Carlsbad Field Office
OCD Hobbs

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Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM122622

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☑ Multiple Zone

8. Lease Name and Well No.: ENDURANCE 36 STATE COM 708H (38129)

2. Name of Operator: EOG RESOURCES INC (7377)

9. API Well No.: 30-025-43492

3a. Address: 1111 Bagby Sky Lobby2 Houston TX 77002

3b. Phone No. *(include area code)*: (713)651-7000

10. Field and Pool, or Exploratory: RED HILLS / WC-025 S263327G (98097)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: SWNE / 404 FSL / 2038 FEL / LAT 32.0012475 / LONG -103.5236508

At proposed prod. zone: NWNE / 230 FNL / 1651 FEL / LAT 32.020905 / LONG -103.5224053

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 36 / T26S / R33E / NMP

14. Distance in miles and direction from nearest town or post office*: 27 miles

12. County or Parish: LEA

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 230 feet

16. No. of acres in lease: 1640

17. Spacing Unit dedicated to this well: 235.8

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 661 feet

19. Proposed Depth: 12530 feet / 19844 feet

20. BLM/BIA Bond No. on file: FED: NM2308

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3346 feet

22. Approximate date work will start*: 11/01/2016

23. Estimated duration: 25 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Stan Wagner / Ph: (432)686-3689	06/22/2016

Title: Regulatory Specialsit

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	11/30/2016

Title	Office
Supervisor Multiple Resources	HOBBS

Application approval 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.
Conditions of approval, if any, are attached.

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.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

KZ 12/09/16

EOG RESOURCES, INC.
ENDURANCE 36 STATE COM NO. 708H

1. GEOLOGIC NAME OF SURFACE FORMATION:
Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	870'
Top of Salt	1,210'
Base of Salt / Top Anhydrite	4,850'
Base Anhydrite	5,090'
Lamar	5,090'
Bell Canyon	5,115'
Cherry Canyon	6,130'
Brushy Canyon	7,765'
Bone Spring Lime	9,300'
1st Bone Spring Sand	10,270'
2nd Bone Spring Shale	10,450'
2nd Bone Spring Sand	10,765'
3rd Bone Spring Carb	11,280'
3rd Bone Spring Sand	11,890'
Wolfcamp	12,360'
TD	12,530'

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

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,130'	Oil
Brushy Canyon	7,765'	Oil
1st Bone Spring Sand	10,270'	Oil
2nd Bone Spring Shale	10,450'	Oil
2nd Bone Spring Sand	11,765'	Oil
3rd Bone Spring Carb	11,280'	Oil
3rd Bone Spring Sand	11,890'	Oil
Wolfcamp	12,360'	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 895' and circulating cement back to surface.

EOG RESOURCES, INC.
ENDURANCE 36 STATE COM NO. 708H

See COAs 4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
14.75"	0 ~~895~~ 930'	10.75"	40.5#	J55	STC	1.125	1.25	1.60
9.875"	0-8,000'	7.625"	29.7#	HCP-110	LTC	1.125	1.25	1.60
8.75"	8,000' 11,300'	7.625"	29.7#	HCP-110	FlushMax III	1.125	1.25	1.60
6.75"	0'-19,844'	5.5"	23#	HCP-110	VAM SG	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. Centralizers will be placed in the 9-7/8" hole interval at least one every third joint.

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.

See COA **Cementing Program:**

Depth	No. Sacks	Wt. ppg	Yld Ft^3/ft	Mix Water Gal/sk	Slurry Description
10-3/4" 895	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" 11,300'	250	14.8	~~1.38~~ 1.38	6.48	Class C + 5% Gypsum + 3% CaCl2
	2000	14.8	1.38	6.48	Class C + 5% Gypsum + 3% CaCl2
	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
5-1/2" 19,844'	725	14.1	1.26	5.80	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17

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.

Additional Cement maybe Required

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 – 895'	Fresh - Gel	8.6-8.8	28-34	N/c
895' – 11,300'	Brine	8.8-10.0	28-34	N/c
11,300' – 19,844' Lateral	Oil Base	10.0-11.5	58-68	3 - 6

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 182 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 7492 psig. 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.

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.

EOG RESOURCES, INC.
ENDURANCE 36 STATE COM NO. 708H

See COA

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. Prior to running the intermediate casing, the rams will be changed out to accommodate the 7-5/8" casing. The bonnet seals will be tested to 1500 psi. After installing the intermediate casing the casing rams will be removed and replaced with variable bore rams. The remaining BOPE will not be retested after installing the intermediate casing.

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.

Wellhead drawing Attached.

