

TD Notice: Browning 3408 2-23H14H

Browning 3408 2-23H14H

26-34S-8W

Harper Co., KS

Legacy 15

Spud Date	7/1/18
TD for ICP	5,082' (MPLM) on 7/27/18
Drill out of intermediate casing	7/29/18
GL	1,324'
KB	1,342'
Lateral Start Depth	5,101' MD
Drill Out Date	7/29/18
TD	12,500' MD
TD Date	8/17/18
Total Days in Lateral	19
Miss Unc Top	4,885' MD/4,717' TVD/-3,375' SS

Vertical

Formation Tops	MD	TVD	SS	Geological Notes
Base of Heebner	3488	3496	-2154	Dark grey to black shales with interbedded limestones and sandstones. Poor sample shows and low gas.
Tonkawa	3809	3808	-2466	Translucent to opaque sandstones with interrbedded shales. Dull yellow to gold fluorescence, no cuts. No gas. Lack of porosity development.
Cottage Grove	4080	4074	-2732	Light tan limestones, hairline fracturing with associated porosity. No shows and low gas.
Swope	4300	4275	-2933	Off white to tan limestones, hairline fracturing with associated porosity. No shows and low gas.
Cherokee	4619	4544	-3202	Dark grey shales with interbedded limestones. No shows and low gas.
Atoka	4810	4686	-3344	Light grey shales with interbedded limestone. Fracture porosity with associated shows. Poor yellow fluorescence and no cuts or gas.
Mississippian	4885	4717	-3375	Off white to white limestones and cherts. Yellow fluorescence, fair blue cuts, and thin residual rings.

Lateral:

Drilled with WBM. No open-hole logs.

The Browning 3408 2-23H14H targeted the upper Mississippian Limestone. 2-mile lateral offsetting the Schnackenberg 3408 1-23H14 Mississippi Lime well. The lateral lithology was comprised of limestone, chert and shale stringers. XRF was ran on the samples to detail lithology. The data confirmed higher clay content where the mudlogger called the shale streaks. The chertier zones had higher silica and the more limestone rich zones had higher Calcium readings. The target was maintained throughout the lateral. The upper window for the target line was opened up to 20 feet at 10,858' MD and finally to 30' at 11,760' when the ROP had dropped and the bit was trying to build. Gas shows were high in the heel of the wellbore peaking at 1,200 units and then remained low throughout the remainder of the lateral with formation gas peaking at 180 units. Sample shows consisted of dull yellow fluorescence, slow cuts, and thin residual rings.