

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FEB 21 2020

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.

5. Lease Serial No. NMNM125008
6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

7. If Unit or CA/Agreement, Name and/or No. 327182
8. Well Name and No. PANCHO 17 FEDERAL COM 601H
9. API Well No. 30-015-46603-00-X1
10. Field and Pool or Exploratory Area N SEVEN RIVERS CLOR YESO PENASCO DRAW-PERMO PENN
11. County or Parish, State EDDY COUNTY, NM

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other	
2. Name of Operator EOG RESOURCES INCORPORATED Contact: TINA HUERTA E-Mail: tina_huerta@eogresources.com	
3a. Address MIDLAND, TX 79702	3b. Phone No. (include area code) Ph: 575-748-4168
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 18 T19S R25E SENE 2486FNL 544FEL 32.661556 N Lat, 104.517387 W Lon	

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

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize <input type="checkbox"/> Deepen <input type="checkbox"/> Production (Start/Resume) <input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Reclamation <input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair <input type="checkbox"/> New Construction <input type="checkbox"/> Recomplete <input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Temporarily Abandon <input type="checkbox"/> Change to Original APD
	<input type="checkbox"/> Convert to Injection <input type="checkbox"/> Plug Back <input type="checkbox"/> 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 recomple 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 recomple 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 Resources, Inc. respectfully requests to move the Bottom Hole location and change the name as follows:

From: 1987 FNL & 100 FEL of Section 17-19S-25E
To: 1436 FNL & 100 FEL of Section 17-19S-25E ✓

From: Barb Federal Com 1H
To: Pancho 17 Federal Com 601H - **327182** ✓

The Surface Hole location will remain the same as the approved APD. The formation, casing and cement will change as per attached updated BLM plan. ✓

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

**Electronic Submission #500592 verified by the BLM Well Information System
For EOG RESOURCES INCORPORATED, sent to the Carlsbad
Committed to AFSS for processing by PRISCILLA PEREZ on 01/28/2020 (20PP1045SE)**

Name (Printed/Typed) TINA HUERTA

Title REGULATORY SPECIALIST

Signature (Electronic Submission)

Date 01/24/2020

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JEROMY PORTER

Title PETROLEUM ENGINEER

Date 02/10/2020

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 Carlsbad

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 ****

RWP 2-24-2020

Additional data for EC transaction #500592 that would not fit on the form

32. Additional remarks, continued

Attached is the new C-102 with the new Bottom Hole location and name.

Revisions to Operator-Submitted EC Data for Sundry Notice #500592

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM125008	NMNM125008
Agreement:		
Operator:	EOG RESOURCES INC. 104 SOUTH FOURTH STREET ARTESIA, NM 88210 Ph: 575-748-1471	EOG RESOURCES INCORPORATED MIDLAND, TX 79702 Ph: 432.686.3600
Admin Contact:	TINA HUERTA REGULATORY SPECIALIST E-Mail: tina_huerta@eogresources.com Ph: 575-748-4168	TINA HUERTA REGULATORY SPECIALIST E-Mail: tina_huerta@eogresources.com Ph: 575-748-4168
Tech Contact:	TINA HUERTA REGULATORY SPECIALIST E-Mail: tina_huerta@eogresources.com Ph: 575-748-4168	TINA HUERTA REGULATORY SPECIALIST E-Mail: tina_huerta@eogresources.com Ph: 575-748-4168
Location:		
State:	NM	NM
County:	EDDY	EDDY
Field/Pool:	N.SEVEN RIVERS;GLOR-YESO	N SEVEN RIVERS-GLOR-YESO PENASCO DRAW-PERMO PENN
Well/Facility:	BARB FEDERAL COM 1H Sec 18 T19S R25E SENE 2486FNL 544FEL	PANCHO 17 FEDERAL COM 601H Sec 18 T19S R25E SENE 2486FNL 544FEL 32.661556 N Lat, 104.517387 W Lon

EOG RESOURCES, INC.
PANCHO 17 FEDERAL COM NO. 601H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

San Andres:	550'
Glorieta:	1,996'
Yeso:	2,060'
Abo:	4,170'
Wolfcamp:	5,238'
Target Zone:	7,150'
Horizontal TD	12,653'

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

Glorieta:	1,996'	Oil
Yeso:	2,060'	Oil
Abo:	4,170'	Oil
Wolfcamp:	5,238'	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 9.625" casing at 1250' and circulating cement back to surface.

4. CASING PROGRAM – NEW

EOG Resources requests the approval of 2 casing string and cement designs based on the possibility of lost circulation in the area.

1st Hole & Casing String:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
12.25"	0'-1,250'	9.625"	36#	H-40/J-55	LTC	1.125	1.25	1.60
8.75"	0' -7,528'	5.5"	20#	P-110	BTC	1.125	1.25	1.60
8.5"	7,528-12,653	5.5"	20#	P-110	BTC	1.125	1.25	1.60

EOG RESOURCES, INC.
PANCHO 17 FEDERAL COM NO. 601H

2nd Hole & Casing String:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
12.25"	0'-1,250'	9.625"	36#	H-40/J-55	STC	1.125	1.25	1.60
8.75"	0'-6,500'	7.625"	29.7#	L-80	FLUSHMAX-III	1.125	1.25	1.60
6.75"	0'-12,653'	5 1/2"	20#	P-110	BTC	1.125	1.25	1.60

Cementing Program:

Note: Cement volumes based on bit size plus at least 100% excess on surface, 100% excess in Intermediate and 35% excess in production string.

