

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

APR 13 2015

Revised August 1, 2011

Submit one copy to appropriate

District Office

RECEIVED

☐ AMENDED REPORT

Permit 202596

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015- 43036	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 26H
		⁹ Elevation 3594'

¹⁰ Surface Location

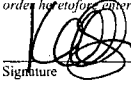
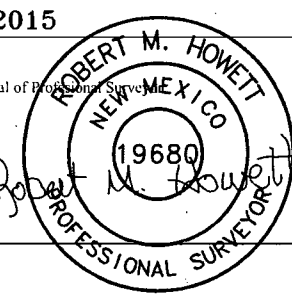
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
L	4	17S	29E		1900	SOUTH	150	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

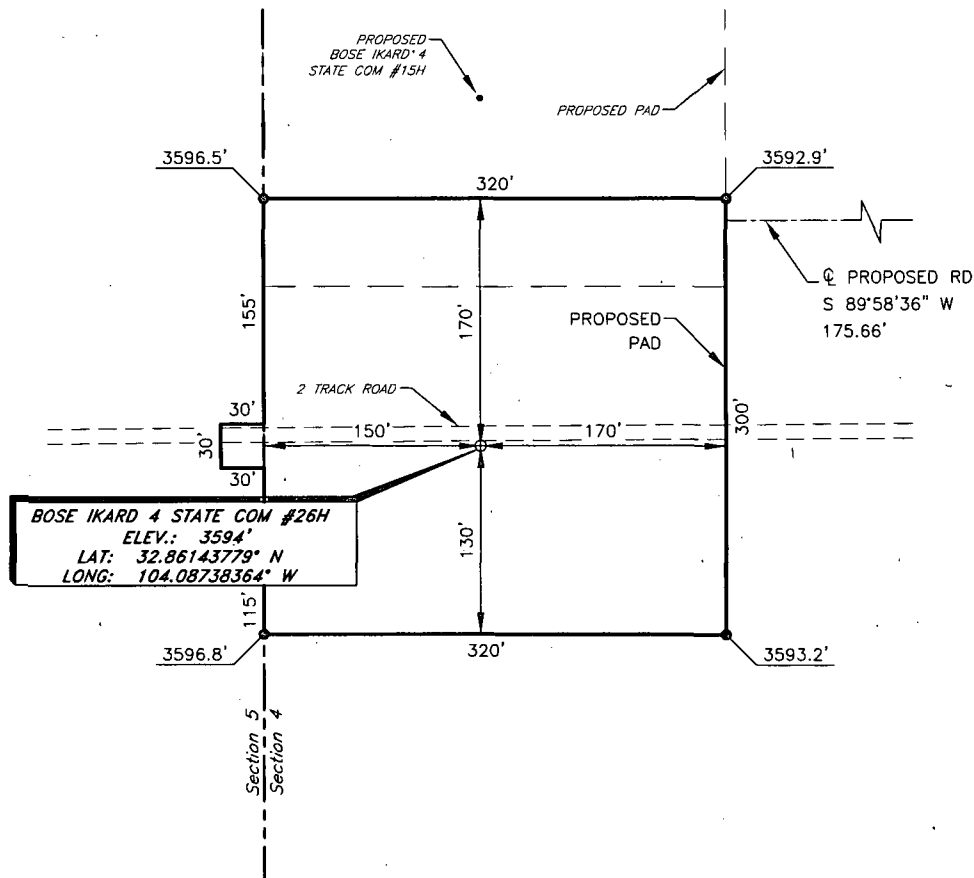
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	4	17S	29E		1650	SOUTH	330	EAST	EDDY

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 interest have been consolidated or a non-standard unit has been approved by the division.

