APD ID: 10400010760 **Submission Date:** 03/07/2017

Operator Name: EOG RESOURCES INCORPORATED

Well Name: DOGWOOD 23 FED COM **Well Number:** 705H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
17706	PERMIAN	3305	0	0	ANHYDRITE	NONE	No
17746	RUSTLER	2333	972	972	ANHYDRITE	NONE	No
17718	TOP SALT	1983	1322	1322	SALT	NONE	No
17722	BASE OF SALT	-1627	4932	4932	SALT	NONE	No
17719	LAMAR	-1854	5159	5159	LIMESTONE	NONE	No
15332	BELL CANYON	-1893	5198	5198	SANDSTONE	NATURAL GAS,OIL	No
15316	CHERRY CANYON	-2935	6240	6240	SANDSTONE	NATURAL GAS,OIL	No
17713	BRUSHY CANYON	-4616	7921	7921	SANDSTONE	NATURAL GAS,OIL	No
17721	BONE SPRING LIME	-6090	9395	9395	LIMESTONE	NONE	No
15338	BONE SPRING 1ST	-7018	10323	10323	SANDSTONE	NATURAL GAS,OIL	No
17737	BONE SPRING 2ND	-7572	10877	10877	SANDSTONE	NATURAL GAS,OIL	No
17738	BONE SPRING 3RD	-8628	11933	11933	SANDSTONE	NATURAL GAS,OIL	No
17709	WOLFCAMP	-9049	12354	12354	SHALE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Operator Name: EOG RESOURCES INCORPORATED

Well Name: DOGWOOD 23 FED COM **Well Number:** 705H

Pressure Rating (PSI): 10M **Rating Depth:** 12500

Equipment: The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (10000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil and Gas order No. 2.

Requesting Variance? YES

Variance request: Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line). 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.

Testing Procedure: Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

Choke Diagram Attachment:

10M_Choke_Manifold_07-12-2017.pdf

BOP Diagram Attachment:

10M_BOPE_07-12-2017.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	1000	0	1000	3305	2305	1000	J-55	40.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	1000	0	1000	3305	2305	1000	HCP-110	29.7	LTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	INTERMEDIATE	9.875	7.625	NEW	API	N	1000	3000	1000	3000	2305	305	2000	OTHER	29.7	OTHER - SJIJ II	1.125	1.25	BUOY	1.6	BUOY	1.6
4	PRODUCTION	6.75	5.5	NEW	API	N	0	11100	0	11100	3305	-7795	11100	OTHER	20	OTHER - DWC/C-IS MS	1.125	1.25	BUOY	1.6	BUOY	1.6
5	INTERMEDIATE	8.75	7.625	NEW	API	N	3000	11600	3000	11600	305	-8295	8600	HCP-110	29.7	OTHER - Flushmax III	1.125	1.25	BUOY	1.6	BUOY	1.6
6	PRODUCTION	6.75	5.5	NEW	API	N	11100	22584	11100	12500	-7795	-9195	11484	OTHER	20	OTHER - VAM SFC	1.125	1.25	BUOY	1.6	BUOY	1.6

Operator Name: EOG RESOURCES INCORPORATED

Well Name: DOGWOOD 23 FED COM **Well Number:** 705H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dogwood 23 Fed Com 705H BLM Plan_03-03-2017.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dogwood 23 Fed Com 705H BLM Plan_03-03-2017.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dogwood 23 Fed Com 705H BLM Plan_03-03-2017.pdf

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dogwood 23 Fed Com 705H BLM Plan_03-03-2017.pdf

Casing ID: 5 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dogwood 23 Fed Com 705H BLM Plan_03-03-2017.pdf

Casing ID: 6 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Dogwood 23 Fed Com 705H BLM Plan_03-03-2017.pdf

