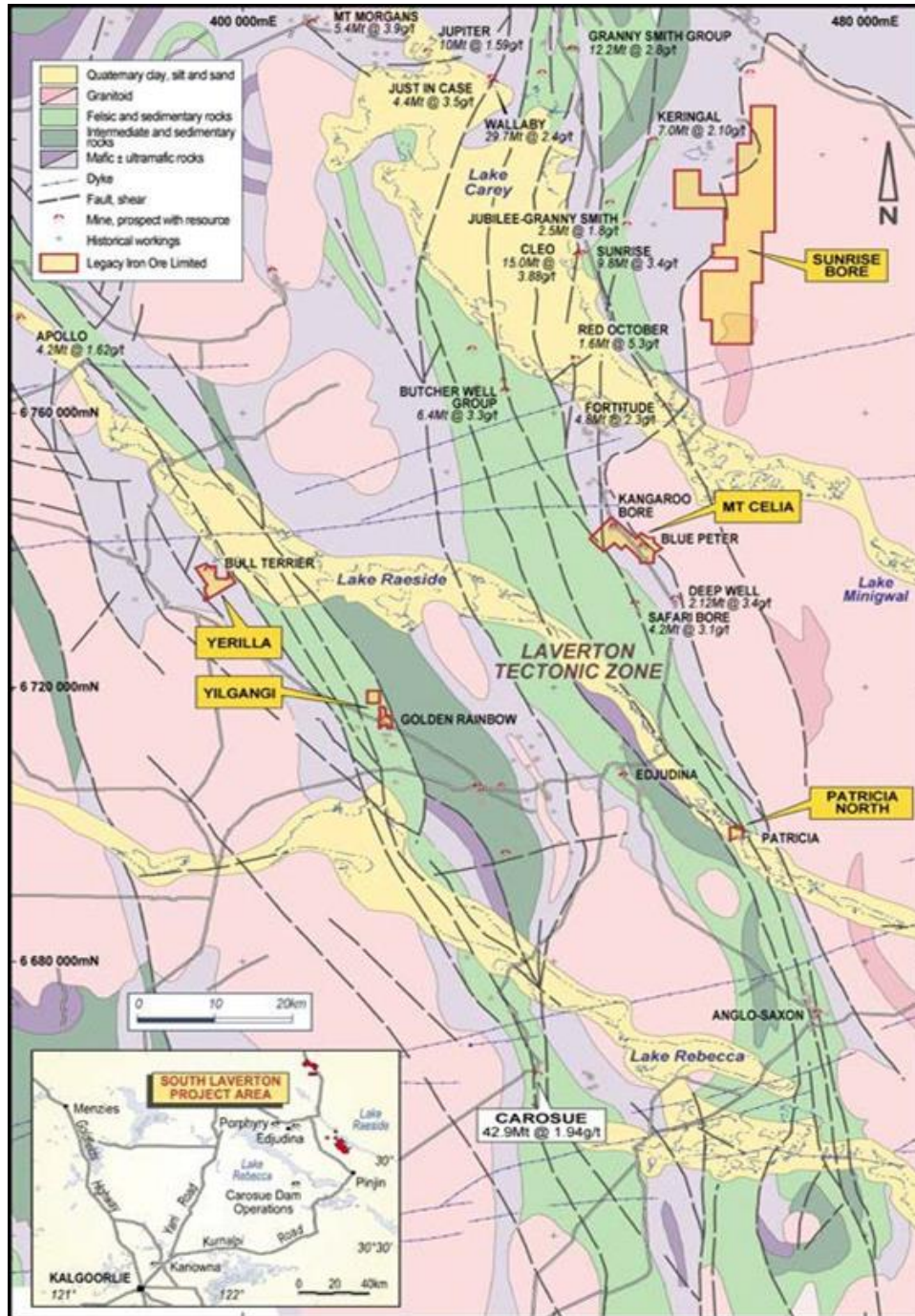


Figure 3: Location of Mt Celia within the South Laverton Project region

The project contains several known gold occurrences including Kangaroo Bore and Blue Peter deposits (Figure 4). The total gold resource at Mt Celia is shown in Table 2.

Deposit	Classification	Cut-Off (g/t Au)	Tonnage (t)	Grade (g/t Au)	Metal (oz)
Kangaroo Bore	Inferred	0.7	2,800,000	1.48	133,000
Blue Peter	Inferred	1.0	607,200	2.62	51,100
Total (Mt Celia)	Inferred		3,407,200	1.68	184,100

Table 2 Mineral Resource estimate - Mt Celia Project (as of March 2018)

(Note: Please refer to ASX announcement made on 17 Nov 2017 and 22 Mar 2018 for the complete statement about the above Kangaroo bore and Blue Peter resource estimates. Additional rounds of RC drilling have been completed at Kangaroo Bore and Blue Peter after these estimates and getting considered in the ongoing resource upgrade for the project)