LOT 4 40.00 Ac. (MSP 40.05 Ac.) GEODETIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 677190.3 - E 575521.8 BOTTOM HOLE N 676968.9 - E 580297.5	LOT 3 39.91 Ac. (MSP 40.00 Ac.) CORNER DATA NAD 27 GRID - NM EAST A: FOUND RED CAP "HOWETT" PLS19680 N 675289.3 - E 575371.1 B: FOUND BRASS CAP "1914" N 677928.7 - E 575371.9 C: FOUND BRASS CAP "1914" N 680580.6 - E 575358.9 D: FOUND BRASS CAP "1914" N 680585.3 - E 577994.0	LOT 2 39.80 Ac. (MSP 39.93 Ac.) E: FOUND BRASS CAP "1914" N 680598.6 - E 580627.0 F: FOUND BRASS CAP "1914" N 677960.0 - E 580626.8 G: FOUND BRASS CAP "1914" N 675321.9 - E 580628.5 H: FOUND BRASS CAP "1914" N 675304.8 - 577999.2 1: CALCULATED CORNER N 676609.0 - E 575371.5 2: CALCULATED CORNER N 676641.0 - E 580627.6	LOT 1 39.78 Ac. (MSP 39.88 Ac.)	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 unleased 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 covered by the division. Signature:  Date: 4-8-15 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: 3-13-2015 Signature and Seal of Professional Surveyor:  Certificate Number: 19680				

COG OPERATING, LLC
BOSE IKARD 4 STATE COM #26H
(1900' FSL & 150' FWL)
SECTION 4, T17S, R29E
N. M. P. M., EDDY CO., NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-214 (Barnaval Draw) and CR-211 (Old Loco)
Go West on CR-211 approx. 0.6 miles;
Turn Right on lease rd. and go South approx. 0.3 miles;
Location is approx. 350 feet to the West of lease road.

SCALE: 1" = 100'
0 50 100
BEARINGS ARE
NAD 27 GRID - NW EAST
DISTANCES ARE
GROUND.

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.:	LS1503084	
DWG. NO.:	1503084PAD	

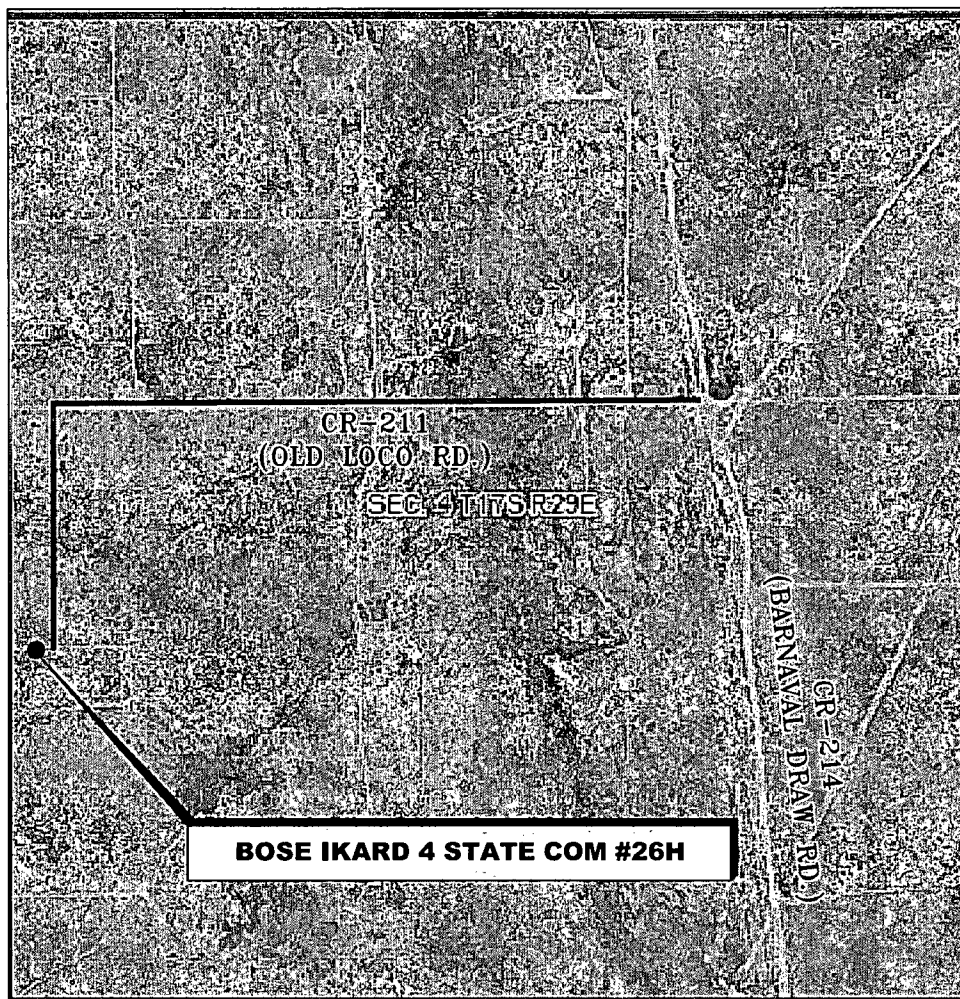
RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 3-13-2015
SURVEYED BY: GB
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1

