

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

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

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. NM-112915
6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2.

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

8. Well Name and No.
Forehand Ranch 27 State Com # 1H

9. API Well No. 30-015-39844

10. Field and Pool or Exploratory Area
Wildcat Bone Springs

11. County or Parish, State
Eddy County, New Mexico

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Caza Operating, LLC

3a. Address 200 N. Loraine, Suite 1550
Midland, Texas 79707

3b. Phone No. (include area code)
432 682 7424

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

252 FNL & 1900 FEL, Sec 27, T-23-S, R-27-E

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

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

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat 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 recompleat 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.)

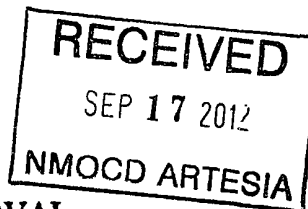
Caza Operating Respectfully request the changes in Casing and Cement for the subject well. Attached is the revised Casing design along with the Cement changes. We've decided to run 7" through the curve.

Hole Size	Csg Size	Csg wgt	Setting Depth	Sacks Cement	TOC Plan
8-3/4"	7"	26#P	7724 ft	902 sacks	1500 ft 7" thru curve
6-1/8"	4-1/2" Lnr	11.6# P	11,929 ft	452 sacks	6700 ft TOL

RRDade 9/18/12
Accepted for record
NMOC

Spud 3-31-12

SEE ATTACHED FOR
CONDITIONS OF APPROVAL



14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Richard L. Wright

Title Operations Manager

Signature

Richard L. Wright

Date August 14, 2012

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Office

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.

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)

APPROVED

SEP 14 2012

Chris Walls

BUREAU OF LAND MANAGEMENT

Well name:
 Operator: N/A
 String type: Intermediate: Prod'n

Forehand Ranch 27 State Com #1H
 Caza Operating, LLC

Design parameters:

Collapse

Mud weight:

Minimum design factors:

Collapse:

10.00 ppg DF

Environment:

H2S considered?

1.125 Surface temperature

No

75.00 °F

Design is based on evacuated pipe.

BHT

123 °F

Temperature gradient

0.65 °F/100ft

Minimum section length

1,000 ft

Minimum Drift:

6.250 in

Burst:

DF

1.10 Cement top

1,224 ft

Burst

Max anticipated surface pressure

7,500.00 psi Frac

Internal gradient:

0.12 psi/ft

Tension:

Directional well information

Calculated BHP

3,870.51 psi

8 Round ST

1.80 (J)

Kick-off point

6874 ft

8 Round LTC

1.80 (J)

Departure at shoe

488 ft

No backup mud specified.

Buttress:

1.60 (J)

Maximum dogleg

12 °/100ft

Premium:

1.50 (J)

Inclination at shoe:

90 °

Body yield:

1.60 (B)

Re subsequent strings:

Next setting depth:

7,451 ft

Tension is based on buoyed weight.

Next mud weight

10.000 ppg

Neutral point 6,326.93 ft

Next setting BHP

3,871 psi

Fracture mud wt:

30.000 ppg

Fracture depth:

7,451 ft

Injection pressure

11,612 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	
1	7724	7	26.00	P-110	LT&C	7451	7724		6.151
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	3871	5879	1.519	8500	9950	1.17	164.5	693	4.21 J

Date

July 16, 2012
 Midland, Texas

Wright

Remarks:

Collapse is based on a vertical depth of 7451 ft, a mud weight of 10 ppg. The casing is considered to be evacuated for collapse purposes.

Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a tensile load which is added to the axial load.

Well name:
Operator
String type **Production Liner**

Forehand Ranch 27 State Com #1H
Caza Operating, LLC

Design parameters:

Collapse

Mud weight:

Minimum design factors:

Collapse:

10.00 ppg

DF

Environment:

H2S considered?

1 200 Surface temperature

No

75.00 °F

Design is based on evacuated pipe.

BHT

123 °F

Temperature gradient.

0.65 °F/100ft

Minimum section length

1,000 ft

Minimum Drift

3 750 in

Cement top.

N/A ft

Burst:

DF

1.20

Burst

Max anticipated surface

pressure:

2,976.42 psi

Liner top:

6,725 ft

Internal gradient:

0.12 psi/ft

Tension:

Directional Info - Build & Hold

Calculated BHP

3,870.51 psi

STC

1 80 (J)

Kick-off point

6874 ft

LTC

1.80 (J)

Departure at shoe

4693 ft

Buttress:

1.60 (J)

Maximum dogleg.

12 °/100ft

Premium:

1 50 (J)

Inclination at shoe:

90 °

Body yield:

1.60 (B)

No backup mud specified.

Tension is based on buoyed weight.

