Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD
FEB 13 2019
RECEIVED

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMNM02965A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
MAGNOLIA 15 FED COM 705H

2. Name of Operator
EOG RESOURCES INC
Contact: SARAH MITCHELL
E-Mail: sarah_mitchell@eogresources.com

9. API Well No.
30-025-44346-00-X1

3a. Address
1111 BAGBY SKY LOBBY2
HOUSTON, TX 77002

3b. Phone No. (include area code)
Ph: 432-848-9133

10. Field and Pool or Exploratory Area
WC025G09S263327G UP WOLFCAMP

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 15 T26S R33E NENW 1080FNL 2159FWL
32.047768 N Lat, 103.561752 W Lon

11. County or Parish, State
LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

EOG respectfully requests an amendment to our approved APD for this well to reflect changes in the BHL and the casing design.

Attached please find the following supporting documentation: Amended C-102 Plat, Revised Permit Information, Revised Wellbore Diagram, Revised Directional Plot, and Revised Directional Plan.

Carlsbad Field Office
OCD Hobbs

Estimated spud date is 4/1/19.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

All Previous COAs Still Apply, Except For the Following:

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #453572 verified by the BLM Well Information System
For EOG RESOURCES INC, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 02/07/2019 (19PP0971SE)

Name *(Printed/Typed)* SARAH MITCHELL — Title REGULATORY CONTRACTOR

Signature (Electronic Submission) — Date 02/06/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JEROMY PORTER — Title PETROLEUM ENGINEER — Date 02/08/2019

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Hobbs

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Revisions to Operator-Submitted EC Data for Sundry Notice #453572

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM02965A	NMNM02965A
Agreement:		
Operator:	EOG RESOURCES, INC. P.O. BOX 2267 MIDLAND, TX 79702 Ph: 432-848-9133	EOG RESOURCES INC 1111 BAGBY SKY LOBBY2 HOUSTON, TX 77002 Ph: 7136517000
Admin Contact:	SARAH MITCHELL REGULATORY CONTRACTOR E-Mail: sarah_mitchell@eogresources.com Ph: 432-848-9133	SARAH MITCHELL REGULATORY CONTRACTOR E-Mail: sarah_mitchell@eogresources.com Ph: 432-848-9133
Tech Contact:	SARAH MITCHELL REGULATORY CONTRACTOR E-Mail: sarah_mitchell@eogresources.com Ph: 432-848-9133	SARAH MITCHELL REGULATORY CONTRACTOR E-Mail: sarah_mitchell@eogresources.com Ph: 432-848-9133
Location: State: County:	 NM LEA	 NM LEA
Field/Pool:	SANDERS TANK; WOLFCAMP	WC025G09S263327G UP WOLFCAMP
Well/Facility:	MAGNOLIA 15 FED COM 705H Sec 15 T26S R33E Mer NMP NENW 1080FNL 2159FWL 32.047768 N Lat, 103.561748 W Lon	MAGNOLIA 15 FED COM 705H Sec 15 T26S R33E NENW 1080FNL 2159FWL 32.047768 N Lat, 103.561752 W Lon

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

FORM C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

[X] **AMENDED REPORT**

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1]API Number	[2]Pool Code	[3]Pool Name
30-025-44346	98097	Sanders Tank; Upper Wolfcamp

[4]Property Code	[5]Property Name	[6]Well Number
320563	MAGNOLIA 15 FED COM	#705H

[7]OGRID No.	[8]Operator Name	[9]Elevation
7377	EOG RESOURCES, INC.	3301'

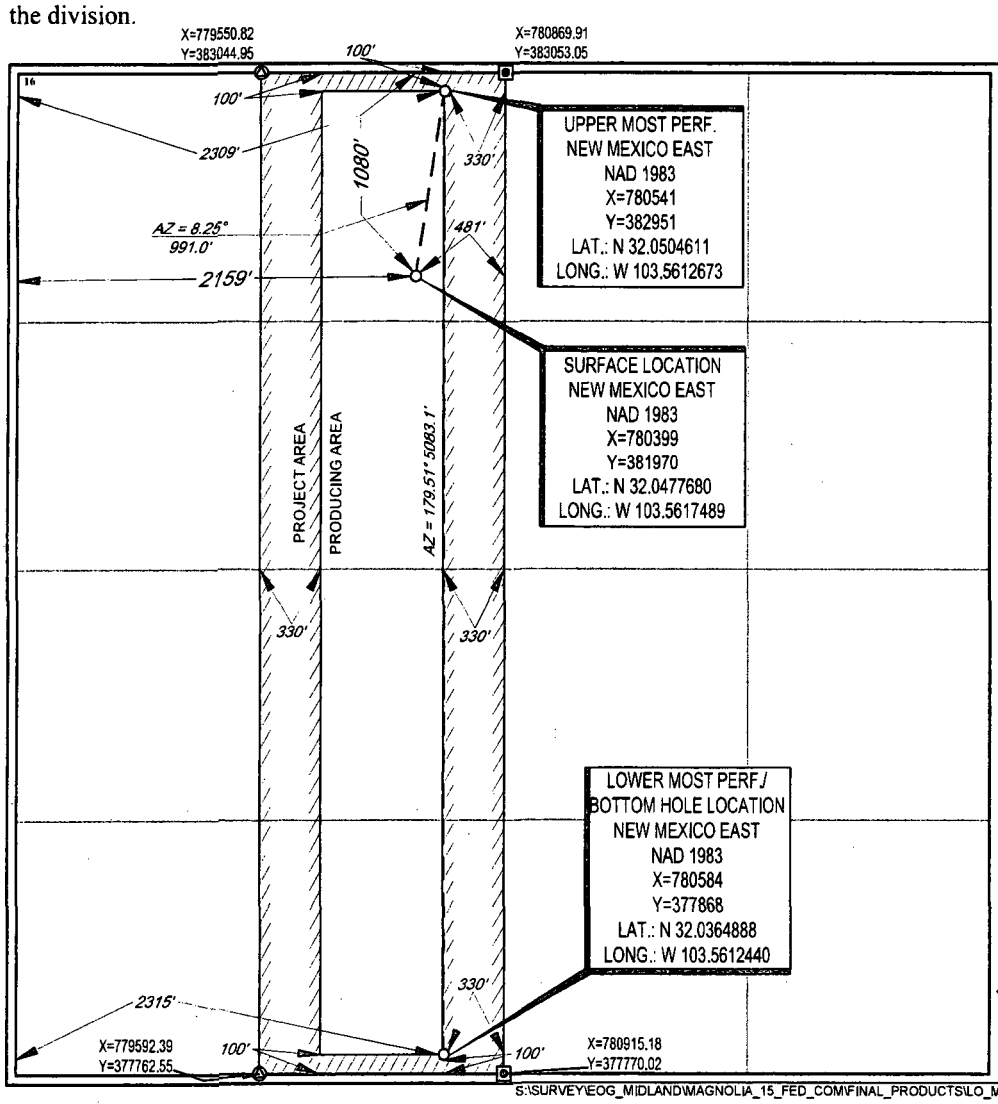
[10]Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	15	26-S	33-E	-	1080'	NORTH	2159'	WEST	LEA

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	15	26-S	33-E	-	100'	SOUTH	2315'	WEST	LEA

[12]Dedicated Acres	[13]Joint or Infill	[14]Consolidation Code	[15]Order No.
160.00			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17]OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Sarah Mitchell 1/9/19
Signature Date

Sarah Mitchell
Printed Name

sarah_mitchell@eogresources.com
E-mail Address

[18]SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true to the best of my belief.

