

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: (505) 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

RECEIVED

SEP 17 2013

NMOC D ARTESIA

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-41662	Pool Code 50270	Pool Name Penasco Draw; SA-Yeso (Assoc)
Property Code 39124	Property Name TARPAN 33 FEE	Well Number 4H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3378'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	33	18-S	26-E		150	SOUTH	2310	WST	EDDY

Bottom Hole Location If Different From Surface

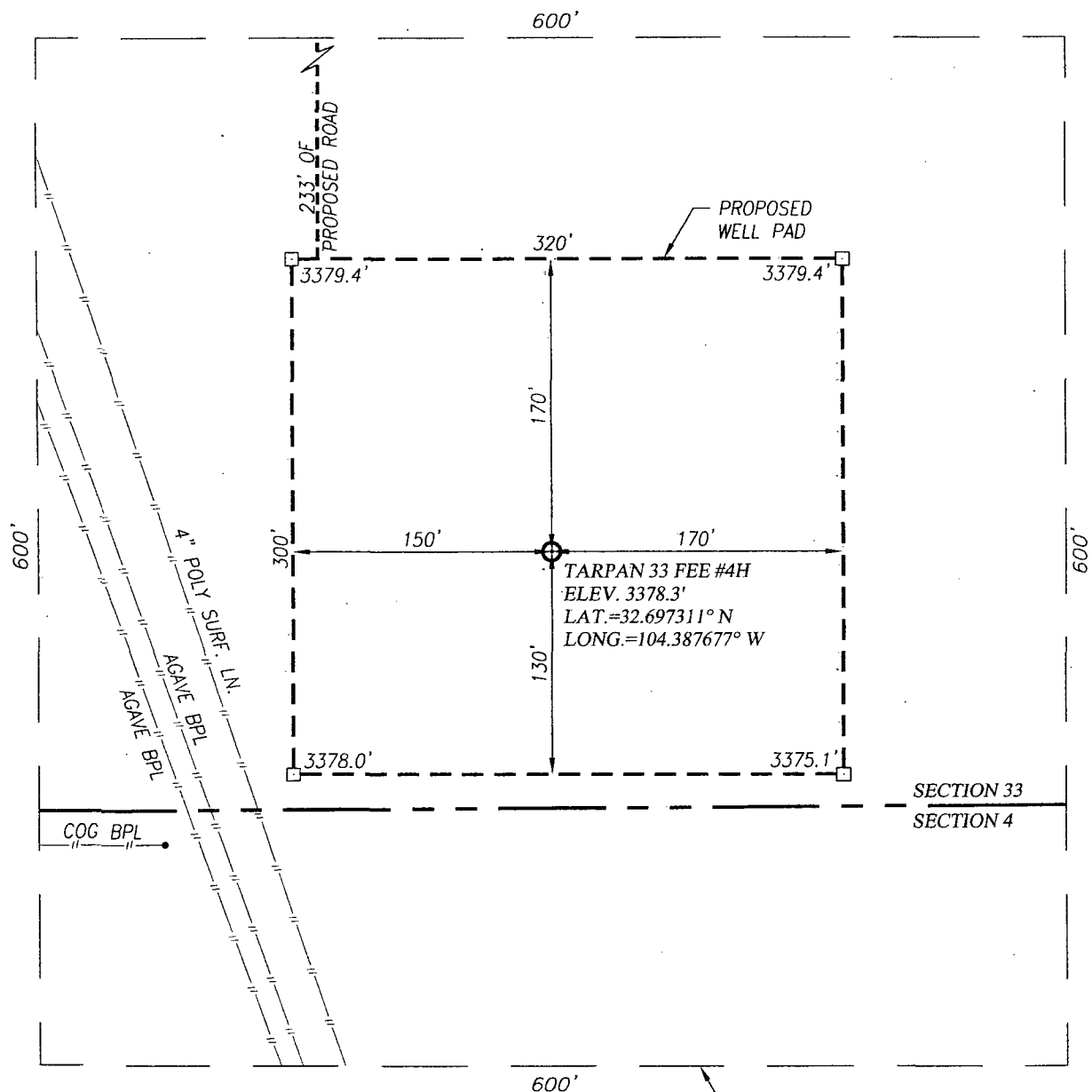
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	33	18-S	26-E		1900	NORTH	2310	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
120			

