



P&A Wellbore Diagram (Actual)

Well Name	Durham 1-31	API	05-081-07622	Well Type	Horizontal Oil
SHL	SWSE S31 T5N R90W	GLE	6695 ft AMSL	MD	6747
BHL	40.345661, -107.534683	RKB	6700 ft AMSL	TVD	3551
County, State	Moffat, Colorado	*Not to Scale*		Drawn by/Date	9/27/2016 MPG

Description	TVD (ft)	MD (ft)	Existing Casing	Existing Cement Info	P&A Plugs	Summary Procedure
Top of surface plug	0	0	Conductor - Unknown	N/A	Cemented to surface with 217 sx of 14.5ppg cmt (Lead) and 147 sx of 15.8 ppg cmt (Tail), tti 418 sx. 40 bbl of cement to surface. No CBL.	Set 5-1/2" CIBP at 3145'. Set 7-5/8" CIBP at 3012'. Pressure test 7-5/8" casing to 1000 psi (good test). Est injection rate below CIBP. Pump 20 sx w/ 2% CaCl2 and 88 sx with 1% CaCl2 (2-1/2 bbl into formation). No squeeze. Pump 40 sx w/ 2% CaCl2 and 46 sx with 1% CaCl2. Displace tbg. WOC. Pressure built to 1000 psi. Pump 30 sx on top of CIBP. Set CIBP at 824'. Perforate at 774'. Attempt to establish rate down annulus - held at 500 psi. Establish rate down intermediate casing - pressured up to 1000 psi and bled off. Squeeze 57 sx at 1.5 bbl/min - holding 300 psi. WOC. Tag cmt at 634'. Pump 30 sx at surface.
Bottom of surface plug	126	126	10-3/4" 40.5# J-55 at 724'.	Cemented to surface with 217 sx of 14.5ppg cmt (Lead) and 147 sx of 15.8 ppg cmt (Tail), tti 418 sx. 40 bbl of cement to surface. No CBL.		
TOC	634	634	7-5/8" 29.7# P-110 LTC @ 3419'. ID: 6.875" Drift: 6.75"	Cemented to 900' with 75sx (lead) and 285 sx (tail), 360 sx. Confirmed by CBL.		
Surface Casing	724	724	5-1/2" 17# N-80 H511 ID: 4.892" Drift: 4.767" . 3419' to 6750' (MD)	No Cement. Liner pre-perforated: 2' of 3spf @ 120 deg phasing in the middle of the joint on every other joint.	Cement below CIBP at 3012': 194 sx. Cement above CIBP at 824': 57 sx (24 sx in formation, remainder in casing). Surface plug: 30 sx (126' to 0').	Set 5-1/2" CIBP at 3145'. Set 7-5/8" CIBP at 3012'. Pressure test 7-5/8" casing to 1000 psi (good test). Est injection rate below CIBP. Pump 20 sx w/ 2% CaCl2 and 88 sx with 1% CaCl2 (2-1/2 bbl into formation). No squeeze. Pump 40 sx w/ 2% CaCl2 and 46 sx with 1% CaCl2. Displace tbg. WOC. Pressure built to 1000 psi. Pump 30 sx on top of CIBP. Set CIBP at 824'. Perforate at 774'. Attempt to establish rate down annulus - held at 500 psi. Establish rate down intermediate casing - pressured up to 1000 psi and bled off. Squeeze 57 sx at 1.5 bbl/min - holding 300 psi. WOC. Tag cmt at 634'. Pump 30 sx at surface.
New Perfs	774	774				
CIBP		824				
TOC	900	900			Cement below CIBP at 3012': 194 sx. Cement above CIBP at 824': 57 sx (24 sx in formation, remainder in casing). Surface plug: 30 sx (126' to 0').	Set 5-1/2" CIBP at 3145'. Set 7-5/8" CIBP at 3012'. Pressure test 7-5/8" casing to 1000 psi (good test). Est injection rate below CIBP. Pump 20 sx w/ 2% CaCl2 and 88 sx with 1% CaCl2 (2-1/2 bbl into formation). No squeeze. Pump 40 sx w/ 2% CaCl2 and 46 sx with 1% CaCl2. Displace tbg. WOC. Pressure built to 1000 psi. Pump 30 sx on top of CIBP. Set CIBP at 824'. Perforate at 774'. Attempt to establish rate down annulus - held at 500 psi. Establish rate down intermediate casing - pressured up to 1000 psi and bled off. Squeeze 57 sx at 1.5 bbl/min - holding 300 psi. WOC. Tag cmt at 634'. Pump 30 sx at surface.
TOC		2827				
CICR		3012				
TOL (Drop off, no packer)	3055	3115			Cement below CIBP at 3012': 194 sx. Cement above CIBP at 824': 57 sx (24 sx in formation, remainder in casing). Surface plug: 30 sx (126' to 0').	Set 5-1/2" CIBP at 3145'. Set 7-5/8" CIBP at 3012'. Pressure test 7-5/8" casing to 1000 psi (good test). Est injection rate below CIBP. Pump 20 sx w/ 2% CaCl2 and 88 sx with 1% CaCl2 (2-1/2 bbl into formation). No squeeze. Pump 40 sx w/ 2% CaCl2 and 46 sx with 1% CaCl2. Displace tbg. WOC. Pressure built to 1000 psi. Pump 30 sx on top of CIBP. Set CIBP at 824'. Perforate at 774'. Attempt to establish rate down annulus - held at 500 psi. Establish rate down intermediate casing - pressured up to 1000 psi and bled off. Squeeze 57 sx at 1.5 bbl/min - holding 300 psi. WOC. Tag cmt at 634'. Pump 30 sx at surface.
CIBP		3145				
Intermediate Casing	3266	3419				
Casing PBTD	3551	6747				

