

District I
1625 N. French Dr., Hobbs, NM 88249
Phone: (575) 393-6161 Fax: (575) 393-9720
District II
811 S. First St., Artesia, NM 88210
Phone: (505) 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

June 29 2013

NMOCD ARTESIA

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015- 41634	² Pool Code 96718	³ Pool Name Loco Hills; Glorieta Veso
⁴ Property Code 302586	⁵ Property Name WICHITA STATE	⁶ Well Number 4
⁷ OGRID No. 229137	⁸ Operator Name COG OPERATING, LLC	⁹ Elevation 3678'

¹⁰ Surface Location

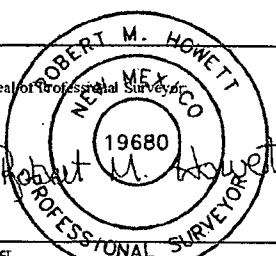
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	16	17-S	30-E		1928	SOUTH	647	WEST	EDDY

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
L	16	17-S	30-E		1650	SOUTH	330	WEST	EDDY

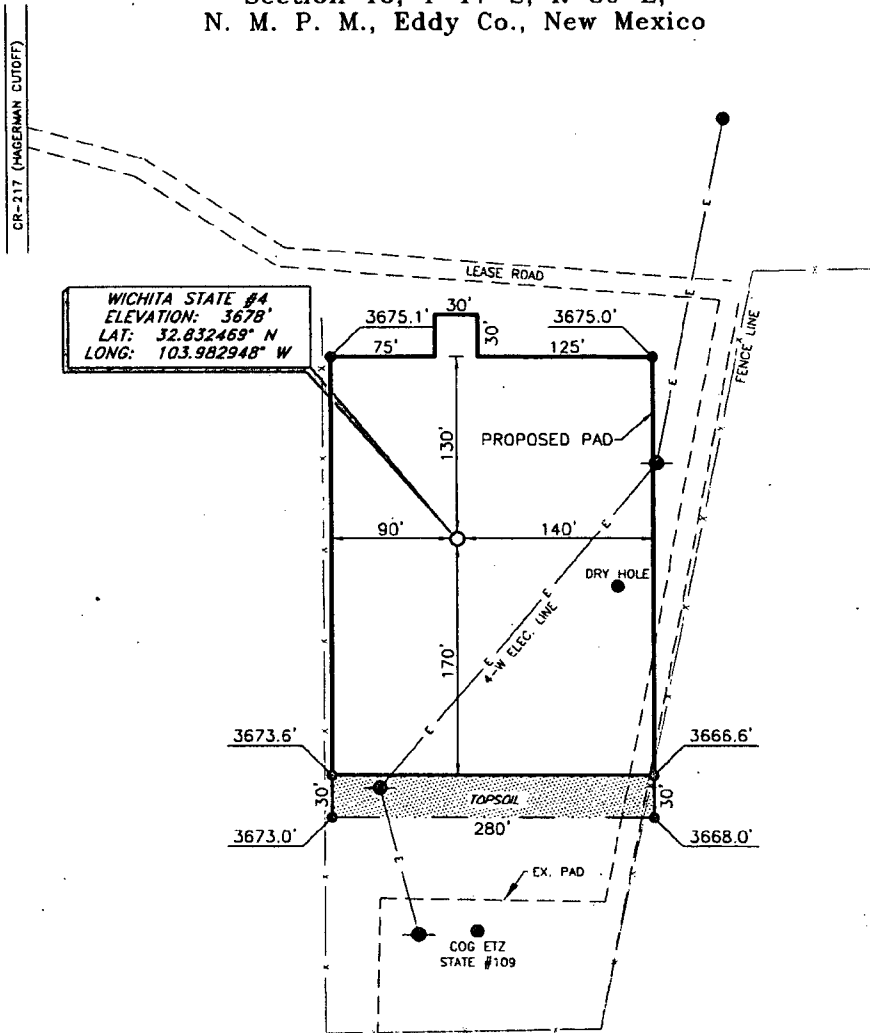
¹² Dedicated Acres 40	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

