

Big plans for the new exploration and mining season at Brumby

It does look as though 2020 is fast shaping up to be a big year for InterGroup Mining's (IGM) Brumby Project and the gold price. Untested gold bearing mesothermal veins are known to be present across the project area but these have seen little exploration effort due to the rugged terrain and difficult access. With the wet season over, field work is recommencing at the Brumby Project.

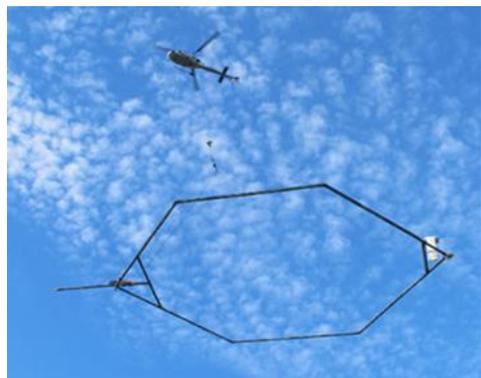
There are a series of important initiatives planned over 2020 which includes: a wide-scale geophysical survey, ramping up the on-site processing capacity, a \$1 million drilling programme and further exploration across a number of the newer prospects. Plus, there is the brand-new kaolin potential that is being investigated. All at a time when Australia is basking in record local gold prices.

Programme to define quartz veining at depth

IGM is currently in the midst of assessing geophysical techniques that could be used to define the quartz veining at depth and so gain an understanding of both the trend and extent of these veins. Truth is that extensive deep drilling is prohibitively expensive, so the mining industry has become increasingly reliant on geophysics in order to identify high quality drill targets. The choice of geophysical survey techniques to be used at Brumby seems to have boiled down to either Time Domain Electromagnetic (TDEM) or Sub-Audio Magnetics (SAM). The management is weighing up the pros and cons of each technique with an eye to achieving the best exploration results and best coverage for dollars spent.

SkyTEM is a leading airborne geophysical survey business that provides the acquisition and advanced processing of transient electromagnetic, magnetic and radiometric data. Transient electromagnetic (TEM) and time-domain electromagnetics (TDEM) are basically geophysical exploration techniques whereby electric and magnetic fields are induced by transient pulses of electric current with the subsequent decay response being measured and recorded.

SkyTEM measures variations in the physical parameters of the earth's subsurface. SkyTEM is an expert in airborne electromagnetic (EM) surveys that can detect alterations in mineralogy which can be represented in powerful 3D images. Certainly, SkyTEM systems are designed so that they can detect subtle variations in the conductivity/resistivity which allow the delivery of accurate high-resolution images of alterations in the earth. Processing this data allows the identification of anomalies that differentiate conductive/resistive zones which can then be followed up on the ground.



Airborne EM survey. Source: SkyTEM



Gap HeliSAM airborne survey. Source: Gap Geophysics

Whilst SAM represent proprietary geophysical methods which allow for the rapid acquisition of high spatial definition and/or deep penetration data related to both the electrical and magnetic properties of the earth. With deep exploration, we are talking about anything from 300m to in excess of 1,000m. The geophysical transmitter provides an alternating electromagnetic field either through distant electrode or through a loop. A high-performance magnetometer (such as Cs vapour Total B-Field) measures the earth's EM response to the transmitted signal with the earth's magnetic field.

With SAM, the EM signal is separated from the earth's magnetic field and parameters of interest can be extracted from the SAM waveform. It depends on the configuration of the survey, but the information provided includes: Total Magnetic Intensity (TMI), Total Field MagnetoMetric Conductivity (TFMMC), Total Field ElectroMagnetics (TFEM) and Total Field MagnetoMetric Induced Polarisation (TFMMIP). The technology has been 25 years in development with one of the first successful TFEM trials conducted for mineral exploration was the HeliSAM EM Survey (2014) at Lalor which is a deep volcanogenic massive sulphide (VMS) deposit within the Chisel Lake basin in NW Manitoba.

