ACTUAL WELLPATH REPORT (CSV version)
Prepared by Baker Hughes
Software System: WellArchitect® 4.0.0

HOBBS OCD

APR 2 3 2015

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.
Area	Lea County, NM
Field	(James Federal) Sec 29, TS 23 S, R 32 E
Facility	Federal 29 James 21
Slot	No. 21 SHL
Well	No. 21
Wellbore	No. 21 AWB
Wellpath	No. 21 AWB
Sidetrack	(none)

30-025-41362

REPORT SETUP INFORMATION

Projection	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
North Refe	Grid
Scale	0.999954
Convergen	0.34° East
Software S	WellArchitect® 4.0.0
User	Abraall
Report Ger	12/9/2014 at 9:50:13 AM
DataBase/S	WA_Midland/ev2830.xml

WELLPATH	Local North [ft]	Local East [ft]	Easting [US ft]	Northing [US ft]	Latitude	Longitude
Slot Locatic	0	0	738749.4	467023.4	32°16'56.3	103°41'40.333"W
Facility Ref			738749.4	467023.4	32°16'56.3	103°41'40.333"W
Field Refer			165000	0	30°59'39.8	105°32'03.866"W

WELLPATH DATUM

Calculation	Minimum curvature
Horizontal	Slot
Vertical Re	Rig on No. 21 SHL (KB)
MD Refere	Rig on No. 21 SHL (KB)
Field Vertic	Mean Sea Level

MAY 0 5 2015

Rig on No. 25.00ft
Rig on No. 3714.00ft
Rig on No. 25.00ft
Section Ori N 0.00, E 0.00 ft
Section Azi 176.99°

WELLPATH DATA † = interpolated/extrapolated station

	MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
†	0	0	272	0	0	0	0	738749.4	467023.4	32°16'56.3	103°41'40.	0	
	25	0	272	25	0	0	0	738749.4	467023.4	32°16'56.3	103°41'40.	0	
	169.9	0.22	272	169.9	-0.02	0.01	-0.28	738749.1	467023.4	32°16'56.3	103°41'40.	0.15	
	235.51	0.09	304.17	235.51	-0.07	0.04	-0.45	738749	467023.4	32°16'56.3	103°41'40.	0.23	
	328.63	0.22	257.81	328.63	-0.08	0.05	-0.68	738748.7	467023.5	32°16'56.3	103°41'40.	0.18	
	389.39	0.4	291.3	389.39	-0.15	0.1	-0.99	738748.4	467023.5	32°16'56.3	103°41'40.	0.41	
	480.97	0.4	282.77	480.97	-0.37	0.29	-1.6	738747.8	467023.7	32°16'56.3	103°41'40.	0.06	
