

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-102

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

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

RECEIVED

Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015- 42885	² Pool Code 96610	³ Pool Name Empire; Glorieta-Yeso East
⁴ Property Code 313320	⁵ Property Name BOSE IKARD 4 STATE COM	
⁷ OGRID No. 229137	⁸ Operator Name COG OPERATING, LLC	⁶ Well Number 25H ⁹ Elevation 3596'

¹⁰ Surface Location

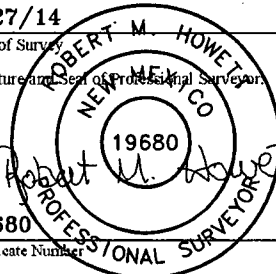
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	4	17-S	29-E		2310	SOUTH	330	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	4	17-S	29-E		2310	SOUTH	330	EAST	EDDY

¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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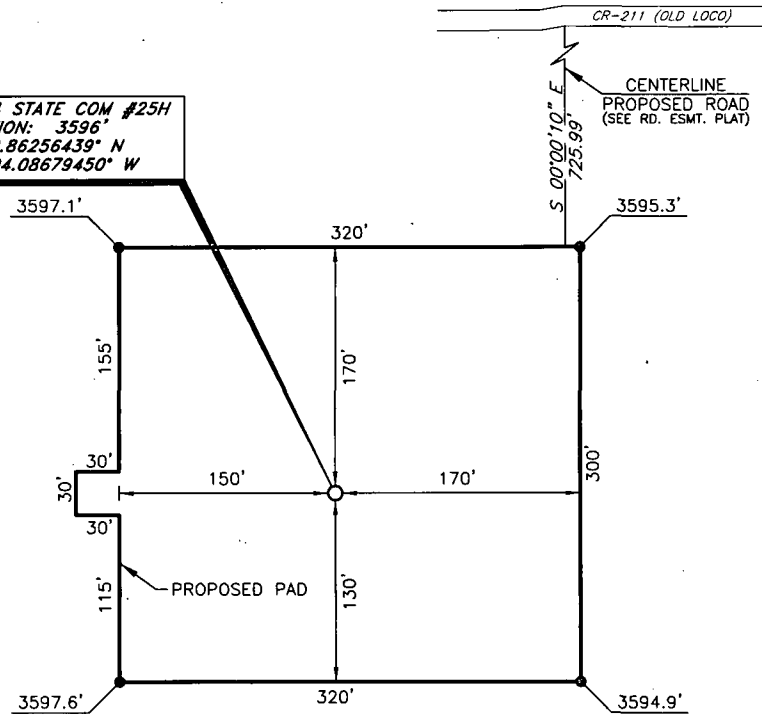
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁶ LOT 4 ¹⁶ LOT 3 ¹⁶ LOT 2 ¹⁶ LOT 1 ¹⁶ LOT 5 ¹⁶ LOT 6 ¹⁶ LOT 7 ¹⁶ LOT 8 ¹⁶ LOT 9 ¹⁶ LOT 10 ¹⁶ LOT 11 ¹⁶ LOT 12 ¹⁶ LOT 13 ¹⁶ LOT 14 ¹⁶ LOT 15 ¹⁶ LOT 16 ¹⁶ LOT 17 ¹⁶ LOT 18 ¹⁶ LOT 19 ¹⁶ LOT 20 ¹⁶ LOT 21 ¹⁶ LOT 22 ¹⁶ LOT 23 ¹⁶ LOT 24 ¹⁶ LOT 25 ¹⁶ LOT 26 ¹⁶ LOT 27 ¹⁶ LOT 28 ¹⁶ LOT 29 ¹⁶ LOT 30 ¹⁶ LOT 31 ¹⁶ LOT 32 ¹⁶ LOT 33 ¹⁶ LOT 34 ¹⁶ LOT 35 ¹⁶ LOT 36 ¹⁶ LOT 37 ¹⁶ LOT 38 ¹⁶ LOT 39 ¹⁶ LOT 40 ¹⁶ LOT 41 ¹⁶ LOT 42 ¹⁶ LOT 43 ¹⁶ LOT 44 ¹⁶ LOT 45 ¹⁶ LOT 46 ¹⁶ LOT 47 ¹⁶ LOT 48 ¹⁶ LOT 49 ¹⁶ LOT 50 ¹⁶ LOT 51 ¹⁶ LOT 52 ¹⁶ LOT 53 ¹⁶ LOT 54 ¹⁶ LOT 55 ¹⁶ LOT 56 ¹⁶ LOT 57 ¹⁶ LOT 58 ¹⁶ LOT 59 ¹⁶ LOT 60 ¹⁶ LOT 61 ¹⁶ LOT 62 ¹⁶ LOT 63 ¹⁶ LOT 64 ¹⁶ LOT 65 ¹⁶ LOT 66 ¹⁶ LOT 67 ¹⁶ LOT 68 ¹⁶ LOT 69 ¹⁶ LOT 70 ¹⁶ LOT 71 ¹⁶ LOT 72 ¹⁶ LOT 73 ¹⁶ LOT 74 ¹⁶ LOT 75 ¹⁶ LOT 76 ¹⁶ LOT 77 ¹⁶ LOT 78 ¹⁶ LOT 79 ¹⁶ LOT 80 ¹⁶ LOT 81 ¹⁶ LOT 82 ¹⁶ LOT 83 ¹⁶ LOT 84 ¹⁶ LOT 85 ¹⁶ LOT 86 ¹⁶ LOT 87 ¹⁶ LOT 88 ¹⁶ LOT 89 ¹⁶ LOT 90 ¹⁶ LOT 91 ¹⁶ LOT 92 ¹⁶ LOT 93 ¹⁶ LOT 94 ¹⁶ LOT 95 ¹⁶ LOT 96 ¹⁶ LOT 97 ¹⁶ LOT 98 ¹⁶ LOT 99 ¹⁶ LOT 100	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or released mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature:  Date: 12-30-14 Printed Name: Kelly J. Holly E-mail Address: kholly@concho.com	
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey: 2/27/14 Signature and Seal of Professional Surveyor:  Certificate Number: 19680	

