

## SARI

Pit Purnama terletak di wilayah Tambang Emas Martabe dengan kondisi geologi yang cukup kompleks, sehingga pemahaman mengenai kondisi geologi, persebaran zona alterasi, mineralisasi serta karakteristiknya, sangat diperlukan guna menunjang proses produksi dan eksplorasi lebih lanjut pada daerah di sekitarnya. Proses pengambilan data lapangan dilakukan dengan melakukan metode *mapping* pit per 10 meter dan dilakukan pada 2 *bench*, kemudian dilanjutkan dengan *drill core logging* pada 9 data lubang bor. Pengambilan sampel dilakukan dengan metode *grab sampling* untuk kemudian dianalisis di laboratorium yang mencakup: analisis ASD (*Analytical Spectral Device*), XRF (*X-Ray Fluorescence*), petrografi, serta mineragrafi. Selain itu, untuk menunjang integrasi data mineralisasi bijih, penulis menggunakan data sekunder berupa *fire assay* sampel lubang bor yang diperoleh dari data perusahaan. Hasil deskripsi petrografi menunjukkan bahwa daerah penelitian tersusun atas satuan lava andesit, satuan kubah intrusi diorit, dan satuan breksi freatomagmatik polimiktik yang secara keseluruhan terpotong oleh urat kuarsa. Sementara itu berdasarkan analisis ASD, zona alterasi yang berkembang terdiri atas alterasi silika *vuggy*-masif, zona alterasi silika+dikit±alunit, ilit+smektit, dan smektit+klorit. Berdasarkan analisis mineragrafi dan ditunjang oleh data XRF, dapat diketahui bahwa mineralisasi di daerah penelitian berupa pirit, enargit, hematit, goetit, dan jarosit. Kondisi geologi yang mengontrol persebaran alterasi dan mineralisasi yang terjadi adalah adanya struktur berarah timur laut – barat daya dan barat laut – teggara, serta litologi yang memiliki porositas bervariasi. Berdasarkan sekuen alterasi dan mineralisasi yang terjadi, daerah penelitian diinterpretasikan mengalami fase epitermal sulfidasi rendah yang dikontrol oleh struktur yang ada, dan diakhiri dengan fase epitermal sulfidasi tinggi yang membawa mineralisasi bijih.

### **ABSTRACT**

*Purnama Pit laid on Martabe Gold Mine area which geological conditions are quite complex, so that an understanding of geological conditions, the distribution of the alteration and mineralization zones also their characteristics, and the geological factors that control them are needed to support the production process and further exploration of the surrounding area. The process of field data collection is done by the mapping pit method by tracing the pit every 10 meters and performed on 2 benches, then proceed with the drill core logging on 9 drill hole data. Sampling was carried out using the grab sample method for laboratory analysis which included: ASD (Analytical Spectral Device) analysis, XRF (X-Ray Fluorescence), petrography, and minegraphy. In addition, to support the integration of ore mineralization data, the author use secondary data in the form of fire assay drill hole samples obtained from company's data. The result showed that the study area was composed of andesite lava units, diorite intrusion dome units, and polymictic phreatomagmatic breccia units which were entirely cutted by quartz veins. Meanwhile, the alteration zone that developed consisted of vuggy-massive silica alteration, silica+dickite±alunite zone, illite+smectite zone, and smectite+chlorite zone. Mineralization that can be found in the research area are pyrite, enargite, hematite, goethite, and jarosite. The geological conditions that control the distribution of alteration and mineralization that occur are the north east – south west and north west – south west, and varies porosities of the lithologies. Based on the alteration and mineralization sequences that occur, the study area is interpreted to experience a low sulphidation epithermal phase which is controlled by the existing structure, and ends with a high sulphidation epithermal phase that carried ore mineralization.*