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 COORDINATES TABLE A - Y=621229.5 N, X=482293.2 E B - Y=621227.1 N, X=483619.5 E C - Y=617249.4 N, X=483613.2 E D - Y=617241.1 N, X=482293.4 E GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=617397.2 N X=483282.6 E BOTTOM HOLE LOCATION Y=620655.0 N X=483277.2 E Estimated Completed Interval: 330 FSL + 2310 FWL	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. 9-12-13 Signature Date Kelly J. Holly Printed Name kholly@concho.com E-mail Address 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. JULY 15, 2013 Date of Survey Ronald J. Eidson Signature & Seal of Professional Surveyor: 07/18/2013 Certificate Number Gary C. Eidson 12641 Ronald J. Eidson 3239 BKL
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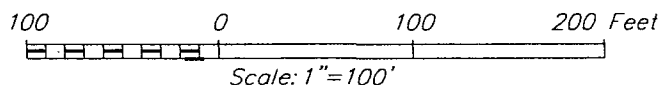
SECTION 33, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY NEW MEXICO



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

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF US HIGHWAY 285 & CO. RD. 38 (KINCAID) GO EAST APPROX 0.6 MILES ON CO. RD. 38; TURN RIGHT AND GO SOUTH APPROX. 0.1 MILES; TURN RIGHT AND GO WEST APPROX. 0.1 MILES; TURN LEFT AND GO SOUTHWEST AT YATES TANK BATTERY APPROX. 250 FEET. TURN LEFT AND GO SOUTHWEST APPROX. 220 FEET. ROAD BENDS LEFT AND GOES SOUTH APPROX. 0.7 MILES TO PROPOSED ROAD STAKES. FOLLOW STAKES SOUTH 233 FEE TO THE LOCATION.