	571.73	0.4	255	571.72	-0.39	0.27	-2.22	738747.2	467023.7	32°16'56.3	103°41'40.	0.21	
	662.9	0.48	259.48	662.89	-0.27	0.12	-2.9	738746.5	467023.5	32°16'56.3	103°41'40.	0.1	
	753.26	0.48	271.48	753.25	-0.25	0.06	-3.65	738745.8	467023.5	32°16'56.3	103°41'40.	0.11	
	843.16	0.79	255.88	843.14	-0.16	-0.08	-4.63	738744.8	467023.3	32°16'56.3	103°41'40.	0.39	
	933.68	0.79	245.99	933.65	0.18	-0.49	-5.8	738743.6	467022.9	32°16'56.2	103°41'40.	0.15	
	1029.5	0.79	241.77	1029.46	0.7	-1.07	-6.99	738742.4	467022.3	32°16'56.2	103°41'40.	0.06	
	1124.57	1.01	247.48	1124.52	1.26	-1.7	-8.34	738741.1	467021.7	32°16'56.2	103°41'40.	0.25	
	1216.41	1.01	241.2	1216.35	1.88	-2.4	-9.8	738739.6	467021	32°16'56.2	103°41'40.	0.12	
	1310	1.01	243.88	1309.92	2.56	-3.16	-11.26	738738.1	467020.2	32°16'56.2	103°41'40.	0.05	
	1405	1.1	240.1	1404.91	3.3	-3.98	-12.8	738736.6	467019.4	32°16'56.2	103°41'40.	0.12	
	1500	1.19	237.77	1499.89	4.2	-4.96	-14.43	738735	467018.4	32°16'56.2	103°41'40.	0.11	
	1596	1.19	243.31	1595.87	5.08	-5.94	-16.16	738733.2	467017.5	32°16'56.2	103°41'40.	0.12	
	1691	1.32	243.79	1690.85	5.91	-6.87	-18.03	738731.4	467016.5	32°16'56.2	103°41'40.	0.14	
	1783	1.19	244.8	1782.82	6.69	-7.74	-19.84	738729.6	467015.7	32°16'56.2	103°41'40.	0.14	
	1878	1.01	249.68	1877.81	7.31	-8.45	-21.52	738727.9	467015	32°16'56.2	103°41'40.	0.21	
	1973	1.32	242.08	1972.79	8.02	-9.26	-23.27	738726.1	467014.1	32°16'56.2	103°41'40.	0.36	
	2068	1.32	244.1	2067.76	8.91	-10.25	-25.22	738724.2	467013.2	32°16'56.2	103°41'40.	0.05	
	2163	1.32	237.38	2162.74	9.87	-11.31	-27.13	738722.3	467012.1	32°16'56.1	103°41'40.	0.16	
	2258	1.32	241.99	2257.71	10.88	-12.42	-29.02	738720.4	467011	32°16'56.1	103°41'40.	0.11	
	2354	1.32	241.77	2353.69	11.81	-13.46	-30.97	738718.4	467009.9	32°16'56.1	103°41'40.	0.01	

