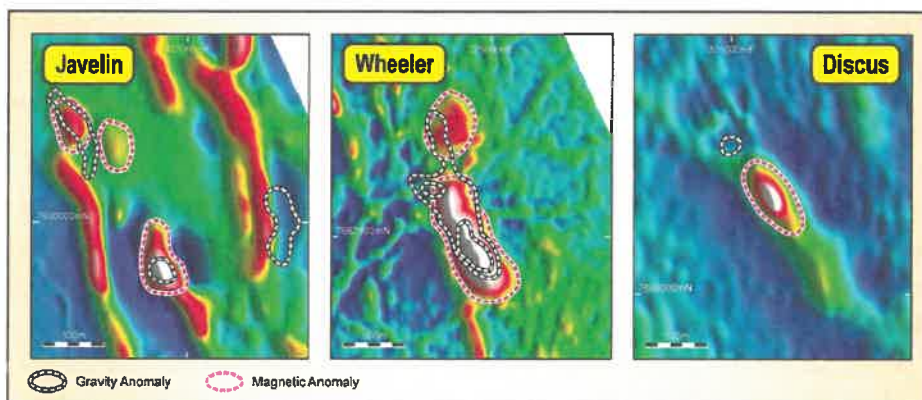


## **CARAWINE RESOURCES (CWX AU, \$0.20. Market cap A\$15m)**

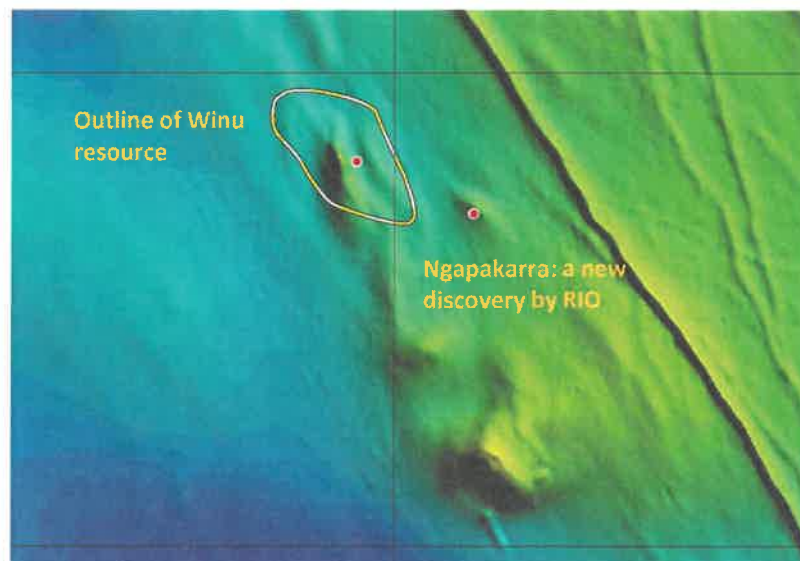
### **Action in the Paterson: drilling to start at Baton**

- Of greatest significance in CWX's recent quarterly is the announcement that one of the company's JV partners in the highly prospective Paterson province of WA, Rio Tinto (RIO ASX), is to commence drilling later this month. (See Appendix 1 for the location of CWX's exploration projects.)
- As a reminder, RIO has farmed into a number of CWX's northern tenements in the Paterson, with the potential of earning 70% with the expenditure of \$5.5m, then to 80% as RIO achieve set milestones.
- **RIO is mobilising a rig in August to drill test coincident gravity and magnetic anomalies at three targets within the Baton project, Javelin, Discus and Wheeler. 10-15 holes are likely for around 2000m of drilling.**
- Its quite clear why RIO has sought to tie up as much of the northern Paterson as they have, with the recent disclosure of a resource at its new discovery, Winu. (See below for a summary of Winu). The Winu discovery, we believe, was made by targeting coincident geophysical anomalies, including magnetics and gravity. CWX highlight the significance of these three key anomalies within the northern Baton tenement as having a similar geophysical signature to Winu.



Source: CWX release, 20/7/20

- We have managed to source a magnetic signature for RIO's Winu discovery from the WA Geological Survey for comparison.