COG OPERATING, LLC

Bose Ikard 4 State Com #25H
(2310' FSL & 330' FWL)
Section 4, T-17-S, R-29-E,
N. M. P. M., Eddy Co., New Mexico

BOSE IKARD 4 STATE COM #25H
ELEVATION: 3596'
LAT: 32.86256439° N
LONG: 104.08679450° W

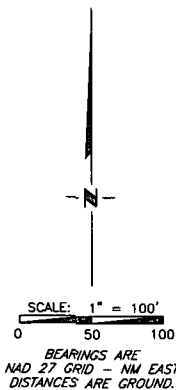


DIRECTIONS TO LOCATION

From the intersection of CR-211 (Old Loco) and CR-214 (Barnaval Draw):

Go West on CR-214 approx. 0.6 mile to road survey.

Turn left and follow road survey South approx. 0.2 mile South to this location.



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NO.	REVISION	DATE
JOB NO.:	LS140095	
DWG. NO.:	140095	

PROSPERITY CONSULTANTS, LLC

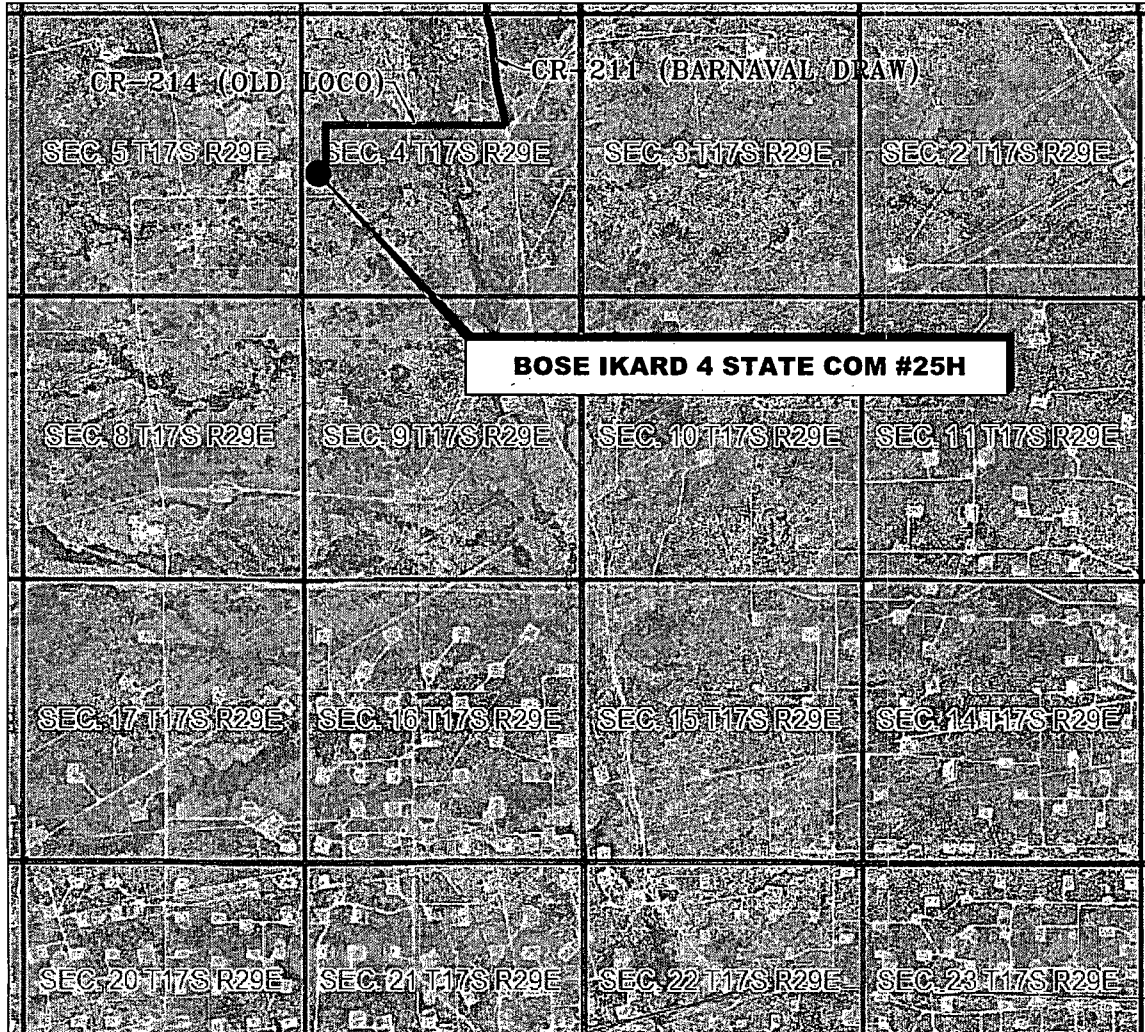


308 W. Broadway St., Hobbs, NM 88240 | Firm No.: TX 10193838 NM 4655451 | (575) 964-8200

SCALE: 1"=100'
DATE: 2/27/13
SURVEYED BY: GB/SM
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

VICINITY MAP

NOT TO SCALE



**SECTION 4, TWP. 17 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO**

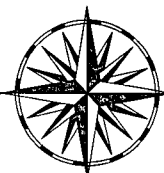
OPERATOR: COG Operating, LLC
LEASE: Bose Ikard 4 State Com
WELL NO.: 25H

LOCATION: 2310' FSL & 330' FWL
ELEVATION: 3596'

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NO.	REVISION	DATE
JOB NO.:	LS140095	
DWG. NO.:	140095VM	

