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The Prediction Of Reservoir Quality Through The Effect Of Diagenesis To The Porosity Evolution Of Carbonate Rocks In Won

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Summary

This research was conducted in Wonosari Formation because those carbonate rocks making up good representatives as analogue because it has been suffered diagenesis intensively. The research methods by stratigraphic measurement in the field. Rock samples were prepared for thin section analysis and porosity measurement. The main object which is investigated are lithofacies, diagenetic products (such as cemen type, mineralogy and other products that may be encountered such as paleosoil, karst and caliche), pore type and porosity. Diagenetic history of carbonate rocks in Wonosari Formation will be understood by the result identification of diagenetic product and the interpretation of diagenetic processes.

Early Hypothesis, carbonate rocks of Wonosari Formation experienced some diagenetic process in marine, burial and meteoric conditions in early stages, then continued to burial diagenesis until exposed to the surface and has suffered meteoric diagenesis till now. Based on diagenesis history that has been explained, carbonate rocks of Wonosari Formation would have increasing or decreasing of porosity quality. The significant porosity reduction occurred by cementation process, whereas the significant porosity enhancement occurred by the dissolution process. This dissolution process as a diagenesis product with huge potential as an oil and gas reservoir.

The research aims to predict reservoir quality guarantee on carbonate rocks as one of oil and gas energy resources which has not been widely utilized recently. The diagenetic processes through the carbonate rocks will affect its porosity evolution. The process could increase or decrease the porosity. In oil exploration, it becomes crucial, yet difficult to do because of limited subsurface data. However, generally carbonate rocks reservoir could be analyzed further in the future through reservoir research and diagenetic evidence in carbonate rocks.

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From the data analysis by diagenesis and porosity will note that the carbonate rocks is also a potential reservoir of oil and gas, that can be used to guarantee energy reserves for future generations.

Keywords : Diagenesis, porosity evolution, reservoir quality, Wonosari Formation