Source: <https://www.dmp.wa.gov.au/Geological-Survey/Regional-geophysical-survey-data>

- Both figures are about the same scale and demonstrate how similar in dimension the largest anomaly, Wheeler, is to the Winu magnetic signature. Both are around 2km in length and perhaps 300-400m in width. CWX state that RIO have used a gravity survey to assist with targeting the initial drill holes. Note as well the location of a recent discovery of gold mineralisation at Ngapakarra by RIO with the best intercept of 25m at 4.9gpt from 349m. This also appears to be associated with a low level magnetic anomaly.
- Needless to say there can be no certainty regarding what might be discovered at CWX's Baton anomalies. But it's easy to see why RIO's geologists are so enthusiastic. Baton is only 60km to the SW of Winu so any discoveries here could easily integrate into the Winu development. (This is discussed in more detail in Appendix 2, a review of the Winu discovery.)
- CWX also comments that an additional target has been identified in the Red Dog tenements (also a RIO earn-in) and has been named Marquess (See plan in Appendix 1). To quote CWX, it "has been defined by a prominent circular conductivity high feature, with a central resistivity response identifiable from Tempest AEM and VTEM imagery." Further access agreements with the Traditional Owners are required to allow further work to proceed. This is another very encouraging drill target, and one of several in the Red Dog project.