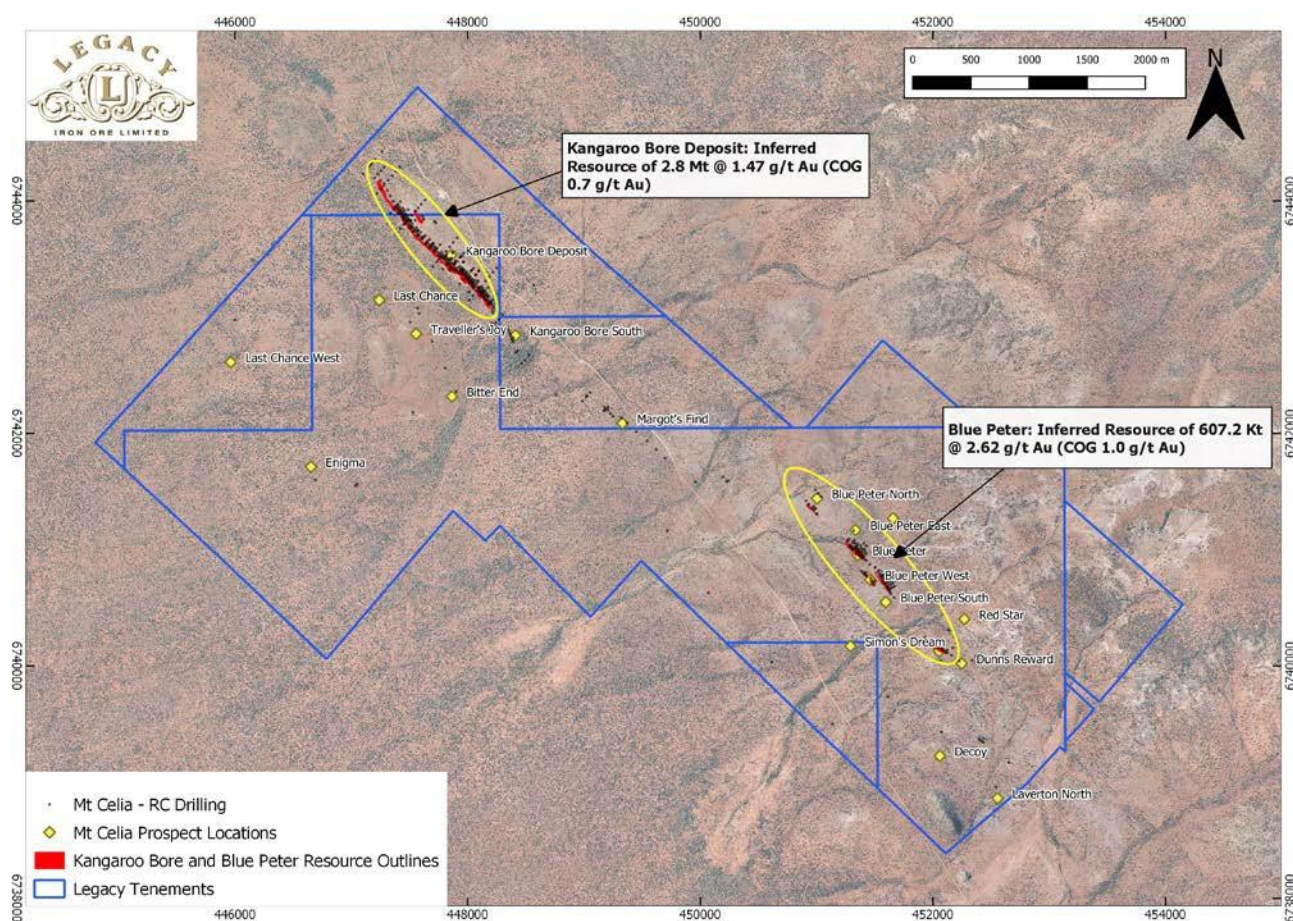


Figure 4. Mt Celia's Prospects

A total of 207 drill holes including 24 diamond holes (totaling 15,099 m of drilling) were considered for use in the Kangaroo Bore resource estimate. The majority of the data used for the resource estimation was derived from historical drilling.

The Kangaroo Bore deposit is hosted by the Laverton Tectonic Complex, a strongly faulted and folded



greenstone sequence that forms part of the larger Edjudina-Laverton greenstone belt. The mineralisation occurs within the Kangaroo Bore shear zone, which strikes to the northwest, and dips steeply to the northeast. The gold mineralisation occurs predominantly within micro-folded quartz-carbonate veins hosted within silicified quartz-pyrophyllite schists.

The Blue Peter prospect is located approximately 2-3km south of the Kangaroo Bore within the Mt Celia Project. A total of 122 RC holes (totaling 9,356 m of drilling) were considered for use in the Blue Peter current resource estimates (table 1). At Blue Peter, the mineralisation is hosted within a set of narrow, sub-parallel lodes that strike to the northwest and dip steeply to the northeast. The mineralisation occurs over a strike extent of approximately 2 km, and comprises three main sub-regions: Blue Peter North, Blue Peter/Blue Peter South/ Blue Peter West, and Coronation, which have approximate strike lengths of 130 m, 620 m, and 200 m, respectively.

#### **COMPETENT PERSON STATEMENT - METALLURGY**

The information in this announcement that relates to Metallurgical Testwork has been reviewed by Simon Walsh, Competent Person, who is a member of the Australasian Institute of Mining and Metallurgy and a Chartered Professional in Metallurgy. Simon Walsh is employed as Principal Metallurgist at Simulus Pty Ltd and consults to The Company as required. Simon Walsh has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Walsh consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### ***ASX Listing rule disclosure***

In accordance with ASX Listing Rule 5.23.2, Legacy Iron confirms that it is not aware of any new information or data that materially affects the information included in the 8th December 2020 market announcement referred to above, and that all material assumptions and technical parameters underpinning the Mineral Resource estimates in that announcement continue to apply and have not materially changed.