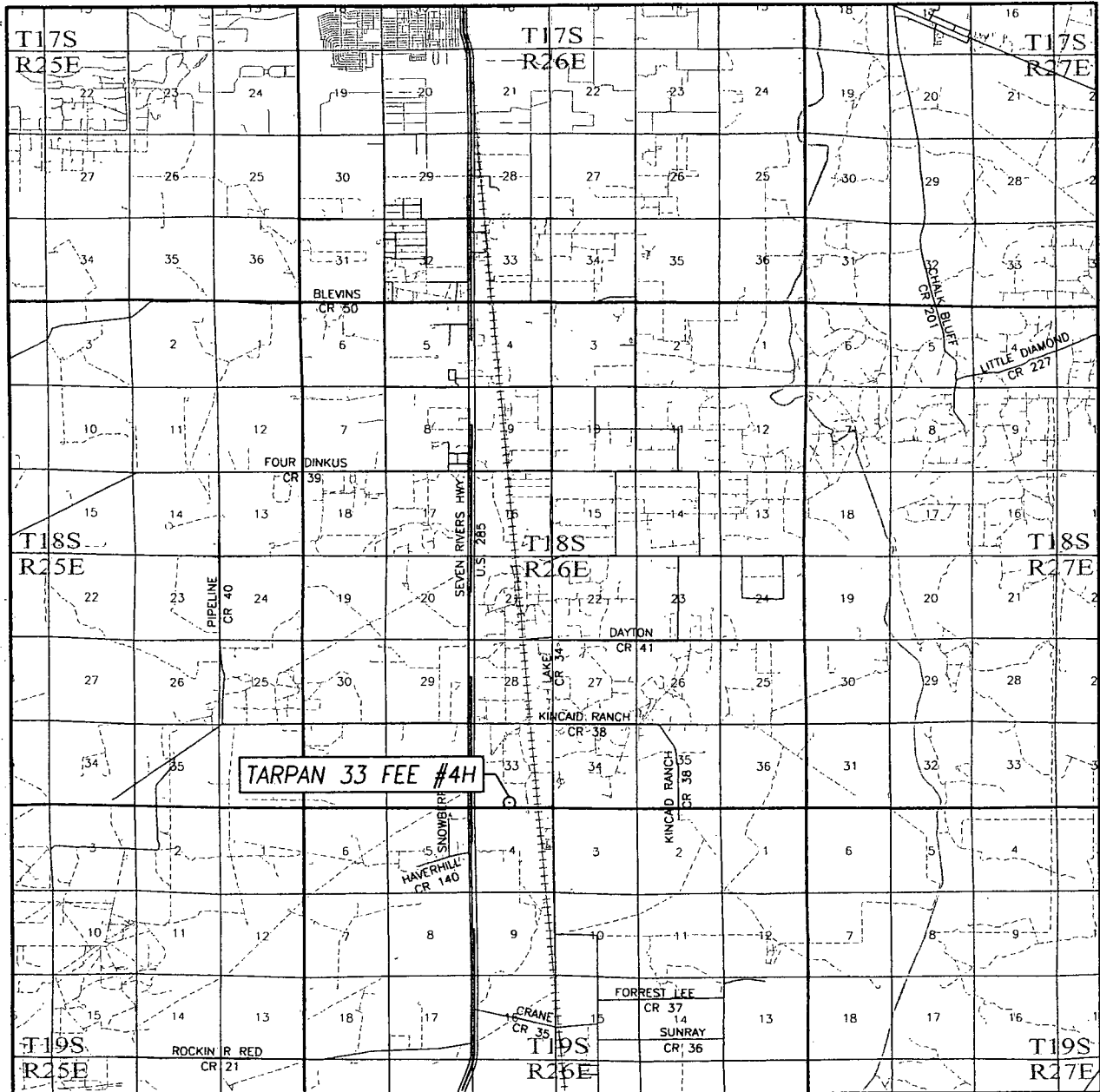
COG OPERATING, LLC

TARPAN 33 FEE #4H WELL
LOCATED 150 FEET FROM THE SOUTH LINE
AND 2310 FEET FROM THE WEST LINE OF SECTION 33,
TOWNSHIP 18 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

Survey Date: 7/15/2013	CAD Date: 7/17/13	Drawn By: BKL
W.O. No.: 13110795	Rev:	Rel. W.O.:
		Sheet 1 of 1

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 33 TWP. 18-S RGE. 26-E

SURVEY N.M.P.M.

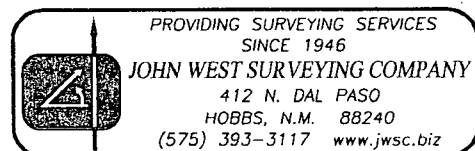
COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 150' FSL & 2310' FWL

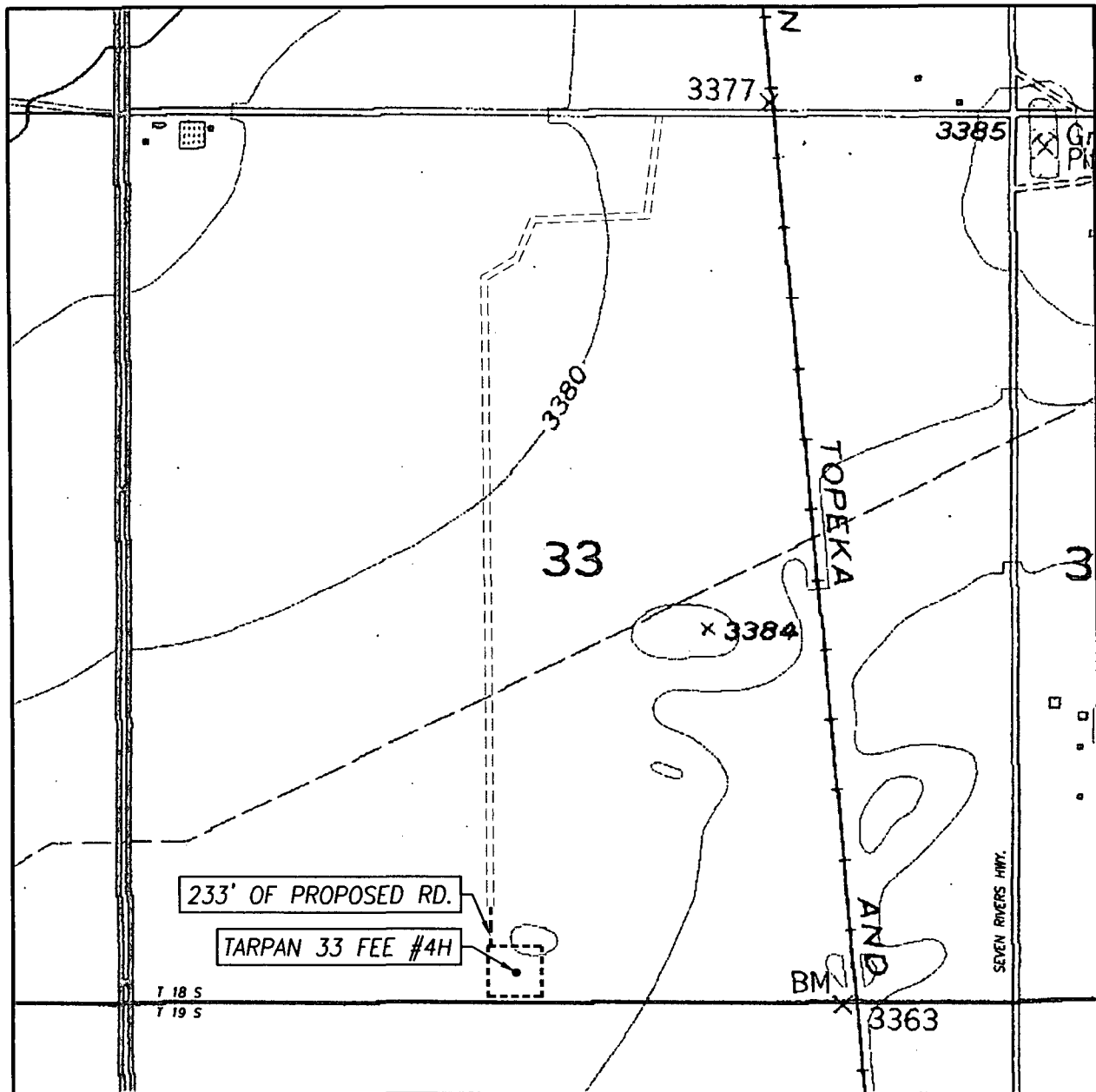
ELEVATION 3378'

