

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 19 2019

RECEIVED



Percussion Petroleum, LLC

30-015-45796

Eddy County, NM

Rose

#4H

OH

Plan: Plan #1

Standard Plan With Toolface

11 March, 2019



Wellbenders
Standard Plan With Toolface

Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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
From:	Map	Easting:	512,404.20 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in
		Latitude:	32.680563
		Longitude:	-104.427371
		Grid Convergence:	-0.051 °

Well	#4H		
Well Position	+N-S	0.00 usft	Northing:
	+E-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	3/8/2019	7.199
			Dip Angle
			60.320
			Field Strength
			47,937.97301984

Design	Plan #1		
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
			270.26

Survey Tool Program	Date 3/11/2019		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
0.00	9,529.53	Plan #1 (OH)	MWD+IGRF
			Description
			OWSG MWD + IGRF or WMM



Wellbenders

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Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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 4H: SHL (1388' FNL & 986' 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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
420.00	0.00	0.00	420.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
450.00	1.80	286.16	450.00	0.13	-0.45	0.45	6.00	6.00	0.00	286.162	
503.39	5.00	286.16	503.28	1.01	-3.49	3.50	6.00	6.00	0.00	0.000	
600.00	5.00	286.16	599.53	3.36	-11.59	11.60	0.00	0.00	0.00	0.000	
700.00	5.00	286.16	699.14	5.79	-19.96	19.99	0.00	0.00	0.00	0.000	
800.00	5.00	286.16	798.76	8.21	-28.34	28.38	0.00	0.00	0.00	0.000	
900.00	5.00	286.16	898.38	10.64	-36.72	36.77	0.00	0.00	0.00	0.000	
1,000.00	5.00	286.16	998.00	13.07	-45.09	45.15	0.00	0.00	0.00	0.000	
1,100.00	5.00	286.16	1,097.62	15.50	-53.47	53.54	0.00	0.00	0.00	0.000	
1,200.00	5.00	286.16	1,197.24	17.92	-61.85	61.93	0.00	0.00	0.00	0.000	
1,300.00	5.00	286.16	1,296.86	20.35	-70.22	70.32	0.00	0.00	0.00	0.000	
1,400.00	5.00	286.16	1,396.48	22.78	-78.60	78.70	0.00	0.00	0.00	0.000	
1,500.00	5.00	286.16	1,496.10	25.21	-86.98	87.09	0.00	0.00	0.00	0.000	
1,600.00	5.00	286.16	1,595.72	27.63	-95.35	95.48	0.00	0.00	0.00	0.000	
1,700.00	5.00	286.16	1,695.33	30.06	-103.73	103.87	0.00	0.00	0.00	0.000	
1,800.00	5.00	286.16	1,794.95	32.49	-112.11	112.25	0.00	0.00	0.00	0.000	
1,900.00	5.00	286.16	1,894.57	34.92	-120.48	120.64	0.00	0.00	0.00	0.000	
2,000.00	5.00	286.16	1,994.19	37.34	-128.86	129.03	0.00	0.00	0.00	0.000	
2,100.00	5.00	286.16	2,093.81	39.77	-137.24	137.42	0.00	0.00	0.00	0.000	
2,200.00	5.00	286.16	2,193.43	42.20	-145.61	145.80	0.00	0.00	0.00	0.000	
2,300.00	5.00	286.16	2,293.05	44.63	-153.99	154.19	0.00	0.00	0.00	0.000	



Wellbenders

Standard Plan With Toolface

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Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	WBDS_SQL_2