APD ID: 10400002184
Operator Name: EOG RESOURCES INC
Well Name: ENDURANCE 36 STATE COM
Well Type: OIL WELL

Submission Date: 06/22/2016
Federal/Indian APD: FED
Well Number: 708H
Well Work Type: Drill

Highlight All Changes

Application

Section 1 - General

APD ID: 10400002184
Tie to previous NOS?
Submission Date: 06/22/2016
BLM Office: HOBBS
User: Stan Wagner
Title: Regulatory Specialsit
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM122622
Lease Acres: 1640
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? YES
Permitting Agent? NO
APD Operator: EOG RESOURCES INC
Operator letter of designation:
Keep application confidential? YES

Operator Info

Operator Organization Name: EOG RESOURCES INC
Operator Address: 1111 Bagby Sky Lobby2
Zip: 77002
Operator PO Box:
Operator City: Houston
State: TX
Operator Phone: (713)651-7000
Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO
Mater Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** RED HILLS **Pool Name:** WC-025 S263327G

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** ENDURANCE 36 STATE COM **Number:** 707H/708H

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 27 Miles **Distance to nearest well:** 661 FT **Distance to lease line:** 230 FT

Reservoir well spacing assigned acres Measurement: 235.8 Acres

Well plat: 708H C-102 signed_06-22-2016.pdf

Well work start Date: 11/01/2016 **Duration:** 25 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD27 **Vertical Datum:** NAVD88

Survey number:

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.0012475	**Longitude:** -103.5236508	
SHL	**Elevation:** 3346	**MD:** 0	**TVD:** 0
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM122622	
	NS-Foot: 404	**NS Indicator:** FSL	
	EW-Foot: 2038	**EW Indicator:** FEL	
	Twsp: 26S	**Range:** 33E	**Section:** 36
	Aliquot: SWNE	**Lot:**	**Tract:**

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.0012394	**Longitude:** -103.522391	
KOP	**Elevation:** -9142	**MD:** 12613	**TVD:** 12488
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM122622	
	NS-Foot: 50	**NS Indicator:** FSL	
	EW-Foot: 1648	**EW Indicator:** FEL	
	Twsp: 26S	**Range:** 33E	**Section:** 36
	Aliquot: SWNE	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.0206306	**Longitude:** -103.522405	
PPP	**Elevation:** -9167	**MD:** 12689	**TVD:** 12513
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM122622	
	NS-Foot: 330	**NS Indicator:** FSL	
	EW-Foot: 1648	**EW Indicator:** FEL	
	Twsp: 26S	**Range:** 33E	**Section:** 36
	Aliquot: SWNE	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.0209056	**Longitude:** -103.522405	
EXIT	**Elevation:** -9184	**MD:** 19744	**TVD:** 12530
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM122622	
	NS-Foot: 330	**NS Indicator:** FNL	
	EW-Foot: 1651	**EW Indicator:** FEL	
	Twsp: 26S	**Range:** 33E	**Section:** 25
	Aliquot: NWNE	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** LEA
	Latitude: 32.020905	**Longitude:** -103.5224053	
BHL	**Elevation:** -9184	**MD:** 19844	**TVD:** 12530
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM122622	
	NS-Foot: 230	**NS Indicator:** FNL	
	EW-Foot: 1651	**EW Indicator:** FEL	

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Twsp: 26S **Range:** 33E **Section:** 25

Aliquot: NWNE **Lot:** **Tract:**

Drilling Plan

Section 1 - Geologic Formations

ID: Surface formation **Name:** RUSTLER

Lithology(ies):

ANHYDRITE

Elevation: 3345 **True Vertical Depth:** 870 **Measured Depth:** 870

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 1 **Name:** TOP OF SALT

Lithology(ies):

SALT

Elevation: 2135 **True Vertical Depth:** 1210 **Measured Depth:** 1210

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 2 **Name:** BASE OF SALT

Lithology(ies):

SALT

Elevation: -1505 **True Vertical Depth:** 4850 **Measured Depth:** 4850

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 3 **Name:** LAMAR LS

Lithology(ies):

LIMESTONE

Elevation: -1745 **True Vertical Depth:** 5090 **Measured Depth:** 5090

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 4 **Name:** BELL CANYON

Lithology(ies):

SANDSTONE

Elevation: -1770 **True Vertical Depth:** 5115 **Measured Depth:** 5115

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

ID: Formation 5 **Name:** CHERRY CANYON

Lithology(ies):

SANDSTONE

Elevation: -2785 **True Vertical Depth:** 6130 **Measured Depth:** 6130

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

ID: Formation 6 **Name:** BRUSHY CANYON

Lithology(ies):

SANDSTONE

Elevation: -4420 **True Vertical Depth:** 7765 **Measured Depth:** 7765

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

ID: Formation 7 **Name:** BONE SPRING LIME

Lithology(ies):

LIMESTONE

Elevation: -5955 **True Vertical Depth:** 9300 **Measured Depth:** 9300

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 8 **Name:** BONE SPRING 1ST

Lithology(ies):

SANDSTONE

Elevation: -6925 **True Vertical Depth:** 10270 **Measured Depth:** 10270

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

ID: Formation 9 **Name:** BONE SPRING 2ND

Lithology(ies):

SANDSTONE

Elevation: -7420 **True Vertical Depth:** 10765 **Measured Depth:** 10765

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

ID: Formation 10 **Name:** BONE SPRING 3RD

Lithology(ies):

SANDSTONE

Elevation: -8545 **True Vertical Depth:** 11890 **Measured Depth:** 11890

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

ID: Formation 11 **Name:** WOLFCAMP

Lithology(ies):

SHALE

Elevation: -9015 **True Vertical Depth:** 12360 **Measured Depth:** 12360

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 12590

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 (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.
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. Centralizers will be placed in the 9-7/8" hole interval at least one every third joint. 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 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.