Neutral point: 7,390.85 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)		
1	5229	4.5	11.60	P-110	LT&C	7451	11929	3.875		
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor	Tension
1	3871	7580	1 958	3871	10690	2.76	7 4	279	37 67 J	
								Date:	July 17, 2012	
Wright								Midland, Texas		

Remarks:

For this liner string, the top is rounded to the nearest 100 ft. Collapse is based on a vertical depth of 7451 ft, a mud weight of 10 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a tensile load which is added to the axial load.

Engineering responsibility for use of this design will be that of the purchaser

Operator Name: CAZA OPERATING LLC
Well Name: FOREHAND RANCH '27' STATE COM 1H
Job Description: 7" 26# Casing @ 7,725'
Date: August 14, 2012



Proposal No: 847250105D

JOB AT A GLANCE

Depth (TVD) 7,725 ft
Depth (MD) 7,725 ft
Hole Size 8.75 in
Casing Size/Weight 7 in, 26 lbs/ft
Pump Via 7" O.D. (6.276" I.D.) 26

Total Mix Water Required 5,864 gals

Stage No: 1 Float/Landing Collar set @ 7,685 ft

Slurry

Class H 382 sacks
Density 15.6 ppg
Yield 1.19 cf/sack

Displacement

Displacement 294 bbls
Density 8.3 ppg

Stage No: 2 Stage Collar set @ 5,500 ft

Lead Slurry

Class C 420 sacks
Density 14.1 ppg
Yield 1.55 cf/sack

Tail Slurry

Class C 100 sacks
Density 14.8 ppg
Yield 1.33 cf/sack

Displacement

Displacement 210 bbls
Density 8.3 ppg

Operator Name: CAZA OPERATING LLC
Well Name: FOREHAND RANCH `27` STATE COM 1H
Job Description: 7" 26# Casing @ 7,725'
Date: August 14, 2012



Proposal No: 847250105D

FLUID SPECIFICATIONS

STAGE NO. 1

<u>FLUID</u>	<u>VOLUME CU-FT</u>	<u>VOLUME FACTOR</u>	<u>AMOUNT AND TYPE OF CEMENT</u>
Slurry	460	/ 1.19	= 382 sacks Class H Cement + 0.75% bwoc EC-1 + 0.5% bwoc CD-32 + 1% bwoc FL-62 + 0.2% bwoc FL-52A + 45.8% Fresh Water
Displacement			294.0 bbls Displacement @ 8.34 ppg

CEMENT PROPERTIES

SLURRY NO.1

Slurry Weight (ppg)	15.60
Slurry Yield (cf/sack)	1.19
Amount of Mix Water (gps)	5.16
Estimated Pumping Time - 70 BC (HH:MM)	3:35

COMPRESSIVE STRENGTH

12 hrs @ 142 ° F (psi)	905
24 hrs @ 142 ° F (psi)	1706
48 hrs @ 142 ° F (psi)	2228

RHEOLOGIES

<u>FLUID</u>	<u>TEMP</u>	<u>600</u>	<u>300</u>	<u>200</u>	<u>100</u>	<u>6</u>	<u>3</u>
Slurry	@ 80 ° F	300	243	170	93	9	6

Operator Name: CAZA OPERATING LLC
Well Name: FOREHAND RANCH '27' STATE COM 1H
Job Description: 7" 26# Casing @ 7,725'
Date: August 14, 2012



Proposal No: 847250105D

FLUID SPECIFICATIONS (Continued)

STAGE NO. 2

<u>FLUID</u>	<u>VOLUME CU-FT</u>	<u>VOLUME FACTOR</u>	<u>AMOUNT AND TYPE OF CEMENT</u>
Lead Slurry	651	/ 1.55	= 420 sacks Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 1.2% bwoc FL-25 + 0.8% bwoc Sodium Metasilicate + 68.9% Fresh Water
Tail Slurry	133	/ 1.33	= 100 sacks Class C Cement
Displacement			210.4 bbls Displacement @ 8.34 ppg

CEMENT PROPERTIES

	SLURRY NO.1	SLURRY NO.2
Slurry Weight (ppg)	14.10	14.80
Slurry Yield (cf/sack)	1.55	1.33
Amount of Mix Water (gps)	7.76	6.33
Estimated Pumping Time - 70 BC (HH:MM)	2:50	2:54
COMPRESSIVE STRENGTH		
6.35 hrs @ 122 ° F (psi)	500	
12 hrs @ 122 ° F (psi)	1016	
24 hrs @ 122 ° F (psi)	1468	
12 hrs @ 124 ° F (psi)		1037

RHEOLOGIES

<u>FLUID</u>	<u>TEMP</u>	<u>600</u>	<u>300</u>	<u>200</u>	<u>100</u>	<u>6</u>	<u>3</u>
Lead Slurry	@ 80 ° F	179	116	63	45	24	22
Tail Slurry	@ 80 ° F	81	59	52	45	25	18