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Bulid (°/100ft)	Turn (°/100ft)	TFace (°)
2,400.00	5.00	286.16	2,392.67	47.05	-162.37	162.58	0.00	0.00	0.00	0.000
2,500.00	5.00	286.16	2,492.29	49.48	-170.74	170.97	0.00	0.00	0.00	0.000
2,600.00	5.00	286.16	2,591.91	51.91	-179.12	179.35	0.00	0.00	0.00	0.000
2,700.00	5.00	286.16	2,691.52	54.34	-187.50	187.74	0.00	0.00	0.00	0.000
2,800.00	5.00	286.16	2,791.14	56.76	-195.87	196.13	0.00	0.00	0.00	0.000
2,884.80	5.00	286.16	2,875.62	58.82	-202.98	203.24	0.00	0.00	0.00	0.000
2,900.00	5.88	283.49	2,890.75	59.19	-204.37	204.64	6.00	5.77	-17.58	-17.464
2,950.00	8.81	278.48	2,940.34	60.35	-210.65	210.92	6.00	5.87	-10.01	-14.803
3,000.00	11.78	275.97	2,989.53	61.45	-219.52	219.79	6.00	5.93	-5.02	-9.836
3,050.00	14.76	274.46	3,038.19	62.48	-230.95	231.23	6.00	5.96	-3.02	-7.365
3,100.00	17.75	273.45	3,086.18	63.43	-244.90	245.19	6.00	5.97	-2.02	-5.896
3,150.00	20.74	272.73	3,133.38	64.31	-261.36	261.65	6.00	5.98	-1.45	-4.926
3,200.00	23.73	272.18	3,179.66	65.11	-280.26	280.55	6.00	5.99	-1.10	-4.239
3,250.00	26.72	271.74	3,224.89	65.84	-301.55	301.85	6.00	5.99	-0.87	-3.729
3,300.00	29.72	271.39	3,268.94	66.48	-325.19	325.48	6.00	5.99	-0.70	-3.336
3,350.00	32.72	271.10	3,311.69	67.04	-351.09	351.39	6.00	5.99	-0.59	-3.026
3,400.00	35.71	270.85	3,353.03	67.51	-379.20	379.50	6.00	5.99	-0.50	-2.776
3,450.00	38.71	270.63	3,392.85	67.90	-409.43	409.74	6.00	5.99	-0.43	-2.570
3,500.00	41.71	270.44	3,431.03	68.20	-441.71	442.01	6.00	6.00	-0.38	-2.399
3,554.91	45.00	270.26	3,470.95	68.43	-479.40	479.70	6.00	6.00	-0.33	-2.254
3,600.00	45.00	270.26	3,502.84	68.58	-511.28	511.58	0.00	0.00	0.00	0.000
3,700.00	45.00	270.26	3,573.55	68.90	-581.99	582.29	0.00	0.00	0.00	0.000
3,804.91	45.00	270.26	3,647.73	69.24	-656.17	656.48	0.00	0.00	0.00	0.000
3,850.00	49.51	270.26	3,678.33	69.39	-689.27	689.58	10.00	10.00	0.00	0.000
3,900.00	54.51	270.26	3,709.09	69.57	-728.67	728.97	10.00	10.00	0.00	0.000
3,950.00	59.51	270.26	3,736.31	69.76	-770.59	770.90	10.00	10.00	0.00	0.000
4,000.00	64.51	270.26	3,759.77	69.96	-814.73	815.04	10.00	10.00	0.00	0.000



