HydraShock	HydraShock Jointed Pipe	Treatment Date: July 10, 2016
	Rescue JP Case History	Pages: 1/1
Document Number: ResJP-000001	Approver Position: Approver Name	HydraShock CT Product Line Manager: Lauren Mendenhall

Days stuck before called: 4
Location: Carrollton, OH
Formation: Utica

Scope of Work:

Assist in removing a jointed pipe milling BHA utilizing the Hydra Shock Pumpdown System.

Background:

Workstring: 2.875” 7.80lb/ft SMAX
HydraShock: 500 Series HydraShock JP Rescue
Immediate Concerns: work string 100% packed off with no annular flow
SICP: 0psi

Initially the job data was transferred to Hydra Shock LLC from the tool company on location, the tubing profile data showed the need for a 2.188" lock. Hydra Shock LLC mobilized a specialist and tool cases via commercial airline to Pittsburgh, PA. Upon arrival the Hydra Shock Specialist noted the nipples on location had a 2.125" profile. This presented no issue to the HydraShock team, as the JP system kits come with three specific pump down mandrels for each size tubing. Once the Hydra Shock Specialist held a teleconference with the HydraShock technical team to update the conditions on location, the operations were commenced. The technical team calculated the triaxial (combined stress factors) forces on the tubulars to find the maximum allowable axial, torsional, and delta pressure loads able to be applied safely. This data dictated the maximum limits the tubular could withstand before yielding, while also dictating the highest category ΔnBall™ deployable, of the six currently available. Prior to the arrival of the HydraShock technician, a maximum of 194,000lbs (tension) and up to 4,000 lb·ft of torque had been applied multiple times to attempt to free the work string.

Treatment:

The Hydra Shock Specialist arrived on location and performed an injectivity test down the 2.875" tubing to establish the ability to pump the required rate to seat the jointed pipe rescue tool. Next, the Hydra Shock Pump Down tool was deployed under the high pressure swivel. Then, the Hydra Shock tool was conveyed with approximately 57bbls of fresh water and seated in the 2.125” profile nipple. The Hydra Shock tool was deployed with a "Green" control ΔnBall for the pumpdown procedure, which is a lower range pressure ball. When the annular fluid level is uncertain, whether from gas in the annulus or lost circulation, a lower pressure ΔnBall is utilized to safely ascertain an operational baseline. After the control ball was released, the next pressure range ball was selected to attempt to free the tubing. A "Blue" ball was then deployed and 2,000ft-lbs of torque applied to the tubing. Once the ball extruded, the tubing began to rotate immediately. The workstring was then pulled free on the first attempt to move uphole. After nearly 5 days of being stuck, the string was freed within 54 minutes of the HydraShock technician running the tool system into the well.