



Jagged Peak Energy

Ward County, Texas (NAD-83)

UTL 2714A-17

21H

OH

Design: OH

RRC

03 July, 2018





RRC



Company:	Jagged Peak Energy	Local Co-ordinate Reference:	Well 21H
Project:	Ward County, Texas (NAD-83)	TVD Reference:	KB=25' @ 2717.00usft (Sidewinder 219)
Site:	UTL 2714A-17	MD Reference:	KB=25' @ 2717.00usft (Sidewinder 219)
Well:	21H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14 Single User Db

Project	Ward County, Texas (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Texas Central Zone		

Site	UTL 2714A-17		
Site Position:		Northing:	10,561,995.82 usft
From:	Map	Easting:	1,400,511.61 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	31.613021
		Longitude:	-103.212210
		Grid Convergence:	-1.48 °

Well		21H				
Well Position	+N/-S	0.00 usft	Northing:	10,561,979.63 usft	Latitude:	31.612980
	+E/-W	0.00 usft	Easting:	1,400,563.22 usft	Longitude:	-103.212043
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	2,692.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	06/11/18	6.64	59.54	47,515.98179527

Design	OH			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	73.97

Survey Program	Date	06/11/18		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
217.00	21,312.00	MWD Survey (OH)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction



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Design:	OH	Database:	EDM 5000.14 Single User Db

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
217.00	0.68	123.58	216.99	-0.71	1.07	0.31	0.83	1.29	123.58
First MWD Survey									
336.00	0.77	168.54	335.99	-1.89	1.82	0.47	1.23	2.62	136.03
395.00	2.08	195.13	394.97	-3.31	1.62	2.43	0.64	3.68	153.92
455.00	2.66	199.66	454.92	-5.67	0.87	1.02	-0.73	5.74	171.31
515.00	2.80	199.74	514.85	-8.36	-0.10	0.23	-2.40	8.36	180.66
607.00	2.45	204.40	606.75	-12.27	-1.67	0.45	-4.99	12.38	187.74
791.00	0.69	126.81	790.69	-16.51	-2.41	1.30	-6.87	16.69	188.29
972.00	1.77	196.30	971.65	-19.85	-2.32	0.92	-7.71	19.98	186.66
1,063.00	2.05	202.93	1,062.60	-22.70	-3.35	0.39	-9.48	22.94	188.39
1,248.00	0.74	200.66	1,247.54	-26.86	-5.06	0.71	-12.28	27.33	190.66
1,343.00	1.33	208.06	1,342.52	-28.41	-5.79	0.64	-13.41	28.99	191.52
1,437.00	2.22	202.32	1,436.48	-31.06	-7.00	0.96	-15.30	31.83	192.70
1,532.00	2.28	196.30	1,531.41	-34.57	-8.23	0.26	-17.45	35.54	193.38
1,627.00	1.95	189.26	1,626.34	-37.98	-9.02	0.44	-19.15	39.04	193.35
1,722.00	1.37	185.55	1,721.30	-40.71	-9.39	0.62	-20.26	41.78	192.98
1,913.00	1.39	134.47	1,912.25	-44.60	-7.95	0.62	-19.96	45.31	190.11
2,007.00	1.88	158.00	2,006.21	-46.83	-6.56	0.87	-19.24	47.29	187.98
2,102.00	2.98	173.53	2,101.13	-50.73	-5.70	1.34	-19.49	51.05	186.41
2,196.00	3.71	191.59	2,194.97	-56.14	-6.04	1.35	-21.30	56.46	186.14
2,291.00	5.01	196.58	2,289.69	-63.12	-7.84	1.42	-24.96	63.61	187.08
2,386.00	4.46	191.42	2,384.37	-70.72	-9.75	0.73	-28.90	71.39	187.85
2,479.00	5.19	191.25	2,477.04	-78.39	-11.29	0.79	-32.50	79.20	188.20
2,574.00	6.78	191.46	2,571.52	-88.10	-13.24	1.67	-37.06	89.09	188.55
2,669.00	6.33	193.35	2,665.90	-98.69	-15.57	0.53	-42.21	99.91	188.96
2,764.00	6.05	195.39	2,760.34	-108.61	-18.10	0.37	-47.39	110.11	189.46



