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## **Facies Distribution and Genetic Relationships of Cimarrona Formation, Guaduas Area, Colombia**

The Cimarrona Formation has become a new exploration target in Colombia's Middle Magdalena Basin since the discovery of Guaduas field in 1994. The field is located in the east flank of the Guaduas Syncline, which is the main structural feature of the area.

The Cimarrona Formation in this field is composed by fractured sandy limestone and calcareous sandstone, interbedded with calcareous shale and siltstones in a low pressure reservoir setting. To the west of the field Cimarrona becomes conglomerates and conglomeratic sandstones sometimes calcareous, described in outcrops as the type section which is also seen in drilled exploratory wells. To the easternmost part of the field, the limestone pinches out.

Some exploratory dry hole or non commercial wells, have been drilled in the surrounding area of Guaduas field searching for the same play concept, reaching the target but encountering very thin limestone bodies, non fractured sandstones or just the absence of limestone and sandstone.

The results of this work explains the thickness variations of the limestone bodies as a result of facial changes to the edges of the fans and help to predict successful development wells. On the other hand this knowledge allows better geological prognosis as well as better gas and water injector wells definitions. This work also became a model for developing exploratory concepts using the field facies distribution as analogy for other areas and to try keeping the operators away from dry holes due to the absence of a reservoir.