CORNER DATA NAD 27 GRID - NM EAST A: FND BRASS CAP 1916 N 664812.6 - E 606985.4 B: FND BRASS CAP 1916 N 667453.2 - E 606975.6 C: FND BRASS CAP 1916 N 670092.7 - E 606967.2 D: FND BRASS CAP 1916 N 670097.0 - E 609609.0 E: FND BRASS CAP 1916 N 670102.3 - E 612250.5 F: FND BRASS CAP 1916 N 667461.9 - E 612259.6 G: FND BRASS CAP 1916 N 664822.3 - E 612268.5 H: FND BRASS CAP 1916 N 664818.5 - E 609582.4 GEODETIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 666741.7 E 607625.1 LAT: 32.832469° N LONG: 103.982948° W BOTTOM LOCATION N 666462.9 E 607309.2 Estimated Completed Interval: 1928 FSL 647 FWL 647' S.L. 330' B.H. S 48° 34' 28" W (GRID) 421.42' (HORIZ.) 1928' 1650'	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 undivided 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 previously entered by the division.  7-30-13 Date Kelly J. Holly Printed Name kholly@concho.com E-mail Address 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. 7/9/13 Date of Survey  Signature and Seal of Professional Surveyor  19680 Certificate Number
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COG OPERATING, LLC

Wichita State #4
(1928' FSL & 647' FWL)
Section 16, T-17-S, R-30-E,
N. M. P. M., Eddy Co., New Mexico



DIRECTIONS TO LOCATION

From the intersection of U.S. Hwy. #82 and CR-217 (Hagerman Cutoff):

Go North on CR-217 approx. 1.1 miles.

Turn right on lease road and go East approx. 0.1 mile.

The location is approx. 190 feet south of the lease road.

SCALE: 1" = 100'

BEARINGS ARE
MAD 22° - NW EAST
DISTANCES ARE
GROUND.

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NO.	REVISION	DATE
JOB NO.: LS130305		
DWG. NO.: 130305PAD		

PROSPERITY CONSULTANTS, LLC



2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE: 1" = 100'

