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**12 November 2019** 

# Substantial Upgrade in Abujar Gold Resource to 2.2M oz

- Shallow high-grade core increases 32% to 1.4M oz at 2.2 g/t Au including new
   Indicated category 0.8M oz at 2.5 g/t
- Accelerated 50,000 metre DD program from 4 company rigs for resource upgrade in Q3 2020

# Highlights:

- ➤ Updated Mineral Resource Estimate (MRE) for Abujar Gold Project in Cote d'Ivoire increases 24% to 45.5Mt @ 1.5 g/t Au for 2.15 Moz of contained gold
- Resource confidence boosted with 40% of Abujar project ounces (860,000 ounces) now in the Indicated category
- ➤ High grade core near surface, located at the northern end of the AG deposit increases in both ounces and grade to 19.3Mt @ 2.2 g/t Au for 1.4 Moz, including Indicated Resources of 9.6Mt at 2.5g/t for 0.76Moz.
- ➢ High-grade AG resource now stands at >4,000 oz per vertical metre, suggesting potential for a high margin open pit mining operation
- The substantial uplift in the MRE is the result of only 15,000m of extensional drilling and 5,000m of infill diamond drilling at AG since the last resource update (April 2019)
- Since cut-off date for data inclusion in this latest MRE estimate, the Company has accumulated >3,000 samples awaiting assay
- > 50,000m drilling program, doubling all drilling to date, is already underway targeting rapid resource growth:
  - Resource definition at AG, AG Deeps and APG
  - Drill testing high priority regional targets
- Next MRE update planned for Q3 2020
- ➤ A fourth company-owned diamond rig has been placed on order to accelerate the current drilling program, at sector-leading diamond drilling costs of ~US\$35/m

**Table 1**: Statement of Mineral Resources by Deposit as at  $11^{th}$  November, 2019 Reported at 0.4 g/t Au cut off within pit shells; and 0.8 g/t Au cut off below the pit shells for AG, and 0.4 g/t to a depth of 40m and 0.8 g/t below 40m for APG.

		Oxide			Tra	nsitior	1	F	resh		Т	otal	
Area	Class	Quantity	Au	Au	Quantity	Au	Au	Quantity	Au	Au	Quantity	Au	Au
		(Mt)	(g/t)	(MOz)	(Mt)	(g/t)	(MOz)	(Mt)	(g/t)	(MOz)	(Mt)	(g/t)	(MOz
	Indicated	0.08	2	0.01	0.3	1.6	0.02	14.19	1.8	0.84	14.58	1.8	0.86
AG	Inferred	0.44	1.5	0.02	1.21	1.3	0.05	18.02	1.5	0.88	19.68	1.5	0.95
	Total	0.53	1.6	0.03	1.51	1.3	0.06	32.22	1.7	1.72	34.26	1.6	1.81
APG	Inferred	1.24	0.7	0.03	3.43	0.8	0.09	6.56	1.1	0.23	11.24	1	0.35
Gra	nd Total	1.77	1	0.06	4.95	1	0.15	38.78	1.6	1.94	45.49	1.5	2.15



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#### Notes:

- 1. The Mineral Resource has been compiled under the supervision of Mr. Jeremy Clark who is a full-time employee of RPM and a Registered Member of the Australian Institute of Mining and Metallurgy. Mr. Clark has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code.
- 2. All Mineral Resources figures reported in the table above represent estimates at 11 November, 2019. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.
- 3. Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The Joint Ore Reserves Committee Code JORC 2012 Edition).
- 4. The Mineral Resources have been reported at a 100% equity stake and not factored for ownership proportions.

West African gold explorer Tietto Minerals Limited (ASX: TIE) (**Tietto** or the **Company**) is pleased to announce further substantial increases in its Mineral Resource at its Abujar Gold Project in central west Côte D'Ivoire, West Africa.

Tietto's Managing Director, Dr. Caigen Wang, commented:

"We are very pleased to report that our Abujar Gold Project has moved into a select multi-million ounce club with gold resources increasing to 2.2 Moz at 1.5 g/t Au. This excellent result has been underpinned by rapid and effective drilling at AG since the last resource update in April 2019 that delivered wide high grade intercepts on section after section.

These high impact holes (from just 15,000m of extensional drilling and 5,000m of infill) have translated into a resource update at AG that has delivered on many fronts. We have increased our shallow high-grade core to 1.4Moz at a higher grade of 2.2 g/t Au over a continuous 1.4km zone. Our drilling has also increased the confidence of the resource estimate at AG. We now have just under half of the AG resource classified as Indicated Resources for 0.86Moz at 1.8 g/t Au including 9.6Mt at 2.5g/t for 0.76Moz from surface with these resources located at the northern half of AG.

Our discovery costs are arguably the cheapest in the industry. We will be very busy in 2020 as our fleet of four Company drill rigs are on track to deliver 50,000m or more of drilling by Q3 2020, doubling all drilling at Abujar to date, as we target continuing rapid growth in our gold resource inventory. Gold mineralisation at AG and APG remains open and we will continue with our aggressive resource definition drilling as well as testing new targets over the 70km strike of the largely untested Abujar gold corridor."

### AG (Abujar Gludehi) Deposit

A continuous 1.45km high-grade core of 19.3Mt at 2.2g/t for 1.38Moz Au (at a 0.8 g/t cut-off) has been demonstrated between sections L14B to L29, 55% of which (9.6Mt at 2.5g/t for 0.76Moz) are now upgraded to the Indicated category.



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Significantly, since the cut-off date for inclusion of data in this MRE, the Company has continued to drill DD holes at a rate of 4500m/month. At AG, we have completed a number of 500m deep DD targeting depth extensions of the high-grade core and have also completed shallow holes at the southern end. Gold mineralisation has been logged in both depth and strike extension holes and we expect these new DD holes will have a positive influence on the next update of the MRE due for Q3 2020.

The updated AG Mineral Resource now totals 34.3Mt at 1.6g/t Au for 1.81 million ounces reported at 0.4 g/t Au cut-off within pit shells; and 0.8 g/t Au cut-off below the pit shell. This increase has come from step-out and down dip extensional drilling over 4.5km and up to 400m vertical depth (Figure 1). Within the 1.81Moz resource, there are now 14.57Mt at 1.8g/t for 0.86Moz of Indicated Resources making up 47.5% of the total AG resource.

The southern portion of the AG deposit (2.7km) has only been drilled to a shallow depth or not drilled yet. It is anticipated with successful drilling further resource growth will be seen in this area.

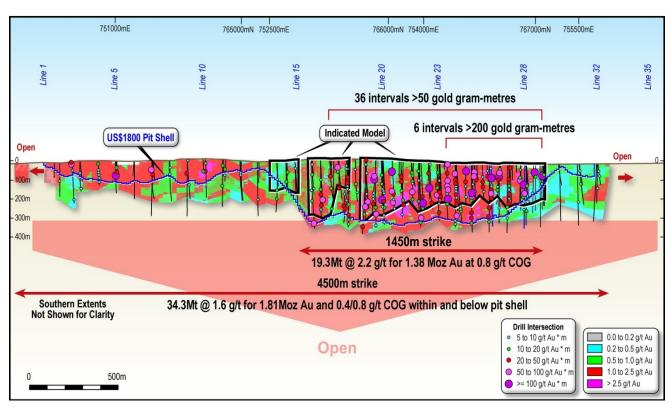


Figure 1: Oblique long section view of the AG deposit

#### **Project Location and Access**

#### Cote D'Ivoire

The Abujar Project is located within Cote D'Ivoire and can be accessed by typical regional dirt/gravel roads which vary in quality from tarred and regional gravel good quality roads to lesser quality dirt roads from local villages. The local roads, which would require upgrading to support mining operations, are accessible year-round and suitable to support ongoing exploration teams and associated equipment including drill rigs during the drilling season.



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Regionally, the Project is connected to major regional towns by tarred and good quality gravel roads, and subsequently to the political capital of Yamoussoukro by tarred road. The major regional city near Abujar, Daloa, has an airport, however it is not serviced by commercial airlines. International flights are available at Abidjan, which is 400km from Abujar.

### **Regional Environment**

### Geography

Project geography is typical of West Africa, with a reasonable flat-lying topography and a tropical climate with a pronounced dry season between November and March and a wet season occurring between April and October. This seasonal rainfall also varies on a year-by-year basis and has an impact on both mining activities and water supply and storage on a day-to-day basis. The average annual temperature is 22°C and the region has an average annual rainfall of 1,500mm.

The major regional town of Daloa is at the intersection of major north-south and east-west travel routes which connect neighbouring Liberia, Sierra Leona and Ghana. It is the primary collecting point for a forest region that produces coffee, cocoa, cashew nuts, and timber to the coast and major port at Abidjan for export. Daloa is also a local trade centre for rice, cassava, yams, bananas, and cotton and has a regional office of the Department of Agriculture.

### **Mining History**

Surface mining has occurred within several areas of the Project which is typically to a depth of 8 to 15m within the currently defined resource areas. Mining has targeted the higher grade near surface mineralisation. These activities occur in numerous places through the Project and they vary significantly from minor surface disturbances to small scale handheld pit and underground workings within the oxide material above the water table. These mining activities are not considered material to the currently defined resources, nor are they restricted to the reported resource areas which highlights the untested mineralisation potential within the region.

#### **Mineral Rights and Land Tenure**

Tietto holds interests in a series of exploration licences and the combination of the Zoukougbeu, Zahibo and Issia licences are named the Abujar project. These enable the current exploration activities and associated surface disturbances. Below is a summary of the key permit which hosts the mineral resources.

### Zoukougbeu licence

 Tietto Minerals Limited (TMA) entered a Joint Venture Agreement for the Development of an Exploration Licence for Gold in Zoukougbeu in Cote d'Ivoire dated 29 April 2014 (the TMA-B&F



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**Agreement**) with B & F Minerals SARL, a company incorporated under the laws of Côte d'Ivoire (**B&F**) and its shareholders.

- B&F is the registered holder of an exploration licence in the region of Zoukougbeu in the Côte d'Ivoire registered with the Mines Directorate under number 469 (the Zoukougbeu Licence) which was granted on 15 September 2014 with Decree No. 2014-520.
- Under the terms of the TMA-B&F Agreement, TMA may earn an interest in the share capital of B&F of up to 50% subject to meeting certain expenditure and payment obligations; and 75% in any exploitation company formed if an exploitation (mining) permit is granted over all or part of the area covered by the Licence.
- TMA's current registered interest in the share capital of B&F is 50%. TMA continues to incur expenditure in accordance with the existing agreement.
- TMA and B&F reached an agreement on 28 March 2017 to allow TMA to have 90% interest in the Abujar Middle Tenement by transferring the exploration licence to a newly incorporate JV company called Tiebaya Gold Sarl, of which Tietto has 90% share capital, B&F has 10% share capital. Tiebaya was incorporated in late April 2017. The Côte D'Ivoire Mining Ministry officially transferred the Zoukougheu licence to Tiebaya Gold Sarl on 28<sup>th</sup> February 2018.

The initial tenure of the three exploration licences is four years under the new Côte D'Ivoire mining regulations. Subject to satisfaction to the terms and conditions of the initial exploration licences, the exploration licences are entitled for renewal for second and third terms of 3 years, followed by one exceptional renewal of 2 years.

#### **Geological Setting and Mineralisation**

The West African Craton formed by progressive accretion of younger orogenic belts onto a cratonic core of early Archean age. Locally, younger orogenic belts developed inside the existing cratons, but more commonly they were accreted along the margins. The West African Craton has been subdivided into the Archaean Man Shield and Palaeoproterozoic Birimian rocks.

