

Veligallu RPAs – Key Facts

The Veligallu Schist (Greenstone) Belt (VGB) is an Achaean greenstone belt on the southern side of the Mesoproterozoic-Neoproterozoic Cuddapah basin. The VGB lies about 100 km NNE of Kolar and 300 km SE of Hutti.

GSI mapping identifies the VGB extending N-S for a length of about 60 km with width ranging from 6-13 km (Figure 1). It consists of a group of volcano-sedimentary rocks with sheared/faulted margins flanked by tonalite-granodiorite-monzodiorite and granite-syenogranite intrusive suites either side. The rocks of the belt are classified into three formations (1) the lower Tamballapalli Formation comprising metabasalts, metapyroxenite and metagabbro; the metabasalt is mainly massive but also schistose with deformed pillows, amygdales and vesicles; (2) the Sivapuram Formation consisting of acid volcanic rocks with conglomerate/breccia and some quartzofeldspathic gneiss units; and (3) the Mallayakonda Formation consisting of banded iron formation.

IGRPL's attention was focussed on the VGB by various research undertaken here by GSI and more particularly, a geochemical programme by a joint Hyderabad-Utrecht University team in the 1980s. This collaborative programme identified anomalous amounts of tungsten in the northern part of the VGB along with anomalous gold. A similar Achaean gold-tungsten association is found in the Abitibi greenstone belts of Canada and at the Kolar Goldfields in nearby Karnataka.

Detailed stream sediment sampling was undertaken at an approximate sampling density of 1.5/km² and at each site, a 3.5 kg sample of -2mm was panned to a concentrate and grain counted under ultraviolet light for scheelite; observations were made when obvious gold was also seen in the panned concentrate.

Key elements of past work are summarized in Figure 1.

IGRPL applied for a 1317 km² RP over much of the VGB on 26 August 2008, for gold, copper, lead, zinc, tungsten and associated minerals (Figure 1). An additional RPA of 372 km² was submitted recently to cover southern and eastern extensions of the VGB. Both are currently being processed by the DMG in Hyderabad. A prior 25 km² PLA submitted by the local subsidiary (Geomysore) of private Australian group Australia-India Resources, is situated in the central part of our RPA; if granted this area will be excluded from any area granted to IGRPL.

The RPAs, if granted, will represent a truly remarkable opportunity for IGRPL insofar as they will allow almost an entire 60-km long greenstone belt to be explored using a modern approach. The belt has gold and associated mineral (scheelite and copper) showings evident throughout and has had no drilling undertaken to the present time.

