



## Greater Fosterville Update

### Key Points

- **Exploration Licence Application (ELA) process underway over Block 4 of the Victorian Government ground release following S2's award of preferred tenderer status**
- **Initial community engagement commenced**
- **Preparatory technical work started, comprising data consolidation and target generation on the ELA, which abuts and surrounds Kirkland Lake Gold's world class Fosterville Mine**
- **Substantial historical datasets, incorporating extensive geophysical and geochemical surveys, gives S2 a significant head start defining targets**
- **Initial findings indicate key structures and stratigraphy hosting Fosterville gold mineralisation continue north and south into the Greater Fosterville ELA**

S2 Resources Ltd ("S2" or the "Company") wishes to advise the market on progress regarding its successful tender for Block 4 of the North Central Victorian Goldfields (NCVG) land release, referred to as the Greater Fosterville Project.

S2 was notified in October 2021 that it had won the highly competitive tender process for Block 4 of the NCVG, giving the Company the sole right to apply for an Exploration Licence over the block (refer to S2 ASX announcement date 29 October 2021). This block covers an area of 394 square kilometres and has a north-south strike extent of 55 kilometres abutting and surrounding the high grade, high margin Fosterville Mine operated by Kirkland Lake Gold ("Kirkland Lake", KLA:ASX, KL:TSX) (Figure 1). This block is arguably the most coveted gold exploration application in Australia and is now a major focus for S2 Resources.

### Status of application process

The Company has formally commenced the application process for the block, designated EL7795 by the Victorian government agency, Earth Resources Regulator (ERR). This process comprises a number of steps which need to be completed before the licence is granted:

- The first step, already undertaken on 10 November 2021, was to publish a *Notice of the Acceptance* of the tender in local Victorian and Bendigo newspapers, required under the *Mineral Resources (Sustainable Development) Act 1990*
- This publication was followed by a 21-day comment/objection period which ended on 30 November 2021
- Responses to this notice are currently being processed by the Department of Jobs, Precincts and Regions (DJPR). Once this has been completed, the Government will advise the Company.
- Subject to a positive outcome, the next stage in the process is the negotiation of an agreement with traditional owners, which can be expedited where traditional owners have determined Native Title and/or other equivalent agreements with the State
- The final stage is an assessment of the Company and its planned activities by the ERR before granting the Exploration Licence. Note that in this case much of this assessment was completed as part of the North Central Victorian Goldfields Ground Release tender process.

The area covered by the ELA comprises a mixture of crown land and freehold land, with the latter including a mix of broadacre farms and low density residential areas, so there is a variety of stakeholders including traditional owners, farmers and local communities. The Company, with the assistance of the Victorian Government, has therefore commenced a process of stakeholder engagement which will broaden as the application process progresses.

### **Prospectivity analysis and technical work**

In parallel with the application and community engagement processes, the Company has collated the large amount of data acquired by previous explorers over the area, including the relatively recent initial exploration work undertaken by Kirkland Lake on the tenement before it expired (immediately before it was placed under moratorium for inclusion in the NCVG tender process).

This data includes a comprehensive set of extensive and high quality geophysical and geochemical surveys, including:

- Detailed airborne and ground gravity and regional gravity reprocessing/modelling
- Over 23,000 line kilometres of airborne magnetic, radiometric and digital terrain surveys
- Induced polarisation (IP) and airborne electromagnetic (AEM) surveys – effective tools for defining sulphides, which are often associated with gold mineralisation in the Fosterville Goldfield.
- Extensive multigenerational geochemical soil surveys defining numerous targets, many of which are yet to be followed up with drilling

This data also includes prior drilling, which although widely spaced and/or shallow and/or highly localised, has identified gold mineralisation in several locations such as the Goornong South and May Reef prospects.

Most of these targets are situated in the corridor north and south along strike from the Fosterville gold mine, and are associated with the same stratigraphy and family of structures that host high grade gold mineralisation at the mine itself.