1st Cement Design:

Depth	No. Sacks	Wt. lb/gal	Yld Ft ³ /ft	Volume Ft ³	Slurry Description
1,250'	255	12.9	1.97	90	Lead: Class 'C' + 4%PF20(Bentonite Gel) + 2%PF1(Calcium Chloride) + 0.125#/skPF29(Celloflake) + 0.4#/skPF45 (Defoamer) 100% Excess (TOC @ Surface)
	210	14.8	1.34	50	Tail: Class 'C' + 2%PF1(Calcium Chloride) (100% excess)
12,653'*	825	11.9	2.47	79	Lead: Class 50/50 PozC + 5%PF44(BWOW)(Salt) + 10% PF20(Bentonite Gel) +.2%PF153(Anti Settling Agent(+ 3#/sk OF42(Kolseal) + 0.125#/sk PF29 (celloflake) + 0.4#/sk PF45 (Defoamer) (TOC @ 200' into previous casing string) 35% Excess
	1430	13	1.48	289	Tail: Class PVL + 1.3% PF44(BWOW)(Salt) + 5% PF174 (Expanding Cement) + 0.5% PF606 (Fluid Loss) + 0.1% PF153 (Anti Settling Agent) + 0.4#/sk PF45 (Defoamer) 35% Excess

*Cement could be done in 2 stages if losses in the wellbore are encountered. DV/PKR stage tool placement will be placed above loss zone. Cement volumes will be adjusted accordingly.

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2nd Cement Design:

Depth	No. Sacks	Wt. lb/gal	Yld Ft ³ /ft	Volume Ft ³	Slurry Description
1,250'	255	12.9	1.97	90	Lead: Class 'C' + 4%PF20(Bentonite Gel) + 2%PF1(Calcium Chloride) + 0.125#/skPF29(Celloflake) + 0.4#/skPF45 (Defoamer) 100% Excess (TOC @ Surface)
	210	14.8	1.34	50	Tail: Class 'C' + 2%PF1(Calcium Chloride) (100% excess)
6,500'*	360	12.8	1.79	112	Lead: 35:65 Poz C + .02 gal/sk Anti Foam + 1% Extender + .13 lb/sk Lost Circulation (TOC @ Surface) (100% Excess)
	200	14.8	1.34	48	Tail: Class C + 0.13% Anti Foam
12,653'*	215	11.9	2.47	79	Lead: Class 50/50 PozC + 5%PF44(BWOW)(Salt) + 10% PF20(Bentonite Gel) +.2%PF153(Anti Settling Agent(+ 3#/sk OF42(Kolseal) + 0.125#/sk PF29 (celloflake) + 0.4#/sk PF45 (Defoamer) (TOC @ 200' into previous casing string) 35% Excess
	1095	13	1.48	289	Tail: Class PVL + 1.3% PF44(BWOW)(Salt) + 5% PF174 (Expanding Cement) + 0.5% PF606 (Fluid Loss) + 0.1% PF153 (Anti Settling Agent) + 0.4#/sk PF45 (Defoamer) 35% Excess

* Cement could be done in 2 stages if losses in the wellbore are encountered. DV/PKR stage tool placement will be placed above loss zone. Cement volumes will be adjusted accordingly.

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

A variance is requested to use a co-flex line between the BOP and choke manifold, dependent on rig selection (instead of using a steel line). Certification and specs are attached.

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a double rams with blind rams & pipe rams preventer (5,000 psi WP) and an annular preventer (5,000-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 5,000/ 250 psig and the annular preventer to 2,500/ 250 psig. The surface casing will be tested to 1200 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 surface casing shoe.

**EOG RESOURCES, INC.
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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 – 1,250'	Fresh Water	8.6-8.8	28-32	N/c
1,250' – 12,653' Vertical/Curve/Lateral	Cut Brine	8.8-9.5	30-34	N/c - 6

The highest mud weight needed to balance formation is expected to be 9.5 ppg. In order to maintain hole stability, mud weights up to 9.5 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) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.

8. LOGGING, TESTING AND CORING PROGRAM:

GR-Directional surveys will be run in open hole during drilling phase of operations of the entire wellbore out from under surface casing.

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

The estimated bottom-hole temperature (BHT) at TD is 115 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of the horizontal of 3547 psig (based on 9.5 ppg MW). Hydrogen sulfide has been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from spud to surface 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. After WOC 8 hours or 500 psi compressive strength (whichever is greater), the Surface Rig will move off so the wellhead can be installed. A welder will cut the casing to the proper height and weld on the wellhead (both "A" and "B" sections). The weld will be tested to 1000 psi. All valves will be closed and a wellhead cap will be installed (diagram attached). 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.

EOG RESOURCES, INC.
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11. WELLHEAD:

A multi-bowl wellhead system will be utilized.

After running the 9-5/8" surface casing, a 9 5/8" BOP/BOPE system with a minimum working pressure of 5,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5,000 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 5,000 psi.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Stream Flo HES 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.

The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.