Section 4 - Cement

Operator Name: EOG RESOURCES INCORPORATED

Well Name: DOGWOOD 23 FED COM **Well Number:** 705H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead		0	0	0	0	0	0		0	0
PRODUCTION	Lead		0	0	0	0	0	0	0	0	0
INTERMEDIATE	Lead		0	0	0	0	0	0		0	0
SURFACE	Lead		0	1000	325	1.73	13.5	562	25	Class C	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl2 + 0.25 lb/sk Cello-Flake (TOC @ Surface)
SURFACE	Tail		1000	1000	200	1.34	14.8	268	25	Class C	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
INTERMEDIATE	Lead		0	11600	2250	1.38	14.8	3105	25	Class C	Class C + 5% Gypsum + 3% CaCl2 pumped via bradenhead (TOC@surface)
INTERMEDIATE	Tail		11600	11600	550	1.2	14.4	660	25	Class H	50:50 Class H:Poz + 0.25% CPT20A + 0.40% CPT49 + 0.20% CPT35 + 0.80% CPT16A + 0.25% CPT503P pumped conventionally.
PRODUCTION	Lead		11100	22584	950	1.26	14.1	1197	25	Class H	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 10,600')

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: (A) A Kelly cock will be kept in the drill string at all times. (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times. (C) H2S monitoring and detection equipment will be utilized from surface casing point to TD.
Describe the mud monitoring system utilized: An electronic pit volume totalizer (PVT) will be utilized on the circulating system to monitor pit volume, flow rate, pump pressure and stroke rate.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
1000	11600	SALT SATURATED	8.8	10							
11600	22584	OIL-BASED MUD	10	14							
0	1000	WATER-BASED MUD	8.6	8.8							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Open-hole logs are not planned for this well.

List of open and cased hole logs run in the well:

DS

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7488 **Anticipated Surface Pressure:** 4738

Anticipated Bottom Hole Temperature(F): 181

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Dogwood 23 Fed Com 705H H2S Plan Summary_03-03-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Dogwood 23 Fed Com 705H Planning Report_03-03-2017.pdf
Dogwood 23 Fed Com 705H Wall Plot_03-03-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Dogwood 23 Fed Com 705H 5.500in 20.00 VST P110EC DWC_C-IS MS Spec Sheet_03-03-2017.pdf
Dogwood 23 Fed Com 705H 5.500in 20.00 VST P110EC VAM SFC Spec Sheet_03-03-2017.pdf
Dogwood 23 Fed Com 705H 7.625in 29.7 P110EC VAM SLIJ-II_03-03-2017.pdf
Dogwood 23 Fed Com 705H 7.625in 29.70 P-110 FlushMax III Spec Sheet_03-03-2017.pdf
Dogwood 23 Fed Com 705H BLM Plan_03-03-2017.pdf
Dogwood 23 Fed Com 705H Proposed Wellbore_03-03-2017.pdf
Dogwood 23 Fed Com 705H Rig Layout_03-03-2017.pdf
Dogwood23FC705_deficiency_response_07-12-2017.pdf

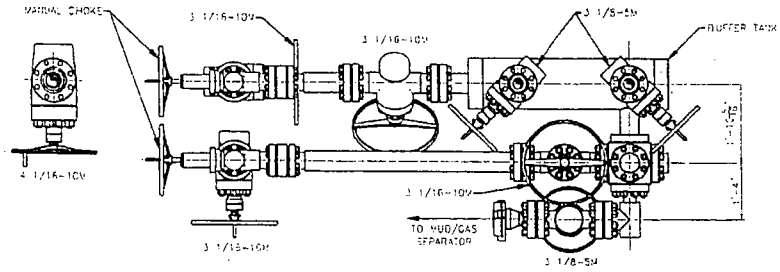
Other Variance attachment:

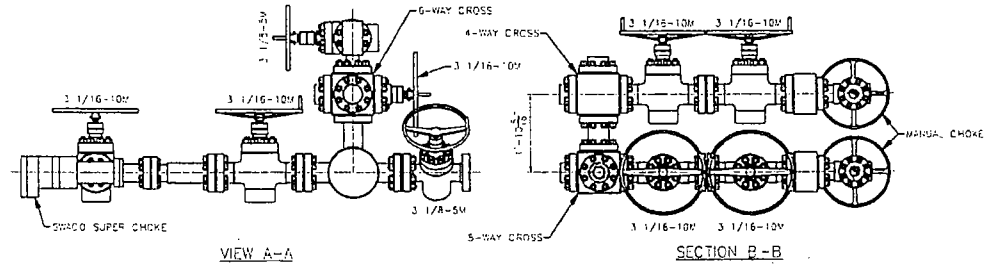
Dogwood 23 Fed Com 705H Co-Flex Hose Certification_03-03-2017.PDF
Dogwood 23 Fed Com 705H Co-Flex Hose Test Chart_03-03-2017.pdf

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well #705H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3330.00usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3330.00usft
Site:	Dogwood 23 Fed Com	**North Reference:**	Grid
Well:	#705H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Design Targets

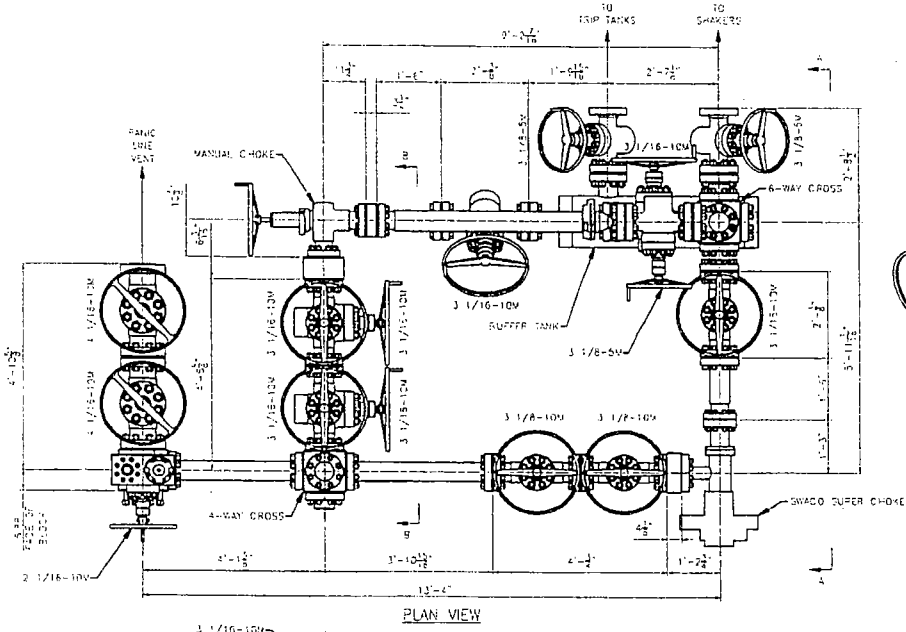
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (Dogwood 23 Fed - plan hits target center - Point	0.00	0.00	12,500.00	10,136.00	403.00	382,856.00	786,424.00	32.05008286	-103.54228205
FTP (Dogwood 23 Fed (- plan misses target center by 40.41usft at 12598.54usft MD (12463.24 TVD, 155.38 N, 472.32 E) - Point	0.00	0.01	12,500.00	139.00	476.00	372,859.00	786,497.00	32.02260238	-103.54228276