02/07/2018
Date of Survey
Signature and Seal of Professional Surveyor

MICHAEL B. BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Certificate Number

S:\SURVEY\EOG_MIDLAND\MAGNOLIA_15_FED_COM\FINAL_PRODUCTS\LO_MAGNOLIA_15_FED_COM_705H_REV2.DWG 1/7/2019 5:04:56 PM tstewart

Intent [X] As Drilled [ ]

API #
30-025-44346

Operator Name:	Property Name:	Well Number
EOG Resources, Inc.	Magnolia 15 Fed Com	705H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
C	15	26S	33E		49	North	2301	West	Lea

Latitude	Longitude	NAD
N 32.0505985	W -103.5612654	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
C	15	26S	33E		100	North	2309	West	Lea

Latitude	Longitude	NAD
N 32.0504611	W -103.5612673	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
N	15	26S	33E		100	South	2315	West	Lea

Latitude	Longitude	NAD
N 32.0364888	W -103.5612440	83

Is this well the defining well for the Horizontal Spacing Unit? [No]

Is this well an infill well? [Yes]

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #
30-025-44374

Operator Name:	Property Name:	Well Number
EOG Resources, Inc.	Magnolia 15 Fed Com	703H

KZ 06/29/2018

Revised Permit Information 1/9/19:

Well Name: Magnolia 15 Fed Com No. 705H

Location:
SHL: 1080' FNL & 2159' FWL, Section 15, T-26-S, R-33-E, Lea Co., N.M.
BHL: 100' FSL & 2315' FWL, Section 15, 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
12.25"	0 – 855'	9.625"	40#	J55	LTC	1.125	1.25	1.60
8.75"	0 – 11,300'	7.625"	26.4#	HCP-110	Ultra SF	1.125	1.25	1.60
6.75"	0' – 10,800'	5.5"	20#	HCP-110	LTC	1.125	1.25	1.60
6.75"	10,800'-11,300'	5.5"	20#	HCP-110	VAM SFC	1.125	1.25	1.60
6.75"	11,300'-17,241'	5.5"	20#	HCP-110	LTC	1.125	1.25	1.60

Variance is requested to wave the centralizer requirements for the 7-5/8" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to wave any centralizer requirements for the 5-1/2" FJ casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

EOG requests variance to allow deviation from the 0.422'' annulus clearance requirement from Onshore Order #2 under the following conditions:

- Annular clearance to meet or exceed 0.422'' between intermediate casing ID and production casing coupling only on the first 500' overlap between both casing strings.
- Annular clearance less than 0.422'' is acceptable for the curve and lateral portions of the production open hole section.

EOG also requests to retain the option to utilize previously permitted 4 string designs (to be referred to as Design B in post-drill reports and sundries), if applicable.

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft^3/ft	Slurry Description
9-5/8" 855'	690	13.5	1.73	Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	80	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 655')
7-5/8" 11,300'	500	14.2	1.11	1st Stage (Tail): Class C + 0.6% Halad-9 + 0.45% HR-601 + 3% Microbond (TOC @ 7,000')
	1,000	12.7	2.30	2nd Stage (Bradenhead squeeze): Class C + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (TOC @ surface)
5-1/2" 17,241'	530	14.1	1.26	Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 10,800')

Additive	Purpose
Bentonite	Lightweight/Lost circulation prevention
Calcium Chloride	Accelerator
Cello-flake	Lost circulation prevention
Sodium Metasilicate	Accelerator
PreMag-M	Expansive agent
Sodium Chloride	Accelerator
FL-62	Fluid loss control
Halad-344	Fluid loss control
Halad-9	Fluid loss control
HR-601	Retarder
Microbond	Expansive Agent

EOG requests variance from minimum standards to pump a two stage cement job on the 7-5/8'' intermediate casing string with the first stage being pumped conventionally with the calculated TOC @ the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If necessary a top out consisting of 1,000 sacks of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. Top of cement will be verified by Echo-meter.

EOG also requests variance for the option to perform this cement procedure on previously permitted 4 string designs in the 7-5/8" 2nd Intermediate casing string as a contingency plan.

EOG will include the final fluid top verified by Echo-meter and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

EOG will report to the BLM the volume of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures.

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 855'	Fresh - Gel	8.6-8.8	28-34	N/c
855' – 11,300'	Oil Base	8.7-9.4	58-68	N/c - 6
11,300' – 17,241' Lateral	Oil Base	10.0-14.0	58-68	3 - 6

