



RECEIVED

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EMNRD-OCD ARTESIA

I **Larry Wright**, certify that I am employed by **Wellbenders Directional Services**. That I did on the day(s) of **06/02/19** thru **06/10/19** conduct or supervise the taking of a **MWD Survey** from a depth of **222'** to a depth of **8337'**; that the data is true, correct, complete and within the limitations of the tool as set forth by **Wellbenders Directional Services**; that I am authorized and qualified to make this report; that this survey was conducted at the request of **Percussion Petroleum, LLC** for the **Rose 5H** API No. **30-015-45797** in **Eddy County, New Mexico**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by **Wellbenders Directional Services**.

Larry Wright

Larry
Wright

Digitally signed
by Larry Wright
Date:
2019.12.13
10:49:17 -06'00'



PERCUSSION
PETROLEUM
LLC

Percussion Petroleum, LLC

Eddy County, NM

Rose

#5H

OH

Design: OH

End Of Well Report

11 June, 2019



Wellbenders End Of Well Report

Company: Percussion Petroleum, LLC Project: Eddy County, NM Site: Rose Well: #5H Wellbore: OH Design: OH	Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:	Well #5H RKB=16' @ 3395.00usft (Akita 20) RKB=16' @ 3395.00usft (Akita 20) Grid Minimum Curvature WBDS_SQL_2
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Project: Eddy County, NM	
Map System: US State Plane 1983 Geo Datum: North American Datum 1983 Map Zone: New Mexico Eastern Zone	System Datum: Mean Sea Level

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

Well: #5H	
Well Position +N/-S 0.00 usft +E/-W 0.00 usft Position Uncertainty 0.00 usft	Northing: 610,584.90 usft Easting: 512,687.20 usft Wellhead Elevation: usft
	Latitude: 32.678508 Longitude: -104.426449 Ground Level: 3,379.00 usft

Wellbore: OH	
Magnetics	
Model Name: IGRF2015 Sample Date: 5/31/2019 Declination (°): 7.174 Dip Angle (°): 60.317 Field Strength (nT): 47,914.27619945	

Design: OH	
Audit Notes:	
Version: 1.0 Phase: ACTUAL Tie On Depth: 0.00	
Vertical Section: Depth From (TVD) (usft) 0.00	+N/-S (usft) 0.00
	+E/-W (usft) 0.00
	Direction (°): 270.26

Survey Program: Date 6/11/2019	
From (usft): 222.00 To (usft): 8,337.00 Survey (Wellbore): Survey #1 (OH)	Tool Name: MWD+IGRF Description: OWSG MWD + IGRF or WMM



Wellbenders

End Of Well Report

Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #5H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3395.00usft (Akita-20)
Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Well:	#5H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WBDS_SQL_2

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)	CL Azi (°)	DLeg (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
222.00	0.40	45.46	222.00	0.54	0.55	-0.55	222.00	45.46	0.18	
312.00	1.80	273.36	311.98	0.85	-0.63	0.64	90.00	284.33	2.32	
403.00	3.74	272.48	402.87	1.06	-5.03	5.03	91.00	272.77	2.13	
494.00	5.23	273.45	493.59	1.44	-12.13	12.14	91.00	273.05	1.64	
585.00	7.65	280.21	584.01	2.76	-22.24	22.25	91.00	277.46	2.78	
677.00	10.55	279.86	674.85	5.29	-36.56	36.59	92.00	280.01	3.15	
767.00	11.78	278.72	763.14	8.09	-53.76	53.80	90.00	279.26	1.39	
858.00	10.64	277.23	852.40	10.56	-71.28	71.33	91.00	278.01	1.29	
948.00	10.07	276.96	940.94	12.56	-87.33	87.39	90.00	277.10	0.64	
1,040.00	10.11	277.75	1,031.51	14.62	-103.32	103.38	92.00	277.36	0.16	
1,130.00	10.20	279.60	1,120.10	17.01	-119.00	119.08	90.00	278.68	0.38	
1,201.00	10.24	280.04	1,189.98	19.16	-131.41	131.50	71.00	279.82	0.12	
1,268.00	10.20	279.60	1,255.92	21.19	-143.13	143.22	67.00	279.82	0.13	
1,362.00	9.80	279.60	1,348.49	23.91	-159.22	159.33	94.00	279.60	0.43	
1,456.00	9.36	280.92	1,441.18	26.70	-174.61	174.73	94.00	280.24	0.52	
1,550.00	8.79	281.62	1,534.00	29.59	-189.16	189.29	94.00	281.26	0.62	
1,644.00	8.35	280.39	1,626.95	32.27	-202.90	203.05	94.00	281.02	0.51	
1,738.00	9.67	278.98	1,719.79	34.73	-217.42	217.57	94.00	279.63	1.42	
1,832.00	9.67	280.39	1,812.45	37.39	-232.98	233.15	94.00	279.68	0.25	
1,926.00	19.56	271.42	1,903.31	39.21	-256.54	256.71	94.00	274.41	10.76	
2,020.00	25.23	269.84	1,990.18	39.54	-292.33	292.51	94.00	270.54	6.07	
2,115.00	28.88	269.49	2,074.77	39.28	-335.53	335.71	95.00	269.65	3.85	
2,209.00	32.75	269.75	2,155.49	38.97	-383.68	383.85	94.00	269.63	4.12	
2,303.00	36.70	270.19	2,232.73	38.95	-437.21	437.38	94.00	269.98	4.21	
2,398.00	44.04	270.72	2,305.06	39.46	-498.70	498.87	95.00	270.47	7.73	
2,492.00	47.12	270.90	2,370.84	40.41	-565.82	566.00	94.00	270.81	3.28	



