

GENERAL RECOMMENDATIONS FOR MITIGATING CT ABRASION IN HORIZONTAL WELLS

MITIGATING STEP	POSITIVE IMPACT	NEGATIVE IMPACT
Use of less aggressive/lower frequency extended reach tools.	Reduced abrasion wear.	Less horizontal reach.
Use of thicker wall thickness in the whip-end sections.	More sacrificial material to abrade before failure.	Less horizontal reach and reduced penetration rate.
Reduce time spent at low rate of penetration (ROP < 5 fpm).	Less time for agitator to wear flat spots on CT.	Less horizontal reach.
Limit max set-down in the field to helical lockup based on TFA modelling.	Less helical buckling - reducing highly localized spots of abrasion.	Less horizontal reach.
Increase use of Pipe-on-pipe friction reducers via continued addition and/or pumping slugs.	Increase lateral reach and higher ROPs.	Increased chemical costs. Potential for emulsions in shale regions with greater GOR.
Frequent mini short trips of 100+ ft after drilling every 5-10 composite plugs, and full short trip to kick-off point after drilling all composites plugs and before going through dissolvable plugs in the toe section of the lateral.	More thorough cleaning in between plug sets, reduced chances of encountering higher drag / stuck-pipe scenarios from large volumes of debris. The buckled helix section of coil is relaxed/rest through each short trip. Higher ROPs while washing through the toe section.	Increased in hole operating time and costs on each well.
Use of more fresh water and less recirculated water during drillouts.	Increased chemical efficiencies leading to better hole cleaning thus higher ROPs and reduced localized abrasion.	Increased logistics and disposal costs.
Implement freshwater sweeps in conjunction with current gel sweep programs	Increased ROP's and better hole cleaning. These could reduce the likelihood of stuck pipe events and mitigate abrasion from low ROP's and wellbore debris.	Increase of in hole operating time. Increased logistics and disposal cost.
Trim 20 – 50 ft pipe between each run regardless of any indications of abrasion.	Removal of possible abrasion in close proximity to the BHA. Move areas with possible abrasion away from critical high wall contact areas in the well.	Increased operation time for cutting pipe and loss of overall pipe length.
Attaching bottomhole assembly to pipe with minimal or no curvature. If curvature is present, cropping pipe to tangent of the curve is perpendicular to the wellhead is critical.	Eliminating bends near the bottomhole assembly. Any bends near the BHA are susceptible to premature abrasion	Increased operation time for cutting pipe and loss of overall pipe length.
Inspection of pipe for waviness.	Early detection and removal of wavy sections which are susceptible to abrasion.	Increased monitoring and potential loss of pipe length due to excision of wavy sections near the whip-end.

Looking for more?

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