VICINITY MAP

NOT TO SCALE



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

OPERATOR: COG Operating, LLC
LEASE: Bose Ikard 4 State Com
WELL NO.: 26H

LOCATION: 1900' FSL & 150' FWL
ELEVATION: 3594'

Firm No.: TX 10193838 NM 4655451

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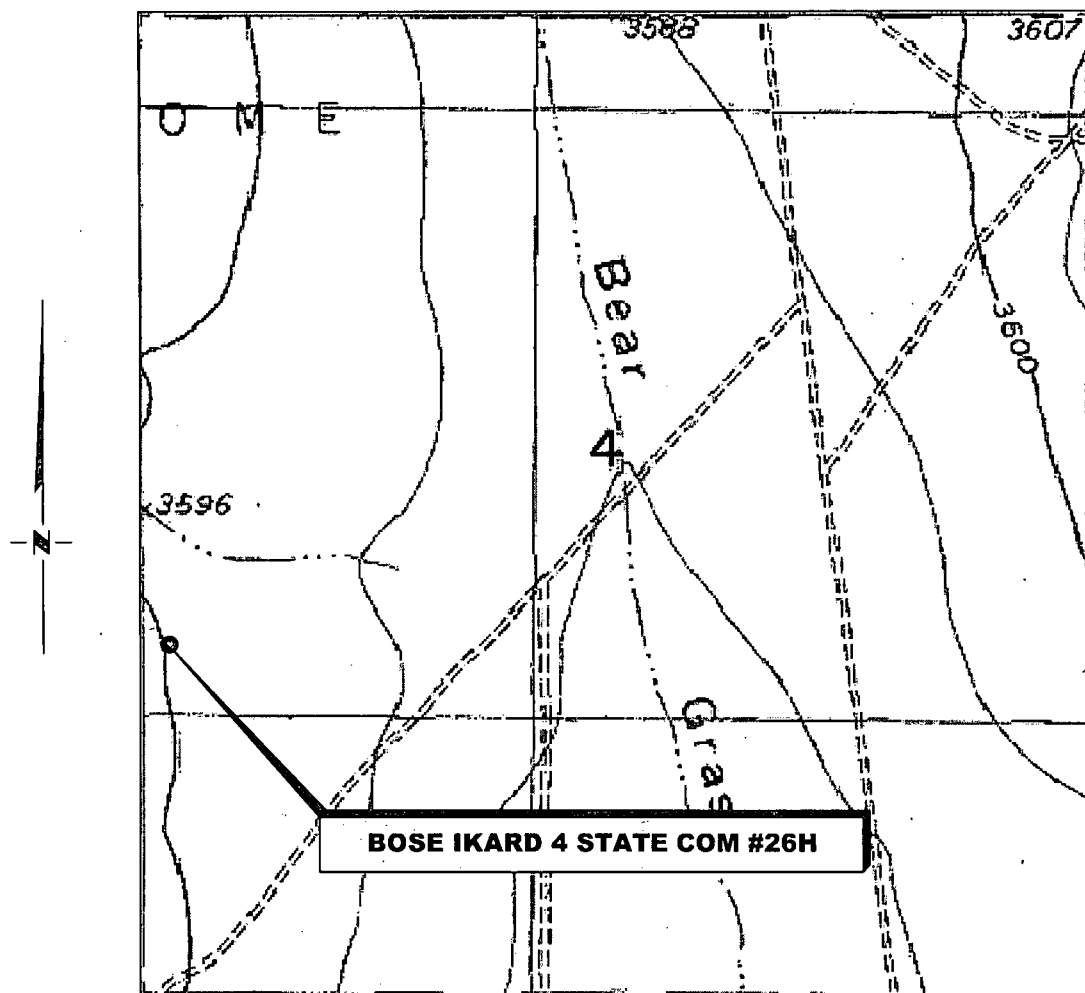
NO.	REVISION	DATE
JOB NO.: LS1503084		
DWG. NO.: 1503084VM		

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: NTS
DATE: 3-13-2015
SURVEYED BY: GB
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1