Operator Name: CAZA OPERATING LLC
Well Name: FOREHAND RANCH '27' STATE COM 1H
Job Description: 4 1/2" 11.6# Liner @ 11,929
Date: August 14, 2012



Proposal No: 847250105D

JOB AT A GLANCE

Depth (TVD)	7,450 ft
Depth (MD)	11,929 ft
Hole Size	6.125 in
Liner Size/Weight	4 1/2 in, 11.6 lbs/ft
Pump Via	Casing 4 1/2" O.D. (3.754" I.D) 16.6 4 1/2" O.D. (4.000" I.D) 11.6
Total Mix Water Required	2,717 gals
Slurry	
Class H	452 sacks
Density	15.6 ppg
Yield	1.42 cf/sack
Displacement	
Displacement	173 bbls
Density	8.3 ppg

Operator Name: CAZA OPERATING LLC
Well Name: FOREHAND RANCH '27' STATE COM 1H
Job Description: 4 1/2" 11.6# Liner @ 11,929
Date: August 14, 2012



Proposal No: 847250105D

FLUID SPECIFICATIONS

<u>FLUID</u>	<u>VOLUME CU-FT</u>	<u>VOLUME FACTOR</u>	<u>AMOUNT AND TYPE OF CEMENT</u>
Slurry	641	/ 1.42	= 452 sacks Class H Cement + 20 lbs/sack ASCA-1 + 1.4% bwoc FL-62 + 0.2% bwoc Sodium Metasilicate + 0.15% bwoc ASA-301 + 53.3% Fresh Water
Displacement			173.0 bbls Displacement @ 8.34 ppg

CEMENT PROPERTIES

SLURRY NO.1

Slurry Weight (ppg)	15.60
Slurry Yield (cf/sack)	1.42
Amount of Mix Water (gps)	6.01



**Caza
Petroleum**

Caza Operating, LLC

Eddy County, NM

Sec 27-T23S-R27E

Forehand Ranch "27" State Com #1H

Original Wellpath

Plan: Plan #1

Standard Planning Report

17 July, 2012



Database:	EDM:5000:1 Single User Db	Local Co-ordinate Reference:	Site Sec 27-T23S-R27E
Company:	Caza Operating, LLC	TVD Reference:	WELL @ 3158.0usft (Original Well Elev)
Project:	Eddy County, NM	MD Reference:	WELL @ 3158.0usft (Original Well Elev)
Site:	Sec 27-T23S-R27E	North Reference:	Grid
Well:	Forehand Ranch "27" State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

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

Site	Sec 27-T23S-R27E		
Site Position:	Map	Northing:	466,546 11 usft
From:		Easting:	590,070 84 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 16' 57 039 N
		Longitude:	104° 10' 32 295 W
		Grid Convergence:	0 08 °

Well	Forehand Ranch "27" State Com #1H		
Well Position	+N/-S	0 0 usft	Northing:
	+E/-W	0 0 usft	Easting:
Position Uncertainty	0 0 usft	Wellhead Elevation:	Ground Level:
			3,158 0 usft

Wellbore	Original Wellpath		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	07/17/12	7 73
			Dip Angle
			(°)
			Field Strength
			(nT)
			60 11
			48,477

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0 0
Vertical Section:	Depth From (TVD):	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	7,450 3	0 0	0 0
			Direction
			(°)
			180 00

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 00	0 00	0 00	
6,874 0	0 00	0 00	6,874 0	0 0	0 0	0 00	0 00	0 00	0 00	
6,974 0	8 00	180 00	6,973 7	-7 0	0 0	8 00	8 00	0 00	180 00	
7,074 0	12 00	180 00	7,072 1	-24 3	0 0	4 00	4 00	0 00	0 00	
7,724 0	90 00	180 00	7,450 3	-491 4	0 0	12 00	12 00	0 00	0 00	
11,929 0	90 00	180 00	7,450 3	-4,696.4	0 0	0 00	0 00	0 00	0 00	Forehand Ranch 27 S