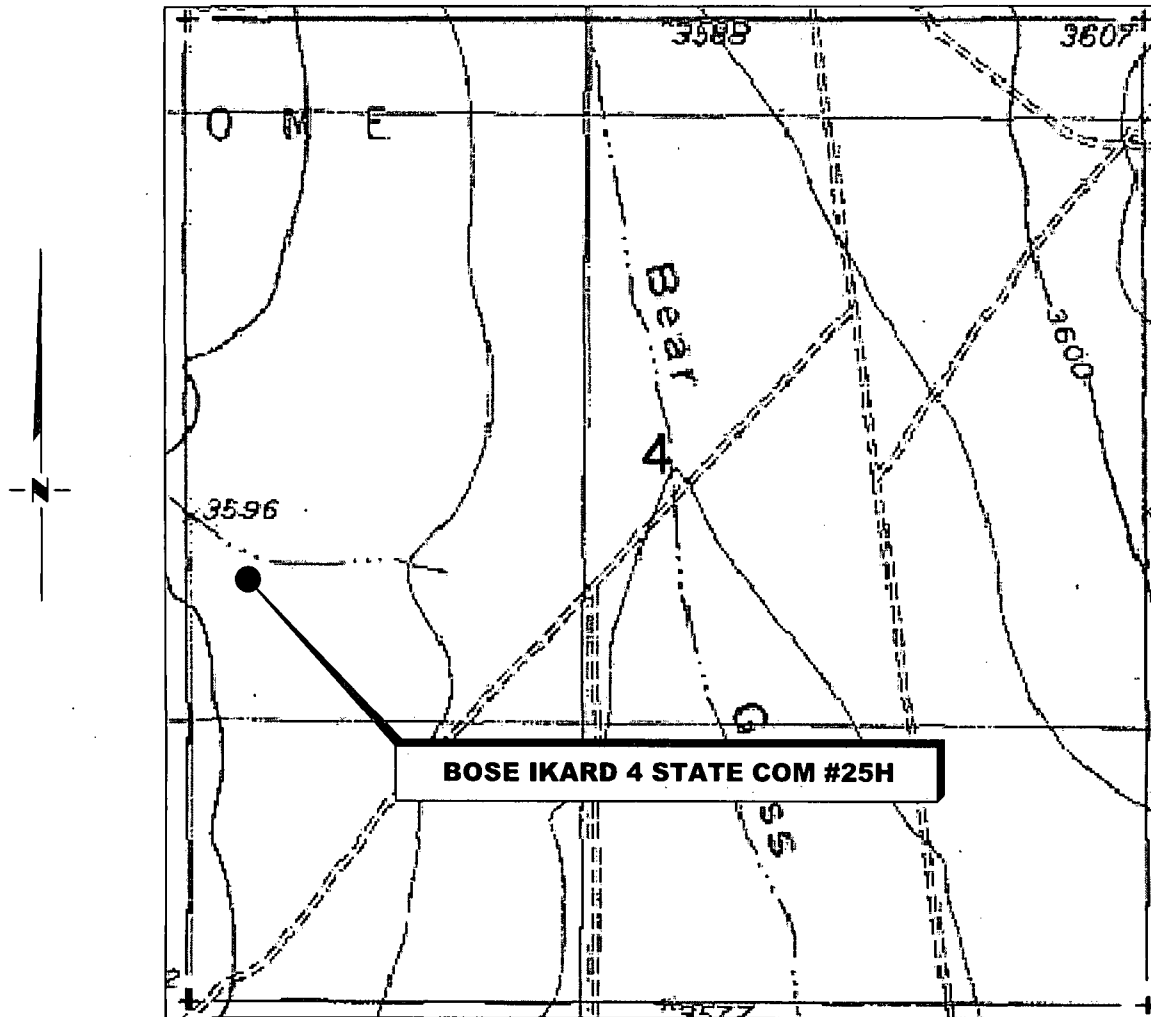
PROSPERITY CONSULTANTS, LLC



308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: N.T.S.
DATE: 2/27/14
SURVEYED BY: GB/SM
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

LOCATION VERIFICATION MAP



SECTION 4, TWP. 17 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: COG Operating, LLC
LEASE: Bose Ikard 4 State Com
WELL NO.: 25H
ELEVATION: 3596'

LOCATION: 2310' FSL & 330' FWL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Red Lake, NM (1955)

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NO.	REVISION	DATE
JOB NO.:	LS140095	
DWG. NO.:	140095LVM	

PROSPERITY CONSULTANTS, LLC



308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: 1"=1000'
DATE: 2/27/14
SURVEYED BY: GB/SM
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

COG OPERATING, LLC

Eddy County, NM

Bose Ikard 4 State Com 25H

25H

Lateral

Plan: Plan #1

Standard Planning Report

15 December, 2014

Section Distances

Sec4,T17S,R29E

SHL - Unit L

2309'FSL, 330'FWL

PBHL - Unit I

2309'FSL, 330'FEL

Archer

Planning Report

Database:	EDM.R5000.1 MULTI	Local Co-ordinate Reference:	Well 25H
Company:	COG OPERATING, LLC	TVD Reference:	3596'GL @ 3596.00usft (Planning)
Project:	Eddy County, NM	MD Reference:	3596'GL @ 3596.00usft (Planning)
Site:	Bose Ikard 4 State Com 25H	North Reference:	Grid
Well:	25H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Project	Eddy County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site: Bose Ikard 4 State Com 25H					
Site Position:		Northing:	677,600.60 usft	Latitude:	32° 51' 45.23 N
From:	Map	Easting:	575,701.70 usft	Longitude:	104° 5' 12.46 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.13

Well	25H					
Well Position	+N/-S	0.00 usft	Northing:	677,600.60 usft	Latitude:	32° 51' 45.23 N
	+E/-W	0.00 usft	Easting:	575,701.70 usft	Longitude:	104° 5' 12.46 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,596.00 usft

Wellbore						Lateral					
Magnetics	Model Name		Sample Date		Declination		Dip Angle		Field Strength		
					(°)		(°)		(nT)		
	HDGM		12/15/2014		7.75		60.67		48,489		