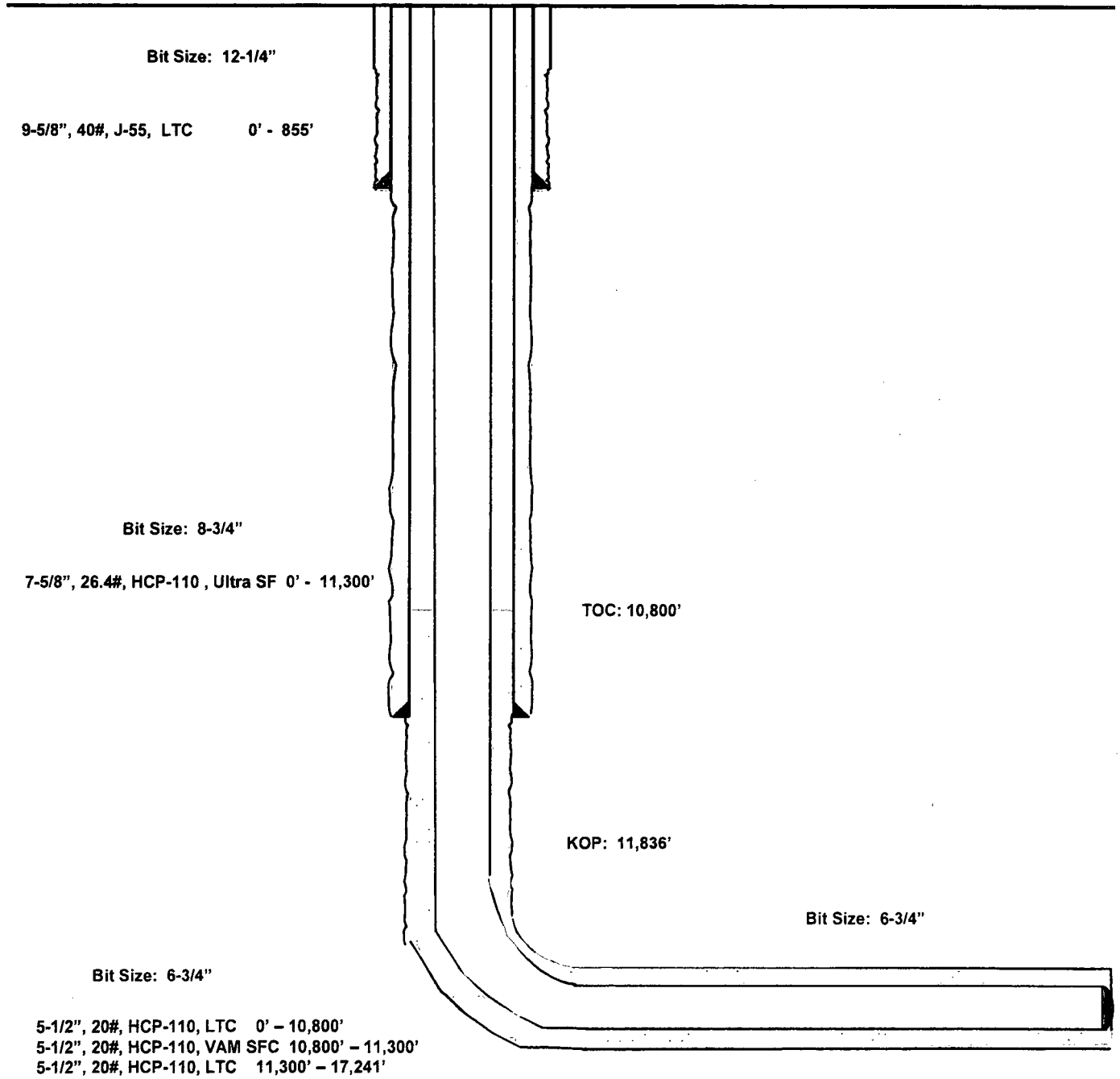
Magnolia 15 Fed Com #705H

1080' FNL
2159' FWL
Section 15
T-26-S, R-33-E

Lea County, New Mexico
Revised Wellbore 1/9/2019

API: 30-025-44346

KB: 3,326'
GL: 3,301'



Lateral: 17,241' MD, 12,250' TVD
Upper Most Perf:
100' FNL & 2309' FWL Sec. 15
Lower Most Perf:
100' FSL & 2315' FWL Sec. 15
BH Location: 100' FSL & 2315' FWL
Section 15
T-26-S, R-33-E

Issued on 07 Feb 2010

VAM SLIJ-II
Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
5 1/2 in.	20.00 lb/ft	0.361 in.	VM 110 HC	4.653 in.	VAM SLIJ-II

PIPE PROPERTIES		
Nominal OD	5.500	in.
Nominal ID	4.778	in.
Nominal Cross Section Area	[illegible]	sqin.
Grade Type	High Collapse	
Min. Yield Strength	110	ksi
Max. Yield Strength	140	ksi
Min. Ultimate Tensile Strength	125	ksi

CONNECTION PROPERTIES		
Connection Type	Premium Integral Semi-Flush	
Connection OD (nom)	5.524	in.
Connection ID (nom)	[illegible]	in.
Make-up Loss	4.526	in.
Critical Cross Section	4.125	sqin.
Tension Efficiency	70.8	% of pipe
Structural Compression Efficiency	70.8	% of pipe
Compression Efficiency with ISO/API sealability	40.5	% of pipe
Internal Pressure Efficiency	100	% of pipe
External Pressure Efficiency	100	% of pipe

CONNECTION PERFORMANCES		
Tensile Yield Strength	[illegible]	klb
Structural Compression Resistance	454	klb
Compression Resistance with ISO/API Sealability	[illegible]	klb
Internal Yield Pressure	12630	psi
Uniaxial Collapse Pressure	13340	psi
Max. Structural Bending	65	°/100 ft
Max. Bending with ISO/API Sealability	[illegible]	°/100 ft

FIELD TORQUE VALUES		
Min. Make-up torque	5800	ft.lb
Opt. Make-up torque	6500	ft.lb
Max. Make-up torque	[illegible]	ft.lb
Min. Shouldering Torque	320	ft.lb
Max. Shouldering Torque	[illegible]	ft.lb

VAM® SLIJ-II is a semi-flush integral premium connection for all casing applications. It combines a near flush design with high performances in tension, compression and gas sealability.
VAM® SLIJ-II has been validated according to the most stringent tests protocols, and has an excellent performance history in the world's most prolific HPHT wells.

Do you need help on this product? - Remember no one knows VAM® like VAM®

[illegible email addresses]

Other Connection Data Sheets are available at www.vamservices.com

Vallourec Group

vallourec

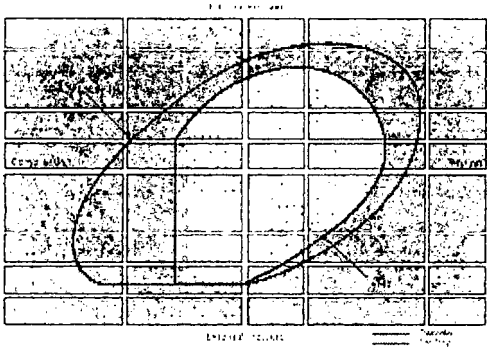
TECHNICAL DATA SHEET TMK UP SF 7.625 X 26.4 P110 HC

