HOBBS OCD

JUN 28 2018

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Permit Information:

Well Name: Thor 21 No. 201H

Location:

SL: 511' FNL & 626' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

BHL: 100' FSL & 330' FEL, Section 21, T-26-S, R-33-E, Lea Co., N.M.

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
17.5"	0 – 900'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
12.25"	4000' – 4,800'	9.625"	40#	HCK-55	LTC	1.125	1.25	1.60
8.75"	0'-14,902'	5.5"	17#	HCP-110	LTC	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft^3/ft	Slurry Description
900'	600	13.5	1.73	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	300	14.8	1.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
4,800'	900	12.7	2.22	Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free (TOC @ Surface)
	225	14.8	1.32	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
14,902'	375	10.8	3.67	60:40:0 Class C + 15.0 pps BA-90 + 4% MPA-5 + 3.0% SMS + 5.0% A-10 + 1.0% BA-10A + 0.80% ASA-301 + 2.55% R-21 + 8.0 pps LCM-1 (TOC @ 4,300')
	400	11.8	2.38	50:50:10 Class H + 0.80% FL-52 + 0.30% ASA-301 + 0.40% SMS + 2.0% Salt + 0.30% R-21 + 3.0 pps LCM-1 + 0.25 pps Celloflake
	1300	14.2	1.28	50:50:2 Class H + 0.65% FL-52 + 0.45% CD-32 + 0.10% SMS + 2.0% Salt

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 900'	Fresh - Gel	8.6-8.8	28-34	N/c
900' – 4,800'	Brine	10.0-10.2	28-34	N/c
4,800' – 9,465'	Cut Brine	8.4-9.0	28-34	N/c
9,465' – 14,902' Lateral	Cut Brine	9.0-9.5	40-42	8-10

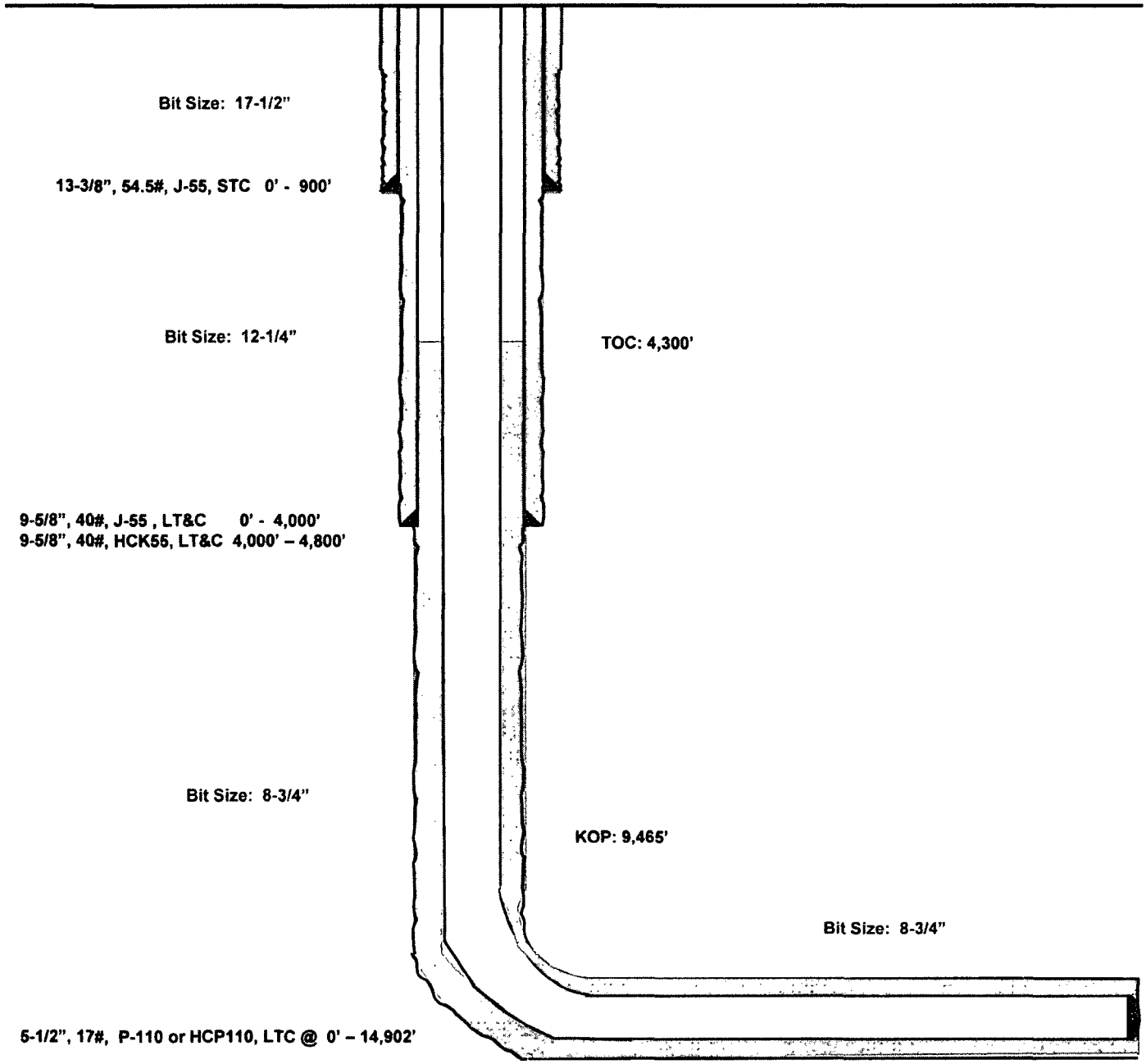
Thor 21 #201H
Lea County, New Mexico

511' FNL
626' FEL
Section 21
T-26-S, R-33-E

Proposed Wellbore

API: 30-025-*****

KB: 3,310'
GL: 3,285'



Lateral: 14,902' MD, 9,955' TVD

BH Location: 100' FSL & 330' FEL
Section 21
T-26-S, R-33-E