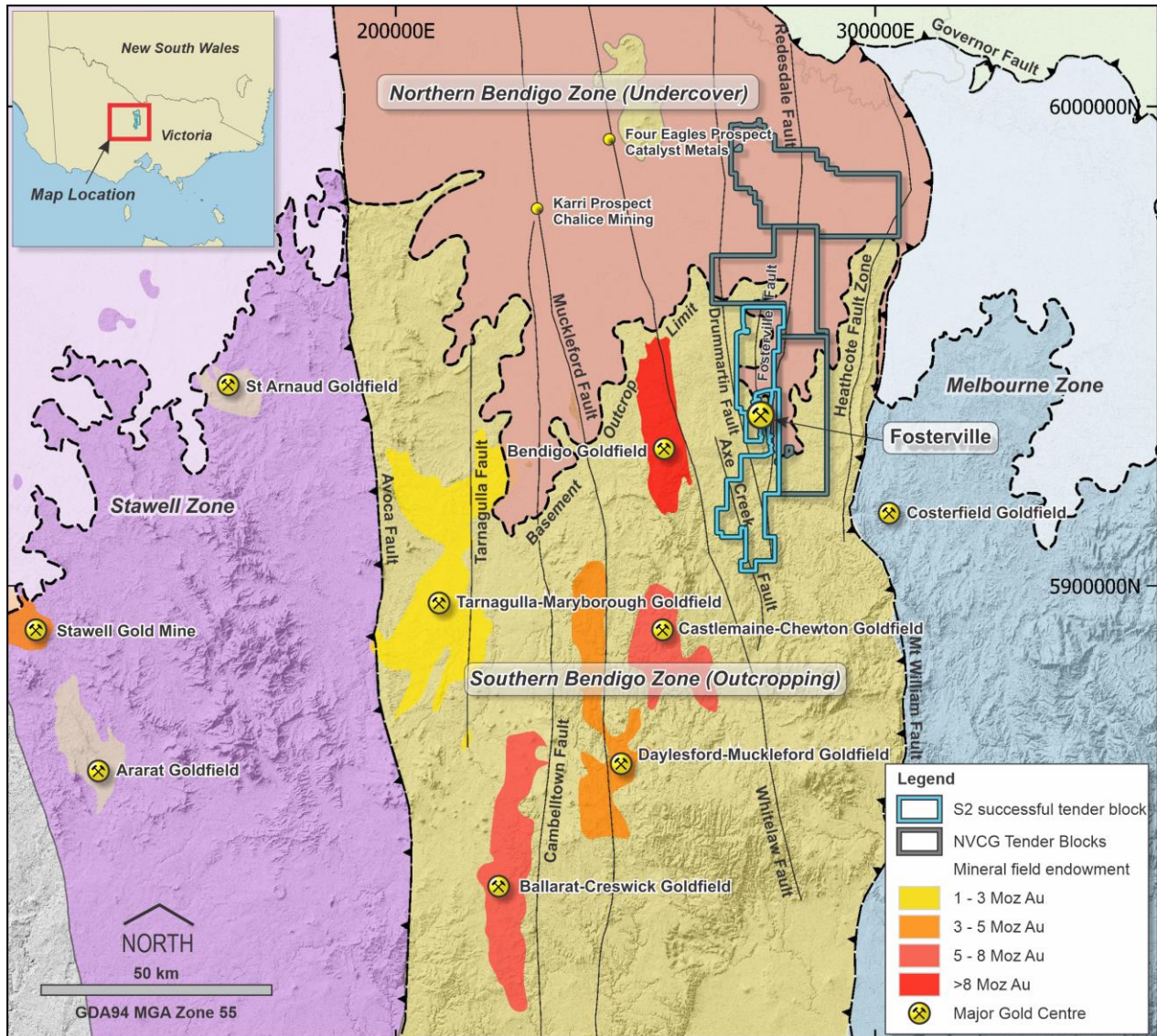


Figure 1. Regional map of the Victorian Goldfields showing the location of the awarded Block 4 (blue), the Fosterville mine and gold endowments of selected fields.

### About the Greater Fosterville project

Exploration Licence Application EL7795, or the Greater Fosterville Project, surrounds the world class Fosterville Gold Mine, which currently has a Mineral Resource of 4.5 million ounces at 9.8g/t gold (refer to <https://www.kl.gold/our-business/resources-and-reserves/default.aspx>). The mine produced 2 million ounces up to 2018 before the addition of the high-grade Swan Zone boosted production to over 600,000 ounces per annum.

The Bendigo and Fosterville gold districts comprise high grade gold mineralisation within quartz veins or reefs hosted by tightly folded turbidites made up of alternating sandstones and shales. At Bendigo, most



mineralisation is in the form of quartz saddle reefs, which occupy the noses of tightly folded anticlines, whereas at Fosterville, most mineralisation occurs within quartz lodes which crosscut the hinges of both anticlines and synclines. Both gold fields are located in the eastern part of the greater Bendigo Zone, which is one of several zones bound by large scale thrust faults that together comprise the Lachlan Orogen. The Bendigo Zone is bound by the Avoca Fault to the west and the Heathcote Fault to the east.