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Choke Diagram Attachment:

5 M Choke Manifold Diagram (3-21-14)_06-02-2016.pdf

BOP Diagram Attachment:

5 M BOP Diagram (8-14-14)_06-02-2016.pdf

Section 3 - Casing

String Type: PRODUCTION **Other String Type:**

Hole Size: 6.75

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: 3346

Bottom setting depth MD: 19844 **Bottom setting depth TVD:** 12049

Bottom setting depth MSL: -8703

Calculated casing length MD: 19844

Casing Size: 5.5 **Other Size**

Grade: HCP-110 **Other Grade:**

Weight: 23

Joint Type: OTHER **Other Joint Type:** VAM SG

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.125 **Burst Design Safety Factor:** 1.25

Joint Tensile Design Safety Factor type: BUOYANT **Joint Tensile Design Safety Factor:** 1.6

Body Tensile Design Safety Factor type: BUOYANT **Body Tensile Design Safety Factor:** 1.6

Casing Design Assumptions and Worksheet(s):

708H casing attachments_07-12-2016.pdf

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

String Type: SURFACE **Other String Type:**

Hole Size: 14.75

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: 3346

Bottom setting depth MD: 895 **Bottom setting depth TVD:** 895

Bottom setting depth MSL: 2451

Calculated casing length MD: 895

Casing Size: 10.75 **Other Size**

Grade: J-55 **Other Grade:**

Weight: 40.5

Joint Type: STC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.125 **Burst Design Safety Factor:** 1.25

Joint Tensile Design Safety Factor type: BUOYANT **Joint Tensile Design Safety Factor:** 1.6

Body Tensile Design Safety Factor type: BUOYANT **Body Tensile Design Safety Factor:** 1.6

Casing Design Assumptions and Worksheet(s):

708H casing attachments_07-12-2016.pdf

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

String Type: INTERMEDIATE **Other String Type:**

Hole Size: 8.75

Top setting depth MD: 8000 **Top setting depth TVD:** 8000

Top setting depth MSL: 3346

Bottom setting depth MD: 11300 **Bottom setting depth TVD:** 11300

Bottom setting depth MSL: -7954

Calculated casing length MD: 3300

Casing Size: 7.625 **Other Size**

Grade: HCP-110 **Other Grade:**

Weight: 29.7

Joint Type: OTHER **Other Joint Type:** Flushmax III

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.125 **Burst Design Safety Factor:** 1.25

Joint Tensile Design Safety Factor type: BUOYANT **Joint Tensile Design Safety Factor:** 1.6

Body Tensile Design Safety Factor type: BUOYANT **Body Tensile Design Safety Factor:** 1.6

Casing Design Assumptions and Worksheet(s):

708H casing attachments_07-12-2016.pdf

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

String Type: INTERMEDIATE **Other String Type:**

Hole Size: 9.875

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: 3346

Bottom setting depth MD: 8000 **Bottom setting depth TVD:** 8000

Bottom setting depth MSL: -4654

Calculated casing length MD: 8000

Casing Size: 7.625 **Other Size**

Grade: HCP-110 **Other Grade:**

Weight: 29.7

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.125 **Burst Design Safety Factor:** 1.25

Joint Tensile Design Safety Factor type: BUOYANT **Joint Tensile Design Safety Factor:** 1.6

Body Tensile Design Safety Factor type: BUOYANT **Body Tensile Design Safety Factor:** 1.6

Casing Design Assumptions and Worksheet(s):

708H casing attachments_07-12-2016.pdf

Section 4 - Cement

Casing String Type: SURFACE

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 895 **Cement Type:** Class C

Additives: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl2 + 0.25 lb/sx Cello-Flake (TOC@Surface) **Quantity (sks):** 325 **Yield (cu.ff./sk):** 1.73

Density: 13.5 **Volume (cu.ft.):** 562 **Percent Excess:** 25

Tail

Bottom MD Segment: 895 **Cement Type:** Class C

Top MD of Segment: 0 **Quantity (sks):** 200 **Yield (cu.ff./sk):** 1.34

Additives: Class C + 0.6% FL-62 + 0.25 lb/sx Cello-Flake + 0.2% Sodium Metasilicate **Volume (cu.ft.):** 268 **Percent Excess:** 25

Density: 14.8

Casing String Type: INTERMEDIATE

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 11300 **Cement Type:** Class C

Additives: Class C + 5% Gypsum + 3% CaCl2 **Quantity (sks):** 250 **Yield (cu.ff./sk):** 12.38

Density: 14.8 **Volume (cu.ft.):** 3095 **Percent Excess:** 25

Tail

Bottom MD Segment: 11300 **Cement Type:** Class C

Top MD of Segment: 0 **Quantity (sks):** 2000 **Yield (cu.ff./sk):** 1.38

Additives: Class C + 5% Gypsum + 3% CaCl2 **Volume (cu.ft.):** 2760 **Percent Excess:** 25