There is no messing about here as the board plans such a geophysical survey over the entire Brumby Project area in the coming months. Given the extent of this planned EM survey, it will allow new areas to be highlighted right across the project area which could bear similarities with existing discoveries in mining licence (ML) 100008 and Brandy Creek. It must be pointed out that deep exploration receives little guidance from surface expression, and so investors may well be in for a few surprises. Certainly, the results could serve to provide a big leap forward into the understanding of the potential extent of the gold mineralisation beyond that which has already been discovered following the analysis of historic mining on the tenements.

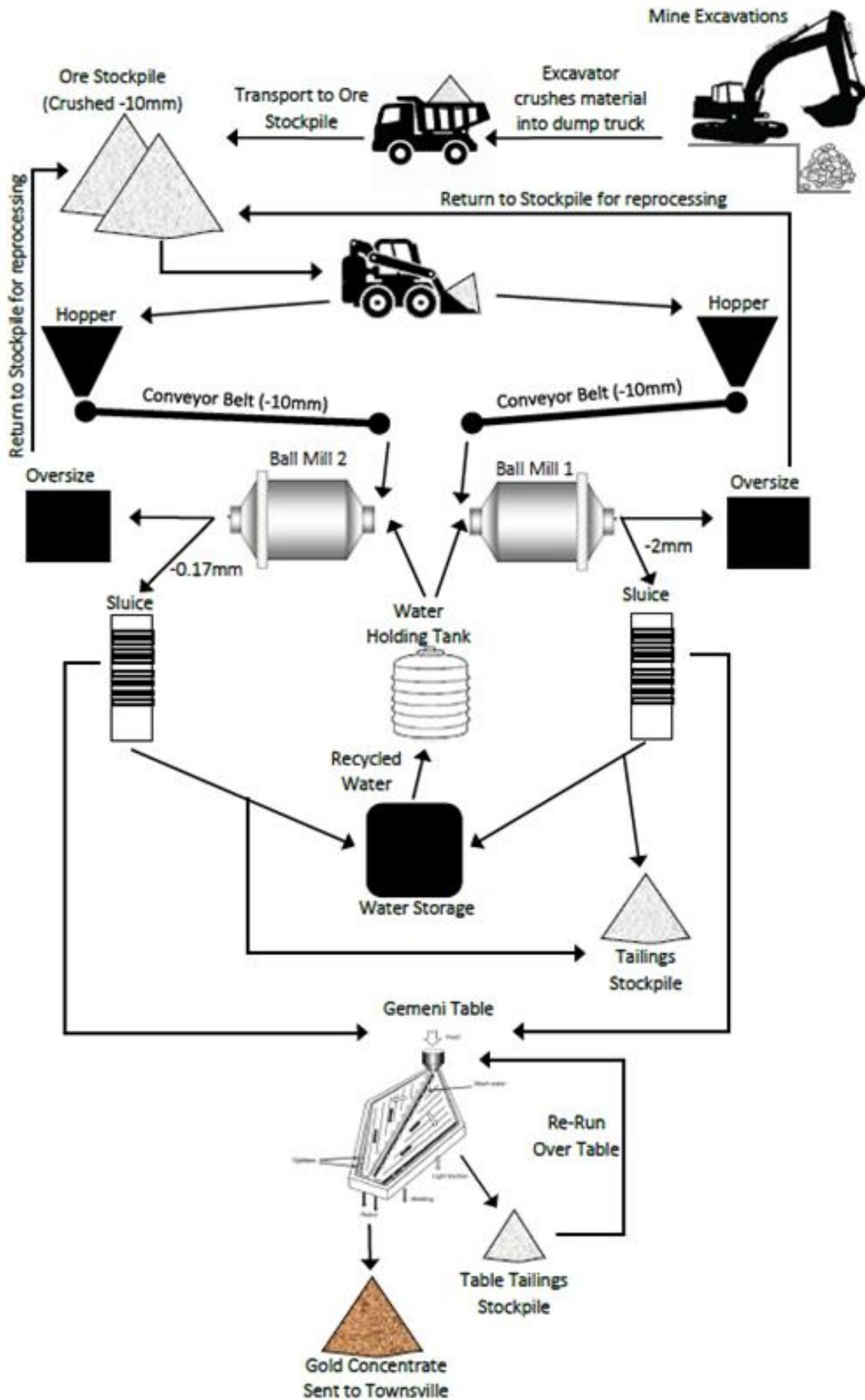
New equipment heading to site

Once minor maintenance has been completed, the Brumby mill will be starting up again shortly. A small-scale processing plant was established on site in late-2018 which has subsequently been upgraded to improve recoveries and increase capacity to process gold ore from the growing stockpiles of mined material which are awaiting treatment. The good news is that an additional ball mill has been purchased and is currently being fabricated to enable it to fit into the current processing circuit. This will increase throughput and production as well as helping to capture any super fine gold.



Additional ball mill which is almost ready to be delivered to the mine site

Last year there was plenty of evidence to show that the on-site processing operation was really coming together with the reported production of high grade concentrate along with free gold. Progress will be further improved with the inclusion of this additional ball mill in the current set-up. Fabrication work is almost complete which will allow the ball mill to be delivered to site allowing daily processed tonnages to be rapidly escalated. Over the last year or so, it has been clearly demonstrated that processing of the gold ore at Brumby is straightforward using gravity separation, where the gold can be separated from the waste based on their differing densities.