2448	1.49	250.21	2447.66	12.63	-14.39	-33.07	738716.3	467009	32°16'56.1	103°41'40.	0.28
2544	1.41	244.01	2543.63	13.45	-15.33	-35.31	738714.1	467008.1	32°16'56.1	103°41'40.	0.18
2638	1.49	249.28	2637.6	14.27	-16.27	-37.49	738711.9	467007.1	32°16'56.1	103°41'40.	0.17
2733	1.41	249.99	2732.57	14.99	-17.1	-39.74	738709.7	467006.3	32°16'56.1	103°41'40.	0.09
2828	1.41	251.31	2827.54	15.65	-17.88	-41.95	738707.5	467005.5	32°16'56.1	103°41'40.	0.03
2923	1.49	252.01	2922.51	16.28	-18.63	-44.23	738705.2	467004.8	32°16'56.1	103°41'40.	0.09
3019	1.58	254.47	3018.47	16.89	-19.37	-46.69	738702.7	467004	32°16'56.1	103°41'40.	0.12
3114	1.49	253.99	3113.44	17.45	-20.06	-49.14	738700.3	467003.3	32°16'56.1	103°41'40.	0.1
3209	1.49	258.21	3208.41	17.92	-20.66	-51.54	738697.9	467002.7	32°16'56.0	103°41'40.	0.12
3305	1.58	264.01	3304.37	18.18	-21.05	-54.07	738695.3	467002.4	32°16'56.0	103°41'40.	0.19
3400	1.58	257.81	3399.34	18.46	-21.46	-56.66	738692.8	467001.9	32°16'56.0	103°41'40.	0.18
3495	1.71	267.87	3494.3	18.64	-21.79	-59.35	738690.1	467001.6	32°16'56.0	103°41'41.	0.33
3590	1.8	268.71	3589.25	18.58	-21.88	-62.26	738687.1	467001.5	32°16'56.0	103°41'41.	0.1
3684	1.8	264.89	3683.21	18.59	-22.04	-65.21	738684.2	467001.4	32°16'56.0	103°41'41.	0.13
3780	1.8	267.7	3779.16	18.62	-22.24	-68.22	738681.2	467001.2	32°16'56.0	103°41'41.	0.09
3875	1.89	271.48	3874.11	18.48	-22.26	-71.27	738678.1	467001.1	32°16'56.0	103°41'41.	0.16
3971	1.8	269.28	3970.06	18.3	-22.24	-74.36	738675	467001.2	32°16'56.0	103°41'41.	0.12
4066	1.71	263.79	4065.01	18.32	-22.41	-77.26	738672.1	467001	32°16'56.0	103°41'41.	0.2
4158	1.49	256.71	4156.98	18.61	-22.83	-79.79	738669.6	467000.6	32°16'56.0	103°41'41.	0.32
4251	1.49	255.17	4249.95	19.07	-23.42	-82.14	738667.3	467000	32°16'56.0	103°41'41.	0.04
4346	1.49	240.58	4344.92	19.87	-24.34	-84.41	738665	466999.1	32°16'56.0	103°41'41.	0.4
4441	1.41	233.07	4439.89	21.07	-25.65	-86.42	738663	466997.8	32°16'56.0	103°41'41.	0.22
4536	1.49	219.71	4534.86	22.63	-27.3	-88.14	738661.3	466996.1	32°16'56.0	103°41'41.	0.36
4631	1.49	216.59	4629.82	24.49	-29.25	-89.67	738659.7	466994.2	32°16'56.0	103°41'41.	0.09
4722	1.71	218.3	4720.79	26.42	-31.26	-91.21	738658.2	466992.1	32°16'55.9	103°41'41.	0.25
4822	1.89	211.4	4820.74	28.9	-33.84	-93	738656.4	466989.6	32°16'55.9	103°41'41.	0.28
4913	1.32	174.8	4911.7	31.19	-36.16	-93.69	738655.7	466987.2	32°16'55.9	103°41'41.	1.26
5008	1.19	102.9	5006.69	32.55	-37.47	-92.62	738656.8	466985.9	32°16'55.9	103°41'41.	1.55
5103	1.41	89.81	5101.66	32.88	-37.69	-90.49	738658.9	466985.7	32°16'55.9	103°41'41.	0.39
5198	1.19	95.48	5196.64	33.08	-37.78	-88.34	738661.1	466985.6	32°16'55.9	103°41'41.	0.27
5292	1.19	95.17	5290.62	33.37	-37.96	-86.4	738663	466985.4	32°16'55.9	103°41'41.	0.01
5387	1.01	98.9	5385.6	33.68	-38.18	-84.59	738664.8	466985.2	32°16'55.9	103°41'41.	0.2
5479	1.01	95.08	5477.59	33.96	-38.38	-82.98	738666.4	466985	32°16'55.9	103°41'41.	0.07
5575	1.1	90.51	5573.57	34.14	-38.46	-81.22	738668.2	466984.9	32°16'55.9	103°41'41.	0.13
5672	1.01	92.49	5670.55	34.28	-38.51	-79.43	738670	466984.9	32°16'55.9	103°41'41.	0.1
5768	1.01	96.18	5766.54	34.49	-38.63	-77.75	738671.7	466984.8	32°16'55.9	103°41'41.	0.07
5863	1.1	100.8	5861.52	34.84	-38.9	-76.02	738673.4	466984.5	32°16'55.9	103°41'41.	0.13