The Man shield is comprised of an Archean core of extensive granitic gneiss/granitoid complexes containing narrow, elongate metamorphosed volcano-sedimentary and sedimentary greenstones belts. Metamorphic and granitic rocks of the Liberian Province (~3200-2500Ma) underlie the north western two-thirds of Liberia whereas the south eastern portion of the country belongs to the Eburnean Province (~2100-1700Ma). These units are primarily re-activated Archaean basement rocks with some local Proterozoic lithologies. The Eburnean orogenic cycle (2100-1700Ma) remetamorphosed Archaean cratonic rocks of the earlier Liberian metamorphic age province. In the central and eastern regions of the West African Craton these units have been broadly classified as mafic and ultramafic volcano-sedimentary rocks and iron formations, and are known to host many important precious metals, base metals and bulk mineral (principally iron ore) deposits in West Africa. The metamorphic grade of these greenstone belts ranges from lower greenschist to amphibolite facies.



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The Birimian rocks comprise volcanic arc and sedimentary basinal successions that mantle the Man shield to the north and east. These were deformed by the most active period of the Eburnean orogeny, which took place in three major tectono-metamorphic phases between 2150 and 2190Ma. After the Eburnean orogeny, most of West Africa formed a stable craton (around 1700Ma) and was bounded on the east and west by the Pan-African mobile zones. Birimian successions host most of the major gold deposits in West Africa.

The last major tectonic event in West Africa was the Pan-African Orogeny of Upper- Proterozoic to Lower Palaeozoic age (600-500Ma). This event also added new crustal material to the older cratons and re-metamorphosed older sequences of Archean to Late Proterozoic age. Pan- African mobile belts rim the western margins of West Africa and occur along Liberia's coastline. At the end of the Pan-African orogeny, the various cratons were joined together to form the approximate current shape of the continent of western Africa.

#### **Geology of the Region**

The Ivory Coast lies in the southern portion of the West African Craton and the southern portion of the Man shield. The country consists of four geological domains defined on geochronology; Archean, transition, Paleoproterozoic sedimentary basin and coastal sedimentary basin.

#### Archean domain

The Project area is located to the western part of Ivory Coast which is enclosed to the west of the major curved Sassandra fault. This fault continues towards the WNW, towards Guinea in the north. The lithology of the Archean area consists of grey gneiss and tonalite, trondhjemitic to charnokites, greenstone metamorphosed to granulite facies, banded quartzite, with magnetite and biotite migmatites. These formations are intruded by pink granites and basic-ultrabasic complex. This area was metamorphosed during orogenic cycles; Sierra Leone (3.5 to 2.9 Ga) and Liberia (2.9 - 2.6 Ga).

Modern dating on mono-zircon and monazite show that the oldest granulite formations are the tonalite gneisses in the northern part of the Archean area (north of the fault Danane-Man). These gneisses are dated to  $3050 \pm 10$  Ma and intruded by charnokite formations that are dated at  $2800 \pm 8$  Ma. The manifestation of the Eburnean orogeny in this area of Archean is dated to  $2100 \pm 40$  Ma, and exhibits retrogressive reactions in basic rocks in formations of Mount Tia (Toulepleu-Ity) and in basic gneiss northern area.

#### **Transition Area Archean-Proterozoic**

The work of Kouamelan (1996) indicates the existence of a transition zone within the Paleoproterozoic area between the fault of Sassandra and longitude  $6^{\circ}$  W. This area is characterized by the contamination of Birimian juvenile training by Archean crust (Nd model age and intermediate inherited zircon). He determined the presence of inherited zircons whose isotopic ages Pb / Pb of respectively  $3132 \pm 9$  Ma and  $3141 \pm 2$  Ma. These ages prove the existence of Archean segments within



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a transition zone. This area is characterized in particular by the existence of Archean relics within the Paleoproterozoic domain.

### **Paleoproterozoic Domain**

The area is separated from Paleoproterozoic Archean area by the Sassandra fault. The characteristic lithology consists of volcano-sedimentary belts which are generally oriented 200 to 500 and sandwiched between granitoid batholiths. The age of this domain is attributed to Birimian with the formations consist predominately of tholeiltic and calc-alkaline rocks.

The structure of this area is interpreted to be the result of two major Paleoproterozoic strains: the first was the result of tangential tectonics on structures oriented NS to NNE; the second corresponds to a transcurrent deformation, which is marked by the establishment of large sets of granitoids, around 2.1 Ga. Studies from geochronology show that the Birimian rocks were formed (quickly) between 2.25 and 2.05 Ga. This area is covered in the south by the coastal sedimentary basins up to the present Cretaceous basin.

### **Coastal Sedimentary Basin**

The Ivory Coast sedimentary basin extends along the Atlantic coast. Its history is linked to the rifting of Gondwana and opening of the South Atlantic in the Lower Cretaceous. This opening led to the separation of Africa and South America.

It is an "open" type of basin; part of a string of sedimentary basins along the Atlantic coast from southern Morocco to South Africa. The Ivory Coast crescent is 400 km long and 40 km wide. It represents only 2.5% of Ivory Coast's surface. The formations of the Ivory Coast sedimentary basin are of Cretaceous-Quaternary age.

The history of the basin is summarized by three episodes of transgressions:

- The Albo- Aptien is characterized by deposits of clay and sandstone;
- Lower Maastrichtian-Eocene is marked by glauconitic clays, clays and sands; and
- Lower Miocene is composed of marl, of variegated clays and lignite.

### **Tectonic Development of the Birimian**

The Birimian litho-stratigraphic succession is separated into two large groups:

- A Lower Birimian (B1) set essentially flyschoid basin fill. The whole basin is affected by three cycles of deformation:
  - D1 (2090-2100Ma) phase of major collision: duplication of the lower Proterozoic on the gneissic Archaean basement, a break in all B1 sedimentation and intrusion of synkinematic granites;
  - D2 and D3 (2090-1970Ma) responsible for the intrusion of granites mantle between;



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- 2080 and 1945my (D2 large sinistral offsets, related overlaps and folding; D3 dextral offsets and associated folds); and
- The upper Birimian (B2), volcanic-dominated, where fluvio-deltaic formations are intercalated in volcano-sedimentary facies.

### Metallogenesis of the Birimian

The Eburnean metallogenic cycle, which is rich in gold and base metals lasted 150Ma with:

- A first period at the time of the filling of the B1; stratiform deposits of Mn, Fe, Au, Zn-Ag were put in place at about 2150Ma at the top of the stratigraphic pile. This period ends with the deposition of gold mineralisation in conglomerates; and
- The second, late-orogenic metallogenic period appears with the latter brittle deformation phases of D1 and D2. It is marked by mesothermal mineralisation, followed by quartz veins and paragenetic Pb-Zn-Ag-Bi deposits dated at approximately 201Ma.

The deposits encountered in West Africa in the Birimian are diverse. Examples of deposit types are:

- Gold mineralisation associated with major shear zones for example, Obuasi (AngloGold Ashanti/Randgold Resources) along Ashanti Fault Zone in Ghana.
- Gold Mineralisation associated with conglomerates at the base of paleo-channels (placers) as in the deposit at Tarkwa in Ghana (lamgold).
- Volcanic Massive Sulphides in the lower Birimian for example the zinc deposit at Perkoa in Burkina Faso (Blackthorn Resources and Glencore International, project in development).
- Sedex deposits of the Nsuta Manganese Mine in Ghana operated by the Ghana Manganese Company Limited since 1916. Mineralisation is associated with turbidites within a volcanoclastic terrane.
- Gold skarn at Ity. Ity is the only known Au skarn in the Birimian however iron skarns are known
  in the Kéniéba-Kedougou Inlier of the Faleme District in Mali and Senegal.

### **Project Geology**

#### **Abujar**

The Project is located within the Proterozoic Birimian rocks of the Man Shield, as situated on the Daloa 1:200,000 geologic sheet, 30km west of Daloa. It is located in the Hana-Lobo belt, east of the Sassandra fault that marks the boundary between the Man Shield (Archean) and Eburnean domain.

### Lithologies

Within the Project area outcrops are very uncommon. Lateritic cover mainly consists of hardpans and duricrust occurrences. Owing to vegetation cover, weathering and laterite development the 1:200,000 geological map lacks detail which can be interpreted with the recent drilling. However, general features of the local geology can be seen in the recently completed geophysical magnetic survey.



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The Abujar Deposit is located within a NNE SSW orientated body of granitoid migmatite and is hosted within in an interpreted regional shear structure. This is then enclosed within two mica granite bodies of similar interpreted orientation which are regionally referred to as granodiorites. Greenstones are rare in the immediate vicinity but have been mapped as isolated bodies to the south and east.

Due to the lack of outcrop and limited drilling, the regional lithologies are relatively poorly understood, however they can be separated into either Proterozoic or post Proterozoic. The lithologies of Proterozoic age which are present inside the Project include:

- Migmatitic granitoïds (Eburnean) associated with syntectonic granites; they can belong to
  either the metamorphic or the magmatic domain depending on the intensity of melting. They
  occurs in the central portion of the property;
- Metamorphosed rhyolite (Eburnean) of pyroclastic origin. They occurs as relics within two
  mica granites and consist mainly of quartz phenocrysts inside glass. They are found as light
  coloured banks showing mainly muscovite corresponding probably to pyroclastic rhyolitic
  flows;
- Schists are divided into 2 groups:
  - Argillic schist: are always weathered with mottled texture and crosscut by quartz veins;
     and
  - Two micas (+ staurolite and andalusite) micaschist: consist of biotite and muscovite with minor andalusite, which is a common mineral of contact metamorphism. This rock occurs at the contact with two-mica granite bodies in the central area of the property.

Only artisanal pits and diamond drill holes exhibit the different lithologies associated with the Proterozoic aged rocks which typically host mineralisation and are outlined below:

- Granodiorite is post Eburnean in age and consist of calc-alkaline intrusions. They are generally
  coarse to medium grained in texture depending on the intensity of deformation. Mineral
  compositions consist of quartz, biotite, amphibole, plagioclase, chlorite, epidote/calcite and
  pyrite. Visible gold can be present. The granodiorite has undergone a regional metamorphism
  of greenschist facies, with a paragenesis assemblage made of chlorite-quartz-biotite-epidote.
- The Schist group (or highly deformed granodiorite) consists of rocks with schistose texture of
  indeterminate origin. Minerals are fine-grain, mainly biotite, chlorite, quartz and pyrite. The
  biotite-chlorite-quartz assemblage shows that the rock belongs to the greenschist facies, being
  marked by regional metamorphism.
- Later Intrusions crosscut the granodiorite and schists. These later intrusions consist of either diorite or pegmatites. Diorite is massive and fine grained. The minerals don't show any general orientation and are typically green biotite, quartz and plagioclase. The pegmatite has thicknesses ranging from centimetres to metres. They are high temperature rocks in terms of the paragenetic assemblage. Main minerals are K-feldspar, biotite, muscovite, quartz and garnet.



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#### **Deformation and Mineralisation**

Two styles of deformation are interpreted to be present within the drill cores at Abujar, these include ductile deformation and brittle deformation. The gold mineralisation is interpreted to be related to the deformed granodiorite, in shear zones, with sulphides (mainly pyrite and minor chalcopyrite) associated with visible gold. The mineralisation seems to be located within the granodiorite at the boundary between two different intensities of deformation i.e. weakly deformed and highly strained

Alteration is characterised by chlorite, sericite, calcite, secondary quartz and disseminated pyrite. This assemblage is well developed in schistose, foliated rocks with the presence of quartz veins or veinlets.

#### Mineralisation Style and Geometry

Deposits within the Abujar Project resemble typical shear zone deposits of the West African granite-greenstone terrane. The Abujar deposit is associated with a major regional shear zone and is developed in granodiorite hosts similar to that which hosts the Pischon & Golikro deposits and the interpreted extension areas in the Gamina deposits to the north (Gamina South and Centre). Mineralisation is potentially spatially related to the emplacement of intrusives and interpreted to be mesothermal in origin. It occurs as free gold in quartz vein stockworks and zones of silicification, associated with pyrite and chalcopyrite.