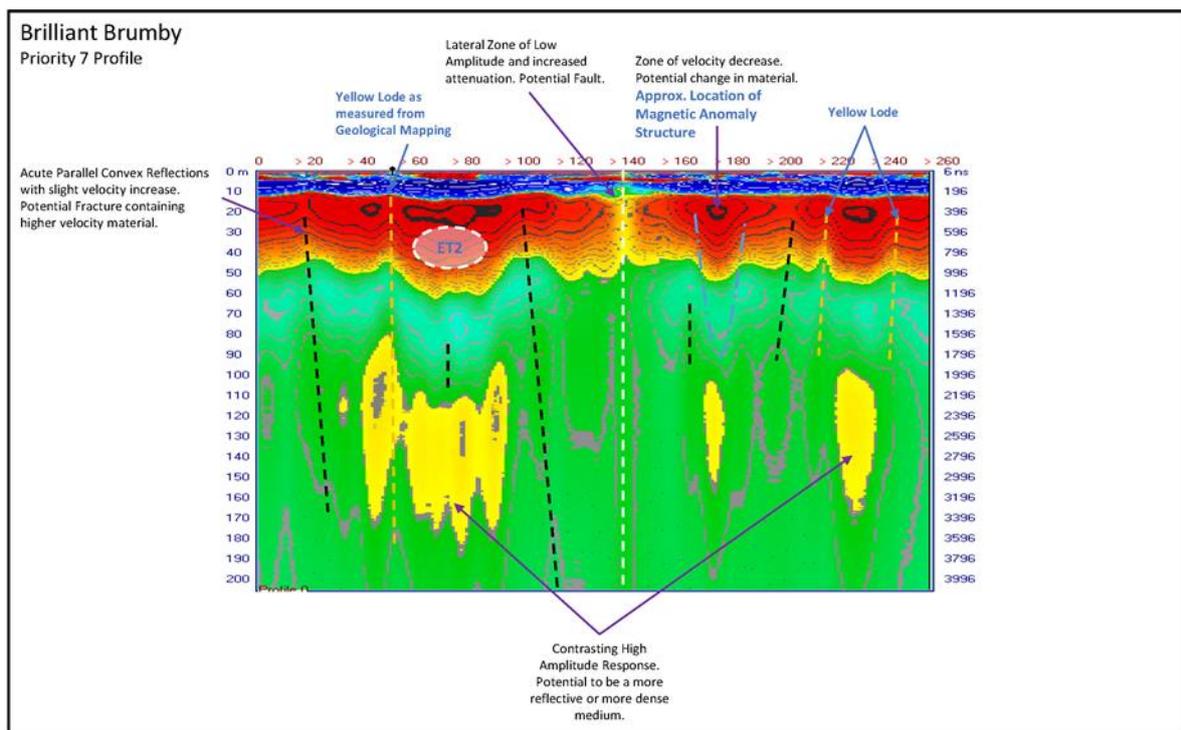


Configuration of the processing circuit at Brumby

Extensive drilling programme

To date there have been two drilling programmes at Brumby which have each substantially expanded the Company's understanding of the project and demonstrated rapidly increasing potential. The last drilling programme was undertaken between August 2018 and January 2019 where 148 Reverse Circulation (RC) holes were drilled for 11,130m to test new targets and gain a better understanding of the deeper gold potential at known prospects such as Brilliant Brumby, Oaky Creek, Brandy Creek, High Ridge and The Worm. In all, a total of 25 prospects were drill tested.

A \$1 million drilling program has been proposed on the ML 100008 to follow up on anomalous intersections from 2018 and to test deeper extents of the auriferous quartz veins. Diamond drilling is also proposed as part of this program to provide structural information on the veining. It does look as though there will be no shortage of news flow for IGM investors and we look forward to bringing them up to speed as this information becomes available.



Terravision ground penetrating radar (GPR) across a south-north section at Brilliant Brumby

Previously the Company had trialled ground penetrating radar (GPR) at various prospects around the Brumby Project. To verify whether certain GPR responses were valid it was necessary to run the trials over numerous zones of mineralisation known from surface geology and from below