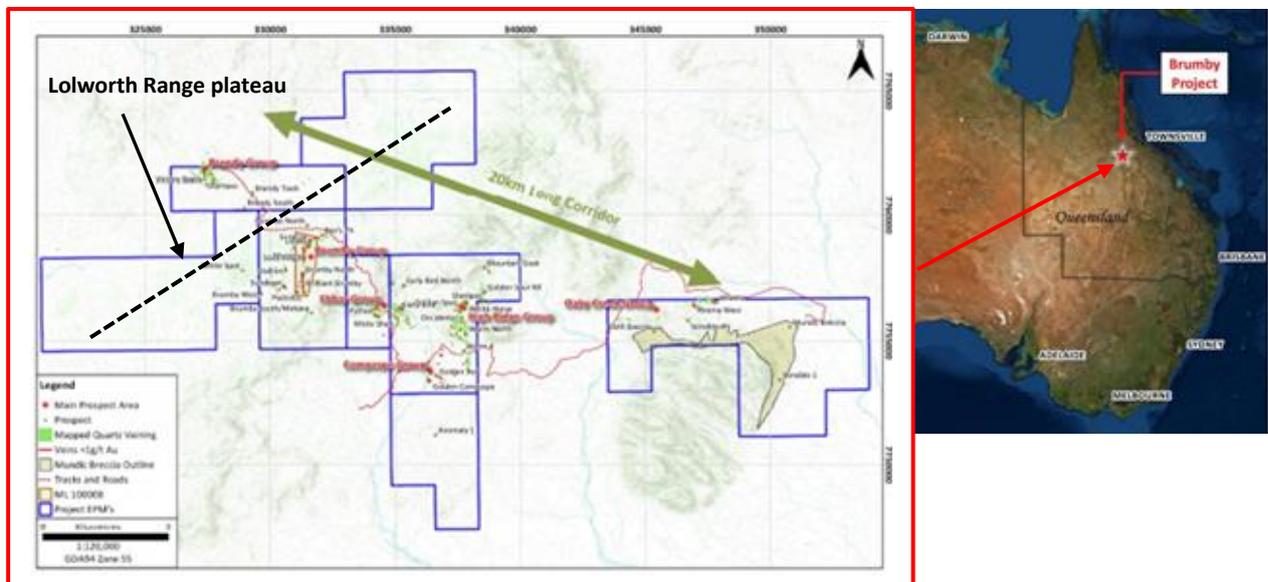


## INTRODUCTION

InterGroup Mining Limited (IGM) commissioned Map to Mine Pty Ltd (MTM) to prepare a Competent Person's Report on IGM's tenements in Queensland for inclusion in a prospectus for admission to a tier one international stock exchange. The CPR has been prepared to meet the requirements of the VALMIN Code, the JORC Code and the European ESMA regulations.

## PROJECT DESCRIPTION

IGM was incorporated in 2013 as an unlisted Australian Public Company. The Company owns a 100% interest in a major gold exploration project called the Brilliant Brumby Project in North Queensland, Australia. The project lies 250km inland by road from the major seaport of Townsville. IGM holds one Mining Lease ML 100008 (179 hectares) and four EPMs (18419, 25299, 25431 & 26366) and has also applied for another EPM (27705) which together cover an area totalling 179km<sup>2</sup>.



***Location of the licence area highlighting the 20km long and up to 5km wide NW trending envelope of 60 quartz vein prospects discovered to date***

Although kaolin deposits are not well known in the area, IGM has discovered widespread zones of kaolinized granite mineralisation on the Lolworth Range plateau along with numerous narrow-vein gold prospects. In addition, there is potential for bulk tonnage breccia hosted gold mineralisation.

The Brilliant Brumby Project lies in a prospective part of the Lolworth Igneous Complex which has only seen sporadic exploration despite the past mining of high-grade gold at a number of locations.

The most advanced kaolin and gold prospects have been bulk sampled and metallurgically tested with the kaolin being assessed both in Australia and overseas. The gold prospects have been assessed locally through on-going bulk sampling trials at IGM's on-site gravity separation plant. The mineral inventory is being further increased by the progressive exploration of additional prospects.

IGM was the first company to recognise the kaolin potential of the area in 2017. Results to date have established the potential to upgrade the material to 4N and possibly 5N high purity alumina (HPA) as well as for use as a pozzolan to improve the qualities of concrete and possibly help reduce the large scale of CO<sub>2</sub> emissions by the cement industry. The assessment of this kaolin mineralisation is ongoing.

