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30-025-42701

McElvain Energy

Lea County, NM (NAD 83)
EK 30 BS2 Federal Com
#1H

OH

Design: OH Surveys 125'-14734' PTB 14783'

Standard Survey Report

16 October, 2017





Pro Directional Survey Report



Company:	McElvain Energy	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD 83)	TVD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Site:	EK 30 BS2 Federal Com	MD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH Surveys 125'-14734' PTB 14783'	Database:	WellPlanner1

Project	Lea County, NM (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	EK 30 BS2 Federal Com				
Site Position:		Northing:	623,529.00 usft	Latitude:	32.7119416
From:	Map	Easting:	768,784.00 usft	Longitude:	-103.5938442
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#1H					
Well Position	+N-S	0.00 usft	Northing:	623,529.00 usft	Latitude:	32.7119416
	+E-W	0.00 usft	Easting:	768,784.00 usft	Longitude:	-103.5938442
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,894.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/28/2017	6.72	60.77	48,346.20

Design	OH Surveys 125'-14734' PTB 14783'				
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	358.15	

Survey Program	Date	10/16/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
125.00	1,762.00	VES Gyro (OH)	GYRO-NS-CT	OWSG XYZ Accel with XY Static and Continuous	
1,912.00	14,783.00	ProMWD #1 (OH)	MWD+HDGM	OWSG MWD + HRGM	

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	0.00
125.00	0.58	246.76	125.00	-0.25	-0.58	-0.23	0.46	0.46	0.00	
225.00	0.40	314.64	224.99	-0.20	-1.29	-0.16	0.57	-0.18	67.88	
325.00	0.33	328.28	324.99	0.29	-1.69	0.34	0.11	-0.07	13.64	
425.00	0.48	224.89	424.99	0.23	-2.14	0.30	0.64	0.15	-103.39	
525.00	0.56	266.09	524.99	-0.10	-2.92	0.00	0.37	0.08	41.20	
625.00	0.38	238.52	624.98	-0.30	-3.70	-0.18	0.28	-0.18	-27.57	
725.00	0.42	241.67	724.98	-0.65	-4.30	-0.51	0.05	0.04	3.15	