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Sec 27-T23S-R27E
Company:	Caza Operating, LLC	TVD Reference:	WELL @ 3158.0usft (Original Well Elev)
Project:	Eddy County, NM	MD Reference:	WELL @ 3158.0usft (Original Well Elev)
Site:	Sec 27-T23S-R27E	North Reference:	Grid
Well:	Forehand Ranch #27 State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0 0	0.00	0.00	0 0	0.0	0.0	0.0	0.00	0.00	0.00
100 0	0.00	0.00	100 0	0.0	0.0	0.0	0.00	0.00	0.00
200 0	0.00	0.00	200 0	0.0	0.0	0.0	0.00	0.00	0.00
300 0	0.00	0.00	300 0	0.0	0.0	0.0	0.00	0.00	0.00
400 0	0.00	0.00	400 0	0.0	0.0	0.0	0.00	0.00	0.00
500 0	0.00	0.00	500 0	0.0	0.0	0.0	0.00	0.00	0.00
600 0	0.00	0.00	600 0	0.0	0.0	0.0	0.00	0.00	0.00
700 0	0.00	0.00	700 0	0.0	0.0	0.0	0.00	0.00	0.00
800 0	0.00	0.00	800 0	0.0	0.0	0.0	0.00	0.00	0.00
900 0	0.00	0.00	900 0	0.0	0.0	0.0	0.00	0.00	0.00
1,000 0	0.00	0.00	1,000 0	0.0	0.0	0.0	0.00	0.00	0.00
1,100 0	0.00	0.00	1,100 0	0.0	0.0	0.0	0.00	0.00	0.00
1,200 0	0.00	0.00	1,200 0	0.0	0.0	0.0	0.00	0.00	0.00
1,300 0	0.00	0.00	1,300 0	0.0	0.0	0.0	0.00	0.00	0.00
1,400 0	0.00	0.00	1,400 0	0.0	0.0	0.0	0.00	0.00	0.00
1,500 0	0.00	0.00	1,500 0	0.0	0.0	0.0	0.00	0.00	0.00
1,600 0	0.00	0.00	1,600 0	0.0	0.0	0.0	0.00	0.00	0.00
1,700 0	0.00	0.00	1,700 0	0.0	0.0	0.0	0.00	0.00	0.00
1,800 0	0.00	0.00	1,800 0	0.0	0.0	0.0	0.00	0.00	0.00
1,900 0	0.00	0.00	1,900 0	0.0	0.0	0.0	0.00	0.00	0.00
2,000 0	0.00	0.00	2,000 0	0.0	0.0	0.0	0.00	0.00	0.00
2,100 0	0.00	0.00	2,100 0	0.0	0.0	0.0	0.00	0.00	0.00
2,200 0	0.00	0.00	2,200 0	0.0	0.0	0.0	0.00	0.00	0.00
2,300 0	0.00	0.00	2,300 0	0.0	0.0	0.0	0.00	0.00	0.00
2,400 0	0.00	0.00	2,400 0	0.0	0.0	0.0	0.00	0.00	0.00
2,500 0	0.00	0.00	2,500 0	0.0	0.0	0.0	0.00	0.00	0.00
2,600 0	0.00	0.00	2,600 0	0.0	0.0	0.0	0.00	0.00	0.00
2,700 0	0.00	0.00	2,700 0	0.0	0.0	0.0	0.00	0.00	0.00
2,800 0	0.00	0.00	2,800 0	0.0	0.0	0.0	0.00	0.00	0.00
2,900 0	0.00	0.00	2,900 0	0.0	0.0	0.0	0.00	0.00	0.00
3,000 0	0.00	0.00	3,000 0	0.0	0.0	0.0	0.00	0.00	0.00
3,100 0	0.00	0.00	3,100 0	0.0	0.0	0.0	0.00	0.00	0.00
3,200 0	0.00	0.00	3,200 0	0.0	0.0	0.0	0.00	0.00	0.00
3,300 0	0.00	0.00	3,300 0	0.0	0.0	0.0	0.00	0.00	0.00
3,400 0	0.00	0.00	3,400 0	0.0	0.0	0.0	0.00	0.00	0.00
3,500 0	0.00	0.00	3,500 0	0.0	0.0	0.0	0.00	0.00	0.00
3,600 0	0.00	0.00	3,600 0	0.0	0.0	0.0	0.00	0.00	0.00
3,700 0	0.00	0.00	3,700 0	0.0	0.0	0.0	0.00	0.00	0.00
3,800 0	0.00	0.00	3,800 0	0.0	0.0	0.0	0.00	0.00	0.00
3,900 0	0.00	0.00	3,900 0	0.0	0.0	0.0	0.00	0.00	0.00
4,000 0	0.00	0.00	4,000 0	0.0	0.0	0.0	0.00	0.00	0.00
4,100 0	0.00	0.00	4,100 0	0.0	0.0	0.0	0.00	0.00	0.00
4,200 0	0.00	0.00	4,200 0	0.0	0.0	0.0	0.00	0.00	0.00
4,300 0	0.00	0.00	4,300 0	0.0	0.0	0.0	0.00	0.00	0.00
4,400 0	0.00	0.00	4,400 0	0.0	0.0	0.0	0.00	0.00	0.00
4,500 0	0.00	0.00	4,500 0	0.0	0.0	0.0	0.00	0.00	0.00
4,600 0	0.00	0.00	4,600 0	0.0	0.0	0.0	0.00	0.00	0.00
4,700 0	0.00	0.00	4,700 0	0.0	0.0	0.0	0.00	0.00	0.00
4,800 0	0.00	0.00	4,800 0	0.0	0.0	0.0	0.00	0.00	0.00
4,900 0	0.00	0.00	4,900 0	0.0	0.0	0.0	0.00	0.00	0.00
5,000 0	0.00	0.00	5,000 0	0.0	0.0	0.0	0.00	0.00	0.00
5,100 0	0.00	0.00	5,100 0	0.0	0.0	0.0	0.00	0.00	0.00
5,200 0	0.00	0.00	5,200 0	0.0	0.0	0.0	0.00	0.00	0.00
5,300 0	0.00	0.00	5,300 0	0.0	0.0	0.0	0.00	0.00	0.00

