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State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised November 14, 2012

HOBBS OCD

☐ AMENDED REPORT

AUG 26 2015

RECEIVED

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address ConocoPhillips Company P. O. Box 51810 Midland, TX 79710		² OGRID Number 217817
		³ API Number 025-32128
⁴ Property Code 31667	⁵ Property Name Hardy 36 State	⁶ Well No. 01

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
K	36	20S	37E		1980	South	2230	West	Lea

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County

⁹ Pool Information

Pool Name Skaggs; Grayburg	Pool Code 57380
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Additional Well Information

¹¹ Work Type recomplete/PB	¹² Well Type Oil	¹³ Cable/Rotary Rotary	¹⁴ Lease Type State	¹⁵ Ground Level Elevation 3489' GL
¹⁶ Multiple	¹⁷ Proposed Depth 10,625'	¹⁸ Formation Skaggs; Grayburg	¹⁹ Contractor	²⁰ Spud Date 11/16/1993
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

²¹ Proposed Casing and Cement Program

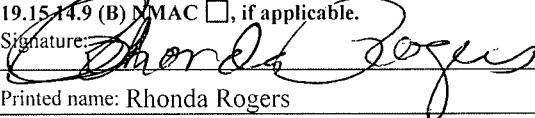
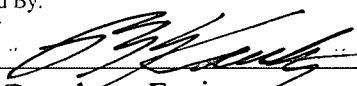
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
surf	17 1/2"	13 3/8"	61#	533'	on record	0
Interm	12 1/4"	9.63"	40#	3900'	on record	0
prod	8 3/4"	7"	26#	10,625	on record	9756'

Casing/Cement Program: Additional Comments

cmt program on file. Please see attached procedure & current/proposed schematic

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐ , if applicable. Signature:  Printed name: Rhonda Rogers Title: Staff Regulatory Technician E-mail Address: rogersr@conocophillips.com Date: 08/20/2015 Phone: (432)688-9174		OIL CONSERVATION DIVISION Approved By:  Title: Petroleum Engineer Approved Date: 08/26/15 Expiration Date: 08/26/17 Conditions of Approval Attached
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ADD SKAGGS; GRAYBURG (NEW NOT DRILLED)

AUG 31 2015

dm

Project Scope

- Abandon open Abo gross completion interval: 6950-7130 & squeezed Drinkard gross completion interval: 6705-6746
- Recomplete to Grayburg
 - Spot cmt plug: 4250-4350
 - Selectively perforate within gross Grayburg section: 3784-4009

Well Service Procedure:

- 1) MI & RU service unit.
 - a) Un-seat pump. POOH w/ rods & pump (in-service: 01.2014)
 - b) Visually inspect rods & couplings for wear
 - c) Send pump in for repair.
 - d) Pump 15 bbl fresh water down 2-7/8", 6.5# tbg (fresh water fluid column: 2590 ft.; 1120#).
Pump 78 bbl fresh water down 2-7/8" x 7", 26# annulus (fresh water fluid column: 2590 ft.; 1120#)
SD and allow well to equalize
 - e) ND well. NU hydraulic 5M Hydril BOP.
 - f) Release tbg anchor. POOH w/ 2-7/8", 6.5#, L-80 production tbg (in-service: 01.2014).
- 2) RIH w/ 6-1/8" bit, scraper (7", 26#) & 2-7/8", 6.5#, L-80 prod tbg to 6925. POOH.
- 3) RIH w/ CIBP (7", 26#) & tbg.
Set CIBP @ 6885 (csg collars: 6863 & 6909; uppermost perforation: 6950)
Circ well fresh water (wellbore capacity to CIBP @ 6885: 248 bbl).
Close pipe-rams & test CIBP @ 500# (01.07.14: Test 7" csg 7500-surface @ 500#-OK).
- 4) Spot 38 sx cmt plug: 6651-6885 (CIBP)
 - a) Pump 38 sx (9 bbl) Class C cmt plug
 - b) Displace w/ 38.4 bbl fresh water (cmt column: 6636-6885; 249 ft.)
 - c) Pull 6 stands (EOT: 6510; cmt column: 6651-6885; 234 ft.)
 - d) Reverse 2 tbg volumes (75 bbl). SD 4 hrs.
 - e) RIH & tag cmt @ 6651.
 - f) Pull uphole & position EOT @ 4350
Spot 16 sx cmt plug: 4250-4350
 - a) Pump 16 sx (3.8 bbl) Class C cmt plug
 - b) Displace w/ 24.6 bbl fresh water (cmt column: 4245-4350; 104 ft.)
 - c) Pull 4 stands (EOT: 4100; cmt column: 4251-4350; 99 ft.)
 - d) Reverse 2 tbg volumes (47 bbl)
 - e) Circ well w/ biocide-treated 2% KCl (wellbore capacity to EOT @ 4100: 148 bbl)
 - f) POOH w/ 2-7/8" tbg
- 6) RU WLU perforating services
 - a) RIH w/ GR/CCL. Log interval: 3600-4250. Correlate to open-hole Western Atlas CDN/CNL (12.14.93)
Note: GR Markers @ 3916, 4055.5, 4239.5
 - b) NU lubricator w/ pack-off. Test @ 500#
 - c) Perforate following intervals at 2 spf (perforating to be done w/ lubricator in-place):
60-degree phasing w/ 3-3/8" HSD PowerJet 3406, HMX, 22.8 gm (EHD: 0.37 in.; Penetration: 37 in.)