RRC



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Well:	21H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (°)	
2,862.00	5.48	197.49	2,857.85	-118.06	-20.88	0.62	-52.67	119.89	190.03	
2,956.00	5.16	197.86	2,951.44	-126.36	-23.53	0.34	-57.51	128.53	190.55	
3,050.00	4.87	197.01	3,045.08	-134.20	-25.99	0.32	-62.04	136.69	190.96	
3,144.00	6.51	205.44	3,138.62	-142.83	-29.45	1.95	-67.74	145.83	191.65	
3,238.00	5.81	185.88	3,232.09	-152.37	-32.22	2.34	-73.05	155.74	191.94	
3,332.00	5.29	184.64	3,325.64	-161.43	-33.06	0.57	-76.35	164.78	191.57	
3,426.00	4.83	185.18	3,419.28	-169.69	-33.77	0.49	-79.31	173.01	191.25	
3,519.00	5.13	186.23	3,511.93	-177.72	-34.57	0.34	-82.31	181.05	191.01	
3,613.00	5.49	185.04	3,605.52	-186.38	-35.42	0.40	-85.51	189.71	190.76	
3,707.00	5.02	184.39	3,699.13	-194.96	-36.13	0.50	-88.57	198.28	190.50	
3,802.00	4.64	183.85	3,793.79	-202.93	-36.71	0.40	-91.32	206.23	190.25	
3,896.00	4.86	181.76	3,887.47	-210.71	-37.09	0.30	-93.83	213.95	189.98	
3,990.00	5.48	177.28	3,981.08	-219.17	-37.00	0.79	-96.08	222.27	189.58	
4,084.00	5.16	176.58	4,074.68	-227.87	-36.53	0.35	-98.04	230.78	189.11	
4,178.00	4.83	175.63	4,168.32	-236.04	-35.98	0.36	-99.76	238.77	188.67	
4,273.00	4.02	173.34	4,263.04	-243.34	-35.29	0.87	-101.11	245.88	188.25	
4,368.00	4.40	177.18	4,357.78	-250.28	-34.72	0.50	-102.49	252.68	187.90	
4,462.00	6.43	178.90	4,451.36	-259.15	-34.44	2.17	-104.67	261.43	187.57	
4,556.00	7.32	180.44	4,544.68	-270.40	-34.39	0.97	-107.72	272.58	187.25	
4,650.00	6.97	176.61	4,637.95	-282.08	-34.10	0.63	-110.67	284.13	186.89	
4,744.00	6.31	178.06	4,731.32	-292.94	-33.58	0.72	-113.17	294.86	186.54	
4,838.00	5.86	179.43	4,824.79	-302.90	-33.36	0.50	-115.71	304.73	186.29	
4,932.00	5.16	181.16	4,918.36	-311.92	-33.40	0.77	-118.24	313.71	186.11	
5,026.00	4.76	180.13	5,012.00	-320.05	-33.49	0.44	-120.57	321.80	185.97	
5,121.00	4.62	181.06	5,106.69	-327.82	-33.57	0.17	-122.79	329.53	185.85	
5,215.00	4.57	179.94	5,200.38	-335.35	-33.64	0.11	-124.94	337.03	185.73	
5,309.00	4.25	174.91	5,294.11	-342.56	-33.33	0.53	-126.63	344.18	185.56	