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Survey

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825.00	0.41	277.51	824.98	-0.78	-4.98	-0.62	0.26	-0.01	35.84
925.00	0.25	262.45	924.98	-0.76	-5.55	-0.58	0.18	-0.16	-15.06
1,025.00	0.41	222.69	1,024.98	-1.05	-6.01	-0.86	0.27	0.16	-39.76
1,125.00	0.30	215.21	1,124.97	-1.53	-6.40	-1.32	0.12	-0.11	-7.48
1,225.00	0.38	314.41	1,224.97	-1.51	-6.79	-1.29	0.52	0.08	99.20
1,325.00	0.25	220.64	1,324.97	-1.44	-7.17	-1.21	0.47	-0.13	-93.77
1,425.00	0.41	292.18	1,424.97	-1.47	-7.64	-1.23	0.41	0.16	71.54
1,525.00	0.41	234.38	1,524.97	-1.55	-8.26	-1.28	0.40	0.00	-57.80
1,625.00	0.26	161.40	1,624.97	-1.97	-8.48	-1.69	0.42	-0.15	-72.98
1,725.00	0.40	235.97	1,724.97	-2.38	-8.70	-2.10	0.42	0.14	74.57
1,762.00	0.56	224.26	1,761.96	-2.58	-8.93	-2.29	0.51	0.43	-31.65
1,912.00	0.22	123.75	1,911.96	-3.27	-9.20	-2.97	0.43	-0.23	-67.01
2,006.00	0.22	88.51	2,005.96	-3.36	-8.87	-3.07	0.14	0.00	-37.49
2,101.00	0.30	63.90	2,100.96	-3.25	-8.47	-2.97	0.14	0.08	-25.91
2,195.00	0.50	54.70	2,194.96	-2.90	-7.91	-2.65	0.22	0.21	-9.79
2,290.00	0.70	40.40	2,289.95	-2.22	-7.20	-1.99	0.26	0.21	-15.05
2,384.00	0.80	44.80	2,383.94	-1.32	-6.36	-1.11	0.12	0.11	4.68
2,479.00	0.90	45.80	2,478.93	-0.33	-5.36	-0.15	0.11	0.11	1.05
2,573.00	0.30	100.60	2,572.93	0.14	-4.59	0.29	0.82	-0.64	58.30
2,668.00	1.00	210.10	2,667.92	-0.62	-4.76	-0.47	1.20	0.74	115.26
2,762.00	1.50	206.60	2,761.90	-2.43	-5.72	-2.24	0.54	0.53	-3.72
2,857.00	1.70	209.90	2,856.86	-4.76	-6.98	-4.54	0.23	0.21	3.47
2,951.00	1.70	211.60	2,950.82	-7.16	-8.41	-6.89	0.05	0.00	1.81
3,045.00	1.80	210.20	3,044.78	-9.62	-9.88	-9.30	0.12	0.11	-1.49
3,140.00	0.80	220.80	3,139.75	-11.42	-11.07	-11.05	1.08	-1.05	11.16
3,234.00	1.00	343.20	3,233.75	-11.13	-11.73	-10.74	1.68	0.21	130.21
3,329.00	1.50	356.20	3,328.73	-9.09	-12.05	-8.70	0.60	0.53	13.68
3,424.00	1.70	358.70	3,423.69	-6.44	-12.17	-6.05	0.22	0.21	2.63
3,518.00	1.90	359.00	3,517.64	-3.49	-12.23	-3.09	0.21	0.21	0.32
3,613.00	1.90	16.70	3,612.59	-0.41	-11.80	-0.03	0.62	0.00	18.63
3,707.00	1.00	58.20	3,706.56	1.52	-10.66	1.86	1.41	-0.96	44.15
3,802.00	0.90	94.10	3,801.55	1.90	-9.21	2.20	0.62	-0.11	37.79
3,896.00	1.00	87.10	3,895.54	1.89	-7.65	2.13	0.16	0.11	-7.45
3,991.00	1.70	146.70	3,990.51	0.75	-6.05	0.95	1.55	0.74	62.74
4,086.00	2.30	153.70	4,085.46	-2.13	-4.43	-1.99	0.68	0.63	7.37
4,180.00	2.20	154.10	4,179.38	-5.45	-2.81	-5.35	0.11	-0.11	0.43
4,275.00	1.40	173.80	4,274.34	-8.24	-1.89	-8.18	1.05	-0.84	20.74
4,369.00	0.50	216.90	4,368.32	-9.71	-2.01	-9.64	1.16	-0.96	45.85
4,464.00	0.30	257.90	4,463.32	-10.10	-2.50	-10.01	0.35	-0.21	43.16
4,558.00	0.40	266.40	4,557.32	-10.17	-3.07	-10.06	0.12	0.11	9.04
4,653.00	0.50	268.90	4,652.32	-10.20	-3.81	-10.07	0.11	0.11	2.63
4,747.00	0.60	282.30	4,746.31	-10.10	-4.71	-9.94	0.17	0.11	14.26



