

Exploration and Delineation of the Vaca Muerta Formation: Seven Years Sorting Out the Play

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ABSTRACT

In the last seven years, the Vaca Muerta Formation has gone from being a world class source rock to being the Argentinean source rock with the highest potential as a shale reservoir to finally becoming a real shale gas/oil productive reservoir with some challenges to solve.

YPF, partners, and other operators have moved from the exploration phase to pilots and delineation phases in core areas, resulting in the first shale gas/oil YPF operated development shale assets. This is the result of intense drilling activity and the completion of approximately 600 wells since 2010.

Today's understanding has allowed companies to define the most promising areas and the marginal zones as well, resulting in current pilots' activities in the different fluid windows.

The industry has developed a more integrated approach, still in process of improvement, which has allowed a better definition of exploration and delineation strategies. One example that must be emphasized is the Transecta Project, the first successful attempt between companies to have a common understanding and integrate the Quintuco - Vaca Muerta stratigraphic framework to better assess a reservoir characterization. Another example to consider is the Loma Campana field, the first unconventional producing cluster outside North America and the first operational lab for Vaca Muerta to be developed in a factory mode.

Finally, well performance, data acquisition, interpretation, and integration have turned this shale from a play that looked promising in 2012 to an interesting performing shale reservoir where the main challenges are related to cost reduction, operational issues, development strategies, scaling factor, an industry-government-society commitment, and, of course, oil and gas prices.