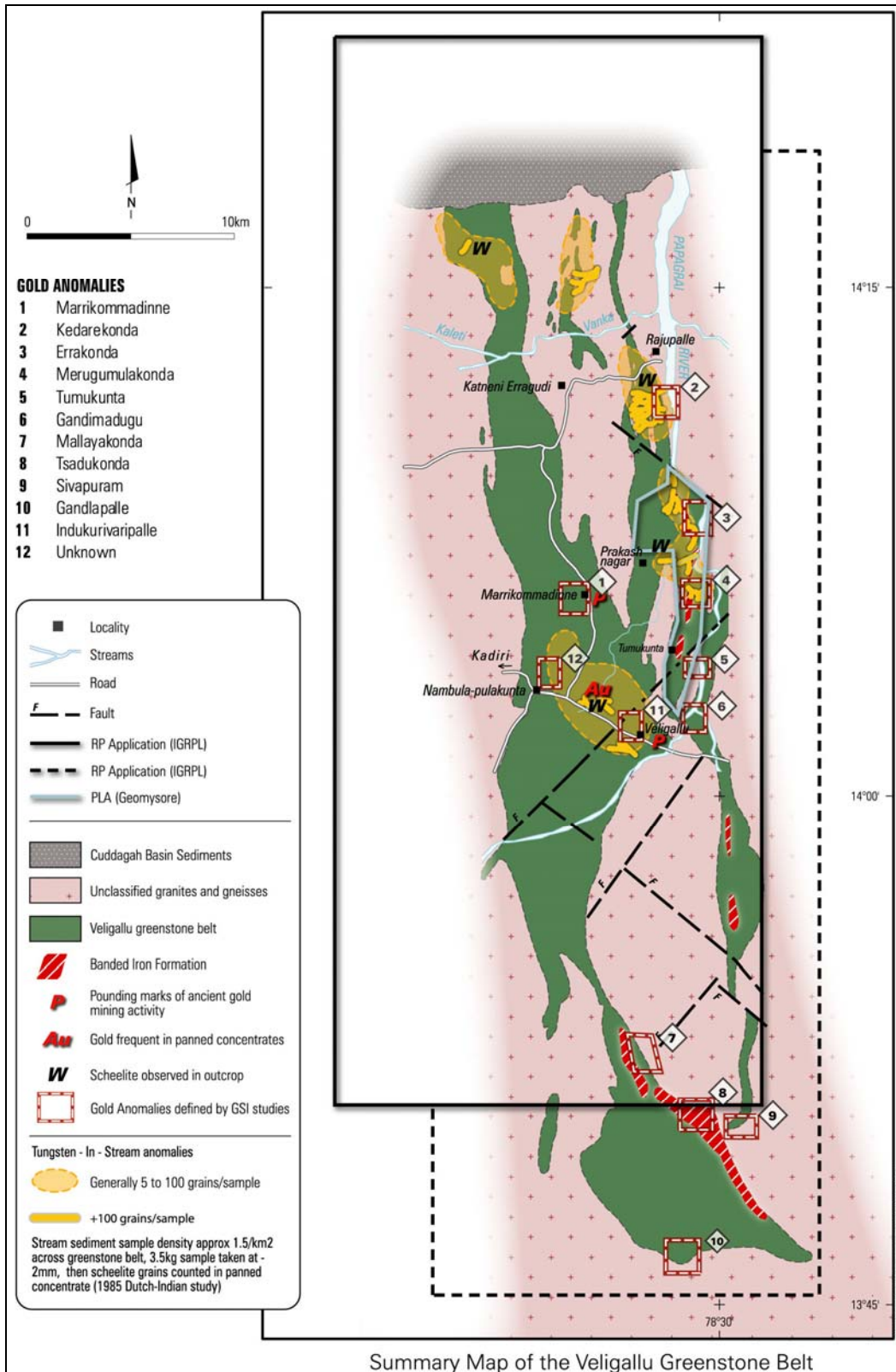


Figure 1 – Veligallu Greenstone Belt and IGRPL PLA

GSI Studies

Work undertaken by the GSI has been summarized in GSI Special Publication No. 58, pp11-27 by K.S. Rao (2001). It has included the following:

- Regional mapping in the VGB to identify target areas for gold and polymetallic sulphide mineralization associated with several shear zones in BIF. In places, scheelite association with gold is recorded.
- Regional geochemical surveys involving a total of 1,008 lithochemical samples on 1 km x 1 km grid, plus 1,560 samples taken at random and 20 stream sediment samples.
- Detailed mapping and rock sampling (656 samples on 500 m x 50 m grids plus additional random samples), together with some trenching (205 samples) on selected blocks.
- Geophysical surveys, including IP, SP and ground magnetics on selected blocks.