5957	0.88	103.21	5955.51	35.26	-39.23	-74.43	738675	466984.2	32°16'55.9	103°41'41.	0.24
6052	1.01	96	6050.5	35.6	-39.48	-72.89	738676.5	466983.9	32°16'55.9	103°41'41.	0.19
6145	1.8	72.58	6143.47	35.36	-39.13	-70.68	738678.7	466984.3	32°16'55.9	103°41'41.	1.03
6239	1.89	66.3	6237.42	34.45	-38.07	-67.85	738681.6	466985.3	32°16'55.9	103°41'41.	0.24
6334	1.8	64.89	6332.37	33.33	-36.8	-65.06	738684.3	466986.6	32°16'55.9	103°41'41.	0.11
6429	1.8	65.99	6427.32	32.24	-35.56	-62.35	738687.1	466987.8	32°16'55.9	103°41'41.	0.04
6522	1.89	71.39	6520.27	31.3	-34.48	-59.56	738689.8	466988.9	32°16'55.9	103°41'41.	0.21
6617	1.8	76.01	6615.23	30.6	-33.62	-56.63	738692.8	466989.8	32°16'55.9	103°41'40.	0.18
6711	1.71	78.07	6709.18	30.1	-32.97	-53.82	738695.6	466990.4	32°16'55.9	103°41'40.	0.12
6806	1.58	76.98	6804.14	29.65	-32.38	-51.16	738698.2	466991	32°16'55.9	103°41'40.	0.14
6901	1.49	69.5	6899.11	29.05	-31.66	-48.73	738700.7	466991.7	32°16'55.9	103°41'40.	0.23
6995	1.1	63.57	6993.08	28.33	-30.83	-46.78	738702.6	466992.6	32°16'55.9	103°41'40.	0.44
7089	1.19	66.3	7087.07	27.62	-30.03	-45.07	738704.3	466993.4	32°16'56.0	103°41'40.	0.11
7183	1.1	72.1	7181.05	27.05	-29.36	-43.32	738706.1	466994	32°16'56.0	103°41'40.	0.16
7277	1.32	70.89	7275.03	26.51	-28.73	-41.44	738708	466994.7	32°16'56.0	103°41'40.	0.24
7372	1.49	61.37	7370	25.68	-27.78	-39.32	738710.1	466995.6	32°16'56.0	103°41'40.	0.3
7467	1.58	55.79	7464.96	24.46	-26.45	-37.16	738712.3	466997	32°16'56.0	103°41'40.	0.18
7561	1.41	67.09	7558.93	23.4	-25.27	-35.02	738714.4	466998.1	32°16'56.0	103°41'40.	0.36
7655	1.32	68.49	7652.9	22.66	-24.43	-32.95	738716.5	466999	32°16'56.0	103°41'40.	0.1