Design: Plan #1				
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	89.64

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	
4,079.21	0.00	0.00	4,079.21	0.00	0.00	0.00	0.00	0.00	0.00	
4,906.48	91.00	91.75	4,600.00	-16.18	529.71	11.00	11.00	0.00	91.75	
4,986.63	91.00	89.35	4,598.60	-16.95	609.84	3.00	0.00	-3.00	-89.98	
8,973.06	91.00	89.35	4,529.04	28.60	4,595.40	0.00	0.00	0.00	0.00	Bose Ikard 25H PBHL

Archer

Planning Report

Database:	EDM R5000.1 MULTI	Local Co-ordinate Reference:	Well: 25H
Company:	COG OPERATING LLC	TVD Reference:	3596 GL @ 3596.00usft (Planning)
Project:	Eddy County, NM	MD Reference:	3596 GL @ 3596.00usft (Planning)
Site:	Boselkard 4 State Com 25H	North Reference:	Grid
Well:	25H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
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)
0.00	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	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,079.21	0.00	0.00	4,079.21	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 11.00									
4,100.00	2.29	91.75	4,099.99	-0.01	0.41	0.41	11.00	11.00	0.00
4,150.00	7.79	91.75	4,149.78	-0.15	4.80	4.80	11.00	11.00	0.00
4,200.00	13.29	91.75	4,198.92	-0.43	13.94	13.93	11.00	11.00	0.00
4,250.00	18.79	91.75	4,246.96	-0.85	27.74	27.73	11.00	11.00	0.00
4,300.00	24.29	91.75	4,293.45	-1.41	46.08	46.07	11.00	11.00	0.00
4,350.00	29.79	91.75	4,337.97	-2.10	68.79	68.77	11.00	11.00	0.00
4,400.00	35.29	91.75	4,380.10	-2.92	95.66	95.64	11.00	11.00	0.00
4,450.00	40.79	91.75	4,419.47	-3.86	126.44	126.41	11.00	11.00	0.00
4,500.00	46.29	91.75	4,455.70	-4.91	160.85	160.82	11.00	11.00	0.00
4,550.00	51.79	91.75	4,488.47	-6.07	198.57	198.53	11.00	11.00	0.00
4,600.00	57.29	91.75	4,517.46	-7.31	239.26	239.21	11.00	11.00	0.00

