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Study on the forecasting method of tight gas "sweet" in the Shahezi group in Xujiaweizi

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The burial depth and the structural complexity of the layer in Shahezi groups are very difficult to predict the reservoir prediction due to the volcanic disturbance. In order to solve these difficulties, the reservoir prediction is carried out by dividing sequence in the vertical, dividing facies in the horizontal and the geological mode facies controlling. First of all, we need to analysis the petrophysical for different sequences based on wellbore collapse correction and standardized treatment to all well curves. Based on the prestack inversion of partial stacking data, the simultaneous solution of multiple seismic data bodies with different offsets is obtained. So the elastic parameters of the rock, such as the impedance of the wave, the impedance of the shear wave, and the velocity of the wave and the velocity of the wave, are generated. The effective reservoir development zone of the sequence of rock and gravel is predicted according to the results of rock physical analysis.

Through seismic attribute data of plane graphic analysis of the plane change rule and the similar range profile can reflect the depositional sub facies change. Display through the stack of all kinds of seismic attributes and fault set show that as far as possible to eliminate the abnormal attribute strip caused by the fault, and next, correcting local attribute meaning by single well face to reduce the misleading. Last, combined with the sand thickness map and rate of sand to stratigraphy to carry out fine sedimentary facies analysis. On the basis of sedimentary facies control, the zone, that shear wave velocity is higher than 2460m/s and P-wave velocity is higher than that of

4350m/s, is a gravel rock zone. On this basis, the rock zone, in which P-wave velocity is less than 5000m/s and the density is less than 2.59g/, is the effective reservoir development zone. And then, the "sweet" of the Shahezi group is obtained by the automatic engraving technology of rock space and the collective characterization of the fine sandstone reservoir. Finally, according to this process, we identified 25 "sweet" in Shahezi group. So we Established the Shahezi group tight gas "sweet" identification and characterization techniques. According to this method, two horizontal wells were deployed and obtained industrial capacity, which provide a solid technical support in tight gas exploration breakthrough in Xujiaweizi.

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