In contrast to the adjacent zones, the Ordovician interbedded sandstone, siltstone and shale turbidite sequences of the Bendigo zone are interpreted to be underlain by Cambrian mafic volcanics (Figure 2). This substrate of Cambrian mafic volcanics is considered to be enriched in gold relative to other rocks, and the ultimate source of the gold now in the quartz lodes, which may be a reason why the Bendigo Zone is so well endowed compared to other zones.

Gold sourced from the Cambrian mafic volcanics is interpreted to have been transported in hydrothermal fluids up the major faults and then into smaller scale faults which developed in the hanging walls of the major faults as deformation progressed. Mineralisation in the Fosterville Goldfield generally manifests where these smaller scale faults, such as the Fosterville and O'Dwyer's faults, intercept gently south plunging chevron folded shale-sandstone sequences. It is often best developed where these faults cross fold noses and refract and dilate as they pass through them. Mineralisation may develop strongly at the intersection of these faults and fold noses, and form ribbon-shaped ore shoots with long plunge extents. For example, the shoot extending from the Falcon open pit to the Phoenix underground zone of the Fosterville Mine extends for over 2.5 kilometres down plunge. Figure 3 below provides a schematic representation of mineralisation in the Fosterville Goldfield.

The key structures hosting high grade gold mineralisation in the Fosterville Mine are interpreted to extend north and south into S2's Greater Fosterville Project. In addition, several en-echelon fault-fold pairs similar to the Fosterville and O'Dwyer's faults have been mapped within the project area. All these structures are considered prospective for Fosterville-style mineralisation.

By way of example, mineralisation at the Goornong South prospect, located 8 kilometres north of Fosterville and only 4 kilometres north of Kirkland Lakes' new Curie Zone, is associated with a repetition of one of these en-echelon structures, and mineralisation has already been traced up to 1.2 kilometres down-plunge from its surface position.

Several geological papers have been written on the structural controls of gold mineralisation in the Lachlan Orogen, and more specifically the Bendigo Zone, citing more dilated lower order faults as the preferred path for gold bearing fluids (i.e. Cayley et al. 2011 and Rawling et al. 2011). As a consequence, gold mineralisation is preferentially concentrated in a corridor offset from the surface position of the major structures, where smaller scale faults and folds have developed in the hangingwall. In the case of the Fosterville Goldfield, the underlying Heathcote Fault is a first order structure, the Redesdale Fault, which runs along the eastern margin of S2's tenure is a second order structure and the mineralised faults such as the Fosterville and O'Dwyer's are third order structures splaying off the Redesdale Fault. There is a distinct concentration of gold deposits and occurrences running in a broad corridor offset 1.5 to 5 kilometres to the west of the Redesdale Fault. This corridor runs the length of S2's tenure (Figure 4).