surface drilling information. The received responses are displayed using an amplitude scale where the shape of the response provides information on the structure of the medium. Examination of the GPR results showed few stand-out anomalies and the detail was not clear enough to define the individual veins with certainty. Hence the planned investment this year in project wide geophysics and an extensive drill programme.

Expanding mining activity

The vision behind the Company's corporate strategy is the establishment of viable mining operations based on the gold veins that characterise the Mt Stewart region. Towards this goal, tremendous progress has been made at the Brumby mining licence which the team is now planning to emulate at Brandy Creek. Initial gold mining activity at ML 100008 only began in 2018 which shows just how rapid the move into mining and processing has been.



Mining in progress at Brumby

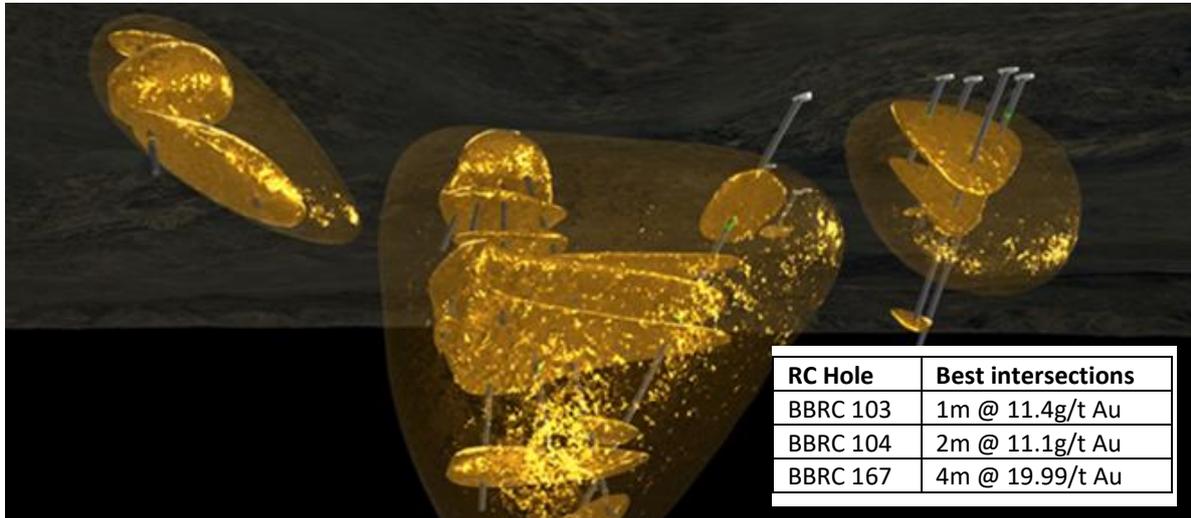
One of the main aims of the 2018-19 drilling programme was to target shallow open pit gold resources in granite hosted quartz veins for immediate mining and treatment at the onsite processing plant. High priority follow-up drill targets have been selected which are focused on defining a maiden and expanded resource. Certainly, the ability to generate a 3D model of exploration results has led to a greater understanding of the subsurface geology leading to the identification of an increasing number of shallow gold mining targets to a depth of 120m.

