CobraMax® DM Service
Enables High-Intensity Multistage Fracturing with Proppant Concentration Control

CobraMax® DM service with downhole mixing enables placement of a virtually unlimited number of fracturing stages in a horizontal section with the flexibility of on-demand, downhole changes in proppant concentration.

CobraMax DM service uses high-rate pumping of non-abrasive fluid down the annulus. The fluid is mixed downhole with low-rate proppant concentrate slurries pumped through the tubing. Aspects of the new service include the following:

- Multiple intervals fractured on each run into the well
- Applicable to horizontal, cased, cemented and unperforated wellbores
- Proppant pack isolation of fracture intervals provides maximum near-wellbore conductivity in ductile rock
- Deployed using new PowerReach™ service
- Proppant slug diversion in the fracture encourages branch fracturing and proppant pillar conductivity
- Proppant pack provides wellbore diversion
- Immediate overflush capability is available downhole when early screenout is indicated allowing the treatment to continue
- Higher treatment rates are achievable as compared to other coiled tubing fracturing processes

Implemented through a unique process, the service includes a new bottomhole assembly that features a downhole assembly with the Hydra-Jet™ TS perforating tool and a mixing sub to provide homogeneous slurries when pumping proppant concentrate slurries through coiled tubing. Real-time, downhole changes to proppant concentration helps achieve optimum stimulated reservoir volume and connectivity to a larger fracture network.
Case History
An operator in the Marcellus shale was looking for an innovative method to fracture 30 intervals with lower risks than conventional perf & plug methods. Halliburton successfully deployed the CobraMax DM service with the following results:

- Slug/sweep (pumping a high proppant concentration followed immediately by a low concentration) proppant schedule successfully used with downhole mixing to achieve diversion inside the reservoir
- Indications of an early screen-out were mitigated by high-rate, low-concentration proppant slurry overflush of perforations using downhole mixing control, allowing the treatment to continue
- One early screen-out did occur and was mitigated by circulating the excess slurry to surface with a total impact on process efficiency of less than 6 hours
- Horsepower requirements were reduced to 15,000 Hhp as compared to 30,000 Hhp required for conventional perf & plug process
- Operations were conducted in a continuous process with a single trip into the wellbore leaving the completion cleaned-out to TD and flowing up the casing
- Time between treatment stages was reduced to about 40 minutes, compared to the 4 hours per stage using the conventional perf & plug method which requires a trip in and out of the well

For more information about how CobraMax® DM service can help make your horizontal completions more productive, contact your local Halliburton representative or email stimulation@halliburton.com.