The gold mineralisation is typically found in linear domains with the contacts showing evidence of shearing with free gold frequently observed. Alteration is weak to severe depending on the development of the system. As noted, mineralisation is hosted within a continuous shear zone which is traced over 4.5km within Abujar, 1.5km within Pischon and 2.5km within Golikro, however analysis of the drill holes within these deposit indicates that within this low grade shear hosted halo, higher grade lodes occur which are slightly oblique to the strike of the shear. This is interpreted to be typical riedel ductile shear mineralisation, which is structurally controlled both at a local and regional scale.

Several occurrences of boudin structures are observed within the drill core, and it is hypothesized these structure control mineralisation both regionally and locally. Of particular note are the intersection of near vertical extremely high grade plunging shoots (>5g/t) which can be interpreted within both the Abujar and Pischon Deposit. These can be seen in the long sections of the grade estimates.

All lodes have similar southeast-dipping orientations striking 030° and dipping at varying angles of inclination typically between 50 and 75°. These lodes appear to coincide with strong linear geological structures which are offset by several faults and have strike length from 200 metre to up to 1.2km. The lodes range in thickness from 2m to up to 15m, with the thicker zones general occurring where the higher grades occur, which is as expected for the structurally controlled style of mineralisation.



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### **Exploration Works**

### **Abujar**

Exploration works to date have focused on the Zoukougbeu Licence which has included geochemical sampling, surface pits and trenches as well as surface diamond, RC and AC drilling. These works have been undertaken in 2015, 2016, 2018 and 2019 with recent work being focused on surface drilling over the AG deposit located in the north eastern part of the Zoukougbeu permit.

### **Drilling**

Drilling to date has targeted areas directly beneath artisanal workings and anomalous areas identified during the geochemical sampling programs. Both Reserve Circulation (**RC**) and Surface Diamond Drilling (**DD**) have been utilised for the Project to date in four phases during 2015 - 2017, 2018 and 2019.

All drilling during 2015 and 2017 was via surface RC with the 2016 drilling most holes via RC and some holes commencing with RC collars changing to DD at depth, with the majority of mineralised intersection currently via DD drilling. Drilling in 2019 is predominately DD.

The diamond rigs used a conventional wire-line diamond drilling technique to produce HQ- or NQ-size diamond core. HQ-size rods and casing were used at the top the holes to stabilise the collars, however the majority were drilled with NQ-NTW-size equipment from surface to the end of the hole. In rare occasion BQ drilling was used at depth. In July 2018 Tietto started utilising its own man portable DD rig.

Drilling to date has targeted seven areas, within the Project, these include the Abujar-Gludehi, Pischon and Vingt Deux deposits within the Zoukougbeu licence and the Gamina set of deposits within the Zahibo Licence. Drilling at the deposit extends to a vertical depth of approximately 400m within Abujar and 200m in Pischon with the majority of drilling being undertaken during 2016 as shown in **Table 2**. Drill hole spacing over the AG deposit is approximating 50m by 50m in the north and 100m by 50m in the south.



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Table 2: Drilling History of the Project. 2019 includes drilling used for resources only.

Deposit	No Holes	type	Metres
Abujar - Gludehi	22	2015 RC	2,063
Abujar - Gludehi	16	2016 DD	3,631
Abujar - Gludehi	40	2016 RC	6,968
Pischon	6	2016 RC	630
Vingt Deux	11	2016 RC	1,303
Gamina North	17	2017 RC	1,947
Gamina Centre	5	2017 RC	585
Gamina South	10	2017 RC	1,341
Abujar - Gludehi	54	2018 RC	9,529
Abujar – Gludehi	7	2018 DD	968
Abujar - Gludehi	25	2018 AC	844
Pischon	21	2018 RC	1,424
Pischon	13	2018 DD	1,868
Pischon	21	2018 AC	1,000
Golikro	10	2018 RC	502
Golikro	5	2018 DD	955
Golikro	26	2018 AC	1,133
Zoukpangbeu	23	2018 AC	892
Zoukpangbeu	3	2018 RC	395
Koflankro	28	2018 AC	1,111
Mandanou	8	2018 RC	400
Mandanou	27	2018 AC	972
Abujar – Gludehi	73	2019 DD	20,041
Abujar – Gludehi	7	2019 RC	1,299
Pischon	10	2019 DD	2,062
Golikro	4	2019 DD	517



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#### **Mineral Resource Data Verification**

RPM conducted a review of the geological and digital data supplied by Tietto to ensure that no material issues could be identified and that there was no cause to consider the data inaccurate and not representative of the underlying samples.

RPM personnel have visited the Abujar Project in July 2016, August 2017 and July 2018 and reviewed the outcrops, drill-hole location and core sheds as well as held various discussions with site personnel. RPM sighted mineralised drill-hole intersections of all the deposits, down hole surveys and assay data, laboratory facilities, sampling and reviewed survey data acquisition protocols, assay procedures, bulk density determination, logging and sample preparation procedures and quality control (QC) results. RPM concluded that the data was adequately acquired and validated following industry best practices.

#### **Exploration Data**

Both Reserve Circulation (RC) and Surface Diamond Drilling (DD) have been utilised for the Project to date. All drilling during 2015 at Abujar was RC with the 2016 drilling most completed with RC and some commencing with RC collars changing to DD at depth, subsequently all drilling during 2017 was RC. In 2018 Drilling included DD, RC, RC with DD tail and AC. Early 2019, DD and RC drilling was conducted.

The diamond rigs used a conventional wire-line diamond drilling technique to produce HQ- or NQ-size diamond core. HQ-size rods and casing were used at the top the holes to stabilise the collars, however the majority were drilled with NQ-NTW-size equipment to the end of the hole. In rare occasion BQ drilling was used at depth. In July 2018 Tietto started utilising its own man portable DD rig. Each drill run was 6m in length, or 1.5m in length for the man portable.

All RC samples were placed in plastic bag directly sourced from the rig mounted cyclone. The core was placed in approximately 1 m long wooden/metal/plastic core trays (each holding around 4 to 6m drill core depending of the core diameter) subsequent to extraction from the core barrel. The 1 m intervals were then marked and labelled for future reference.

#### **Drilling Sample Recovery**

Within the diamond drilling typical core recoveries ranged between 90% and 100% for all holes which RPM considers suitable with no notable outliers within the mineralised zones. Some low recovery are associated with intensely fractured or faulted intervals and the more intensely weathered upper zone however these low recoveries are not considered material to the total Mineral Resource currently estimated.



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#### **Drill Hole Collar Locations**

All drill hole collar and trench locations were surveyed utilising the differential GPS methods by third party surveyors (Sahara Mining Services). The DGPS system utilised is typically within 10cm accuracy range which is suitable for the classification applied.

#### **Down Hole Survey**

Contract drilling teams utilised the Reflex EZ-shot instrument to measure deviations in azimuth and inclination angles for all holes; however, vertical holes were not surveyed. The first measurement is taken at 6 m depth, and then at approximately every 30 to 50 m depth and at the end of the hole. Tietto utilised is own survey tool with its man portable DD rig. RPM considers the drilling and the drilling information provided for the reported resources to be of high standard when compared to mining industry practices. RPM agrees with the surveys procedures, their controls and, as a result, all drilling for the Abujar and Pischon deposit can be used as a base for the Mineral Resource estimate.

### **Drill Hole Logging**

The Company has developed logging and sampling procedures based on the experience of the local technical team. These were subsequently reviewed by RPM during the site visit and it is their opinion that the processes and protocols implemented will provide results with a high level of confidence. Tietto company geologists log the core and RC samples according to the existing lithological, alteration and mineralogical nomenclature of the deposit as well as sulphide content. Photography and recovery measurements were carried out by assistants under a geologist's supervision.

Logging records were mostly registered in physical format and were inputted into a digital format (excel). However, as the project develops RPM would recommend capturing the geological logs in digital format, to avoid any potential for input errors. The core photographs, collar coordinates and down the hole surveys were received in digital format.

#### Sample Methodology

Diamond core was logged both for geological and mineralised structures as noted above. The core was then cut in half using a diamond brick cutting saw on 1m intervals. Typically the core was sampled to geological intervals as defined by the geologist within even two metre sample intervals utilised. The right hand side of the core was always submitted for analysis with the left side being stored in trays on site, as confirmed by RPM during the site visit.

RC samples were collected as 1m samples directly from the cyclone which were split using a riffle splitter with ¼ of the same retained in the plastic bags, the remainder was re-split with ¼ retained in calico bag and the remainder placed in large green plastic bags. These samples were spear sampled to form 2 m samples which were subsequently sent to the laboratory.



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#### Sample Preparation and Assaying

All resource sample preparation was completed by independent international accredited laboratory ALS Minerals. Subsequent to cutting or splitting, the samples were bagged by the Client's employees and then sent to ALS Minerals laboratory in Yamoussoukro for preparation. These samples were subsequently sent to Ghana for analysis by fire assay. Since September 2018, samples have been analysed by Intertek. Samples were picked up from site and then send to Ghana for preparation and analysis. Both labs used the exact same preparation and analytical method path.

Tietto employees insert quality control (QAQC) samples on site prior to delivering the samples to ALS Minerals in Yamoussoukro / to Intertek picking up the samples from site. The Clients employees have no further involvement in the preparation or analysis of the samples.

All samples followed a standard path as outlined below:

- Samples as received are initially sorted and verified against the client Sample Submission Form.
- Samples are air dried at 90°C.
- All samples are crushed to 2 mm using a jaw crusher and Boyd crusher in a two-stage process.
- Sample split by rotary sample divider to 600-700 g, with reject retained.
- Whole sample is pulverised to 90% <75 μm.</li>
- The pulverised sample is mixed and divided manually, with approximately 200 g retained for the client and 300 g retained for laboratory analysis.
- Gold by fire assay with atomic adsorption finish 30 g.

#### **Quality Assurance and Quality Control**

A definitive QAQC program has been implemented to provide verification of the sample procedure, the sample preparation and the analytical precision and accuracy of the primary laboratory, which includes the following:

- Standard Reference Material (SRM) samples: Two types of standards sourced from Geostats ltd. were inserted 1 in every 20 samples.
- Primary RC duplicates: Generated from the first splitter off the rig and inserted 5% (1 in 20 samples). This sample is collected from a spear sample from the reject material of the primary split.
- Primary DD duplicate: Generated by cutting the remaining half core into a ¼ and sampled.
- Coarse blank samples: Inserted 1 in every 20 samples.
- Laboratory Internal Duplicates and Standards.



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#### Sample Security

Measures undertaken to ensure sample security included the following:

- Samples for the Mineral Resource estimates have been derived from surface drilling. The drilling crews are responsible for delivering the samples and core to the storage facilities, the Company's personnel are responsible for cutting the core and placing the cut core in bags for delivery to the preparation laboratory facilities which is also managed by the Company's Geology Department. Together with the cores and RC samples, the geology staff provide the laboratory with a report detailing the amount and numbers of samples and sample tickets to each core is provided. Prior to submission, duplicate and SRM's were included in the batches and documented within the sample runs. Batches are sent to the analytical laboratories with a report detailing the analysis method required for each element. Chain of custody is kept all the time by the Company personnel.
- Following submission, samples are managed and prepared by independent international accredited laboratory personnel.
- All personnel handling samples are supervised by senior site geologists and geotechnicians. In addition, photos are taken of all core trays prior to sampling. Core is clearly labelled for sampling, a suitable paper trail of sampling can be produced and duplicate samples are taken to ensure no sample handling issues arise. Half core rejects, core rejects and pulps are appropriately stored inside the core shed and are available for further checks.



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#### **Mineral Resource Estimate**

Mineral Resources have been independently reported by RPM in compliance with the recommended guidelines of the JORC Code (2012).

#### Mineral Resource Classification System under the JORC Code

A "Mineral Resource" is defined in the JORC Code as 'a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality) that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.

Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results.

For a Mineral Resource to be reported, it must be considered by the Competent Person to meet the following criteria under the recommended guidelines of the JORC Code:

- There are reasonable prospects for eventual economic extraction.
- Data collection methodology and record keeping for geology, assay, bulk density and other sampling information is relevant to the style of mineralisation and quality checks have been carried out to ensure confidence in the data.
- Geological interpretation of the resource and its continuity has been well defined.
- Estimation methodology that is appropriate to the deposit and reflects internal grade variability, sample spacing and selective mining units.
- Classification of the Mineral Resource has taken into account varying confidence levels and
  assessment and whether appropriate account has been taken for all relevant factors i.e.
  relative confidence in tonnage/grade, computations, confidence in continuity of geology and
  grade, quantity and distribution of the data and the results reflect the view of the Competent
  Person.

#### Area of the Resource Estimation

The deposits, which form part of the Mineral Resource estimates, are located approximately 27km west of Daloa in the Ivory Coast all within the Abujar Project. The Project consists of three exploration rights under the Ivory Coast mining code currently held by the Companies of which Tietto have Joint Venture agreements or partial owners through subsidiaries. RPM notes that the reported Mineral Resources include the following areas:



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• AG Deposit – Contained within the northern portion of the Zoukougbeu licence this deposit consists of multiple vein structures defined up to 400m in depth with a strike length of 4.5 km.

### **Estimation Parameters and Methodology**

### **Sample Data**

A comprehensive dataset was provided to RPM which included two types of sampling which were utilised within the estimate and resultant classification of the resources. These included RC, RD, AC, DD holes and surface trenches. All drill hole and channel sample collar, survey, assay and geology records were supplied to RPM in digital format by the site geologists. All Mineral Resource estimation work reported by RPM was based on data received as at October, 2019 (Table 3).

Table 3: Summary of Drill Hole Data Supplied to RPM

Deposit	No holes	Туре	Metres
	22	2015 RC	2,063
	2	2016 DD	477
	39	2016 RC	6,833
	12	2016 RD	2,800
4.0	6	2017 TRENCH	110
AG	52	2018 AC	1,816
	56	2018 RC	9,287
	6	2018 RD	1,610
	73	2019 DD	20,041
	7	2019 RC	1,299
	7	2016 RC	800
	70	2018 AC	3,025
450	17	2018 DD	2,746
APG	30	2018 RC	1,824
	1	2018 RD	180
	14	2019 DD	2,579
Total	414		57,490



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#### **Bulk Density Data**

Bulk density determinations were carried out on the diamond core from holes within the Abujar Project:

- No relation can be interpreted between grade and density, this is as expected for the style of mineralisation;
- Rock types of granodiorite (Fgd) and Mafics (Msc) appear to have relationship with density, as would be expected; and
- Experimental density values were assigned for oxidised and transition areas with 2.0 g/cu.cm and 2.4 g/cu.cm respectively applied, and an average density value 2.8 g/cu.cm from provided density data used for fresh rock.

#### **Depletion Areas**

Small scale mining has been undertaken on several areas within the project. This mining is restricted typically to the upper 10m of the oxide material, however is variable in depth and extent. A detailed topographic survey was used to deplete known mining areas.

#### **Geological Interpretation**

Geological units and shear host veins for the deposits, defined by lithological logging and sample assays consisted of generally discrete, mineralised lenses. These were interpreted and wireframed as solids for each area.

RPM constructed one set of mineralised wireframes for each deposit using a cut-off grade of 0.3 g/t Au based on interrogation of log histograms and probability plots of the raw assay data. Geological interpretations of the lithological units, the geological structure, alteration and the different lodes of mineralisation were used to guide and interpret the shape of the mineralised wireframes.

All deposits have similar styles of mineralisation which was interpreted as being comprised of southeast-dipping lodes striking 030° dipping at varying angles of inclination typically between 50 and 75°. These lodes appear to be coincide with strong linear geological structures which are offset by several offsetting faults.

RPM defined 39 discrete bodies for the AG Deposit based on the orientation and shape of the mineralisation.

Oxidation logging data which was used to create a base of oxidation surface and the top of fresh rock to further constrain the mineralised domains and allow separation of material types into oxide, transition and fresh.

Drill hole collars were generally spaced on an approximate 100m by 50m grid in all deposits however closer spacing occurs within AG.



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#### **Preparation of Wireframes**

Wireframed solids were constructed based on sectional interpretations of drill hole geological and sample data using SURPAC version 6.7 geological software. The sectional resource outlines were generally extrapolated to a distance half-way between mineralised and un-mineralised holes/sections with a maximum distance of 50m along strike where the drill spacing was greater than 100 m and on the edges of the mineralisation. In the up-dip and down-dip directions where no un-mineralised holes were available to constrain the mineralisation, extrapolation was also around 50m where geological continuity could be observed along strike.

The interpreted outlines were manually triangulated to form the wireframes. To form the ends of the wireframes, the end section strings were copied to a position mid-way to the next section (to a maximum of 50m) and adjusted to match the overall interpretation and trend of the mineralisation. The wireframed objects were validated using SURPAC software and set as solids.

The resultant mineralised wireframes were used as hard boundaries to constrain the grade interpolation within the deposit. All un-sampled intervals were assumed to have no mineralisation and they were therefore set to zero grade, however these were minimal.

#### **Sample and Generational Support**

RPM completed a sample support analysis of the two sample types RC and DD. As these are different sampling methods and importantly have different sampling volumes, there is the potential to introduce inherent sample bias. A statistical review of the assay results from the two sampling methods indicates that there is a no potential bias when comparing close pairs of each dataset, as such no changes the data was required.

#### Composites

The sets of mineralised wireframes ("objects") were used to code the assay database to allow identification of the resource intersections. A review of the sample lengths was subsequently completed to determine the optimal composite length. The most prevalent sample length inside the mineralised wireframes was 2m, and as a result, was chosen as the composite length. The samples inside the mineralised wireframes were then composited to 2m lengths and SURPAC software was used to extract the composites. Separate composite files were generated for each resource object. The composites were checked visually in SURPAC software for spatial correlation with the wireframed mineralised objects.

# **Statistical Analysis**

The composites were imported into statistical software to analyse the statistics of the assays within the mineralised wireframes. The summary statistics for major lodes are shown in **Table 4**.

Log histograms and log probability plots for the drilling composites within AG are shown in Figure 2.



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The composite samples show a moderate positively skewed log-normal distribution which is typical for the style of mineralisation observed within the deposits. RPM notes that it is apparent that multiple distributions occur within the populations at the AG deposit.

Table 4: Basic Statistics and Major Lodes.

Deposit			AG					
Statistic	All	32	40	43	47	51		
Number	3825	228	456	320	252	238		
Minimum	0.01	0.01	0.01	0.01	0.01	0.01		
Maximum	200.2	34.4	144.3	85.3	50.6	26.0		
Mean	1.4	1.1	1.7	2.4	1.5	1.2		
Std Dev	6.4	3.0	8.0	6.7	4.7	2.8		
Coeff Var	4.5	2.7	4.8	2.8	3.1	2.3		
Variance	41.5	9.0	63.8	45.3	22.3	7.8		
Skewness	17.6	8.0	14.1	7.6	7.2	5.7		
Percentiles	Percentiles							
10%	0.1	0.1	0.1	0.1	0.1	0.1		
20%	0.2	0.2	0.2	0.2	0.1	0.2		
30%	0.3	0.3	0.3	0.3	0.3	0.3		
40%	0.4	0.3	0.4	0.5	0.3	0.3		
50%	0.5	0.4	0.5	0.6	0.4	0.4		
60%	0.6	0.5	0.6	8.0	0.6	0.6		
70%	0.8	0.7	0.9	1.2	8.0	8.0		
80%	1.1	1.1	1.2	2.4	1.1	1.2		
90%	2.2	2.2	2.4	4.6	2.6	2.6		
95%	4.2	3.7	4.1	9.2	4.8	4.9		
97.50%	7.6	5.5	9.3	22.3	9.8	7.5		
99%	18.0	11.8	17.5	27.7	24.1	16.0		



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#### **High Grade Cuts**

The statistical analysis of the composited samples for Au inside the mineralised wireframes was used to determine the high-grade cuts that were applied to the grades in the mineralised objects before they were used for grade interpolation. All assays above the cut value were assigned the cut value. This was done to eliminate any high grade outliers in the assay populations which would result in conditional bias within the resource estimate. The high grade cuts applied to the composites were determined from the log histograms and log probability plots for each deposit resulting in the following conclusions:

- Top-cuts of 70g/t, 50g/t and 20g/t were appropriate for different lodes in the AG area respectively and a top-cut of 10g/t was appropriate for all lodes in the APG area. These high grade cuts were applied to the composites and were determined from the log histograms and log probability plots. RPM notes there were some extreme high grade samples identified during the latest exploration stage however the high grade domains were not extended.
- A grade dependent search was applied to all samples above 35 g/t. This was limited to a 32.5m radius influence of 8 samples due to the extreme grades of these holes.

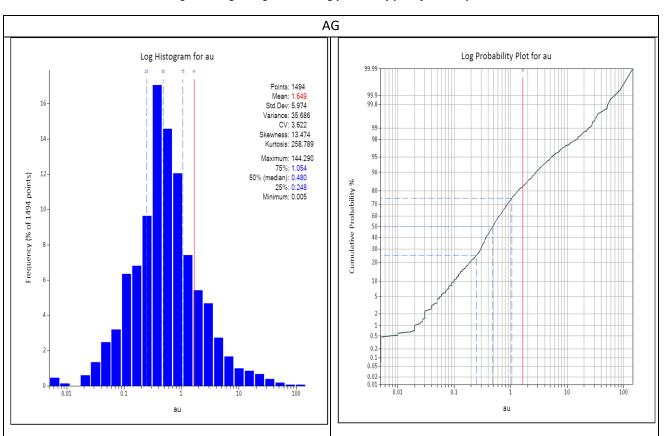


Figure 2: Log histograms and log probability plots for main pods



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#### **Geospatial Analysis**

Due to the limited number of samples within the individual lodes, RPM combined the composited files of the three main mineralised lodes (32, 40, 43, 47, 51) and completed relative variogram analysis for the AG area. These analyses indicated that within the highly continuous along strike sheets (30° which dip consistently at 60° - 80° to the south east, a southerly plunging shoots can be interpreted. This orientation is consistent with the high grade plunges which can be interpreted within the drill holes.

#### **Mineral Resource estimation**

#### **Block Model**

SURPAC block models were created to encompass the full extent of each resource area as currently defined within the licence boundary for the AG deposit. The block model was rotated to a bearing of 0350 degrees to align with the general strike of the majority of the mineralised lenses, to improve the fit of the blocks to the wireframe and to reduce the size of the block model. The block dimensions used in the model were 25 m NS (along strike) by 10 m EW (across strike) by 5 m vertical with subcells of 3.125 m by 3.125 m by 0.625 m based on the drill spacing. The block model origin, extent and attributes are shown in **Table 5**.

Table 5: Block Model parameters

Estimate		Origin		Extent			Rotation
Area	Easting	Northing	Elevation	Easting	Northing	Elevation	Degrees
AG	750,400	763,500	-175	16000	5,300	520	35

### **Grade Interpolation and Estimation Parameters**

Each mineralised wireframed object was used as a hard boundary for the interpolation of Au. That is, only composites inside each object were used to interpolate the blocks inside the same object. The Ordinary Kriging (**OK**) algorithm was selected for grade interpolation of Au. The OK algorithm was selected to minimise smoothing within the estimate and to give a more reliable weighting of clustered samples.