The gold bearing surface mineralisation is mined by a series of shallow pits which allows for low cost production. To date, mining activity has been concentrated at Surprise, Mystery, Silica Ridge and Brumby North. There is no need for drilling and blasting as free digging methods can be used as the material close to the surface has been weathered and can be successfully mined using an excavator. The overall current mining plan at ML 100008 and Brandy Creek is for a series of shallow open pit gold mines which will feed a central mill.

Further excavations are expected to commence later this year which are planned to include an extension of the current Surprise pit further north following the line of historical workings. Also, on the cards this year is the commencement of more focused mining at Brumby North. The move into mining not only allows for early stage revenue generation but also provides a comprehensive understanding of the processing requirements that will be needed in any large-scale operation in the future.

Brandy Creek has a lot of promise

The 2018 drilling programme saw the Company drill Brandy Creek for the very first time to investigate the extent of the mapped historic workings and mineralised quartz veins. Drilling has led to the discovery of impressive grades as high as 47g/t gold, which is close to the grades that were mined there in the past. Importantly, drilling has also confirmed gold in quartz-vein mesothermal mineralisation, and that near surface gold extends at depth. Big similarities have been noted between Brandy Creek and the Brilliant Brumby line, and so further exploration could be well rewarded.



Brandy Creek gold mineralisation and best drill intersections at this prospect in 2018

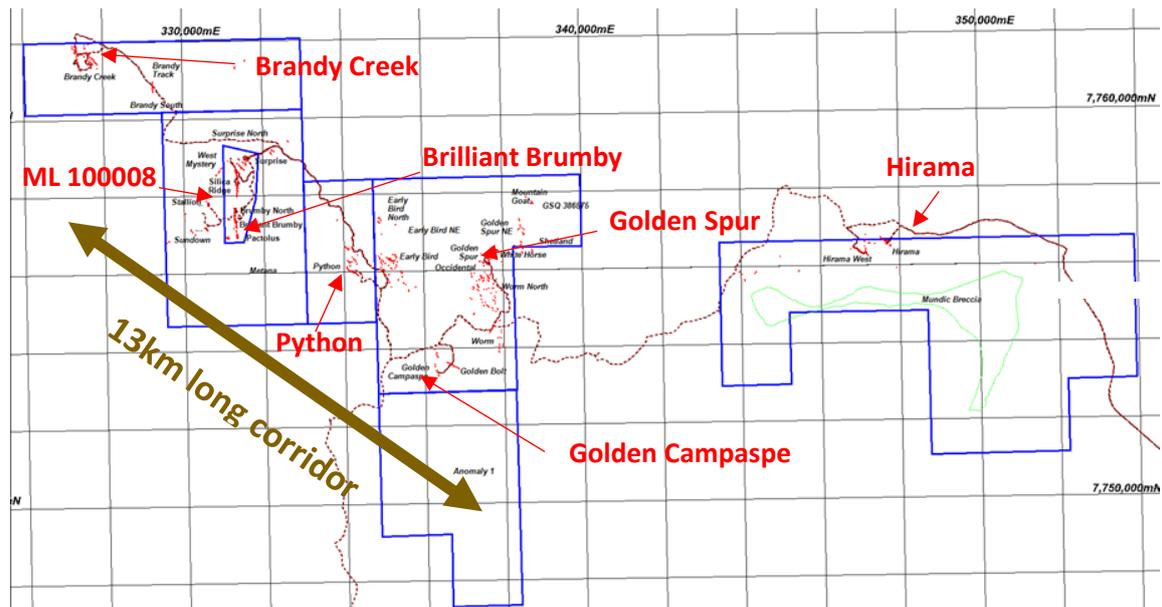
Preliminary modelling of the mineralised zones at Brandy Creek has already led to the delineation of almost 1 million tonnes (Mt) of gold ore with a highly variable grade averaging 0.7g/t for approximately 20,000 ounces, following the initial drilling. There are a series of high-priority drill targets which are designed to further test high-grade gold historic workings, with the goal of considerably expanding the resource.