Wellbenders End Of Well Report

Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #5H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3395.00usft:(Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Well:	#5H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WBDS_SQL_2

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)	CL Azi (°)	DLeg (°/100ft)	
2,587.00	46.11	269.93	2,436.10	40.91	-634.86	635.04	95.00	270.42	1.30	
2,681.00	46.73	270.19	2,500.90	40.99	-702.95	703.13	94.00	270.06	0.69	
2,775.00	56.48	271.42	2,559.21	42.07	-776.53	776.71	94.00	270.85	10.42	
2,869.00	64.84	271.16	2,605.23	43.91	-858.38	858.57	94.00	271.28	8.90	
2,964.00	70.81	271.42	2,641.07	45.89	-946.29	946.48	95.00	271.29	6.29	
3,058.00	78.59	271.16	2,665.86	47.93	-1,036.86	1,037.07	94.00	271.29	8.28	
3,151.00	89.14	271.42	2,675.78	50.01	-1,129.18	1,129.39	93.00	271.29	11.35	
3,245.00	92.40	270.81	2,674.52	51.84	-1,223.14	1,223.36	94.00	271.12	3.53	
3,338.00	92.97	270.90	2,670.16	53.23	-1,316.02	1,316.25	93.00	270.85	0.62	
3,431.00	90.11	270.11	2,667.66	54.04	-1,408.98	1,409.21	93.00	270.50	3.19	
3,553.00	91.21	269.93	2,666.26	54.09	-1,530.97	1,531.20	122.00	270.02	0.91	
3,647.00	92.31	270.19	2,663.37	54.18	-1,624.92	1,625.15	94.00	270.06	1.20	
3,740.00	92.70	269.31	2,659.30	53.78	-1,717.83	1,718.06	93.00	269.75	1.03	
3,833.00	91.96	268.44	2,655.52	51.95	-1,810.73	1,810.95	93.00	268.87	1.23	
3,927.00	90.51	268.44	2,653.50	49.40	-1,904.67	1,904.88	94.00	268.44	1.54	
4,021.00	89.71	269.23	2,653.32	47.49	-1,998.65	1,998.85	94.00	268.84	1.20	
4,115.00	90.95	269.67	2,652.78	46.58	-2,092.64	2,092.83	94.00	269.45	1.40	
4,209.00	90.42	270.81	2,651.65	46.98	-2,186.63	2,186.83	94.00	270.24	1.34	
4,304.00	89.49	270.46	2,651.73	48.03	-2,281.63	2,281.82	95.00	270.64	1.05	
4,398.00	88.92	270.02	2,653.03	48.42	-2,375.62	2,375.81	94.00	270.24	0.77	
4,492.00	89.14	269.75	2,654.62	48.23	-2,469.60	2,469.80	94.00	269.88	0.37	
4,587.00	90.07	270.02	2,655.28	48.04	-2,564.60	2,564.79	95.00	269.89	1.02	
4,681.00	91.03	269.67	2,654.37	47.79	-2,658.59	2,658.78	94.00	269.85	1.09	
4,776.00	89.85	269.93	2,653.65	47.46	-2,753.59	2,753.78	95.00	269.80	1.27	
4,870.00	89.98	269.93	2,653.78	47.34	-2,847.59	2,847.77	94.00	269.93	0.14	
4,965.00	88.13	269.58	2,655.35	46.94	-2,942.57	2,942.75	95.00	269.76	1.98	
5,059.00	88.44	269.67	2,658.16	46.32	-3,036.53	3,036.71	94.00	269.63	0.34	



