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## **The Combination of Carboniferous Volcanic Reservoir Spaces and Hydrocarbon Storage Modes**

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A great number of volcanic rocks occur in the northern of Chepaizi area, west of Junggar basin, China. The study on the combination of reservoir spaces is still in its infancy and no paper about the pattern of oil storage is found at present. Based on the observation of cores and thin sections, the paper studied the characteristics of carboniferous volcanic reservoir spaces and concluded their hydrocarbon storage modes in Chepaizi area. The result shows that the combination types of Carboniferous reservoir spaces include isolated pores, connectivity pores, fractures, fractures-pores and pores-fractures-corrosion holes in the west of Junggar basin (Figure 1). How much oil in volcanic rocks depends on the mutual configuration state of porosity and permeability caused by the combination of reservoir spaces.

Overall, the extent of hydrocarbon storage successively reduced in accordance with pores-fractures-corrosion holes, connectivity pores, fractures-pores and fractures. Correspondingly, four forms of hydrocarbon storage modes are concluded, they are mesh-like, beaded-like, roots-like and crack surface, while there is no oil in the isolated pores. The results and understandings provide a scientific basis for further exploration of the volcanic reservoir in Chepaizi area.

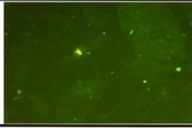

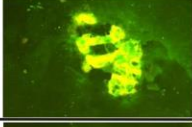

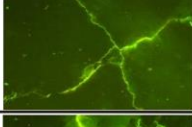

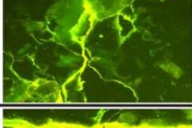

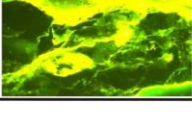

The combination types of volcanic reservoir spaces (%)	case (fluorescence thin section)	Sample information	general sketch	Representative lithology	Growing condition	oil property
Pores-pores (14%)		P668 well 1006m		basalt andesite	general	bad
corrosion holes-pores (22%)		P666 well 1067m		volcanic breccia	More growing	good
fracture-fracture (2%)		P666 well 990m		andesite	fewer	general
fracture-pores (27%)		P666 well 1074.5m		tuff andesite	More growing	better
pores-fracture-corrosion holes (35%)		P666 well 1070.2m		andesite Tuff Volcanic breccia	growing	good

Figure 1: The combination characteristics and characteristics of hydrocarbon storage of volcanic reservoir spaces in Chepaizi Area, Junggar Basin

References:

- [1] Romain P and Jeroen J (2009) AAPG Bulletin 93(11): 1503-1516