Density: 14.8

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 11300 **Cement Type:** Class H

Additives: 50:50 Class H POZ + 0.25% CPT20A + 0.40% CPT49 +0.20% CPT35 + 0.80% CPT16A + 0.25% CPT503P **Quantity (sks):** 550 **Yield (cu.ff./sk):** 1.2

Density: 14.4 **Volume (cu.ft.):** 660 **Percent Excess:** 25

Tail

Bottom MD Segment: **Cement Type:**

Quantity (sks): **Yield (cu.ff./sk):**

Top MD of Segment: 0 **Volume (cu.ft.):** **Percent Excess:** 25

Additives:

Density:

Casing String Type: PRODUCTION

Stage Tool Depth:

Lead

Top MD of Segment: 10800 **Bottom MD Segment:** 19844 **Cement Type:** Class H

Additives: Class H +0.1%C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 **Quantity (sks):** 725 **Yield (cu.ff./sk):** 1.26

Density: 14.1 **Volume (cu.ft.):** 913 **Percent Excess:**

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: 895 **Bottom Depth:** 11300

Mud Type: SALT SATURATED

Min Weight (lbs./gal.): 8.8 **Max Weight (lbs./gal.):** 10

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Top Depth: 11300 **Bottom Depth:** 19844

Mud Type: OIL-BASED MUD

Min Weight (lbs./gal.): 10 **Max Weight (lbs./gal.):** 11.5

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Top Depth: 0 **Bottom Depth:** 895

Mud Type: WATER-BASED MUD

Min Weight (lbs./gal.): 8.6 **Max Weight (lbs./gal.):** 8.8

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

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: 7492 **Anticipated Surface Pressure:** 4735.39

Anticipated Bottom Hole Temperature(F): 182

Anticipated abnormal proessures, 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:

Endurance 36 State Com 708H H2S Plan Summary_06-13-2016.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Endurance 36 State Com 708H Planning Report_06-13-2016.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Co-Flex Hose Test Chart_06-03-2016.pdf
Co-Flex Hose Certification_06-03-2016.PDF
Endurance 36 State Com 708H Well Site Diagram_06-13-2016.pdf
Endurance 36 State Com 708H BLM Drill Plan_07-12-2016.pdf
Endurance 36 State Com 708H Proposed Wellbore_07-12-2016.pdf
Endurance 36 State Com 708H deficiency letter response_07-12-2016.pdf
Endurance 36 State Com 708H deficiency letter response_08-02-2016.pdf

Other Variance attachment:

SUPO

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

708H Exhibit2_06-13-2016.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

708H Exhibit2A_06-13-2016.pdf

New road type: RESOURCE

Length: 288.63 Feet **Width (ft.):** 24

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Max slope (%): 2 **Max grade (%):** 20

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 24

New road access erosion control: Newly constructed or reconstructed roads will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road. We plan to grade and water twice a year.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: 6" of Compacted Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: An adequate amount of topsoil/root zone will be stripped by dozer from the proposed well location and stockpiled along the side of the welllocation as depicted on the well site diagram / survey plat.

Access other construction information:

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: No drainage crossings

Road Drainage Control Structures (DCS) description: N/A

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

708H Exhibit3_06-13-2016.pdf

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Estimated Production Facilities description:

Production Facilities description: This well will produce to a central tank battery on lease.

Production Facilities map:

708H Exhibit5_06-13-2016.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: OTHER **Water source type:** RECYCLED

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: WATER RIGHT

Source land ownership: STATE

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: STATE

Water source volume (barrels): 720000 **Source volume (acre-feet):** 92.80303

Source volume (gal): 30240000

Water source and transportation map:

ENDURANCE FRAC POND TO 707_708 WATERLINE.pdf

Water source comments:

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche utilized for the drilling pad will be obtained either from an existing approved mineral pit, or by benching into a hill, which will allow the pad to be level with existing caliche from the cut, or extracted by "Flipping" the well location. A mineral material permit will be obtained from BLM prior to excavating any caliche on Federal Lands. Amount will vary for each pad.
Construction Materials source location attachment:

Caliche Map_07-12-2016.docx

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drill fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility. Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly. Human waste and grey water will be properly contained of and disposed of properly. After drilling and completion operations; trash, chemicals, salts, frac sand, and other waste material will be removed and disposed of properly at a state approved disposal facility.
Amount of waste: 0 barrels

Waste disposal frequency : Daily

Safe containment description: Steel Tanks

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: Trucked to NMOCD approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Closed Loop System. Drill cuttings will be disposed of into steel tanks and taken to an NMOCD approved disposal facility.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

708H Exhibit2A_06-13-2016.pdf

Comments: Exhibit 2A

Section 10 - Plans for Surface Reclamation

Type of disturbance: NEW

Recontouring attachment:

Drainage/Erosion control construction: Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area.

