



NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 19 2019

RECEIVED

Percussion Petroleum, LLC

Eddy County, NM

Rose

#7H

OH

30-015-45804

Plan: Plan #2

Standard Plan With Toolface

12 March, 2019



Wellbenders
Standard Plan With Toolface

Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Well:	#7H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WBDS_SQL_2

Project		Eddy County, NM	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Rose									
Site Position:		Northing:		611,332.70 usft		Latitude:		32.680563			
From:		Map		Easting:		512,404.20 usft		Longitude:		-104.427371	
Position Uncertainty:		0.00 usft		Slot Radius:		13.200 in		Grid Convergence:		-0.051 °	

Well	#7H					
Well Position	+N-S	0.00 usft	Northing:	611,591.80 usft	Latitude:	32.681275
	+E-W	0.00 usft	Easting:	512,600.00 usft	Longitude:	-104.426736
Position Uncertainty	0.00 usft		Wellhead Elevation:	usft	Ground Level:	3,377.00 usft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/8/2019	7.199	60.322	47,939.55263693

Design		Plan #2		
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	270.31

Survey Tool Program		Date 3/12/2019		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	9,119.85	Plan #2 (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM



Wellbenders
Standard Plan With Toolface

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Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Well:	#7H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WBDS_SQL_2

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
Rose 7H: SHL (400' FNL & 901' FWL)											
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
343.00	0.00	0.00	343.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
350.00	0.42	280.05	350.00	0.00	-0.03	0.03	6.00	6.00	0.00	280.046	
401.39	3.50	280.05	401.35	0.31	-1.76	1.76	6.00	6.00	0.00	0.000	
500.00	3.50	280.05	499.78	1.36	-7.69	7.70	0.00	0.00	0.00	0.000	
600.00	3.50	280.05	599.59	2.43	-13.71	13.72	0.00	0.00	0.00	0.000	
700.00	3.50	280.05	699.41	3.49	-19.73	19.74	0.00	0.00	0.00	0.000	
800.00	3.50	280.05	799.22	4.56	-25.74	25.77	0.00	0.00	0.00	0.000	
900.00	3.50	280.05	899.03	5.63	-31.76	31.79	0.00	0.00	0.00	0.000	
1,000.00	3.50	280.05	998.84	6.69	-37.78	37.81	0.00	0.00	0.00	0.000	
1,100.00	3.50	280.05	1,098.66	7.76	-43.79	43.84	0.00	0.00	0.00	0.000	
1,200.00	3.50	280.05	1,198.47	8.82	-49.81	49.86	0.00	0.00	0.00	0.000	
1,300.00	3.50	280.05	1,298.28	9.89	-55.83	55.88	0.00	0.00	0.00	0.000	
1,400.00	3.50	280.05	1,398.10	10.96	-61.85	61.90	0.00	0.00	0.00	0.000	
1,500.00	3.50	280.05	1,497.91	12.02	-67.86	67.93	0.00	0.00	0.00	0.000	
1,600.00	3.50	280.05	1,597.72	13.09	-73.88	73.95	0.00	0.00	0.00	0.000	
1,700.00	3.50	280.05	1,697.54	14.15	-79.90	79.97	0.00	0.00	0.00	0.000	
1,800.00	3.50	280.05	1,797.35	15.22	-85.91	86.00	0.00	0.00	0.00	0.000	
1,900.00	3.50	280.05	1,897.16	16.29	-91.93	92.02	0.00	0.00	0.00	0.000	
2,000.00	3.50	280.05	1,996.98	17.35	-97.95	98.04	0.00	0.00	0.00	0.000	
2,100.00	3.50	280.05	2,096.79	18.42	-103.97	104.06	0.00	0.00	0.00	0.000	
2,200.00	3.50	280.05	2,196.60	19.48	-109.98	110.09	0.00	0.00	0.00	0.000	
2,300.00	3.50	280.05	2,296.42	20.55	-116.00	116.11	0.00	0.00	0.00	0.000	



Wellbenders

Standard Plan With Toolface

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Site:	Rose	MD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Well:	#7H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WBDS_SQL_2