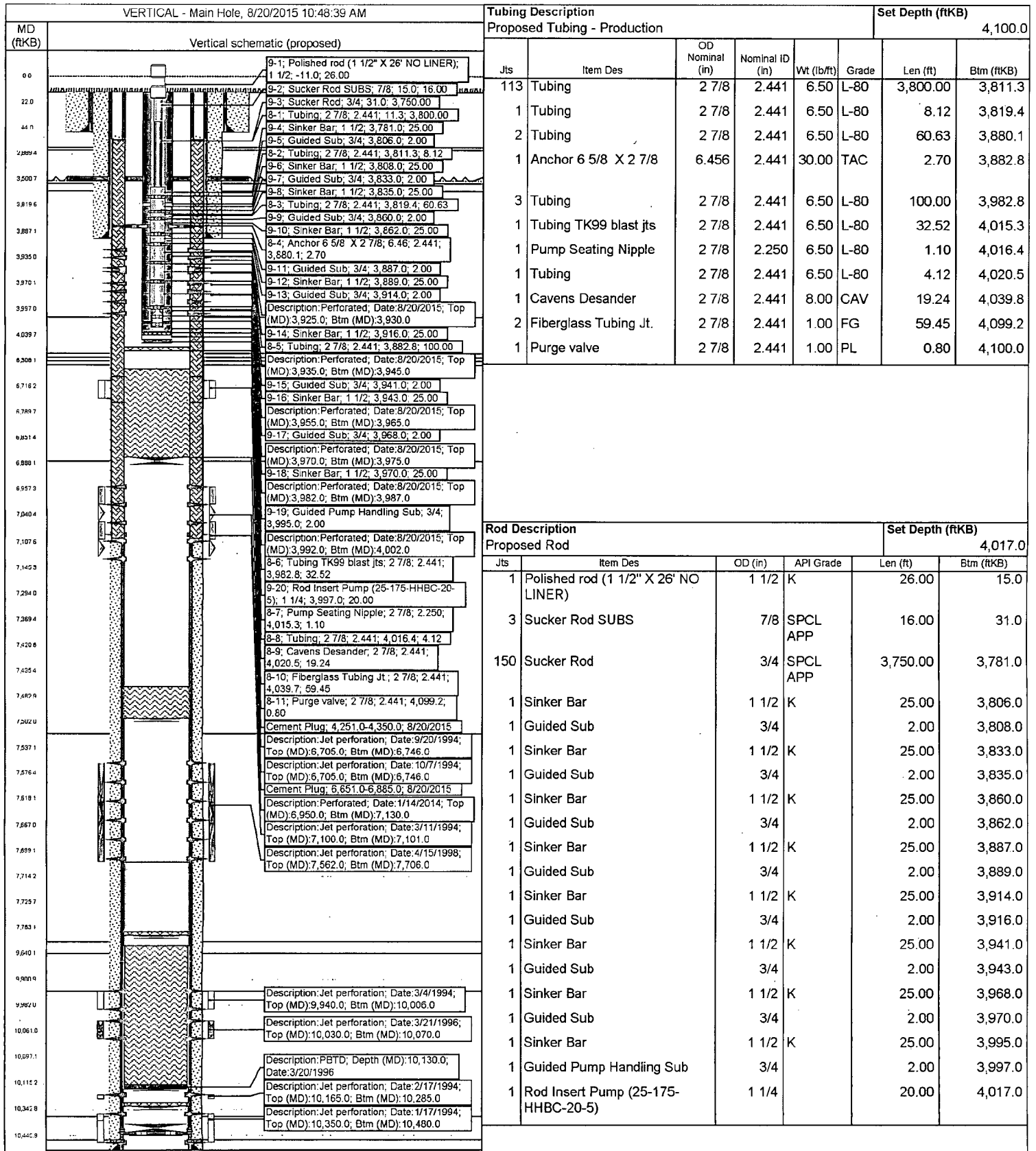
Hardy 36 State-01:
Grayburg Recompletion
API#30-025-32128

