



ASX Announcement

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KALAMAZOO AND CSIRO COMPLETE COLLABORATIVE MINERALS RESEARCH PROGRAM AT THE CASTLEMAINE GOLD PROJECT

Highlights

- Kalamazoo and the CSIRO have completed their first stage research on the Wattle Gully Gold Mine area and within the 288km² Castlemaine Gold Project, located in the Bendigo Zone, Victoria
- The research mapped geochemical gradients and has provided discriminators of both the primary stratigraphy and alteration associated with gold mineralisation that will be applied as exploration vectors to new target areas
- The CSIRO study determined that Al-rich white mica and Fe-rich chlorites are consistently found around the Wattle Gully Gold Mine – this feature is potentially a very powerful tool for exploration, as the white micas are preserved in the saprolite (weathered rocks)
- CSIRO's data predicts that alteration halos around the mineral zonation patterns in the area could be detected by low cost gridded soil sampling of the saprolite at 100 meters spacing (in contrast to the detection of the ore zone which would require gridded sample spacing of less than 20 meters)

Kalamazoo Resources Limited (ASX: KZR) ("Kalamazoo" or the "Company") is pleased to announce that its collaborative study with the CSIRO "Mapping Geochemical Zonation Patterns at the Wattle Gully Gold Deposit" has been completed. Copies of the complete study will be available shortly on the Company's website www.kzr.com.au or at www.csiro.gov.au.

"The quality of research and professionalism of Adam Bath and his team from CSIRO has been very impressive" Kalamazoo Chairman and CEO, Mr Luke Reinehr, said today.

"The recommendations of the CSIRO Study will be incorporated by Kalamazoo in our upcoming exploration programs at Wattle Gully, Wattle Gully South and South Muckleford Gold Projects as we look to explore smarter, using new technologies and innovations in a low impact manner" he said.

CSIRO Project

Kalamazoo was awarded a grant in early 2019 under the Innovation Connections element of the Australian Government Department of Industry, Innovation and Science Entrepreneurs' Programme (ASX: KZR 19 March 2019). The purpose of the grant was to assist the Company in a collaborative research program with CSIRO, led by Dr. Adam Bath to map mineral gradients and potential vectors to gold mineralisation within the Castlemaine Gold Project, Central Victoria.

The Company engaged with CSIRO in Perth, Western Australia to undertake a field sampling program and detailed laboratory studies. The work mapped geochemical gradients at Wattle Gully and elsewhere within the project area to provide discriminators of both the primary stratigraphy and alteration associated with gold mineralisation that can in turn be applied as vectors to new target areas for exploration.

One of the keys was to unlock value from the project area's 80,000m of historical diamond drill core.

CSIRO has a long history and track record of innovation working with the gold sector. In other research projects, CSIRO is applying breakthrough concepts and technologies to produce integrated maps of mineral systems that in turn can be used to maximise the probability of new ore discovery.

Study Summary

Orogenic gold deposits are considered difficult to explore for as ore zones are narrow and alteration halos are considered cryptic. More advanced approaches are required to map the alteration halos more precisely in order to reduce the search volume and rapidly direct exploration programs into key areas where the narrow high-grade gold shoots occur.

The CSIRO Study investigated alteration on ~300 samples primarily from the Wattle Gully gold deposit in the Castlemaine area of Central Victoria. Results show that Wattle Gully deposit occurs within a broad zone (up to ~170m wide) that contains carbonate metasomatism.

Carbonate metasomatism resulted in the deposition of Fe-rich carbonate (siderite), calcite, cobaltite (CoAs₂), Al-rich white mica (muscovite) and Fe-rich chlorites (chamosite) at the time of high-grade mineralization.

The 170 meter-wide alteration envelope at Wattle Gully notably contains dilational zones where sandstone volumes have expanded approximately 50 percent, indicating significant fluid pressure in these zones required to open up spaces between quartz grains. In some cases, high-grade ore shoots occur around the tips of these dilational zones, indicating that dilational zones were critical pathways at time of high-grade mineralisation at Wattle Gully.

Alteration patterns overprint both mudstones and sandstones, and the presence of Al-rich white mica and Fe-rich chlorites are consistently found around the ore zones irrespective of rock type. This feature is potentially a very powerful tool for exploration, as white micas are preserved in weathered rocks. Therefore, mineral zonation patterns can be explored in the saprolite through low-cost soil sampling.

This method is predicted to rapidly reduce the search volume, as CSIRO's data predicts that the alteration halo around Wattle Gully could be detected within gridded soil sampling of 100 meters spacing. In contrast detection of the ore zone would require gridded sample spacing of less than 20 meters.