An isotropic search ellipsoid in the major and semi-major directions was used for the interpolation process based on the number of samples to be used to estimate a block and the relative orientations of the mineralisation, however an anisotropic parameter was used in the minor direction (across strike). The search ellipsoid orientations used for interpolation matched the general orientation of the mineralised lodes in each domain, with separate parameters used for the north, middle and south. Three passes were used for the estimation including a final pass with a large search ellipsoid and a minimum sample of one to ensure that all blocks were estimated within the block model, as shown in

Table 6.



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Table 6: AG Search Ellipsoid Parameters

Parameter	Estimation Pass	Estimation Pass	Estimation Pass				
	Pass 1	Pass 2	Pass 3				
Search Type	Ellipsoid						
Bearing	183	183	183				
Dip	38	38	38				
Plunge	-48	-48	-48				
Major-Semi Major Ratio	1.9	1.9	1.9				
Major-Minor Ratio	2	2	2				
Search Radius	60	100	250				
Minimum Samples	8	4	1				
Maximum Samples	20	20	20				
Max. Samples per Hole	8	8	8				
Block Discretisation	5 X by 5 Y by 2 Z						

#### **Model Validation**

A rigorous process was used to validate the estimation for the Project as outlined below:

- Mathematical Comparison by Domain;
- Visual Inspection of the Blocks; and
- Overall Validation.

#### **Visual Inspection of the Blocks**

Following the mathematical comparison and the validation notes, a visual comparison of the block estimates to the composites was completed. The visual inspection indicates a good correlation exists at a local scale down dip and when closer spaced drilling occurred between the block estimate and the surrounding composites with the block estimate grade smoothed due to a combination of the block dimensions and the OK algorithm.

RPM notes due to the style of mineralisation there is a degree of smoothing within each lode, however RPM considers this level of smoothing suitable to interpretation on a global scale, however variation may occur on a local scale. As such RPM considers that further drilling and closer drilling spacing will be required should a higher level of classification be required.

#### **Overall Validation**

The review of the mathematical comparison indicates that a good overall correlation exists between the block estimates and the composite grades within both deposit and each lode. This good correlation of the drill holes and interpolated block model is further supported when a visual inspection is completed, however RPM does note that there is a degree of smoothing.



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As a result of the validation completed, RPM considers the estimate is representative of the composites and is indicative of the known controls of mineralisation and the underlying data.

#### Mineral Resource Classification

Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012). The Mineral Resource was classified as Indicated and Inferred Mineral Resource on the basis of data quality, sample spacing, and lode continuity.

The AG deposit shows good continuity of the main mineralised lodes along strike and down dip which allowed the drill hole intersections to be modelled into coherent, geologically robust wireframes within the drill spacing of 50m-100m by 50m. Relative consistency is evident in the thickness of the structures, along with the continuity of structure between sections. While there is good geological continuity along strike and down dip, there is evidence, and it is interpreted, that local variation of grade and thickness will occur between the current drill spacing arising from the boudin type structures resulting in discontinuous pods of mineralisation.

Given the interpretation of further local grade variation with further drilling, within the good geological continuity, RPM considers the current data suitable to provide a good estimate of tonnage and metal content within the current drilling spacing on a global scale.

RPM considers the 2019 infill and extension drilling undertaken with 50m by 50m spacing suitable for the Indicated classification in the norther area of AG, based on variogram ranges (60% of the sill range) and visual confirmation of structure and grade continuity. RPM however considers that further drilling is required to allow a confirmed estimate of local grade and metal distribution; as such no measured resource is report. All other areas are reported the Mineral Resource as Inferred within the 100m by 50m drilling spacing areas and extrapolated to 25m from the nearest drill hole.

### **Metallurgical Testwork**

RPM is aware that preliminary metallurgical testwork has been completed by ALS in Perth, Australia. This testwork included ore types of oxide (84.2 kg), transition (90.4 kg) and fresh (131.7 kg) ores with the material sourced from the 2015 RC drilling. The object was to determine a likely gold extraction flowsheet which included:

- Whole Ore direct cyanide leach (no activated carbon);
- · Gravity gold recovery following by direct cyanide leach, and
- Gravity gold recovery followed by carbon in leach (CIL).

A summary of the results of the testwork is shown in Table. The following conclusions could be drawn from the testwork.



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- Gold extraction was very high for all three composites, irrespective of which flowsheet was tested with over 98% extraction in all tests. Leach residue grades ranged from less than the detection limit of 0.02 g/t to a maximum of 0.06 g/t.
- The inclusion of gravity gold recovery ahead of leaching showed that a significant proportion of the gold (a minimum of 60.5% for the Oxide and up to 89.0% for the Transitional) could be recovered via gravity separation and intensive leaching of the gravity concentrate.
- Despite the presence of low levels of organic carbon detected in the Oxide and Fresh composites, no evidence of preg-robbing was seen.
- In all tests, leach kinetics were rapid with total gold extraction (taking into account gravity gold) exceeding 90% at the 8-hour mark.
- The percentage of gold recovered via gravity for the Transitional Composite was significantly higher for the single gravity/direct leach compared to the gravity/direct and CIL leach tests, reflecting the nature of the coarse, spotty gold in the samples. Total gold extraction remained extremely high at over 99%.
- In all tests, leach kinetics were rapid with total gold extraction (taking into account gravity gold) exceeding 90% at the 8-hour mark.

**Table 7: Preliminary Metallurgical Testwork Results** 

	GRAVITY/CYANIDE LEACH TESTWORK - SUMMARY OF RESULTS									
Comp	*Flowsheet	(ID.)		d Grade /t)		ll Au Ext @ hours		Au Tail Grade	Reagent Cons. (kg/t)	
ID	riowsneed	Grav/Leach	Assay	Calc'd	Gravity	24	48	(g/t)	NaCN	Lime
	DL	1899		1.29	-	94.0	98.5	0.02	0.37	2.14
	GDL	1902/1905	1.40	1.40	68.8	99.8	99.3	<0.02	0.25	2.52
Oxide	GDL	1908/1914	1.40	1.29	60.5	97.5	98.1	0.03	0.32	2.73
	GCIL	1908/1911		1.22	63.9	98.0	98.0	0.03	0.58	2.38
	DL	1900	2.54	4.17	NA	98.3	99.3	0.03	0.30	1.80
Tunus	GDL	1903/1906		4.83	71.6	99.4	99.3	0.04	0.29	1.34
Trans.	GDL	1909/1915	2.54	4.29	87.1	99.7	99.5	0.02	0.18	1.71
	GCIL	1909/1912		4.20	89.0	99.7	99.8	<0.02	0.79	1.54
	DL	1901		3.21	NA	96.6	98.3	0.06	0.22	0.55
Fuest	CDI	1904/1907	F 00	6.85	85.3	99.5	99.5	0.04	0.14	0.60
Fresh	GDL	1910/1916	5.99	6.63	82.6	99.1	99.3	0.05	0.25	0.41
	GCIL	1910/1913		6.61	82.8	99.3	99.3	0.05	0.51	0.43

<sup>\*</sup> Flowsheet description: DL = direct leach. GDL = gravity/direct leach. GCIL = gravity/CIL



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#### **JORC Statement of Mineral Resources**

Results of the independent Mineral Resources estimate for the Project are tabulated in the Statement of Mineral Resources below, which are reported in line with both the requirements of the 2012 JORC Code, as such the Statement of Mineral Resources is suitable for public reporting. The Statement of Mineral Resources shown in Table 8.

Mineral Resources are reported at a cut-off grade of 0.4 Au g/t within a pit shell based on a gold price of 1,800 USD per troy ounce, and 0.8 Au g/t below the pit shell. The cut-off grades were based on estimated mining and processing costs and recoveries factors of similar projects in the Ivory Coast.

Table 8: Statement of Mineral Resources by Deposit as at 11 November, 2019 Reported at 0.4 g/t Au cut off within pit shells; and 0.8 g/t Au cut off below the pit shells for AG, and 0.4 g/t to a depth of 40m and 0.8 g/t below 40m for APG.

			Oxide	•	Tra	nsition	1	F	resh		Т	otal	
Area	Class	Quantity (Mt)	Au (g/t)	Au (MOz)	Quantity (Mt)	Au (g/t)	Au (MOz)	Quantity (Mt)	Au (g/t)	Au (MOz)	Quantity (Mt)	Au (g/t)	Au (MOz
	Indicated	<del>'</del>	2	0.01	0.3	1.6	0.02	14.19	1.8	0.84	14.58	1.8	0.86
AG	Inferred	0.44	1.5	0.02	1.21	1.3	0.05	18.02	1.5	0.88	19.68	1.5	0.95
	Total	0.53	1.6	0.03	1.51	1.3	0.06	32.22	1.7	1.72	34.26	1.6	1.81
APG	Inferred	1.24	0.7	0.03	3.43	0.8	0.09	6.56	1.1	0.23	11.24	1	0.35
Gra	nd Total	1.77	1	0.06	4.95	1	0.15	38.78	1.6	1.94	45.49	1.5	2.15

#### Note:

- 5. The Mineral Resources has been compiled under the supervision of Mr. Jeremy Clark who is a full-time employee of RPM and a Registered Member of the Australian Institute of Mining and Metallurgy. Mr. Clark has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code.
- 6. All Mineral Resources figures reported in the table above represent estimates at 11 November, 2019. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.
- 7. Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The Joint Ore Reserves Committee Code JORC 2012 Edition).
- 8. The Mineral Resources have been reported at a 100% equity stake and not factored for ownership proportions.





A high grade core of mineralisation has been identified within the overall resource at AG of 19.3 Mt at 2.2 g/t for 1.38 Moz. The total resource at AG reported at varying cut-off grades is provided in Table 9 below and shows a significant amount of higher grade mineralisation within the overall resource. However RPM recommends that the Mineral Resource be reported at 0.4 g/t above the pit shell and 0.8 g/t below it as shown in Table 8.

Table 9: AG Total Inferred Mineral Resource at varying cut off grades

	Indicated			In	Inferred			Total		
COG Au g/t	Tonnes	Au	Au	Tonnes	Au	Au	Tonnes	Au	Au	
Au g/t	Mt	g/t	Moz	Mt	g/t	Moz	Mt	g/t	Moz	
8.0	9.6	2.2	0.68	13.1	1.9	0.80	22.7	2.1	1.49	
1.6	4.4	3.5	0.49	5.44	3.0	0.53	9.8	3.2	1.02	
2.4	2.4	4.8	0.37	2.89	4.0	0.37	5.3	4.4	0.74	
3.2	1.6	5.8	0.30	1.59	5.0	0.25	3.2	5.4	0.56	

The total resource at APG reported at varying cut-off grades is provided in Table 10 below. However, RPM recommends that the Mineral Resource be reported at 0.4 g/t to a depth of 40m and 0.8 g/t below 40m as shown in Table 8.

Table 10: APG Total Inferred Mineral Resource at varying cut off grades

COG Au g/t	Quantity Mtonnes	Au g/t	Au Moz
0.4	20.4	0.8	0.52
0.5	17.9	0.8	0.49
0.6	13.8	0.9	0.41
0.7	10.6	1.0	0.35
0.8	8.1	1.1	0.29
0.9	5.9	1.2	0.23
1.0	4.2	1.3	0.18
1.1	2.9	1.4	0.13
1.2	1.9	1.5	0.09

### **ENDS**

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#### Abujar Gold Project, Côte d'Ivoire

The Abujar Gold Project is located approximately 30km from the major regional city of Daloa in central western Côte D'Ivoire. It is close to good regional and local infrastructure to facilitate exploration and development being only 15km from nearest tarred road and grid power.

The Abujar Gold Project is comprised of three contiguous tenements, Middle, South and North tenement, with a total land area of 1,114km², of which less than 10% has been explored. It features an NNE-orientated gold corridor over 65km striking across three tenements.

Tietto is well placed to grow its resource inventory. It has substantially advanced the project since starting exploration in mid-2015 with the identification of 2.2 million ounces Indicated and Inferred JORC 2012 Mineral Resources and has also completed preliminary metallurgical test work.