Wellbenders

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Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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 (°)	
4,050.00	69.51	270.26	3,779.29	70.17	-860.74	861.05	10.00	10.00	0.00	0.000	
4,100.00	74.51	270.26	3,794.73	70.39	-908.28	908.59	10.00	10.00	0.00	0.000	
4,150.00	79.51	270.26	3,805.97	70.61	-956.98	957.29	10.00	10.00	0.00	0.000	
4,200.00	84.51	270.26	3,812.92	70.84	-1,006.48	1,006.79	10.00	10.00	0.00	0.000	
4,250.00	89.51	270.26	3,815.52	71.06	-1,056.40	1,056.71	10.00	10.00	0.00	0.000	
4,279.91	92.50	270.26	3,815.00	71.20	-1,086.30	1,086.61	10.00	10.00	0.00	0.000	
Rose 4H: FTP (1306' FNL & 100' FEL)											
4,300.00	92.50	270.26	3,814.12	71.29	-1,106.37	1,106.68	0.00	0.00	0.00	0.000	
4,400.00	92.50	270.26	3,809.76	71.75	-1,206.27	1,206.59	0.00	0.00	0.00	0.000	
4,500.00	92.50	270.26	3,805.40	72.20	-1,306.18	1,306.49	0.00	0.00	0.00	0.000	
4,600.00	92.50	270.26	3,801.04	72.66	-1,406.08	1,406.40	0.00	0.00	0.00	0.000	
4,700.00	92.50	270.26	3,796.68	73.11	-1,505.99	1,506.30	0.00	0.00	0.00	0.000	
4,800.00	92.50	270.26	3,792.31	73.57	-1,605.89	1,606.21	0.00	0.00	0.00	0.000	
4,900.00	92.50	270.26	3,787.95	74.02	-1,705.79	1,706.11	0.00	0.00	0.00	0.000	
5,000.00	92.50	270.26	3,783.59	74.48	-1,805.70	1,806.02	0.00	0.00	0.00	0.000	
5,100.00	92.50	270.26	3,779.23	74.93	-1,905.60	1,905.92	0.00	0.00	0.00	0.000	
5,200.00	92.50	270.26	3,774.87	75.39	-2,005.50	2,005.83	0.00	0.00	0.00	0.000	
5,300.00	92.50	270.26	3,770.51	75.84	-2,105.41	2,105.73	0.00	0.00	0.00	0.000	
5,400.00	92.50	270.26	3,766.14	76.30	-2,205.31	2,205.64	0.00	0.00	0.00	0.000	
5,500.00	92.50	270.26	3,761.78	76.75	-2,305.22	2,305.54	0.00	0.00	0.00	0.000	
5,600.00	92.50	270.26	3,757.42	77.21	-2,405.12	2,405.44	0.00	0.00	0.00	0.000	
5,700.00	92.50	270.26	3,753.06	77.66	-2,505.02	2,505.35	0.00	0.00	0.00	0.000	
5,800.00	92.50	270.26	3,748.70	78.12	-2,604.93	2,605.25	0.00	0.00	0.00	0.000	
5,900.00	92.50	270.26	3,744.33	78.58	-2,704.83	2,705.16	0.00	0.00	0.00	0.000	
6,000.00	92.50	270.26	3,739.97	79.03	-2,804.73	2,805.06	0.00	0.00	0.00	0.000	
6,100.00	92.50	270.26	3,735.61	79.49	-2,904.64	2,904.97	0.00	0.00	0.00	0.000	
6,200.00	92.50	270.26	3,731.25	79.94	-3,004.54	3,004.87	0.00	0.00	0.00	0.000	



