

Finding New Reserves in Old Fields by Recognizing Bypassed Pay; Mesaverde Production in the Trail Field of the Green River Basin, Sweetwater Co, WY

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First gas production in the Trail field occurred in 1958 from high permeability (>1 md) sandstones of the Canyon Creek Member of the Ericson Formation of the Mesaverde Group. Individually these original wells had cumulative production of up to 30 BCF. The field was quickly developed on 640 acre spacing and reached peak production in 1961 of about 4 BCF per year. Production fell to 0.5 BCF per year by 1989 when compression was brought on to stabilize rates. Through the life of the field there was a bias towards only developing the proven reservoir. Farming out the field was even considered during the 1990's as the Canyon Creek reservoir neared depletion; In an effort to increase production in 2005 the Almond Formation, Trail Member of the Ericson Formation and the Blair Formation, all within the Mesaverde Group, were recognized as potential tight-gas reservoir targets. Through an extensive drilling and recompletion process, these reservoirs have been proven highly economical to develop on 40-acre spacing. The geologic investigations included analyzing old DST data to identify higher perm marine bars and fluvial channels, collecting current reservoir pressures using Weatherford's MFT logs to identify bypassed pay and potential thief zones, measuring the fracture and stress systems that control new frac treatments and gas production, and used nearby outcrops as stratigraphic analogs to better map pay trends. These maps have allowed OGIP calculations to be made which are currently being used to identify other potential reservoirs that are not currently producing, guiding our investigative efforts to the zones with the greatest potential rewards. Today the Trail field's annual production far exceeds its 1961 peak and will continue to grow annually through the next five years and beyond!