DATE: 7/9/13

SURVEYED BY: GB/SM

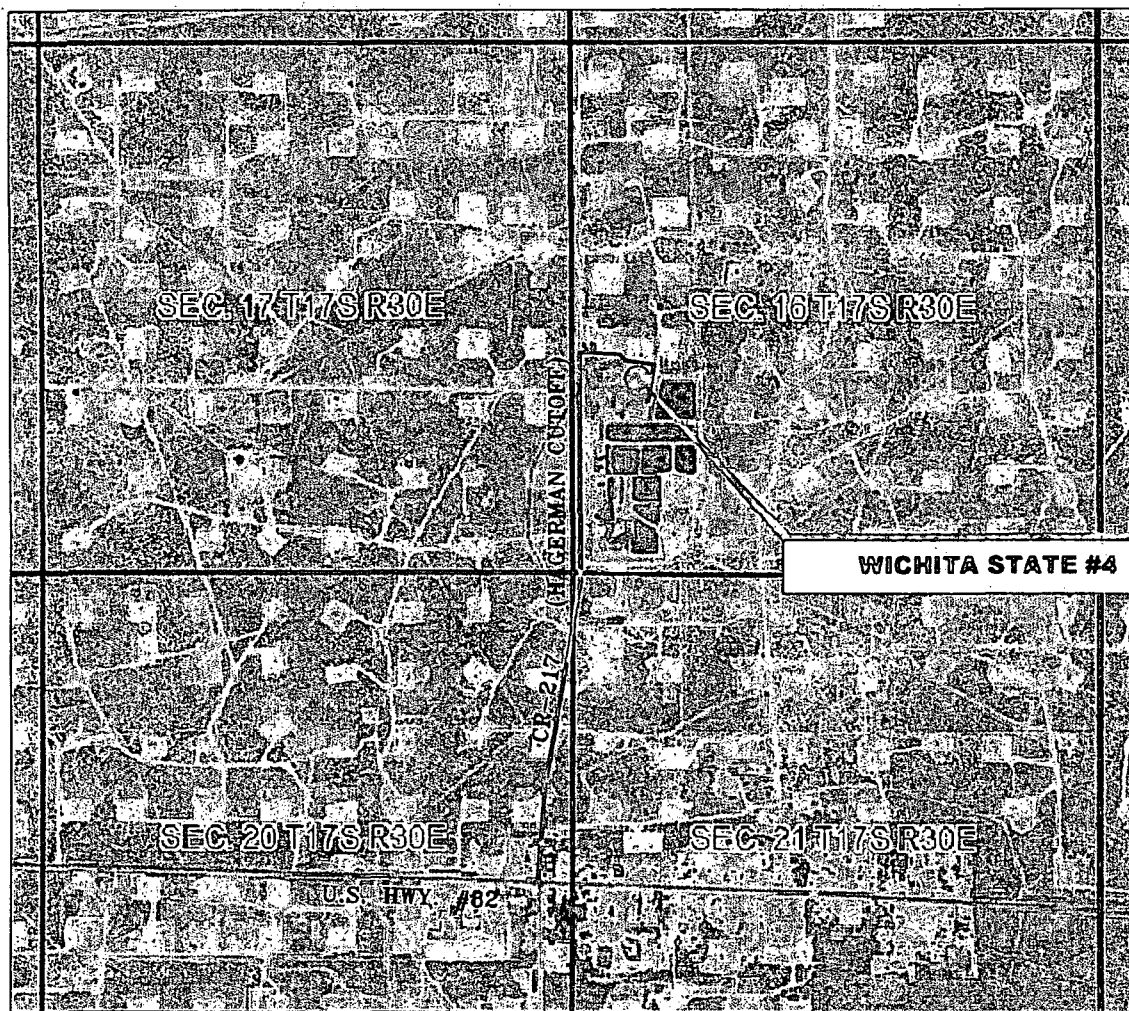
DRAWN BY: AF

APPROVED BY: LWB

SHEET : 1 OF 1

VICINITY MAP

NOT TO SCALE



**SECTION 16, TWP. 17 SOUTH, RGE. 30 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO**

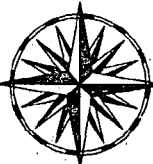
OPERATOR: COG Operating, LLC
LEASE: Wichita State
WELL NO.: 4

LOCATION: 1928' FSL & 647' FWL
ELEVATION: 3678'

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NO.	REVISION	DATE
JOB NO.:	LS130305	
DWG. NO.:	130305VM	