#### **Competent Persons' Statements**

The information in this report that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Mark Strizek, a Competent Person who is a Member or The Australasian Institute of Mining and Metallurgy. Mr Strizek is a non-executive director of the Company. Mr Strizek has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Strizek consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears. Additionally, Mr Strizek confirms that the entity is not aware of any new information or data that materially affects the information contained in the ASX releases referred to in this report.

The information in this report that relates to Mineral Resources is based on information evaluated by Mr Jeremy Clark who is a Member of The Australasian Institute of Mining and Metallurgy (MAusIMM) and who has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Clark is an employee of RPMGlobal Asia Limited and he consents to the inclusion of the estimates in the report of the Mineral Resource in the form and context in which they appear.

#### **Compliance Statement**

This report contains information extracted from ASX market announcements reported in accordance with the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" ("2012 JORC Code") and available for viewing at www. tietto.com. Includes results reported previously and published on ASX platform, 16 January 2018, 27 March 2018, 23 April 2018, 8 May 2018, 7 June 2018, 4 October 2018, 1 November 2018, 28 November 2018, 31 January 2019, 26 February 2019 and 12 March 2019 - The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous announcements.



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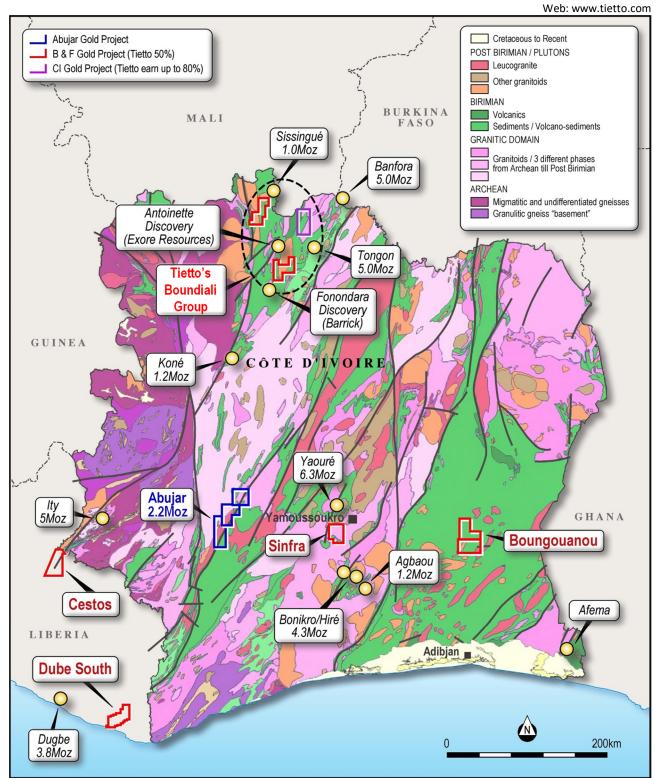
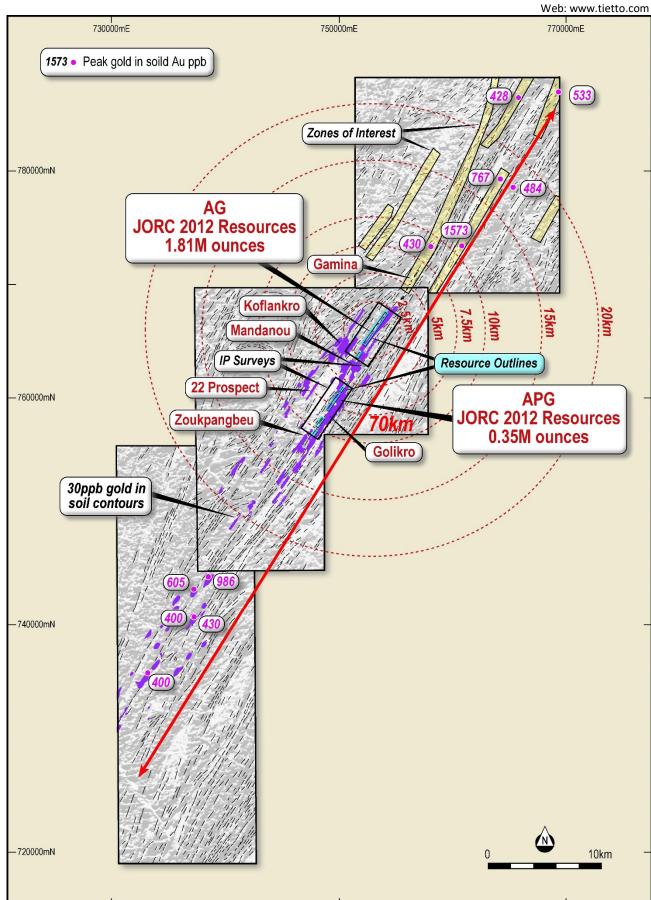


Figure 3: Plan view showing location of the Abujar Gold Project



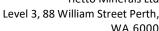
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Figure 4: Plan view showing location of deposits and resources at the Abujar Gold Project

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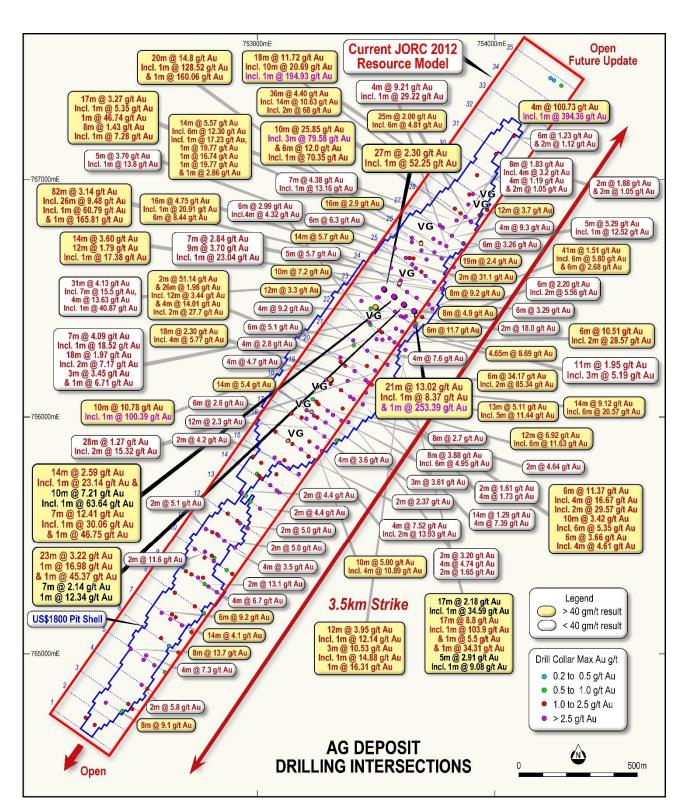
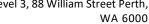
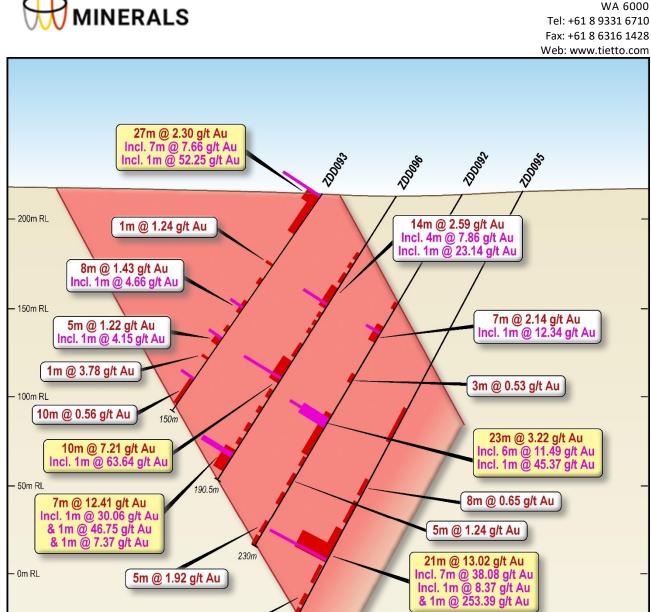


Figure 5: Plan view showing drill results at AG



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Section 23B



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Figure 6: Cross Section showing drill results at AG deposit

Open

270m

4m @ 2.42 g/t Au

100m



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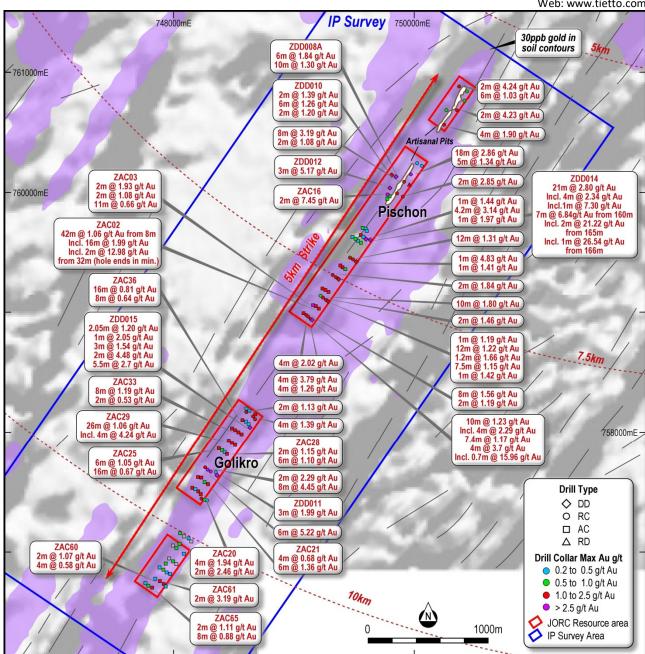


Figure 7: Plan view showing drill results at APG deposit



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# Section 1 of the JORC Code, 2012 Edition – Table 1

# **Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Samples at AG and APG project areas were collected using drilling techniques including Air Core Drilling (AC), Reverse Circulation (RC), Diamond Drilling (DD). Holes were generally angled at 60° to 90° towards northwest to optimally intersect the mineralised zones.</li> <li>AC samples were collected every 1m from cyclone, and 2m composite samples which is combined with two 1/3 of each one meter sample were sent for assaying. No Aircore samples where used in the estimates reported in the Report.</li> <li>RC samples were collected as 1m samples from the cyclone, which were subsequently spear sampled to form 2 m samples which were subsequently sent to the laboratory. All one meter samples were split using a riffle splitter with 1/4 of the same retained in the plastic bags, the remainder was resplit with 1/4 retained in calico bag and the remainder discarded.</li> <li>Diamond core was logged both for geological and mineralised structures as noted above. The core was then cut in half using a diamond brick cutting saw on 1m intervals. Typically the core was sampled to geological intervals as defined by the geologist within the even two metre sample intervals utilised. The right hand side of the core was always submitted for analysis with the left side being stored in trays on site.</li> <li>No QAQC was completed during the 2015 drilling program, however the vast majority of the data is sourced from the 2016-2019 drilling which implemented definitive QAQC program, to provide verification of the sample procedure, the sample preparation and the analytical precision and accuracy of the primary laboratory.</li> <li>Sample preparation was completed by independent international accredited laboratory Intertek Minerals Ltd in 2016 and ALS Ghana in 2018. Following cutting or splitting, the samples were bagged by the Client employees and then sent to the laboratory for preparation. These samples were subsequently sent to Ghana for analysis via 30g fire assay in 2016-2017 (Intertek Ghana) and 150g fire assay in 2018-201</li></ul>