OPERATOR COG OPERATING, LLC

LEASE TARPAN 33 FEE



LOCATION VERIFICATION MAP



SCALE: 1" = 1000'

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

SEC. 33 TWP. 18-S RGE. 26-E

SURVEY _____ N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

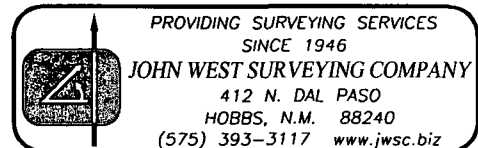
DESCRIPTION 150' FSL & 2310' FWL

ELEVATION 3378'

OPERATOR COG OPERATING, LLC

LEASE TARPAN 33 FEE

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



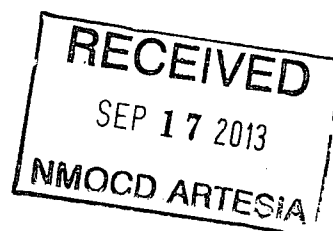
PROVIDING SURVEYING SERVICES
SINCE 1946

JOHN WEST SURVEYING COMPANY

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COG Operating LLC

Eddy County, New Mexico (NAD 27 NME)

Tarpan 33 Fee

#4H

WB1

Plan: Plan #1 09-05-13

Surface: 150' FSL, 2310' FWL, Sec 33, T18S, R26E, Unit N

PP: 330' FSL, 2310' FWL, Sec 33, T18S, R26E, Unit N

BHL: 1900' FNL, 2310' FWL, Sec 33, T18S, R26E, Unit F

Standard Planning Report

05 September, 2013





Phoenix Technology Services
Planning Report



Database:	GCRIDB	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating LLC	TVD Reference:	GL @ 3378.00usft
Project:	Eddy County, New Mexico (NAD 27 NME)	MD Reference:	GL @ 3378.00usft
Site:	Tarpan 33 Fee	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 09-05-13		

Project	Eddy County, New Mexico (NAD 27 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	Tarpan 33 Fee		
Site Position:		Northing:	617,397.20 usft
From:	Map	Easting:	483,282.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 41' 50.32117 N
		Longitude:	104° 23' 15.63587 W
		Grid Convergence:	-0.03 °

Well	#4H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level:
			3,378.00 usft

Wellbore	WB1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	09/05/13	7.72
			Dip Angle
			(°)
			60.43
			Field Strength
			(nT)
			48,588

Design	Plan #1 09-05-13		
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
			(°)
			359.91

