SARI

GEOLOGI DAN ANALISIS FASIES BATUGAMPING SERTA HUBUNGANNYA DENGAN KUALITAS SEBAGAI BAHAN BAKU SEMEN DAERAH KARANGLO DAN SEKITARNYA, KECAMATAN KEREK, KABUPATEN TUBAN, JAWA TIMUR

Batugamping merupakan bahan baku utama dalam pembuatan semen, oleh karena itu perlu dilakukan analisa kualitas batugamping untuk mengetahui kelayakannya sebagai bahan baku semen. Berdasarkan hal tersebut, maka timbul permasalahan yang harus dijawab dalam penelitian ini seperti bagaimana kondisi geologi dan juga fasies dapat berhubungan dengan kualitas batugamping sebagai bahan baku semen. Adapun tujuan dari penilitian ini yaitu, mengetahui kondisi geologi, stratigrafi, kandungan fosil, lingkungan pengendapan, pembagian dan penyebaran fasies serta hubungannya dengan kualitas batugamping sebagai bahan baku semen. Lokasi penelitian berada pada Daerah Karanglo dan Sekitarnya, Kecamatan Kerek, Kabupaten Tuban, Jawa Timur. Metode penelitian yang digunakan yaitu pemetaan kondisi geologi, analisis fasies dan analisis kimia batugamping dengan metode XRF. Analisa XRF berguna untuk mengetahui kadar unsur kimia pada batuan. Standard kelayakan kualitas batugamping yang digunakan yaitu berdasarkan standar kualitas PT. Semen Indonesia, klasifikasi Walter L. Duda (1976) dan klasifikasi Pettijohn (1949). Berdasarkan analisis petrografi dan fasies, batugamping daerah penelitian dibagi menjadi dua jenis yaitu batugamping terumbu dan batugamping klastik. Pada daerah studi khusus, fasies *foraminiferal bafflestone* diinterperetasikan terendapkan di zona fasies *platform-margin reefs* (Wilson, 1975) dengan lingkungan pengendapan *reef front* (James, 1984). *Foraminiferal wackestone* diinterpretasikan terendapkan di zona fasies *open marine* (Wilson, 1975) dengan lingkungan pengendapan *back reef* (James, 1984). Lingkungan pengendapan batugamping pada daerah studi khusus merupakan lingkungan yang baik untuk berkembangnya organisme sehingga kaya akan kadar CaO. Berdasarkan analisa XRF, batugamping daerah penelitian umumnya didapatkan kadar CaO berkisar antara 49% - 55%, dan kadar MgO pada mayoritas sampel < 1.5% yang artinya batugamping daerah penelitian memiliki kualitas baik. Ditemukan juga dolomit dengan kadar MgO >10% pada beberapa sampel.

Kata Kunci: Batugamping, Fasies, Bafflestone, Floatstone, Dolomit, Semen

ABSTRACT

GEOLOGY AND FACIES ANALYSIS OF LIMESTONE AS WELL AS ITS RELATION TO QUALITY AS CEMENT RAW MATERIAL OF KARANGLO REGION, KEREK SUB-DISTRICT, TUBAN DISTRICT, EAST JAVA

Limestone is a major raw material in the manufacture of cement, therefore analyzing the quality of limestone is needed to be done to know its feasibility as a cement raw material. Based on that, there has been a problem to be answered in this study such as how geological conditions as well as facies can relate to the quality of limestone as a cement raw material. As for the purpose of this commutation, it is to know about the geological conditions, stratigraphy, fossil content, depositional environment, division and spread of facies as well as its relation to quality of the limestone as a cement raw material. The research location is in the Karanglo and Surrounding Area, Kerek Subdistrict, Tuban District, East Java. The research methods used are geological conditions mapping, facies analysis and chemical analysis of limestone by XRF method. XRF analysis is useful for knowing the levels of rock chemical elements. The Feasibility standard of limestone quality used is based on the quality standard of PT Semen Indonesia, classification of Walter L. Duda (1976) and Pettijohn (1949). Based on the petrographic analysis and facies, the limestone of the research area is divided into two types namely reef and clastic limestone. In specialized study areas, the foraminiferal bafflestone facies is deposited in the platform-margin reefs facies zone (Wilson, 1975) with reef front environment (James, 1984). The foraminiferal floatstone facies is deposited in the open marine facies zone (Wilson, 1975) with back reef environment (James, 1984). These environments of limestone in specialized study area are good for developing organisms so they are rich in CaO levels. Based on XRF analysis, the limestones in research area generally obtained CaO levels ranging from 49% - 55%, and the MgO levels in the majority of samples is <1.5% meaning that the limestones in the research area have a good quality. Dolomite was also found with MgO >10% levels on some samples.

Keywords: Limestone, Facies, Bafflestone, Floatstone, Dolomite, Cement