EOG Resources - Artesia

Eddy County (NAD83)

Pancho

Pancho 17 Federal Com #601H

Lateral

Plan: Plan #2

Standard Planning Report

21 January, 2020



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well Pancho 17 Federal Com #601H
Company:	EOG Resources - Artesia	TVD Reference:	KB @ 3572.00usft (Training Rig)
Project:	Eddy County (NAD83)	MD Reference:	KB @ 3572.00usft (Training Rig)
Site:	Pancho	North Reference:	Grid
Well:	Pancho 17 Federal Com #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Project	Eddy County (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Pancho		
Site Position:	Map	Northing:	604,454.00 usft
From:		Easting:	484,697.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 39' 41.600 N
		Longitude:	104° 31' 2.587 W
		Grid Convergence:	-0.10 °

Well	Pancho 17 Federal Com #601H			
Well Position	+N/-S	0.00 usft	Northing:	604,454.00 usft
	+E/-W	0.00 usft	Easting:	484,697.00 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level:
				3,554.00 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2015	1/21/2020	7.15	60.28	47,826.87468511

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	80.00

Plan Survey Tool Program	Date	1/21/2020		
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks
(usft)	(usft)			
1	0.00	12,652.47	Plan #2 (Lateral)	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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,027.15	12.54	9.76	2,022.15	67.38	11.59	2.00	2.00	0.00	9.76	
6,153.88	12.54	9.76	6,050.39	950.62	163.55	0.00	0.00	0.00	0.00	
6,781.03	0.00	360.00	6,672.54	1,018.00	175.14	2.00	-2.00	0.00	180.00	
6,781.03	0.00	360.00	6,672.54	1,018.00	175.14	0.00	0.00	0.00	0.00	
7,528.23	89.66	90.00	7,150.00	1,018.00	649.81	12.00	12.00	12.04	90.00	
12,652.51	89.66	90.00	7,180.00	1,018.00	5,774.00	0.00	0.00	0.00	0.00	[P17FC#1H]PBHL



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well, Pancho 17 Federal Com #601H
Company:	EOG Resources - Artesia	TVD Reference:	KB @ 3572.00usft (Training Rig)
Project:	Eddy County (NAD83)	MD Reference:	KB @ 3572.00usft (Training Rig)
Site:	Pancho	North Reference:	Grid
Well:	Pancho 17 Federal Com #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Planned Survey						Vertical Section	Dogleg Rate	Build Rate	Turn Rate
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	2.00	9.76	1,499.98	1.72	0.30	0.59	2.00	2.00	0.00
1,600.00	4.00	9.76	1,599.84	6.88	1.18	2.36	2.00	2.00	0.00
1,700.00	6.00	9.76	1,699.45	15.47	2.66	5.31	2.00	2.00	0.00
1,800.00	8.00	9.76	1,798.70	27.48	4.73	9.43	2.00	2.00	0.00
1,900.00	10.00	9.76	1,897.47	42.89	7.38	14.71	2.00	2.00	0.00
2,000.00	12.00	9.76	1,995.62	61.70	10.61	21.17	2.00	2.00	0.00
2,027.15	12.54	9.76	2,022.15	67.38	11.59	23.12	2.00	2.00	0.00
2,100.00	12.54	9.76	2,093.26	82.98	14.28	28.47	0.00	0.00	0.00
2,200.00	12.54	9.76	2,190.88	104.38	17.96	35.81	0.00	0.00	0.00
2,300.00	12.54	9.76	2,288.49	125.78	21.64	43.15	0.00	0.00	0.00
2,400.00	12.54	9.76	2,386.10	147.18	25.32	50.49	0.00	0.00	0.00
2,500.00	12.54	9.76	2,483.72	168.59	29.00	57.84	0.00	0.00	0.00
2,600.00	12.54	9.76	2,581.33	189.99	32.69	65.18	0.00	0.00	0.00
2,700.00	12.54	9.76	2,678.94	211.39	36.37	72.52	0.00	0.00	0.00
2,800.00	12.54	9.76	2,776.56	232.79	40.05	79.86	0.00	0.00	0.00
2,900.00	12.54	9.76	2,874.17	254.20	43.73	87.20	0.00	0.00	0.00
3,000.00	12.54	9.76	2,971.78	275.60	47.42	94.55	0.00	0.00	0.00
3,100.00	12.54	9.76	3,069.40	297.00	51.10	101.89	0.00	0.00	0.00
3,200.00	12.54	9.76	3,167.01	318.41	54.78	109.23	0.00	0.00	0.00
3,300.00	12.54	9.76	3,264.62	339.81	58.46	116.57	0.00	0.00	0.00
3,400.00	12.54	9.76	3,362.24	361.21	62.14	123.92	0.00	0.00	0.00
3,500.00	12.54	9.76	3,459.85	382.61	65.83	131.26	0.00	0.00	0.00
3,600.00	12.54	9.76	3,557.46	404.02	69.51	138.60	0.00	0.00	0.00
3,700.00	12.54	9.76	3,655.08	425.42	73.19	145.94	0.00	0.00	0.00
3,800.00	12.54	9.76	3,752.69	446.82	76.87	153.29	0.00	0.00	0.00
3,900.00	12.54	9.76	3,850.30	468.23	80.55	160.63	0.00	0.00	0.00
4,000.00	12.54	9.76	3,947.92	489.63	84.24	167.97	0.00	0.00	0.00
4,100.00	12.54	9.76	4,045.53	511.03	87.92	175.31	0.00	0.00	0.00
4,200.00	12.54	9.76	4,143.14	532.43	91.60	182.66	0.00	0.00	0.00
4,300.00	12.54	9.76	4,240.76	553.84	95.28	190.00	0.00	0.00	0.00
4,400.00	12.54	9.76	4,338.37	575.24	98.97	197.34	0.00	0.00	0.00
4,500.00	12.54	9.76	4,435.98	596.64	102.65	204.68	0.00	0.00	0.00
4,600.00	12.54	9.76	4,533.60	618.04	106.33	212.03	0.00	0.00	0.00
4,700.00	12.54	9.76	4,631.21	639.45	110.01	219.37	0.00	0.00	0.00
4,800.00	12.54	9.76	4,728.82	660.85	113.69	226.71	0.00	0.00	0.00
4,900.00	12.54	9.76	4,826.44	682.25	117.38	234.05	0.00	0.00	0.00
5,000.00	12.54	9.76	4,924.05	703.66	121.06	241.40	0.00	0.00	0.00
5,100.00	12.54	9.76	5,021.66	725.06	124.74	248.74	0.00	0.00	0.00
5,200.00	12.54	9.76	5,119.28	746.46	128.42	256.08	0.00	0.00	0.00



