

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, New Mexico 87505

NM OIL CONSERVATION
ARTESIA DISTRICT
SEP 28 2015

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

RECEIVED ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015- 43386	Pool Code 3250	Pool Name Atoka; Glorieta Yeso
Property Code 39567	Property Name CUSTER 16 STATE COM	Well Number 1H
OGRID No 229137	Operator Name COG OPERATING, LLC	Elevation 3348'

Surface Location

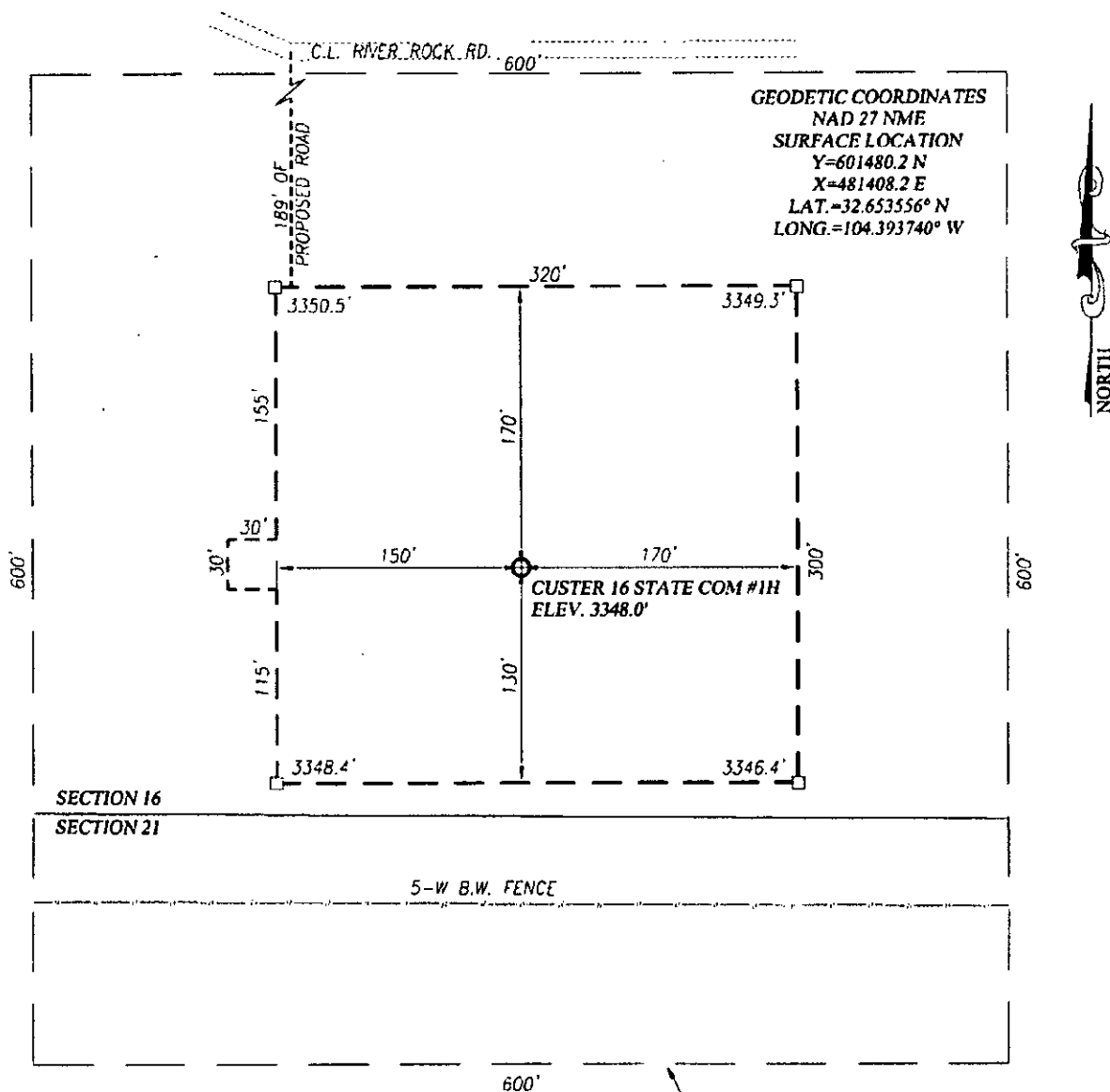
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	19-S	26-E		150	SOUTH	330	WEST	EDDY

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
D	16	19-S	26-E		330	NORTH	330	WEST	EDDY
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.						