The CSIRO study has identified five key methods that could be tested further by Kalamazoo and used to direct exploration:

1. 100 meter wide gridded soil sampling campaigns of saprolite and identification of possible broad As (>15 ppm) zones in the saprolite.
2. Identification of zones where there is an abundance of muscovite:phengite within the broad As zones in the saprolite.
3. Smaller gridded sampling programs (~30m) around muscovite:phengite anomalous zones to test the size of the anomaly.
4. Ranking of targets based on size of muscovite:phengite anomaly in saprolite.
5. Running drilling programs aimed towards testing anomalies in saprolite into fresh bedrock.

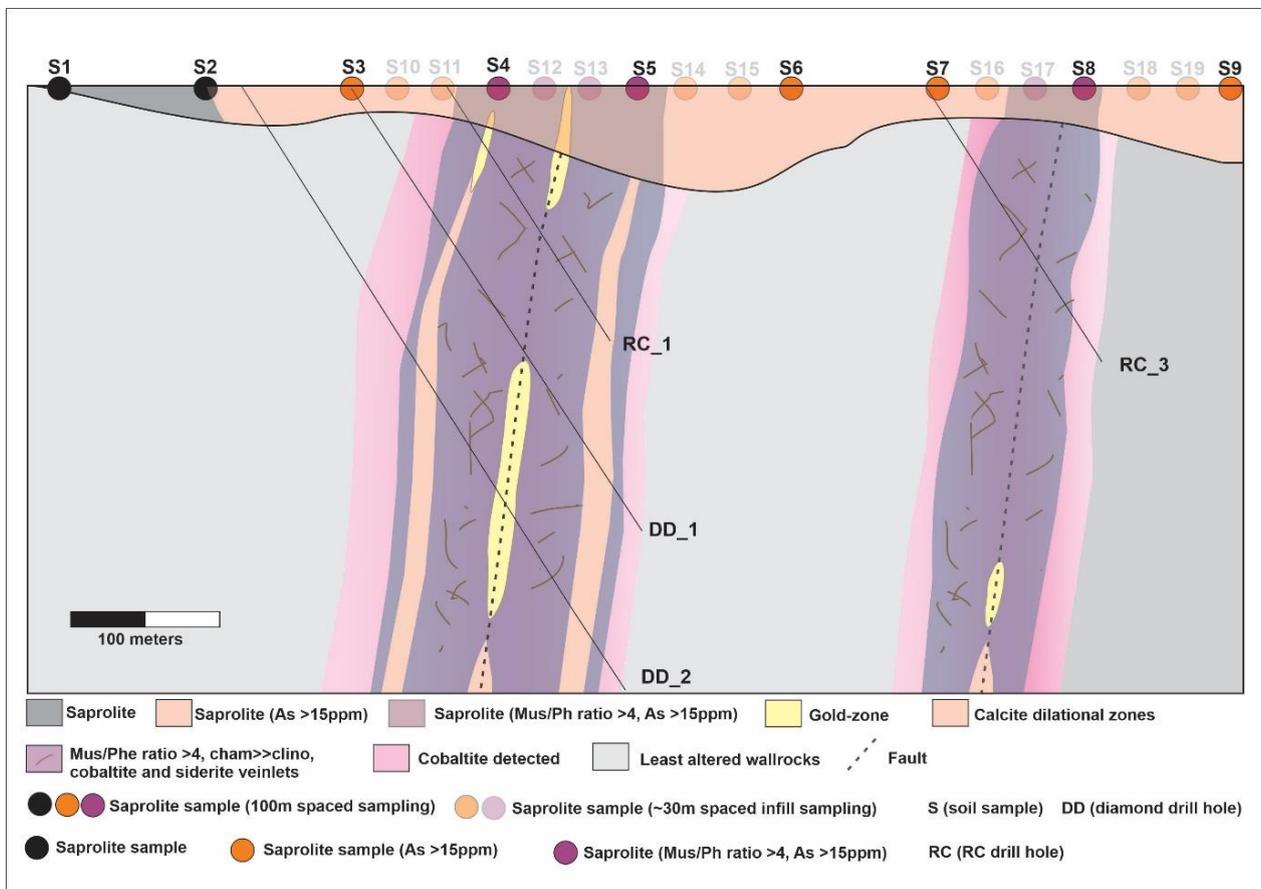


Figure 1: Summary of Key Zonation Patterns in the Bedrock at the Wattle Gully Deposit

Schematic cartoon (cross-section) that aims to summarize the key zonation patterns in the bedrock at the Wattle Gully Deposit. The cartoon also illustrates a possible exploration strategy based off the findings from the current study. The first part of the strategy is sampling of saprolite at intervals of 100 meters. Second part is to identify the As (>15 ppm) anomalies, and areas of high muscovite:phengite ratios (>4) within the broader As zones. Closely spaced sampling is then applied around areas that contain high muscovite:phengite ratios (>4) to test anomalous areas further. Broad (>100m) anomalous zones are selected as targets for drilling/further testing.