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	
2,571.88	0.00	0.00	2,571.88	0.00	0.00	0.00	0.00	0.00	0.00	
3,411.88	92.40	359.91	3,092.30	542.68	-0.90	11.00	11.00	0.00	359.91	
6,129.39	92.40	359.91	2,978.50	3,257.80	-5.40	0.00	0.00	0.00	0.00	PBHL-Tarpan 33 Fee



Phoenix Technology Services
Planning Report



Database:	GCR-DB:	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating, LLC	TVD Reference:	GL @ 3378.00usft
Project:	Eddy County, New Mexico (NAD 27 NME)	MD Reference:	GL @ 3378.00usft
Site:	Tarpan 33 Fee	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 09-05-13		

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
2,571.88	0.00	0.00	2,571.88	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 11.00									
2,600.00	3.09	359.91	2,599.99	0.76	0.00	0.76	11.00	11.00	0.00
2,700.00	14.09	359.91	2,698.71	15.68	-0.03	15.68	11.00	11.00	0.00
2,800.00	25.09	359.91	2,792.78	49.16	-0.08	49.16	11.00	11.00	0.00
2,900.00	36.09	359.91	2,878.73	99.97	-0.17	99.97	11.00	11.00	0.00
3,000.00	47.09	359.91	2,953.40	166.26	-0.28	166.26	11.00	11.00	0.00
3,018.44	49.12	359.91	2,965.71	179.98	-0.30	179.98	11.00	11.00	0.00
PP-Tarpan 33 Fee #4H									
3,100.00	58.09	359.91	3,014.05	245.57	-0.41	245.57	11.00	11.00	0.00
3,200.00	69.09	359.91	3,058.46	334.99	-0.56	335.00	11.00	11.00	0.00
3,300.00	80.09	359.91	3,084.99	431.25	-0.71	431.25	11.00	11.00	0.00
3,400.00	91.09	359.91	3,092.66	530.80	-0.88	530.80	11.00	11.00	0.00
3,405.24	91.67	359.91	3,092.53	536.04	-0.89	536.04	11.00	11.00	0.00
TL 3115° TVD @ 0 VZ 92.40° Inc									
3,411.88	92.40	359.91	3,092.30	542.68	-0.90	542.68	11.00	11.00	0.00
LP Start 2717.51 hold at 3411.88 MD									
3,500.00	92.40	359.91	3,088.61	630.72	-1.05	630.72	0.00	0.00	0.00
3,600.00	92.40	359.91	3,084.42	730.63	-1.21	730.63	0.00	0.00	0.00
3,700.00	92.40	359.91	3,080.23	830.55	-1.38	830.55	0.00	0.00	0.00
3,800.00	92.40	359.91	3,076.04	930.46	-1.54	930.46	0.00	0.00	0.00
3,900.00	92.40	359.91	3,071.86	1,030.37	-1.71	1,030.37	0.00	0.00	0.00
4,000.00	92.40	359.91	3,067.67	1,130.28	-1.87	1,130.28	0.00	0.00	0.00
4,100.00	92.40	359.91	3,063.48	1,230.19	-2.04	1,230.20	0.00	0.00	0.00
4,200.00	92.40	359.91	3,059.29	1,330.11	-2.20	1,330.11	0.00	0.00	0.00
4,300.00	92.40	359.91	3,055.11	1,430.02	-2.37	1,430.02	0.00	0.00	0.00
4,400.00	92.40	359.91	3,050.92	1,529.93	-2.54	1,529.93	0.00	0.00	0.00
4,500.00	92.40	359.91	3,046.73	1,629.84	-2.70	1,629.84	0.00	0.00	0.00
4,600.00	92.40	359.91	3,042.54	1,729.75	-2.87	1,729.76	0.00	0.00	0.00
4,700.00	92.40	359.91	3,038.36	1,829.67	-3.03	1,829.67	0.00	0.00	0.00
4,800.00	92.40	359.91	3,034.17	1,929.58	-3.20	1,929.58	0.00	0.00	0.00
4,900.00	92.40	359.91	3,029.98	2,029.49	-3.36	2,029.49	0.00	0.00	0.00
5,000.00	92.40	359.91	3,025.79	2,129.40	-3.53	2,129.41	0.00	0.00	0.00
5,100.00	92.40	359.91	3,021.61	2,229.32	-3.70	2,229.32	0.00	0.00	0.00
5,200.00	92.40	359.91	3,017.42	2,329.23	-3.86	2,329.23	0.00	0.00	0.00
5,300.00	92.40	359.91	3,013.23	2,429.14	-4.03	2,429.14	0.00	0.00	0.00
5,400.00	92.40	359.91	3,009.04	2,529.05	-4.19	2,529.06	0.00	0.00	0.00
5,500.00	92.40	359.91	3,004.86	2,628.96	-4.36	2,628.97	0.00	0.00	0.00
5,600.00	92.40	359.91	3,000.67	2,728.88	-4.52	2,728.88	0.00	0.00	0.00
5,700.00	92.40	359.91	2,996.48	2,828.79	-4.69	2,828.79	0.00	0.00	0.00
5,800.00	92.40	359.91	2,992.29	2,928.70	-4.85	2,928.70	0.00	0.00	0.00
5,900.00	92.40	359.91	2,988.11	3,028.61	-5.02	3,028.62	0.00	0.00	0.00
6,000.00	92.40	359.91	2,983.92	3,128.52	-5.19	3,128.53	0.00	0.00	0.00
6,100.00	92.40	359.91	2,979.73	3,228.44	-5.35	3,228.44	0.00	0.00	0.00
6,129.39	92.40	359.91	2,978.50	3,257.80	-5.40	3,257.80	0.00	0.00	0.00
TD at 6129.39 PBHL-Tarpan 33 Fee #4H									



Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #4H
Company:	COG Operating, LLC	TVD Reference:	GL @ 3378.00usft
Project:	Eddy County, New Mexico (NAD 27 NME)	MD Reference:	GL @ 3378.00usft
Site:	Tarpan 33 Fee	North Reference:	Grid
Well:	#4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 09-05-13		

Design Targets										
Target Name	hit/miss target	Dip Angle	Dip Dir	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
	Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
PP-Tarpan 33 Fee #4H	- plan hits target center	0.00	0.00	2,965.73	180.00	-0.30	617,577.20	483,282.30	32° 41' 52.10238 N	104° 23' 15.64044 W
	- Point									
PBHL-Tarpan 33 Fee #4	- plan hits target center	0.00	360.00	2,978.50	3,257.80	-5.40	620,655.00	483,277.20	32° 42' 22.55908 N	104° 23' 15.71861 W
	- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)					
3,405.24	3,092.53	TL, 3115' TVD @ 0 VZ, 92.40° Inc		-2.40	359.91	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
(usft)	(usft)	(usft)	(usft)		
2,571.88	2,571.88	0.00	0.00	KOP Start Build 11.00	
3,411.88	3,092.30	542.68	-0.90	LP Start 2717.51 hold at 3411.88 MD	
6,129.39	2,978.50	3,257.80	-5.40	TD at 6129.39	



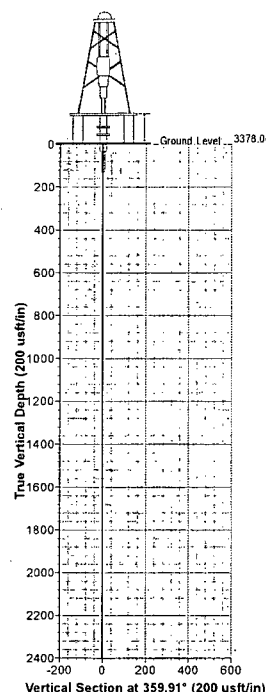
Project: Eddy County, New Mexico (NAD 27 NME)
Site: Tarpan 33 Fee
Well: #4H
Wellbore: WB1
Design: Plan #1 09-05-13



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: 0.03°
Magnetic North: 7.75°
Magnetic Field
Strength: 48588.4nT
Dip Angle: 50.43°
Date: 09/05/2013
Model: IGRF2010_14



Vertical Section at 359.91° (200 usft/in)

WELL DETAILS									
	-N-S	-E-W	North	Ground Level	3378.00	Latitude	Longitude		
	0.00	0.00	617397.20	Easting	483282.60	32° 41' 50.32117 N	104° 23' 15.63587 W		