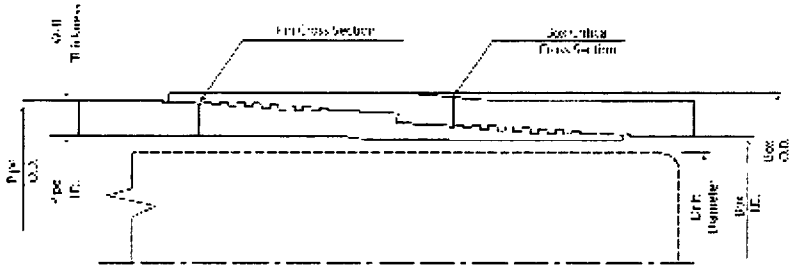
TUBULAR PARAMETERS	
Nominal OD, (inch)	7.625
Wall Thickness, (inch)	0.328
Pipe Grade	P110 HC
Drift	Standard

CONNECTION PARAMETERS	
Connection OD (inch)	7.792
Connection ID, (inch)	6.938
Make-Up Loss, (inch)	6.029
Connection Critical Area, (sq inch)	6.666
Yield Strength in Tension, (klbs)	733
Yeld Strength in Compression, (klbs)	733
Tension Efficiency	89%
Compression Efficiency	89%
Min. Internal Yield Pressure, (psi)	8 280
Collapse Pressure, (psi)	4 510
Uniaxial Bending (deg/100ft)	59.0

MAKE-UP TORQUES	
Minimum Make-Up Torque, (ft-lb)	20 000
Optimum Make-Up Torque, (ft-lb)	22 000
Maximum Make-Up Torque, (ft-lb)	24 200
Operating Torque, (ft-lb)	25 500
Yield Torque, (ft-lb)	30 000

PIPE BODY PROPERTIES	
PE Weight, (lbs/ft)	25.56
Nominal Weight, (lbs/ft)	26.40
Nominal ID, (inch)	6.969
Drift Diameter, (inch)	6.844
Nominal Pipe Body Area, (sq inch)	7.519
Yield Strength in Tension, (klbs)	827
Min. Internal Yield Pressure, (psi)	8 280
Collapse Pressure, (psi)	4 510
Minimum Yield Strength, (psi)	110 000
Minimum Tensile Strength, (psi)	125 000





Print date: 02/06/2019 22:28

eog resources

Lea County, NM (NAD 83 NME)

Magnolia 15 Fed Com #705H

Plan #0.2

PROJECT DETAILS: Lea County, NM (NAD 83 NME)	
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level

To convert a Magnetic Direction to a Grid Direction, Add 6.54°
To convert a Magnetic Direction to a True Direction, Add 6.95° East
To convert a True Direction to a Grid Direction, Subtract 0.41°

WELL DETAILS: #705H

Ground Level: 3301.0
KB = 25' @ 3326.0usft

Northing	Easting	Latitude	Longitude
381970.00	780399.00	32.0477673°N	103.5617476°W

SECTION DETAILS

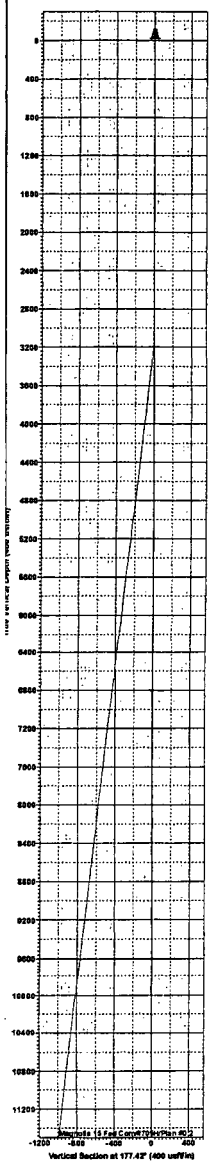
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0	
3	3345.5	6.91	7.84	3344.7	20.6	2.8	2.00	7.84	-20.5	
4	11649.0	6.91	7.84	11587.8	1010.4	139.2	0.00	0.00	-1003.1	
5	11994.5	0.00	0.00	11932.5	1031.0	142.0	2.00	180.00	-1023.6	KOP(Magnolia 15 Fed Com #705H)
6	12744.5	90.00	179.52	12410.0	553.6	146.0	12.00	179.52	-546.4	
7	17400.2	90.00	179.52	12410.0	-4102.0	185.0	0.00	0.00	4106.2	PBHL (Magnolia 15 Fed Com #705H)