PROSPERITY CONSULTANTS, LLC

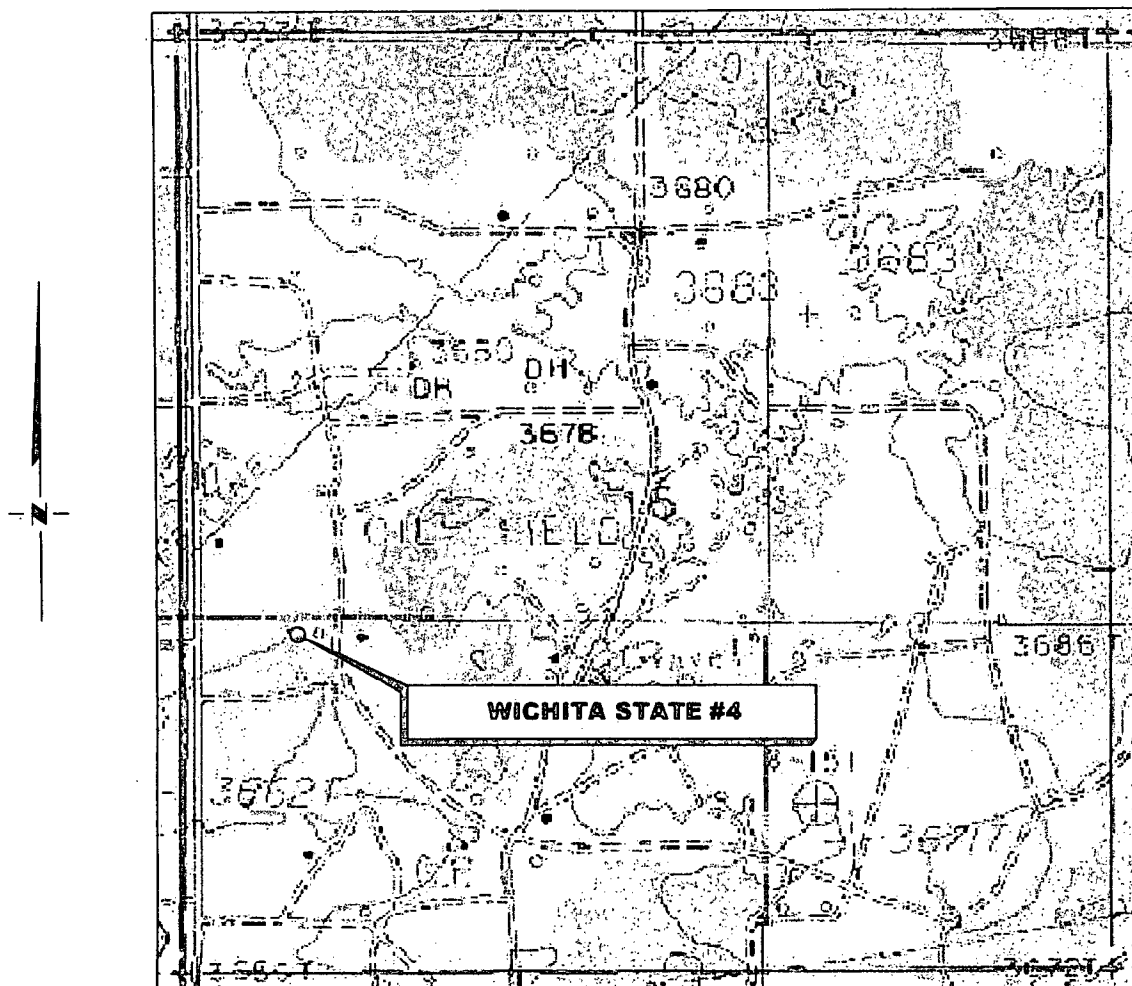


2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE:	N.T.S.
DATE:	7/9/13
SURVEYED BY:	GB/SM
DRAWN BY:	AF
APPROVED BY:	LWB
SHEET :	1 OF 1

LOCATION VERIFICATION MAP



*SECTION 16, TWP. 17 SOUTH, RGE. 30 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: COG Operating, LLC
LEASE: Wichita State
WELL NO.: 4
ELEVATION: 3678'

LOCATION: 1928' FSL & 647' FWL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Loco Hills, NM (P.E. 1985)

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NO.	REVISION	DATE
JOB NO.:	LS130305	
DWG. NO.:	130305LVM	

PROSPERITY CONSULTANTS, LLC



2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 / (512) 251-2518

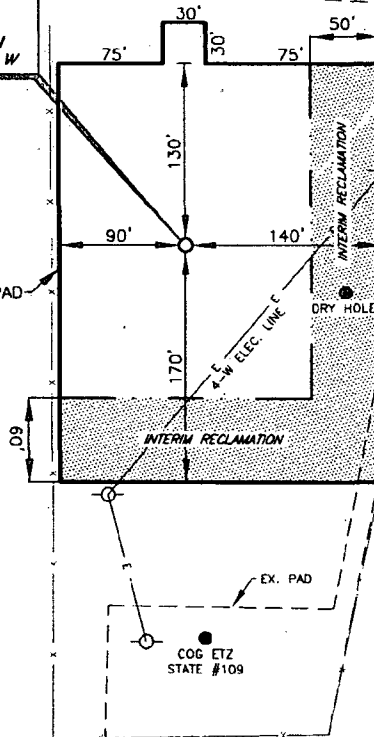
SCALE: 1" = 1000'
DATE: 7/9/13
SURVEYED BY: GB/SM
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

COG OPERATING, LLC
Interim Reclamation
Wichita State #4
(1928' FSL & 647' FWL)
Section 16, T-17-S, R-30-E,
N. M. P. M., Eddy Co., New Mexico

CR-217 (HAGERMAN CUTOFF)

WICHITA STATE #4
ELEVATION: 3678'
LAT: 32.832469° N
LONG: 103.982948° W

PROPOSED PAD



DIRECTIONS TO LOCATION

From the intersection of U.S. Hwy. #82 and CR-217 (Hagerman Cutoff):

Go North on CR-217 approx. 1.1 miles.

Turn right on lease road and go East approx. 0.1 mile.

The location is approx. 190 feet south of the lease road.

N

SCALE: 1" = 100'
0 50 100

BEARINGS ARE
MAD 27 - NW EAST
DISTANCES ARE
GROUND.