Drainage/Erosion control reclamation: The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

Wellpad long term disturbance (acres): 3.122 **Wellpad short term disturbance (acres):** 4.029

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Access road long term disturbance (acres): 0.159 **Access road short term disturbance (acres):** 0.159

Pipeline long term disturbance (acres): 0.020661157 **Pipeline short term disturbance (acres):** 0.0573921

Other long term disturbance (acres): 0 **Other short term disturbance (acres):** 0

Total long term disturbance: 3.3016613 **Total short term disturbance:** 4.2453923

Reconstruction method: In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. Areas planned for interim reclamation will be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts and fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.

Soil treatment: Re-seed according to BLM standards. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.

Existing Vegetation at the well pad: Grass, forbs, and small woody vegetation, such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and respreads evenly on the site following topsoil respreading. Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the top 6 inches of soil material, will be stripped and stockpiled on the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils.

Existing Vegetation at the well pad attachment:

708H Exhibit 2B_06-13-2016.pdf

Existing Vegetation Community at the road: All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Stan **Last Name:** Wagner

Phone: (432)686-3689 **Email:** stan_wagner@eogresources.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, erosion is controlled, and free of noxious weeds. Weeds will be treated if found.
Weed treatment plan attachment:

Monitoring plan description: Reclamation will be completed within 6 months of well plugging. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, erosion is controlled, and free of noxious weeds.
Monitoring plan attachment:

Success standards: N/A

Pit closure description: NA

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: NMSLO

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information: OnSite meeting conducted 4/26/16

Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

708H L&E_06-13-2016.pdf

708H Exhibit 2C_06-13-2016.pdf

708H Exhibit 2B_07-12-2016.pdf

Endurance 36 State Com 708H deficiency letter response_07-12-2016.pdf

Endurance 36 State Com 708H Well Site Diagram_07-12-2016.pdf

Endurance 36 State Com 708H deficiency letter response_08-02-2016.pdf

PWD

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

Bond Info

Bond Information

Federal/Indian APD: FED

BLM Bond number: NM2308

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Operator Certification

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Stan Wagner **Signed on:** 06/22/2016