Archer

Planning Report

Database:	EDM R5000.1 MULTI	Local Co-ordinate Reference:	Well 25H
Company:	COG OPERATING, LLC	TVD Reference:	3596'GL @ 3596.00usft (Planning)
Project:	Eddy County, NM	MD Reference:	3596'GL @ 3596.00usft (Planning)
Site:	Bose-Ikard 4 State Com 25H	North Reference:	Grid
Well:	25H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
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)	
4,650.00	62.79	91.75	4,542.43	-8.63	282.54	282.48	11.00	11.00	0.00	
4,700.00	68.29	91.75	4,563.12	-10.02	328.02	327.95	11.00	11.00	0.00	
4,750.00	73.79	91.75	4,579.37	-11.47	375.26	375.18	11.00	11.00	0.00	
4,800.00	79.29	91.75	4,591.00	-12.95	423.85	423.76	11.00	11.00	0.00	
4,850.00	84.79	91.75	4,597.93	-14.46	473.32	473.22	11.00	11.00	0.00	
4,900.00	90.29	91.75	4,600.07	-15.99	523.23	523.13	11.00	11.00	0.00	
4,906.48	91.00	91.75	4,600.00	-16.18	529.71	529.60	11.00	11.00	0.00	
Start DLS 3.00 TFO -89.98										
4,986.63	91.00	89.35	4,598.60	-16.95	609.84	609.72	3.00	0.00	-3.00	
Start 3986.43 hold at 4986.63 MD										
5,000.00	91.00	89.35	4,598.37	-16.80	623.21	623.09	0.00	0.00	0.00	
5,100.00	91.00	89.35	4,596.62	-15.65	723.18	723.07	0.00	0.00	0.00	
5,200.00	91.00	89.35	4,594.88	-14.51	823.16	823.06	0.00	0.00	0.00	
5,300.00	91.00	89.35	4,593.13	-13.37	923.14	923.04	0.00	0.00	0.00	
5,400.00	91.00	89.35	4,591.39	-12.23	1,023.12	1,023.02	0.00	0.00	0.00	
5,500.00	91.00	89.35	4,589.64	-11.08	1,123.10	1,123.01	0.00	0.00	0.00	
5,600.00	91.00	89.35	4,587.90	-9.94	1,223.08	1,222.99	0.00	0.00	0.00	
5,700.00	91.00	89.35	4,586.15	-8.80	1,323.05	1,322.97	0.00	0.00	0.00	
5,800.00	91.00	89.35	4,584.41	-7.66	1,423.03	1,422.96	0.00	0.00	0.00	
5,900.00	91.00	89.35	4,582.66	-6.51	1,523.01	1,522.94	0.00	0.00	0.00	
6,000.00	91.00	89.35	4,580.92	-5.37	1,622.99	1,622.92	0.00	0.00	0.00	
6,100.00	91.00	89.35	4,579.17	-4.23	1,722.97	1,722.91	0.00	0.00	0.00	
6,200.00	91.00	89.35	4,577.43	-3.09	1,822.95	1,822.89	0.00	0.00	0.00	
6,300.00	91.00	89.35	4,575.68	-1.94	1,922.92	1,922.87	0.00	0.00	0.00	
6,400.00	91.00	89.35	4,573.94	-0.80	2,022.90	2,022.86	0.00	0.00	0.00	
6,500.00	91.00	89.35	4,572.19	0.34	2,122.88	2,122.84	0.00	0.00	0.00	
6,600.00	91.00	89.35	4,570.45	1.48	2,222.86	2,222.82	0.00	0.00	0.00	
6,700.00	91.00	89.35	4,568.70	2.63	2,322.84	2,322.81	0.00	0.00	0.00	
6,800.00	91.00	89.35	4,566.96	3.77	2,422.82	2,422.79	0.00	0.00	0.00	
6,900.00	91.00	89.35	4,565.21	4.91	2,522.79	2,522.78	0.00	0.00	0.00	
7,000.00	91.00	89.35	4,563.47	6.06	2,622.77	2,622.76	0.00	0.00	0.00	
7,100.00	91.00	89.35	4,561.72	7.20	2,722.75	2,722.74	0.00	0.00	0.00	
7,200.00	91.00	89.35	4,559.98	8.34	2,822.73	2,822.73	0.00	0.00	0.00	
7,300.00	91.00	89.35	4,558.23	9.48	2,922.71	2,922.71	0.00	0.00	0.00	
7,400.00	91.00	89.35	4,556.49	10.63	3,022.68	3,022.69	0.00	0.00	0.00	
7,500.00	91.00	89.35	4,554.74	11.77	3,122.66	3,122.68	0.00	0.00	0.00	
7,600.00	91.00	89.35	4,553.00	12.91	3,222.64	3,222.66	0.00	0.00	0.00	
7,700.00	91.00	89.35	4,551.25	14.05	3,322.62	3,322.64	0.00	0.00	0.00	
7,800.00	91.00	89.35	4,549.51	15.20	3,422.60	3,422.63	0.00	0.00	0.00	
7,900.00	91.00	89.35	4,547.76	16.34	3,522.58	3,522.61	0.00	0.00	0.00	
8,000.00	91.00	89.35	4,546.02	17.48	3,622.55	3,622.59	0.00	0.00	0.00	
8,100.00	91.00	89.35	4,544.27	18.62	3,722.53	3,722.58	0.00	0.00	0.00	
8,200.00	91.00	89.35	4,542.53	19.77	3,822.51	3,822.56	0.00	0.00	0.00	
8,300.00	91.00	89.35	4,540.78	20.91	3,922.49	3,922.54	0.00	0.00	0.00	
8,400.00	91.00	89.35	4,539.04	22.05	4,022.47	4,022.53	0.00	0.00	0.00	
8,500.00	91.00	89.35	4,537.29	23.19	4,122.45	4,122.51	0.00	0.00	0.00	
8,600.00	91.00	89.35	4,535.55	24.34	4,222.42	4,222.49	0.00	0.00	0.00	
8,700.00	91.00	89.35	4,533.80	25.48	4,322.40	4,322.48	0.00	0.00	0.00	
8,800.00	91.00	89.35	4,532.06	26.62	4,422.38	4,422.46	0.00	0.00	0.00	
8,900.00	91.00	89.35	4,530.31	27.77	4,522.36	4,522.44	0.00	0.00	0.00	
8,973.06	91.00	89.35	4,529.04	28.60	4,595.40	4,595.49	0.00	0.00	0.00	
TD at 8973.06										