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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)
4,842.00	0.60	284.90	4,841.31	-9.87	-5.67	-9.68	0.03	0.00	2.74
4,878.00	0.60	289.80	4,877.31	-9.75	-6.03	-9.55	0.14	0.00	13.61
4,981.00	0.80	283.90	4,980.30	-9.40	-7.24	-9.16	0.21	0.19	-5.73
5,012.00	0.80	291.60	5,011.29	-9.27	-7.65	-9.01	0.35	0.00	24.84
5,107.00	1.20	110.60	5,106.29	-9.37	-7.33	-9.13	2.11	0.42	188.42
5,201.00	3.30	118.30	5,200.21	-11.00	-4.03	-10.87	2.25	2.23	8.19
5,295.00	5.10	117.20	5,293.96	-14.19	2.07	-14.25	1.92	1.91	-1.17
5,389.00	5.50	117.80	5,387.55	-18.20	9.77	-18.51	0.43	0.43	0.64
5,483.00	5.50	118.80	5,481.12	-22.48	17.70	-23.04	0.10	0.00	1.06
5,577.00	5.60	119.50	5,574.68	-26.90	25.64	-27.72	0.13	0.11	0.74
5,671.00	5.70	118.70	5,668.22	-31.40	33.73	-32.48	0.14	0.11	-0.85
5,765.00	5.80	120.20	5,761.75	-36.04	41.93	-37.37	0.19	0.11	1.60
5,859.00	6.00	119.80	5,855.25	-40.87	50.30	-42.47	0.22	0.21	-0.43
5,954.00	6.00	118.70	5,949.73	-45.72	58.96	-47.60	0.12	0.00	-1.16
6,048.00	5.60	119.80	6,043.25	-50.36	67.25	-52.50	0.44	-0.43	1.17
6,142.00	5.30	119.80	6,136.83	-54.79	75.00	-57.19	0.32	-0.32	0.00
6,236.00	5.00	120.10	6,230.45	-59.01	82.31	-61.63	0.32	-0.32	0.32
6,330.00	5.00	118.80	6,324.09	-63.03	89.44	-65.89	0.12	0.00	-1.38
6,424.00	4.90	120.30	6,417.74	-67.03	96.50	-70.11	0.17	-0.11	1.60
6,518.00	5.10	120.80	6,511.38	-71.20	103.55	-74.50	0.22	0.21	0.53
6,613.00	4.90	120.70	6,606.02	-75.43	110.67	-78.96	0.21	-0.21	-0.11
6,707.00	4.90	120.10	6,699.67	-79.49	117.59	-83.25	0.05	0.00	-0.64
6,801.00	4.60	122.20	6,793.35	-83.52	124.25	-87.48	0.37	-0.32	2.23
6,895.00	4.60	125.10	6,887.05	-87.69	130.53	-91.86	0.25	0.00	3.09
6,988.00	4.90	109.20	6,979.73	-91.14	137.33	-95.53	1.45	0.32	-17.10
7,082.00	5.10	107.60	7,073.38	-93.73	145.10	-98.36	0.26	0.21	-1.70
7,176.00	5.50	119.20	7,166.98	-97.19	153.02	-102.08	1.21	0.43	12.34
7,270.00	5.60	120.50	7,260.54	-101.71	160.90	-106.85	0.17	0.11	1.38
7,364.00	5.70	120.10	7,354.08	-106.38	168.89	-111.78	0.11	0.11	-0.43
7,458.00	5.60	120.10	7,447.62	-111.02	176.90	-116.68	0.11	-0.11	0.00
7,553.00	5.40	120.70	7,542.19	-115.63	184.75	-121.53	0.22	-0.21	0.63
7,647.00	4.90	120.40	7,635.81	-119.92	192.02	-126.06	0.53	-0.53	-0.32
7,741.00	4.50	120.10	7,729.49	-123.80	198.67	-130.15	0.43	-0.43	-0.32
7,836.00	4.10	120.60	7,824.22	-127.40	204.82	-133.94	0.42	-0.42	0.53
7,930.00	3.60	123.10	7,918.01	-130.72	210.19	-137.44	0.56	-0.53	2.66
8,024.00	2.90	121.40	8,011.86	-133.57	214.69	-140.43	0.75	-0.74	-1.81
8,119.00	2.20	124.50	8,106.76	-135.85	218.24	-142.83	0.75	-0.74	3.26
8,214.00	1.90	111.60	8,201.70	-137.47	221.21	-144.54	0.58	-0.32	-13.58
8,308.00	1.50	105.50	8,295.66	-138.37	223.84	-145.52	0.47	-0.43	-6.49
8,403.00	1.60	98.30	8,390.63	-138.89	226.35	-146.13	0.23	0.11	-7.58
8,497.00	1.80	78.20	8,484.59	-138.78	229.10	-146.10	0.66	0.21	-21.38
8,591.00	1.90	66.10	8,578.54	-137.85	231.97	-145.26	0.43	0.11	-12.87