Database:	EDM:5000.1 Single User Db	Local Co-ordinate Reference:	Site Sec.27-T23S-R27E
Company:	Caza Operating, LLC	TVD Reference:	WELL @ 3158.0usft (Original Well Elev)
Project:	Eddy County, NM	MD Reference:	WELL @ 3158.0usft (Original Well Elev)
Site:	Sec 27-T23S-R27E	North Reference:	Grid
Well:	Forehand Ranch "27" State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,874.0	0.00	0.00	6,874.0	0.0	0.0	0.0	0.00	0.00	0.00
BLD 8°/100'									
6,900.0	2.08	180.00	6,900.0	-0.5	0.0	0.5	8.00	8.00	0.00
6,950.0	6.08	180.00	6,949.9	-4.0	0.0	4.0	8.00	8.00	0.00
6,974.0	8.00	180.00	6,973.7	-7.0	0.0	7.0	8.00	8.00	0.00
EOB 8° Inc. CONT BLD 4°/100'									
7,000.0	9.04	180.00	6,999.4	-10.8	0.0	10.8	4.00	4.00	0.00
7,074.0	12.00	180.00	7,072.1	-24.3	0.0	24.3	4.00	4.00	0.00
EOB 12° Inc. KOP BLD 12°/100'									
7,075.0	12.12	180.00	7,073.1	-24.5	0.0	24.5	12.00	12.00	0.00
7,100.0	15.12	180.00	7,097.4	-30.4	0.0	30.4	12.00	12.00	0.00
7,125.0	18.12	180.00	7,121.4	-37.6	0.0	37.6	12.00	12.00	0.00
7,150.0	21.12	180.00	7,144.9	-46.0	0.0	46.0	12.00	12.00	0.00
7,175.0	24.12	180.00	7,168.0	-55.6	0.0	55.6	12.00	12.00	0.00
7,200.0	27.12	180.00	7,190.5	-66.4	0.0	66.4	12.00	12.00	0.00
7,225.0	30.12	180.00	7,212.5	-78.4	0.0	78.4	12.00	12.00	0.00
7,250.0	33.12	180.00	7,233.7	-91.5	0.0	91.5	12.00	12.00	0.00
7,275.0	36.12	180.00	7,254.3	-105.7	0.0	105.7	12.00	12.00	0.00
7,300.0	39.12	180.00	7,274.1	-120.9	0.0	120.9	12.00	12.00	0.00
7,325.0	42.12	180.00	7,293.1	-137.2	0.0	137.2	12.00	12.00	0.00
7,350.0	45.12	180.00	7,311.2	-154.5	0.0	154.5	12.00	12.00	0.00
7,375.0	48.12	180.00	7,328.4	-172.6	0.0	172.6	12.00	12.00	0.00
7,400.0	51.12	180.00	7,344.6	-191.7	0.0	191.7	12.00	12.00	0.00
7,425.0	54.12	180.00	7,359.7	-211.5	0.0	211.5	12.00	12.00	0.00
7,450.0	57.12	180.00	7,373.8	-232.2	0.0	232.2	12.00	12.00	0.00
7,475.0	60.12	180.00	7,386.9	-253.5	0.0	253.5	12.00	12.00	0.00
7,500.0	63.12	180.00	7,398.7	-275.5	0.0	275.5	12.00	12.00	0.00
7,525.0	66.12	180.00	7,409.5	-298.1	0.0	298.1	12.00	12.00	0.00
7,550.0	69.12	180.00	7,419.0	-321.2	0.0	321.2	12.00	12.00	0.00
7,575.0	72.12	180.00	7,427.3	-344.8	0.0	344.8	12.00	12.00	0.00
7,600.0	75.12	180.00	7,434.3	-368.8	0.0	368.8	12.00	12.00	0.00
7,625.0	78.12	180.00	7,440.1	-393.1	0.0	393.1	12.00	12.00	0.00
7,650.0	81.12	180.00	7,444.6	-417.7	0.0	417.7	12.00	12.00	0.00
7,675.0	84.12	180.00	7,447.8	-442.4	0.0	442.4	12.00	12.00	0.00
7,700.0	87.12	180.00	7,449.7	-467.4	0.0	467.4	12.00	12.00	0.00
7,724.0	90.00	180.00	7,450.3	-491.4	0.0	491.4	12.00	12.00	0.00
EOB HLD 90° Inc.									
7,800.0	90.00	180.00	7,450.3	-567.4	0.0	567.4	0.00	0.00	0.00



