INTISARI

Longsor merupakan bencana yang paling sering terjadi diantara bencana lainnya di Kabupaten Magelang. Salah satu kejadian longsor di Kabupaten Magelang terjadi di Dusun Kalisari, Desa Margoyoso, Kecamatan Salaman. Adanya pergerakan aktif material longsor menjadi ciri bahwa dinamika proses geomorfologi intensif terjadi di lokasi kajian. Tujuan dari penelitian ini adalah untuk mengetahui magnitude, arah, variasi spasial pergerakan horizontal dan vertikal proses *displacement* longsor dan mengetahui karakteristik geokimia mineral lempung pada *displacement* longsor Dusun Kalisari, Margoyoso, Salaman, Magelang. Pengamatan proses *displacement* dilakukan menggunakan hasil foto udara *unmanned aerial vehicle* (UAV) berupa ortofoto dan *Digital Elevation Model* (DEM) untuk pengolahan *DEM of difference* (DoD). Pemantauan koordinat titik pengamatan menggunakan survei geodetik metode RTK-Radio. Karakterisasi geokimia mineral lempung dilakukan dengan metode *X-Ray Fluoroscence* (XRF) dan *Scanning Electron Microscope* (SEM). Hasil pengamatan yang dilakukan pada bulan Oktober 2019 hingga Desember 2019 adalah perpindahan titik pengamatan menghasilkan magnitude pergerakan horizontal 0,675 m hingga 0,903 m dan besar sudut pergerakan horizontal N46,92°E - N74°E. Magnitude pergerakan vertikal berkisar -0,72 m hingga -1,14 m dengan nilai negatif yang menandakan terjadi penurunan ketinggian permukaan. Karakteristik geokimia lempung longsor Kalisari terdiri atas dua tipe mineral lempung yaitu kaolinite dan halloysite. Lempung kaolinite mungkin berasal dari proses alterasi hidrotermal bahan induk breksi andesit. Tipe mineral lempung halloysite mungkin berasal dari bahan induk endapan abu vulkan Gunungapi Sumbing Tua dan Gunungapi Sumbing Muda.

Kata Kunci: *Longsor, Displacement, Lempung Longsor, Halloysite, Kaolinite, UAV.*

ABSTRACT

Landslides are the most frequent disasters in Magelang Regency. One of the landslides in Magelang Regency is Kalisari Landslide located in Kalisari Village, Margoyoso, Salaman. The active movement of landslide indicates intensive geomorphological processes in the study site. The aims of this research are to determine the magnitude, direction, spatial variation of horizontal and vertical movement of the landslide displacement process and to determine the geochemical characteristics of clay minerals of the landslide material. Observations of the displacement processes were carried out by comparing multi temporal of orthophotos and Digital Elevation Models (DEM of differences analysis). GNSS survey based on RTK-Radio method was employed to monitoring the coordinates of the observation point. The geochemical characterization of clay minerals was carried out using X-Ray Fluoroscence (XRF) and Scanning Electron Microscope (SEM) methods. The results of observations from October 2019 to December 2019 shows that observation points moved horizontally with the magnitude of 0.675 m to 0.903 m and the horizontal movement angle was N 46,92°E - N74°E. The magnitude of the vertical movement ranged from -0.72 m to -1.14 m (a negative value indicates a decrease in surface height). The geochemical characteristics of the Kalisari Landslide clay consist of two types of clay minerals such as kaolinite and halloysite. Kaolinite clay may be derived from the hydrothermal alteration process of the andesite breccia parent material. Halloysite clay mineral may originate from the main material of volcanic ash from the Old Sumbing Volcano and Sumbing Volcano.

Keywords: *Landslide, Displacement, Landslide Clay, Halloysite, Kaolinite, UAV.*