7748	1.41	71.57	7745.88	22.02	-23.67	-30.86	738718.5	466999.7	32°16'56.0	103°41'40.	0.12
7842	1.32	83.3	7839.85	21.64	-23.18	-28.69	738720.7	467000.2	32°16'56.0	103°41'40.	0.31
7936	1.41	91.78	7933.82	21.67	-23.09	-26.46	738722.9	467000.3	32°16'56.0	103°41'40.	0.23
8030	1.32	96.79	8027.8	21.95	-23.25	-24.23	738725.2	467000.2	32°16'56.0	103°41'40.	0.16
8125	1.49	98.51	8122.77	22.38	-23.57	-21.92	738727.5	466999.8	32°16'56.0	103°41'40.	0.18
8219	1.32	99.3	8216.74	22.86	-23.92	-19.64	738729.8	466999.5	32°16'56.0	103°41'40.	0.18
8313	1.01	103.61	8310.72	23.32	-24.29	-17.77	738731.6	466999.1	32°16'56.0	103°41'40.	0.34
8408	1.1	106.11	8405.71	23.86	-24.74	-16.08	738733.3	466998.7	32°16'56.0	103°41'40.	0.11
8502	1.01	106.59	8499.69	24.44	-25.23	-14.42	738735	466998.2	32°16'56.0	103°41'40.	0.1
8595	1.1	111.91	8592.67	25.09	-25.8	-12.81	738736.6	466997.6	32°16'56.0	103°41'40.	0.14
8698	1.01	118.11	8695.66	25.97	-26.59	-11.09	738738.3	466996.8	32°16'56.0	103°41'40.	0.14
8783	0.62	127.29	8780.65	26.66	-27.22	-10.06	738739.3	466996.2	32°16'56.0	103°41'40.	0.48
8791	0.78	129.23	8788.65	26.72	-27.29	-9.98	738739.4	466996.1	32°16'56.0	103°41'40.	2.02
8822	0.86	141.76	8819.64	27.05	-27.6	-9.68	738739.7	466995.8	32°16'56.0	103°41'40.	0.63
8886	6.3	143.94	8883.5	30.39	-30.82	-7.31	738742.1	466992.6	32°16'55.9	103°41'40.	8.5
8917	9.45	143.46	8914.2	33.94	-34.24	-4.79	738744.6	466989.2	32°16'55.9	103°41'40.	10.16
8948	12.87	143.54	8944.61	38.94	-39.06	-1.23	738748.2	466984.3	32°16'55.9	103°41'40.	11.03
8979	16.32	142.5	8974.6	45.42	-45.3	3.48	738752.9	466978.1	32°16'55.8	103°41'40.	11.16