	<u>top</u>	<u>btm</u>	<u>ft.</u>	<u>SPF</u>	<u>Perfs</u>
Grayburg	3925	3930	5	2	10
	3935	3945	10	2	20
	3955	3965	10	2	20
	3970	3975	5	2	10
	3982	3987	5	2	10
	3992	4002	10	2	20
			45	12	90

- d) RD WLU
- 7) PU & RIH w/ 3-1/2", 9.3#, L-80 tbg w/ PKR to lowermost perforation @ 4002 while testing tbg below slips @ 6000# (3-1/2", 9.3#, L-80 Internal Yield Prs.: 10,160#)
- 8) Acidize perforated interval w/ 100 bbl (4200 gal) 15% NE Fe HCL:
- a) Pump 10.0 bbl 15% HCl
 - b) Pump 32.3 bbl 2% KCl. SD & allow well to stabilize (acid column: 3717-4002)
 - c) Pull uphole & set PKR @ 3700 (est csg collars: 3687 & 3733; acid column: 3740-4002; 7" TOC: 1630)
 - a) NU frac-valves:
 - 5K psi manual frac valve (btm)
 - 5K psi hydraulic frac valve (top)
 - b) Test surface lines @ 6000#
 - c) Set treating line pop-off @ 4500#
 - d) Set pump-trips @ 4000#
 - e) Install spring-operated relief valve on csg-tbg annulus. Pre-set @ 500#
 - f) Place 200# on 3-1/2" x 7" annulus (record annulus load volume).
 - d) Breakdown perforations w/ 2% KCl (estimated breakdown: 1500-2000 psi)
 - e) Acidize w/ remaining 90 bbl 15% NE Fe HCl @ 6 BPM (anticipated treating pressure: 1300#):
 - a) Pump 45 bbl 15% NE Fe HCl w/ 2: 1.3 sg RCN ball-sealers per bbl
 - b) Pump 45 bbl 15% NE Fe HCl w/ 1: 1.3 sg RCN ball-sealer per bbl
 - c) Displace w/ 60 bbl 2% KCl (capacity to bottom perforation @ 4002: 44 bbl)
 - Note: if ball-out occurs during treatment (surface treating prs: 3000#)
 - shut-down
 - surge 3 times to un-seat ball-sealers
 - resume treatment
 - d) Record: P(max); P(min); AIR; ISIP; SITP(5 min); SITP(5 min); SITP(10 min); SITP(15 min)
 - e) Surge well 3 times prior to frac.
- 9) Frac-treat Grayburg perforated interval: 3925-4002
- 9) Open well & flow back until dead.
- 10) ND frac valves
- 11) Release PKR. RIH to 4200 (PBD: 4250).
POOH & LD 3-1/2", 9.3#, L-80 tbg & PKR.
- 12) If necessary, RIH w/ 6-1/8" bit & tbg. Clean-out to 4250 (lowermost perforation: 4002). POOH.
- 12) RIH w/ 2-7/8", 6.5#, L-80 tbg as per attached: Proposed Tubing Configuration w/
EOT positioned: approximately 4250 (approximately 50 ft. below lowermost perforation @ 4002)
TAC positioned: approximately 3875 (approximately 50 ft. above uppermost perforation @ 3925)
Test tbg below slips @ 3000# while RIH (2-7/8", 6.5#, L-80 Internal Yield Prs: 10,570#).
- 13) ND BOP. NU well
- 14) RIH w/ pump & rods
- 15) RD well service unit. Release all services.

Proposed Rod and Tubing Configuration

HARDY 36 STATE 01





Current Rod & Tbg Schematic

HARDY 36 STATE 01

District	Field Name	API / UWI	County	State/Province
PERMIAN CONVENTIONAL	HARDY	300253212800	LEA	NEW MEXICO
Original Spud Date	Surface Legal Location	E/W Dist (ft)	E/W Ref	N/S Dist (ft)
11/15/1993	Sec. 36, Township 20 S, Range 37E	2,230.00	W	1,980.00
				S

VERTICAL - Main Hole, 8/20/2015 9:39:15 AM