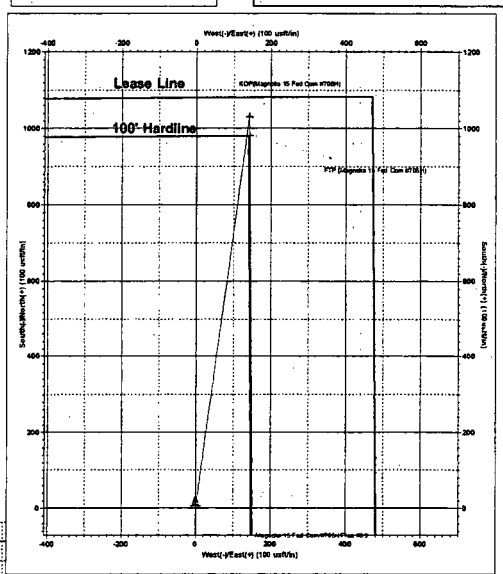
CASING DETAILS

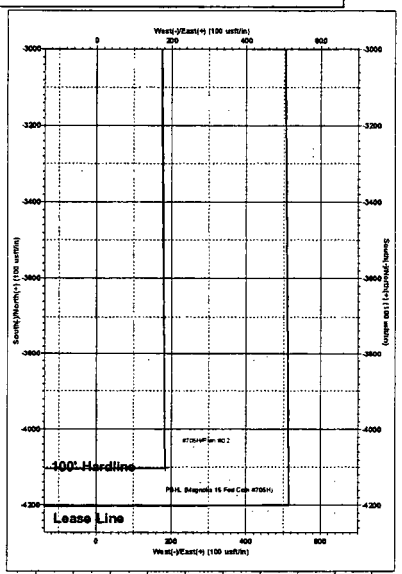
No casing data is available

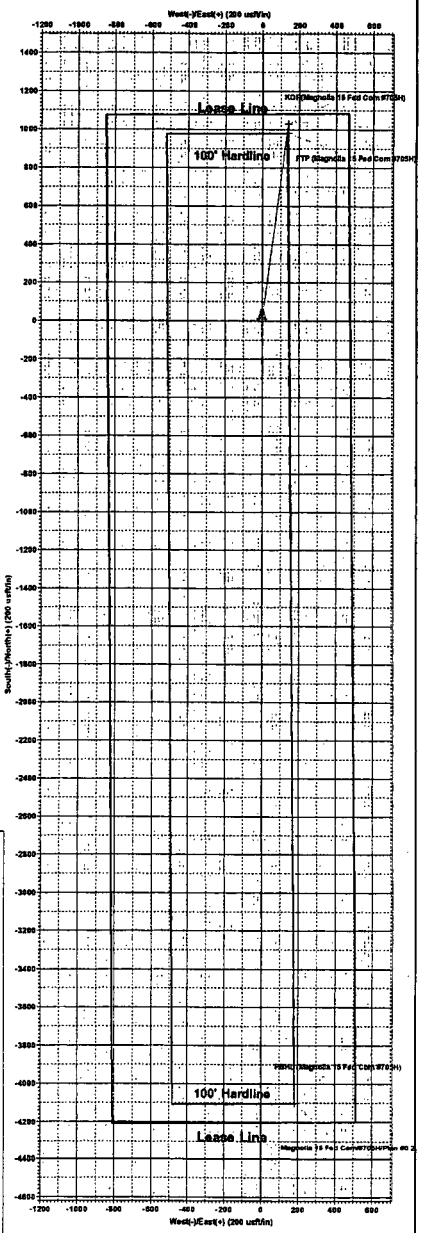
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

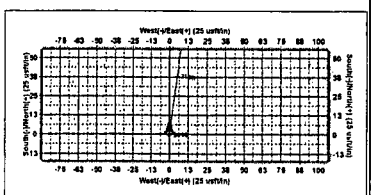
Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP(Magnolia 15 Fed Com #705H)	11932.5	1031.0	142.0	383001.00	780541.00
FTP (Magnolia 15 Fed Com #705H)	12410.0	981.0	142.0	382951.00	780541.00
PBHL (Magnolia 15 Fed Com #705H)	12410.0	-4102.0	185.0	377868.00	780584.00

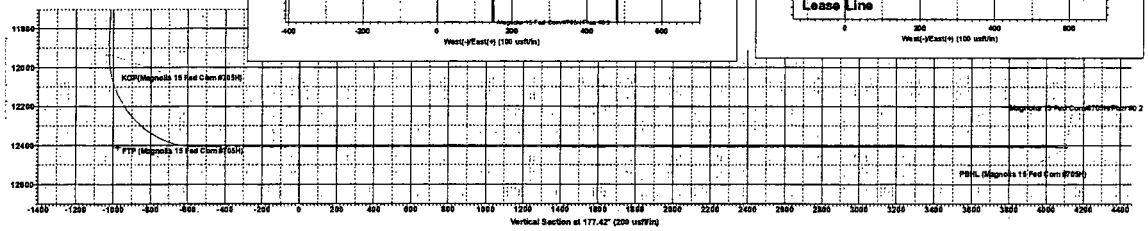


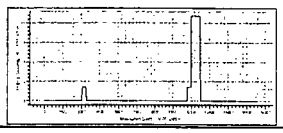












eog resources

EOG Resources - Midland

Lea County, NM (NAD 83 NME)
Magnolia 15 Fed Com
#705H

OH

Plan: Plan #0.2

Standard Planning Report

09 January, 2019

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #705H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3326.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3326.0usft
Site:	Magnolia 15 Fed Com	**North Reference:**	Grid
Well:	#705H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Magnolia 15 Fed Com				
Site Position:		**Northing:**	381,905.00 usft	**Latitude:**	32.0475892°N
From:	Map	**Easting:**	780,373.00 usft	**Longitude:**	103.5618329°W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.41 °

Well	#705H					
Well Position	**+N/-S**	65.0 usft	**Northing:**	381,970.00 usft	**Latitude:**	32.0477674°N
	+E/-W	26.0 usft	**Easting:**	780,399.00 usft	**Longitude:**	103.5617475°W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	3,301.0 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	5/10/2017	6.95	59.90	47,845.89065411

Design	Plan #0.2				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.0	0.0	0.0	177.42	

Plan Survey Tool Program **Date** 1/9/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	17,400.2	Plan #0.2 (OH)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,345.5	6.91	7.84	3,344.7	20.6	2.8	2.00	2.00	0.00	7.84	
11,649.0	6.91	7.84	11,587.8	1,010.4	139.2	0.00	0.00	0.00	0.00	
11,994.5	0.00	0.00	11,932.5	1,031.0	142.0	2.00	-2.00	0.00	180.00	KOP(Magnolia 15 Fed
12,744.5	90.00	179.52	12,410.0	553.6	146.0	12.00	12.00	23.94	179.52	
17,400.2	90.00	179.52	12,410.0	-4,102.0	185.0	0.00	0.00	0.00	0.00	PBHL (Magnolia 15 F