Archer

Planning Report

Database:	EDM R5000.1 MULTI	Local Co-ordinate Reference:	Well: 25H
Company:	COG OPERATING, LLC	TVD Reference:	3596'GL @ 3596.00usft (Planning)
Project:	Eddy County, NM	MD Reference:	3596'GL @ 3596.00usft (Planning)
Site:	Bose Ikard 4 State Com 25H	North Reference:	Grid
Well:	25H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
Bose Ikard 25H Surface	- plan hits target center	0.00	0.00	0.00	0.00	0.00	677,600.60	575,701.70	32° 51' 45.23 N 104° 5' 12.46 W
- Point									
Bose Ikard 25H PBHL	- plan hits target center	0.00	0.00	4,529.04	28.60	4,595.40	677,629.20	580,297.10	32° 51' 45.41 N 104° 4' 18.58 W
- Point									

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
4,079.21	4,079.21	0.00	0.00	Start Build 11.00	
4,906.48	4,600.00	-16.18	529.71	Start DLS 3.00 TFO -89.98	
4,986.63	4,598.60	-16.95	609.84	Start 3986.43 hold at 4986.63 MD	
8,973.06	4,529.04	28.60	4,595.40	TD at 8973.06	

COG OPERATING, LLC

Field: Eddy County, NM
Site: Bose Ikard 4 State Com 25H
Well: 25H
Wellbore: Lateral
Plan: Plan #1