Wellbenders

End Of Well Report

Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #5H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Well:	#5H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WBDS_SQL_2

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V: Sec (usft)	CL (usft)	CL Azi (°)	DLeg (°/100ft)	
5,153.00	89.36	269.93	2,659.97	45.99	-3,130.51	3,130.68	94.00	269.80	1.02	
5,247.00	89.32	269.49	2,661.05	45.52	-3,224.50	3,224.67	94.00	269.71	0.47	
5,341.00	89.85	269.58	2,661.73	44.76	-3,318.49	3,318.66	94.00	269.54	0.57	
5,435.00	90.46	269.93	2,661.48	44.35	-3,412.49	3,412.66	94.00	269.75	0.75	
5,531.00	91.03	270.02	2,660.23	44.31	-3,508.48	3,508.65	96.00	269.97	0.60	
5,625.00	88.09	269.31	2,660.95	43.76	-3,602.47	3,602.63	94.00	269.67	3.22	
5,719.00	88.40	269.23	2,663.83	42.57	-3,696.42	3,696.57	94.00	269.27	0.34	
5,813.00	89.01	269.23	2,665.96	41.30	-3,790.38	3,790.53	94.00	269.23	0.65	
5,907.00	89.45	269.40	2,667.22	40.18	-3,884.37	3,884.51	94.00	269.32	0.50	
6,002.00	89.93	269.31	2,667.73	39.11	-3,979.36	3,979.50	95.00	269.35	0.51	
6,097.00	90.86	269.67	2,667.08	38.26	-4,074.35	4,074.48	95.00	269.49	1.05	
6,191.00	92.00	269.67	2,664.73	37.72	-4,168.32	4,168.45	94.00	269.67	1.21	
6,285.00	92.62	269.93	2,660.94	37.39	-4,262.24	4,262.37	94.00	269.80	0.72	
6,379.00	91.78	270.72	2,657.33	37.93	-4,356.17	4,356.30	94.00	270.33	1.23	
6,474.00	91.60	270.98	2,654.53	39.34	-4,451.12	4,451.25	95.00	270.85	0.33	
6,568.00	91.87	271.16	2,651.69	41.09	-4,545.06	4,545.20	94.00	271.07	0.35	
6,663.00	92.18	271.69	2,648.33	43.45	-4,639.97	4,640.12	95.00	271.42	0.65	
6,754.00	92.40	272.04	2,644.69	46.41	-4,730.85	4,731.01	91.00	271.86	0.45	
6,845.00	92.62	272.04	2,640.71	49.65	-4,821.70	4,821.88	91.00	272.04	0.24	
6,935.00	92.09	271.34	2,637.01	52.30	-4,911.59	4,911.77	90.00	271.69	0.98	
7,026.00	92.13	270.98	2,633.66	54.14	-5,002.51	5,002.70	91.00	271.16	0.40	
7,117.00	92.62	271.25	2,629.89	55.91	-5,093.41	5,093.61	91.00	271.11	0.61	
7,208.00	93.10	271.60	2,625.35	58.17	-5,184.27	5,184.48	91.00	271.42	0.65	
7,299.00	91.25	270.90	2,621.90	60.15	-5,275.18	5,275.40	91.00	271.25	2.17	
7,390.00	91.43	270.90	2,619.77	61.58	-5,366.14	5,366.37	91.00	270.90	0.20	
7,481.00	92.00	271.25	2,617.04	63.29	-5,457.08	5,457.32	91.00	271.07	0.73	
7,571.00	92.48	271.16	2,613.53	65.18	-5,547.00	5,547.23	90.00	271.21	0.54	



