SHADOW Frac Plugs
Eliminate post-frac intervention and accelerate return on investment
Plug-and-perf is used in an estimated 70-80% of new well completions...

but traditional composite plugs are standing between you and your investment.
A costly trade-off
When it comes to unconventional wells, plug-and-perf is a popular completion option because of the extended stage potential and larger inside diameter (ID) production flow area versus ball and sleeve systems. But, when composite plugs are used to isolate zones the startup of production can be delayed as long as three or more days while the plugs and drop balls are drilled out using coiled-tubing (CT)-conveyed milling tools and debris is circulated to the surface. This not only prolongs completion times, it results in:
- Additional planning
- More days on location
- Increased HSE risk
- Potential stuck incidents
- Limited plug setting depths
- Location restrictions
Stop Milling. Start Producing.
Historically, intervention has been unavoidable in plug-and-perf completions. Last year alone, operators set over 250,000 frac plugs in North American wells and spent more than 30,000 days milling them out before production could begin. But it doesn’t have to be that way. The Baker Hughes SHADOW™ series frac plug allows you to bypass CT intervention and start producing as soon as fracturing operations are complete. The plug is designed to stay downhole and completely eliminates the millout phase of plug-and-perf operations, increasing operational efficiency and maximizing pay zone access.

Cut completion costs. Accelerate ROI. Maximize production.

SHADOW frac plugs are run in hole on wireline and are set in sequence along the lateral section of the wellbore to isolate zones for treatment, just like composite plugs. The initial reservoir entry point is created using our Alpha™ sleeve pressure-actuated valve, rather than a perforating gun run in on coiled tubing. And after all zones have been perforated and fractured, the plugs stay in the well and production can be turned on—without intervention and with no reduction in production volume.

SHADOW plugs feature a large flow-through ID and use Baker Hughes IN-Tallic™ disintegrating frac balls so production can flow with the plugs in place. IN-Tallic disintegrating frac balls are made of controlled electrolytic metallic (CEM) nanoconstructed material—a technology pioneered by Baker Hughes. IN-Tallic balls hold pressure during fracturing operations, then completely disintegrate in the well when exposed to produced fluids to prevent production blockages and eliminate debris. IN-Tallic balls are stronger than composite frac balls and can withstand higher pressures without deformation, enabling a larger ID through the plug.
Go where you’ve never gone before

When traditional composite plugs are run in the well, they can only be set as far as the reach of the CT-conveyed milling tools, which is typically only 6,000 ft (1829 m). Because SHADOW plugs stay in the well, they can be set in horizontal sections beyond the reach of CT, allowing you to expose more of your reservoir to the wellbore. And, you can extend your plug-and-perf operations to more remote developments that previously would have been limited by the accessibility of intervention equipment.

SHADOW plugs can be set beyond the reach of CT milling tools so you can access more of your reservoir.

Contact your local Baker Hughes representative today or visit www.bakerhughes.com/SHADOW to learn more about how SHADOW frac plugs can save you USD 150,000 on your next plug-and-perf well.
SHADOW frac plugs saved USD 300,000 on two wells
An operator in the Horn River Basin ran a total of 52 SHADOW frac plugs in two wells on a seven-well pad. The other five wells were completed with traditional composite plugs. During fracturing, the SHADOW plugs provided reliable zonal isolation and ball seat signatures were clearly visible on the pump charts.

After fracturing, the SHADOW wells were brought on production immediately. Production from the other five wells was delayed for three days while the operator milled out the composite plugs. Once the wells completed with composite plugs were brought on line, production charts confirmed that the wells with SHADOW plugs produced at the same rate as the wells completed with composite plugs.

SHADOW plugs saved the operator USD 150,000 in intervention costs on each well. Based on the results of this field test, the operator is adapting its entire operational structure around SHADOW plugs and plans to use them in all future wells.