

INTISARI

Pemetaan Mikrozonasi Sumur Minyak Tua di Desa Bendoharjo, Grobogan, Jawa Tengah Berdasarkan Pengukuran Mikroseismik

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Telah dilakukan pengukuran mikroseismik di daerah sumur minyak tua Desa Bendoharjo, Grobogan, Jawa Tengah dengan tujuan memetakan karakteristik dinamis lapisan tanah permukaan, seperti frekuensi resonansi dan faktor amplifikasi, menggunakan seismometer *short period* Lennartz 3D Lite dengan frekuensi sampling 80 Hz. Penelitian dilakukan di grid 2 x 3,5 km dengan 40 titik pengukuran.

Analisis data dikerjakan menggunakan metode *Horizontal to Vertical Spectral Ratio* (HVSr). Hasil penelitian menunjukkan bahwa nilai frekuensi resonansi berkisar 3 – 22 Hz; faktor amplifikasi berkisar 0,8 – 5,6; ketebalan lapisan lapuk adalah 3 – 30 m; indeks kerentanan seismik berkisar 0,1 – 2,9; dan percepatan getaran maksimum berkisar 8 – 23 gal.

Kata kunci: mikroseismik, HVSr, indeks kerentanan seismik, percepatan getaran tanah maksimum.

ABSTRACT

Microzonation Mapping of An Old Well Area in Bendoharjo, Grobogan, Central Java Using Microseismic Method

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Geophysical study by applying microseismic method has been conducted in order to generate a microzonation map, consisting the dynamic soil and rock properties such as resonant frequency and amplification factor in an old-well area in Bendoharjo, Gabus, Grobogan, Central Java, using one short period seismometer Lennartz 3D Lite with 80 Hz sampling frequency. The research area covers a grid of 2 x 3.5 km with 40 measurement points.

Processed data from GEOPSY by applying HVSR (Horizontal to Vertical Spectrum Ratio) method shown that resonant frequency ranges from 3 – 23 Hz with amplification factor 0.83 – 5.6. Thickness of weathered soil ranges from 3 – 30 m. Seismic susceptibility index ranges from 0.1 – 2.9. And peak ground activity ranges from 8 – 23 gal.

Keywords: microseismic, HVSR, seismic susceptibility index, peak ground activity.