## **GEOLOGY AND MINERALISATION**

The geology is dominated by Devonian granites which intruded into older metamorphic rocks about 380 million years ago (Ma). The granite is the host to arrays of narrow quartz veins and is occasionally cut by north-easterly trending dacitic dykes, while in the east, the Devonian granites themselves have been intruded by Permian (265-285 Ma) granite stocks, dykes and breccias.

Erosion and weathering of the granite over hundreds of millions of years has resulted in the formation of a layer of kaolinized granite beneath a flat land surface. Renewed erosion commenced about 20 million years ago which has exposed the kaolinitic profile along the Lolworth Range escarpment.

### **Kaolin**

Widespread kaolinized granite occurs on the weathered Amarra Granite along the Lolworth Range plateau. The original granite was relatively low in iron bearing minerals which has allowed the formation of high-quality kaolin deposits as residual mantles.

The commercial potential for kaolin for industrial use and HPA production was first recognized by Messrs W. Doyle and K. Doyle in 2017. The extent of the kaolin was initially exposed during excavation of the *Surprise* gold pits and subsequent examination of satellite imagery showed the white outcrops of white kaolinized granite at other sites along the Lolworth Range escarpment.

### **Gold**

Gold was discovered on the Project area in 1932, 60 years after the discovery of the *Charters Towers* Goldfield and over 70 years after the nearby *Cape River* alluvial goldfield at Pentland. The Brumby gold mineralisation is marginally younger than the gold at the 6Moz *Charters Towers* Goldfield. Partly due to the rugged terrain, the goldfield on the Project area remained little known until the resurgence of Queensland gold exploration late last century.

The dominant gold potential lies in granite hosted narrow mesothermal quartz veins of short individual strike length within steeply dipping sericitic hydrothermal alteration lodes. Plus, there is additional potential for bulk tonnage breccia hosted mineralisation in the eastern basement terrane.

Widespread occurrences of mesothermal quartz-vein hosted gold have been found in the Amarra Granite on the Project. At Brilliant Brumby a combination of historic knowledge, geological mapping and drilling has established a 2km long mesothermal vein system. Plus, there has been the rediscovery of adjacent vein fields at *Golden Spur*, *Python* and *Brandy Creek* which had been "lost" for decades.

Mesothermal quartz vein gold on the Project area shares similarities to the *Charters Towers* vein systems, with the gold contained in quartz veins within sericitic hydrothermal alteration envelopes (lodes). Individual quartz veins at Brilliant Brumby typically have strike lengths of 5 to 100m.

The gold bearing lodes tend to be oriented north-northwest and usually display a more strongly en-echelon pattern (closely spaced, parallel/subparallel, overlapping or step-like minor structures) than at *Charters Towers*. A proven mineralisation model suggests that the vein systems on IGM's tenements are likely to have formed at shallower depths than at *Charters Towers* which highlights the potential for more continuous structures with higher-grade gold mineralisation at depth.

The Project area covers a remarkable complex of mostly en-echelon quartz vein arrays which are scattered over a WNW trending strike length of 20km. These arrays occur in groups situated 2 to 5km apart and are typically 1 to 4 km long and 500 to 1,500m wide. Detailed geological mapping completed so far has outlined 60 quartz vein prospects (grouped into 6 areas) within a WNW trending envelope 20km long and up to 5km wide. These groups contain at least 500 individual quartz veins which have a cumulative strike length of 11km, 25% of these sampled veins have returned gold grades >1g/t.

## **EXPLORATION**

The Brilliant Brumby Project lies in a prospective part of the Lolworth Igneous Complex. Gold was first discovered on the Lolworth Range at Brandy Creek in 1932, but since then there has only been sporadic exploration. This has resulted in large areas remaining only sparsely explored and many promising prospects being abandoned before being subject to the necessary evaluation.

IGM's subsidiary recognised the widespread gold occurrences and poorly explored nature of the area and commenced its mineral tenement acquisitions in December 2009. ML 100008 was granted in October 2016 following good drilling results in the *Brilliant Brumby* area. Most recently, EPM 27705 was applied for in October 2020 to cover extensions of kaolin mineralisation from EPM 18419.

Exploration has included extensive geological mapping, sampling and the drilling of 200 reverse circulation drill holes (for 15,763m) along with geochemical and ground geophysical surveys. Eighteen of the prospects were drilled during programs in 2103-14 and 2018-19. The 2018RC drilling assays above a 2g/t Au cut off averaged 5.5g/t Au. The continuity and lateral extend of most of the intersections remains to be established with follow up drilling being recommended on many sites.