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8,686.00	2.00	59.40	8,673.48	-136.37	234.83	-143.88	0.26	0.11	-7.05	
8,781.00	1.90	51.80	8,768.43	-134.55	237.50	-142.15	0.29	-0.11	-8.00	
8,875.00	2.20	61.30	8,862.37	-132.72	240.30	-140.41	0.48	0.32	10.11	
8,970.00	2.70	82.00	8,957.28	-131.53	244.12	-139.34	1.06	0.53	21.79	
9,064.00	2.70	82.80	9,051.18	-130.95	248.51	-138.90	0.04	0.00	0.85	
9,158.00	2.50	77.90	9,145.08	-130.24	252.71	-138.33	0.32	-0.21	-5.21	
9,253.00	2.50	71.10	9,239.99	-129.13	256.70	-137.35	0.31	0.00	-7.16	
9,347.00	2.40	72.20	9,333.91	-127.87	260.51	-136.21	0.12	-0.11	1.17	
9,380.00	2.00	64.70	9,366.88	-127.41	261.69	-135.79	1.49	-1.21	-22.73	
9,411.00	3.00	26.00	9,397.85	-126.45	262.53	-134.86	6.15	3.23	-124.84	
9,443.00	6.70	6.40	9,429.73	-123.84	263.11	-132.27	12.51	11.56	-61.25	
9,475.00	10.30	0.30	9,461.38	-119.12	263.33	-127.56	11.58	11.25	-19.06	
9,506.00	14.60	357.90	9,491.64	-112.44	263.20	-120.88	13.97	13.87	-7.74	
9,538.00	18.50	358.10	9,522.31	-103.34	262.89	-111.77	12.19	12.19	0.63	
9,569.00	22.30	359.00	9,551.36	-92.54	262.62	-100.97	12.30	12.26	2.90	
9,601.00	26.10	0.30	9,580.54	-79.42	262.55	-87.86	11.99	11.88	4.06	
9,632.00	29.00	0.70	9,608.03	-65.09	262.68	-73.53	9.37	9.35	1.29	
9,664.00	31.90	0.90	9,635.61	-48.87	262.91	-57.33	9.07	9.06	0.63	
9,695.00	34.30	0.40	9,661.58	-31.95	263.10	-40.42	7.79	7.74	-1.61	
9,727.00	36.10	1.30	9,687.72	-13.50	263.37	-22.00	5.85	5.63	2.81	
9,758.00	38.30	0.00	9,712.42	5.24	263.58	-3.28	7.54	7.10	-4.19	
9,790.00	41.40	358.20	9,736.98	25.73	263.25	17.22	10.34	9.69	-5.63	
9,821.00	41.80	353.70	9,760.17	46.25	261.79	37.78	9.72	1.29	-14.52	
9,852.00	44.20	353.80	9,782.84	67.27	259.49	58.86	7.75	7.74	0.32	
9,884.00	46.30	357.70	9,805.37	89.92	257.82	81.55	10.86	6.56	12.19	
9,915.00	48.60	0.70	9,826.33	112.75	257.51	104.38	10.29	7.42	9.68	
9,947.00	51.80	2.40	9,846.82	137.32	258.19	128.92	10.80	10.00	5.31	
9,971.14	54.52	3.09	9,861.29	156.62	259.11	148.17	11.48	11.25	2.84	
330' Hardline Entry: 9971.14' MD, 9861.29' TVD										
9,979.00	55.40	3.30	9,865.80	163.04	259.47	154.58	11.48	11.26	2.72	
10,010.00	58.90	2.50	9,882.62	189.05	260.79	180.53	11.50	11.29	-2.58	
10,042.00	62.50	1.90	9,898.27	216.93	261.85	208.36	11.37	11.25	-1.88	
10,073.00	66.40	1.50	9,911.64	244.88	262.68	236.27	12.63	12.58	-1.29	
10,105.00	70.40	1.90	9,923.42	274.61	263.57	265.96	12.55	12.50	1.25	
10,136.00	74.10	3.20	9,932.87	304.10	264.88	295.39	12.59	11.94	4.19	
10,168.00	77.80	3.60	9,940.64	335.08	266.72	326.30	11.63	11.56	1.25	
10,199.00	82.30	2.90	9,945.99	365.56	268.45	356.70	14.69	14.52	-2.26	
10,231.00	86.30	2.30	9,949.17	397.36	269.90	388.44	12.64	12.50	-1.88	
10,262.00	91.80	2.60	9,949.68	428.32	271.22	419.34	17.77	17.74	0.97	
10,304.00	93.10	2.60	9,947.89	470.24	273.13	461.17	3.10	3.10	0.00	
10,398.00	93.70	2.30	9,942.31	563.98	277.14	554.74	0.71	0.64	-0.32	
10,492.00	93.60	1.30	9,936.33	657.75	280.08	648.36	1.07	-0.11	-1.06	