Database:	EDM5000.1 Single User Db	Local Co-ordinate Reference:	Site Sec.27-T23S-R27E
Company:	Caza Operating, LLC	TVD Reference:	WELL @ 3158.0usft (Original Well Elev)
Project:	Eddy County - NM	MD Reference:	WELL @ 3158.0usft (Original Well Elev)
Site:	Sec.27-T23S-R27E	North Reference:	Grid
Well:	Forehand Ranch, 27 State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,900.0	90.00	180.00	7,450.3	-667.4	0.0	667.4	0.00	0.00	0.00
8,000.0	90.00	180.00	7,450.3	-767.4	0.0	767.4	0.00	0.00	0.00
8,100.0	90.00	180.00	7,450.3	-867.4	0.0	867.4	0.00	0.00	0.00
8,200.0	90.00	180.00	7,450.3	-967.4	0.0	967.4	0.00	0.00	0.00
8,300.0	90.00	180.00	7,450.3	-1,067.4	0.0	1,067.4	0.00	0.00	0.00
8,400.0	90.00	180.00	7,450.3	-1,167.4	0.0	1,167.4	0.00	0.00	0.00
8,500.0	90.00	180.00	7,450.3	-1,267.4	0.0	1,267.4	0.00	0.00	0.00
8,600.0	90.00	180.00	7,450.3	-1,367.4	0.0	1,367.4	0.00	0.00	0.00
8,700.0	90.00	180.00	7,450.3	-1,467.4	0.0	1,467.4	0.00	0.00	0.00
8,800.0	90.00	180.00	7,450.3	-1,567.4	0.0	1,567.4	0.00	0.00	0.00
8,900.0	90.00	180.00	7,450.3	-1,667.4	0.0	1,667.4	0.00	0.00	0.00
9,000.0	90.00	180.00	7,450.3	-1,767.4	0.0	1,767.4	0.00	0.00	0.00
9,100.0	90.00	180.00	7,450.3	-1,867.4	0.0	1,867.4	0.00	0.00	0.00
9,200.0	90.00	180.00	7,450.3	-1,967.4	0.0	1,967.4	0.00	0.00	0.00
9,300.0	90.00	180.00	7,450.3	-2,067.4	0.0	2,067.4	0.00	0.00	0.00
9,400.0	90.00	180.00	7,450.3	-2,167.4	0.0	2,167.4	0.00	0.00	0.00
9,500.0	90.00	180.00	7,450.3	-2,267.4	0.0	2,267.4	0.00	0.00	0.00
9,600.0	90.00	180.00	7,450.3	-2,367.4	0.0	2,367.4	0.00	0.00	0.00
9,700.0	90.00	180.00	7,450.3	-2,467.4	0.0	2,467.4	0.00	0.00	0.00
9,800.0	90.00	180.00	7,450.3	-2,567.4	0.0	2,567.4	0.00	0.00	0.00
9,900.0	90.00	180.00	7,450.3	-2,667.4	0.0	2,667.4	0.00	0.00	0.00
10,000.0	90.00	180.00	7,450.3	-2,767.4	0.0	2,767.4	0.00	0.00	0.00
10,100.0	90.00	180.00	7,450.3	-2,867.4	0.0	2,867.4	0.00	0.00	0.00
10,200.0	90.00	180.00	7,450.3	-2,967.4	0.0	2,967.4	0.00	0.00	0.00
10,300.0	90.00	180.00	7,450.3	-3,067.4	0.0	3,067.4	0.00	0.00	0.00
10,400.0	90.00	180.00	7,450.3	-3,167.4	0.0	3,167.4	0.00	0.00	0.00
10,500.0	90.00	180.00	7,450.3	-3,267.4	0.0	3,267.4	0.00	0.00	0.00
10,600.0	90.00	180.00	7,450.3	-3,367.4	0.0	3,367.4	0.00	0.00	0.00
10,700.0	90.00	180.00	7,450.3	-3,467.4	0.0	3,467.4	0.00	0.00	0.00
10,800.0	90.00	180.00	7,450.3	-3,567.4	0.0	3,567.4	0.00	0.00	0.00
10,900.0	90.00	180.00	7,450.3	-3,667.4	0.0	3,667.4	0.00	0.00	0.00
11,000.0	90.00	180.00	7,450.3	-3,767.4	0.0	3,767.4	0.00	0.00	0.00
11,100.0	90.00	180.00	7,450.3	-3,867.4	0.0	3,867.4	0.00	0.00	0.00
11,200.0	90.00	180.00	7,450.3	-3,967.4	0.0	3,967.4	0.00	0.00	0.00
11,300.0	90.00	180.00	7,450.3	-4,067.4	0.0	4,067.4	0.00	0.00	0.00
11,400.0	90.00	180.00	7,450.3	-4,167.4	0.0	4,167.4	0.00	0.00	0.00
11,500.0	90.00	180.00	7,450.3	-4,267.4	0.0	4,267.4	0.00	0.00	0.00
11,600.0	90.00	180.00	7,450.3	-4,367.4	0.0	4,367.4	0.00	0.00	0.00
11,700.0	90.00	180.00	7,450.3	-4,467.4	0.0	4,467.4	0.00	0.00	0.00
11,800.0	90.00	180.00	7,450.3	-4,567.4	0.0	4,567.4	0.00	0.00	0.00
11,900.0	90.00	180.00	7,450.3	-4,667.4	0.0	4,667.4	0.00	0.00	0.00
11,929.0	90.00	180.00	7,450.3	-4,696.4	0.0	4,696.4	0.00	0.00	0.00