Wellbenders

End Of Well Report

Company:	Percussion Petroleum, LLC	Local Co-ordinate Reference:	Well #5H
Project:	Eddy County, NM	TVD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Site:	Rose	MD Reference:	RKB=16' @ 3395.00usft (Akita 20)
Well:	#5H	North Reference:	Grid:
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	WBDS_SQL_2

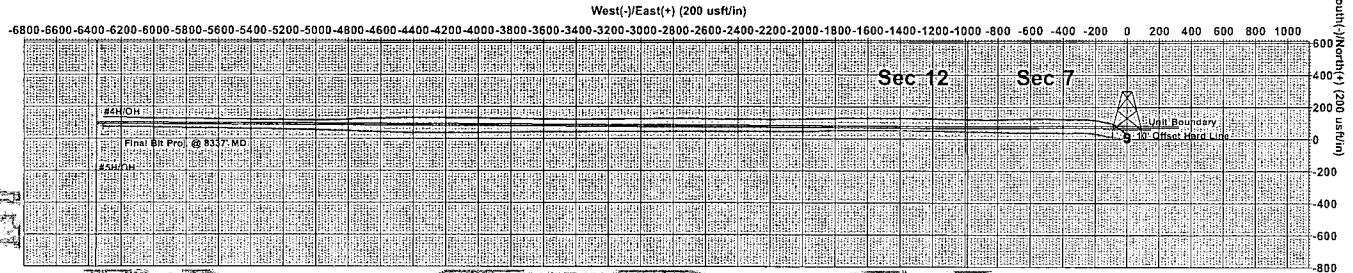
Survey									
MD (usft)	Inc (°)	Azi. (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)	CL Azi (°)	D Leg (°/100ft)
7,663.00	91.52	270.46	2,610.32	66.48	-5,638.93	5,639.17	92.00	270.81	1.29
7,753.00	91.21	270.72	2,608.17	67.41	-5,728.90	5,729.15	90.00	270.59	0.45
7,844.00	91.08	270.81	2,606.35	68.62	-5,819.87	5,820.12	91.00	270.77	0.17
7,935.00	92.18	271.16	2,603.76	70.18	-5,910.82	5,911.08	91.00	270.98	1.27
8,028.00	92.18	271.42	2,600.23	72.28	-6,003.73	6,004.00	93.00	271.29	0.28
8,120.00	91.38	270.81	2,597.37	74.07	-6,095.67	6,095.94	92.00	271.11	1.09
8,210.00	90.86	270.55	2,595.61	75.13	-6,185.64	6,185.92	90.00	270.68	0.65
8,266.00	91.38	270.55	2,594.52	75.67	-6,241.63	6,241.91	56.00	270.55	0.93
8,337.00	91.38	270.55	2,592.81	76.35	-6,312.61	6,312.89	71.00	270.55	0.00
Final Station Closure Distance= 6313.07 /Direction= 270.69 - Projection to Bit: 8337.00' MD/ 2592.81' TVD - TD: Latitude = 32.678701 / Longitude = -104.446966 - TD: Y= 610661.25 / X= 506374.59									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,337.00	2,592.81	76.35	-6,312.61	Final Station Closure Distance= 6313.07 /Direction= 270.69
8,337.00	2,592.81	76.35	-6,312.61	Projection to Bit: 8337.00' MD/ 2592.81' TVD
8,337.00	2,592.81	76.35	-6,312.61	TD: Latitude = 32.678701 / Longitude = -104.446966
8,337.00	2,592.81	76.35	-6,312.61	TD: Y= 610661.25 / X= 506374.59

Checked By: _____	Approved By: _____	Date: _____
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Company: Percussion Petroleum, LLC
Project: Eddy County, NM
Site: Rose
Well: #5H
Wellbore: OH
Rig: Akita 20
Design: OH 9:34, June 11 2019



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Final Bit Proj. @ 8337 MD	2592.81	76.35	-6312.61	610661.25	506374.59	32.678701	-104.446966

TOTAL CORRECTION
To convert a Magnetic Direction to a Grid Direction, Add 7.224°

WELL DETAILS: #5H

RKB=16' @ 3395.00usft (Akita 20)							
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
0.00	0.00	610584.90	512687.20	32.678508	-104.426449		