Pro Directional Survey Report



Company:	McElvain Energy	Local Co-ordinate Reference:	Well #1H
Project:	Lea County, NM (NAD 83)	TVD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Site:	EK 30 BS2 Federal Com	MD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH Surveys 125'-14734' PTB 14783'	Database:	WellPlanner1

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)
10,586.00	92.30	0.40	9,931.49	751.61	281.48	742.13	1.68	-1.38	-0.96
10,680.00	92.60	359.70	9,927.47	845.52	281.56	835.99	0.81	0.32	-0.74
10,774.00	91.10	359.80	9,924.44	939.47	281.15	929.90	1.60	-1.60	0.11
10,869.00	90.30	359.60	9,923.28	1,034.46	280.65	1,024.86	0.87	-0.84	-0.21
10,963.00	91.20	359.80	9,922.05	1,128.45	280.16	1,118.82	0.98	0.96	0.21
11,057.00	90.90	359.10	9,920.32	1,222.43	279.26	1,212.78	0.81	-0.32	-0.74
11,151.00	91.50	359.10	9,918.36	1,316.40	277.78	1,306.74	0.64	0.64	0.00
11,245.00	90.90	358.40	9,916.39	1,410.35	275.73	1,400.72	0.98	-0.64	-0.74
11,339.00	90.90	358.20	9,914.91	1,504.30	272.94	1,494.70	0.21	0.00	-0.21
11,434.00	89.10	359.60	9,914.91	1,599.28	271.12	1,589.69	2.40	-1.89	1.47
11,528.00	91.30	0.10	9,914.58	1,693.27	270.87	1,683.64	2.40	2.34	0.53
11,622.00	90.10	358.80	9,913.43	1,787.25	269.97	1,777.61	1.88	-1.28	-1.38
11,716.00	90.60	358.30	9,912.86	1,881.22	267.59	1,871.60	0.75	0.53	-0.53
11,810.00	93.30	359.10	9,909.66	1,975.13	265.46	1,965.53	3.00	2.87	0.85
11,904.00	91.40	358.50	9,905.81	2,069.03	263.49	2,059.44	2.12	-2.02	-0.64
11,997.00	88.60	357.50	9,905.81	2,161.96	260.25	2,152.43	3.20	-3.01	-1.08
12,091.00	90.10	358.40	9,906.87	2,255.89	256.88	2,246.42	1.86	1.60	0.96
12,185.00	91.10	358.20	9,905.89	2,349.84	254.10	2,340.42	1.08	1.06	-0.21
12,279.00	92.40	357.60	9,903.02	2,443.73	250.65	2,434.37	1.52	1.38	-0.64
12,373.00	92.20	356.80	9,899.25	2,537.55	246.07	2,528.28	0.88	-0.21	-0.85
12,467.00	91.30	357.60	9,896.38	2,631.39	241.48	2,622.22	1.28	-0.96	0.85
12,562.00	90.30	358.40	9,895.05	2,726.32	238.16	2,717.21	1.35	-1.05	0.84
12,656.00	91.20	357.90	9,893.82	2,820.26	235.13	2,811.20	1.10	0.96	-0.53
12,751.00	89.60	357.20	9,893.16	2,915.17	231.07	2,906.19	1.84	-1.68	-0.74
12,845.00	89.80	356.60	9,893.65	3,009.03	225.98	3,000.17	0.67	0.21	-0.64
12,940.00	90.70	356.20	9,893.23	3,103.84	220.02	3,095.12	1.04	0.95	-0.42
13,034.00	92.00	355.30	9,891.02	3,197.55	213.05	3,189.01	1.68	1.38	-0.96
13,128.00	91.00	355.80	9,888.56	3,291.23	205.76	3,282.88	1.19	-1.06	0.53
13,223.00	90.80	357.70	9,887.07	3,386.07	200.38	3,377.83	2.01	-0.21	2.00
13,317.00	91.70	357.50	9,885.01	3,479.96	196.44	3,471.80	0.98	0.96	-0.21
13,412.00	91.10	358.40	9,882.69	3,574.87	193.05	3,566.77	1.14	-0.63	0.95
13,506.00	90.20	359.30	9,881.63	3,668.84	191.16	3,660.76	1.35	-0.96	0.96
13,601.00	88.70	0.40	9,882.54	3,763.83	190.91	3,755.71	1.96	-1.58	1.16
13,695.00	89.20	0.00	9,884.26	3,857.82	191.24	3,849.63	0.68	0.53	-0.43
13,790.00	91.20	359.00	9,883.93	3,952.81	190.41	3,944.60	2.35	2.11	-1.05
13,884.00	92.80	358.30	9,880.65	4,046.72	188.20	4,038.54	1.86	1.70	-0.74
13,979.00	89.60	0.30	9,878.66	4,141.67	187.04	4,133.48	3.97	-3.37	2.11
14,073.00	90.10	0.50	9,878.91	4,235.67	187.69	4,227.40	0.57	0.53	0.21
14,168.00	88.80	359.60	9,879.82	4,330.66	187.78	4,322.35	1.66	-1.37	-0.95
14,262.00	88.70	359.30	9,881.87	4,424.64	186.87	4,416.30	0.34	-0.11	-0.32
14,357.00	89.70	358.20	9,883.20	4,519.60	184.80	4,511.28	1.56	1.05	-1.16
14,451.00	90.20	356.40	9,883.28	4,613.49	180.37	4,605.27	1.99	0.53	-1.91