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #705H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3326.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3326.0usft
Site:	Magnolia 15 Fed Com	**North Reference:**	Grid
Well:	#705H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	2.00	7.84	3,100.0	1.7	0.2	-1.7	2.00	2.00	0.00
3,200.0	4.00	7.84	3,199.8	6.9	1.0	-6.9	2.00	2.00	0.00
3,300.0	6.00	7.84	3,299.5	15.5	2.1	-15.4	2.00	2.00	0.00
3,345.5	6.91	7.84	3,344.7	20.6	2.8	-20.5	2.00	2.00	0.00
3,400.0	6.91	7.84	3,398.8	27.1	3.7	-26.9	0.00	0.00	0.00
3,500.0	6.91	7.84	3,498.0	39.0	5.4	-38.7	0.00	0.00	0.00
3,600.0	6.91	7.84	3,597.3	51.0	7.0	-50.6	0.00	0.00	0.00
3,700.0	6.91	7.84	3,696.6	62.9	8.7	-62.4	0.00	0.00	0.00
3,800.0	6.91	7.84	3,795.9	74.8	10.3	-74.3	0.00	0.00	0.00
3,900.0	6.91	7.84	3,895.1	86.7	11.9	-86.1	0.00	0.00	0.00
4,000.0	6.91	7.84	3,994.4	98.6	13.6	-97.9	0.00	0.00	0.00
4,100.0	6.91	7.84	4,093.7	110.6	15.2	-109.8	0.00	0.00	0.00
4,200.0	6.91	7.84	4,193.0	122.5	16.9	-121.6	0.00	0.00	0.00
4,300.0	6.91	7.84	4,292.2	134.4	18.5	-133.4	0.00	0.00	0.00
4,400.0	6.91	7.84	4,391.5	146.3	20.2	-145.3	0.00	0.00	0.00
4,500.0	6.91	7.84	4,490.8	158.2	21.8	-157.1	0.00	0.00	0.00
4,600.0	6.91	7.84	4,590.0	170.1	23.4	-168.9	0.00	0.00	0.00
4,700.0	6.91	7.84	4,689.3	182.1	25.1	-180.8	0.00	0.00	0.00
4,800.0	6.91	7.84	4,788.6	194.0	26.7	-192.6	0.00	0.00	0.00
4,900.0	6.91	7.84	4,887.9	205.9	28.4	-204.4	0.00	0.00	0.00
5,000.0	6.91	7.84	4,987.1	217.8	30.0	-216.3	0.00	0.00	0.00
5,100.0	6.91	7.84	5,086.4	229.7	31.6	-228.1	0.00	0.00	0.00
5,200.0	6.91	7.84	5,185.7	241.7	33.3	-239.9	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #705H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3326.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3326.0usft
Site:	Magnolia 15 Fed Com	**North Reference:**	Grid
Well:	#705H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	6.91	7.84	5,285.0	253.6	34.9	-251.8	0.00	0.00	0.00
5,400.0	6.91	7.84	5,384.2	265.5	36.6	-263.6	0.00	0.00	0.00
5,500.0	6.91	7.84	5,483.5	277.4	38.2	-275.4	0.00	0.00	0.00
5,600.0	6.91	7.84	5,582.8	289.3	39.9	-287.3	0.00	0.00	0.00
5,700.0	6.91	7.84	5,682.1	301.3	41.5	-299.1	0.00	0.00	0.00
5,800.0	6.91	7.84	5,781.3	313.2	43.1	-310.9	0.00	0.00	0.00
5,900.0	6.91	7.84	5,880.6	325.1	44.8	-322.8	0.00	0.00	0.00
6,000.0	6.91	7.84	5,979.9	337.0	46.4	-334.6	0.00	0.00	0.00
6,100.0	6.91	7.84	6,079.2	348.9	48.1	-346.4	0.00	0.00	0.00
6,200.0	6.91	7.84	6,178.4	360.9	49.7	-358.3	0.00	0.00	0.00
6,300.0	6.91	7.84	6,277.7	372.8	51.3	-370.1	0.00	0.00	0.00
6,400.0	6.91	7.84	6,377.0	384.7	53.0	-381.9	0.00	0.00	0.00
6,500.0	6.91	7.84	6,476.2	396.6	54.6	-393.8	0.00	0.00	0.00
6,600.0	6.91	7.84	6,575.5	408.5	56.3	-405.6	0.00	0.00	0.00
6,700.0	6.91	7.84	6,674.8	420.5	57.9	-417.4	0.00	0.00	0.00
6,800.0	6.91	7.84	6,774.1	432.4	59.6	-429.3	0.00	0.00	0.00
6,900.0	6.91	7.84	6,873.3	444.3	61.2	-441.1	0.00	0.00	0.00
7,000.0	6.91	7.84	6,972.6	456.2	62.8	-452.9	0.00	0.00	0.00
7,100.0	6.91	7.84	7,071.9	468.1	64.5	-464.8	0.00	0.00	0.00
7,200.0	6.91	7.84	7,171.2	480.1	66.1	-476.6	0.00	0.00	0.00
7,300.0	6.91	7.84	7,270.4	492.0	67.8	-488.4	0.00	0.00	0.00
7,400.0	6.91	7.84	7,369.7	503.9	69.4	-500.3	0.00	0.00	0.00
7,500.0	6.91	7.84	7,469.0	515.8	71.0	-512.1	0.00	0.00	0.00
7,600.0	6.91	7.84	7,568.3	527.7	72.7	-523.9	0.00	0.00	0.00
7,700.0	6.91	7.84	7,667.5	539.7	74.3	-535.8	0.00	0.00	0.00
7,800.0	6.91	7.84	7,766.8	551.6	76.0	-547.6	0.00	0.00	0.00
7,900.0	6.91	7.84	7,866.1	563.5	77.6	-559.4	0.00	0.00	0.00
8,000.0	6.91	7.84	7,965.3	575.4	79.3	-571.3	0.00	0.00	0.00
8,100.0	6.91	7.84	8,064.6	587.3	80.9	-583.1	0.00	0.00	0.00
8,200.0	6.91	7.84	8,163.9	599.3	82.5	-594.9	0.00	0.00	0.00
8,300.0	6.91	7.84	8,263.2	611.2	84.2	-606.8	0.00	0.00	0.00
8,400.0	6.91	7.84	8,362.4	623.1	85.8	-618.6	0.00	0.00	0.00
8,500.0	6.91	7.84	8,461.7	635.0	87.5	-630.4	0.00	0.00	0.00
8,600.0	6.91	7.84	8,561.0	646.9	89.1	-642.3	0.00	0.00	0.00
8,700.0	6.91	7.84	8,660.3	658.9	90.7	-654.1	0.00	0.00	0.00
8,800.0	6.91	7.84	8,759.5	670.8	92.4	-665.9	0.00	0.00	0.00
8,900.0	6.91	7.84	8,858.8	682.7	94.0	-677.8	0.00	0.00	0.00
9,000.0	6.91	7.84	8,958.1	694.6	95.7	-689.6	0.00	0.00	0.00
9,100.0	6.91	7.84	9,057.4	706.5	97.3	-701.4	0.00	0.00	0.00
9,200.0	6.91	7.84	9,156.6	718.5	99.0	-713.3	0.00	0.00	0.00
9,300.0	6.91	7.84	9,255.9	730.4	100.6	-725.1	0.00	0.00	0.00
9,400.0	6.91	7.84	9,355.2	742.3	102.2	-736.9	0.00	0.00	0.00
9,500.0	6.91	7.84	9,454.4	754.2	103.9	-748.8	0.00	0.00	0.00
9,600.0	6.91	7.84	9,553.7	766.1	105.5	-760.6	0.00	0.00	0.00
9,700.0	6.91	7.84	9,653.0	778.1	107.2	-772.4	0.00	0.00	0.00
9,800.0	6.91	7.84	9,752.3	790.0	108.8	-784.3	0.00	0.00	0.00
9,900.0	6.91	7.84	9,851.5	801.9	110.4	-796.1	0.00	0.00	0.00
10,000.0	6.91	7.84	9,950.8	813.8	112.1	-807.9	0.00	0.00	0.00
10,100.0	6.91	7.84	10,050.1	825.7	113.7	-819.8	0.00	0.00	0.00
