

Managing Debris

Achieving Depth

ICOTA 

A DEPLOYABLE JARRING AND CUTTING SOLUTION FOR EXTREME STUCK IN HOLE SCENARIOS

2018 ICOTA CANADA ROUNDTABLE
Oct.24 2018

HydraCut 

HYDRASHOCK


RESERVOIR GROUP

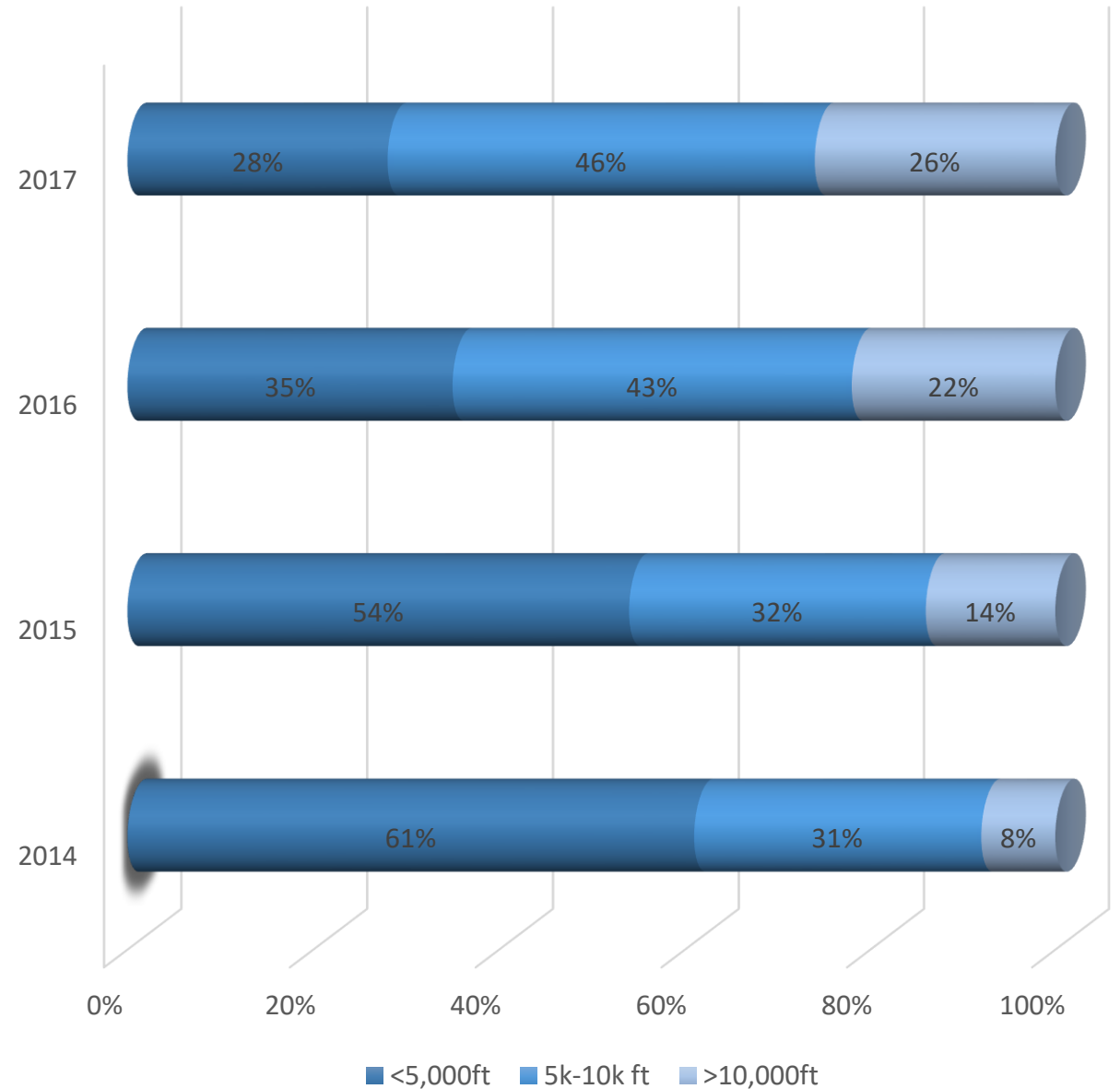
STUCK STRING MECHANISMS

- Lost Circulation
- Debris
- Surface Equipment Failure
- Aggressive Operations



GROWING RISK

- Unconventional wells
- Increasingly longer laterals
- Wells are depleted
- Subsurface Communication



CONVENTIONAL STUCK MITIGATION

- Push and Pull
- Pump chemicals
- Pump N₂
- Shut in to equalize
- Pump down the annulus
- Drop a ball
- Mechanical Jarring

DEPLOYABLE HYDRAULIC JARRING TOOL

DESIGN

- Design utilizes coil string's stored mechanical/hydraulic energy
- Ball Actuated
- Variable pressure balls (28-85MPa)
- RIP – Run in conventional BHA
- CTRT – Pumped Thru Coil
- Can be deployed on jointed pipe

DEPLOYABLE HYDRAULIC JARRING TOOL

BENEFITS

- Works Below stuck point
- Reduce BHA length
- Limited CT fatigue
- No movement required to re-set
- No moving parts
- Pipe weight or weight to bit not require for effective force
- Evident indication of actuation
- RIP tool effective in E-coil applications







HYDRAULIC JARRING FORCE



DEPLOYABLE HYDRAULIC JARRING TOOL

RUN HISTORY

- 3000 RIP tools ran
- 280 rescue operations with 77% success rate
- Coil freed from deploying 1 ball up to 150 balls



RIP TOOL CASE HISTORY Jan 2 2017

2.625" Coil

Well Info

- Casing: 114.3mm, 17.26kg/m
- TD: 5406.54m
- Stuck Depth: 4149.85m
- Temperature: 85C
- Stuck Mechanism: Composite Plug Debris
- Max Pull: 43,800 daN x 3 (17,236.5 daN Over string weight)

Tool Actuation

- Set coil into compression -6800 daN
- Dropped 14 balls in succession to free the coil string
- Pre coil fatigue (0%)
- Post coil fatigue (3%)

PUMP THRU COIL CUTTING SYSTEM

- Used in conjunction with the HydraShock system to place a cut in the vertical or horizontal sections of the wellbore near the calculated stuck point
- Deployed through the reel
- If cut is made below the stuck point a second hydrostatically controlled tool can be launched
- Accurate to depth within 30m on average to date
- Cuts 1.5" to 2 5/8" Coil

PUMP THRU COIL CUTTING SYSTEM

BENEFITS

- Maintain string integrity
- Eliminates working under suspended load (Injector, Lube and Coil)
- Saves coil up to stuck point for future use (tempered coil)
- Eliminates wireline unit
- Eliminates risk of coil kick
- No more surface cuts
- 62 cuts at 100% cut rate





Coil Tubing Cut Case History Alaska 1.75" Coil June 9 2018

Well Info

- Casing: 88.9mm, 13.1kg/m
- TD: 5436.71m
- Stuck Depth: 3681m
- Temperature: 60C
- Target Cut Depth: 3505.2m

Treatment

- Deploy CTRT
- Confirm Spacing Delta N Balls
- Drop Actuation balls
- Pump fluid spacer
- Launch Hydraulic Pump Thru Coil Cutting System
- Cut Successful on Depth
- Saved 3505m of coil
- Saved operator \$2M



Managing Debris

Achieving Depth

ICOTA 

Thank you ICOTA Canada for inviting us to present at this annual round table

HydraCut 


HYDRASHOCK


RESERVOIR GROUP