

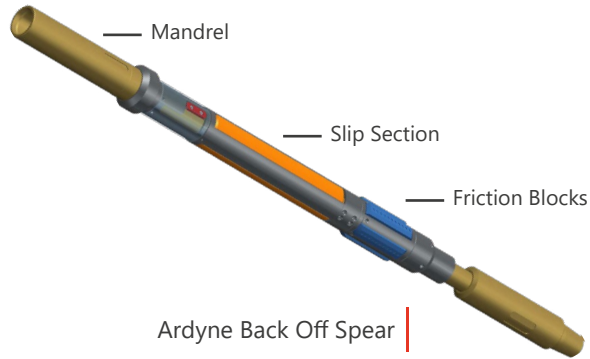
# NEW BACK OFF SPEAR DESIGNED, BUILT & RUN IN 69 DAYS

Designed to back off & recover light fish with an easy set / release mechanism



Ardyne were approached by a Norwegian O&G Operator in 2020 to tender for a PP&A campaign which included 21 annular safety valve (ASV) retrievals.

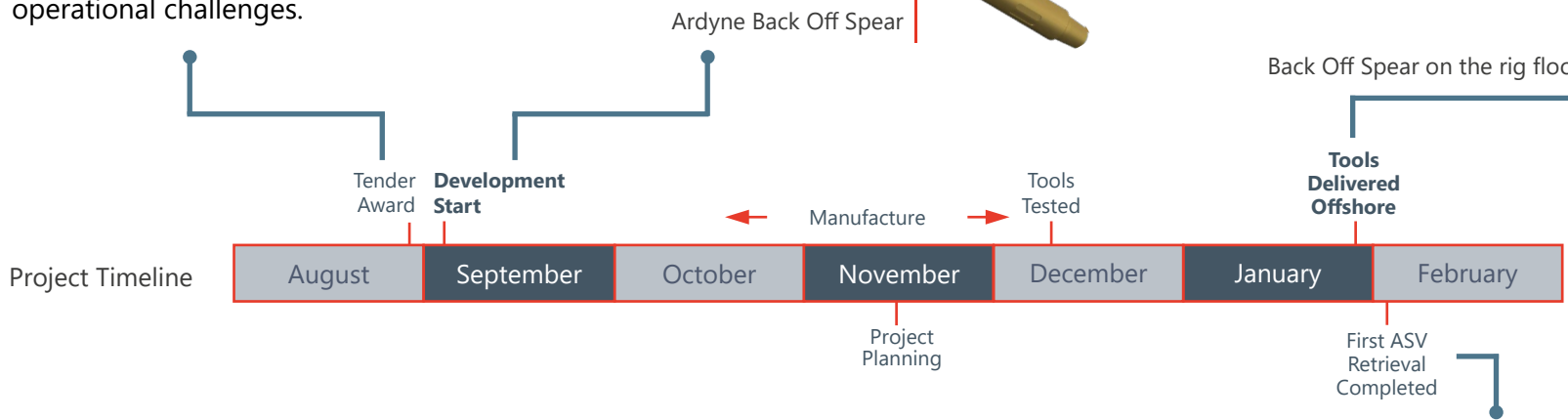
A newly designed spear to set in 5 1/2" was proposed to be developed to address the operational challenges.



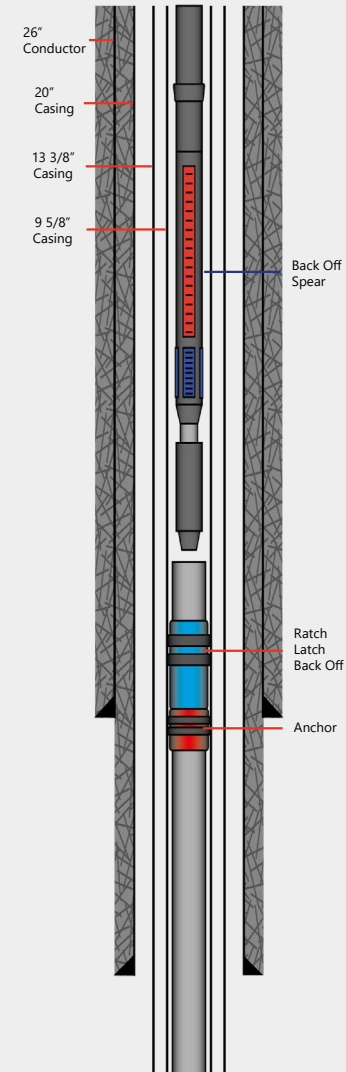
[Click to open Back Off Spear data Sheet](#)



Back Off Spear on the rig floor



## Back off & retrieve annular safety valve



| Operational Requirement                                    | Ardyne Solution   |
|--|---|
| Engineered to accommodate light fish & low backoff torques | Slip & cone design allow for high radial forces with minimal overpull to minimise friction on threads during backoff operations                               |
| Large contact cross sectional area                         | Significantly larger than competitor spears to minimise contact pressure on casing to be pulled   |
| Mechanical set & release slips                             | Rotate string to the left & pick up to set spear. Rotate string right to apply backoff torque. To release spear simply slack off string & rotate to the right |
| High torque capacity capable                               | Up to 13.5 kN.m   |

- Operational steps:**
- Apply overpull of 14 Tonnes to the string
  - Reset overpull to 3 Tonnes
  - Rotate the drill string right hand, torque increased to 2-3 kN.m
  - Increase overpull to 7 Tonnes & continue to turn drillstring
  - Wt decreased by 0.5 Tonne per rotation
  - After 15 turns overpull fell off & the fish was free