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

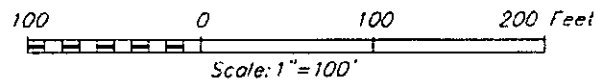
PRODUCING AREA PROJECT AREA GRID AZ = 00°21'58" HORIZ. DIST. = 4825.4' Estimated Completed Interval: 330 FSL 330 FWL	GEODETIC COORDINATES NAD 27 NME BOTTOM HOLE LOCATION Y=606304.1 N X=481439.0 E LAT.=32.666816° N LONG.=104.393649° W	OPERATOR CERTIFICATION I hereby certify that the information herein 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>[Signature]</i> 9-24-15 Signature Date Kelly J Holly Printed Name kholly@concho.com E-mail Address
	CORNER COORDINATES TABLE NAD 27 NME A - Y=606633.7 N, X=481111.2 E B - Y=606635.0 N, X=482433.5 E C - Y=601332.3 N, X=481077.3 E D - Y=601323.8 N, X=482393.1 E	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. MARCH 27, 2014
	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=601480.2 N X=481408.2 E LAT.=32.653556° N LONG.=104.393740° W	Date of Survey Signature & Seal of Professional Surveyor. <i>[Signature]</i> GARY G. EIDSON NEW MEXICO 12641
	ACK	Certificate Number Gary G. Eidson 12641 Ronald J. Eidson 3239 W.S.C. W.O.: 14.11.0316



NOTE:
 1) SEE "LOCATION VERIFICATION MAP"
 FOR PROPOSED ROAD LOCATION.

DIRECTIONS TO CUSTER 16 STATE COM #1H:

FROM THE INTERSECTION OF U.S. HIGHWAY 285 (SEVEN RIVERS) AND CO. RD. #35 (CRANE RD.), GO EAST-SOUTHEAST ON CRANE RD. APPROX. 150 FEET. TURN RIGHT AND GO SOUTH AT LEASE ROAD APPROX. 0.5 MILES TO PROPOSED ROAD SURVEY. FOLLOW STAKED ROAD SOUTH APPROX. 189 FEET TO THE LOCATION.



COG OPERATING, LLC

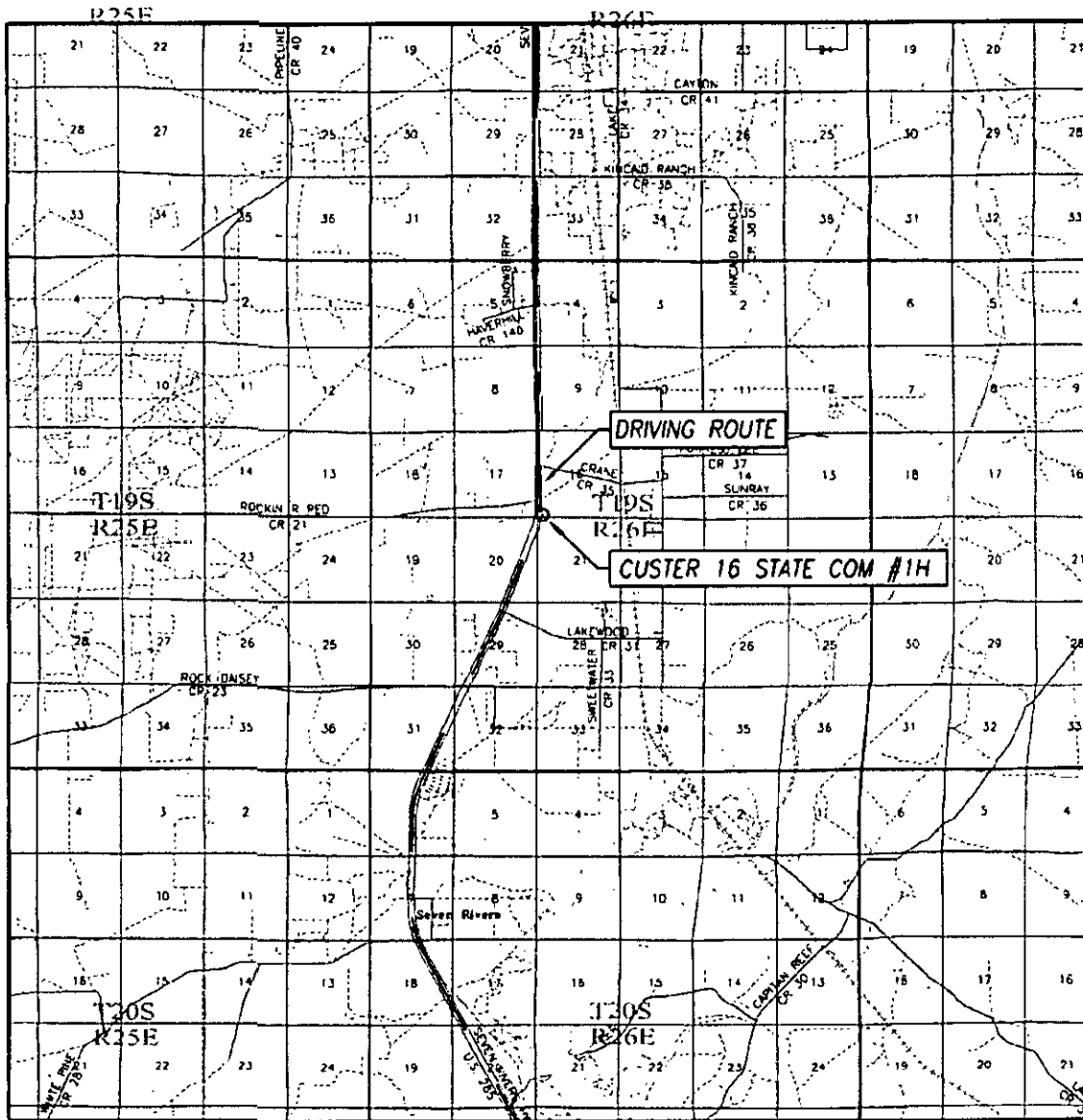
CUSTER 16 STATE COM #1H WELL
 LOCATED 150 FEET FROM THE SOUTH LINE
 AND 330 FEET FROM THE WEST LINE OF SECTION 16,
 TOWNSHIP 19 SOUTH, RANGE 26 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO



PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO HOBBS, N.M. 88240
 (575) 393-3117 www.jwsc.biz
 TBPLS# 10021000

Survey Date: 3/27/14	CAD Date: 4/15/14	Drawn By: ACK
W.O. No.: 14110316	Rev.:	Rel. W.O.:
		Sheet 1 of 1

VICINITY MAP



SCALE: 1" = 2 MILES

DRIVING ROUTE: SEE LOCATION VERIFICATION MAP

SEC. 16 TWP. 19-S RGE. 26-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 150' FSL & 330' FWL

ELEVATION 3348'

OPERATOR COG OPERATING, LLC

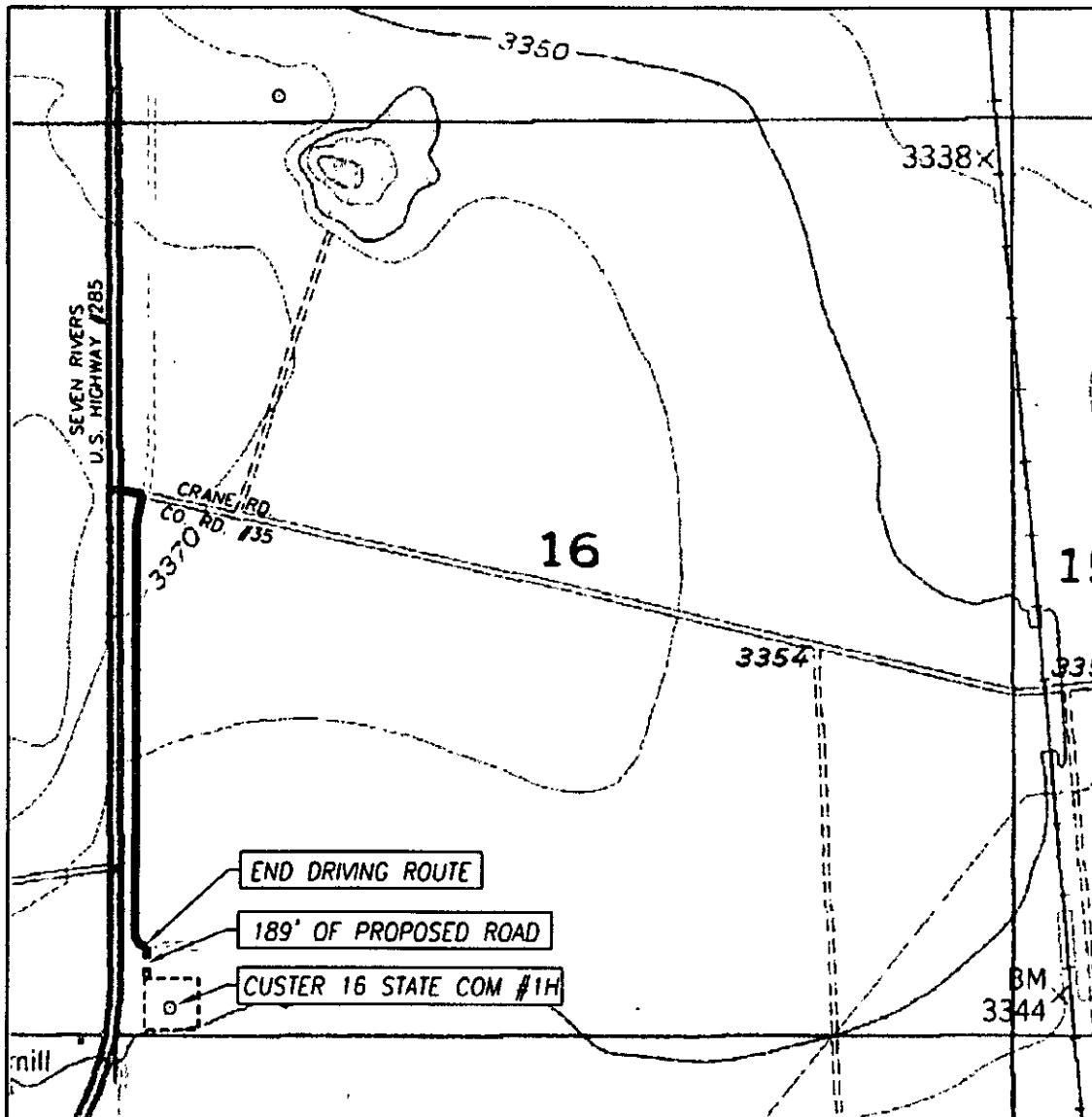
LEASE CUSTER 16 STATE COM

PROVIDING SURVEYING SERVICES
SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

LOCATION VERIFICATION MAP



SCALE: 1" = 1000'

CONTOUR INTERVAL:
DAYTON, N.M. - 10'

SEC. 16 TWP. 19-S RGE. 26-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 150' FSL & 330' FWL

ELEVATION 3348'

OPERATOR COG OPERATING, LLC

LEASE CUSTER 16 STATE COM

U.S.G.S. TOPOGRAPHIC MAP
DAYTON, N.M.

DIRECTIONS TO CUSTER 16 STATE COM #1H:

FROM THE INTERSECTION OF U.S. HIGHWAY 285 (SEVEN RIVERS) AND CO. RD. #35 (CRANE RD.), GO EAST-SOUTHEAST ON CRANE RD. APPROX. 150 FEET, TURN RIGHT AND GO SOUTH AT LEASE ROAD APPROX. 0.5 MILES TO PROPOSED ROAD SURVEY. FOLLOW STAKED ROAD SOUTH APPROX. 189 FEET TO THE LOCATION.



PROVIDING SURVEYING SERVICES
SINCE 1946
JOIN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000



NM OIL CONSERVATION

ARTESIA DISTRICT

SEP 28 2015

RECEIVED

COG Operating LLC

Eddy County, NM (NAD27 NME)

Custer 16 State Com

#1H

OH

Plan: Plan #1 09-21-15

Surface: 150' FSL, 330' FWL, Sec 16, T19S, R26E, Unit M

PP: 330' FSL, 330' FWL, Sec 16, T19S, R26E, Unit M

BHL: 330' FNL, 330' FWL, Sec 16, T19S, R26E, Unit D

Standard Planning Report

21 September, 2015





Phoenix Technology Services LP
Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	KB @ 3366.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3366.00usft (Silver Oak 3)
Site:	Custer 16 State Com	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 09-21-15		

Project	Eddy County, NM (NAD27 NME)		
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	Custer 16 State Com		
Site Position:		Northing:	601,480.20 usft
From:	Map	Easting:	481,408.20 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 39' 12.80192 N
		Longitude:	104° 23' 37.46506 W
		Grid Convergence:	-0.03 °