Title: Regulatory Specialsit

Street Address: 5509 Champions Drive

Operator Name: EOG RESOURCES INC

Well Name: ENDURANCE 36 STATE COM **Well Number:** 708H

City: Midland **State:** TX **Zip:** 79702

Phone: (432)686-3689

Email address: Stan_Wagner@eogresources.com

Field Representative

Representative Name: James Barwis

Street Address: 5509 Champions Drive

City: Midland **State:** TX **Zip:** 79706

Phone: (432)425-1204

Email address: james_barwis@eogresources.com

Payment Info

Payment

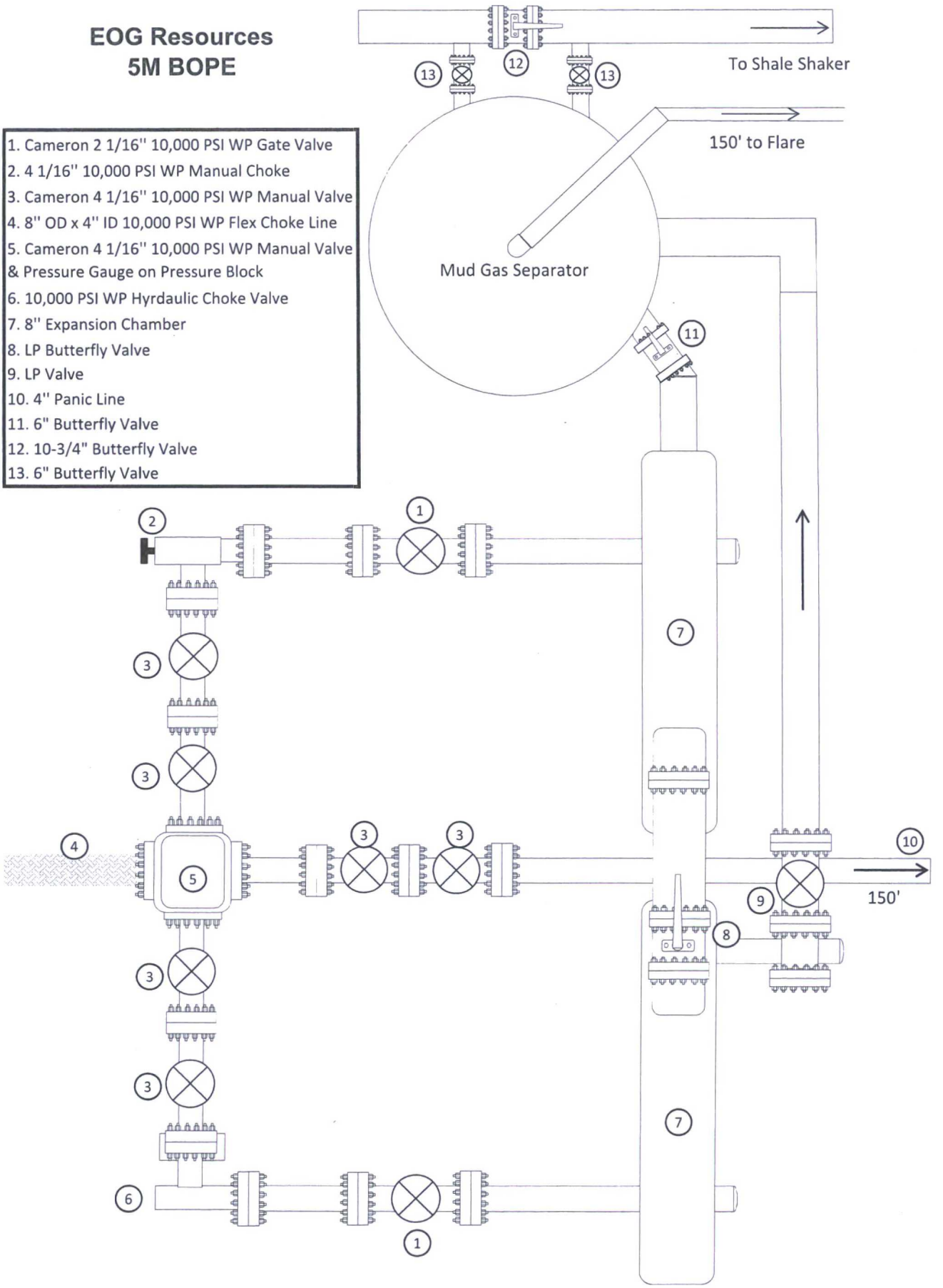
APD Fee Payment Method: BLM DIRECT

CBS Receipt number: 3590014

Exhibit 1a

EOG Resources
5M BOPE

1. Cameron 2 1/16" 10,000 PSI WP Gate Valve
2. 4 1/16" 10,000 PSI WP Manual Choke
3. Cameron 4 1/16" 10,000 PSI WP Manual Valve
4. 8" OD x 4" ID 10,000 PSI WP Flex Choke Line
5. Cameron 4 1/16" 10,000 PSI WP Manual Valve & Pressure Gauge on Pressure Block
6. 10,000 PSI WP Hyrdaulic Choke Valve
7. 8" Expansion Chamber
8. LP Butterfly Valve
9. LP Valve
10. 4" Panic Line
11. 6" Butterfly Valve
12. 10-3/4" Butterfly Valve
13. 6" Butterfly Valve