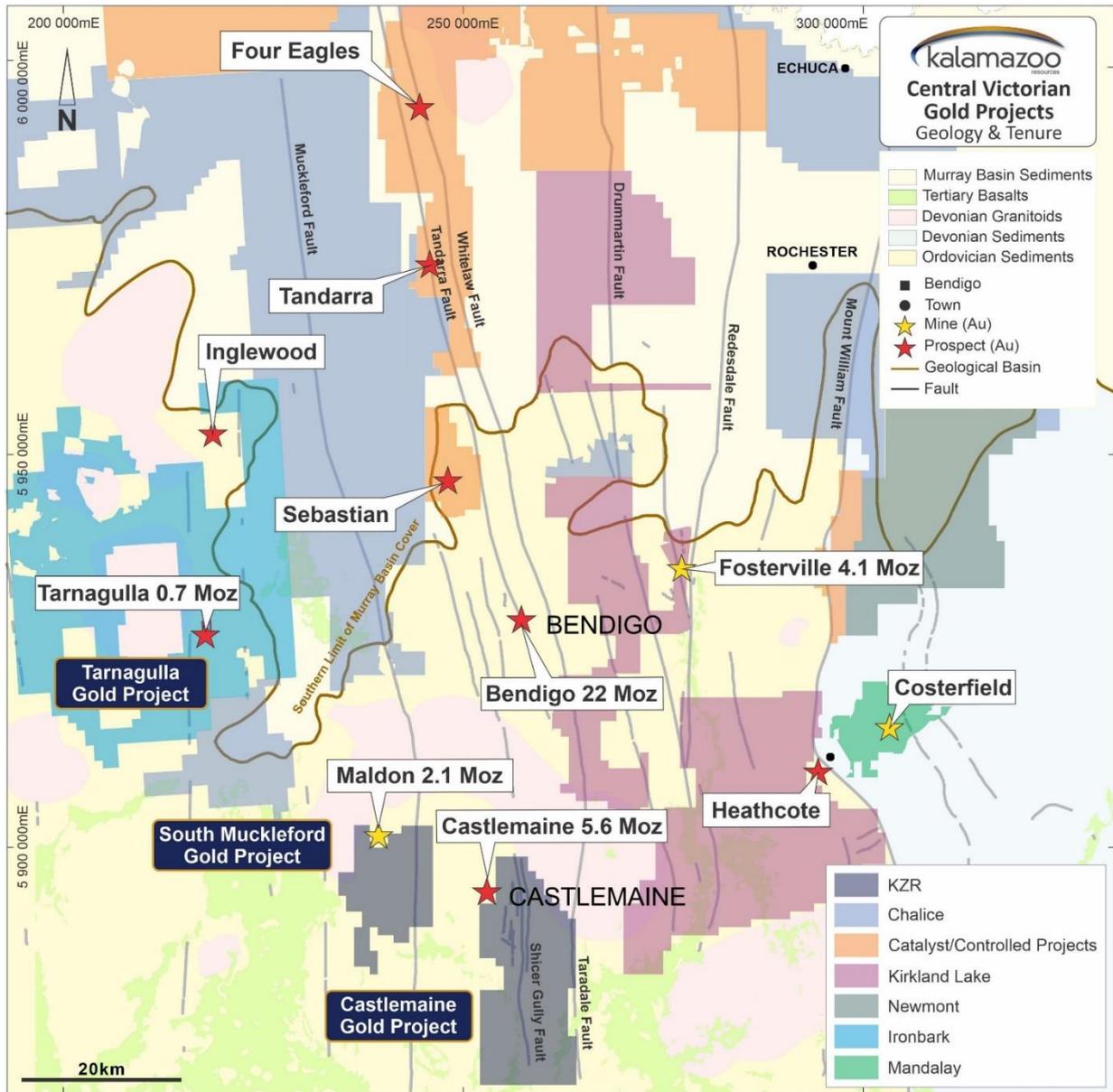


Figure 2: Central Victoria regional gold exploration tenure with Kalamazoo's Castlemaine and South Muckleford Gold Projects in grey

