

New Progress and Development Prospect in Shale Gas Engineering Technologies of Sinopec

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ABSTRACT

Aiming at the effective development of deep shale gas reservoirs and those with normal pressure gradient, Sinopec has made breakthroughs in a series of techniques based on its continuous upgrading of engineering technology chain for middle-deep shale gas. Those techniques include geology and engineering integral design based on the sweet spot evaluation, detailed formation evaluation while drilling, optimum and fast drilling, novel oil-based drilling fluid, novel elastic and tough cement slurry and foam cement slurry, new techniques for stimulated reservoir volume, new staged fracturing tools, high-efficiency fracturing fluid system, shale gas testing and productivity evaluation and manufacturing of large-scale fracturing unit, which have primarily established the engineering technology chain in the development of deep shale reservoirs and those with normal pressure gradient and provided powerful support in the productivity construction of Fuling Shale Gas Field and the development of deep shale reservoirs and those with normal pressure gradient. This paper summarizes the latest progresses in shale gas engineering technologies of Sinopec, and in combination with the exploration and development tendency of shale gas reservoirs in China, puts forward the development path in improving the engineering technology chain for middle-deep shale gas reservoirs, setting up the engineering technology chain for deep shale gas reservoirs, and developing the engineering technology chain for shale gas reservoirs with normal pressure gradient.