Well	#1H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 39' 12.80192 N
		Longitude:	104° 23' 37.46506 W
		Ground Level:	3,348.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	HDGM	9/21/2015	7.60
			Dip Angle
			(°)
			60.52
			Field Strength
			(nT)
			48,412

Design	Plan #1 09-21-15		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			0.37

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(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	
2,753.11	0.00	0.00	2,753.11	0.00	0.00	0.00	0.00	0.00	0.00	
3,582.20	91.20	0.37	3,273.87	531.77	3.40	11.00	11.00	0.00	0.37	
7,875.36	91.20	0.37	3,183.96	4,823.90	30.80	0.00	0.00	0.00	0.00	BHL (Custer 16 State



Phoenix Technology Services LP
Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	KB @ 3366.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3366.00usft (Silver Oak 3)
Site:	Custer 16 State Corn	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 09-21-15		

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
2,753.11	0.00	0.00	2,753.11	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 11°/100° Build									
2,800.00	5.16	0.37	2,799.94	2.11	0.01	2.11	11.00	11.00	0.00
2,900.00	16.16	0.37	2,898.06	20.57	0.13	20.57	11.00	11.00	0.00
3,000.00	27.16	0.37	2,990.86	57.42	0.37	57.42	11.00	11.00	0.00
3,100.00	38.16	0.37	3,074.92	111.30	0.71	111.30	11.00	11.00	0.00
3,199.70	49.12	0.37	3,146.96	180.00	1.15	180.00	11.00	11.00	0.00
PP (Custer 16 State Corn #1H)									
3,200.00	49.16	0.37	3,147.16	180.23	1.15	180.23	11.00	11.00	0.00
3,300.00	60.16	0.37	3,204.91	261.67	1.67	261.68	11.00	11.00	0.00
3,400.00	71.16	0.37	3,246.07	352.64	2.25	352.65	11.00	11.00	0.00
3,500.00	82.16	0.37	3,269.11	449.79	2.87	449.80	11.00	11.00	0.00
3,579.25	90.88	0.37	3,273.92	528.82	3.38	528.83	11.00	11.00	0.00
TL 3285' TVD @ 0 VZ, 91.2° Inc									
3,582.20	91.20	0.37	3,273.87	531.77	3.40	531.78	11.00	11.00	0.00
Begin 91.2° Inc Hold, 0.37° Azm									
3,600.00	91.20	0.37	3,273.50	549.56	3.51	549.57	0.00	0.00	0.00
3,700.00	91.20	0.37	3,271.40	649.54	4.15	649.55	0.00	0.00	0.00
3,800.00	91.20	0.37	3,269.31	749.51	4.79	749.53	0.00	0.00	0.00
3,900.00	91.20	0.37	3,267.21	849.49	5.42	849.51	0.00	0.00	0.00
4,000.00	91.20	0.37	3,265.12	949.46	6.06	949.48	0.00	0.00	0.00
4,100.00	91.20	0.37	3,263.03	1,049.44	6.70	1,049.46	0.00	0.00	0.00
4,200.00	91.20	0.37	3,260.93	1,149.42	7.34	1,149.44	0.00	0.00	0.00
4,300.00	91.20	0.37	3,258.84	1,249.39	7.98	1,249.42	0.00	0.00	0.00
4,400.00	91.20	0.37	3,256.74	1,349.37	8.62	1,349.40	0.00	0.00	0.00
4,500.00	91.20	0.37	3,254.65	1,449.34	9.25	1,449.37	0.00	0.00	0.00
4,600.00	91.20	0.37	3,252.55	1,549.32	9.89	1,549.35	0.00	0.00	0.00
4,700.00	91.20	0.37	3,250.46	1,649.30	10.53	1,649.33	0.00	0.00	0.00
4,800.00	91.20	0.37	3,248.37	1,749.27	11.17	1,749.31	0.00	0.00	0.00
4,900.00	91.20	0.37	3,246.27	1,849.25	11.81	1,849.29	0.00	0.00	0.00
5,000.00	91.20	0.37	3,244.18	1,949.22	12.45	1,949.26	0.00	0.00	0.00
5,100.00	91.20	0.37	3,242.08	2,049.20	13.08	2,049.24	0.00	0.00	0.00
5,200.00	91.20	0.37	3,239.99	2,149.18	13.72	2,149.22	0.00	0.00	0.00
5,300.00	91.20	0.37	3,237.89	2,249.15	14.36	2,249.20	0.00	0.00	0.00
5,400.00	91.20	0.37	3,235.80	2,349.13	15.00	2,349.18	0.00	0.00	0.00
5,500.00	91.20	0.37	3,233.71	2,449.10	15.64	2,449.15	0.00	0.00	0.00
5,600.00	91.20	0.37	3,231.61	2,549.08	16.28	2,549.13	0.00	0.00	0.00
5,700.00	91.20	0.37	3,229.52	2,649.06	16.91	2,649.11	0.00	0.00	0.00
5,800.00	91.20	0.37	3,227.42	2,749.03	17.55	2,749.09	0.00	0.00	0.00
5,900.00	91.20	0.37	3,225.33	2,849.01	18.19	2,849.07	0.00	0.00	0.00
6,000.00	91.20	0.37	3,223.23	2,948.99	18.83	2,949.05	0.00	0.00	0.00
6,100.00	91.20	0.37	3,221.14	3,048.96	19.47	3,049.02	0.00	0.00	0.00
6,200.00	91.20	0.37	3,219.05	3,148.94	20.11	3,149.00	0.00	0.00	0.00
6,300.00	91.20	0.37	3,216.95	3,248.91	20.74	3,248.98	0.00	0.00	0.00
6,400.00	91.20	0.37	3,214.86	3,348.89	21.38	3,348.96	0.00	0.00	0.00
6,500.00	91.20	0.37	3,212.76	3,448.87	22.02	3,448.94	0.00	0.00	0.00
6,600.00	91.20	0.37	3,210.67	3,548.84	22.66	3,548.91	0.00	0.00	0.00
6,700.00	91.20	0.37	3,208.58	3,648.82	23.30	3,648.89	0.00	0.00	0.00
6,800.00	91.20	0.37	3,206.48	3,748.79	23.94	3,748.87	0.00	0.00	0.00
6,900.00	91.20	0.37	3,204.39	3,848.77	24.57	3,848.85	0.00	0.00	0.00
7,000.00	91.20	0.37	3,202.29	3,948.75	25.21	3,948.83	0.00	0.00	0.00
7,100.00	91.20	0.37	3,200.20	4,048.72	25.85	4,048.80	0.00	0.00	0.00
7,200.00	91.20	0.37	3,198.10	4,148.70	26.49	4,148.78	0.00	0.00	0.00