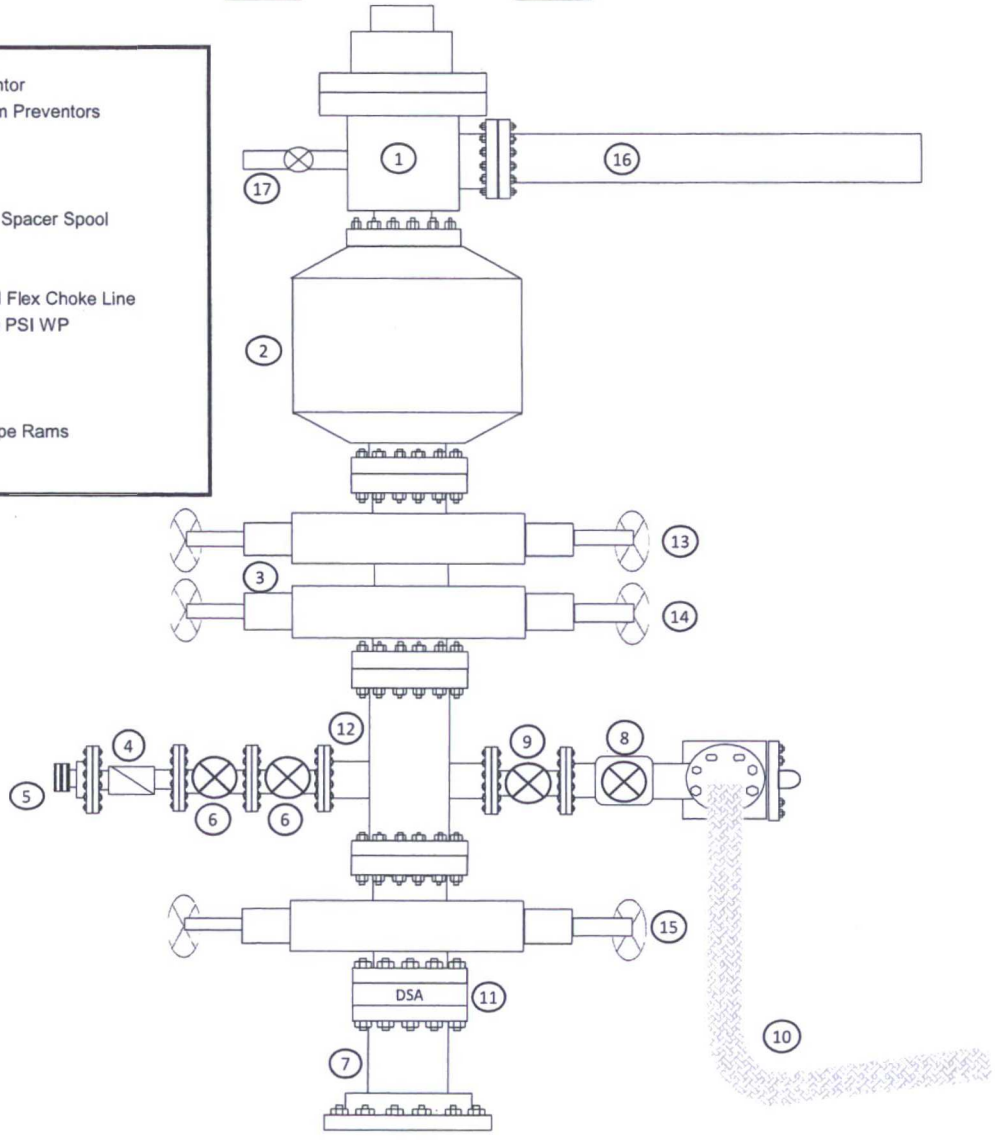


EOG 5M Choke Manifold Diagram (rev. 3/21/14)

Exhibit 1
EOG Resources
5M BOPE

Rig Floor

1. 13 5/8" Rotating Head
2. NOV 13 5/8" 5,000 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



Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: CACTUS

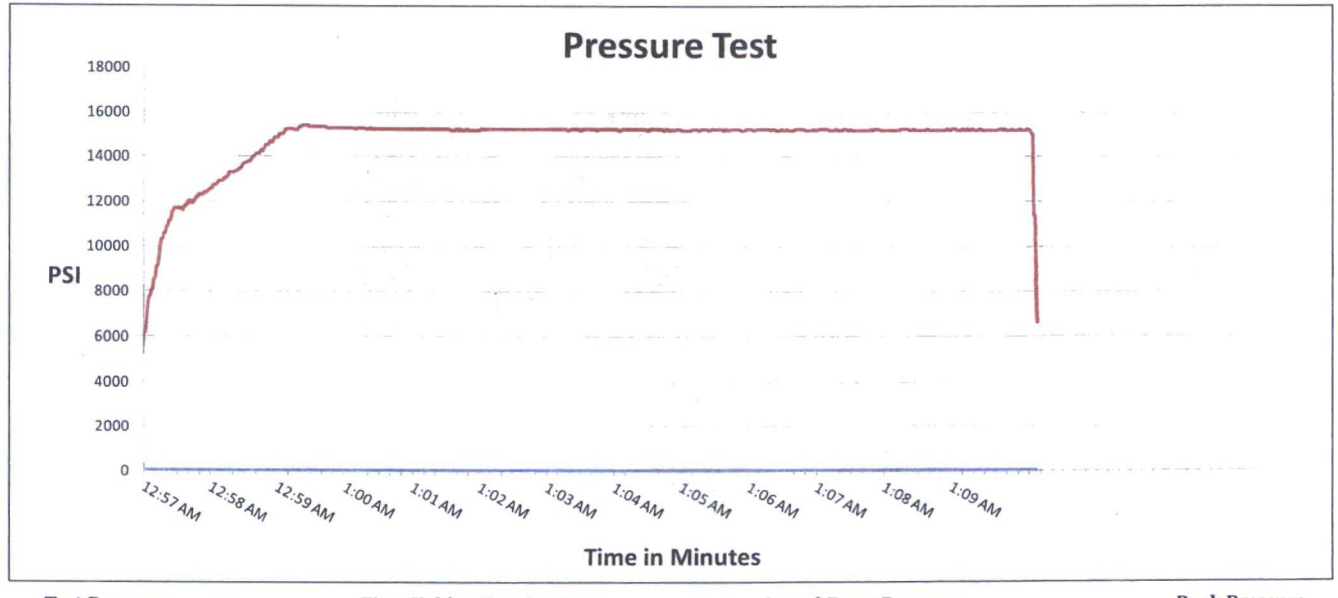
SALES ORDER# 90067

Hose Specifications

Hose Type	Length
C & K	35'
I.D.	**O.D.**
4"	8"
Working Pressure	**Burst Pressure**
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4 1/16 10K	Swage
Die Size	**Final O.D.**
6.62"	6.68"
Hose Serial #	**Hose Assembly Serial #**
	90067



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	11 1/4 Minutes		15439 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Bobby Fink*

Approved By: *Mendi Jackson*

x Mendi Jackson

Manufacturer: Midwest Hose & Specialty

Serial Number: SN#90067

Length: 35'

Size: OD = 8" ID = 4"

Ends: Flanges Size: 4-1/16"

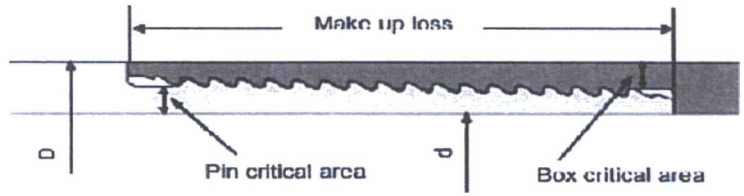
WP Rating: 10,000 psi Anchors required by manfacturer: No