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Criteria	JORC Code explanation	Commentary
Drilling techniques	Drill type (eg core, reverse circulation, openhole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	AC drilling size is 89 mm, RC drilling comprising 105mm diameter face sampling bit. Diamond drilling carried out with mostly HQ and some NQ sized equipment. PQ-size rods and casing were used at the top the holes to stabilise the collars although no samples were taken from the PQ size core.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>Within the Diamond drilling typically core recoveries ranged between 85% and 100% for all holes with no significant issues noted. All 2019 holes has recoveries above 95% in the majority of the mineralised areas.</li> <li>Some low recovery are associated with intensely fractured or faulted intervals and the more intensely weathered upper zone however These low recoveries are not considered material to the total Mineral Resource currently estimated.</li> <li>AC, RC samples were visually checked for recovery, moisture and contamination. RPM notes that it has relied on information for the majority of holes for sample recovery based on drilling plods however considers sample recovery suitable.</li> <li>No relationship exists between sample recovery and grade.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All holes were field logged by company geologists. Lithological, alteration and mineralogical nomenclature of the deposit as well as sulphide content were recorded. No a geotechnical and structural data measured has been recorded until the last 10 holes of the 2019 program.</li> <li>Photography and recovery measurements were carried out by assistants under a geologist's supervision. The logging for all RC holes is also recorded on a logging "chipboard", where the chips for each metre are glued to a board to form a visual log of the entire hole</li> <li>All drill holes were logged in full.</li> <li>Logging was qualitative and quantitative in nature.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> </ul>	<ul> <li>HQ and NQ core was cut in half using a core saw. Typically the core was sampled to major geological intervals as defined by the geologist within the even two metre sample intervals utilised. All samples were collected from the same side of the core.</li> <li>AC, RC samples were collected as 1m samples from the cyclone, which were subsequently composited using as spear samples to form 2 m samples.</li> <li>Sampling of diamond core and AC, RC chips used industry standard techniques. Sample preparation for the 2018 drilling is detailed below; previous releases detail the 2016 and</li> </ul>
	Measures taken to ensure that the sampling is	2018 drilling results. After drying the sample is subject to a primary crush to 2mm. Sample



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Criteria	JORC Code explanation	Commentary
Criteria	representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.  • Whether sample sizes are appropriate to the grain size of the material being sampled.	is split through a riffle splitter until 250gm is left (this involves 4-5 splits through the riffle splitter).  The 250gm sample is milled through an LM5 using a single puck to 90% <75 micron  Milled sample is homogenised through a matt roll with a 150gm routine sample collected using a spoon around the quadrants and sent to Ghana for analysis and the remaining 100gm kept at ALS for checks.  Field QC procedures involved the use of 2 types certified reference materials (1 in 20) which is certified by Geostats Ltd,  Primary RC duplicates: Generated from the first splitter off the rig and inserted 5% (1 in 20 samples). This sample is collected from a spear sample from the reject material of the primary split.  Primary DD duplicate: Generated by cutting the remaining half core into a ¼ and sampled.  Coarse blank samples: Inserted 1 in every 20 samples  Laboratory Internal Duplicates and Standards  Sample sizes are considered appropriate to correctly represent the moderately nuggetty gold mineralisation based on: the style of mineralisation, the thickness and consistency of the intersections, the sampling
Quality of assay data and laboratory tests  Verification of sampling and	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometres, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> <li>The verification of significant intersections by either independent or alternative company personnel.</li> </ul>	<ul> <li>methodology and assay value ranges for Au.</li> <li>The analytical techniques used Fire Assay on 150g pulp samples.</li> <li>No geophysical tools were used to determine any element concentrations used in this Mineral Resource estimate.</li> <li>Sample preparation checks for fineness were carried out by the laboratory as part of internal procedures to ensure the grind size of 2mm was being attained. Laboratory QAQC includes the use of internal standards using certified reference material, and pulp replicates. No anomalous assays were noted.</li> <li>The QAQC results confirm that acceptable levels of accuracy and precision have been established.</li> <li>The Company has developed logging and sampling procedures that is based on the African experience of the local teams and</li> </ul>
assaying	<ul> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	subsequently reviewed by RPM during the site visits that confirmed the processes and protocols implemented giving the results a high level of confidence. The Company geologists log the core and RC samples according to the existing lithological, alteration and mineralogical nomenclature of the deposit as well as sulphide content. Photography and recovery measurements were carried out by assistants under a geologist's supervision. The logging for all



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Criteria	JORC Code explanation	Commentary
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.  Specification of the grid system used.	RC holes is also recorded on a logging "chipboard", where the chips for each metre are glued to a board to form a visual log of the entire hole  • Twinned holes have not been drilled as not considered appropriate as the Company has been responsible for all holes.  • Logging records were mostly registered in physical format and were input into a digital format. The core photographs, collar coordinates and down the hole surveys were received in digital format.  • Assay values that were below detection limit were adjusted to equal half of the detection limit value. Un-sampled intervals were assumed to have no mineralisation and they were therefore set to blank in the database.  • The selective original data review and site visit observations carried out by RPM did not identify any material issues with the data entry or digital data. In addition RPM considers that the onsite data management system meets industry standard which minimizes potential 'human' data-entry errors and no systematic fundamental data entry errors or data transfer errors.  • All drill hole and trench collar locations were surveyed utilising the differential GPS methods by third party surveyors.  • RPM notes that the DGPS system utilised is typically within a 10 cm accuracy range which is suitable for the classification applied. I  • The Client's drilling teams utilised the Reflex EZ-shot instrument to measure deviations in azimuth and inclination angles for all holes; however, vertical holes were not surveyed. The first measurement is taken at 5 m depth, and then at approximately every 30 to 50m depth interval and at the end of the hole.  • Small scale mining has been undertaken on several areas within the project. This mining is restricted typically to the upper 10m of the oxide material however is variable in depth and extent with recent underground mining occurring in the fresh rock. For AG area, the latest provided topographic survey models were utilised which were further depleted in areas of recent activity to 5m depth. In addition two k



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Criteria	JORC Code explanation	Web: www.tietto.com
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Drill hole collars were generally spaced on an approximate 100 m by 50 m grid in both deposits with recent drilling including infill drilling on 50m by 50m spacing within AG.</li> <li>The drill hole spacing and distribution is considered sufficient to establish the degree of continuity appropriate for the Inferred and Indicated Mineral Resource estimation procedures. A combined composited file of the 5 largest lodes with the AG area was created for constructing variogram. Object 40 was also invested which returned very similar variograms.</li> <li>The most prevalent sample length inside the mineralised wireframes was 1m and 2 m, and as a result, 2m was chosen as the composite length. The samples inside the mineralised wireframes were then composited to 2 m lengths</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	No bias was interpreted to be introduced as most drill holes are angled to northwest, which is approximately perpendicular to the orientation of the mineralised trends are interpreted being comprised of southeast-dipping lodes striking 30° dipping at varying angles of inclination typically between 60° and 80°.
Sample security	The measures taken to ensure sample security.	Chain of custody is managed by the Client's senior site geologists and geotechnicians. Samples are stored in a core shed at site and samples were delivered to the laboratory by client geologists. Client employees have no further involvement in the preparation or analysis of the samples.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>A review of sampling techniques was carried out on each site visit by RPM in July 2016 and July 2018.</li> </ul>

## Section 2 of the JORC Code, 2012 Edition – Table 1

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> </ul>	<ul> <li>The Project is contained within three adjacent exploration licenses (Zoukougbeu, Zahibo and Issia licenses) which are currently held by third party companies, of which Tietto or its wholly owned subsidiaries are part owners. All resource are contained within the Zahibo tenement.</li> <li>The tenements are in good standing with no known impediment to future grant of a mining lease.</li> </ul>



Criteria	JORC Code explanation	Web: www.tietto.com
Criteria	- Joke Code explanation	Commentary
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>No exploration programs have been conducted by other parties as Projects</li> <li>The license area was not historically known as a prospective region for gold, but recent artisanal workings revealed the presence of primary gold mineralisation in huge artisanal pits.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The AG-APG Deposits are located within the Proterozoic Birimian rocks of the Man shield. It is situated on the Daloa 1:200,000 geologic sheet, 30km west of Daloa. It is located in the Hana-Lobo belt, east of the Sassandra fault that marks the boundary between the Man shield (Archean) and Eburnean domain. The regional trend is NNE to NE.</li> <li>The AG-APG deposits resemble typical shear zone deposits of the West African granite-greenstone terrane. The deposits themselves are associated with a major regional shear zone and are developed in a granodiorite host. Mineralisation may be spatially related to the emplacement of intrusives. The gold mineralisation is mesothermal in origin and occurs as free gold in quartz vein stockworks and zones of silicification, associated with pyrite and chalcopyrite. The gold mineralisation is found in linear zones with the contacts showing evidence of shearing. Free gold is frequently observed. Alteration is weak to strong depending on the development of the system.</li> <li>Two types of deformation are present in the drill cores: ductile deformation and brittle deformation. The gold mineralisation is related to deformed granodiorite, in shear zones, with sulphides (mainly pyrite and minor chalcopyrite) associated with visible gold. Alteration is characterized by chlorite, sericite, calcite, secondary quartz and disseminated pyrite. This assemblage is well developed in schistose, foliated rocks with presence of quartz veins or veinlets.</li> </ul>
Drill hole information	<ul> <li>A summary of all information material to the under-standing of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent</li> </ul>	<ul> <li>Drill hole locations are shown on the map within the body of this Mineral Resource report.</li> <li>All information has been included in the appendices. No RC or DD drill hole information has been excluded however no AC drilling is utilised.</li> </ul>



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Criteria	JORC Code explanation	Commentary
	Person should clearly explain why this is the case.	
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>Exploration results are not being reported</li> <li>No aggregation of intercepts was carried out. Drilling intervals are predominantly 1m and 2m.</li> <li>AC, RC samples were collected as 1m samples from the cyclone, which were subsequently spear samples to form 2 m samples which were subsequently sent to the laboratory</li> <li>Metal equivalent values are not being reported.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g.'down hole length, true width not known').</li> </ul>	<ul> <li>Most drill holes are angled to northwest, which is approximately perpendicular to the orientation of the mineralised trends as all deposits have similar styles of mineralisation which was interpreted as being comprised of southeast-dipping lodes striking 30° dipping at varying angles of inclination typically between 60° and 80°.</li> <li>Sections are provided in the main body of the report and the press release however exploration results are not being reported</li> </ul>
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Relevant diagrams have been included within the Mineral Resource report main body of text However exploration results are not being reported
Balanced Reporting	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul> <li>All drill hole and trench collar locations were surveyed utilising the differential GPS methods by third party surveyors. DGPS system utilised it typically within 10 cm accuracy range.</li> <li>Drilling teams utilised the Reflex EZ-shot instrument to measure deviations in azimuth and inclination angles for all holes; however, vertical holes were not surveyed. The first measurement is taken at 6 m depth, and then at approximately every 30m depth interval and at the end of the hole.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples - size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	All interpretations for each deposit are consistent with observations made and information gained during drilling at the project.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large- scale step-out drilling).	Further exploration work has been planned which will focus on expanding hr resource and infill drilling to increase the confidence



Criteria	JORC Code explanation	Commentary
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	<ul> <li>in the resource.</li> <li>Subject the several years of systematic exploration the Project contains numerous gold anomalous areas with particular focus on the AG Deposit. While encompassing the entire Project, this Report focused on the estimation of Mineral Resources within two areas (AG and APG); however several other anomalous areas have been identified within the Project. So further exploration works could be planned.</li> <li>Infill and extensional drilling is drilled at 2019 at local areas of the AG Mineral Resource for classification update.</li> </ul>



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## Section 3 of the JORC Code, 2012 Edition – Table 1