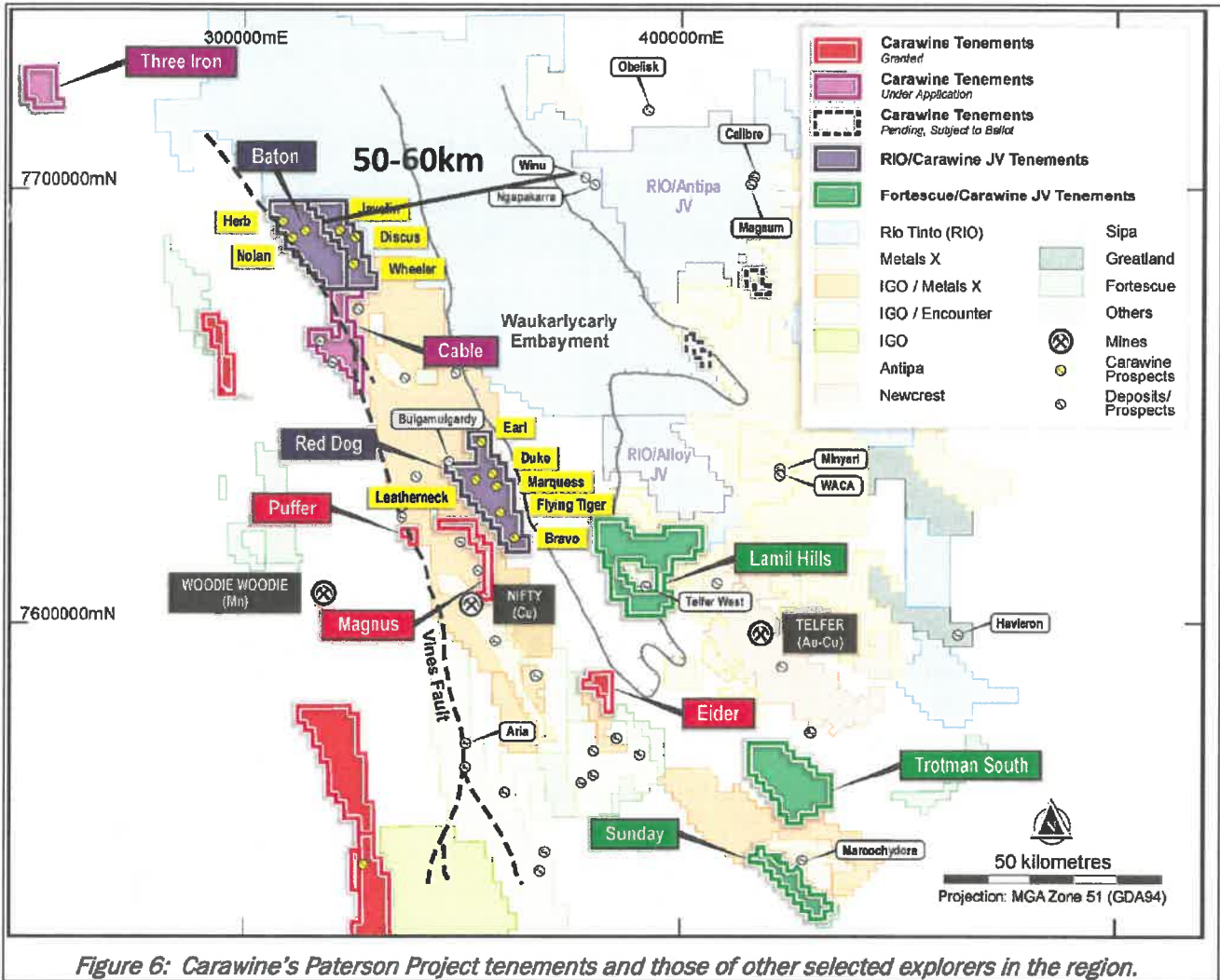
## Other exploration

- Elsewhere in the Paterson, CWX report on the **Coolbro JV** where FMG are earning up to 51%. Here FMG are targeting Winu-style mineralisation. EM surveys are to commence in 3Q20.
- In the highly prospective **Fraser Range** area, CWX holds tenements in JV with Independence Group (IGO) and also has 100% owned projects. At the Big Bullocks JV (IGO earning to 70%) a moving loop EM survey is in progress, and is focussed on areas which have delivered anomalous Ni and Cu in previous drilling. Initial work has commenced at the 100% owned Big Bang project, just 2km south of Galileo Mining's (GAL) Lantern South discovery.
- Finally, nothing new from CWX's core asset, the **Jamieson gold-copper porphyry project**. Drilling was suspended due to COVID restrictions and with the usual winter shutdown imposed by the State. Drilling is likely to recommence in November, again subject to COVID restrictions in Victoria.
- As a reminder, CWX's most recent hole intersected 11m at 13.9gpt (including 2m at 75gpt), a remarkably successful hole which points to the potential for medium to high grade resources which could be extracted by underground mining. We are perplexed as to why the market seemed to ignore the significance of this hole, especially in this very buoyant exploration environment.

## Investment view

- As we reported in our May 2020 note, Carawine holds very prospective and immediate drill targets, the most advanced of which is the Hill 800 project in Victoria. Management has demonstrated an ability to identify prospective projects and in the case of Hill 800 advance it to pre-resource status.
- CWX has demonstrated that the company can be quick on its feet and has commandeered positions in the Paterson Province, the Fraser Range and has recently expanded its tenement holdings in NE Victoria. The slightest sniff of further exploration success we believe could translate to a strong share price move.
- Investors should remember that exploration success does not come quickly, nor cheaply. As an example, Staveley Resources took some 5-6 years to identify the Cayley Lode which has a good chance of delivering an economic copper resource. The possibility of finding deeper economic porphyry copper deposits remains quite real.
- The recipe for exploration success is reasonably straightforward: large holdings in prospective terrain together with a well-funded, competent geological team, and finally a good helping of geological luck. CWX passes all the tests, in our view. It also passes the "we are not a lifestyle company" test with over 90% of total spend going into exploration and evaluation in the 12 months ending June 2020.
- At an EV of around \$13.5m, with the next drill programme at Jamieson fully funded, and with RIO's drilling programme in the West Paterson starting in a month or so, CWX appears to us to be an attractive investment proposition.

**Appendix 1. Location of CWX's exploration projects in the Paterson Province of WA.**



Source: Modified from CWX release, 30/7/20

## Appendix 2. An outline of Rio Tinto's Winu discovery

- During the June 2020 quarter, Rio Tinto announced the long-awaited maiden resource for its 2019 Winu discovery. The headline number demonstrates the deposit to be a very large system, hosting low grade copper gold mineralisation. The inferred resource announced was 503mt at 0.45% copper equivalent (CuEq) at a 0.2% CuEq cutoff grade. Within this resource is contained a higher grade zone, of some 188mt at 0.68% CuEq (0.45% COG).

**Table A: Inferred Mineral Resource tabulation for the Winu Project.**

	<b>CuEq% Cutoff</b>	<b>Mt</b>	<b>CuEq (%)</b>	<b>Cu (%)</b>	<b>Au (g/t)</b>	<b>Ag (g/t)</b>
Supergene	>=0.2	57	0.56	0.48	0.43	2.68
Hypogene	>=0.2	446	0.43	0.34	0.25	2.09
<b>Total</b>	<b>&gt;=0.2</b>	<b>503</b>	<b>0.45</b>	<b>0.35</b>	<b>0.27</b>	<b>2.15</b>
Supergene	>=0.45	29	0.80	0.66	0.55	3.61
Hypogene	>=0.45	159	0.66	0.53	0.33	3.14
<b>Total</b>	<b>&gt;=0.45</b>	<b>188</b>	<b>0.68</b>	<b>0.55</b>	<b>0.36</b>	<b>3.21</b>