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Site:	EK 30 BS2 Federal Com	MD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH Surveys 125'-14734' PTB 14783'	Database:	WellPlanner1

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)
14,545.00	91.40	356.00	9,881.96	4,707.28	174.15	4,699.20	1.35	1.28	-0.43
14,614.41	91.55	355.20	9,880.18	4,776.46	168.82	4,768.52	1.18	0.21	-1.16
330' Hardline Exit: 14614.41' MD, 9880.18' TVD									
14,640.00	91.60	354.90	9,879.48	4,801.94	166.61	4,794.06	1.18	0.21	-1.16
14,734.00	91.70	354.30	9,876.77	4,895.49	157.77	4,887.84	0.65	0.11	-0.64
Last Survey: 14734.00' MD, 9876.77' TVD									
14,783.00	91.70	354.30	9,875.32	4,944.22	152.91	4,936.71	0.00	0.00	0.00
PTB: 14783.00' MD, 9875.32' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,971.14	9,861.29	156.62	259.11	330' Hardline Entry: 9971.14' MD, 9861.29' TVD
14,614.41	9,880.18	4,776.46	168.82	330' Hardline Exit: 14614.41' MD, 9880.18' TVD
14,734.00	9,876.77	4,895.49	157.77	Last Survey: 14734.00' MD, 9876.77' TVD
14,783.00	9,875.32	4,944.22	152.91	PTB: 14783.00' MD, 9875.32' TVD

Checked By: _____ Approved By: _____ Date: _____



Radial Cement Bond
Gamma Ray CCL
Log

Company Mcelvain Energy Inc.
Well EK 30 BS2 Federal Com #1H
Field EK Bone Spring
County Lea
State New Mexico

Company Mcelvain Energy Inc.
Well EK 30 BS2 Federal Com #1H
Field EK Bone Spring
County Lea State New Mexico

Location: API #: 230' FNL & 660 FEL Section 31
SEC TWP RGE
Other Services
Elevation
Permanent Datum Ground Level Elevation 3894'
Log Measured From KB 25' APD K.B. 3919'
Drilling Measured From KB D.F. 3918'
G.L. 3894'

Date	11/16/2017
Run Number	One
Depth Driller	14908'
Depth Logger	10170'
Bottom Logged Interval	10169'
Top Log Interval	1800'
Open Hole Size	7 5/8"
Type Fluid	Water
Density / Viscosity	-
Max. Recorded Temp.	-
Estimated Cement Top	-
Time Well Ready	On Arrival
Time Logger on Bottom	See Log
Equipment Number	WL 821
Location	Hobbs, New Mexico
Recorded By	R. Utajara
Witnessed By	Mr. Brian O Dell