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NO.	REVISION	DATE
JOB NO.: LS130305		
DWG. NO.: 130305REC		

PROSPERITY CONSULTANTS, LLC



2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 / (512) 251-2518

SCALE: 1" = 100'

DATE: 7/9/13

SURVEYED BY: GB/SM

DRAWN BY: AF

APPROVED BY: LWB

SHEET : 1 OF 1



Plan Proposal

FOR

COG Operating, LLC
Wichita State #4
Eddy Co., NM

Design #3

Presented By

Aaron Boger
Account Manager

Bret Wolford
Well Planner

SHL

1928' FSL & 647' FWL

Sec.16-T17S-R30E

Top of Paddock (4310' TVD)

1755' FSL & 449' FWL

Penetration Point

1928' FSL & 647' FWL

PBHL

1660' FSL & 340' FWL

Sec.16-T17S-R30E

ARTESIA



COG Operating, LLC
Project: Eddy County(NM27E)
Site: Sec.17-T17S-R30E
Well: Wichita State #4
Wellbore: Wellbore #1
Design: Design #3
Latitude: 32° 49' 56.888 N
Longitude: 103° 58' 58.613 W
Ground Level: 3678.00
WELL @ 3681.00usft

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AUG 29 2013
Archer
NMOOD ARTESIA

PROJECT DETAILS: Eddy County(NM27E)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Wichita State #4, Grid North
Vertical (TVD) Reference: WELL @ 3681.00usft
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: WELL @ 3681.00usft
Calculation Method: Minimum Curvature

WELL DETAILS: Wichita State #4

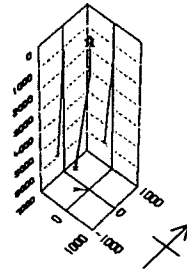
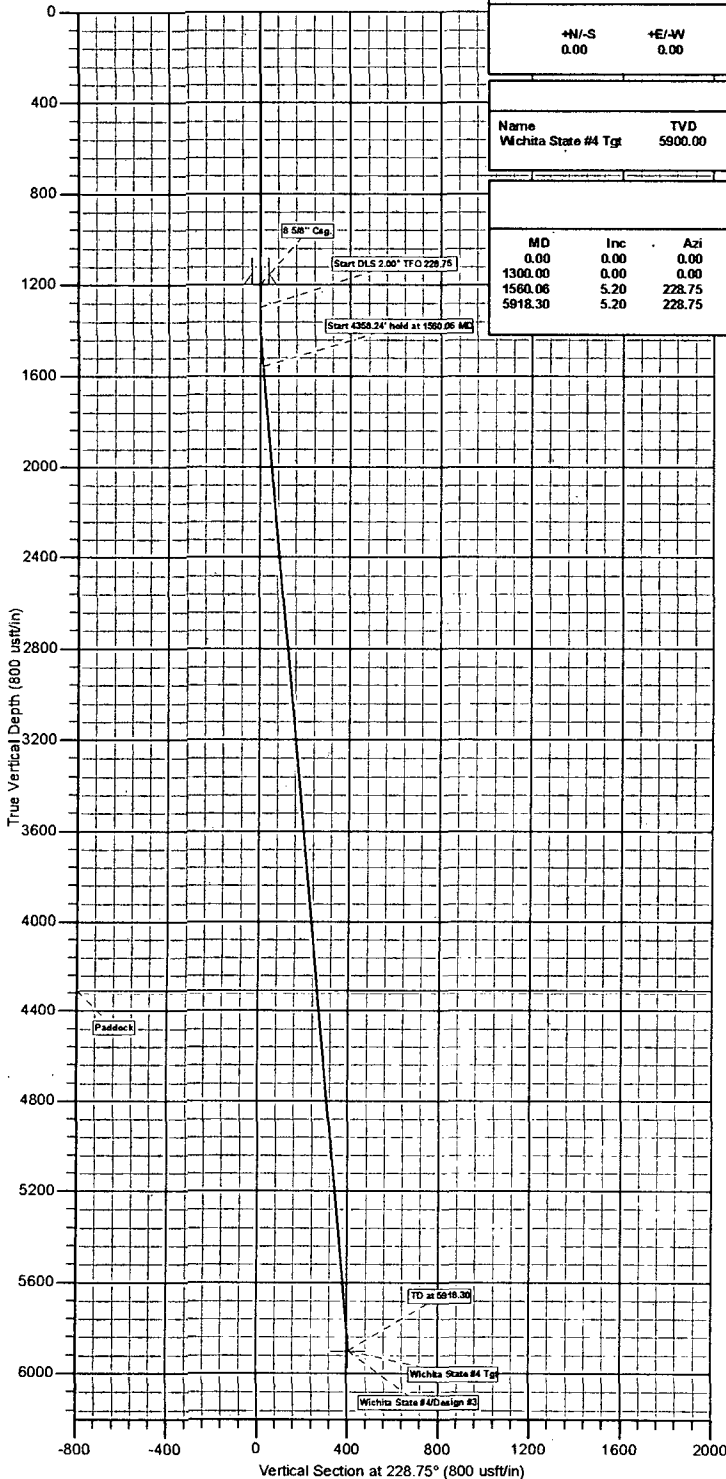
+N/-S	+E/-W	Northing	Ground Level:	Latitude	Longitude	Slot
0.00	0.00	666741.700	3678.00	32° 49' 56.888 N	103° 58' 58.613 W	
			Easting			
			607625.100			