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well Pancho 17 Federal Com #601H
Company:	EOG Resources - Artesia	TVD Reference:	KB @ 3572.00usft (Training Rig)
Project:	Eddy County (NAD83)	MD Reference:	KB @ 3572.00usft (Training Rig)
Site:	Pancho	North Reference:	Grid
Well:	Pancho 17 Federal Com #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Planned Survey						Vertical Section	Dogleg Rate	Build Rate	Turn Rate
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
5,300.00	12.54	9.76	5,216.89	767.86	132.11	263.42	0.00	0.00	0.00
5,400.00	12.54	9.76	5,314.50	789.27	135.79	270.77	0.00	0.00	0.00
5,500.00	12.54	9.76	5,412.12	810.67	139.47	278.11	0.00	0.00	0.00
5,600.00	12.54	9.76	5,509.73	832.07	143.15	285.45	0.00	0.00	0.00
5,700.00	12.54	9.76	5,607.34	853.48	146.83	292.79	0.00	0.00	0.00
5,800.00	12.54	9.76	5,704.96	874.88	150.52	300.14	0.00	0.00	0.00
5,900.00	12.54	9.76	5,802.57	896.28	154.20	307.48	0.00	0.00	0.00
6,000.00	12.54	9.76	5,900.18	917.68	157.88	314.82	0.00	0.00	0.00
6,100.00	12.54	9.76	5,997.80	939.09	161.56	322.16	0.00	0.00	0.00
6,153.88	12.54	9.76	6,050.39	950.62	163.55	326.12	0.00	0.00	0.00
6,200.00	11.62	9.76	6,095.49	960.13	165.18	329.38	2.00	-2.00	0.00
6,300.00	9.62	9.76	6,193.77	978.29	168.31	335.61	2.00	-2.00	0.00
6,400.00	7.62	9.76	6,292.64	993.06	170.85	340.68	2.00	-2.00	0.00
6,500.00	5.62	9.76	6,391.96	1,004.43	172.80	344.58	2.00	-2.00	0.00
6,600.00	3.62	9.76	6,491.63	1,012.37	174.17	347.30	2.00	-2.00	0.00
6,700.00	1.62	9.76	6,591.53	1,016.87	174.95	348.85	2.00	-2.00	0.00
6,781.03	0.00	0.00	6,672.54	1,018.00	175.14	349.23	2.00	-2.00	0.00
KOP 12°/100' BR									
6,800.00	2.28	90.00	6,691.51	1,018.00	175.52	349.61	12.00	12.00	0.00
6,825.00	5.28	90.00	6,716.45	1,018.00	177.16	351.23	12.00	12.00	0.00
6,850.00	8.28	90.00	6,741.27	1,018.00	180.11	354.13	12.00	12.00	0.00
6,875.00	11.28	90.00	6,765.91	1,018.00	184.36	358.31	12.00	12.00	0.00
6,900.00	14.28	90.00	6,790.29	1,018.00	189.89	363.76	12.00	12.00	0.00
6,925.00	17.28	90.00	6,814.34	1,018.00	196.68	370.45	12.00	12.00	0.00
6,950.00	20.28	90.00	6,838.01	1,018.00	204.73	378.37	12.00	12.00	0.00
6,975.00	23.28	90.00	6,861.22	1,018.00	214.00	387.51	12.00	12.00	0.00
7,000.00	26.28	90.00	6,883.92	1,018.00	224.48	397.82	12.00	12.00	0.00
7,025.00	29.28	90.00	6,906.04	1,018.00	236.13	409.30	12.00	12.00	0.00
7,050.00	32.28	90.00	6,927.51	1,018.00	248.92	421.89	12.00	12.00	0.00
7,075.00	35.28	90.00	6,948.29	1,018.00	262.82	435.58	12.00	12.00	0.00
7,100.00	38.28	90.00	6,968.31	1,018.00	277.78	450.32	12.00	12.00	0.00
7,125.00	41.28	90.00	6,987.52	1,018.00	293.78	466.07	12.00	12.00	0.00
7,150.00	44.28	90.00	7,005.87	1,018.00	310.75	482.79	12.00	12.00	0.00
7,175.00	47.28	90.00	7,023.31	1,018.00	328.67	500.43	12.00	12.00	0.00
7,200.00	50.28	90.00	7,039.78	1,018.00	347.47	518.94	12.00	12.00	0.00
7,225.00	53.28	90.00	7,055.24	1,018.00	367.11	538.28	12.00	12.00	0.00
7,250.00	56.28	90.00	7,069.66	1,018.00	387.53	558.39	12.00	12.00	0.00
7,275.00	59.28	90.00	7,082.99	1,018.00	408.67	579.22	12.00	12.00	0.00
7,300.00	62.28	90.00	7,095.19	1,018.00	430.49	600.70	12.00	12.00	0.00
7,325.00	65.28	90.00	7,106.24	1,018.00	452.91	622.79	12.00	12.00	0.00
7,350.00	68.28	90.00	7,116.10	1,018.00	475.88	645.41	12.00	12.00	0.00
7,375.00	71.28	90.00	7,124.74	1,018.00	499.34	668.51	12.00	12.00	0.00
7,400.00	74.28	90.00	7,132.14	1,018.00	523.22	692.03	12.00	12.00	0.00
7,425.00	77.28	90.00	7,138.28	1,018.00	547.45	715.89	12.00	12.00	0.00
7,450.00	80.28	90.00	7,143.15	1,018.00	571.97	740.03	12.00	12.00	0.00
7,475.00	83.28	90.00	7,146.72	1,018.00	596.71	764.40	12.00	12.00	0.00
7,500.00	86.28	90.00	7,149.00	1,018.00	621.60	788.91	12.00	12.00	0.00
7,525.00	89.28	90.00	7,149.97	1,018.00	646.58	813.51	12.00	12.00	0.00
7,528.23	89.66	90.00	7,150.00	1,018.00	649.81	816.69	12.00	12.00	0.00
[P18FC#1H]EOC 7528' MD (7150 TVD)									
7,600.00	89.66	90.00	7,150.42	1,018.00	721.58	887.37	0.00	0.00	0.00
7,700.00	89.66	90.00	7,151.00	1,018.00	821.58	985.85	0.00	0.00	0.00
7,800.00	89.66	90.00	7,151.59	1,018.00	921.57	1,084.33	0.00	0.00	0.00