LOCATION VERIFICATION MAP



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

OPERATOR: COG Operating, LLC
LEASE: Bose Ikard 4 State Com
WELL NO.: 26H
ELEVATION: 3594'

LOCATION: 1900' FSL & 150' FWL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Red Lake SE, NM (1955)

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.:	LS1503084	
DWG. NO.:	1503084LVM	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 3-13-2015
SURVEYED BY: GB
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1



NM OIL CONSERVATION

ARTESIA DISTRICT

APR 13 2015

RECEIVED

COG Operarting LLC
NEW MEXICO SHELF

EDDY COUNTY, NM

EMPIRE

BOSE IKARD 4 STATE COM #26H

OWB

Plan: PWP0

SHL: 1900' FSL, 150' FWL, SEC. 4, T17S, R29E, UNIT L

PP: 1891' FSL, 330' FWL, SEC. 4, T17S, R29E, UNIT L

BHL: 1650' FSL, 330' FEL, SEC. 4, T17S, R29E, LOT I

Standard Planning Report

27 March, 2015



COG Operating LLC
Planning Report

Database:	EDM Users:	Local Co-ordinate Reference:	Well: BOSE IKARD 4 STATE COM #26H
Company:	NEW MEXICO SHELF	TVD Reference:	RKB=3594+12 @ 3606.0usft (TBD)
Project:	EDDY COUNTY, NM	MD Reference:	RKB=3594+12 @ 3606.0usft (TBD)
Site:	EMPIRE	North Reference:	Grid
Well:	BOSE IKARD 4 STATE COM #26H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

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:	EMPIRE		
Site Position:		Northing:	667,066.90 usft
From:	Map	Easting:	582,960.90 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 50' 0.822 N
		Longitude:	104° 3' 47.669 W
		Grid Convergence:	0.15 °

Well:	BOSE IKARD 4 STATE COM #26H		
Well Position	+N/-S	10,123.4 usft	Northing:
	+E/-W	-7,439.1 usft	Easting:
Position Uncertainty		3.0 usft	Wellhead Elevation:
			0.0 usft
			Latitude:
			32° 51' 41.176 N
			Longitude:
			104° 5' 14.581 W
			Ground Level:
			3,594.0 usft

Wellbore:	OWB		
Magnetics:	Model Name	Sample Date	Declination
	WMM_2005	12/31/2009	8.04
			Dip Angle
			60.73
			Field Strength
			49,112

Design:	PWPO		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			92.65

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,079.1	0.00	0.00	4,079.1	0.0	0.0	0.00	0.00	0.00	0.00	
4,906.6	91.00	92.65	4,600.0	-24.5	529.5	11.00	11.00	0.00	92.65	
9,158.0	91.00	92.65	4,525.6	-221.4	4,775.7	0.00	0.00	0.00	0.00	PBHL-Bose Ikard 4 S



COG Operating LLC

Planning Report

Database:	EDM Users	Local Co-ordinate Reference:	Well BOSE IKARD 4 STATE COM #26H
Company:	NEW MEXICO SHELF	TVD Reference:	RKB=3594+12 @ 3606.0usft (TBD)
Project:	EDDY COUNTY NM	MD Reference:	RKB=3594+12 @ 3606.0usft (TBD)
Site:	EMPIRE	North Reference:	Grid
Well:	BOSE IKARD 4 STATE COM #26H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWR0		

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
4,079.1	0.00	0.00	4,079.1	0.0	0.0	0.0	0.00	0.00	0.00
EST KOP 4079.1 MD 11°/100'									
4,100.0	2.30	92.65	4,100.0	0.0	0.4	0.4	11.00	11.00	0.00
4,200.0	13.30	92.65	4,198.9	-0.6	14.0	14.0	11.00	11.00	0.00
4,300.0	24.29	92.65	4,293.4	-2.1	46.1	46.1	11.00	11.00	0.00
4,400.0	35.29	92.65	4,380.1	-4.4	95.6	95.7	11.00	11.00	0.00
4,500.0	46.29	92.65	4,455.7	-7.5	160.8	161.0	11.00	11.00	0.00
4,525.8	49.13	92.65	4,473.0	-8.3	179.9	180.1	11.00	11.00	0.00
PP 4525.8 MD									
4,600.0	57.29	92.65	4,517.4	-11.1	239.2	239.4	11.00	11.00	0.00
4,700.0	68.29	92.65	4,563.1	-15.2	327.9	328.2	11.00	11.00	0.00
4,800.0	79.28	92.65	4,591.0	-19.6	423.6	424.1	11.00	11.00	0.00
4,900.0	90.28	92.65	4,600.1	-24.2	523.0	523.5	11.00	11.00	0.00