Source: RIO announcement 28/7/20

- Whilst not exactly a 'dripping roast', it is shallow (around 80m to the top of mineralisation) and appears to be open-pit accessible at a low stripping ratio.
- We believe RIO has actually understated the project by reporting recovered rather than head grades on a CuEq basis. We estimate the CuEq head grade for the higher grade (+0.45% CuEq) mineralisation to be around 0.9% CuEq at current spot metal prices and excluding met. recoveries. (As we understand it there is no right way or wrong way to display 'equivalent grades'. It just needs to be disclosed. But if 0.68% CuEq grade sounds low, it should be recognised it is calculated on a recovered grade basis).
- The geological description is interesting, and bears repeating (from RIO's 28/7 ASX release): The prospect is located on the Anketell Shelf of the Yeneena Basin, a Neoproterozoic sequence of metasedimentary rocks and granitoids that is entirely covered by mostly Permian sediments that range from 50-100 m thick in the Winu area. The main lithologies intercepted by the current drilling at Winu include metasedimentary rocks (quartzites, metasandstones, metasilts and metapelites), unmetamorphosed sedimentary cover rocks and dolerite. Host rocks to copper-gold mineralisation are fine to medium-grained subarkosic metasandstones and biotite-rich metasilts.
- The mineralisation is predominantly vein and breccia controlled chalcopryrite and chalcocite with associated pyrite, pyrrhotite, molybdenite, bornite, scheelite, bismuthinite and wolframite. Several generations of veins and breccias are identified and characterised by different mineralogical assemblages and textures. The main mineralisation event is associated with quartz-K-feldspar-sulphide and sulphide-carbonate veins with dominantly K-feldspar, muscovite, biotite and/or chlorite wallrock alteration.
- Primary sulphide mineralisation is overlain by a supergene blanket containing secondary copper minerals as well as native copper in places.
- The Winu deposit strikes approximately NNW/SSE with a strike extent of 2,700m and width of approximately 400m in the main hypogene mineralisation, and up to 700m in the supergene mineralisation. Mineralisation starts approximately 80m below surface.
- Work has already started on the deposit's metallurgy with the following description worth repeating: "The basis for predictions of metallurgical performance is comminution and flotation test work conducted on samples composited from individual geometallurgical zones within several individual drill holes. Preliminary studies indicate that the mineralisation is amenable to processing through conventional crushing, grinding,

and flotation circuits, with gold recovery improved by inclusion of a gravity circuit. More detailed metallurgical test work is planned.”

- As shown in the following table preliminary work has shown that the supergene ore will recover with greater difficulty than the primary. This is no surprise and will present a challenge for the metallurgists.

	CuEq% Cutoff	Average Recovery (%)		
		Cu	Au	Ag
Supergene	>=0.2	74	63	57
Hypogene	>=0.2	95	63	51
	CuEq% Cutoff	Recovery (%)		
		Cu	Au	Ag
Supergene	>=0.45	82	62	61
Hypogene	>=0.45	95	63	50

Source: Rio Tinto release 28/7/20

- We would expect recoveries to improve with further testwork. The sub-70% recoveries for gold (and silver) are a little disappointing.
- What will Winu look like in a scoping study? No doubt RIO will look to maximise the size of the project in an attempt to make the project material for a company of its size. Assuming the company tackles the high grade section, and with say a 70% conversion of resources to reserves, we could imagine a mining inventory of perhaps 130mt. We could imagine a starter project of say 15mtpa delivering a 5-10 year life, then expanding to perhaps 30mtpa to deal with lower grade ore. At 15mtpa and average grades, with recoveries as reported above, the project could deliver 70-80ktpa copper and 100-120kozpa gold. This would not be a big project for RIO, and we doubt it would ‘move the dial’ much in a corporate sense. But it provides a reason to develop a mine in the Paterson and also provides a major incentive to find more ore.
- The discovery of gold mineralisation at nearby Ngapakarra (2km east) is certainly a positive for the project. As well, RIO note that three widely-spaced RC holes have been drilled immediately to the east of Winu. One of these has intersected significant thicknesses of vein and breccia hosted high-grade gold mineralisation. One drillhole intersected 58 m @ 4.73 g/t Au from 231 m, including 10 m @ 11.5 g/t Au (from 243 m) and 6 m @ 21.3 g/t Au (from 263 m).
- All this says to us is that the Paterson has become an important exploration and development hub for Rio Tinto, and CWX’s tenements are well positioned to benefit from these efforts. We have no doubt that the maiden 2000m programme, starting in a month, will be the first of many.



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