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (°)	
5,403.00	4.21	175.89	5,387.85	-349.47	-32.77	0.09	-128.00	351.00	185.36	
5,497.00	3.95	174.03	5,481.61	-356.13	-32.19	0.31	-129.28	357.58	185.16	
5,591.00	3.83	170.86	5,575.39	-362.45	-31.35	0.26	-130.22	363.81	184.94	
5,685.00	3.54	169.57	5,669.20	-368.41	-30.33	0.32	-130.88	369.65	184.71	
5,779.00	3.08	160.12	5,763.04	-373.63	-28.94	0.76	-131.00	374.75	184.43	
5,873.00	3.06	165.29	5,856.91	-378.44	-27.45	0.30	-130.88	379.43	184.15	
5,967.00	2.79	162.00	5,950.79	-383.04	-26.10	0.34	-130.86	383.93	183.90	
6,061.00	2.32	158.71	6,044.69	-386.99	-24.71	0.52	-130.61	387.77	183.65	
6,155.00	2.28	153.76	6,138.62	-390.44	-23.19	0.22	-130.11	391.12	183.40	
6,249.00	2.08	153.85	6,232.55	-393.65	-21.61	0.21	-129.47	394.24	183.14	
6,343.00	2.08	155.45	6,326.49	-396.73	-20.15	0.06	-128.92	397.24	182.91	
6,437.00	2.09	155.62	6,420.43	-399.84	-18.73	0.01	-128.42	400.28	182.68	
6,531.00	1.78	150.52	6,514.37	-402.67	-17.31	0.38	-127.83	403.04	182.46	
6,625.00	1.63	156.63	6,608.33	-405.17	-16.06	0.25	-127.32	405.49	182.27	
6,719.00	1.72	159.46	6,702.29	-407.72	-15.03	0.13	-127.04	408.00	182.11	
6,813.00	1.55	153.61	6,796.25	-410.18	-13.97	0.25	-126.70	410.42	181.95	
6,906.00	1.45	166.17	6,889.22	-412.45	-13.13	0.37	-126.52	412.66	181.82	
7,000.00	1.45	154.18	6,983.19	-414.67	-12.33	0.32	-126.36	414.86	181.70	
7,094.00	1.09	176.72	7,077.17	-416.64	-11.76	0.65	-126.36	416.80	181.62	
7,188.00	0.95	160.36	7,171.15	-418.26	-11.45	0.34	-126.51	418.42	181.57	
7,282.00	0.83	179.74	7,265.14	-419.68	-11.18	0.34	-126.64	419.83	181.53	
7,375.00	0.42	147.27	7,358.14	-420.64	-11.00	0.57	-126.73	420.78	181.50	
7,469.00	0.59	145.47	7,452.13	-421.33	-10.53	0.18	-126.47	421.46	181.43	
7,563.00	0.52	174.40	7,546.13	-422.15	-10.22	0.30	-126.40	422.27	181.39	
7,657.00	0.66	103.72	7,640.12	-422.70	-9.65	0.74	-126.01	422.81	181.31	
7,710.00	0.63	137.26	7,693.12	-422.99	-9.16	0.70	-125.61	423.09	181.24	
7,845.00	0.82	113.85	7,828.11	-423.93	-7.77	0.26	-124.53	424.00	181.05	



