

## Studi Geologi dalam Perencanaan dan Penentuan Lokasi Pembangunan Pelimpah Darurat Bendungan Jatigede, Jawa Barat

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### INTISARI

Suatu konstruksi bendungan dikatakan baik apabila mampu dan stabil dalam menahan laju air kolam waduk, sehingga pada suatu kondisi tertentu yang mana laju air kolam waduk tersebut mencapai batas maksimal dibutuhkan suatu bangunan pelimpah cadangan (disamping adanya bangunan pelimpah utama) yang dapat difungsikan pada suatu waktu, yakni suatu bangunan pelimpah darurat (*emergency spillway*). Terdapat dua alternatif utama lokasi pembangunan pelimpah darurat di Waduk Jatigede, yakni rencana pelimpah darurat kiri (sebelah barat bendungan utama) dan pelimpah darurat kanan (sebelah timur bendungan utama) yang memiliki karakteristik geologi masing-masing. Lokasi perencanaan pembangunan pelimpah darurat secara umum berada pada daerah dengan morfologi tinggian bergelombang lemah hingga sedang, namun pada lokasi bagian timur cenderung lebih curam dibandingkan dengan daerah bagian barat. Litologi pada daerah alternatif pelimpah darurat bagian barat didominasi oleh breksi tuff dan perselingan batulempung-batupasir tufan sedangkan di bagian timur didominasi breksi vulkanik, batulempung, dan breksi vulkanik tak teruraikan. Kedua lokasi berada pada Zona Sesar Jatigede yang melewati lembah alur Sungai Cimanuk. Sesar besar lain seperti halnya Sesar Eretan, Sesar Cisemah, Sesar Lambong, dan Sesar Pejagan juga mempengaruhi perencanaan konstruksi bangunan tersebut. Dari segi kerentanan gerakan massa, di daerah zona bagian barat tingkat kerentanan berkisar sedang hingga tinggi, dibandingkan pada zona pelimpah darurat bagian timur memiliki kerentanan tinggi yang lebih dominan sehingga sangat rawan dan berisiko terjadinya gerakan tanah. Berdasarkan data morfologi, litologi, struktur geologi, tingkat kerentanan gerakan massa serta pertimbangan sosial ekonomi berupa tata guna lahan, bangunan pelimpah darurat diusulkan untuk dibangun di sebelah barat dari bendungan utama.

**Kata kunci:** bangunan pelimpah darurat, karakteristik geologi, kerentanan gerakan massa

## ***Geological Study in Proposed Emergency Spillway Construction Site Jatigede Dam, West Java***

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### ***ABSTRACT***

*A dam construction said to be good, if it is able and stable in curbing water reservoir pond, so that at a certain condition in which the rate of the reservoir pool water reaches the maximum limit required a building reserve spillway (even though there was a main spillway) that can be enabled at a time, namely an emergency spillway. There are two main alternative construction site of emergency spillway in Jatigede dams site, that is proposed emergency spillway that plan left (west of the main dam) and the emergency spillway right (east of the main dam), where each of the emergency spillway alternatives have a geological features. Location of proposed emergency spillway construction are generally in the region of the morphology of weak to moderate, but the location of the eastern part steeper than the western region. Lithology on the western part of the emergency spillway alternative is dominated by tuff breccia and tuffaceous sandstone-mudstone, while the eastern part dominated by volcanic breccias, mudstone, and undifferentiated volcanic breccias. Both locations are in Jatigede Fault Zone that passes through the valley of the river Cimanuk. Another big Fault as well as Eretan Fault, Cisemah Fault, Lambong Fault, and Pejagan Fault also affect the building construction planning. In terms of the landslide susceptibility, in the western part of the zone generally range from medium to high susceptibility, than in the eastern part of the emergency spillway zone has a high susceptibility more dominant so it is very vulnerable and at risk of the occurrence of avalanche. Based on morphological data, lithology, geological structure, grade of landslide susceptibility and the consideration of economic social form of land use, building an emergency spillway is proposed to be built on the west of the main dam.*

**Keywords:** *emergency spillway construction, geological feature, landslide susceptibility*