Wellbenders

Standard Plan With Toolface

Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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 (°)	
6,300.00	92.50	270.26	3,726.89	80.40	-3,104.45	3,104.78	0.00	0.00	0.00	0.000	
6,400.00	92.50	270.26	3,722.52	80.85	-3,204.35	3,204.68	0.00	0.00	0.00	0.000	
6,500.00	92.50	270.26	3,718.16	81.31	-3,304.25	3,304.59	0.00	0.00	0.00	0.000	
6,600.00	92.50	270.26	3,713.80	81.76	-3,404.16	3,404.49	0.00	0.00	0.00	0.000	
6,700.00	92.50	270.26	3,709.44	82.22	-3,504.06	3,504.40	0.00	0.00	0.00	0.000	
6,800.00	92.50	270.26	3,705.08	82.67	-3,603.96	3,604.30	0.00	0.00	0.00	0.000	
6,900.00	92.50	270.26	3,700.72	83.13	-3,703.87	3,704.21	0.00	0.00	0.00	0.000	
7,000.00	92.50	270.26	3,696.35	83.58	-3,803.77	3,804.11	0.00	0.00	0.00	0.000	
7,100.00	92.50	270.26	3,691.99	84.04	-3,903.68	3,904.02	0.00	0.00	0.00	0.000	
7,200.00	92.50	270.26	3,687.63	84.49	-4,003.58	4,003.92	0.00	0.00	0.00	0.000	
7,300.00	92.50	270.26	3,683.27	84.95	-4,103.48	4,103.83	0.00	0.00	0.00	0.000	
7,400.00	92.50	270.26	3,678.91	85.40	-4,203.39	4,203.73	0.00	0.00	0.00	0.000	
7,500.00	92.50	270.26	3,674.54	85.86	-4,303.29	4,303.64	0.00	0.00	0.00	0.000	
7,600.00	92.50	270.26	3,670.18	86.31	-4,403.20	4,403.54	0.00	0.00	0.00	0.000	
7,700.00	92.50	270.26	3,665.82	86.77	-4,503.10	4,503.45	0.00	0.00	0.00	0.000	
7,800.00	92.50	270.26	3,661.46	87.22	-4,603.00	4,603.35	0.00	0.00	0.00	0.000	
7,900.00	92.50	270.26	3,657.10	87.68	-4,702.91	4,703.26	0.00	0.00	0.00	0.000	
8,000.00	92.50	270.26	3,652.73	88.14	-4,802.81	4,803.16	0.00	0.00	0.00	0.000	
8,100.00	92.50	270.26	3,648.37	88.59	-4,902.71	4,903.07	0.00	0.00	0.00	0.000	
8,200.00	92.50	270.26	3,644.01	89.05	-5,002.62	5,002.97	0.00	0.00	0.00	0.000	
8,300.00	92.50	270.26	3,639.65	89.50	-5,102.52	5,102.88	0.00	0.00	0.00	0.000	
8,400.00	92.50	270.26	3,635.29	89.96	-5,202.43	5,202.78	0.00	0.00	0.00	0.000	
8,500.00	92.50	270.26	3,630.93	90.41	-5,302.33	5,302.68	0.00	0.00	0.00	0.000	
8,600.00	92.50	270.26	3,626.56	90.87	-5,402.23	5,402.59	0.00	0.00	0.00	0.000	
8,700.00	92.50	270.26	3,622.20	91.32	-5,502.14	5,502.49	0.00	0.00	0.00	0.000	
8,800.00	92.50	270.26	3,617.84	91.78	-5,602.04	5,602.40	0.00	0.00	0.00	0.000	
8,900.00	92.50	270.26	3,613.48	92.23	-5,701.94	5,702.30	0.00	0.00	0.00	0.000	



Wellbenders
Standard Plan With Toolface

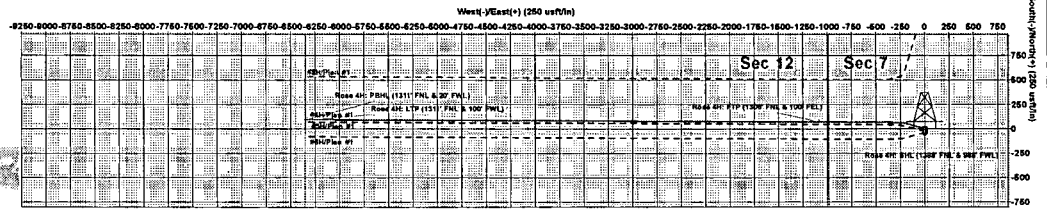
Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
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Planned Survey											
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9,000.00	92.50	270.26	3,609.12	92.69	-5,801.85	5,802.21	0.00	0.00	0.00	0.000	
9,100.00	92.50	270.26	3,604.75	93.14	-5,901.75	5,902.11	0.00	0.00	0.00	0.000	
9,200.00	92.50	270.26	3,600.39	93.60	-6,001.66	6,002.02	0.00	0.00	0.00	0.000	
9,300.00	92.50	270.26	3,596.03	94.05	-6,101.56	6,101.92	0.00	0.00	0.00	0.000	
9,400.00	92.50	270.26	3,591.67	94.51	-6,201.46	6,201.83	0.00	0.00	0.00	0.000	
9,449.99	92.50	270.26	3,589.49	94.74	-6,251.40	6,251.77	0.00	0.00	0.00	0.000	
Rose 4H: LTP (1311' FNL & 100' FWL)											
9,500.00	92.50	270.26	3,587.31	94.96	-6,301.37	6,301.73	0.00	0.00	0.00	0.000	
9,529.96	92.50	270.26	3,586.00	95.10	-6,331.30	6,331.67	0.00	0.00	0.00	0.000	
Rose 4H: PBHL (1311' FNL & 20' FWL)											