Phoenix Technology Services LP
Planning Report



Database:	Compass 5000 GCR	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	KB @ 3366.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3366.00usft (Silver Oak 3)
Site:	Custer 16 State Com	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 09-21-15		

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)
7,300.00	91.20	0.37	3,196.01	4,248.67	27.13	4,248.76	0.00	0.00	0.00
7,400.00	91.20	0.37	3,193.92	4,348.65	27.77	4,348.74	0.00	0.00	0.00
7,500.00	91.20	0.37	3,191.82	4,448.63	28.40	4,448.72	0.00	0.00	0.00
7,600.00	91.20	0.37	3,189.73	4,548.60	29.04	4,548.69	0.00	0.00	0.00
7,700.00	91.20	0.37	3,187.63	4,648.58	29.68	4,648.67	0.00	0.00	0.00
7,800.00	91.20	0.37	3,185.54	4,748.55	30.32	4,748.65	0.00	0.00	0.00
7,875.36	91.20	0.37	3,183.96	4,823.90	30.80	4,824.00	0.00	0.00	0.00
TD at 7875.36' MD - BHL (Custer 16 State Com #1H)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PP (Custer 16 State Cor - plan hits target center - Point	0.00	0.00	3,146.96	180.00	1.15	601,660.20	481,409.35	32° 39' 14.58315 N	104° 23' 37.45281 W
BHL (Custer 16 State Co - plan hits target center - Point	0.00	0.00	3,183.96	4,823.90	30.80	606,304.10	481,439.00	32° 40' 0.53788 N	104° 23' 37.13685 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,579.25	3,273.92	TL, 3285' TVD @ 0 VZ, 91.2° Inc		-1.20	0.37

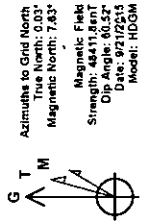
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,753.11	2,753.11	0.00	0.00	KOP, Begin 11°/100' Build
3,582.20	3,273.87	531.77	3.40	Begin 91.2° Inc Hold, 0.37° Azm
7,875.36	3,183.96	4,823.90	30.80	TD at 7875.36' MD