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	13 3/8"	54.5#	Surface	1820'
Prot. String	9 5/8"	40#	Surface	4936'
Production String	5 1/2"	20#	Surface	14776'
Liner				

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

HOBBS OCD
JAN 08 2017
RECEIVED

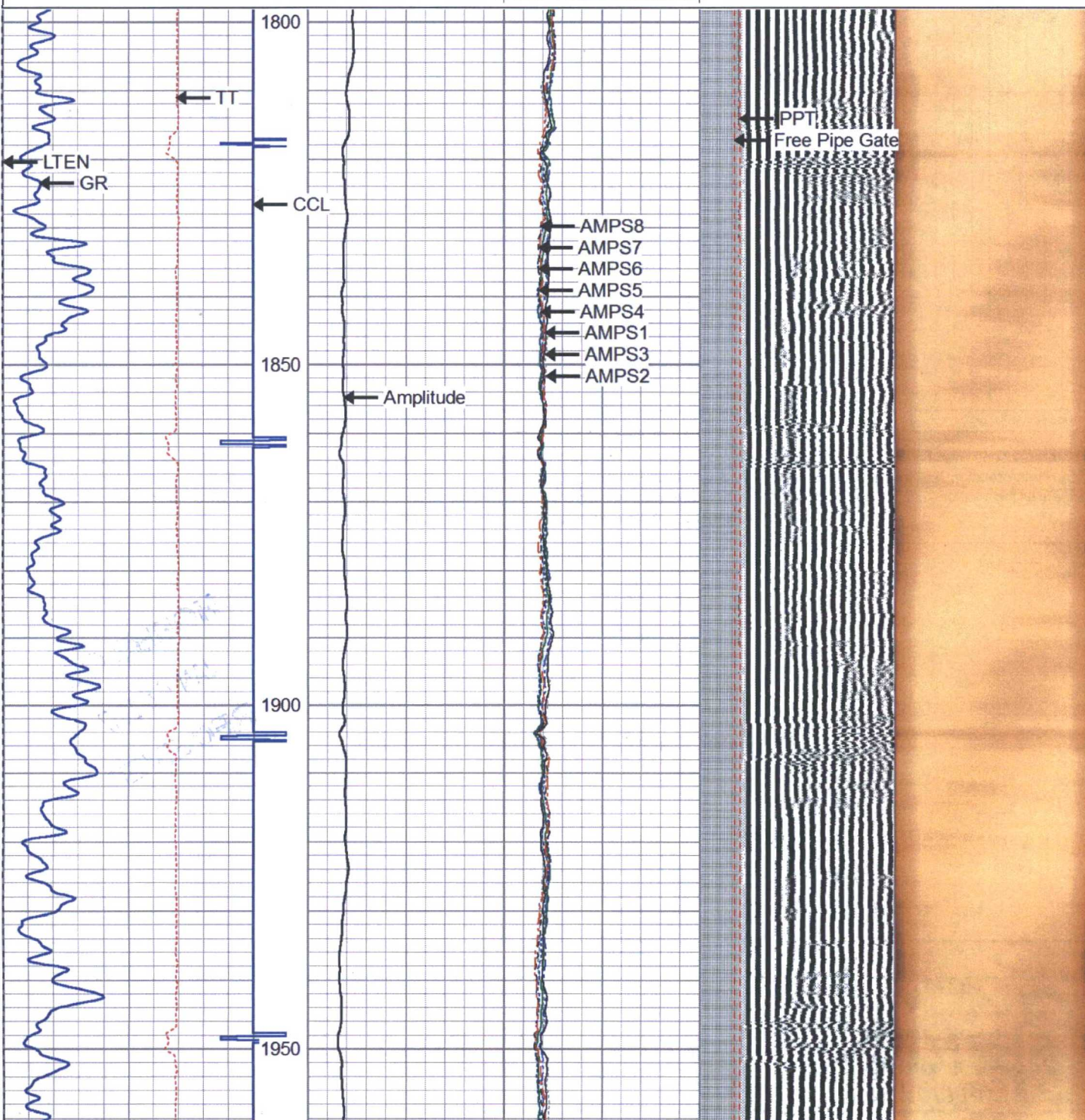
*****Thank you for using Capitan Corporation*****