Based on results of the integrated surveys and exploration, the following gold-anomalous zones were identified, focused primarily on BIF associations because the BIF in this belt commonly contains visible sulphides, mostly pyrite and arsenopyrite: -

Mallayakonda	Gold-bearing BIF zone with pyrite, arsenopyrite and gossan extending for +100 m in strike with a width of 60 m. Old workings are present here; rock samples are all anomalous, ranging from 0.1 to 0.3 g/t Au.
Tsadukonda	Samples ranged from 0.025 to 0.51 g/t Au; no further observations.
Sivapuram	Gold mineralized zones with disseminated of pyrite, arsenopyrite and variegated gossan localized within BIF, extend over a strike length of 800 m. Rock samples assay up to 0.12 g/t Au.
Tumukunta	Gold mineralisation is localized within BIF extending for a length of about 200 m. Rock sample assays are in the range 0.025 to 4.6 g/t Au. Distinct, strong IP anomalies occur over BIF, coincident with SP and magnetic anomalies, thus indicating the possibility of disseminated sulphide mineralisation +/- gold. In Tumukunta and Mulapalli areas also reddish brown and yellowish green stains with faint sulphur smell were noticed in BIF but no visible sulphide mineralisation was observed.
Gandimadugu	A quartz vein and metapyroxenite body within quartz-muscovite-sericite schist contains Cu, Ag and Au mineralization. An old working (1 m x 3 m x 5 m) with profuse malachite and azurite stains is located on a southerly plunging antiform of quartz-muscovite-sericite schist. Samples from the old working have given values of 0.1 to 0.21 g/t Au; 8 to 38 g/t Ag; and 0.5% to 3.5% Cu. Anomalous gold (above 0.04 g/t Au) samples were recorded continuously in quartz veins over a strike length of 100 m to the south of the old workings.

Again, there are distinct, strong IP anomalies over BIF here, coincident with SP and magnetic anomalies, thus indicating the possibility of disseminated sulphide mineralization +/- gold in the adjacent sequence.

- Merugumulakonda Anomalous gold values were reported in sheared/brecciated BIF over a strike length of 250 m, ranging from 0.3 to 0.5 g/t Au.
- Errakonda Along the south-eastern part of Errakonda Hill, a 500 m long, gold (\pm scheelite) mineralized zone is identified in sheared BIF/chert, up to 40 m wide; it has visible sulphides and gossan. Most of the rock samples were anomalous with values from 0.3 to 0.6 g/t Au. An earlier sampling phase recorded a highest spot sample of 4.6 g/t Au.
- Gandlapalle Gold mineralization is confined to sheared grey quartz veins traversing meta-dacite/ rhyolite showing greenish yellow stains and disseminations of pyrite and arsenopyrite. Rock sample assays range from 0.1 to 0.7 g/t Au.
- Indukurivaripalle Gold mineralization occurs here in sheared amphibolite as disseminations of pyrite and arsenopyrite, extending for +4000 m in strike length with widths from 5 to 40 m. Rock sample assays range from 0.1 to 2.0 g/t Au.
- Marrikommadinne The amphibolite exposed near Marrikommadinne shows visible disseminated sulphide mineralization (mostly pyrite and arsenopyrite) in the form of stringers and blebs. These areas are mostly soil covered. A few old (ancient) pits along with pounding marks were observed. Slag and retort samples were also collected from this area thus indicating ancient mining activity for mostly Au and Cu. Earlier samples have shown gold values ranging from less than 0.1 g/t Au up to 0.27 g/t Au; and from 900 to 920 ppm Cu.
- Again, distinct, strong IP anomalies are located over BIF which are coincident with SP and magnetic anomalies, thus indicating the possibility of disseminated sulphide mineralization +/- gold in the adjacent sequence.
- Kedarekonda Rock sample assays up to 0.1 g/t Au.

IGRPL Initial Reconnaissance Visit

IGRPL personnel spent two days examining the northern part of the VGB along public access routes, with a particular focus on several sites where evidence of ancient gold mining was recorded.

At the Gandimadugu prospect, old workings are now covered by debris from a recent dam project. Below the dam is an exposure of highly deformed and altered metasediments and metamorphosed felsic to mafic igneous rocks. The rocks have been variably sheared, faulted, and altered. Alteration includes epidotization associated with the faulting and silicification. Younger, unaltered dolerite dikes cross cut all rock units.