Planning Report

Database:	EDM	Local Co-ordinate Reference:	Well Pancho 17 Federal Com #601H
Company:	EOG Resources - Artesia	TVD Reference:	KB @ 3572.00usft (Training Rig)
Project:	Eddy County (NAD83)	MD Reference:	KB @ 3572.00usft (Training Rig)
Site:	Pancho	North Reference:	Grid
Well:	Pancho 17 Federal Com #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

Planned Survey						Vertical Section	Dogleg Rate	Build Rate	Turn Rate
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
7,900.00	89.66	90.00	7,152.17	1,018.00	1,021.57	1,182.81	0.00	0.00	0.00
8,000.00	89.66	90.00	7,152.76	1,018.00	1,121.57	1,281.29	0.00	0.00	0.00
8,100.00	89.66	90.00	7,153.34	1,018.00	1,221.57	1,379.77	0.00	0.00	0.00
8,200.00	89.66	90.00	7,153.93	1,018.00	1,321.57	1,478.25	0.00	0.00	0.00
8,300.00	89.66	90.00	7,154.52	1,018.00	1,421.57	1,576.73	0.00	0.00	0.00
8,400.00	89.66	90.00	7,155.10	1,018.00	1,521.56	1,675.21	0.00	0.00	0.00
8,500.00	89.66	90.00	7,155.69	1,018.00	1,621.56	1,773.69	0.00	0.00	0.00
8,600.00	89.66	90.00	7,156.27	1,018.00	1,721.56	1,872.17	0.00	0.00	0.00
8,700.00	89.66	90.00	7,156.86	1,018.00	1,821.56	1,970.65	0.00	0.00	0.00
8,800.00	89.66	90.00	7,157.44	1,018.00	1,921.56	2,069.13	0.00	0.00	0.00
8,900.00	89.66	90.00	7,158.03	1,018.00	2,021.56	2,167.61	0.00	0.00	0.00
9,000.00	89.66	90.00	7,158.61	1,018.00	2,121.55	2,266.08	0.00	0.00	0.00
9,100.00	89.66	90.00	7,159.20	1,018.00	2,221.55	2,364.56	0.00	0.00	0.00
9,200.00	89.66	90.00	7,159.79	1,018.00	2,321.55	2,463.04	0.00	0.00	0.00
9,300.00	89.66	90.00	7,160.37	1,018.00	2,421.55	2,561.52	0.00	0.00	0.00
9,400.00	89.66	90.00	7,160.96	1,018.00	2,521.55	2,660.00	0.00	0.00	0.00
9,500.00	89.66	90.00	7,161.54	1,018.00	2,621.55	2,758.48	0.00	0.00	0.00
9,600.00	89.66	90.00	7,162.13	1,018.00	2,721.54	2,856.96	0.00	0.00	0.00
9,700.00	89.66	90.00	7,162.71	1,018.00	2,821.54	2,955.44	0.00	0.00	0.00
9,800.00	89.66	90.00	7,163.30	1,018.00	2,921.54	3,053.92	0.00	0.00	0.00
9,900.00	89.66	90.00	7,163.88	1,018.00	3,021.54	3,152.40	0.00	0.00	0.00
10,000.00	89.66	90.00	7,164.47	1,018.00	3,121.54	3,250.88	0.00	0.00	0.00
10,100.00	89.66	90.00	7,165.05	1,018.00	3,221.53	3,349.36	0.00	0.00	0.00
10,200.00	89.66	90.00	7,165.64	1,018.00	3,321.53	3,447.84	0.00	0.00	0.00
10,300.00	89.66	90.00	7,166.23	1,018.00	3,421.53	3,546.32	0.00	0.00	0.00
10,400.00	89.66	90.00	7,166.81	1,018.00	3,521.53	3,644.80	0.00	0.00	0.00
10,500.00	89.66	90.00	7,167.40	1,018.00	3,621.53	3,743.28	0.00	0.00	0.00
10,600.00	89.66	90.00	7,167.98	1,018.00	3,721.53	3,841.76	0.00	0.00	0.00
10,700.00	89.66	90.00	7,168.57	1,018.00	3,821.52	3,940.23	0.00	0.00	0.00
10,800.00	89.66	90.00	7,169.15	1,018.00	3,921.52	4,038.71	0.00	0.00	0.00
10,900.00	89.66	90.00	7,169.74	1,018.00	4,021.52	4,137.19	0.00	0.00	0.00
11,000.00	89.66	90.00	7,170.32	1,018.00	4,121.52	4,235.67	0.00	0.00	0.00
11,100.00	89.66	90.00	7,170.91	1,018.00	4,221.52	4,334.15	0.00	0.00	0.00
11,200.00	89.66	90.00	7,171.50	1,018.00	4,321.52	4,432.63	0.00	0.00	0.00
11,300.00	89.66	90.00	7,172.08	1,018.00	4,421.51	4,531.11	0.00	0.00	0.00
11,400.00	89.66	90.00	7,172.67	1,018.00	4,521.51	4,629.59	0.00	0.00	0.00
11,500.00	89.66	90.00	7,173.25	1,018.00	4,621.51	4,728.07	0.00	0.00	0.00
11,600.00	89.66	90.00	7,173.84	1,018.00	4,721.51	4,826.55	0.00	0.00	0.00
11,700.00	89.66	90.00	7,174.42	1,018.00	4,821.51	4,925.03	0.00	0.00	0.00
11,800.00	89.66	90.00	7,175.01	1,018.00	4,921.51	5,023.51	0.00	0.00	0.00
11,900.00	89.66	90.00	7,175.59	1,018.00	5,021.50	5,121.99	0.00	0.00	0.00
12,000.00	89.66	90.00	7,176.18	1,018.00	5,121.50	5,220.47	0.00	0.00	0.00
12,100.00	89.66	90.00	7,176.77	1,018.00	5,221.50	5,318.95	0.00	0.00	0.00
12,200.00	89.66	90.00	7,177.35	1,018.00	5,321.50	5,417.43	0.00	0.00	0.00
12,300.00	89.66	90.00	7,177.94	1,018.00	5,421.50	5,515.91	0.00	0.00	0.00
12,400.00	89.66	90.00	7,178.52	1,018.00	5,521.50	5,614.38	0.00	0.00	0.00
12,500.00	89.66	90.00	7,179.11	1,018.00	5,621.49	5,712.86	0.00	0.00	0.00
12,600.00	89.66	90.00	7,179.69	1,018.00	5,721.49	5,811.34	0.00	0.00	0.00
12,652.51	89.66	90.00	7,180.00	1,018.00	5,774.00	5,863.05	0.00	0.00	0.00