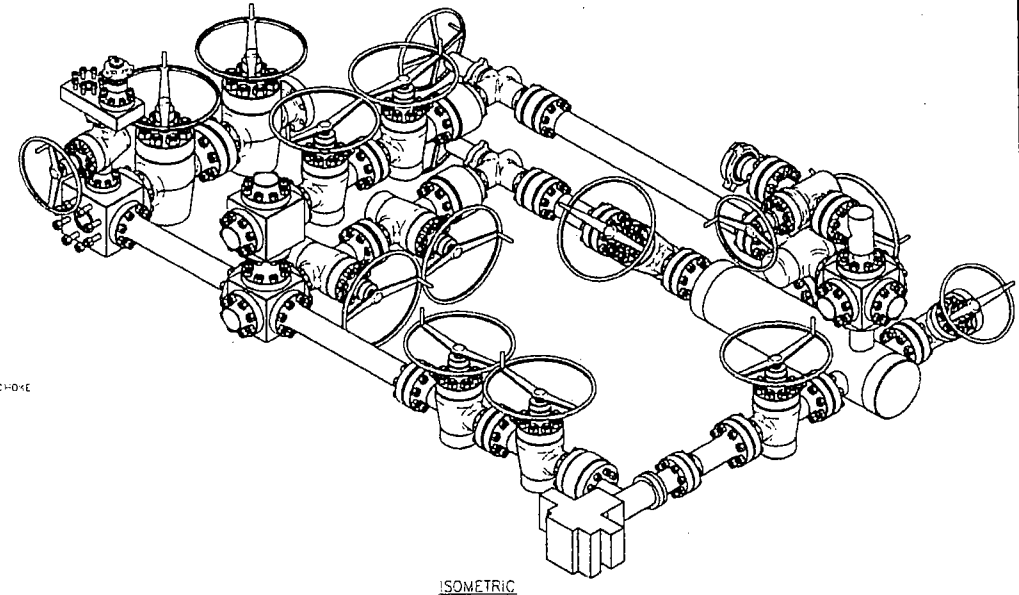


VIEW A-A

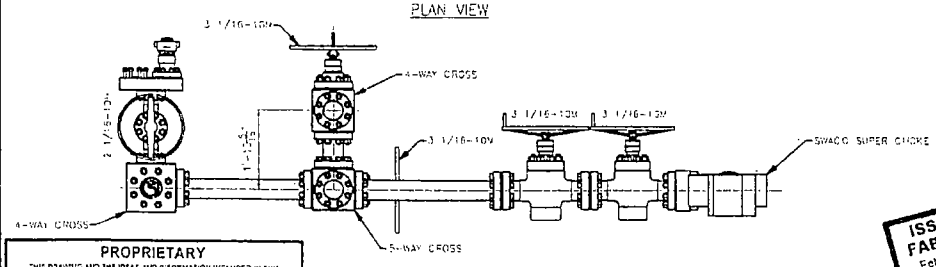
SECTION B-B



PLAN VIEW



ISOMETRIC



ISSUED FOR FABRICATION
February-10-2014
DRAFTSMAN MWL
ENGINEER

STANDARD TOLERANCES

1. FABRICATION DIMENSIONS	A-B" TO 3"	± 1/16"
	B-3+" TO 10"	± 1/32"
	C-OVER 120"	± 1/16"
	A-ANGULAR	± 30'
2. MACHINED DIMENSIONS	B-LINEAR (EXPRESSED AS A FRACTION)	± 1/64
	LINEAR (EXPRESSED TO ONE DECIMAL)	± .1
	LINEAR (EXPRESSED TO TWO DECIMALS)	± .010
	LINEAR (EXPRESSED TO THREE DECIMALS)	± .005

REV	DATE	DESCRIPTION	BY

HELMERICH & PAYNE INTERNATIONAL DRILLING CO.

TITLE: 3 CHOKE, 3 LEVEL, 10M CHOKE MANIFOLD G.A.

CUSTOMER: H&P

PROJECT:

