SARI

GEOLOGI DAN ANALISIS KUALITAS BATUGAMPING SEBAGAI BAHAN BAKU SEMEN PORTLAND DI DAERAH PALIMANAN BARAT DAN SEKITARNYA, KECAMATAN GEMPOL KABUPATEN CIREBON, JAWA BARAT

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Kajian geologi dan analisis kualitas batugamping sebagai bahan dasar semen Portland dilakukakn di kuari A PT. Indocement Tunggal prakarsa Tbk. Unit palimanan, desa palimanan Barat, kecamatan gempol, kabupaten Cirebon, provinsi jawa barat. Kajian geologi dilakukan untuk mengetahui tentang geologi daerah penelitian untuk mengetahui karakteristik batugamping baik itu secara fisik maupun kimia, dalam kajian geologi data yang digunakan merupakan data sekunder berupa penelitian terdahulu berupa satuan geomorfologi, stratigrafi daerah penelitian, struktur geologi, sejarah geologi, penyebaran kualitas batugamping, dan kualitas batugamping sebagai bahan dasar semen. Secara stratigrafi daerah penelitian dari tua ke muda terdiri dari Satuan Batugamping, Satuan Batulempung, Satuan Breksi Piroklastik, Satuan Intrusi, dan Satuan Batupasir Tuff. Studi karakteristik batugamping ini menggunakan analisis petrografi dan analisis *X-Ray Fluorescence.* Secara petrografi batugamping dari tua ke muda terdiri litofasies *packstone, crystalline, grainstone* dan *wackestone*. Fasies *packstone, grainstone* termasuk kedalam zona fasies paparan karbonat tertutup dengan lingkungan pengendapan zona fasies *slope*. Kandungan CaO dan MgO pada batugamping sebagai parameter kelayakan memiliki nilai (CaO minimum 46%) dan nilai (MgO maksimum 3%). Analisis XRF dari sampel batugamping berdasarkan kadar dolomit, pemerian nama termasuk pada batugamping, batugamping berrmagnesium, dan dolomit berkalsium. Setelah dilakukan pengamatan lebih lanjut terhadap unsur-unsur kimia yang terdapat pada batugamping daerah studi khusus, ditemukan anomali distribusi unsur kimia pada sampel batugamping yang telah mengalami dolomitisasi. Serta unsur-unsur lainnya seperti SO_3, dan Al_2O_3, cenderung tidak berbeda jauh dengan batugamping disekitarnya. Berdasarkan sasaran mutu *quality raw* material dari kandungan kimia, hasil analisis *XRF*, 96% batugamping pada daerah penelitian memiliki kualitas baik dan layak sebagai bahan dasar semen.

Kata kunci: *Batugamping, Dolomitisasi, Kualitas, Petrografi, Semen, XRF*.

ABSTRACT

GEOLOGY AND QUALITY ANALYSIS OF BATUGAMPING AS A PORTLAND CEMENT RAW MATERIAL IN WEST PALIMANAN AND SURROUNDING AREAS, KECAMATAN GEMPOL, CIREBON DISTRICT, WEST JAVA

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Geological studies and quality analysis of limestone as the base material for Portland cement were carried out in Quarry A PT. Indocement Tunggal initiative Tbk. Palimanan unit, West Palimanan village, Gempol sub-district, Cirebon district, West Java province. The geological study is conducted to find out about the geology of the research area to determine the characteristics of limestone, both physically and chemically, in the geological study the data used is secondary data in the form of previous research in the form of geomorphological units, stratigraphy of the research area, geological structure, geological history, distribution of limestone quality, and the quality of limestone as a base for cement. Stratigraphically, the research area from old to young consists of Limestone Unit, Claystone Unit, Pyroclastic Breccia Unit, Intrusion Unit, and Tuff Sandstone Unit. This limestone characteristic study uses petrographic analysis and X-Ray fluorescence analysis. Petrographically, limestone from old to young consists of packstone, crystalline, grainstone and wackestone lithofacies. Facies packstone, grainstone is included in the facies zone of closed carbonate exposure with the depositional environment of the facies slope zone. The content of CaO and MgO in limestone as a feasibility parameter has a value (minimum CaO 46%) and a value (maximum MgO 3%). XRF analysis of limestone samples based on dolomite content, description of names including limestone, magnesium limestone, and calcium dolomite. After further observation of the chemical elements present in the limestone of the special study area, anomalies of chemical element distribution were found in the dolomitized limestone samples. As well as other elements such as SO3 and Al2O3, tend not to differ much from the surrounding limestone. Based on the quality target of raw material quality from chemical content, XRF analysis results, 96% of limestone in the study area has good quality and is feasible as a cement base material.

Keywords: Limestone, Dolomitization, Quality, Petrography, Cement, XRF.