This is one of the major areas to be targeted in the 2020 programme of exploration work, where further drilling is planned along with the application of a mining lease. The completion of a favourable Baseline Environmental Report in late-2019 suggested that there were no barriers to hold up such a mining licence application. The plan is to develop this exciting additional area in much the same way as Brilliant Brumby ML 100008 with the focus being on early stage mining and cash flow generation in order to limit dilution for shareholders. Selective mining is planned to target the quartz veins with the gold ore being trucked 5km to the Brilliant Brumby processing plant, where current capacity is being expanded.

Mapping and sampling of satellite prospects

In early 2018, a mapping and rock chip sampling programme successfully led to the identification of new areas of interest within both the known prospects and also within some brand-new prospects such as: HIRAMA Reef, High Ridge North, Stallion, Python and Brumby South; some of which were subsequently tested in the 2018-19 drilling programme.

Exploration data which has been accumulated at the Brumby Project has increasingly highlighted the growing real possibility that the gold-bearing quartz lodes lie over a 13km long WNW trending corridor. These lodes occur within structurally controlled clusters which are typically 1-2km long and 0.5-1km wide from Brandy Creek through Brilliant Brumby and Python to Golden Spur and Golden Campaspe in the south east.



Distribution of quartz lodes along the 13km long corridor & elsewhere in the project area

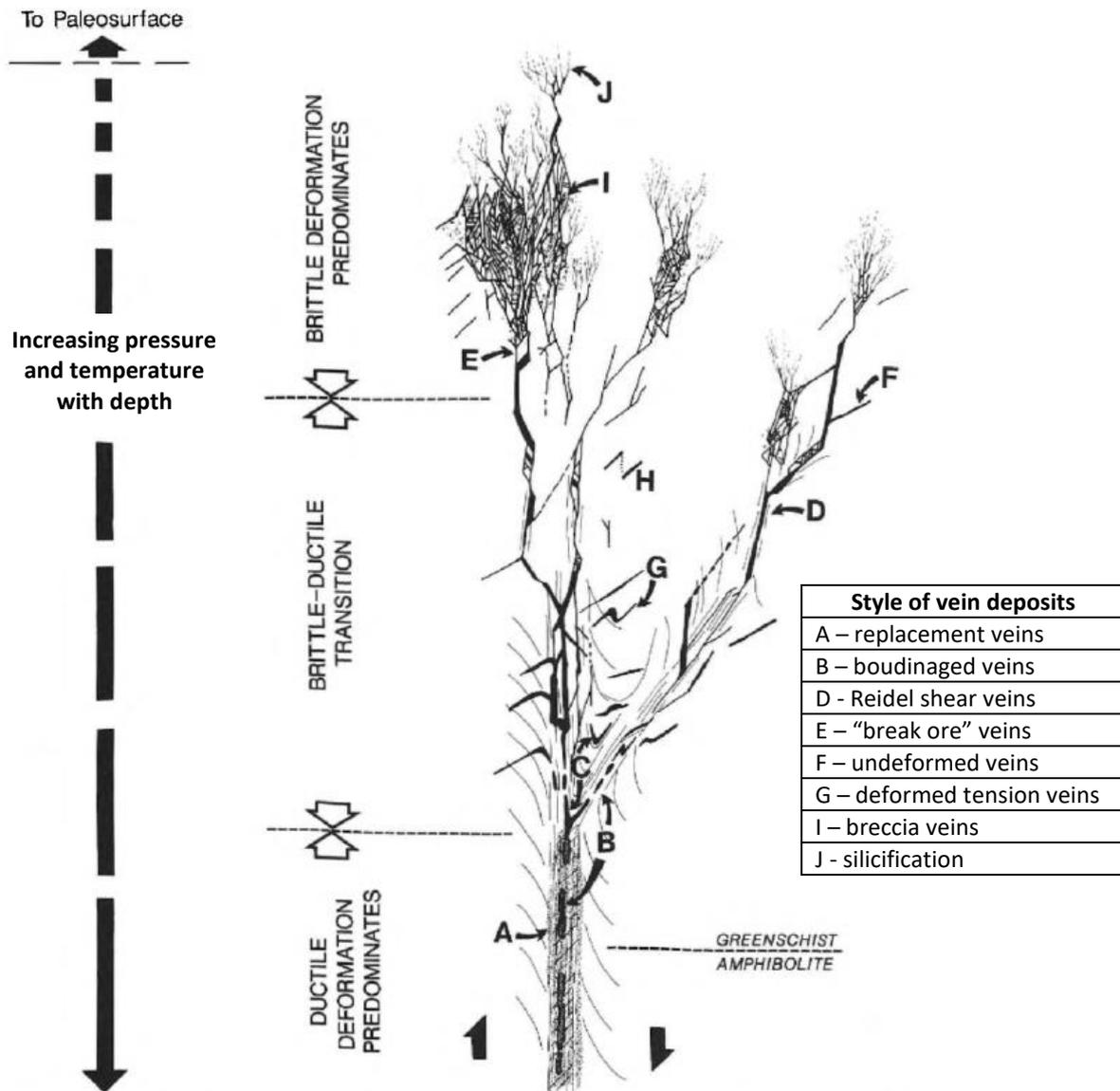
It has also been noted that buried under thin cover sediments to the NW are possible extensions of two of these clusters. In addition, more quartz lodes have also been discovered towards the east in the HIRAMA area. Maps generated from the Company's fast expanding project database show a strong correlation between the quartz lode distribution and results of stream sediment analysis.