COG Operating LLC
Planning Report

Database:	EDM Users	Local Co-ordinate Reference:	Well: BOSE IKARD 4 STATE COM #26H
Company:	NEW MEXICO SHELF	TVD Reference:	RKB=3594+12 @ 3606.0usft (TBD)
Project:	EDDY COUNTY NM	MD Reference:	RKB=3594+12 @ 3606.0usft (TBD)
Site:	EMPIRE	North Reference:	Grid
Well:	BOSE IKARD 4 STATE COM #26H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

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)
4,906.6	91.00	92.65	4,600.0	-24.6	529.6	530.1	10.93	10.93	0.00
EOC 4906.6 MD 4600.0 TVD 91.0 INC 92.65 AZI									
5,000.0	91.00	92.65	4,598.4	-28.9	622.8	623.5	0.00	0.00	0.00
5,100.0	91.00	92.65	4,596.6	-33.5	722.7	723.5	0.00	0.00	0.00
5,200.0	91.00	92.65	4,594.9	-38.1	822.6	823.5	0.00	0.00	0.00
5,300.0	91.00	92.65	4,593.1	-42.8	922.5	923.5	0.00	0.00	0.00
5,400.0	91.00	92.65	4,591.4	-47.4	1,022.4	1,023.5	0.00	0.00	0.00
5,500.0	91.00	92.65	4,589.6	-52.0	1,122.2	1,123.4	0.00	0.00	0.00
5,600.0	91.00	92.65	4,587.9	-56.7	1,222.1	1,223.4	0.00	0.00	0.00
5,700.0	91.00	92.65	4,586.1	-61.3	1,322.0	1,323.4	0.00	0.00	0.00
5,800.0	91.00	92.65	4,584.4	-65.9	1,421.9	1,423.4	0.00	0.00	0.00
5,900.0	91.00	92.65	4,582.6	-70.5	1,521.7	1,523.4	0.00	0.00	0.00
6,000.0	91.00	92.65	4,580.9	-75.2	1,621.6	1,623.4	0.00	0.00	0.00
6,100.0	91.00	92.65	4,579.1	-79.8	1,721.5	1,723.3	0.00	0.00	0.00
6,200.0	91.00	92.65	4,577.4	-84.4	1,821.4	1,823.3	0.00	0.00	0.00
6,300.0	91.00	92.65	4,575.6	-89.1	1,921.3	1,923.3	0.00	0.00	0.00
6,400.0	91.00	92.65	4,573.9	-93.7	2,021.1	2,023.3	0.00	0.00	0.00
6,500.0	91.00	92.65	4,572.1	-98.3	2,121.0	2,123.3	0.00	0.00	0.00
6,600.0	91.00	92.65	4,570.4	-103.0	2,220.9	2,223.3	0.00	0.00	0.00
6,700.0	91.00	92.65	4,568.6	-107.6	2,320.8	2,323.3	0.00	0.00	0.00
6,800.0	91.00	92.65	4,566.9	-112.2	2,420.6	2,423.2	0.00	0.00	0.00
6,900.0	91.00	92.65	4,565.1	-116.9	2,520.5	2,523.2	0.00	0.00	0.00
7,000.0	91.00	92.65	4,563.4	-121.5	2,620.4	2,623.2	0.00	0.00	0.00
7,100.0	91.00	92.65	4,561.6	-126.1	2,720.3	2,723.2	0.00	0.00	0.00
7,200.0	91.00	92.65	4,559.9	-130.7	2,820.1	2,823.2	0.00	0.00	0.00
7,300.0	91.00	92.65	4,558.1	-135.4	2,920.0	2,923.2	0.00	0.00	0.00
7,400.0	91.00	92.65	4,556.4	-140.0	3,019.9	3,023.1	0.00	0.00	0.00
7,500.0	91.00	92.65	4,554.6	-144.6	3,119.8	3,123.1	0.00	0.00	0.00
7,600.0	91.00	92.65	4,552.9	-149.3	3,219.7	3,223.1	0.00	0.00	0.00
7,700.0	91.00	92.65	4,551.1	-153.9	3,319.5	3,323.1	0.00	0.00	0.00
7,800.0	91.00	92.65	4,549.4	-158.5	3,419.4	3,423.1	0.00	0.00	0.00
7,900.0	91.00	92.65	4,547.6	-163.2	3,519.3	3,523.1	0.00	0.00	0.00
8,000.0	91.00	92.65	4,545.9	-167.8	3,619.2	3,623.1	0.00	0.00	0.00
8,100.0	91.00	92.65	4,544.1	-172.4	3,719.0	3,723.0	0.00	0.00	0.00
8,200.0	91.00	92.65	4,542.4	-177.0	3,818.9	3,823.0	0.00	0.00	0.00
8,300.0	91.00	92.65	4,540.6	-181.7	3,918.8	3,923.0	0.00	0.00	0.00
8,400.0	91.00	92.65	4,538.9	-186.3	4,018.7	4,023.0	0.00	0.00	0.00
8,500.0	91.00	92.65	4,537.1	-190.9	4,118.6	4,123.0	0.00	0.00	0.00
8,600.0	91.00	92.65	4,535.4	-195.6	4,218.4	4,223.0	0.00	0.00	0.00
8,700.0	91.00	92.65	4,533.6	-200.2	4,318.3	4,322.9	0.00	0.00	0.00
8,800.0	91.00	92.65	4,531.9	-204.8	4,418.2	4,422.9	0.00	0.00	0.00
8,900.0	91.00	92.65	4,530.1	-209.5	4,518.1	4,522.9	0.00	0.00	0.00
9,000.0	91.00	92.65	4,528.4	-214.1	4,617.9	4,622.9	0.00	0.00	0.00
9,100.0	91.00	92.65	4,526.6	-218.7	4,717.8	4,722.9	0.00	0.00	0.00
9,158.0	91.00	92.65	4,525.6	-221.4	4,775.7	4,780.8	0.00	0.00	0.00
PBHL 9158 MD 4525.6 TVD									