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
2,400.00	3.50	280.05	2,396.23	21.62	-122.02	122.13	0.00	0.00	0.00	0.000
2,471.76	3.50	280.05	2,467.85	22.38	-126.34	126.45	0.00	0.00	0.00	0.000
2,500.00	5.18	276.66	2,496.01	22.68	-128.45	128.57	6.00	5.93	-11.98	-10.383
2,550.00	8.17	274.08	2,545.67	23.19	-134.24	134.36	6.00	5.97	-5.15	-7.008
2,600.00	11.16	272.88	2,594.95	23.69	-142.61	142.74	6.00	5.99	-2.40	-4.448
2,650.00	14.15	272.18	2,643.73	24.17	-153.56	153.68	6.00	5.99	-1.40	-3.263
2,700.00	17.15	271.73	2,691.87	24.62	-167.04	167.17	6.00	5.99	-0.92	-2.581
2,750.00	20.15	271.40	2,739.24	25.06	-183.02	183.15	6.00	6.00	-0.65	-2.140
2,800.00	23.15	271.16	2,785.71	25.46	-201.46	201.59	6.00	6.00	-0.49	-1.832
2,850.00	26.15	270.97	2,831.15	25.85	-222.31	222.44	6.00	6.00	-0.38	-1.605
2,900.00	29.15	270.81	2,875.43	26.21	-245.50	245.64	6.00	6.00	-0.31	-1.432
2,950.00	32.15	270.69	2,918.45	26.54	-270.98	271.12	6.00	6.00	-0.25	-1.296
3,000.00	35.15	270.58	2,960.06	26.85	-298.68	298.82	6.00	6.00	-0.22	-1.186
3,050.00	38.15	270.49	3,000.18	27.12	-328.52	328.66	6.00	6.00	-0.19	-1.096
3,100.00	41.14	270.40	3,038.67	27.37	-360.42	360.56	6.00	6.00	-0.16	-1.022
3,150.00	44.14	270.33	3,075.45	27.59	-394.29	394.43	6.00	6.00	-0.14	-0.959
3,164.26	45.00	270.31	3,085.60	27.64	-404.29	404.44	6.00	6.00	-0.13	-0.906
3,200.00	45.00	270.31	3,110.88	27.78	-429.57	429.71	0.00	0.00	0.00	0.000
3,300.00	45.00	270.31	3,181.59	28.17	-500.28	500.42	0.00	0.00	0.00	0.000
3,400.00	45.00	270.31	3,252.30	28.55	-570.98	571.13	0.00	0.00	0.00	0.000
3,414.26	45.00	270.31	3,262.38	28.61	-581.07	581.21	0.00	0.00	0.00	0.000
3,450.00	48.57	270.31	3,286.85	28.75	-607.11	607.26	10.00	10.00	0.00	0.000
3,500.00	53.57	270.31	3,318.26	28.96	-646.00	646.14	10.00	10.00	0.00	0.000
3,550.00	58.57	270.31	3,346.15	29.19	-687.47	687.62	10.00	10.00	0.00	0.000
3,600.00	63.57	270.31	3,370.33	29.43	-731.22	731.37	10.00	10.00	0.00	0.000
3,650.00	68.57	270.31	3,390.60	29.68	-776.91	777.06	10.00	10.00	0.00	0.000
3,700.00	73.57	270.31	3,406.81	29.93	-824.19	824.34	10.00	10.00	0.00	0.000



Wellbenders

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Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Well:	#7H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WBDS_SQL_2