10,200.0	6.91	7.84	10,149.4	837.7	115.4	-831.6	0.00	0.00	0.00
10,300.0	6.91	7.84	10,248.6	849.6	117.0	-843.5	0.00	0.00	0.00
10,400.0	6.91	7.84	10,347.9	861.5	118.7	-855.3	0.00	0.00	0.00
10,500.0	6.91	7.84	10,447.2	873.4	120.3	-867.1	0.00	0.00	0.00
10,600.0	6.91	7.84	10,546.5	885.3	121.9	-879.0	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #705H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3326.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3326.0usft
Site:	Magnolia 15 Fed Com	**North Reference:**	Grid
Well:	#705H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,700.0	6.91	7.84	10,645.7	897.3	123.6	-890.8	0.00	0.00	0.00
10,800.0	6.91	7.84	10,745.0	909.2	125.2	-902.6	0.00	0.00	0.00
10,900.0	6.91	7.84	10,844.3	921.1	126.9	-914.5	0.00	0.00	0.00
11,000.0	6.91	7.84	10,943.5	933.0	128.5	-926.3	0.00	0.00	0.00
11,100.0	6.91	7.84	11,042.8	944.9	130.1	-938.1	0.00	0.00	0.00
11,200.0	6.91	7.84	11,142.1	956.9	131.8	-950.0	0.00	0.00	0.00
11,300.0	6.91	7.84	11,241.4	968.8	133.4	-961.8	0.00	0.00	0.00
11,400.0	6.91	7.84	11,340.6	980.7	135.1	-973.6	0.00	0.00	0.00
11,500.0	6.91	7.84	11,439.9	992.6	136.7	-985.5	0.00	0.00	0.00
11,600.0	6.91	7.84	11,539.2	1,004.5	138.4	-997.3	0.00	0.00	0.00
11,649.0	6.91	7.84	11,587.8	1,010.4	139.2	-1,003.1	0.00	0.00	0.00
11,700.0	5.89	7.84	11,638.5	1,016.0	139.9	-1,008.7	2.00	-2.00	0.00
11,800.0	3.89	7.84	11,738.1	1,024.5	141.1	-1,017.1	2.00	-2.00	0.00
11,900.0	1.89	7.84	11,838.0	1,029.5	141.8	-1,022.0	2.00	-2.00	0.00
11,994.5	0.00	0.00	11,932.5	1,031.0	142.0	-1,023.6	2.00	-2.00	0.00
12,000.0	0.66	179.52	11,938.0	1,031.0	142.0	-1,023.5	12.00	12.00	0.00
12,025.0	3.66	179.52	11,963.0	1,030.0	142.0	-1,022.6	12.00	12.00	0.00
12,050.0	6.66	179.52	11,987.9	1,027.8	142.0	-1,020.3	12.00	12.00	0.00
12,075.0	9.66	179.52	12,012.6	1,024.2	142.1	-1,016.8	12.00	12.00	0.00
12,100.0	12.66	179.52	12,037.1	1,019.4	142.1	-1,012.0	12.00	12.00	0.00
12,125.0	15.66	179.52	12,061.4	1,013.3	142.1	-1,005.8	12.00	12.00	0.00
12,150.0	18.66	179.52	12,085.3	1,005.9	142.2	-998.5	12.00	12.00	0.00
12,175.0	21.66	179.52	12,108.7	997.3	142.3	-989.9	12.00	12.00	0.00
12,200.0	24.66	179.52	12,131.7	987.5	142.4	-980.0	12.00	12.00	0.00
12,225.0	27.66	179.52	12,154.1	976.4	142.5	-969.0	12.00	12.00	0.00
12,250.0	30.66	179.52	12,176.0	964.3	142.6	-956.9	12.00	12.00	0.00
12,275.0	33.66	179.52	12,197.1	951.0	142.7	-943.6	12.00	12.00	0.00
12,300.0	36.66	179.52	12,217.6	936.6	142.8	-929.2	12.00	12.00	0.00
12,325.0	39.66	179.52	12,237.2	921.1	142.9	-913.7	12.00	12.00	0.00
12,350.0	42.66	179.52	12,256.1	904.7	143.1	-897.3	12.00	12.00	0.00
12,375.0	45.66	179.52	12,274.0	887.2	143.2	-879.9	12.00	12.00	0.00
12,400.0	48.66	179.52	12,291.0	868.9	143.4	-861.6	12.00	12.00	0.00
12,425.0	51.66	179.52	12,307.0	849.7	143.5	-842.4	12.00	12.00	0.00
12,450.0	54.66	179.52	12,322.0	829.7	143.7	-822.4	12.00	12.00	0.00
12,475.0	57.66	179.52	12,335.9	809.0	143.9	-801.7	12.00	12.00	0.00
12,500.0	60.66	179.52	12,348.7	787.5	144.0	-780.2	12.00	12.00	0.00
12,525.0	63.66	179.52	12,360.4	765.4	144.2	-758.1	12.00	12.00	0.00
12,550.0	66.66	179.52	12,370.9	742.7	144.4	-735.5	12.00	12.00	0.00
12,575.0	69.66	179.52	12,380.2	719.5	144.6	-712.3	12.00	12.00	0.00
12,600.0	72.66	179.52	12,388.3	695.9	144.8	-688.6	12.00	12.00	0.00
12,625.0	75.66	179.52	12,395.1	671.8	145.0	-664.6	12.00	12.00	0.00
12,650.0	78.66	179.52	12,400.6	647.4	145.2	-640.2	12.00	12.00	0.00
12,675.0	81.66	179.52	12,404.9	622.8	145.4	-615.6	12.00	12.00	0.00
12,700.0	84.66	179.52	12,407.9	598.0	145.6	-590.8	12.00	12.00	0.00
12,725.0	87.66	179.52	12,409.6	573.0	145.8	-565.9	12.00	12.00	0.00
12,744.5	90.00	179.52	12,410.0	553.6	146.0	-546.4	12.00	12.00	0.00
12,800.0	90.00	179.52	12,410.0	498.1	146.5	-491.0	0.00	0.00	0.00
12,900.0	90.00	179.52	12,410.0	398.1	147.3	-391.0	0.00	0.00	0.00
13,000.0	90.00	179.52	12,410.0	298.1	148.1	-291.1	0.00	0.00	0.00
13,100.0	90.00	179.52	12,410.0	198.1	149.0	-191.2	0.00	0.00	0.00
13,200.0	90.00	179.52	12,410.0	98.1	149.8	-91.2	0.00	0.00	0.00
13,300.0	90.00	179.52	12,410.0	-1.9	150.7	8.7	0.00	0.00	0.00
13,400.0	90.00	179.52	12,410.0	-101.9	151.5	108.6	0.00	0.00	0.00
13,500.0	90.00	179.52	12,410.0	-201.9	152.3	208.6	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #705H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3326.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3326.0usft
Site:	Magnolia 15 Fed Com	**North Reference:**	Grid
Well:	#705H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,600.0	90.00	179.52	12,410.0	-301.9	153.2	308.5	0.00	0.00	0.00
13,700.0	90.00	179.52	12,410.0	-401.9	154.0	408.4	0.00	0.00	0.00
13,800.0	90.00	179.52	12,410.0	-501.9	154.8	508.4	0.00	0.00	0.00
13,900.0	90.00	179.52	12,410.0	-601.9	155.7	608.3	0.00	0.00	0.00
14,000.0	90.00	179.52	12,410.0	-701.9	156.5	708.2	0.00	0.00	0.00
14,100.0	90.00	179.52	12,410.0	-801.9	157.4	808.2	0.00	0.00	0.00