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

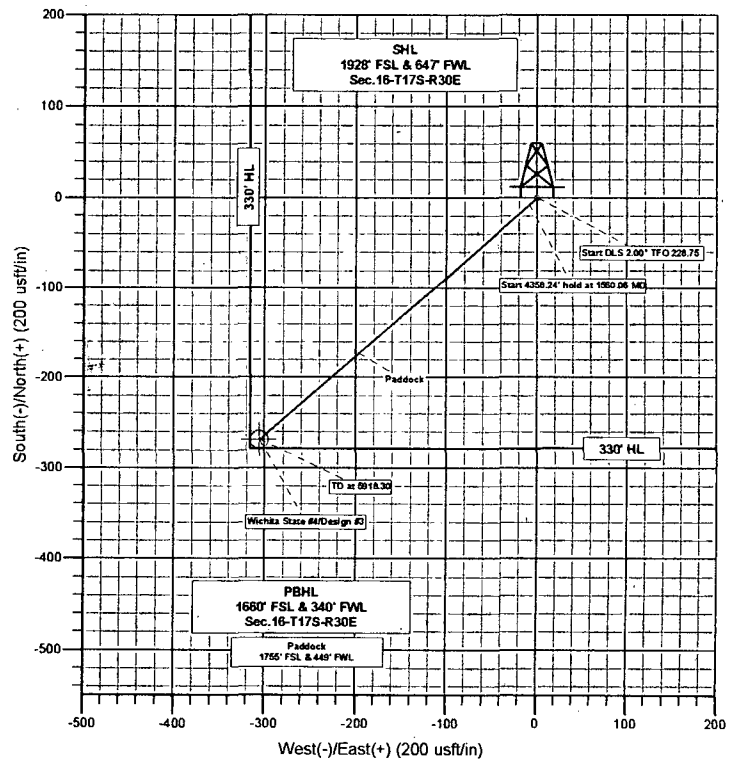
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Wichita State #4 Tgt	5900.00	-268.30	-305.90	666473.400	607319.200	32° 49' 54.243 N	103° 59' 2.268 W	Circle (Radius: 10.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00	Start DLS 2.00° TFO 228.75
1560.06	5.20	228.75	1559.71	-7.78	-8.87	2.00	228.75	11.80	Start 4358.24' hold at 1560.06 MD
5918.30	5.20	228.75	5900.00	-268.30	-305.90	0.00	0.00	406.89	TD at 5918.30



Azimuths to Grid North
True North: -0.19°
Magnetic North: 7.36°
Magnetic Field
Strength: 48715.2snT
Dip Angle: 80.62°
Date: 2013/08/26
Model: IGRF2010



Plan: Design #3 (Wichita State #4/Wellbore #1)

Created By: Bret Wolford Date: 10:59, August 26 2013



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AUG 29 2013

NMOCD ARTESIA

COG Operating, LLC

Eddy County(NM27E)