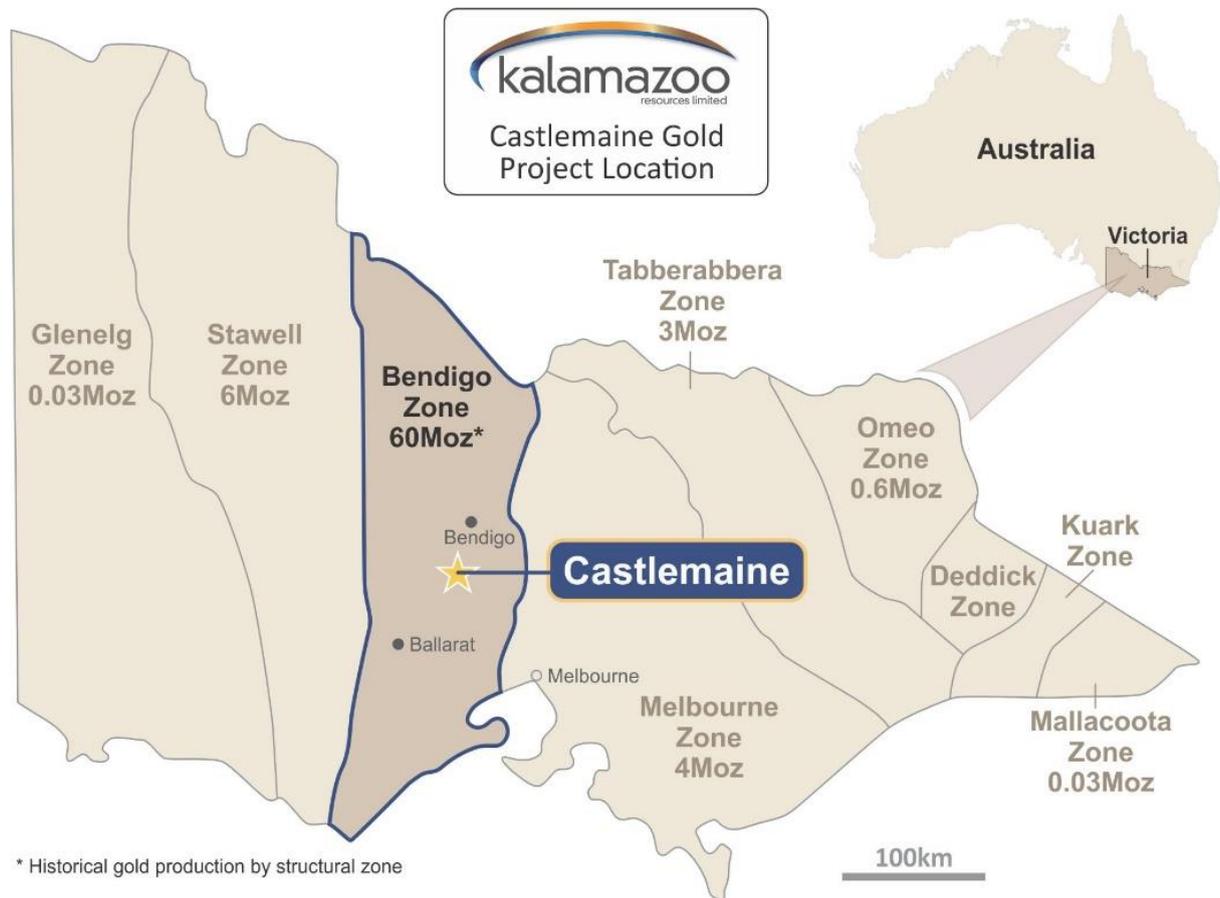


Figure 4: Bendigo Zone Location

About the Castlemaine Gold Project

Kalamazoo acquired the entire Castlemaine Goldfield including the historic Wattle Gully Gold Mine and surrounding 288km² in June 2018. The Company's exploration licences cover major structures interpreted to be commonly associated with high gold potential. Included in the acquisition of this advanced regional gold asset was an extensive exploration database and substantial drill core farm.

The Castlemaine Goldfield produced 5.6M ounces* of gold across its life and is one of the richest gold fields in Australia, with only minor exploration activity having been undertaken over the past decade and with limited effective drilling below 400m. (*refer to Willman et al 2002, Geology Survey Victoria Report 121).

Kalamazoo considers there is significant potential to apply modern exploration techniques, and to look for high grade mineralisation at depth. This is a similar strategy that has been successfully applied at Kirkland Lake Gold Limited (ASX: KLA) Fosterville gold mine, 45km to the north east and Catalyst Metals Limited (ASX: CYL) Tandarra gold project north of Castlemaine.

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