## **KAOLIN ASSETS**

The kaolin assets of the Project are located in the lateritised and leached granite in the Lolworth Range on ML 100008, EPMs 18419 and 25299, and on EPM application 27705. Kaolin is seen to extend both to the east and west of the *Surprise* pits and is an attractive target. The intensely white kaolinized granite has the potential to be upgraded to a kaolin clay product by screening out the quartz grains. The identification of outcrops of white kaolinized granite at other sites along the Lolworth Range escarpment has resulted in an application being made for EPM 27705.

During the 2013 and 2018 RC drilling for gold at *Surprise* on ML 100008 intersected kaolinized granite in most holes. Re-examination of these drilling results outlined a 1-16m thick band of kaolinized granite, averaging about 9m thick with a mean grade of around 18.7% Al<sub>2</sub>O<sub>3</sub>, lying beneath thin cover.

Limited reconnaissance has confirmed more kaolin exposures over 4km of strike, with satellite images suggesting it persists elsewhere along the Lolworth Range. Work to date has found economic kaolinite associated with more intense leaching near the eroded boundary of the Tertiary cover which occurs on an 18km NE trend along the southern side of the Lolworth Range.

### **High Purity Alumina (HPA)**

Metallurgical work began in 2017 and subsequently bulk samples were taken from beside the gold lode at the *Surprise* pits. Commercial assessment has shown that the clay in the weathered granite was predominately kaolinite which was seen as being a good for both HPA and as a cement additive.

Ginn Mineral Technology reckoned that the Brumby kaolin sample contained some of the highest quality minerals that they had evaluated over the last 25 years. Whilst Lava Blue, roasted and leached Brumby kaolin using the aluminium chloride hexahydrate process to produce HPA of 99.998% purity which was crystallised with a colour comparable to commercial grade HPA.

### **Metakaolin**

There is a proposal for Brumby kaolin to be investigated as a metakaolin pozzolan for use in the cement industry. Pozzolans form compounds with cementitious properties and metakaolin has the potential to partially replace cement in the production of concrete reducing CO<sub>2</sub> emissions.

The Cement Business Advisory (CBA) is currently investigating the potential to use Brumby kaolin as a substitute for use in manufacture of cement clinker. CBA believes that the kaolin may be used in the manufacture of both white and grey cement and that some plants may undertake trials.

Geological mapping is proposed to establish the extent of surface kaolin exposures and prospective areas under thin cover with shallow drilling to determine the subsurface extent of kaolinite development, alongside bulk sampling and metallurgical testing. This would be followed up by further exploration and resource definition to delineate high-grade kaolinized granite resources.

## **GOLD ASSETS**

Gold mineralisation occurs in narrow vein mesothermal quartz deposits, mainly within granite. Based on a 3g/t gold cut-off for open pit mineralisation, and a 10g/t gold for underground mineralisation, potentially ore grade gold assays were returned from drill holes on a total of 8 prospects. There is also the potential for breccia and/or stockwork hosted mineralisation on EPM 26366.

IGM progressed mining lease ML 100008 over the Brumby Group of veins that extend over 2km and has potential for shallow open pit mill feed. *Brilliant Brumby*, *Brumby North*, *Surprise* and *Silica Ridge* have potential for underground mining and/or deeper open pits if continuity allows. Whilst *Brandy Creek* has the potential to provide additional gold mineralisation to be trucked over for treatment.

### **Metallurgy and processing**

Metallurgical tests have demonstrated that the gold is largely recoverable by simple, non-polluting gravity separation. This has led to the construction of a small gravity recovery plant at Surprise and enabled the on-site evaluation of near surface lodes and provides the potential for early cash flow. The current 20tpd treatment plant has two small ball mills with trommels, sluices and a Gemeni table to produce concentrate for off-site assessment. Further drilling and bulk sampling have been proposed on various tenements to delineate additional gold resources for processing on ML 100008.

Gekko Systems obtained gold recoveries of 97.5% into 5.8% of the mass by combined gravity (90.4%) and flotation (7.1%). The mineralisation's relatively nuggety nature means that bulk sampling gold grades are likely to be higher than drilling results. Pit samples as high as 13.5g/t Au were recorded at Silica Ridge in 2020 during further excavation work there and at *Surprise* and *Brumby North*. At the latter, a new, soil covered vein system was found with some visible gold samples assaying to 155 g/t gold.