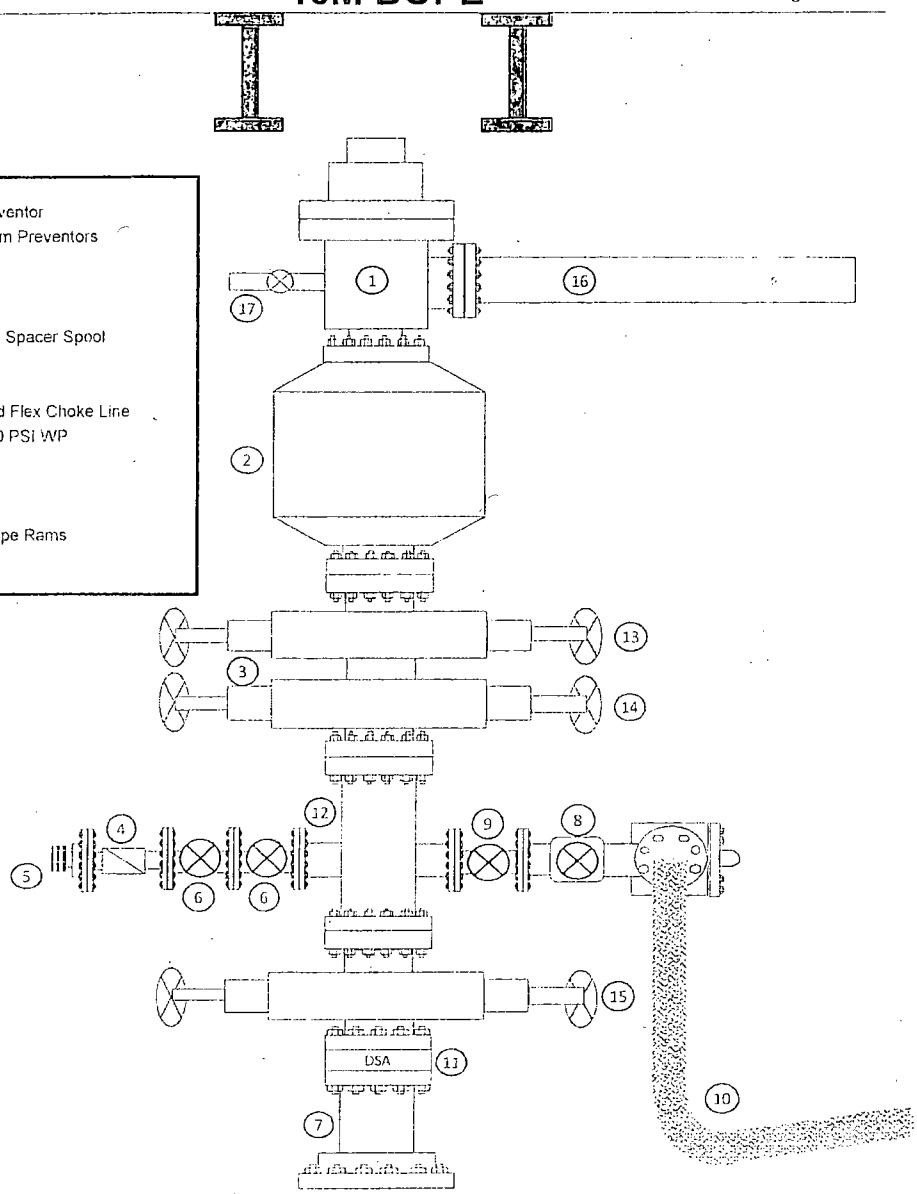
DRAWN: MWL | DATE: 2/10/2014 | DWG. NO: HP-D1254 | REV: —

SCALE: 3/4"=1'-0" | SHEET: 1 OF 1

Exhibit 1
EOG Resources
10M BOPE

Rig Floor

1. 13 5/8" Rotating Head
2. Hydril 13 5/8" 10,000 PSI WP GK Annular Preventor
3. 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors
4. 2 1/16" - 10,000 PSI WP Check Valve
5. 10,000 PSI WP - 1502 Union to kill line
6. 2 1/16" - 10,000 PSI WP Manual Valves
7. 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool
8. 4 1/16" 10,000 PSI WP HCR Valve
9. 4 1/16" 10,000 PSI WP Manual Valve
10. 6" OD x 3" ID 10,000 PSI WP Steel Armoured Flex Choke Line
11. DSA - 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP
12. Mud Cross - 13 5/8" 10,000 PSI WP
13. Blind Rams
14. Pipe Rams
15. 13 5/8" Cameron Type "U" 10,000 PSI WP Pipe Rams
16. Flow Line
17. 2" Fill Line