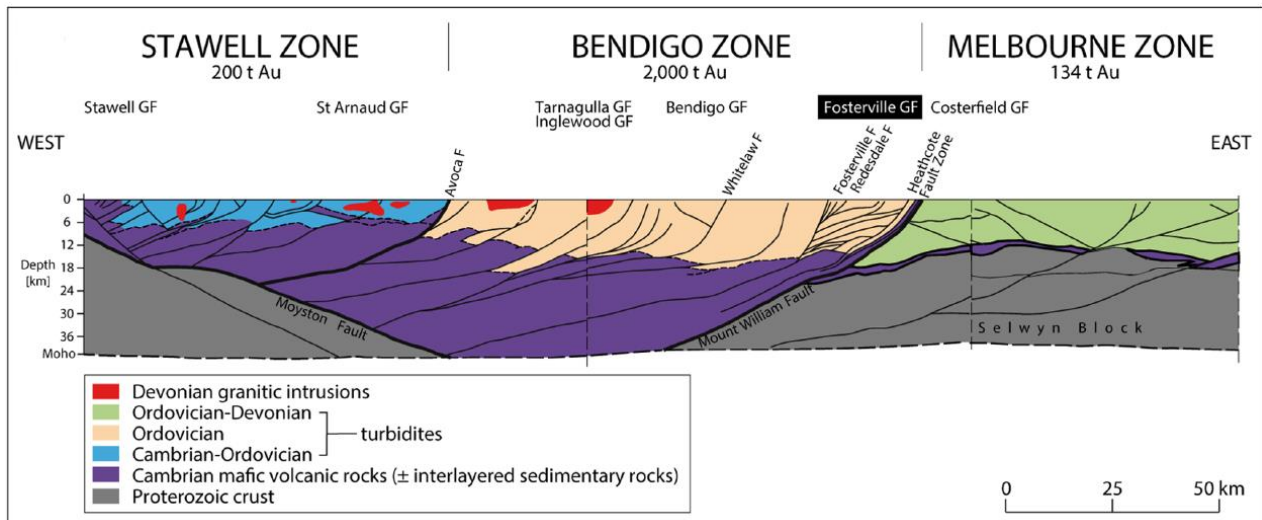


Figure 2. Cross section through the Lachlan Orogen in western Victoria. The Fosterville gold deposit is located within the Bendigo Zone which is bound by the Avoca Fault in the west and Heathcote Fault Zone in the east. Fosterville mineralisation is predominantly located on the footwall of the Fosterville Fault within folded turbidite rocks (beige colour). (Sourced from Ore Geology Reviews, Vollger et. al., 2020)

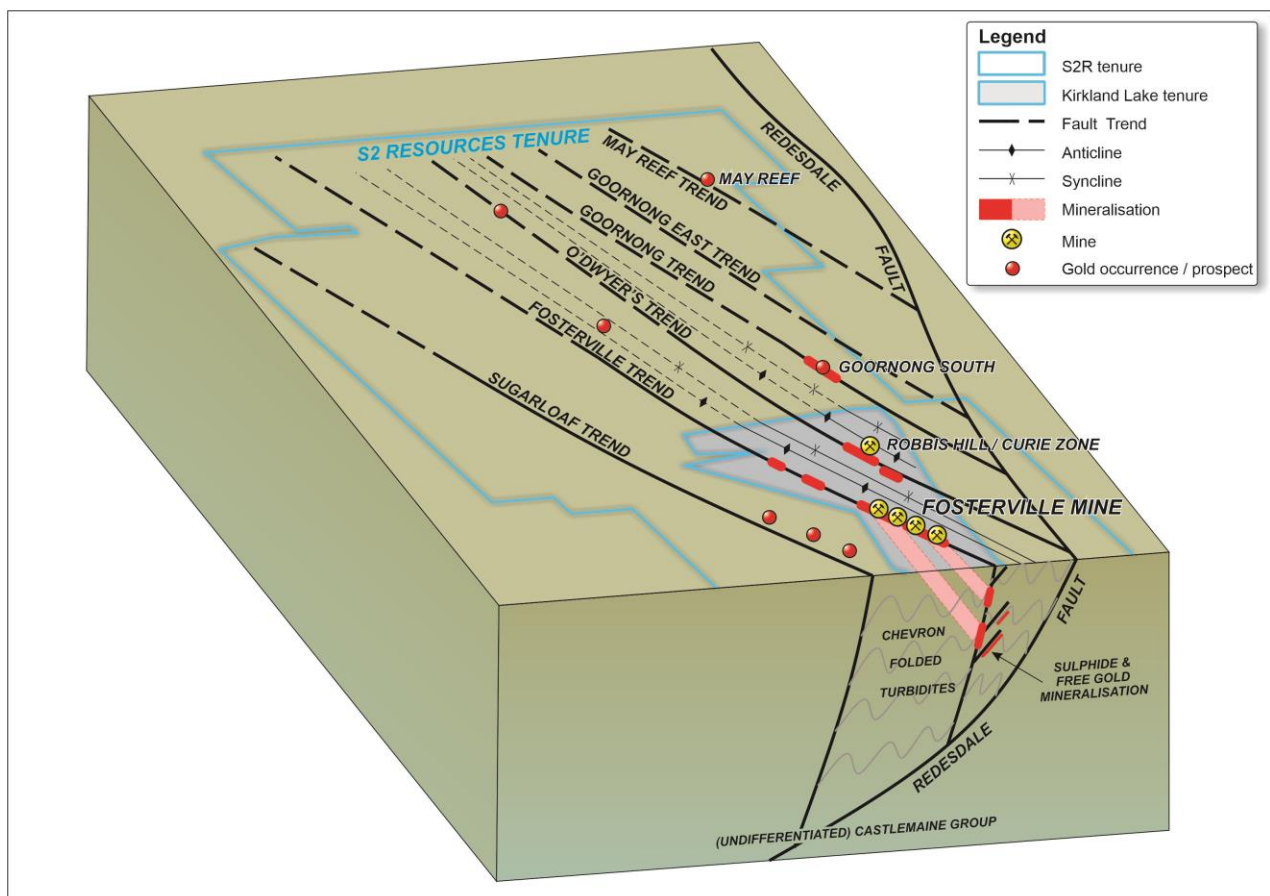


Figure 3. Schematic block model of the Fosterville Gold mine and the northern portion of S2's Greater Fosterville Project showing gold mineralisation in association with the Fosterville Fault where smaller scale faults cross-cut fold axis (face panel). Key structures hosting gold mineralisation are interpreted to extend north and south into S2's tenure. In addition, multiple faults en-echelon to the Fosterville Fault, trend across S2's tenure (top panel). These structures will be the focus of exploration targeting.