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7,939.00	0.89	119.81	7,922.10	-424.56	-6.52	0.12	-123.51	424.61	180.88	
8,033.00	0.89	83.94	8,016.09	-424.85	-5.16	0.58	-122.28	424.88	180.70	
8,127.00	0.70	65.55	8,110.08	-424.53	-3.91	0.34	-120.99	424.55	180.53	
8,220.00	0.92	63.71	8,203.07	-423.97	-2.73	0.24	-119.70	423.97	180.37	
8,314.00	1.09	45.40	8,297.06	-423.00	-1.41	0.38	-118.17	423.01	180.19	
8,408.00	1.19	39.01	8,391.04	-421.62	-0.16	0.17	-116.59	421.62	180.02	
8,502.00	1.35	27.88	8,485.02	-419.88	0.97	0.31	-115.02	419.88	179.87	
8,597.00	1.49	27.94	8,579.99	-417.80	2.07	0.15	-113.38	417.81	179.72	
8,691.00	1.04	35.74	8,673.96	-416.03	3.14	0.51	-111.87	416.04	179.57	
8,784.00	1.26	33.39	8,766.94	-414.49	4.20	0.24	-110.43	414.51	179.42	
8,878.00	1.70	31.98	8,860.91	-412.44	5.51	0.47	-108.60	412.48	179.24	
8,972.00	1.64	38.79	8,954.87	-410.21	7.09	0.22	-106.47	410.27	179.01	
9,066.00	1.30	31.66	9,048.84	-408.26	8.49	0.41	-104.58	408.34	178.81	
9,160.00	0.98	48.75	9,142.82	-406.82	9.65	0.49	-103.06	406.93	178.64	
9,254.00	1.03	48.78	9,236.81	-405.73	10.89	0.05	-101.57	405.88	178.46	
9,348.00	1.40	55.72	9,330.79	-404.53	12.48	0.42	-99.72	404.72	178.23	
9,442.00	1.41	72.91	9,424.76	-403.54	14.53	0.45	-97.47	403.80	177.94	
9,536.00	1.78	97.51	9,518.72	-403.39	17.08	0.82	-94.98	403.75	177.57	
9,630.00	2.10	113.65	9,612.67	-404.27	20.11	0.67	-92.31	404.77	177.15	
9,724.00	2.45	110.11	9,706.60	-405.66	23.57	0.40	-89.36	406.34	176.67	
9,819.00	2.40	109.99	9,801.51	-407.03	27.35	0.05	-86.12	407.95	176.16	
9,912.00	2.12	115.55	9,894.44	-408.44	30.73	0.38	-83.25	409.60	175.70	
10,007.00	2.33	124.46	9,989.37	-410.29	33.91	0.43	-80.71	411.69	175.28	
10,101.00	2.19	143.26	10,083.30	-412.81	36.56	0.80	-78.86	414.43	174.94	
10,195.00	2.29	148.47	10,177.22	-415.85	38.62	0.24	-77.72	417.64	174.69	
10,289.00	2.10	147.74	10,271.16	-418.91	40.52	0.20	-76.74	420.86	174.48	
10,383.00	2.33	142.94	10,365.09	-421.89	42.59	0.31	-75.57	424.04	174.24	



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Site: UTL 2714A-17
Well: 21H
Wellbore: OH
Design: OH

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MD Reference: KB=25' @ 2717.00usft (Sidewinder 219)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (°)
10,441.00	2.30	137.66	10,423.04	-423.69	44.08	0.37	-74.63	425.98	174.06
10,566.00	5.32	88.55	10,547.77	-425.40	51.57	3.35	-67.91	428.51	173.09
10,660.00	10.03	90.96	10,640.91	-425.43	64.12	5.02	-55.86	430.23	171.43
10,754.00	14.21	96.51	10,732.79	-426.87	83.77	4.61	-37.37	435.02	168.90
10,779.00	14.82	98.63	10,757.00	-427.70	89.98	3.25	-31.62	437.06	168.12
FTP @ 10779'									
10,849.00	16.63	103.73	10,824.38	-431.42	108.57	3.25	-14.79	444.87	165.87
10,943.00	22.95	94.00	10,912.80	-435.90	139.96	7.56	14.14	457.82	162.20
11,036.00	30.99	87.69	10,995.64	-436.20	182.05	9.17	54.51	472.66	157.35
11,130.00	39.84	87.46	11,072.17	-433.89	236.42	9.42	107.41	494.11	151.41
11,225.00	46.35	78.73	11,141.57	-425.80	300.65	9.28	171.37	521.25	144.78
11,318.00	53.20	69.88	11,201.66	-406.37	368.77	10.33	242.21	548.75	137.78
11,412.00	63.20	70.67	11,251.13	-379.47	443.88	10.66	321.83	583.98	130.53
11,506.00	72.87	70.61	11,286.25	-350.61	526.03	10.29	408.76	632.17	123.68
11,601.00	84.17	71.48	11,305.12	-320.43	613.95	11.93	501.59	692.53	117.56
11,695.00	89.08	69.15	11,310.66	-288.83	702.26	5.78	595.20	759.34	112.36
11,744.00	89.64	69.05	11,311.20	-271.35	748.04	1.16	644.02	795.73	109.94
11,951.00	90.79	71.38	11,310.43	-201.29	942.80	1.26	850.55	964.05	102.05
12,042.00	90.84	71.59	11,309.13	-172.39	1,029.08	0.24	941.46	1,043.42	99.51
12,133.00	90.78	68.98	11,307.85	-141.70	1,114.73	2.87	1,032.25	1,123.70	97.24
12,225.00	90.84	67.46	11,306.55	-107.57	1,200.15	1.65	1,123.78	1,204.96	95.12
12,319.00	90.87	67.78	11,305.14	-71.78	1,287.06	0.34	1,217.19	1,289.06	93.19
12,413.00	90.36	66.22	11,304.13	-35.06	1,373.58	1.75	1,310.49	1,374.03	91.46
12,507.00	90.90	65.53	11,303.10	3.36	1,459.37	0.93	1,403.55	1,459.37	89.87
12,601.00	90.81	65.64	11,301.70	42.21	1,544.95	0.15	1,496.53	1,545.53	88.43
12,693.00	90.81	64.00	11,300.40	81.35	1,628.20	1.78	1,587.35	1,630.23	87.14
12,787.00	90.84	63.74	11,299.04	122.74	1,712.58	0.28	1,679.88	1,716.97	85.90