EOG RESOURCES, INC.
DOGWOOD 23 FED COM NO. 705H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	972'
Top of Salt	1,322'
Base of Salt / Top Anhydrite	4,932'
Base Anhydrite	5,159'
Lamar	5,159'
Bell Canyon	5,198'
Cherry Canyon	6,240'
Brushy Canyon	7,921'
Bone Spring Lime	9,395'
1st Bone Spring Sand	10,323'
2nd Bone Spring Shale	10,509'
2nd Bone Spring Sand	10,877'
3rd Bone Spring Carb	11,405'
3rd Bone Spring Sand	11,933'
Wolfcamp	12,354'
TD	12,522'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,240'	Oil
Brushy Canyon	7,921'	Oil
1st Bone Spring Sand	10,323'	Oil
2nd Bone Spring Shale	10,509'	Oil
2nd Bone Spring Sand	10,877'	Oil
3rd Bone Spring Carb	11,405'	Oil
3rd Bone Spring Sand	11,933'	Oil
Wolfcamp	12,354'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 10.75" casing at 1,000' and circulating cement back to surface.

EOG RESOURCES, INC.
DOGWOOD 23 FED COM NO. 705H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

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1st Bone Spring Sand	10,323'	Oil
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2nd Bone Spring Sand	10,877'	Oil
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3rd Bone Spring Sand	11,933'	Oil
Wolfcamp	12,354'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 10.75" casing at 1,000' and circulating cement back to surface.

EOG RESOURCES, INC.
DOGWOOD 23 FED COM NO. 705H

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Permian

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Brushy Canyon	7,921'	Oil
1st Bone Spring Sand	10,323'	Oil
2nd Bone Spring Shale	10,509'	Oil
2nd Bone Spring Sand	10,877'	Oil
3rd Bone Spring Carb	11,405'	Oil
3rd Bone Spring Sand	11,933'	Oil
Wolfcamp	12,354'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 10.75" casing at 1,000' and circulating cement back to surface.

EOG RESOURCES, INC.
DOGWOOD 23 FED COM NO. 705H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

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3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

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1st Bone Spring Sand	10,323'	Oil
2nd Bone Spring Shale	10,509'	Oil
2nd Bone Spring Sand	10,877'	Oil
3rd Bone Spring Carb	11,405'	Oil
3rd Bone Spring Sand	11,933'	Oil
Wolfcamp	12,354'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 10.75" casing at 1,000' and circulating cement back to surface.

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
14.75"	0 – 1,000'	10.75"	40.5#	J55	STC	1.125	1.25	1.60
9.875"	0 – 1,000'	7.625"	29.7#	HCP-110	LTC	1.125	1.25	1.60
9.875"	1,000' – 3,000'	7.625"	29.7#	P-110EC	SLIJ II	1.125	1.25	1.60
8.75"	3,000' – 11,600'	7.625"	29.7#	HCP-110	FlushMax III	1.125	1.25	1.60
6.75"	0' – 11,100'	5.5"	20#	P-110EC	DWC/C-IS MS	1.125	1.25	1.60
6.75"	11,100'-22,584'	5.5"	20#	P-110EC	VAM SFC	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.

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft^3/ft	Mix Water Gal/sk	Slurry Description
10-3/4" 1,000'	325	13.5	1.73	9.13	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	200	14.8	1.34	6.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
7-5/8" 11,600'	250	14.8	1.38	6.48	Class C + 5% Gypsum + 3% CaCl2 pumped via Bradenhead (TOC @ Surface)
	2000	14.8	1.38	6.48	Class C + 5% Gypsum + 3% CaCl2 pumped via Bradenhead
	550	14.4	1.20	4.81	50:50 Class H:Poz + 0.25% CPT20A + 0.40% CPT49 + 0.20% CPT35 + 0.80% CPT16A + 0.25% CPT503P pumped Conventionally
5-1/2" 22,584'	950	14.1	1.26	5.80	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 11,100')

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 3500/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 3500/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,000'	Fresh - Gel	8.6-8.8	28-34	N/c
1,000' – 11,600'	Brine	8.8-10.0	28-34	N/c
11,600' – 22,584' Lateral	Oil Base	10.0-14.0	58-68	3 - 6

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 14.0 ppg may be utilized.