In an area about 25m wide are veins, lenses and stockworks of grey crystalline quartz. The quartz is generally occurring in a north-south trending zone near a contact with amphibolites/greenstones to the west and more felsic schists to the east (Photos 1 and 2). The grey quartz is plastically deformed and commonly dismembered. Less deformed, lighter-coloured

quartz veins are also common in this area. Copper staining is present in places within the felsic schists (Photo 2).



Photo 1 - Dry river valley below dam; view to north; mafic volcanic (grey) to west, schist (brown) to east

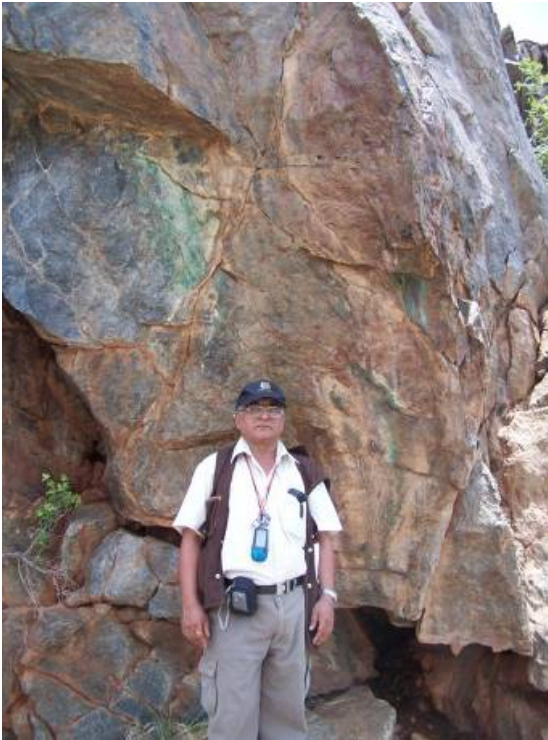


Photo 2 - Minor copper staining in schists to east of N-S mafic-schist contact

On de Smeth and other's (1985) map is an area marked as exhibiting both tungsten and gold (west of Indukurivaripalle area, Figure 1). Grey quartz is common as float or lag deposit in this area. The host is basalt, amphibolite, and gabbro. The mafic host is cut in places by bands of greenish mica and quartz (fuchsite(?) and chrysoprase(?); Photo 4). No tungsten minerals were identified in outcrops in this area.

Past exploration was undertaken here by Geomysore, on an RP covering parts of the VGB that was apparently valid until about 2005(?). During their RP tenure they cut at least 5 trenches, about 50m apart, that followed a generally northeast trending vein or silica flooded breccia zone (Photo 3). The quartz here has a light bluish tinge and includes minor euhedral pyrite, chalcopyrite and arsenopyrite. The vein and/or silicified zone is about 2 to 5 meters wide in several of the trenches. It appears the felsic host to the siliceous zone has been brecciated. The brecciated zone includes hematite.



Photo 3 - Geomysore trench cut across NE trending silicified zone in brecciated felsic schist.



Photo 4 - Green quartz (chrysoprase?) in altered mafic host. This is from an area of elevated gold and tungsten in alluvial sediments



Photo 5 - Banded iron formation with surface gossan.

Some thin BIF locations were visited, one was laminated magnetite and hematite, in places isoclinally folded, in quartzite. A gossanous weathered surface is common on the BIF (Photo 5).

Some time was spent searching for the two recorded locations with evidence of pounding marks where ancient miners apparently crushed rock to extract gold. In each case the pounding marks are reported to be close to villages. Only one was found; the host rock in this area is a very coarse, clastic sedimentary breccia or conglomerate (Photo 6). It seems unlikely that the breccia/conglomerate was the source of the gold mineralization. However, it is very silicified and indurated so would have represented a perfect grinding platform. Thus it is more likely that gold-bearing ores, gossans and/or gravels were carried to this site in ancient times to be crushed and processed, particularly near inhabited areas.



Photo 6 - Ancient pounding marks presumably where ore was crushed to win gold.