Company:	Jagged Peak Energy	Local Co-ordinate Reference:	Well 21H
Project:	Ward County, Texas (NAD-83)	TVD Reference:	KB=25' @ 2717.00usft (Sidewinder 219)
Site:	UTL 2714A-17	MD Reference:	KB=25' @ 2717.00usft (Sidewinder 219)
Well:	21H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (°)	
12,881.00	90.81	63.93	11,297.69	164.19	1,796.94	0.20	1,772.41	1,804.42	84.78	
12,975.00	90.45	63.84	11,296.66	205.56	1,881.34	0.39	1,864.95	1,892.53	83.76	
13,069.00	90.34	63.58	11,296.01	247.19	1,965.61	0.30	1,957.44	1,981.10	82.83	
13,162.00	90.28	65.31	11,295.51	287.31	2,049.51	1.86	2,049.16	2,069.55	82.02	
13,256.00	90.31	66.88	11,295.02	325.40	2,135.44	1.67	2,142.26	2,160.09	81.34	
13,350.00	90.53	69.16	11,294.33	360.58	2,222.60	2.44	2,235.75	2,251.66	80.79	
13,444.00	90.39	70.19	11,293.58	393.23	2,310.75	1.11	2,329.48	2,343.97	80.34	
13,538.00	90.22	70.70	11,293.08	424.69	2,399.32	0.57	2,423.30	2,436.62	79.96	
13,632.00	90.25	70.48	11,292.69	455.93	2,487.98	0.24	2,517.14	2,529.41	79.62	
13,727.00	90.34	70.76	11,292.20	487.45	2,577.59	0.31	2,611.97	2,623.28	79.29	
13,820.00	90.36	70.32	11,291.63	518.43	2,665.28	0.47	2,704.81	2,715.23	78.99	
13,914.00	90.31	72.07	11,291.08	548.73	2,754.26	1.86	2,798.69	2,808.39	78.73	
14,008.00	90.36	72.42	11,290.54	577.40	2,843.78	0.38	2,892.65	2,901.80	78.52	
14,102.00	90.28	72.43	11,290.01	605.78	2,933.39	0.09	2,986.61	2,995.29	78.33	
14,195.00	90.25	72.33	11,289.58	633.93	3,022.03	0.11	3,079.57	3,087.80	78.15	
14,289.00	90.25	72.33	11,289.17	662.46	3,111.59	0.00	3,173.53	3,181.33	77.98	
14,383.00	90.20	72.19	11,288.80	691.11	3,201.12	0.16	3,267.49	3,274.87	77.82	
14,477.00	90.25	72.05	11,288.43	719.97	3,290.58	0.16	3,361.44	3,368.42	77.66	
14,571.00	90.56	72.62	11,287.77	748.49	3,380.14	0.69	3,455.40	3,462.02	77.51	
14,665.00	90.17	72.36	11,287.17	776.77	3,469.79	0.50	3,549.37	3,555.67	77.38	
14,760.00	90.14	72.15	11,286.91	805.72	3,560.27	0.22	3,644.32	3,650.30	77.25	
14,854.00	90.56	72.55	11,286.34	834.22	3,649.84	0.62	3,738.28	3,743.96	77.13	
14,948.00	90.34	72.17	11,285.60	862.71	3,739.42	0.47	3,832.24	3,837.64	77.01	
15,042.00	89.16	71.50	11,286.01	892.01	3,828.73	1.44	3,926.18	3,931.27	76.89	
15,136.00	90.08	72.82	11,286.63	920.81	3,918.20	1.71	4,020.12	4,024.95	76.78	
15,231.00	89.75	72.63	11,286.77	949.02	4,008.92	0.40	4,115.10	4,119.72	76.68	
15,325.00	89.44	72.48	11,287.44	977.20	4,098.59	0.37	4,209.07	4,213.48	76.59	