## **Estimation and Reporting of Mineral Resources**

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>The data base is systematically audited by Client's senior geologists. All drill logs are validated digitally by the database geologist once assay results are returned from the laboratory.</li> <li>The selective original data review and site visit observations carried out by RPM did not identify any material issues with the data entry or digital data. In addition RPM considers that the onsite data management system meets industry standard which minimizes potential 'human' data-entry errors and no systematic fundamental data entry errors or data transfer errors; accordingly, RPM considers the integrity of the digital database to be sound.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>RPM performed data audits in Surpac.</li> <li>Site visits have been conducted by Jeremy Clark (RPM) in July 2016 and subsequently by Philippe Baudry in July, 2018 and in October 2019 by Jeremy Clark. During the visits the visitors reviewed the outcrops, drill-hole location and core sheds as well as held various discussions with site personnel. RPM sighted mineralised drill-hole intersections of all the deposits, down hole surveys and assay data, laboratory facilities, sampling and reviewed survey data acquisition protocols, assay procedures, bulk density determination, logging and sample preparation procedures and quality control (QC) results.</li> <li>RPM concluded that the data was adequately acquired and validated following industry</li> </ul>
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>best practices.</li> <li>The confidence in the geological interpretation is considered to be assumed and is based on good quality drilling.</li> <li>All deposits have similar styles of mineralisation which was interpreted as being comprised of southeast-dipping lodes striking 30° dipping at varying angles of inclination, typically between 60° and 80°. These lodes appear to coincide with strong linear geological structures which are offset by several faults which have been interpreted based on logging of samples taken at regular intervals from angled drill holes.</li> <li>RPM defined 43 discrete bodies for the AG area, and 38 discrete bodies for the APG area based on the orientation and shape of the mineralisation. These are still some sub domains are likely separated by interpreted</li> </ul>



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Criteria	JORC Code explanation	Commentary
		fault zones identified from geophysical surveys; however the style of mineralisation appears the same between domains although grade ranges vary.  Current interpretation is considered suitable for the classification.  Outcrops of mineralisation and host rocks within the Project support the geometry of the mineralisation.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>Mineral Resource Estimate is comprised of 2 areas.</li> <li>The AG Mineral Resource area extends over a strike length of 5,400m (from 763,400mN – 768,600mN), has a typical width of 750m (from 751,300mE – 752050mE). It includes the 520m vertical interval from -175mRL to 345mRL.</li> <li>The APG Mineral Resource area extends over a strike length of 5,175m (from 756,675mN – 761,850mN), has a typical width of 650m (from 747,500mE – 748,150mE). It includes the 400m vertical interval from -50mRL to 350mRL.</li> </ul>
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	Neighbour ("NN") algorithms were also assessed as a way of validating the OK estimation results.  • A maximum distance of 25 m was generally applied; however in areas of 100m at depth with no infill drilling the distance was increased if depth consistency was observed between the section. Additionally, due to the limited drilling near surface if mineralisation was observed in the alluvial pits, the lodes were extrapolated to surface.
	<ul> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> </ul>	<ul> <li>Due to the limited number of samples within the individual lodes, no robust variograms could be interpreted within any single lode; as a result RPM combined the composited files of the three main mineralised lodes (32, 40, 43, 47, and 51) and completed relative variogram analysis for the AG area. Reasonable variograms were obtained for lode 13 and for separate zones for the APG area. These analyses indicated that within the highly continuous along strike sheets (30° which dip consistently at 60° - 80° to the south east, a southerly plunging shoots can be interpreted. This orientation is consistent with the high grade plunges which can be interpreted within the drill holes</li> <li>Surpac software was used for the estimations.</li> <li>Top-cuts of 70g/t, 50g/t and 20g/t were appropriate for different lodes in the AG area respectively and a top-cut of 10g/t was</li> </ul>



Criteria J	IOPC Code explanation	Web: www.tietto.com
Criteria	JORC Code explanation	Commentary
	<ul> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> </ul>	appropriate for all lodes in the APG area. These high grade cuts were applied to the composites and were determined from the log histograms and log probability plots. RPM notes there were some extreme high grade samples identified during the latest exploration stage however the high grade domains were not extended.  • A grade dependent search was applied to all samples above 35 g/t. This was limited to a 32.5m radius influence of 8 samples due to the extreme grades of these holes.  • The parent block dimensions used were 25m NS by 10m EW by 5m vertical with sub-cells of 3.125m by 1.125m by 0.625m based on QKNA analysis. The parent block size was
	<ul> <li>Discussion of basis for using or not using grade cutting or capping.</li> </ul>	selected on the basis of average drill hole spacing in the deposit. Each block model was rotated to a bearing of 030 degrees to align with the general strike of the majority of the mineralised lenses, to improve the fit of the blocks to the wireframe and to reduce the size of the block model.  Historical production records were not available for small scale mining operations.  No assumptions have been made regarding
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	<ul> <li>recovery of by-products.</li> <li>No estimation of deleterious elements was carried out. Only Au was interpolated into the block model.</li> <li>An orientated 'ellipsoid' search was used to select data and was based on parameters taken from the variography or the observed lode geometry. Three passes were used for each domain. The first pass used a range of 60m, with a minimum of 8 samples. For the second pass, the range was extended to 100m, with a minimum of 4 samples. For the final pass, the range was extended to 250m, with a minimum of 1 sample. A maximum of 8 samples was used for all 3 passes.</li> <li>Selective mining units were not modelled in the Mineral Resource model. The block size used in the model was based on drill sample spacing and lode orientation.</li> <li>Only Au assay data was available, therefore correlation analysis was not possible.</li> <li>The deposit mineralisation was constrained by wireframes constructed using a 0.3g/t Au cut-off grade in association with logged lithology codes. The wireframes were applied as hard boundaries in the estimate.</li> <li>Statistical analysis was carried out on data from 81 lodes based on the orientation and shape of the mineralisation, which were further domained in the northern AG area and southern APG area. These 2 domains are likely separated by interpreted fault zones</li> </ul>



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Criteria	JORC Code explanation	Commentary
		identified from geophysical surveys; however the style of mineralisation appears the same between domains although grade ranges vary.  • A four step process was used to validate the model. A qualitative assessment was completed by slicing sections through the block model in positions coincident with drilling. A quantitative assessment of the estimate was completed by comparing the average Au grades of the composite file input against the Au block model output for all the resource objects. Validation of the model included detailed comparison of composite grades and block grades by northing and elevation. Validation plots showed good correlation between the composite grades and the block model grades.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages and grades were estimated on a dry in situ basis. No moisture values were reviewed.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	<ul> <li>Mineral Resource is reported at a cut of grade of 0.4 Au g/t within a pit shell within a gold price of 1,800 USD per troy ounce, and 0.8 Au g/t below. The cut off grades were based on estimated mining and processing costs and recoveries factors of similar projects in the lvory Coast. The pit shell was generated with resources using the following parameters are:</li> <li>Gold Price of USD 1,800 per ounce, RPM notes this is based on the eventual extraction sometime in the future and not the long term consensus forecast</li> <li>The cut off grades were estimated based on the gold price of 1600 USD per troy ounce.</li> <li>Mining Cost of USD 3.4 /tonnes rock</li> <li>A re-blocked model to 5m N, 6.25m E and 5 m east, which is considered the SMU, as such no dilution was included, however 5% ore loss was applied.</li> <li>Processing costs of USD 21 per tonne milled (including G &amp; A), and</li> <li>Processing recovery of 95%.</li> <li>RPM has utilised the operating costs and recoveries along with the price noted above in determining the appropriate cut-off grade. Given the above analysis RPM considers both the open pit and material below the pit demonstrates reasonable prospects for eventual economic extraction, however highlights that additional studies and drilling is required to confirm economic viability.</li> <li>Due to the shallow nature of mineralisation</li> </ul>



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		(maximum depth 150m) the resource was reported with a changing cut-off grade at depth. This was due to the increased costs of potential mining and likely requirement to haul material to the plant at AG. The resource is reported using a 0.4g/t cut off to a depth of 40m and a 0.8 g/t cut off below 40m at APG.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	RPM has assumed that the deposit could be mined using mostly open cut techniques with some possibility of underground mining.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	<ul> <li>Preliminary metallurgical testing has been conducted on the AG Project. It is likely that processing would entail gravity separation of Au followed by leaching to produce a concentrate with expected recoveries greater than 95% for Au based on these results.</li> <li>Further metallurgical studies are planned.</li> </ul>
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	<ul> <li>No assumptions have been made regarding environmental factors. Tietto Minerals Pty Ltd will work to mitigate environmental impacts as a result of any future mining or mineral processing.</li> <li>While RPM has not completed a detailed environmental review RPM has not been informed nor is aware of any issues with the licence and understands that the licence in which Exploration results and Mineral Resources are reported are in good standing.</li> </ul>
Bulk density	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that</li> </ul>	RPM is aware a total of 571 bulk density determinations were carried out on the diamond core from numerous holes within the AG Project. While it is considered that there is limited determinations for the volume of the Project, the values do show consistent trends which include the following:



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Criteria	JORC Code explanation	Commentary
	adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.  • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	<ul> <li>No relation can be interpreted between grade and density, this is as expected for the style of mineralisation;</li> <li>Rock types of granodiorite (Fgd) and Mafics (Msc) appear to have a relationship with density, as would be expected,</li> <li>While there is limited data, there appears to be two populations potentially linked to the sulphide (pyrite) content within the rock, it can be interpreted that a population occurs between 2.73 and 2.78 t/cu.m, while another occurs at 2.84 to 2.88 t/cu.m.</li> <li>Measurements were determined by wax coating samples and immersing in water.</li> <li>While there is limited data from oxidised, transition, experimental density values were assigned for oxidised and transition areas with 2.0 g/cu.cm and 2.4 g/cu.cm respectively applied, and an average density value 2.8 g/cu.cm from provided density data used for fresh rock.</li> <li>RPM recommends an ongoing program of submitting suitable core samples for density</li> </ul>
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.  Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data confidence in	<ul> <li>Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012). The Mineral Resource was classified as Indicated and Inferred Mineral Resource on the basis of data quality, sample spacing, and lode continuity.</li> <li>The AG and APG deposits both show good continuity of the main mineralised lodes along strike and down dip which allowed the drill hole intersections to be modelled into coherent, geologically robust wireframes within the drill spacing of 50m-100m by 50m. Relative consistency is evident in the thickness of the structures, along with the continuity of structure between sections. While there is good geological continuity along strike and down dip, there is evidence, and it is interpreted, that local variation of grade and thickness will occur between the current drill spacing arising from the boudin type structures resulting in discontinuous</li> </ul>
	reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).  • Whether the result appropriately reflects the Competent Person's view of the deposit.	<ul> <li>Type structures resulting in discontinuous pods of mineralisation.</li> <li>Given the interpretation of further local grade variation with further drilling, within the good geological continuity, RPM considers the current data suitable to provide a good estimate of tonnage and metal content within the current drilling spacing on a global scale. For AG area, RPM considers the 2019 infill and extension drilling undertaken had good outcomes with 50m by 50m spacing suitable for the indicated classification in</li> </ul>



Criteria	JORC Code explanation	Commentary Web: www.tietto.com
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		north area of AG area, based on variogram ranges (60% of the sill range) and visual confirmation of structure and grade continuity. RPM however considers that further drilling is required to allow a confirmed estimate of local grade and metal distribution; as such no measured resource is report. All other areas are reported the Mineral Resource as Inferred within the 100m by 50m drilling spacing areas and extrapolated to 25m from the nearest drill hole.  • The Mineral Resource estimate appropriately reflects the view of the Competent Person.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Internal audits have been completed by RPM which verified the technical inputs, methodology, parameters and results of the estimate.
Discussion of relative accuracy/ confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul> <li>The Mineral Resource estimate has been reported with a high degree of confidence. The lode geometry and continuity has been interpreted to reflect the Mineral Resource classification. The data quality is good and the drill holes have detailed logs produced by qualified geologists. Recognised laboratories have been used for all analyses.</li> <li>The Mineral Resource statement relates to global estimates of tonnes and grade.</li> <li>This is an update to the existing Mineral Resource and no recorded mining activities have been undertaken therefore reconciliation could not be conducted.</li> </ul>