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)	
3,750.00	78.57	270.31	3,418.84	30.20	-872.70	872.85	10.00	10.00	0.00	0.000	
3,800.00	83.57	270.31	3,426.60	30.47	-922.08	922.23	10.00	10.00	0.00	0.000	
3,850.00	88.57	270.31	3,430.02	30.74	-971.95	972.10	10.00	10.00	0.00	0.000	
3,879.26	91.50	270.31	3,430.00	30.90	-1,001.20	1,001.35	10.00	10.00	0.00	0.000	
Rose 7H: FTP (360° FNL & 100° FEL)											
3,900.00	91.50	270.31	3,429.46	31.01	-1,021.94	1,022.09	0.00	0.00	0.00	0.000	
4,000.00	91.50	270.31	3,426.84	31.56	-1,121.90	1,122.05	0.00	0.00	0.00	0.000	
4,100.00	91.50	270.31	3,424.22	32.10	-1,221.86	1,222.02	0.00	0.00	0.00	0.000	
4,200.00	91.50	270.31	3,421.60	32.65	-1,321.83	1,321.99	0.00	0.00	0.00	0.000	
4,300.00	91.50	270.31	3,418.99	33.20	-1,421.79	1,421.95	0.00	0.00	0.00	0.000	
4,400.00	91.50	270.31	3,416.37	33.74	-1,521.76	1,521.92	0.00	0.00	0.00	0.000	
4,500.00	91.50	270.31	3,413.75	34.29	-1,621.72	1,621.88	0.00	0.00	0.00	0.000	
4,600.00	91.50	270.31	3,411.13	34.83	-1,721.69	1,721.85	0.00	0.00	0.00	0.000	
4,700.00	91.50	270.31	3,408.52	35.38	-1,821.65	1,821.81	0.00	0.00	0.00	0.000	
4,800.00	91.50	270.31	3,405.90	35.92	-1,921.61	1,921.78	0.00	0.00	0.00	0.000	
4,900.00	91.50	270.31	3,403.28	36.47	-2,021.58	2,021.75	0.00	0.00	0.00	0.000	
5,000.00	91.50	270.31	3,400.66	37.02	-2,121.54	2,121.71	0.00	0.00	0.00	0.000	
5,100.00	91.50	270.31	3,398.05	37.56	-2,221.51	2,221.68	0.00	0.00	0.00	0.000	
5,200.00	91.50	270.31	3,395.43	38.11	-2,321.47	2,321.64	0.00	0.00	0.00	0.000	
5,300.00	91.50	270.31	3,392.81	38.65	-2,421.43	2,421.61	0.00	0.00	0.00	0.000	
5,400.00	91.50	270.31	3,390.19	39.20	-2,521.40	2,521.57	0.00	0.00	0.00	0.000	
5,500.00	91.50	270.31	3,387.58	39.74	-2,621.36	2,621.54	0.00	0.00	0.00	0.000	
5,600.00	91.50	270.31	3,384.96	40.29	-2,721.33	2,721.51	0.00	0.00	0.00	0.000	
5,700.00	91.50	270.31	3,382.34	40.84	-2,821.29	2,821.47	0.00	0.00	0.00	0.000	
5,800.00	91.50	270.31	3,379.72	41.38	-2,921.26	2,921.44	0.00	0.00	0.00	0.000	
5,900.00	91.50	270.31	3,377.10	41.93	-3,021.22	3,021.40	0.00	0.00	0.00	0.000	
6,000.00	91.50	270.31	3,374.49	42.47	-3,121.18	3,121.37	0.00	0.00	0.00	0.000	



Wellbenders Standard Plan With Toolface

Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3393.00usft (Akita 20)
Well:	#7H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	WBDS_SQL_2