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

(C) H_2S monitoring and detection equipment will be utilized from surface casing point to TD.

8. LOGGING, TESTING AND CORING PROGRAM:

Open-hole logs are not planned for this well.

GR–CCL Will be run in cased hole during completions phase of operations.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom-hole temperature (BHT) at TD is 181 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 7488 psig (based on 11.5 ppg MW). No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from 7,300' to Intermediate casing point.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

(A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. If the timing between rigs is such that EOG Resources would not be able to preset the surface, the Primary Rig will MIRU and drill the well in its entirety per the APD.

11. WELLHEAD:

A multi-bowl wellhead system will be utilized.

After running the 10-3/4" surface casing, a 13-5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi pressure test. This pressure test will be repeated at least every 30 days, as per Onshore Order No. 2

The minimum working pressure of the BOP and related BOPE required for drilling below the surface casing shoe shall be 5000 psi.

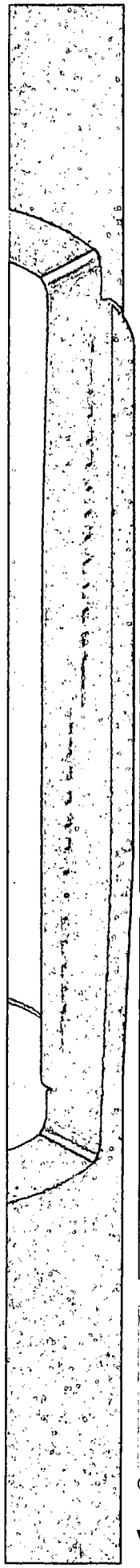
The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Stream Flo FBD100 Multi-Bowl WH system has been sent to the NM BLM office in Carlsbad, NM.

The wellhead will be installed by a third party welder while being monitored by WH vendor's representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

Both the surface and intermediate casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.



Issued on: 24 Jan. 2017

VAM® SLIJ-II

Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift	Connection
7 5/8 in.	29.70 lb/ft	0.375 in.	VM 110 HC	6.750 in.	VAM® SLIJ-II

PIPE PROPERTIES

Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 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)	7.711 in.
Connection ID (nom)	6.820 in.
Make-up Loss	4.822 in.
Critical Cross Section	5.912 sqin.
Tension Efficiency	69.2 % of pipe
Compression Efficiency	48.5 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES

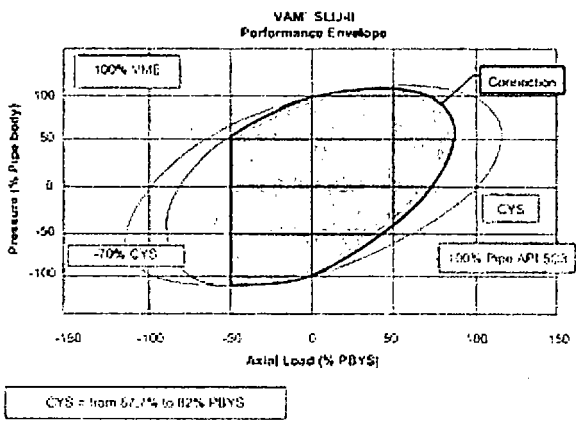
Tensile Yield Strength	651 klb
Compression Resistance	455 klb
Internal Yield Pressure	9470 psi
Uniaxial Collapse Pressure	7890 psi
Max. Bending Capacity	TDB
Max Bending with Sealability	20 °/100 ft

FIELD TORQUE VALUES

Min. Make-up torque	11300 ft.lb
Opti. Make-up torque	12600 ft.lb
Max. Make-up torque	13900 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.