Company:	Jagged Peak Energy	Local Co-ordinate Reference:	Well 21H
Project:	Ward County, Texas (NAD-83)	TVD Reference:	KB=25' @ 2717.00usft (Sidewinder 219)
Site:	UTL 2714A-17	MD Reference:	KB=25' @ 2717.00usft (Sidewinder 219)
Well:	21H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (°)	
15,419.00	89.36	72.00	11,288.42	1,005.87	4,188.11	0.52	4,303.02	4,307.20	76.49	
15,514.00	89.52	72.22	11,289.35	1,035.05	4,278.51	0.29	4,397.97	4,401.93	76.40	
15,608.00	89.89	72.56	11,289.83	1,063.49	4,368.10	0.53	4,491.93	4,495.70	76.32	
15,701.00	89.58	72.23	11,290.27	1,091.62	4,456.75	0.49	4,584.89	4,588.49	76.24	
15,796.00	89.02	71.12	11,291.43	1,121.48	4,546.92	1.31	4,679.81	4,683.18	76.14	
15,890.00	89.64	71.37	11,292.52	1,151.71	4,635.92	0.71	4,773.70	4,776.84	76.05	
15,982.00	89.22	71.24	11,293.44	1,181.19	4,723.06	0.48	4,865.59	4,868.53	75.96	
16,076.00	89.16	71.09	11,294.77	1,211.54	4,812.02	0.17	4,959.47	4,962.19	75.87	
16,168.00	89.38	71.17	11,295.94	1,241.29	4,899.07	0.25	5,051.35	5,053.88	75.78	
16,262.00	89.47	70.97	11,296.88	1,271.78	4,987.98	0.23	5,145.22	5,147.56	75.70	
16,356.00	89.36	71.36	11,297.84	1,302.13	5,076.94	0.43	5,239.11	5,241.27	75.61	
16,450.00	89.30	71.32	11,298.94	1,332.20	5,165.99	0.08	5,333.00	5,335.00	75.54	
16,545.00	89.58	71.75	11,299.87	1,362.29	5,256.10	0.54	5,427.91	5,429.77	75.47	
16,639.00	89.83	71.74	11,300.36	1,391.73	5,345.37	0.27	5,521.84	5,523.57	75.41	
16,733.00	89.58	71.33	11,300.84	1,421.51	5,434.53	0.51	5,615.75	5,617.36	75.34	
16,827.00	89.52	71.25	11,301.58	1,451.66	5,523.56	0.11	5,709.65	5,711.13	75.27	
16,921.00	89.72	71.41	11,302.20	1,481.75	5,612.61	0.27	5,803.54	5,804.91	75.21	
17,015.00	90.36	71.73	11,302.14	1,511.47	5,701.79	0.76	5,897.46	5,898.72	75.15	
17,109.00	90.08	71.43	11,301.77	1,541.17	5,790.97	0.44	5,991.38	5,992.54	75.10	
17,203.00	89.52	71.00	11,302.10	1,571.44	5,879.96	0.75	6,085.27	6,086.33	75.04	
17,297.00	89.89	73.26	11,302.59	1,600.28	5,969.42	2.44	6,179.21	6,180.20	74.99	
17,392.00	89.27	72.99	11,303.28	1,627.85	6,060.33	0.71	6,274.20	6,275.15	74.96	
17,485.00	88.35	73.22	11,305.21	1,654.88	6,149.29	1.02	6,367.17	6,368.08	74.94	
17,579.00	88.57	72.98	11,307.74	1,682.19	6,239.20	0.35	6,461.12	6,461.99	74.91	
17,674.00	88.91	73.09	11,309.83	1,709.91	6,330.04	0.38	6,556.09	6,556.92	74.88	
17,768.00	88.35	72.95	11,312.08	1,737.35	6,419.92	0.61	6,650.05	6,650.84	74.86	
17,863.00	88.91	73.05	11,314.35	1,765.12	6,510.74	0.60	6,745.01	6,745.77	74.83	