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)	
6,100.00	91.50	270.31	3,371.87	43.02	-3,221.15	3,221.33	0.00	0.00	0.00	0.000	
6,200.00	91.50	270.31	3,369.25	43.57	-3,321.11	3,321.30	0.00	0.00	0.00	0.000	
6,300.00	91.50	270.31	3,366.63	44.11	-3,421.08	3,421.27	0.00	0.00	0.00	0.000	
6,400.00	91.50	270.31	3,364.02	44.66	-3,521.04	3,521.23	0.00	0.00	0.00	0.000	
6,500.00	91.50	270.31	3,361.40	45.20	-3,621.01	3,621.20	0.00	0.00	0.00	0.000	
6,600.00	91.50	270.31	3,358.78	45.75	-3,720.97	3,721.16	0.00	0.00	0.00	0.000	
6,700.00	91.50	270.31	3,356.16	46.29	-3,820.93	3,821.13	0.00	0.00	0.00	0.000	
6,800.00	91.50	270.31	3,353.55	46.84	-3,920.90	3,921.09	0.00	0.00	0.00	0.000	
6,900.00	91.50	270.31	3,350.93	47.39	-4,020.86	4,021.06	0.00	0.00	0.00	0.000	
7,000.00	91.50	270.31	3,348.31	47.93	-4,120.83	4,121.03	0.00	0.00	0.00	0.000	
7,100.00	91.50	270.31	3,345.69	48.48	-4,220.79	4,220.99	0.00	0.00	0.00	0.000	
7,200.00	91.50	270.31	3,343.08	49.02	-4,320.76	4,320.96	0.00	0.00	0.00	0.000	
7,300.00	91.50	270.31	3,340.46	49.57	-4,420.72	4,420.92	0.00	0.00	0.00	0.000	
7,400.00	91.50	270.31	3,337.84	50.11	-4,520.68	4,520.89	0.00	0.00	0.00	0.000	
7,500.00	91.50	270.31	3,335.22	50.66	-4,620.65	4,620.85	0.00	0.00	0.00	0.000	
7,600.00	91.50	270.31	3,332.61	51.21	-4,720.61	4,720.82	0.00	0.00	0.00	0.000	
7,700.00	91.50	270.31	3,329.99	51.75	-4,820.58	4,820.79	0.00	0.00	0.00	0.000	
7,800.00	91.50	270.31	3,327.37	52.30	-4,920.54	4,920.75	0.00	0.00	0.00	0.000	
7,900.00	91.50	270.31	3,324.75	52.84	-5,020.51	5,020.72	0.00	0.00	0.00	0.000	
8,000.00	91.50	270.31	3,322.14	53.39	-5,120.47	5,120.68	0.00	0.00	0.00	0.000	
8,100.00	91.50	270.31	3,319.52	53.93	-5,220.43	5,220.65	0.00	0.00	0.00	0.000	
8,200.00	91.50	270.31	3,316.90	54.48	-5,320.40	5,320.61	0.00	0.00	0.00	0.000	
8,300.00	91.50	270.31	3,314.28	55.03	-5,420.36	5,420.58	0.00	0.00	0.00	0.000	
8,400.00	91.50	270.31	3,311.66	55.57	-5,520.33	5,520.55	0.00	0.00	0.00	0.000	
8,500.00	91.50	270.31	3,309.05	56.12	-5,620.29	5,620.51	0.00	0.00	0.00	0.000	
8,600.00	91.50	270.31	3,306.43	56.66	-5,720.25	5,720.48	0.00	0.00	0.00	0.000	
8,700.00	91.50	270.31	3,303.81	57.21	-5,820.22	5,820.44	0.00	0.00	0.00	0.000	



Wellbenders
Standard Plan With Toolface

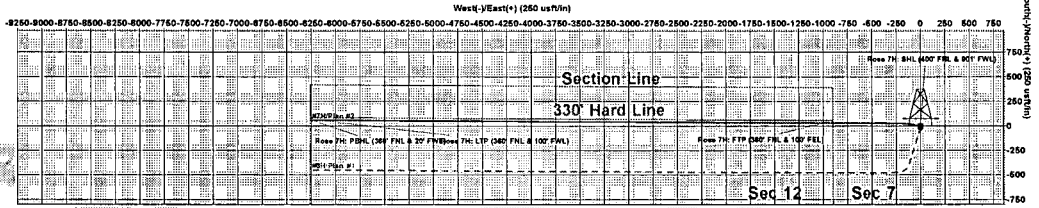
Company:	Percussion Petroleum, LLC.	Local Co-ordinate Reference:	Well #7H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3393.00usft (Akita 20)
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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)	
8,800.00	91.50	270.31	3,301.19	57.75	-5,920.18	5,920.41	0.00	0.00	0.00	0.000	
8,900.00	91.50	270.31	3,298.58	58.30	-6,020.15	6,020.38	0.00	0.00	0.00	0.000	
9,000.00	91.50	270.31	3,295.96	58.85	-6,120.11	6,120.34	0.00	0.00	0.00	0.000	
9,039.90	91.50	270.31	3,294.91	59.06	-6,160.00	6,160.23	0.00	0.00	0.00	0.000	
Rose 7H: LTP (360° FNL & 100' FWL)											
9,100.00	91.50	270.31	3,293.34	59.39	-6,220.08	6,220.31	0.00	0.00	0.00	0.000	
9,119.93	91.50	270.31	3,292.82	59.50	-6,240.00	6,240.23	0.00	0.00	0.00	0.000	
Rose 7H: PBHL (360° FNL & 20' FWL)											