TD at 11929.0 - Forehand Ranch 27 State Com #1H Plat PBHL - Forehand Ranch 27 State Com #1H PBHL Geo

Database:	EDM, 5000.1 Single User Db	Local Co-ordinate Reference:	Site Sec 27-T23S-R27E
Company:	Caza Operating, LLC	TVD Reference:	WELL @ 3158.0usft (Original Well Elev)
Project:	Eddy County, NM	MD Reference:	WELL @ 3158.0usft (Original Well Elev)
Site:	Sec 27-T23S-R27E	North Reference:	Grid
Well:	Forehand Ranch "27" State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Plan #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Forehand Ranch 27 Stal - plan misses target center by 180.8usft at 11929.0usft MD (7450.3 TVD, -4696.4 N, 0.0 E) - Point	0.00	0.00	7,450.3	-4,808.6	141.7	461,737.51	590,212.58	32° 16' 9.452 N	104° 10' 30.727 W
Forehand Ranch 27 Stal - plan hits target center - Point	0.00	0.00	7,450.3	-4,696.4	0.0	461,849.75	590,070.84	32° 16' 10.565 N	104° 10' 32.376 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,874.0	6,874.0	0.0	0.0	BLD 8°/100'
6,974.0	6,973.7	-7.0	0.0	EOB 8° Inc. CONT BLD 4°/100'
7,074.0	7,072.1	-24.3	0.0	EOB 12° Inc. KOP BLD 12°/100'
7,724.0	7,450.3	-491.4	0.0	EOB HLD 90° Inc.
11,929.0	7,450.3	-4,696.4	0.0	TD at 11929.0



Caza Operating, LLC
 Project Eddy County, NM
 Site: Sec 27-T23S-R27E
 Well: Forehand Ranch "27" State Com #1H
 Wellbore Original Wellpath
 Design: Plan #1
 Lat: 32°16' 57.039 N
 Long: 104°10' 32.295 W
 Pad GL: 3158.0
 KB: WELL @ 3158 Oust (Original Well Elev)



