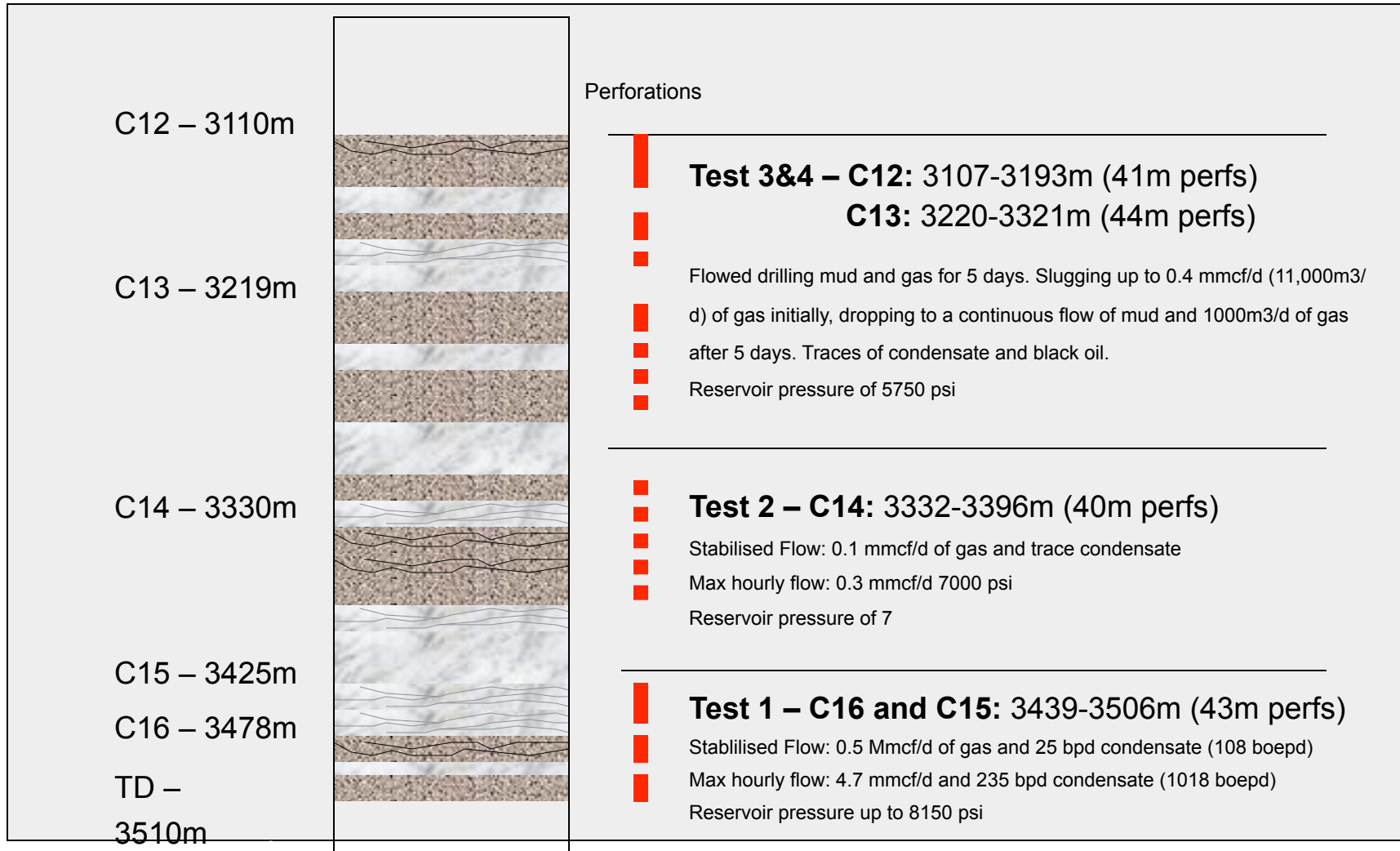


Karlavskoye 101 'Cretaceous Intervals'



Reservoir Section



Fracture zone



Fractured 'Reservoir Section'



Tight rock

Test 1 results: suggest the good initial flow rates are due to fracture flow, however the declining rates & pressures suggest the fractures in this area and depth of the field are not that well connected away from the wellbore. The stabilised rates do show that some connectivity exists. The well re-pressured back to 1.69 sg, the same as the highest pressures seen when drilling the unfractured reservoir section in the C16, again confirming connectivity. This suggest gas in place can be recovered from all intervals. The minimal improvement with acid suggests the interval was not particularly damaged while drilling so enhanced completion practices (acidising, underbalance drilling etc.) may not be essential.

Conclusion: the lower zones will likely need horizontal openhole wells to extend the lateral connectivity, improve flow rates and overall recovery.

Test 2 results: the low flow rates suggest that no fractures were intersected in this interval, but the continuous flow rate demonstrates the gas within the reservoir sections is mobile and suggests that the gas in this middle section of reservoir can be recovered with more aggressive development techniques.

Conclusion: the lower zones will need horizontal openhole wells to intersect with fractures at this depth and to improve the lateral connectivity, flow rates and overall recovery.

Test 3&4 results: the test was dominated by the flow of the heavy drilling mud that had invaded into the lower pressured (5750 psi) upper intervals (C12 and C13) while drilling the high pressure (8150psi) lower intervals (C16). During drilling of the sidetrack approximately 100m³ of drilling mud was lost to the formation and while flowing these test 3&4 around 30-40m³ was produced back. That this volume of mud can enter the upper intervals and then flow back demonstrates reservoir productivity and porosity. Gas flowed for 5 days without any formation water demonstrating the interval is saturated with gas and that without the damage from the drilling mud it is likely the upper intervals will flow with much higher rates.