Sec.17-T17S-R30E

Wichita State #4

Wellbore #1

Plan: Design #3

Standard Planning Report

26 August, 2013

Archer

Database	EDM 5000.1 Single User Db	Local Co-ordinate Reference	Well Wichita State #4
Company	COG Operating, LLC	TVD Reference	WELL @ 3681.00usft
Project	Eddy County(NM27E)	MD Reference	WELL @ 3681.00usft
Site	Sec.17-T17S-R30E	North Reference	Grid
Well	Wichita State #4	Survey Calculation Method	Minimum Curvature
Wellbore	Wellbore #1		
Design	Design #3		

Project	Eddy County(NM27E)		
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	Sec.17-T17S-R30E		
Site Position:		Northing:	665,262.200 usft
From:	Map	Easting:	601,988.900 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 49' 42.428 N
		Longitude:	104° 0' 4.724 W
		Grid Convergence:	0.18 °

Well	Wichita State #4		
Well Position	+N-S	1,479.50 usft	Northing:
	+E-W	5,636.20 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 49' 56.888 N
		Longitude:	103° 58' 58.613 W
		Ground Level:	3,678.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	2013/08/26	7.55
			Dip Angle
			60.62
			Field Strength
			48,715

Design	Design #3		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	5,900.00	0.00	0.00
			Direction
			228.75

Plan Sections										
Measured										
Depth	Inclination	Azimuth	Vertical	+N-S	+E-W	Dogleg	Build	Turn	TFO	Target
(usft)	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	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	
1,560.06	5.20	228.75	1,559.71	-7.78	-8.87	2.00	2.00	-50.47	228.75	
5,918.30	5.20	228.75	5,900.00	-268.30	-305.90	0.00	0.00	0.00	0.00	Wichita State #4 Tgt

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wichita State #4
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3681.00usft
Project:	Eddy County(NM27E)	MD Reference:	WELL @ 3681.00usft
Site:	Sec.17-T17S-R30E	North Reference:	Grid
Well:	Wichita State #4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

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
8.5/8" Csg.									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start DLS 2.00" TFO 228.75									
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	2.00	228.75	1,399.98	-1.15	-1.31	1.75	2.00	2.00	0.00
1,500.00	4.00	228.75	1,499.84	-4.60	-5.25	6.98	2.00	2.00	0.00
Start 4358.24' hold at 1560.06 MD									
1,560.06	5.20	228.75	1,559.71	-7.78	-8.87	11.80	2.00	2.00	0.00
1,600.00	5.20	228.75	1,599.48	-10.17	-11.59	15.42	0.00	0.00	0.00
1,700.00	5.20	228.75	1,699.07	-16.14	-18.41	24.48	0.00	0.00	0.00
1,800.00	5.20	228.75	1,798.65	-22.12	-25.22	33.55	0.00	0.00	0.00
1,900.00	5.20	228.75	1,898.24	-28.10	-32.04	42.61	0.00	0.00	0.00
2,000.00	5.20	228.75	1,997.83	-34.08	-38.85	51.68	0.00	0.00	0.00
2,100.00	5.20	228.75	2,097.42	-40.05	-45.67	60.74	0.00	0.00	0.00
2,200.00	5.20	228.75	2,197.01	-46.03	-52.48	69.81	0.00	0.00	0.00
2,300.00	5.20	228.75	2,296.60	-52.01	-59.30	78.87	0.00	0.00	0.00
2,400.00	5.20	228.75	2,396.18	-57.99	-66.11	87.94	0.00	0.00	0.00
2,500.00	5.20	228.75	2,495.77	-63.96	-72.93	97.01	0.00	0.00	0.00
2,600.00	5.20	228.75	2,595.36	-69.94	-79.74	106.07	0.00	0.00	0.00
2,700.00	5.20	228.75	2,694.95	-75.92	-86.56	115.14	0.00	0.00	0.00
2,800.00	5.20	228.75	2,794.54	-81.90	-93.38	124.20	0.00	0.00	0.00
2,900.00	5.20	228.75	2,894.13	-87.88	-100.19	133.27	0.00	0.00	0.00
3,000.00	5.20	228.75	2,993.71	-93.85	-107.01	142.33	0.00	0.00	0.00
3,100.00	5.20	228.75	3,093.30	-99.83	-113.82	151.40	0.00	0.00	0.00
3,200.00	5.20	228.75	3,192.89	-105.81	-120.64	160.46	0.00	0.00	0.00
3,300.00	5.20	228.75	3,292.48	-111.79	-127.45	169.53	0.00	0.00	0.00
3,400.00	5.20	228.75	3,392.07	-117.76	-134.27	178.59	0.00	0.00	0.00
3,500.00	5.20	228.75	3,491.66	-123.74	-141.08	187.66	0.00	0.00	0.00
3,600.00	5.20	228.75	3,591.24	-129.72	-147.90	196.73	0.00	0.00	0.00
3,700.00	5.20	228.75	3,690.83	-135.70	-154.71	205.79	0.00	0.00	0.00
3,800.00	5.20	228.75	3,790.42	-141.67	-161.53	214.86	0.00	0.00	0.00
3,900.00	5.20	228.75	3,890.01	-147.65	-168.34	223.92	0.00	0.00	0.00
4,000.00	5.20	228.75	3,989.60	-153.63	-175.16	232.99	0.00	0.00	0.00
4,100.00	5.20	228.75	4,089.18	-159.61	-181.98	242.05	0.00	0.00	0.00
4,200.00	5.20	228.75	4,188.77	-165.59	-188.79	251.12	0.00	0.00	0.00
4,300.00	5.20	228.75	4,288.36	-171.56	-195.61	260.18	0.00	0.00	0.00
Paddock									
4,321.73	5.20	228.75	4,310.00	-172.86	-197.09	262.15	0.00	0.00	0.00
4,400.00	5.20	228.75	4,387.95	-177.54	-202.42	269.25	0.00	0.00	0.00
4,500.00	5.20	228.75	4,487.54	-183.52	-209.24	278.31	0.00	0.00	0.00
4,600.00	5.20	228.75	4,587.13	-189.50	-216.05	287.38	0.00	0.00	0.00
4,700.00	5.20	228.75	4,686.71	-195.47	-222.87	296.45	0.00	0.00	0.00