ANNOTATION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
8337.00	91.38	270.55	2592.81	76.35	-6312.61	6312.89	6318.32	Final Station Closure Distance= 6313.07 / Direction= 270.69
8337.00	91.38	270.55	2592.81	76.35	-6312.61	6312.89	6318.32	Projection to Bit: 8337.00' MD / 2592.81' TVD
8337.00	91.38	270.55	2592.81	76.35	-6312.61	6312.89	6318.32	TD: Latitude = 32.678701 / Longitude = -104.446966
8337.00	91.38	270.55	2592.81	76.35	-6312.61	6312.89	6318.32	TD: Y= 610661.25 / X= 506374.59



Azimuths to Grid North
True North: 0.00°
Magnetic North: 7.22°

Magnetic Field
Strength: 47814.3nT
Dip Angle: 60.32°
Date: 5/21/2019
Model: IGRF2015

PROJECT DETAILS: Eddy County, NM

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Elevation: GDS 1989
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

Final Station Closure Distance= 6313.07 / Direction= 270.69
Projection to Bit: 8337.00' MD / 2592.81' TVD
TD: Latitude = 32.678701 / Longitude = -104.446966
TD: Y= 610661.25 / X= 506374.59

Vertical Section at 270.26° (200 usf/in)



Disclaimer:
All Plan Details, Boundary Lines and other well location data is provided by customer and subject to customer review.

Design: OH (#5H/OH) Akita 20

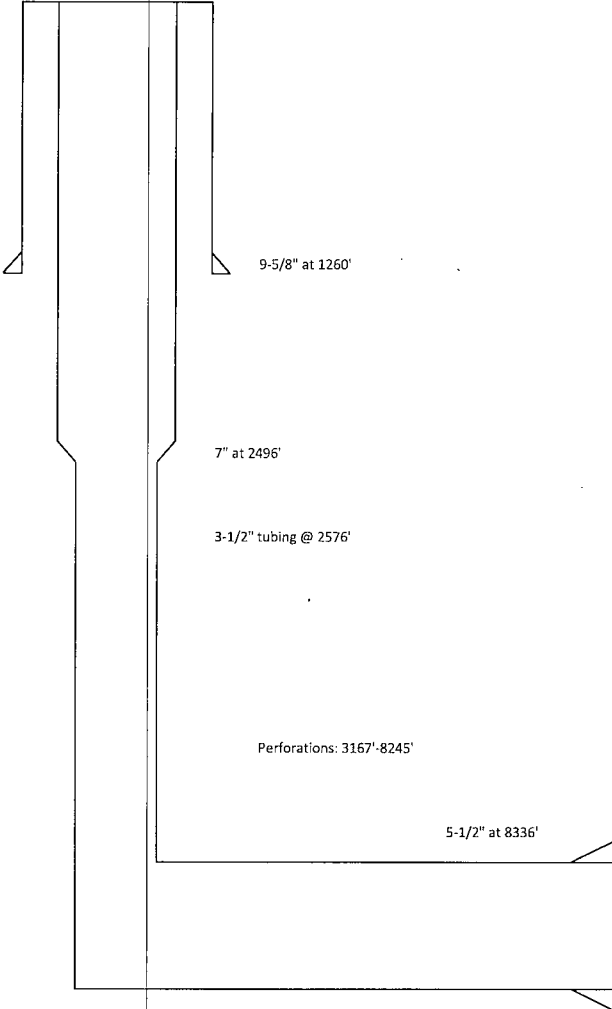
Created By: Pete Broussard Date: 9:34, June 11 2019

API #	30-015-45797	ROSE 5H	County, ST	Eddy, NM
Operator	Spur Energy Partners, LLC		Sec-Twn-Rng	7-19S-25E
Field	PENASCO DRAW; SA-YESO (ASSOC)		Footage	1408' FNL 986' FWL
Spud Date	6/2/2019		Survey	

GL	3379'
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Hole Size	12-1/4"
TOC	Surf
Method	Circ Returns

Csg Depth	1260'
Size	9-5/8"
Weight	36#
Grade	J-55
Connections	BTC
Cement	surface



Hole Size	8-3/4"
TOC	Surf
Method	Circ Returns

Csg Depth	8336'	2496'
Size	5-1/2"	7"
Weight	20ppf	32ppf
Grade	L-80	L-80
Connections	BTC	BTC
Cement	surface	

PBTD	8227'
TD MD	8337'
TD TVD	2593'