Project: Eddy County, NM (NAD27 NME)
Site: Custer 16 State Com
Well: #1H
Wellbore: OH
Design: Plan #1 09-21-15
Rig: Silver Oak 3

PHOENIX
TECHNOLOGY SERVICES



WELL DETAILS

Ground Level 3348.00
Easting 481408.20
Northing 601400.20
Latitude 32° 39' 12.80192" N
Longitude 104° 23' 37.48506" W

SECTION DETAILS

SPC	MD	Inc	TD	ANUS	DIAP	TI	WCT	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2753.11	0.00	0.00	2753.11	0.00	0.00	0.00	0.00	KOP Begin 117100 Build
3	3382.20	91.20	0.37	3373.87	531.77	3.40	11.00	0.37	Begin 91.2° Inc Hold 0.37° Azm
4	7875.36	91.20	0.37	3183.96	4823.90	30.80	0.00	0.00	BHL (Cluster 16 State Com #1H) at 7875.36 MD

DESIGN TARGET DETAILS

Name	TD	ANUS	DIAP	TI	WCT	Target	Annotation
PP (Cluster 16 State Com #1H)	3348.00	183.00	1.15	501802.20	481408.20	104° 23' 37.48506" W	Point
BHL (Cluster 16 State Com #1H)	3183.96	4823.90	30.80	606324.10	481439.50	104° 23' 37.13685" W	Point

LEGEND

Plan #1 09-21-15



KOP @ 3382.20 (Silver Oak 3)

Ground Level 3348.00

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Etiopod: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well #1H, Grid North

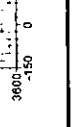
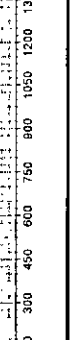
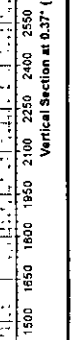
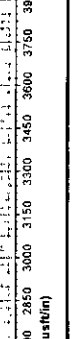
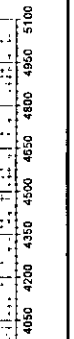
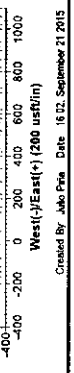
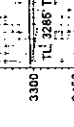
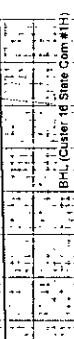
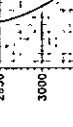
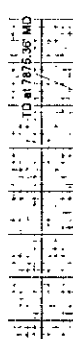
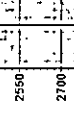
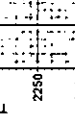
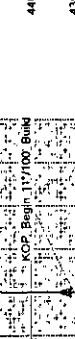
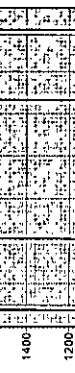
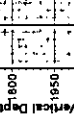
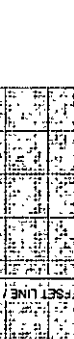
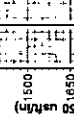
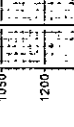
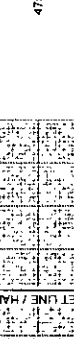
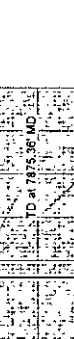
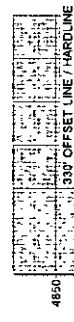
Latitude: 32° 39' 12.80192" N
Longitude: 104° 23' 37.48506" W
Grid East: 481408.20
Grid North: 601400.20
Scale Factor: 1.000

Geometric Model: HDGM
Sample Date: 7-1-Sep-15
Magnetic Declination: 60.52°
Dip Angle from Horizontal: 60.52°
Magnetic Field Strength: 48412

To convert a Magnetic Direction to a Grid Direction, Add 7.83°
To convert a Magnetic Direction to a True Direction, Add 7.90° East
To convert a True Direction to a Grid Direction, Add 0.03°

FORMATION TOP DETAILS

TYD Path: 3575.25
Formation: TL 3285 TVP @ 0 VZ 91.2° Inc -1.20
Dip Angle: 0.37°



Vertical Section at 0.37° (150 usft/in)

West(-)/East(+) (200 usft/in)

West(-)/East(+) (200 usft/in)

Created By: Judo Pate Date: 16.02. September 21. 2015