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Over 140 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

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

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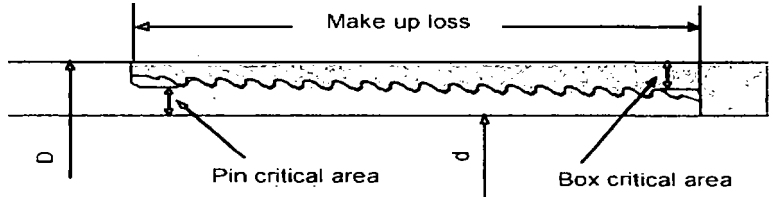
Metal One Corp	FLUSHMAX-III Connection Data Sheet	Page	44-O
		Date	1-Oct-15
		Rev.	N-0



Pipe Body	Imperial		S.I.	
Grade	P110		P110	
Pipe OD (D)	7 5/8	in	193.68	mm
Weight	29.7	lb/ft	44.25	kg/m
Actual weight	29.0	lb/ft	43.26	kg/m
Wall thickness (t)	0.375	in	9.53	mm
Pipe ID (d)	6.875	in	174.63	mm
Pipe body cross section	8.537	in^2	5,508	mm^2
Drift Dia.	6.750	in	171.45	mm

Connection				
Box OD (W)	7.625	in	193.68	mm
PIN ID	6.875	in	174.63	mm
Pin critical area	4.420	in^2	2,852	mm^2
Box critical area	4.424	in^2	2,854	mm^2
Joint load efficiency	60	%	60	%
Make up loss	3.040	in	77.22	mm
Thread taper	1/16 (3/4 in per ft)			
Number of threads	5 thread per in.			

Connection Performance Properties				
Tensile Yield load	563.4	kips	2,506	kN
M.I.Y.P.	7,574	psi	52.2	MPa
Collapse strength	5,350	psi	36.9	MPa

Note
M.I.Y.P. = Minimum Internal Yield Pressure of the connection

Torque Recommended				
Min.	8,700	ft-lb	11,700	N-m
Opti.	9,700	ft-lb	13,100	N-m
Max.	10,700	ft-lb	14,500	N-m
Operational Max.	23,600	ft-lb	32,000	N-m

Note : Operational Max. torque can be applied for high torque application

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE
620 E. GREENE ST.
CARLSBAD, NM 88220
BLM_NM_CFO_APD@BLM.GOV

In Reply To:
3160 (Office Code)
[NMNM122622]

07/20/2017

Attn: STAN WAGNER
EOG RESOURCES INCORPORATED
1111 BAGBY SKY LOBBY2
HOUSTON, TX 77002

Re: Receipt and Acceptability of Application for Permit to Drill (APD)
FEDERAL - NMNM122622

Well Name / Number:	**DOGWOOD 23 FED COM / 705H**
Legal Description:	T26S, R33E, SEC 23, SESW
County, State:	LEA, NM
Date APD Received:	03/07/2017

Dear Operator:

This is the subsequent deficiency letter pursuant to Onshore Oil and Gas Order, Number 1, Section III.E.2.a.

The BLM received your initial Application for Permit to Drill (APD), for the referenced well. on 07/19/2017 . The BLM reviewed the revised APD package pursuant to part III.B.2 of Onshore Oil and Gas Order No.1 and it is:

1. ☑ Incomplete/Deficient (*The BLM cannot process the APD until you submit the identified items within 45 calendar days of the date of the original notice or the BLM will return your APD.*)

- ☐ Well Plat
- ☑ Drilling Plan
- ☑ Surface Use Plan of Operations (SUPO)
  - ☐ Certification of Private Surface Owner Access Agreement
- ☐ Bonding
- ☐ Onsite (The BLM has scheduled the onsite to be on)
  This requirement is exempt of the 45-day timeframe to submit deficiencies. This requirement will be satisfied on the date of the onsite.
- ☑ Other

[*Please See Addendum for further clarification of deficiencies*]