Ongoing geological mapping continues to locate additional lodes with numerous stream sediment gold anomalies which need to be followed up. Currently, only 7% of the project area has been mapped in detail which speaks volume about the potential. Mapping and sampling of the some of the more recently discovered satellite prospects is expected to continue this year especially south of the Brandy Creek area and south of the Brumby ML area where historical workings have been discovered.

More focused and continuous mineralisation at depth

One aspect of the observed mineralisation that is likely to receive increasing attention going forward is the presence of stockwork quartz veining. Stockwork (also known as stringer zones) is basically a complex system of structurally controlled or randomly orientated veins. There are some areas of stockwork quartz veining which cover parts of Brumby North and Silica Ridge.

Surface mapping of the veins and lodes discovered in this high-grade gold system has revealed en-echelon (closely spaced, parallel/subparallel, overlapping or step-like minor structures) characteristics within quartz. This style of the vein deposits varies with increasing depth below the paleosurface (which is the surface of the earth as it was in prehistoric times before being eroded over the ages).



Variation in styles of vein deposits with depth.

Source: “Archean lode gold deposits in Ontario” paper Colvine et al (1988)

The recent mining at Surprise has uncovered some interconnecting veins between the sub-parallel reefs. This all points towards the project lying near the boundary between the brittle deformation domain and the brittle-ductile transition zone. IGM’s geologists are now convinced that this area represents a transitional zone from classic reefs like at Charters Towers and higher level stockwork veins.

The ramifications of this factor are hugely important. Basically, the brittle-ductile transition zone is the strongest part of the earth's crust and at this depth rock becomes less likely to fracture but tends to deform in a ductile manner. The result is that the project's position near such a boundary suggests the potential for more focused and continuous mineralisation at depth.

Potential additional revenue stream

Eagle eyed investors may have questioned the composition of the white rocks surrounding the gold bearing quartz veins. Well work on the ground has demonstrated that there is potentially approximately 100 million tons of kaolin available to mine. Essentially kaolin is a fine soft white clay which results from the natural decomposition of other clays or feldspar. It is also known as china clay and used for making porcelain and china, as a filler in paper and textiles, and in medicinal products which exploit the material's absorbent properties.