Checked By: _____	Approved By: _____	Date: _____
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Company: Percussion Petroleum, LLC
Project: Eddy County, NM
Site: Rose
Well: #7H
Wellbore: OH
Rig: Akita 20
Design: Plan #2 / 13.07, March 12 2019



DESIGN TARGET DETAILS

Name	TVD	N/S	E/W	North	East	Latitude	Longitude
Rose 7H: SHL (400' FNL & 901' FWL)	0.00	0.00	0.00	811581.80	810800.00	32.881373	-104.428736
Rose 7H: PBHL (360' FNL & 20' FWL)	2292.82	59.50	-4240.00	811651.20	806300.00	32.881422	-104.447817
Rose 7H: LTP (360' FNL & 100' FWL)	3254.91	59.10	-4180.00	811650.90	806440.00	32.881421	-104.446837
Rose 7H: FTP (360' FNL & 100' FWL)	3426.90	58.30	-4001.20	811652.70	811580.00	32.881358	-104.428980

TOTAL CORRECTION
To convert a Magnetic Direction to a Grid Direction, Add 7.249°

WELL DETAILS: #7H

RWD-11F @ 3363 Depth (Akita 20)						
						3377.00
N/S	E/W	North	East	Latitude	Longitude	
0.00	0.00	811581.80	810800.00	32.881373	-104.428736	

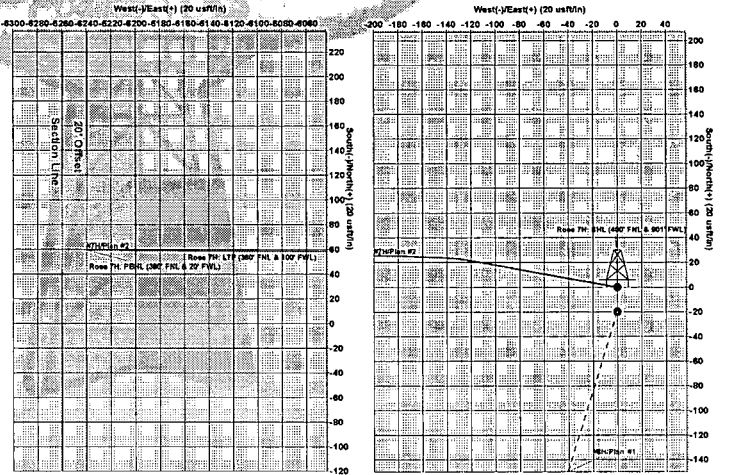
SECTION DETAILS

Sec	WD	Inc	Asl	TVD	N/S	E/W	Dir	VSect
1	0.00	0.00	0.00	0.00	8.00	0.00	0.00	0.00
2	343.00	0.00	0.00	343.00	0.00	0.00	0.00	0.00
3	401.39	3.50	280.85	401.35	0.31	-1.76	0.00	1.76
4	2471.76	7.50	280.55	2471.85	22.38	-128.54	0.00	128.45
5	3164.28	45.00	278.31	3085.88	27.64	-404.26	0.00	404.44
6	3414.28	45.00	278.31	3262.38	28.61	-581.07	0.00	581.21
7	3875.26	91.50	278.31	1420.80	38.90	-1095.20	10.00	1091.55
8	8038.90	91.50	278.31	3284.81	59.58	-4160.00	0.00	8160.23
9	8119.93	91.50	278.31	2292.82	59.50	-4240.00	0.00	8240.23



Atmosphere to Grid North
True North: 0.00°
Magnetic North: 7.25°
Magnetic Declination: 7.25°
Magnetic Field
Strength: 47928 Gauss
Obs. Angle: 85.37°
Date: 3/8/2018
Model: IGRF2015

PROJECT DETAILS: Eddy County, NM
Geoid System: US State Plane 1983
Datum: North American Datum 1983
Elevation: 8063.1000
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level



WELLBENDERS
DIRECTIONAL SERVICES LLC



Disclaimer:
All data is subject to change without notice.
The user assumes all liability for the use of this information.
The user agrees to indemnify and hold the provider harmless from all claims, damages, and expenses, including reasonable attorneys' fees, arising from the use of this information.

Plan: Plan #2 (#7H/GH) Akita 20

Created By: Derek Stephens Date: 13.07, March 12 2019