Company:	Jagged Peak Energy	Local Co-ordinate Reference:	Well 21H
Project:	Ward County, Texas (NAD-83)	TVD Reference:	KB=25' @ 2717.00usft (Sidewinder 219)
Site:	UTL 2714A-17	MD Reference:	KB=25' @ 2717.00usft (Sidewinder 219)
Well:	21H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.14 Single User Db

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (°)
17,957.00	87.17	73.22	11,317.56	1,792.37	6,600.64	1.86	6,838.94	6,839.67	74.81
18,051.00	87.81	72.94	11,321.68	1,819.70	6,690.49	0.74	6,932.83	6,933.54	74.78
18,146.00	88.04	73.00	11,325.12	1,847.51	6,781.26	0.25	7,027.76	7,028.43	74.76
18,240.00	87.73	73.16	11,328.59	1,874.84	6,871.13	0.37	7,121.68	7,122.32	74.74
18,334.00	87.96	73.05	11,332.12	1,902.14	6,961.01	0.27	7,215.60	7,216.22	74.72
18,428.00	88.66	73.35	11,334.90	1,929.30	7,050.96	0.81	7,309.55	7,310.14	74.70
18,522.00	87.23	72.70	11,338.27	1,956.73	7,140.80	1.67	7,403.48	7,404.04	74.68
18,616.00	87.65	72.58	11,342.47	1,984.74	7,230.43	0.46	7,497.36	7,497.89	74.65
18,710.00	89.55	73.35	11,344.76	2,012.27	7,320.27	2.18	7,591.31	7,591.82	74.63
18,805.00	89.75	70.93	11,345.34	2,041.41	7,410.69	2.56	7,686.25	7,686.72	74.60
18,899.00	89.83	71.77	11,345.69	2,071.47	7,499.75	0.90	7,780.15	7,780.57	74.56
18,993.00	88.99	70.47	11,346.65	2,101.88	7,588.69	1.65	7,874.03	7,874.39	74.52
19,087.00	88.88	71.60	11,348.40	2,132.42	7,677.57	1.21	7,967.89	7,968.20	74.48
19,181.00	88.68	71.69	11,350.40	2,162.02	7,766.76	0.23	8,061.79	8,062.07	74.44
19,275.00	88.85	71.75	11,352.43	2,191.49	7,856.00	0.19	8,155.70	8,155.94	74.41
19,370.00	88.96	71.25	11,354.24	2,221.63	7,946.07	0.54	8,250.59	8,250.80	74.38
19,464.00	88.91	71.29	11,355.99	2,251.81	8,035.08	0.07	8,344.47	8,344.65	74.34
19,558.00	88.91	71.33	11,357.78	2,281.93	8,124.11	0.04	8,438.35	8,438.50	74.31
19,651.00	88.85	71.28	11,359.60	2,311.73	8,212.18	0.08	8,531.23	8,531.36	74.28
19,745.00	88.38	71.04	11,361.87	2,342.08	8,301.12	0.56	8,625.09	8,625.19	74.24
19,839.00	88.99	70.91	11,364.03	2,372.71	8,389.96	0.66	8,718.94	8,719.02	74.21
19,933.00	88.21	70.28	11,366.32	2,403.93	8,478.60	1.07	8,812.75	8,812.80	74.17
20,027.00	90.90	72.45	11,367.05	2,433.96	8,567.65	3.68	8,906.63	8,906.67	74.14
20,121.00	88.54	70.99	11,367.51	2,463.44	8,656.90	2.95	9,000.55	9,000.58	74.12
20,215.00	89.05	72.49	11,369.49	2,492.89	8,746.14	1.69	9,094.46	9,094.48	74.09
20,310.00	89.08	73.56	11,371.04	2,520.62	8,836.99	1.13	9,189.43	9,189.45	74.08
20,404.00	89.10	73.11	11,372.53	2,547.58	8,927.03	0.48	9,283.41	9,283.43	74.07