Name
Bose Ikard 25H Surface
Bose Ikard 25H PBHL

TVD
0.00
4529.04

+N/-S
0.00
28.60

+E/-W
0.00
4595.40

TARGET DETAILS

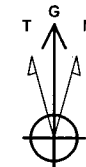
Northing
677600.60
677629.20

Easting
575701.70
580297.10

Latitude
32° 51' 45.23 N
32° 51' 45.41 N

Longitude
104° 5' 12.46 W
104° 4' 18.58 W

Shape
Point
Point



Azimuths to Grid North
True North: -0.13°
Magnetic North: 7.62°

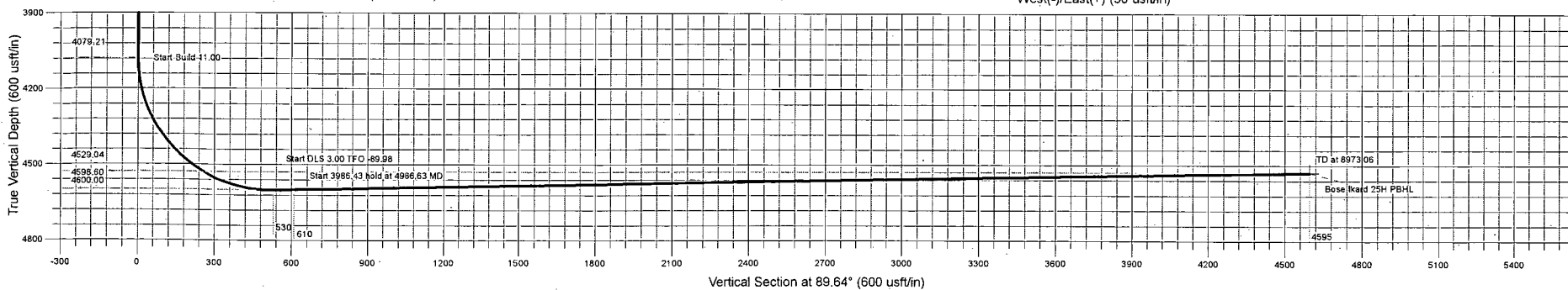
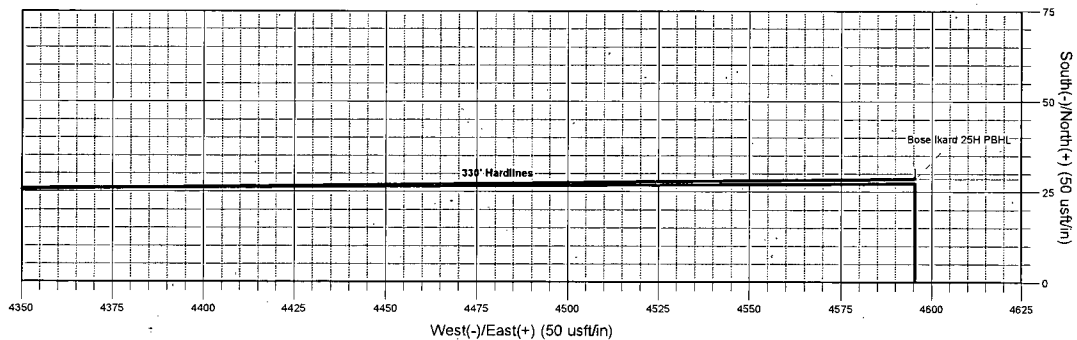
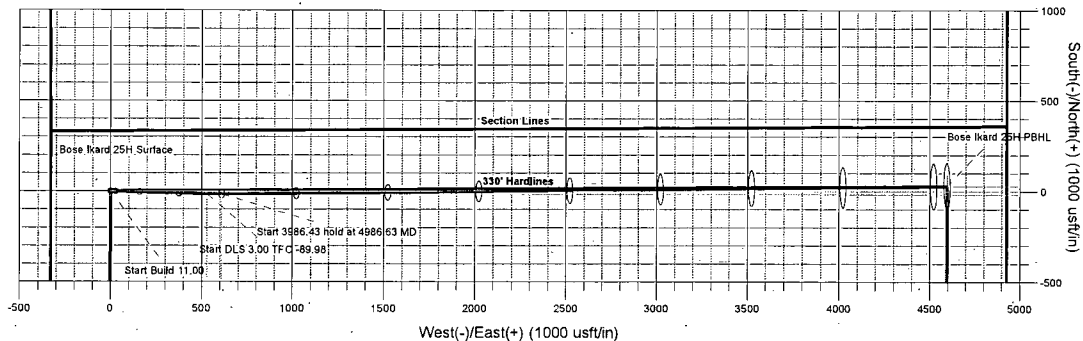
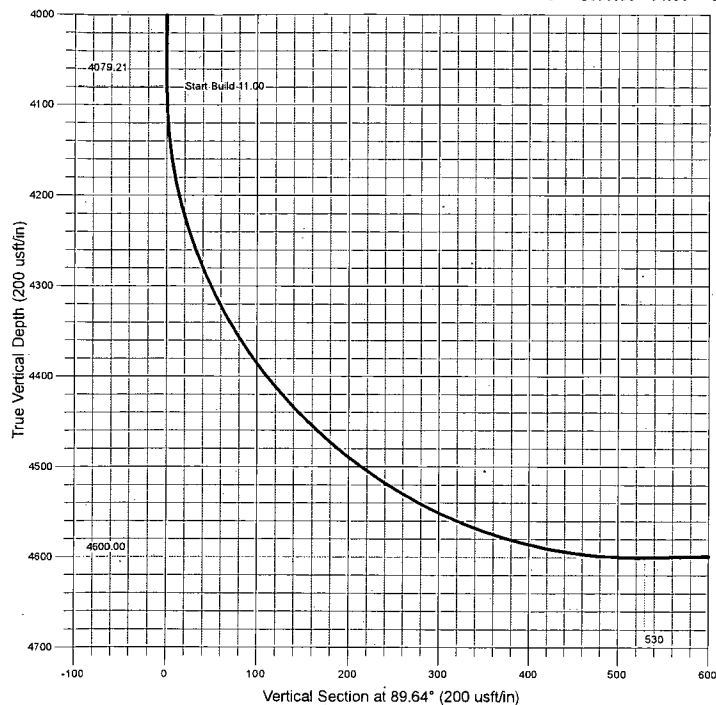
Magnetic Field
Strength: 48489.4nT
Dip Angle: 60.67°
Date: 12/15/2014
Model: HDGM

Section Distances

Sec4, T17S, R29E
SHL - Unit L
2309FSL, 330FWL
PBHL - Unit I
2309FSL, 330FEL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	4079.21	0.00	0.00	4079.21	0.00	0.00	0.00	0.00	0.00	
3	4906.48	91.00	91.75	4600.00	-16.18	529.71	11.00	91.75	529.60	
4	4986.63	91.00	89.35	4598.60	-16.95	609.84	3.00	-89.98	609.72	
5	8973.06	91.00	89.35	4529.04	28.60	4595.40	0.00	0.00	4595.49	Bose Ikard 25H PBHL



Archer

ARCHER DIRECTIONAL DRILLING SERVICES
12101 Cutten Rd. Houston, Texas 77066
Phone: 281-301-2600 Fax: 281-301-2795

Design: Plan #1 (25H/Lateral)
Created By: Ivonne Gonzalez
Date: 14:34, December 15 2014