Checked By: _____	Approved By: _____	Date: _____
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Company: Percussion Petroleum, LLC
Project: Eddy County, NM
Site: Rosa
Well: #415
Wellbore: OH
Rig: Akita 20
Design: Plan #1 / 12:39, March 11 2019



DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Eastng	Latitude	Longitude
Rosa 4H: SHL (1387' FNL & 88' FWL)	0.00	0.00	0.00	610655.10	512697.30	32.87853	-104.426449
Rosa 4H: PBL (1311' FNL & 20' FWL)	3589.88	85.15	-4231.20	610700.20	506356.50	32.87858	-104.447027
Rosa 4H: LTP (1311' FNL & 100' FWL)	3589.48	84.70	-4231.40	610699.80	506435.30	32.87867	-104.446787
Rosa 4H: FTP (1306' FNL & 100' FWL)	3813.00	71.29	-1689.30	610676.30	511661.00	32.878757	-104.429980

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

WELL DETAILS: #4H

RKB+IF @ 3385 Count (Akita 20)	
+N/S	+E/W
0.00	0.00
Northing	Eastng
610655.10	512697.30
Latitude	Longitude
32.87853	-104.426449

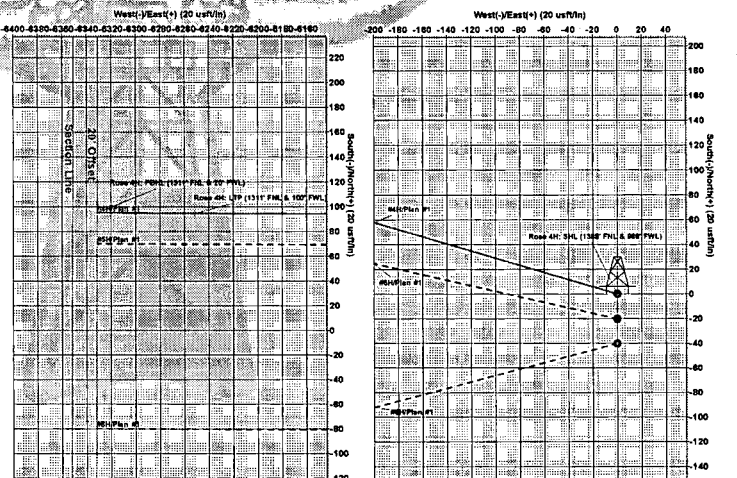
SECTION DETAILS

Row	MD	Inc	Asd	TVD	+N/S	+E/W	Depth	VWest
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	420.00	0.00	0.00	420.00	0.00	0.00	0.00	0.00
3	563.20	0.00	288.10	603.20	1.01	-3.49	0.00	3.00
4	2884.80	0.00	288.10	2875.82	58.82	-202.98	0.00	203.24
5	3534.91	48.00	279.28	3470.85	85.43	-478.40	0.00	478.70
6	3804.81	48.00	279.28	3647.73	89.74	-456.17	0.00	456.48
7	4279.91	82.58	279.28	3815.90	71.30	-1089.30	10.00	1089.61
8	5445.98	82.58	279.28	3589.48	84.74	-4231.40	0.00	4231.77
9	8329.86	92.58	279.28	3589.48	95.10	-4231.30	0.00	4231.67



Altimeter in Grid North
True North: 0.00°
Magnetic North: 7.25°
Magnetic Field
Strength: 0.125 Gauss
Dir Angle: 80.32°
Calc: 3/5/2019
Model: KRF2015

PROJECT DETAILS: Eddy County, NM
Geographic System: US State Plane 1983
Datum: North American Datum 1983
Elevation: GRS 1980
Zone: West Magnetic Eastern Zone
System Datum: Mean Sea Level



Disclaimer:
This is a preliminary report.
It is not to be used for any
purpose other than the one
for which it was prepared.
The user assumes all
responsibility for its use.

Plan: Plan #1 (#4H/OH) Akita 20

Created By: Derek Stephens Date: 12:39, March 11 2019