[P18FC#1H]BHL 12653' MD (7180 TVD)



Database:	EDM	Local Co-ordinate Reference:	Well Pancho 17 Federal Com #601H
Company:	EOG Resources - Artesia	TVD Reference:	KB @ 3572.00usft (Training Rig)
Project:	Eddy County (NAD83)	MD Reference:	KB @ 3572.00usft (Training Rig)
Site:	Pancho	North Reference:	Grid
Well:	Pancho 17 Federal Com #601H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #2		

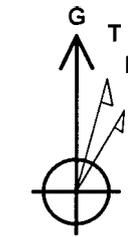
Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
[P17FC#1H]JUMP - plan misses target center by 70.00usft at 7528.42usft MD (7150.00 TVD, 1018.00 N, 650.00 E) - Point	0.00	360.00	7,150.00	948.00	650.00	605,402.00	485,347.00	32° 39' 50.992 N	104° 30' 55.002 W
[P17FC#1H]PBHL - plan hits target center - Point	0.00	0.00	7,180.00	1,018.00	5,774.00	605,472.00	490,471.00	32° 39' 51.767 N	104° 29' 55.061 W

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,781.03	6,672.54	1,018.00	175.14	KOP 12°/100' BR
7,528.23	7,150.00	1,018.00	649.81	[P18FC#1H]EOC 7528' MD (7150 TVD)
12,652.51	7,180.00	1,018.00	5,774.00	[P18FC#1H]BHL 12653' MD (7180 TVD)

Project: Eddy County (NAD83)
 Site: Pancho
 Well: Pancho 17 Federal Com #601H
 Wellbore: Lateral
 Design: Plan #2
 Ground Elevation 3554.00
 Northing 604454.00
 Easting 484697.00
 KB @ 3572.00usft (Training Rig)

PROJECT DETAILS: Eddy County (NAD83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level