WELL DETAILS Forehand Ranch "27" State Com #1H

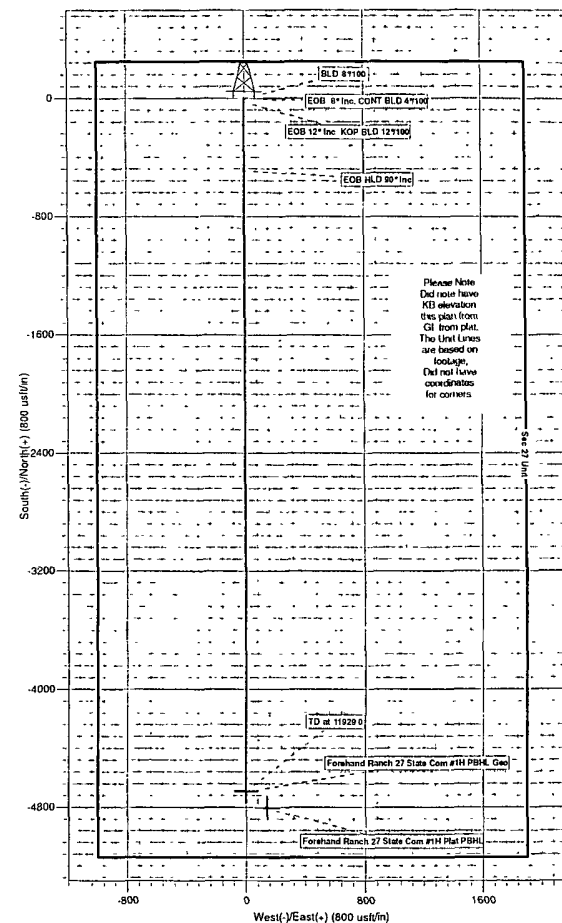
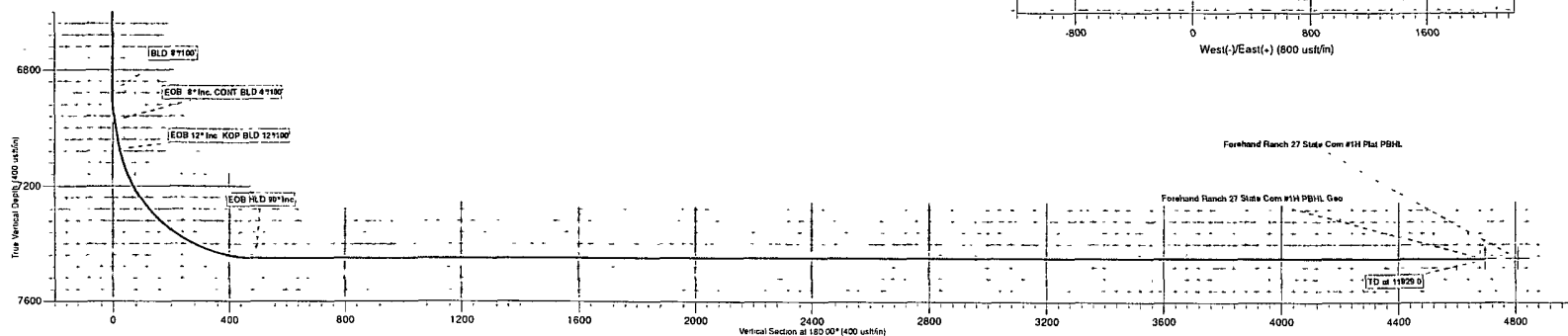
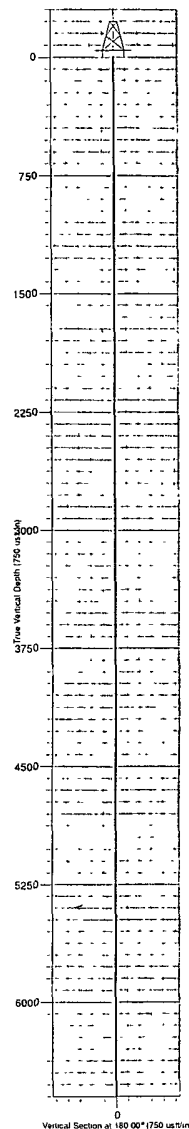
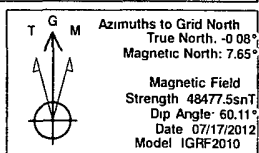
+N-S	+E-W	Northing	Ground Level	3158.0	Eastings	Latitude	Longitude
0.0	0.0	466546.11	590070.63	32°16' 57.039 N	104°10' 32.295 W		

SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Oleg	TFace	VSecl
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
6874.0	0.00	0.00	6874.0	0.0	0.0	0.00	0.00	0.0
6974.0	8.00	180.00	6973.7	7.0	0.0	8.00	180.00	7.0
7074.0	12.00	180.00	7072.1	-24.3	0.0	4.00	0.00	24.3
7724.0	95.00	180.00	7450.3	-491.4	0.0	12.00	0.00	491.4
11929.0	95.00	180.00	7450.3	-491.4	0.0	0.00	0.00	491.4

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N-S	+E-W	Latitude	Longitude
Forehand Ranch 27 State Com #1H PBHL Geo	7450.3	-4696.4	0.0	32°16' 10.555 N	104°10' 32.376 W
Forehand Ranch 27 State Com #1H Plat PBHL	7450.3	-4608.6	141.7	32°16' 9.452 N	104°10' 30.727 W



Please Note
 Did not have
 KB elevation
 this plan from
 GL from plot.
 The Unit Lines
 are based on
 Isogeom.
 Did not have
 coordinates
 for corners

Conditions of Approval

1. The minimum required fill of cement behind the 7 inch production casing is:
 - a. First stage to DV tool:
 - ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.
 - b. Second stage above DV tool:
 - ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.
2. The minimum required fill of cement behind the 4-1/2 inch production Liner is:
 - ☒ Cement to top of liner. If cement does not circulate, contact the appropriate BLM office.