9011	19.43	143.21	9005.06	53.55	-53.13	9.41	738758.8	466970.3	32°16'55.7	103°41'40.	9.74
9042	22.8	143.06	9033.97	62.82	-62.06	16.1	738765.5	466961.3	32°16'55.6	103°41'40.	10.87
9074	26.92	143.39	9063	74.01	-72.84	24.15	738773.6	466950.6	32°16'55.5	103°41'40.	12.88
9105	30.99	143.9	9090.12	86.54	-84.92	33.05	738782.4	466938.5	32°16'55.4	103°41'39.	13.15
9137	34.8	145.38	9116.98	101.23	-99.1	43.09	738792.5	466924.3	32°16'55.3	103°41'39.	12.17
9168	37.69	146.82	9141.98	116.96	-114.31	53.31	738802.7	466909.1	32°16'55.1	103°41'39.	9.72
9200	40.41	146.96	9166.83	134.4	-131.2	64.32	738813.7	466892.2	32°16'54.9	103°41'39.	8.5
9231	43.45	147.01	9189.89	152.34	-148.57	75.6	738825	466874.8	32°16'54.8	103°41'39.	9.81
9263	46.9	146.31	9212.45	171.92	-167.52	88.08	738837.5	466855.9	32°16'54.6	103°41'39.	10.89
9294	50.28	145.26	9232.95	191.8	-186.74	101.15	738850.6	466836.7	32°16'54.4	103°41'39.	11.19
9325	54.26	144.48	9251.91	212.56	-206.79	115.26	738864.7	466816.6	32°16'54.2	103°41'39.	12.99
9356	56.67	145.63	9269.49	234.23	-227.72	129.88	738879.3	466795.7	32°16'54.0	103°41'38.	8.35
9388	58.66	149.03	9286.61	257.73	-250.48	144.47	738893.9	466772.9	32°16'53.8	103°41'38.	10.92
9419	60.83	151.19	9302.23	281.61	-273.69	157.81	738907.2	466749.7	32°16'53.5	103°41'38.	9.23
9450	63.11	153.45	9316.79	306.48	-297.93	170.51	738919.9	466725.5	32°16'53.3	103°41'38.	9.77
9481	65.34	156.35	9330.28	332.34	-323.2	182.34	738931.7	466700.2	32°16'53.0	103°41'38.	11.08
9513	67.47	159.7	9343.09	360.07	-350.39	193.31	738942.7	466673	32°16'52.8	103°41'38.	11.68
9544	69.91	162.43	9354.35	387.84	-377.71	202.67	738952.1	466645.7	32°16'52.5	103°41'37.	11.37
9575	73.07	164.88	9364.2	416.44	-405.91	210.94	738960.3	466617.5	32°16'52.2	103°41'37.	12.65
9607	75.97	167.39	9372.74	446.72	-435.85	218.32	738967.7	466587.6	32°16'51.9	103°41'37.	11.8
9638	78.21	169.69	9379.66	476.61	-465.46	224.32	738973.7	466558	32°16'51.6	103°41'37.	10.22
9670	79.76	171.32	9385.78	507.81	-496.44	229.5	738978.9	466527	32°16'51.3	103°41'37.	6.96
9701	81.15	172.93	9390.92	538.27	-526.72	233.69	738983.1	466496.7	32°16'51.0	103°41'37.	6.81
9733	83.33	175.35	9395.24	569.94	-558.25	236.92	738986.3	466465.2	32°16'50.7	103°41'37.	10.13
9797	88.12	177.45	9400.01	633.73	-621.93	240.93	738990.3	466401.5	32°16'50.1	103°41'37.	8.17
9828	88.12	177.81	9401.03	664.72	-652.88	242.21	738991.6	466370.6	32°16'49.8	103°41'37.	1.16
9923	88.49	179.19	9403.84	759.64	-747.81	244.69	738994.1	466275.6	32°16'48.8	103°41'37.	1.5
10018	88.36	178.88	9406.45	854.54	-842.76	246.29	738995.7	466180.7	32°16'47.9	103°41'37.	0.35
10113	90.15	179.5	9407.68	949.46	-937.74	247.63	738997	466085.7	32°16'47.0	103°41'37.	1.99
10208	90.55	180.76	9407.1	1044.31	-1032.73	247.42	738996.8	465990.7	32°16'46.0	103°41'37.	1.39
10301	90.22	180.77	9406.48	1137.11	-1125.72	246.18	738995.6	465897.7	32°16'45.1	103°41'37.	0.36
10396	90.49	180.15	9405.89	1231.93	-1220.72	245.41	738994.8	465802.7	32°16'44.2	103°41'37.	0.71
10491	93.89	180.56	9402.26	1326.68	-1315.63	244.83	738994.2	465707.8	32°16'43.2	103°41'37.	3.6
10586	93.67	182.22	9396	1421.19	-1410.39	242.53	738991.9	465613.1	32°16'42.3	103°41'37.	1.76
10681	91.88	182.05	9391.4	1515.7	-1505.21	238.99	738988.4	465518.3	32°16'41.3	103°41'37.	1.89
10777	89.85	181.33	9389.95	1611.36	-1601.15	236.16	738985.6	465422.3	32°16'40.4	103°41'37.	2.24
10872	89.48	180.89	9390.5	1706.11	-1696.13	234.32	738983.7	465327.4	32°16'39.5	103°41'37.	0.61