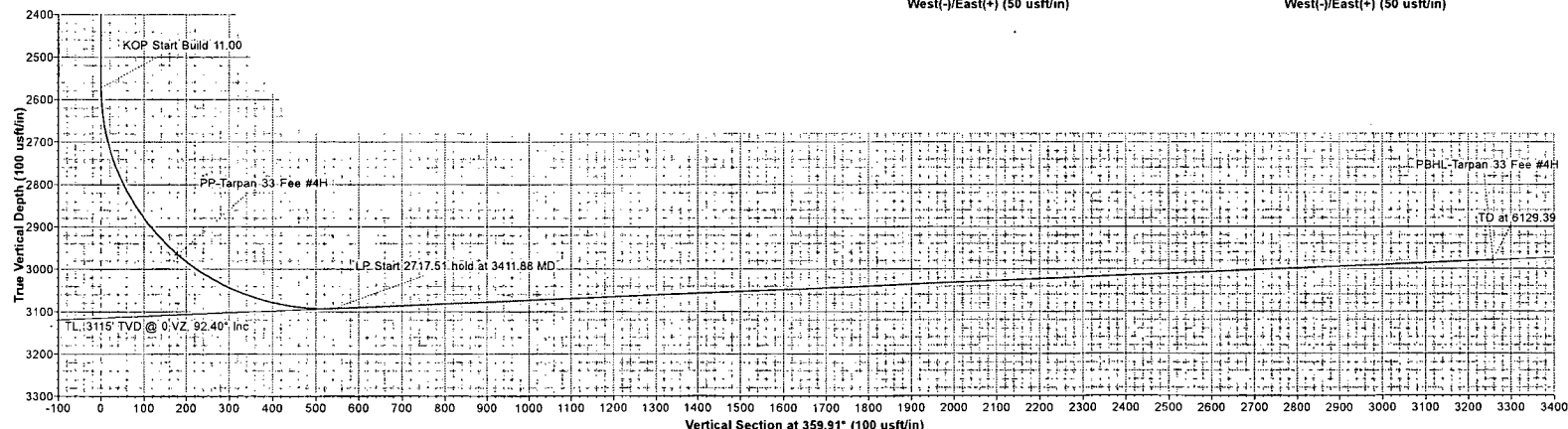
SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	-E-W	Dleg	TFact	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2571.88	0.00	0.00	2571.88	0.00	0.00	0.00	0.00	0.00
3	3411.88	92.40	359.91	3092.30	542.68	-9.90	11.00	359.91	542.68
4	6129.39	92.40	359.91	2978.50	3257.80	-5.40	0.00	0.00	3257.80

DESIGN TARGET DETAILS									
Name	TVD	-N-S	-E-W	North	Easting	Latitude	Longitude	Shape	
PP-Tarpan 33 Fee #4H	2965.73	180.00	-0.30	617577.20	483282.30	32° 41' 52.10238 N	104° 23' 15.64044 W	Point	
									-plan hits target center
PBHL-Tarpan 33 Fee #4H	2978.50	3257.80	-5.40	620655.00	483277.20	32° 42' 22.55908 N	104° 23' 15.71861 W	Point	
									-plan hits target center

PROJECT DETAILS: Eddy County, New Mexico (NAD 27 NME)									
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									

SITE DETAILS: Tarpan 33 Fee									
Site Centre Northing: 617397.20									
Easting: 483282.60									
Positional Uncertainty: 0.00									
Convergence: -0.03									
Local North: Grid									

LEGEND									
Plan #1 09-05-13									



Vertical Section at 359.91° (100 usft/in)

Map System: US State Plane 1927 (Exact solution)									
Datum: NAD 1927 (NADCON CONUS)									
Ellipsoid: Clarke 1866									
Zone Name: New Mexico East 3001									
Local Origin: Well #4H, Grid North									
Latitude: 32° 41' 50.32117 N									
Longitude: 104° 23' 15.63587 W									
Grid East: 483282.60									
Grid North: 617397.20									
Scale Factor: 1.000									
Geomagnetic Model: IGRF2010_14									
Sample Date: 05-Sep-13									
Magnetic Declination: 7.72°									
Dip Angle from Horizontal: 60.43°									
Magnetic Field Strength: 48588									
To convert a Magnetic Direction to a Grid Direction, Add 7.75°									
To convert a Magnetic Direction to a True Direction, Add 7.72° East									
To convert a True Direction to a Grid Direction, Add 0.03°									

FORMATION TOP DETAILS									
TVDPath	MDPath	Formation		DipAngle	DipDir				
3092.53	3405.24	TL 3115° TVD @ 0 VZ 92.40° Inc -2.40		359.91					