A kaolin sample has been sent for analysis to ascertain its purity and brightness as a potential saleable product from the Brumby Mine. This material is excavated along with the gold-bearing quartz veins and therefore could represent an additional revenue stream if the product has the right economic parameters.



Mining at Surprise. Source: Company

World kaolin demand stands at something like 38 million tonnes per annum which values the market at some US\$6 billion based on the average kaolin price in 2019 which has been estimated at US\$158 per ton. The chief use of kaolin is in the manufacture of white paper, but research house Merchant Research & Consulting has identified ceramics as the fastest growing market as well as highlighting that growth is also expected from non-traditional markets such as plastics and pharmaceuticals.

Asia Pacific is the main consuming region and Merchant Research expects that the market will grow driven mainly by demand from the developing countries like China, India and Malaysia. Materials Science publisher AZO Materials believes that 1.8Mt of imports into the Asian Region are coming from USA and Brazil. So, the project could be well-located geographically to supply such a market. For the time being, an initial sample has been sent to Western Australia for testing. Pending the outcome of the initial test will determine future work.

An exciting year ahead at Brumby

Increasingly the true size of the prize at Brumby seems to be becoming apparent. Not only is this a highly prospective project in the legendary Charters Towers Gold Province where more than 20 million ounces of high-grade gold has been mined, but the Brumby Project also spans over 100km² of highly prospective ground. Here, IGM has discovered grades as high as 176g/t Au, by exploring around historic high-grade gold mines. To date, the best finds have been along a prominent 2km Brilliant Brumby line in ML 100008 where small-scale mining and processing is ongoing.

The comprehensive exploration programme that is planned for 2020 has plenty of opportunity to provide a real glimpse of the true extent of the high-grade gold mineralisation. The geophysical surveys that are currently being evaluated ought to allow the management team to visualise the opportunities that exist way beyond the depth of the current exploration, as surface expressions provides little guidance of deeper structures. All the separate gold discoveries that have been made might connect at depth, which is yet to be proven and it might be that geophysics can help here.

It is the powerful combination of a potentially large scale near surface deposit, high grade gold and relatively straight forward mineral processing that could well suggest a Tier 1 status over the coming years. Work is planned towards a JORC-compliant resource which would allow an increasing valuation to be placed on IGM by mining analysts. Over recent decades major mining companies have become increasingly dependent on juniors like IGM for their projects of the future. Moving ahead it is likely that the company will increasingly appear on the radar of the big miners. The majors seem less anxious about JORC-compliant resources but will want to see evidence of a large system in place and a few compelling diamond drill intersections.



Gold price in Australian dollars. Source: Goldprice.org

It must be pointed out that all this is being played out against a backdrop of an increasing gold price. Since the beginning of the year the US dollar gold price has risen by 7% to US\$1,638 per ounce. That comes following an 18% gain in 2019 and many believe that the current year could be shaping up to be another banner year for gold. Such increases are being well and truly magnified down under as Australian gold mining and exploration companies are basking in all-time high gold prices in A\$ terms due to the growing economic and geopolitical uncertainty coupled with a weakening of the local currency. Historically bull markets start slowly and pick up speed over time, as we have witnessed over the years and sustained excitement in the gold market can lead to a rapid uplift in valuations right across the sector.

About the author

Dr Michael Green is an independent analyst specialising in growth companies and resources companies. He gained a BSc and PhD in Mining Engineering from Nottingham University. Having been involved in consultancy work, he began working in the London financial market in the 1980s as a Resources Analyst with stockbrokers Buckmaster & Moore and then HSBC-owned Greenwell Montagu Securities. Subsequently, he was involved in analysing a wide range of growth companies and became Head of Research at stockbroker Everett Financial which specialised in the small cap market. Since, 2006 Michael has been an independent analyst. UK-based DOC Investments Ltd provides research and investor relations.

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