10967	89.11	180.56	9391.67	1800.9	-1791.12	233.12	738982.5	465232.4	32°16'38.5	103°41'37.	0.52
11062	88.25	180.26	9393.86	1895.7	-1886.09	232.44	738981.8	465137.4	32°16'37.6	103°41'37.	0.96
11157	87.69	180.38	9397.22	1990.48	-1981.03	231.91	738981.3	465042.5	32°16'36.6	103°41'37.	0.6
11252	89.82	179.81	9399.29	2085.31	-2076	231.75	738981.1	464947.5	32°16'35.7	103°41'37.	2.32
11347	90.28	179.86	9399.21	2180.2	-2171	232.03	738981.4	464852.5	32°16'34.8	103°41'37.	0.49
11442	90.93	180.25	9398.2	2275.05	-2265.99	231.94	738981.3	464757.5	32°16'33.8	103°41'37.	0.8
11537	90.34	180.73	9397.15	2369.87	-2360.98	231.12	738980.5	464662.5	32°16'32.9	103°41'37.	0.8
11632	89.57	179.67	9397.22	2464.72	-2455.98	230.79	738980.2	464567.5	32°16'31.9	103°41'37.	1.38
11726	89.32	179.13	9398.14	2558.63	-2549.97	231.78	738981.2	464473.6	32°16'31.0	103°41'37.	0.63
11821	89.14	178.99	9399.41	2653.56	-2644.95	233.33	738982.7	464378.6	32°16'30.1	103°41'37.	0.24
11916	89.48	178.65	9400.56	2748.5	-2739.92	235.29	738984.7	464283.6	32°16'29.1	103°41'37.	0.51
12011	89.17	178.51	9401.68	2843.46	-2834.89	237.64	738987	464188.7	32°16'28.2	103°41'37.	0.36
12107	87.97	178.06	9404.07	2939.4	-2930.81	240.52	738989.9	464092.7	32°16'27.2	103°41'37.	1.33
12201	86.12	178.04	9408.92	3033.26	-3024.63	243.71	738993.1	463998.9	32°16'26.3	103°41'37.	1.97
12294	87.47	179.26	9414.12	3126.07	-3117.45	245.9	738995.3	463906.1	32°16'25.4	103°41'37.	1.96
12390	89.6	179.42	9416.57	3221.95	-3213.41	247	738996.4	463810.2	32°16'24.4	103°41'37.	2.22
12485	88.83	179.14	9417.87	3316.87	-3308.39	248.2	738997.6	463715.2	32°16'23.5	103°41'37.	0.86
12579	88.83	178.6	9419.79	3410.79	-3402.35	250.05	738999.4	463621.2	32°16'22.6	103°41'37.	0.57
12674	91.48	179.72	9419.53	3505.72	-3497.33	251.44	739000.8	463526.2	32°16'21.6	103°41'37.	3.03
12769	91.54	179.38	9417.03	3600.59	-3592.3	252.19	739001.6	463431.3	32°16'20.7	103°41'37.	0.36
12864	91.7	178.14	9414.34	3695.5	-3687.23	254.24	739003.6	463336.3	32°16'19.8	103°41'37.	1.32
12959	92.56	178.45	9410.81	3790.41	-3782.13	257.07	739006.5	463241.5	32°16'18.8	103°41'37.	0.96
13054	90.46	178.88	9408.31	3885.33	-3877.06	259.28	739008.7	463146.5	32°16'17.9	103°41'37.	2.26
13149	90.12	178.96	9407.83	3980.28	-3972.04	261.07	739010.5	463051.6	32°16'16.9	103°41'37.	0.37
13245	88.92	179.19	9408.63	4076.21	-4068.03	262.62	739012	462955.6	32°16'16.0	103°41'37.	1.27
13339	88.89	179.12	9410.43	4170.12	-4162	264.01	739013.4	462861.6	32°16'15.1	103°41'37.	0.08
13434	90.95	179.47	9410.56	4265.04	-4256.99	265.18	739014.6	462766.6	32°16'14.1	103°41'37.	2.2
13529	92.1	179.15	9408.03	4359.93	-4351.94	266.32	739015.7	462671.7	32°16'13.2	103°41'37.	1.26
13624	90.56	179.89	9405.83	4454.8	-4446.91	267.11	739016.5	462576.7	32°16'12.2	103°41'37.	1.8
13719	91.73	179.87	9403.93	4549.66	-4541.89	267.31	739016.7	462481.7	32°16'11.3	103°41'37.	1.23
13813	90.74	179.18	9401.91	4643.55	-4635.86	268.09	739017.5	462387.8	32°16'10.4	103°41'37.	1.28
13878	91.32	179.04	9400.74	4708.49	-4700.85	269.1	739018.5	462322.8	32°16'09.7	103°41'37.	0.92
13935	91.32	179.04	9399.42	4765.44	-4757.82	270.06	739019.4	462265.8	32°16'09.2	103°41'37.	0