Azimuths to Grid North
 True North: 0.10°
 Magnetic North: 7.24°

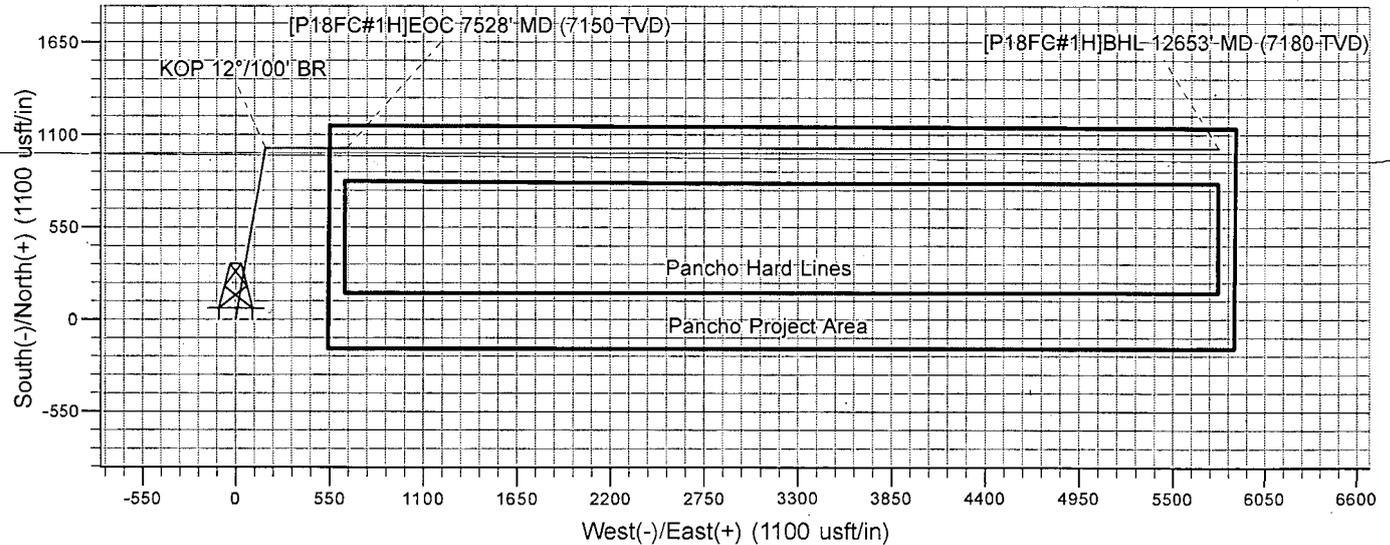
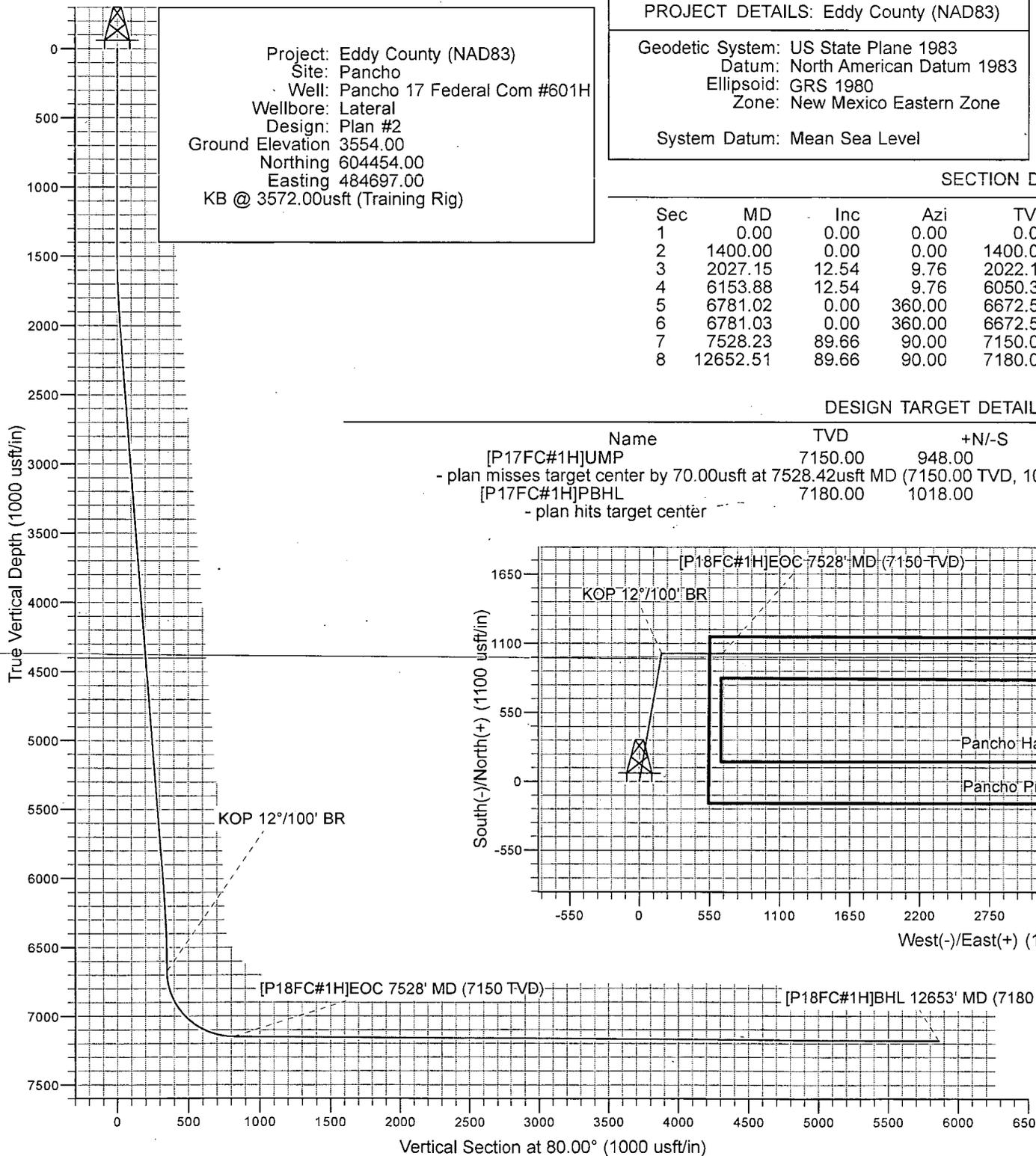
Magnetic Field
 Strength: 47826.9nT
 Dip Angle: 60.28°
 Date: 1/21/2020
 Model: IGRF2015