COG Operating LLC

Planning Report

Database:	EDM Users	Local/Co-ordinate Reference:	Well: BOSE IKARD 4 STATE COM #26H
Company:	NEW MEXICO SHELF	TVD Reference:	RKB=3594+12 @ 3606.0usft (TBD)
Project:	EDDY COUNTY NM	MD Reference:	RKB=3594+12 @ 3606.0usft (TBD)
Site:	EMPIRE	North Reference:	Grid
Well:	BOSE IKARD 4 STATE COM #26H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWR0		

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	
Shape									Latitude Longitude
PBHL-Bose Ikard 4 Stat		0.00	0.00	4,525.6	-221.4	4,775.7	676,968.90	580,297.50	32° 51' 38.871 N 104° 4' 18.598 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,079.1	4,079.1	0.0	0.0	EST KOP, 4079.1' MD, 11°/100'
4,525.8	4,473.0	-8.3	179.9	PP, 4525.8' MD
4,906.6	4,600.0	-24.6	529.6	EOC, 4906.6' MD, 4600' TVD, 91° INC, 92.65° AZI
9,158.0	4,525.6	-221.4	4,775.7	PBHL, 9158' MD, 4525.6' TVD



Project: EDDY COUNTY, NM
 Site: EMPIRE
 Well: BOSE IKARD 4 STATE COM #26H
 Wellbore: OWB
 Design: PWP0

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well BOSE IKARD 4 STATE COM #26H, Grid North
 Vertical (TVD) Reference: RKB=3594+12 @ 3606.0usft (TBD)
 Section (VS) Reference: Slot - (0.0N, 0.0E)
 Measured Depth Reference: RKB=3594+12 @ 3606.0usft (TBD)
 Calculation Method: Minimum Curvature

SECTION DETAILS											Annotation
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	VFace	Target	
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	0.0	EST KOP, 4079.1' MD, 11°/100' EOC, 4906.6' MD, 4600' TVD, 91° INC, 92.65° AZI PBHL-Bose Ikard 4 State Com #26H PBHL, 9158' MD, 4525.6' TVD
2	4079.1	0.00	0.00	4079.1	0.0	0.0	0.00	0.00	0.0	0.0	
3	4906.6	91.00	92.65	4600.0	-24.5	529.5	11.00	92.65	530.1	0.0	
4	9158.0	91.00	92.65	4525.6	-221.4	4775.7	0.00	0.00	4780.8	0.0	