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	Comment

James 29 Federal 21 P	9400	-4765.83	250.91	739000.3	462257.8	32°16'09.1	103°41'37. point

WELLPATH COMPOSITION Ref Wellbore: No. 21 AWB Ref Wellpath: No. 21 AWB

Log Name/	Start MD [ft]	End MD [ft]	Pos Unc Model
Xtreme MV	25	7372	ISCWSA MWD, Rev. 2 (Standard)
BHI Navitra	7372	13878	AT Curve (Short Spaced)
Projection	13878	13935	Blind Drilling (std)

Cimarex Energy Co.

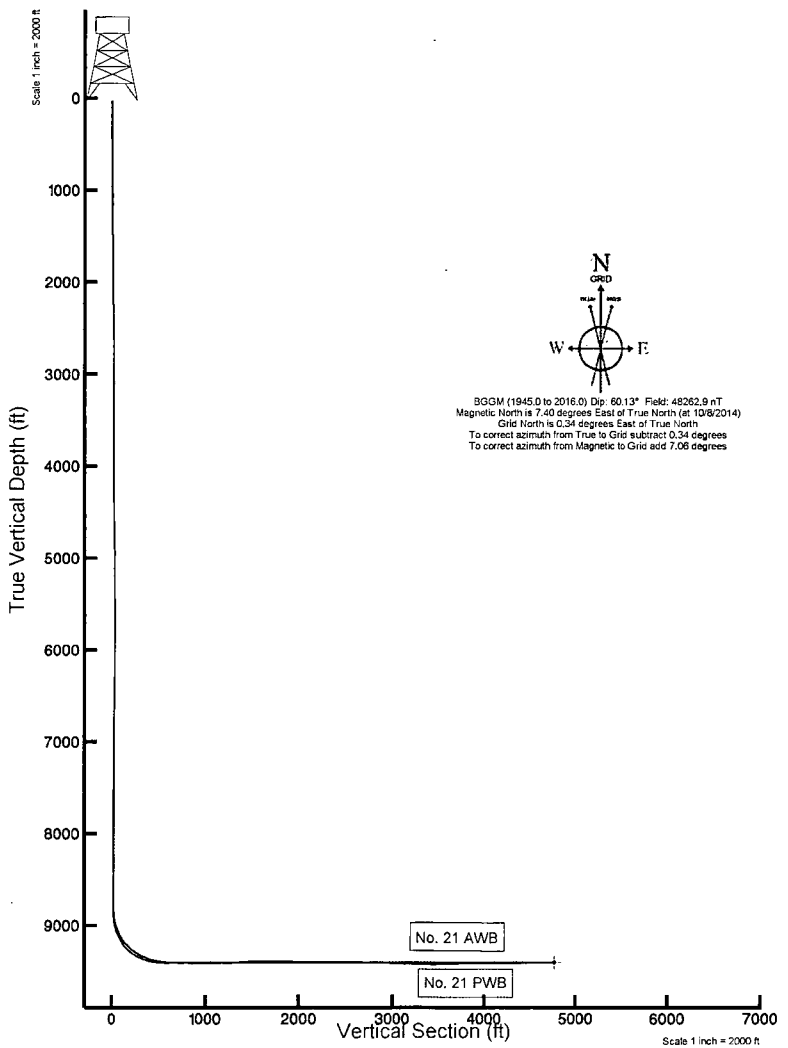
Location: Lea County, NM
Field: (James Federal) Sec 29, TS 23 S, R 32 E
Facility: Federal 29 James 21

Slot: No. 21 SHL
Well: No. 21
Wellbore: No. 21 PWB

Plot reference wellpath is No. 21 Rev 8.0	
True vertical depths are referenced to Rig on No. 21 SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No. 21 SHL (KB)	North Reference: Grid north
Rig on No. 21 SHL (KB) to Mean Sea Level: 3714 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No. 21 SHL): -3689 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: abreall on 12/9/2014

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Federal 29 James 21			738749.400	467023.400	32°16'56.301"N	103°41'40.333"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
No. 21 SHL	0.00	0.00	738749.400	467023.400	32°16'56.301"N	103°41'40.333"W
Rig on No. 21 SHL (KB) to Mud line (At Slot: No. 21 SHL)					25ft	
Mean Sea Level to Mud line (At Slot: No. 21 SHL)					-3689ft	
Rig on No. 21 SHL (KB) to Mean Sea Level					3714ft	



Azimuth 176.99° with reference 0.00 N, 0.00 E

BGGM (1945.0 to 2016.0) Dip: 60.13° Field: 48262.9 nT
Magnetic North is 7.40 degrees East of True North (at 10/8/2014)
Grid North is 0.34 degrees East of True North
To correct azimuth from True to Grid subtract 0.34 degrees
To correct azimuth from Magnetic to Grid add 7.06 degrees