



30-025-42201

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

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ProDirectional



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	
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

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)
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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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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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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Survey

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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



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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



Pro Directional Survey Report



Company: McElvain Energy
Project: Lea County, NM (NAD 83)
Site: EK 30 BS2 Federal Com
Well: #1H
Wellbore: OH
Design: OH Surveys 125'-14734' PTB 14783'

Local Co-ordinate Reference: Well #1H
TVD Reference: Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
MD Reference: Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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: _____

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	

30-025-42701

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
WVFS3FT	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					
WVFS5FT	7.97					
CCL	3.88					
DCCL	3.88					

* GR	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			



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 #: 30-025-42701 Other Services
230' FNL & 660 FEL
Section 31
SEC TWP RGE
Permanent Datum Ground Level Elevation 3894'
Log Measured From KB 25' APD
Drilling Measured From KB
K.B. 3919'
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

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



Main Pass 5"=100'