The recovery plant was established during 2018 and has processed 2,055t of material out of 4,951t mined from nearby prospects. Two trial gravity processing methods have been tested. The current plant uses two ball mills with material from the trommels flowing through a 2mm mesh for screening before running over the sluices for initial gravity recovery of gold and other heavy particles.

After the introduction of the ball mills, a total of 112.4kg of concentrate was produced. Results of the 20tpd plant have improved the economics of mining in the area. However, there is considerable unliberated gold in the tailings which assayed from 0.3 to 1.1 g/t gold and current test work will allow the efficiency of the plant to properly assessed.

## **PROPOSED EXPLORATION WORK**

A \$3.5 million program and budget for the next year has been proposed to advance the exploration and evaluation of the kaolin and gold potential towards determining mineable deposits.

Mapping, drilling, bulk sampling and metallurgical testing of the kaolin deposits is proposed to delineate high grade kaolinized granite resources, including the first specific drill testing of the kaolin potential on ML 100008, plus further kaolin exploration on the EPMS. The resources are to be evaluated for production of metakaolin for cement; and similar analysis will be pursued on other kaolin applications.

Proposed programs for the exploration and delineation of high-grade gold include a processing facility upgrade with further test mining/processing, *Brandy Creek* mining lease application, resource drilling/sampling at ML 100008, *Brandy Creek* and *High Ridge* and exploration of *Mundic Breccia*.

## CONCLUSIONS

The Brumby Project covers a large licence area in a highly prospective region 80km west of Charters Towers which has remained largely unexplored since the initial gold discoveries were made in the 1930's. IGM has undertaken detailed exploration and definition work which has resulted in the successful identification of both high quality kaolin in kaolinized granite along with quartz vein hosted gold deposits.

IGM has identified the potential for significant kaolin resources over 18km of strike length on the Lolworth plateau. No previous exploration for kaolin has ever been completed in this area. Metallurgical test work has already shown the potential for the use of Brumby kaolin in the manufacture of HPA for high-tech applications and as a metakaolin pozzolan in the cement industry which allows CO<sub>2</sub> emissions to be substantially reduced in green concrete.

Ahead of establishing a JORC-compliant resource, the Company is now moving into systematic resource drilling together with bulk sampling to confirm that the kaolin is of sufficient brightness and contaminant free across bulk mineable widths. With a view to taking the project into production, the early application of mining leases is recommended as well as Preliminary Economic Assessments (PEA or Scoping Studies) to evaluate the economic potential of the growing number of operational alternatives that are rapidly becoming apparent at this Project.

Mapping has so far outlined 60 quartz vein deposits (grouped in 6 areas) within a 20km long and up to 5km wide NW trending envelope. These groups contain at least 500 individual quartz veins where 25% of these sampled veins returned gold grades of more than 1g/t. Eighteen of these prospects have been drilled with the latest results showing an average grade of 5.5g/t gold. Based on a 3g/t cut-off grade for open pit mineralisation and 10g/t for underground mineralisation, potentially ore grade assays were returned from drill holes on eight prospects.

These widespread occurrences of mesothermal quartz-vein hosted gold on the Project area share similarities to the vein systems seen at the 6Moz *Charters Towers* Goldfield. The gold bearing lodes tend to be oriented N-NW and usually display a more strongly en-echelon pattern than at *Charters Towers*. A proven mineralisation model suggests that the vein systems on the tenements are likely to have formed at shallower depths than at *Charters Towers* which highlights the potential for more continuous structures with higher-grade gold mineralisation at depth.

Bulk sampling and on-going gravity treatment of five outcropping quartz vein hosted deposits has successfully recovered gold without using hazardous chemicals. Due to the relatively nuggety nature of the mineralisation, bulk sampling gold grades were likely to be higher than the gold grades suggested by drilling. Additional shallow targets for bulk sampling have been identified at *Brandy Creek*, *Brilliant Brumby*, *Brumby North*, *Surprise* and on the *High Ridge* prospects. When the treatment trials are completed and the gold recoveries known, evaluation of the results may establish how the processing circuit can be best upgraded to allow the release of the additional fine gold.

There is considerable potential for more gold discoveries as just 7% of the Project area has been mapped and sampled. IGM plans to complete systematic exploration to test and define existing and future discoveries. Further excavations of near surface gold mineralisation will provide easy feed for the gravity treatment plant and potentially provide cashflow for ongoing operations. At the same time considerable additional potential exists in the large *Mundic Breccia* gold target. As with kaolin, the Company is well positioned to complete further drilling and other exploration work in order to establish JORC-compliant resources which would form the basis of feasibility studies.