Company: Jagged Peak Energy
Project: Ward County, Texas (NAD-83)
Site: UTL 2714A-17
Well: 21H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 21H
TVD Reference: KB=25' @ 2717.00usft (Sidewinder 219)
MD Reference: KB=25' @ 2717.00usft (Sidewinder 219)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.14 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	V. Sec (usft)	Closure Distance (usft)	Closure Azimuth (°)
20,498.00	88.04	72.21	11,374.88	2,575.58	9,016.73	1.48	9,377.35	9,377.37	74.06
20,592.00	88.96	73.01	11,377.34	2,603.67	9,106.40	1.30	9,471.29	9,471.30	74.04
20,686.00	87.96	73.00	11,379.87	2,631.13	9,196.26	1.06	9,565.25	9,565.25	74.03
20,781.00	88.49	72.74	11,382.81	2,659.10	9,287.00	0.62	9,660.18	9,660.19	74.02
20,875.00	88.60	73.17	11,385.20	2,686.64	9,376.84	0.47	9,754.14	9,754.14	74.01
20,970.00	89.22	72.92	11,387.00	2,714.34	9,467.70	0.70	9,849.11	9,849.11	74.00
21,064.00	89.08	72.82	11,388.40	2,742.03	9,557.52	0.18	9,943.08	9,943.08	73.99
21,158.00	88.18	72.85	11,390.64	2,769.76	9,647.30	0.96	10,037.03	10,037.03	73.98
21,241.00	88.70	73.18	11,392.90	2,794.00	9,726.65	0.74	10,119.99	10,119.99	73.97
LTP @ 21241'									
21,252.00	88.77	73.22	11,393.15	2,797.18	9,737.18	0.74	10,130.99	10,130.99	73.97
21,273.00	89.10	73.54	11,393.54	2,803.18	9,757.30	2.19	10,151.98	10,151.98	73.97
Last MWD Survey									
21,312.00	89.10	73.54	11,394.15	2,814.23	9,794.70	0.00	10,190.98	10,190.98	73.97
PTB @ 21312'									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
217.00	216.99	-0.71	1.07	First MWD Survey
10,779.00	10,757.00	-427.70	89.98	FTP @ 10779'
21,241.00	11,392.90	2,794.00	9,726.65	LTP @ 21241'
21,273.00	11,393.54	2,803.18	9,757.30	Last MWD Survey
21,312.00	11,394.15	2,814.23	9,794.70	PTB @ 21312'

Checked By: _____ Approved By: _____ Date: _____