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	0.00
3	2027.15	12.54	9.76	2022.15	67.38	11.59	2.00	9.76	23.12
4	6153.88	12.54	9.76	6050.39	950.62	163.55	0.00	0.00	326.12
5	6781.02	0.00	360.00	6672.54	1018.00	175.14	2.00	180.00	349.23
6	6781.03	0.00	360.00	6672.54	1018.00	175.14	0.00	0.00	349.23
7	7528.23	89.66	90.00	7150.00	1018.00	649.81	12.00	90.00	816.69
8	12652.51	89.66	90.00	7180.00	1018.00	5774.00	0.00	0.00	5863.05

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
[P17FC#1H]JUMP	7150.00	948.00	650.00	605402.00	485347.00
- plan misses target center by 70.00usft at 7528.42usft MD (7150.00 TVD, 1018.00 N, 650.00 E)					
[P17FC#1H]PBHL	7180.00	1018.00	5774.00	605472.00	490471.00
- plan hits target center					



Tina Huerta

From: jjporter@blm.gov
Sent: Monday, February 10, 2020 2:50 PM
To: Tina Huerta
Subject: Well PANCHO 17 FEDERAL COM 601H
Attachments: Pancho 17 Federal COM 601H_Drilling COAs.pdf; EC500592.pdf

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

The sundry for Change to Original APD you submitted has been approved by the BLM. Your original Electronic Commerce (EC) transmission was assigned ID 500592. Please be sure to open and save all attachments to this message, since they contain important information.

02/10/2020

All previous COAs still apply, except for the following:
Approved with Conditions by Jeromy Porter Please see Attached COAs

**PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	EOG RESOURCES INCORPORATED
LEASE NO.:	NMNM125008
WELL NAME & NO.:	PANCHO 17 FEDERAL COM 601H
SURFACE HOLE FOOTAGE:	2486'/N & 544'/E
BOTTOM HOLE FOOTAGE:	1436'/N & 100'/E
LOCATION:	SECTION 18, T19S, R25E, NMPM
COUNTY:	EDDY

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP

All previous COAs still apply, except for the following:

A. CASING

Primary Design

1. The 9 5/8" surface casing shall be set at approximately 1,250' and cemented to surface.
 - a. **If cement does not circulate to 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 **6 hours** after pumping cement, ideally between 8-10 hours after completing the cement job.
 - b. WOC time for a primary cement job will be a minimum of **8 hours** or **500 psi** compressive strength, whichever is greater. This is to include the lead cement.
 - c. If cement falls back, remedial cementing will be done prior to drilling out that string.
 - d. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.

1. The minimum required fill of cement behind the 7 X 5 1/2 " production casing is:

Option1

- 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.**

Option 2

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office. **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.**

Alternate Design

- The 9 5/8" surface casing shall be set at approximately 1,250' and cemented to surface.
 - If cement does not circulate to 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 **6 hours** after pumping cement, ideally between 8-10 hours after completing the cement job.
 - WOC time for a primary cement job will be a minimum of **8 hours** or **500 psi** compressive strength, whichever is greater. This is to include the lead cement.
 - If cement falls back, remedial cementing will be done prior to drilling out that string.
 - WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.
- The minimum required fill of cement behind the 7 5/8" intermediate casing is:

Option1

- 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.**

Option 2

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

d. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **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.**

4. The minimum required fill of cement behind the 5 1/2" production casing is:

- Cement must tie back at least **200** ft into previous casing. If cement does not circulate see B.1.a, c-d above.

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).
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

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.

JJP02102020

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)

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).

- b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

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 integrity 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 integrity 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. 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.
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 not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - 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. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. 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 if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. 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.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

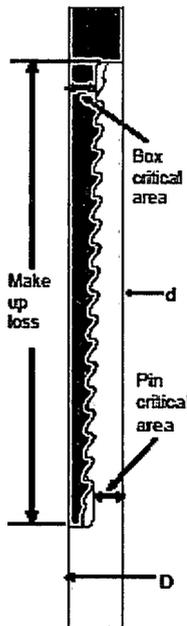
D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

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FLUSHMAX-III	Geometry		Imperial		S.I.	
	Pipe Body					
Grade	L80 / N80		L80 / N80			
Pipe OD (D)	7 5/8	in	193.68	mm		
Weight	29.70	lb/ft	44.20	kg/m		
Actual weight	29.04		43.21	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	
Make up Loss	3.040	in	77.22	mm	
Box Critical Area	4.424	in ²	2,854	mm ²	
Joint load efficiency	60	%	60	%	
Thread Taper	1 / 16 (3/4" per ft)				
Number of Threads	5 TPI				

Performance					
Performance Properties for Pipe Body					
S.M.Y.S.	683	kips	3,038	kN	
M.I.Y.P.	6,890	psi	47.52	MPa	
Collapse Strength	4,790	psi	33.03	MPa	

Note S.M.Y.S. = Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

Performance Properties for Connection					
Tensile Yield load	410 kips (60% of S.M.Y.S.)				
Min. Compression Yield	410 kips (60% of S.M.Y.S.)				
Internal Pressure	5,510 psi (80% of M.I.Y.P.)				
External Pressure	100% of Collapse Strength				
Max. DLS (deg. /100ft)	18				

Recommended Torque					
Min.	11,200	ft-lb	15,100	N-m	
Opti.	12,400	ft-lb	16,800	N-m	
Max.	13,600	ft-lb	18,400	N-m	
Operational Max.	17,000	ft-lb	23,000	N-m	

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

Legal Notice

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Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.metalone.com/InnovativeWebsiteTerms_Active_20130227_1.2 the contents of which are incorporated by reference into this Connection Data Sheet.