MIDWEST

HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS		**P.O. Number:** RIG #123
		Asset # M10761
HOSE SPECIFICATIONS		
Type: CHOKE LINE		**Length:** 35'
I.D. 4" *INCHES*		**O.D.** 8" *INCHES*
WORKING PRESSURE 10,000 *PSI*	**TEST PRESSURE** 15,000 *PSI*	**BURST PRESSURE** *PSI*
COUPLINGS		
Type of End Fitting 4 1/16 10K FLANGE		
Type of Coupling: SWEDGED	**MANUFACTURED BY** MIDWEST HOSE & SPECIALTY	
PROCEDURE		
Hose assembly pressure tested with water at ambient temperature.		
TIME HELD AT TEST PRESSURE 1 *MIN.*	**ACTUAL BURST PRESSURE:** 0 *PSI*	
COMMENTS: SN#90067 M10761 Hose is covered with stainless steel armour cover and wraped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes		
Date: 6/6/2011	**Tested By:** BOBBY FINK	**Approved:** MENDI JACKSON

Metal One Corp	FLUSHMAX-III Connection Data Sheet	Page	44-0
		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	5,506	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.			

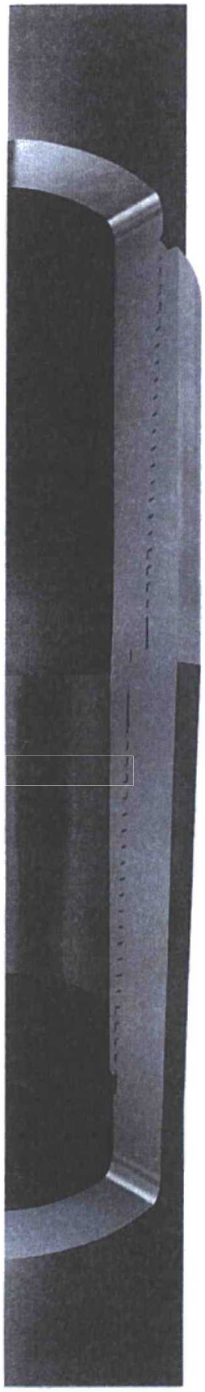
Connection Performance Properties				
Tensile Yield load	563.4	kips	2,506	kN
M.I.Y.P.	7,574	psi	52.2	MPa
Collapse strength	5,350	psi	36.9	MPa

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

VAM SG
Connection Data Sheet



O.D (in)	WEIGHT (lb/ft)	WALL (in)	GRADE	DRIFT	CONNECTION
5.500	23.00	0.415	VST P110EC	4.545	VAM® SG

PIPE PROPERTIES		
Material Grade	VST P110EC	
Min. Yield Strength	125	ksi
Min. Tensile Strength	135	ksi
Nominal OD	5.500	in
Nominal ID	4.670	in
Nominal Area	6.630	sq. in
Yield Strength	829	kips
Ultimate Strength	895	kips
Min Internal Yield	16,510	psi
*High Collapse	16,220	psi

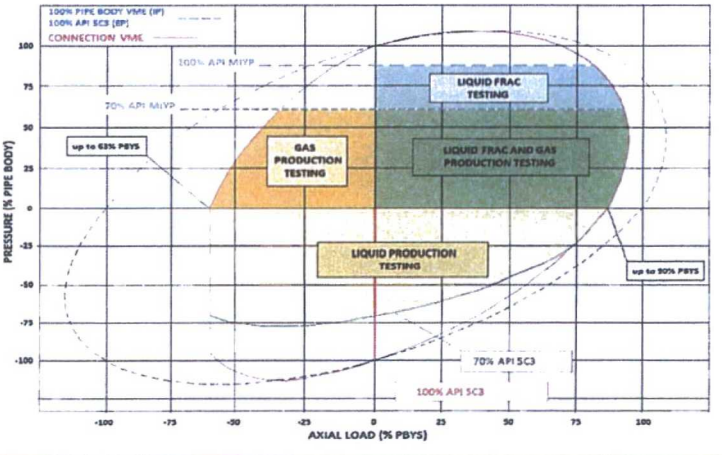
CONNECTION PROPERTIES		
Connection OD	5.720	in
Connection ID	4.603	in
Make up Loss	6.503	in
Connection Critical Area	5.967	sq. in
%PB Section Area	90.0%	
Yield Strength	746	kips
Parting Load	805	kips
Min Internal Yield	16,510	psi
*High Collapse	11,350	psi
Working Compression	522	kips
Max. Bending w/ Sealability	40	°/100 ft

DOCUMENTATION	
Ref. Drawing	SI-PD 100835 Rev.A
Date	11-Aug-14
Time	1:21 PM
Email	tech.support@vam-usa.com

TORQUE VALUES		
Min Make Up Torque	9,100	ft-lb
Opt Make Up Torque	11,200	ft-lb
Max Make Up Torque	13,300	ft-lb
Max Torque w/ Sealability	14,500	ft-lb

The single solution for Shale Play needs

VAM® SG brings VAM® premium sealing performance to a semi-flush connection with extremely high Tension performance and increased Torque capacity, validated to the specific Shale drilling requirements, while remaining highly competitive in North American Shale play economics.



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