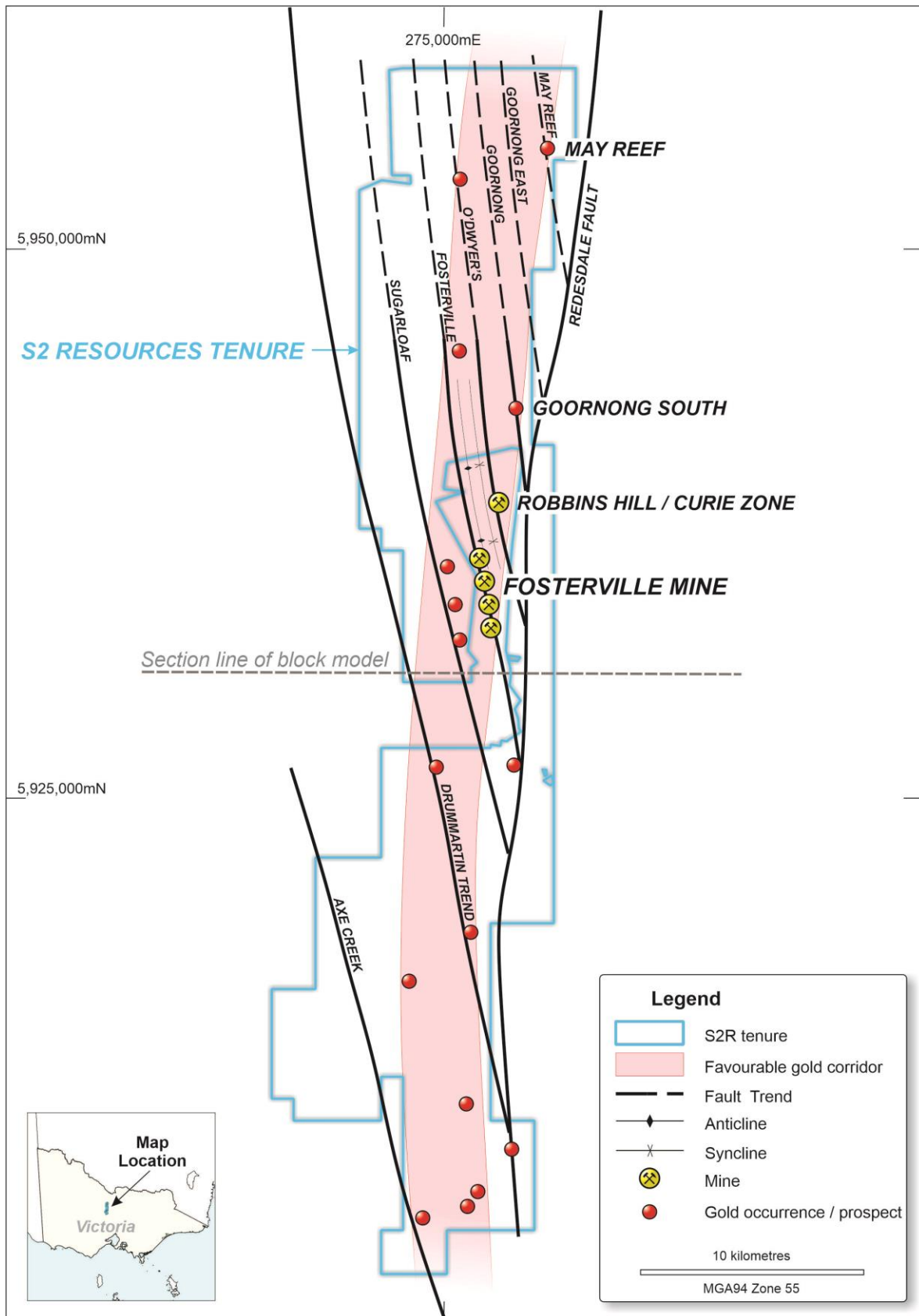


Figure 4. Map of the Greater Fosterville Project showing gold deposits/occurrences/prospects, key structures and the favourable corridor for gold mineralisation running 1.5 to 5 kilometres west of the Redesdale Fault.



This announcement has been provided to the ASX under the authorisation of the S2 Board.

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