14,200.0	90.00	179.52	12,410.0	-901.9	158.2	908.1	0.00	0.00	0.00
14,300.0	90.00	179.52	12,410.0	-1,001.9	159.0	1,008.0	0.00	0.00	0.00
14,400.0	90.00	179.52	12,410.0	-1,101.9	159.9	1,108.0	0.00	0.00	0.00
14,500.0	90.00	179.52	12,410.0	-1,201.9	160.7	1,207.9	0.00	0.00	0.00
14,600.0	90.00	179.52	12,410.0	-1,301.9	161.5	1,307.8	0.00	0.00	0.00
14,700.0	90.00	179.52	12,410.0	-1,401.9	162.4	1,407.8	0.00	0.00	0.00
14,800.0	90.00	179.52	12,410.0	-1,501.9	163.2	1,507.7	0.00	0.00	0.00
14,900.0	90.00	179.52	12,410.0	-1,601.9	164.1	1,607.6	0.00	0.00	0.00
15,000.0	90.00	179.52	12,410.0	-1,701.9	164.9	1,707.6	0.00	0.00	0.00
15,100.0	90.00	179.52	12,410.0	-1,801.9	165.7	1,807.5	0.00	0.00	0.00
15,200.0	90.00	179.52	12,410.0	-1,901.9	166.6	1,907.4	0.00	0.00	0.00
15,300.0	90.00	179.52	12,410.0	-2,001.9	167.4	2,007.4	0.00	0.00	0.00
15,400.0	90.00	179.52	12,410.0	-2,101.9	168.2	2,107.3	0.00	0.00	0.00
15,500.0	90.00	179.52	12,410.0	-2,201.8	169.1	2,207.2	0.00	0.00	0.00
15,600.0	90.00	179.52	12,410.0	-2,301.8	169.9	2,307.2	0.00	0.00	0.00
15,700.0	90.00	179.52	12,410.0	-2,401.8	170.8	2,407.1	0.00	0.00	0.00
15,800.0	90.00	179.52	12,410.0	-2,501.8	171.6	2,507.0	0.00	0.00	0.00
15,900.0	90.00	179.52	12,410.0	-2,601.8	172.4	2,607.0	0.00	0.00	0.00
16,000.0	90.00	179.52	12,410.0	-2,701.8	173.3	2,706.9	0.00	0.00	0.00
16,100.0	90.00	179.52	12,410.0	-2,801.8	174.1	2,806.8	0.00	0.00	0.00
16,200.0	90.00	179.52	12,410.0	-2,901.8	174.9	2,906.8	0.00	0.00	0.00
16,300.0	90.00	179.52	12,410.0	-3,001.8	175.8	3,006.7	0.00	0.00	0.00
16,400.0	90.00	179.52	12,410.0	-3,101.8	176.6	3,106.6	0.00	0.00	0.00
16,500.0	90.00	179.52	12,410.0	-3,201.8	177.5	3,206.6	0.00	0.00	0.00
16,600.0	90.00	179.52	12,410.0	-3,301.8	178.3	3,306.5	0.00	0.00	0.00
16,700.0	90.00	179.52	12,410.0	-3,401.8	179.1	3,406.4	0.00	0.00	0.00
16,800.0	90.00	179.52	12,410.0	-3,501.8	180.0	3,506.4	0.00	0.00	0.00
16,900.0	90.00	179.52	12,410.0	-3,601.8	180.8	3,606.3	0.00	0.00	0.00
17,000.0	90.00	179.52	12,410.0	-3,701.8	181.6	3,706.2	0.00	0.00	0.00
17,100.0	90.00	179.52	12,410.0	-3,801.8	182.5	3,806.2	0.00	0.00	0.00
17,200.0	90.00	179.52	12,410.0	-3,901.8	183.3	3,906.1	0.00	0.00	0.00
17,300.0	90.00	179.52	12,410.0	-4,001.8	184.2	4,006.0	0.00	0.00	0.00
17,400.2	90.00	179.52	12,410.0	-4,102.0	185.0	4,106.2	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #705H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3326.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3326.0usft
Site:	Magnolia 15 Fed Com	**North Reference:**	Grid
Well:	#705H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.2		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP(Magnolia 15 Fed C - plan hits target center - Point	0.00	0.00	11,932.5	1,031.0	142.0	383,001.00	780,541.00	32.0505985°N	103.5612654°W
PBHL (Magnolia 15 Fed - plan hits target center - Point	0.00	0.00	12,410.0	-4,102.0	185.0	377,868.00	780,584.00	32.0364884°N	103.5612451°W
FTP (Magnolia 15 Fed C - plan misses target center by 163.5usft at 12398.7usft MD (12290.1 TVD, 869.9 N, 143.3 E) - Point	0.00	0.00	12,410.0	981.0	142.0	382,951.00	780,541.00	32.0504611°N	103.5612666°W

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**EOG Resources Incorporated**
LEASE NO.:	**NMNM02965A**
WELL NAME & NO.:	**MAGNOLIA 15 FED COM 705H**
SURFACE HOLE FOOTAGE:	**1080'/N & 2159'/E**
BOTTOM HOLE FOOTAGE	**100'/N & 2315'/E**
LOCATION:	**Section 15, T.26 S., R.33 E., NMPM**
COUNTY:	**Lea County, New Mexico**

COA

H2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All previous COAs still apply, except for the following:

A. CASING

1. The **9 5/8** inch surface casing shall be set at approximately **977 feet** (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM Collapse Requirements.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

   - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

❖ **In Medium/High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.**

In case of lost circulation, operator has proposed to pump down 9 5/8" X 7 5/8" annulus. Operator must include final fluid top verified by Echo-meter and the volume of displacement fluid above the cement slurry in the annulus. Submit results to the BLM.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   Cement should tie-back at least **200 feet** into the previous casing. Operator shall provide method of verification. **Excess calculates to 21% - additional cement might be required.**

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

1. **Option 1:**

   i. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) shall be **10,000 (10M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi.

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed

C. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

JJP02082019

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.