Database:	EDM 5000.1 Single User.Db	Local Co-ordinate Reference:	Well Wichita State #4
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3681.00usft
Project:	Eddy County(NM27E)	MD Reference:	WELL @ 3681.00usft
Site:	Sec.17-T17S-R30E	North Reference:	Grid
Well:	Wichita State #4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

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)
4,800.00	5.20	228.75	4,786.30	-201.45	-229.68	305.51	0.00	0.00	0.00
4,900.00	5.20	228.75	4,885.89	-207.43	-236.50	314.58	0.00	0.00	0.00
5,000.00	5.20	228.75	4,985.48	-213.41	-243.31	323.64	0.00	0.00	0.00
5,100.00	5.20	228.75	5,085.07	-219.38	-250.13	332.71	0.00	0.00	0.00
5,200.00	5.20	228.75	5,184.66	-225.36	-256.94	341.77	0.00	0.00	0.00
5,300.00	5.20	228.75	5,284.24	-231.34	-263.76	350.84	0.00	0.00	0.00
5,400.00	5.20	228.75	5,383.83	-237.32	-270.58	359.90	0.00	0.00	0.00
5,500.00	5.20	228.75	5,483.42	-243.30	-277.39	368.97	0.00	0.00	0.00
5,600.00	5.20	228.75	5,583.01	-249.27	-284.21	378.03	0.00	0.00	0.00
5,700.00	5.20	228.75	5,682.60	-255.25	-291.02	387.10	0.00	0.00	0.00
5,800.00	5.20	228.75	5,782.18	-261.23	-297.84	396.17	0.00	0.00	0.00
5,900.00	5.20	228.75	5,881.77	-267.21	-304.65	405.23	0.00	0.00	0.00
TD at 5918.30 - Wichita State #4 Tgt									
5,918.30	5.20	228.75	5,900.00	-268.30	-305.90	406.89	0.00	0.00	0.00

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
Wichita State #4 Tgt	- plan hits target center - Circle (radius 10.00)	0.00	0.00	5,900.00	-268.30	-305.90	666,473.400	607,319.200	32° 49' 54.243 N	103° 59' 2.208 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,200.00	1,200.00	8 5/8" Csg.	8-5/8	12-1/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,321.73	4,310.00	Paddock		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Comment
1,300.00	1,300.00	0.00	0.00	Start DLS 2.00° TFO 228.75
1,560.06	1,559.71	-7.78	-8.87	Start 4358.24' hold at 1560.06 MD
5,918.30	5,900.00	-268.30	-305.90	TD at 5918.30