Main Pass 5"=100'

Database File: mcelvain_energy_ek_30_bs2_fed_com_1h.db
 Dataset Pathname: pass5
 Presentation Format: rbl55
 Dataset Creation: Thu Nov 16 08:57:52 2017 by Log 7.0 B1
 Charted by: Depth in Feet scaled 1:240

343	TT (usec)	243	0	Amplitude (mV)	100	-5	AMPS2	150	200	VDL	1200	Cement Map
0	GR (GAPI)	150	Amplified Amplitude			-5	AMPS3	150	Free Pipe Gate		1	80
0	LTEN (lb)	4000	0	(mV)	10	-5	AMPS4	150				
		CCL				-5	AMPS5	150				
						-5	AMPS6	150				
						-5	AMPS7	150				
						-5	AMPS8	150				
						-5	AMPS1	150				



Temperature Calibration Report

Serial Number: FW1403-67
 Tool Model: RBT-TEMP
 Performed: Wed Jul 22 12:13:37 2015

	Reference		Reading
Low Reference:	0.00 degF		0.00 degF
High Reference:	1.00 degF		1.00 degF
Gain:	1.00		
Offset:	0.00		
Delta Spacing	5		

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)	
TEMP	11.12			1.4375CHD Titan Cable Head 1 7/16	1.00	1.44	10.00
WV3FT	8.97			RBT-RBT-TEMP (FW1403-67) Probe 2.75" Radii Bond w/Temp Tool	9.17	2.75	90.00
WVFCAL	8.97						
WVFS1	8.97						
WVFS2	8.97						
WVFS3	8.97						
WVFS4	8.97						
WVFS5	8.97						
WVFS6	8.97						
WVFS7	8.97						
WVFS8	8.97						
WV5FT	7.97						
CCL	3.88						
DCCL	3.88						

Difference 0.0 GAPI

BEFORE SURVEY VERIFICATION

Background 0.0 cps
 Calibrator 0.0 cps
 Difference 0.0 GAPI

AFTER SURVEY VERIFICATION

Background 0.0 cps
 Calibrator 0.0 cps
 Difference 0.0 GAPI

Segmented Cement Bond Log Calibration Report

Serial Number: FW1403-67
 Tool Model: RBT-TEMP
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 22.600 ft

Master Calibration, performed Thu Nov 16 08:12:54 2017:


	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.823	0.000	71.921	87.432	-0.013
CAL	0.851	0.857				
5'	0.000	0.829	0.000	71.921	86.752	-0.033
SUM						
S1	0.155	0.816	0.000	100.000	151.359	-23.478
S2	-0.000	0.828	0.000	100.000	120.748	0.010
S3	-0.000	0.826	0.000	100.000	120.990	0.035
S4	-0.000	0.824	0.000	100.000	121.259	0.028
S5	0.000	0.834	0.000	100.000	119.966	-0.009
S6	-0.000	0.825	0.000	100.000	121.074	0.059
S7	-0.000	0.829	0.000	100.000	120.612	0.046
S8	-0.000	0.828	0.000	100.000	120.735	0.016


Internal Reference Calibration, performed Thu Sep 24 12:46:32 2015:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.851	0.857	1.000	0.000

Air Zero Calibration, performed Thu Nov 16 08:11:46 2017:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1	0.000		0.000		0.000	
S2	0.000		0.000		0.000	
S3	0.000		0.000		0.000	
S4	0.000		0.000		0.000	
S5	0.000		0.000		0.000	
S6	0.000		0.000		0.000	
S7	0.000		0.000		0.000	
S8	0.000		0.000		0.000	

GK	2.54		GR-Probe275dig (PROFW130211) Probe Digital Gamma CCL	4.78	2.75	57.00
Dataset:		mcelvain_energy_ek_30_bs2_fed_com_1h.db: field/well/run1/pass5				
Total Length:		14.95 ft				
Total Weight:		157.00 lb				
O.D.:		2.75 in				

Company	Mcelvain Energy Inc.				
Well	EK 30 BS2 Federal Com #1H				
Field	EK Bone Spring				
County	Lea	State	New Mexico		
	Radial Cement Bond Gamma Ray CCL Log				